1282 BOYLSTON STREET

1282 Boylston Street
Boston, Massachusetts 02215

Expanded Project Notification Form

Submitted Pursuant to Article 80c of the Boston Zoning Code

SUBMITTED TO:

The Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts

SUBMITTED BY:

The ABBEY Group
575 Boylston Street
Boston, Massachusetts

THE **ABBEY** GROUP

July 5, 2011

Peter Meade, Director
Boston Redevelopment Authority
Boston City Hall, 9th Floor
Boston, MA 02201

Re: 1282 Boylston Mixed Use Project

Dear Director Meade,

The Abbey Group is pleased to submit this Expanded Project Notification Form for a proposed mixed use project at 1282 Boylston Street in the Fenway Neighborhood of Boston. We have been actively working in the Fenway Neighborhood for over 15 years together with the City and the Fenway community to shape the lively, invigorated "Urban Village" that the Fenway is becoming. This project continues those partnerships and efforts, and furthers the shared goals of a vibrant, engaging street life, increased housing for residents, expanded retail alternatives, enhanced urban design and improved office spaces.

The project consists of approximately 210 residential units, 99,000 square feet of office use, 15,000 square feet of retail use and approximately 295 underground parking spaces. This attractive design and sophisticated mixed use program is appropriate for this central location in the middle of the west Fens, and will ably serve the needs of residents, retailers and businesses that are continuing to grow and flourish in the neighborhood.

1282 Boylston is also defined by its package of direct community benefits, including onsite affordable housing, an onsite ground floor Fenway neighborhood community center large enough to handle the assembly of large groups, the creation of a travel way for public use connecting Boylston Street to the shared alley running down the block, and substantial improvements to the physical spaces abutting the property, through constructed improvements and also through the carving away of allowable built area to the benefit of the neighborhood.

The project expressed in this filing is the result of a design process that included significant input and improvements from the neighborhood and the City agencies. We believe that it responsibly meets the challenges and opportunities of the site and the needs of the neighborhood and will be a significant positive contributor to the Fenway neighborhood.

575 Boylston Street
Boston, Massachusetts
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617-266-8860
Fax 617-266-7424

We look forward to working with you and your staff in the continued review of 1282 Boylston.

Sincerely,

David Epstein
COO, President

1282 Boylston Street

Boston, MA 02215

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Submitted pursuant to Article 80c of the Boston Zoning Code

Submitted to:

The Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts

Submitted by:

The Abbey Group
575 Boylston Street
Boston, Massachusetts

In Association with:

Bruner/Cott & Associates
Nitsch Engineering, Inc.
Cosentini Engineers
Epsilon Associates, Inc.
Haley & Aldrich, Inc.
Suffolk Construction
Alan G. Davenport Wind Engineering Group
Tremont Preservation Associates
Rubin and Rudman, LLP
Weidlinger Associates, Inc.

July 2011

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1 Summary

1.1 Project Identification

Project Name

1282 Boylston Street

Location

Fronting Boylston Street, between intersection with Jersey Street and 1270 Boylston Street. Alley along rear property line.

Proponent

Submitted on behalf of Offsite Real Estate, LLC by
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Cambridge, MA 02139
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Robert Simmons, Associate Principal

Contractor

Suffolk Construction Company / William A. Berry & Son
65 Allerton Street
Boston, MA 02119
(617) 445-3500

1.2 Project Summary

1.2.1 Project Site

The proposed 1282 Boylston mixed use development (the “Project”) will be located at 1282 Boylston Street at the east corner of Jersey Street. The Project will adhere to all required setbacks imposed on the site and will maintain additional setbacks on Jersey Street and between the Project and the Baseball Tavern located at 1270 Boylston. This additional setback will create a new street to the existing alley that runs between Boylston and Peterborough Street.

The Project Site is centrally located on the Fenway Boylston Street corridor and it’s proximate to several public transportation options and vehicle thoroughfares.

1.2.2 Prior Development Experience in the Fenway Neighborhood

The Abbey Group has already completed two major developments in the Fenway Neighborhood in the past eleven years with Landmark Center at 401 Park Drive and Landmark Square at 75 Peterborough Street.

The Abbey Group’s transformation of the old Sears Building into the Landmark Center created approximately 970,000 square feet of office, health club, daycare, retail, and cinema space, as well as 1,790 parking spaces. In 2000, the Abbey Group constructed the Landmark Square apartment building and it has proven to be a highly desirable building typically operating with little to no vacancy. The architecture is warm and contextual and has been a well-received addition to Peterborough Street neighborhood.

These highly successful developments have played a crucial role in the recent Fenway Neighborhood revitalization. This area has seen significant construction growth in the past decade beginning with Landmark Center and Landmark Square.

1.2.3 Existing Site Uses

The site currently functions as a surface parking facility with a capacity of 169 vehicles. Prior to this current use, the site served as a drive-through McDonalds Restaurant with some additional commercial parking. When The Abbey Group took ownership of the site in the spring of 2010, the McDonalds was raised and the lot received new paving, landscaping, and fencing in anticipation of its current interim use.

1.2.4 Proposed Development

The proposed 337,000 gross square foot mixed-use project at 1282 Boylston includes 210 residential units, 99,000 square feet of office space, 15,000 square feet of ground floor retail space, and underground parking for approximately 295 vehicles. This integrated residential and commercial building blends with the emerging character of the neighborhood.

The proposed project will build on the current momentum in the Boylston Street corridor that is a result of the substantial recent development and proposed projects already in the pipeline. Demand for Fenway area housing continues to rise steadily as the appeal of this emerging “urban village” has become a highly desirable area for professionals, young families, and empty nesters moving back into the city. As such, the proposed project will include studios, 1BR, 2BR and 3BR residential options to meet the demands of these various demographics. These urban dwellers see the Fenway neighborhood itself, as well as its proximity to downtown, as primary amenities. Therefore, it is the goal of this development to provide a comfortable, modern building that promotes a lifestyle that encourages taking advantage of these assets.

Another goal of this development is to create flexible commercial space in a low inventory area that will appeal to a broad range of potential office or retail users. The space will provide new leasing opportunities for users that can range from 7,500 sf to 99,000 sf, with the option of creating independent lobby entrances. These smaller spaces and branded office possibilities are attractive assets that will bring more diversity to the growing working population of the Fenway. The flexibility of the design enables us to respond to market needs and divide the commercial space into office or retail depending on the demand.

The site exists on a ‘superblock’ that runs from the intersection of Boylston and Park Drive to Jersey Street. To reduce the unbroken length of the block, The Abbey Group will construct a new publicly accessible street on the project site that will connect Boylston Street to the alley that runs between Boylston and Peterborough Streets. This neighborhood enhancement results in several other additional benefits:

- breaks down the building massing
- creates an additional access point
- brings additional order to the alley
- moves building vehicular access away from Jersey Street and the entrance to 1330
- results in a fully articulated façade

1.2.5 Public Review

As set forth in more detail below, the Proposed Project will be reviewed by the Boston Redevelopment Authority pursuant to the provisions of Article 80B (Large Project Review) and Article 80C (Planned Development Area Review) of the Boston Zoning Code. As part of such review the Proposed Project will be reviewed by the BRA, Boston Transportation Department, Boston Environment Department, Boston Civic Design Commission, and other city agencies, as well as by neighborhood groups.

The Proponent has already held several preliminary meetings with these groups and has received broad based support for the Project. The Project adheres to the intended goal of the PDA Zoning and continues the trend of creating more dense development along the Boylston Street corridor to enhance the “urban village” objective.

1.2.6 Public Benefits

The proposed project at 1282 Boylston will offer substantial benefits to the Fenway neighborhood and its residents providing: new housing options, expanded retail alternatives, enhanced urban design, and improved office spaces. The underlying goals of the project are consistent with the neighborhood’s master plan to promote housing while preserving the unique character of the area and providing an active 24/7 environment repopulated with retail and restaurant patrons as well as office workers. The new energy emanating from this project will contribute to the desired “urban village” atmosphere in the area, as well as bring jobs and additional economic activity to the Fenway. Additionally, the proposed project is committed to onsite affordable housing and to the creation of a multi-purpose, flexible community space.

Fenway Neighborhood Community Center:
- The proposed project will include a ground floor space, attached to a restaurant or café, that is for the use and enjoyment of the neighborhood. This space is discussed in more detail at the end of this section.

Affordable Housing:
- The Project will provide 10% of its total residential units as affordable, onsite housing for the benefit of the neighborhood.

Economic Benefits:
- Add over 200 new housing units to help address the ever-increasing demand in the Fenway Neighborhood.
- Introduce new retail and residential vitality along Boylston and Jersey Streets.

- Increase economic activity to the Fenway with mixed-use property for residents, workers, shoppers, and diners.
- Create 600 construction jobs with as many as 250 trades-people working onsite.
- Create a public transit accessible employment center with up to 360 jobs on-site once completed.
- Increase tax revenue for the city.
- Contribute approximately $135,000 towards City of Boston linkage payments.

Neighborhood Design Enhancements:

- Create a vibrant pedestrian and public transit accessible multi-use residential, retail, and office project in an existing surface parking lot.
- Reduce the ground floor footprint of the building to create a dedicated truck drive lane away from the existing neighborhood alley to lessen vehicular congestion and pull the loading functions away from the neighboring residential buildings.
- Use varied multi-level and multi-material façade articulation to bring a warm pedestrian "urban village" feeling to the area.
- Support the Boylston Street Reconstruction Plan through sidewalk and streetscape design.
- Reduce building footprint on Jersey Street to align with existing building setback, and extend the residential streetwall to Boylston Street.
- Reduce the Jersey and Boylston corner by an additional seven feet to provide visual space between 1282 and 1330 Boylston which will enhance this gateway to the residential West Fens.
- Create a new, two lane private way (open to public travel) for alley access and development access.
- Eliminate two curb cuts on Boylston Street.
- Continue the recent trend of bringing high quality architecture to the neighborhood.

Sustainable Design Focus:

- Incorporate state of the art "green" design elements including energy efficient mechanical and building control systems and environmentally responsible materials.
- Build onsite bicycle storage with easy access to encourage bicycle use.

1.2.6.1 Fenway Neighborhood Community Space

The proposed project will provide a dynamic and flexible neighborhood space that will be available to all individuals and groups in the neighborhood. It will be located on the ground floor of the building, and is attached to a neighborhood café, restaurant or coffee shop. To make this space accessible to all, it will be unaffiliated with any one particular group and can be occupied by individuals or groups on either a reservation or first-come first-served basis.

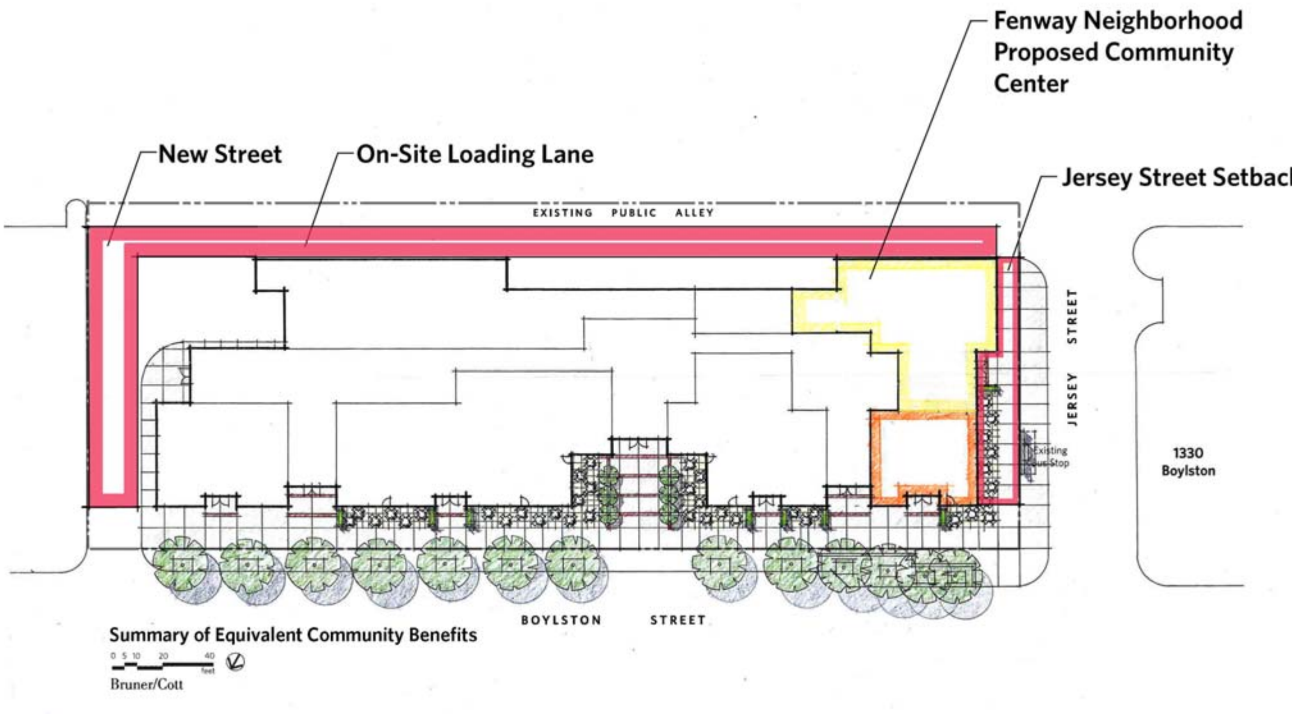

Figure 1-1 - Neighborhood Community Center Legend

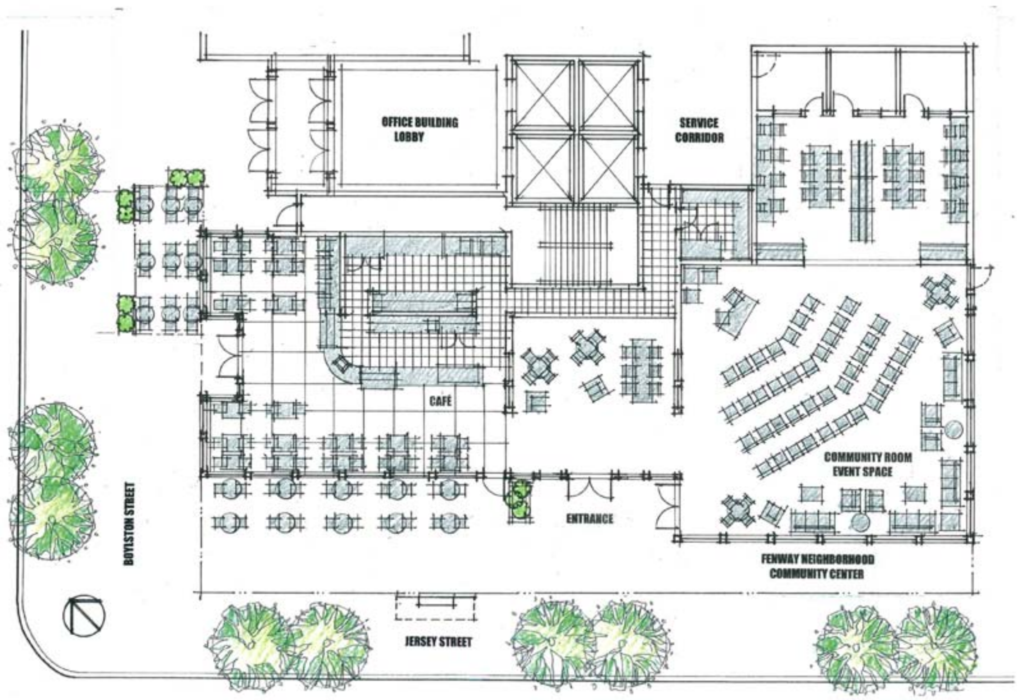

Figure 1-**2** – Proposed Neighborhood Community Center Plan

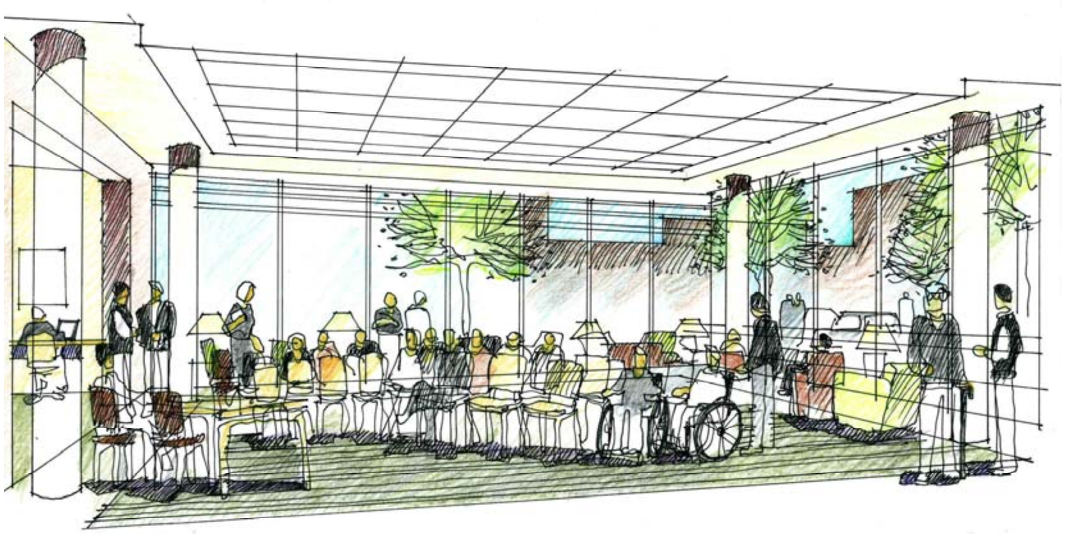

Figure 1-3 - Neighborhood Community Center View

1.2.7 Consistency with Zoning

1.2.7.1 Zoning District

The Proposed Project is located in the South Boylston Street Neighborhood Shopping District (South Boylston NS-1 District) of the Fenway Neighborhood District which is governed by Article 66 of the Boston Zoning Code (the "Code"). Within this subdistrict a Planned Development Area ("PDA") is permitted to be established until October 22, 2011. It is anticipated that the Proposed Project will be reviewed and approved as a PDA pursuant to Section 66-27 and Article 80C of the Code. Approval as a PDA requires the approval by the BRA and the Boston Zoning Commission of a PDA Development Plan that outlines the proposed densities, dimensions, uses, appearance, landscaping and other matters that the BRA deems appropriate for the Proposed Project. The proposed PDA Development Plan for the Proposed Project is attached to this Expanded Project Notification Form as Appendix B (the "Proposed Project Development Plan").

1.2.7.2 Permitted Uses.

The Proposed Project will be used for office, residential, retail and community uses, which are all allowed uses for this district under the Code. To the extent any use needs to be modified, Section 66-28 allows for such modification to be included in the Development Plan for the PDA. Modifications to the uses contemplated and described in the Proposed Project Development Plan are to allow for institutional uses and clinical laboratory uses in the office portion of the Proposed Project and for large take-out (but not drive through) restaurant use in the retail portion of the Proposed Project, among others.

1.2.7.3 Dimensional Requirements

The Project Site contains 1.088 acres and thus satisfies the one (1) acre minimum for approval as a PDA. Section 66-28 of the Code also contains other dimensional requirements for a PDA in this district that affect the Proposed Project as outlined in the table below. It is anticipated that modifications to these dimensional requirements to allow for the dimensions of the Proposed Project will be presented to the Zoning Commission at the same time that the approval of the Proposed Project Development Plan is requested from the Zoning Commission.

Table 1-1 - Dimensional requirements

	Table 2 – Section 66-28	Proposed Project
Maximum Building Height	150 ft.	138’-8” (East Tower) 178’-0” (West Tower)
Maximum FAR	7.0	7.0
Street Wall Height	Determined during Article 80 Review	To be determined
Setback Above Street Wall	Height determined during Article 80 Review	To be determined

1.2.8 Off-Street Parking and Loading

The Proposed Project will contain approximately 295 parking spaces in an underground parking garage. Section 66-28 of the Code requires 0.75 spaces per residential unit and 0.75 spaces per 1,000 sq. ft. of other uses. The total parking satisfies these parking ratios – greater than the .75 spaces per dwelling unit, but less than 1.0 spaces per dwelling unit allowed. There will be 91 stalls for office/retail space at 1/1,000 SF and 204 stalls for 210 residential units at <1.0/unit.

Loading for the building will be to the rear of the building in an area abutting the public alley to the rear of the Project Site. As opposed to using the rear alley, the Proponent plans to create loading ingress and egress fully within the Project Site.

2 Project Description

2.1 Existing Site

The proposed 1282 Boylston mixed-use development site is located at 1282 Boylston Street bound by the Jersey Street intersection and the Baseball Tavern located at 1270 Boylston Street. In addition to those required by the zoning parameters, the project features the following two setbacks:

- a setback along Jersey Street to maintain a consistent streetwall, extending the residential character to Boylston Street

- a setback along the eastern edge of the property next to the Baseball Tavern, to create a new street, providing vehicular access to the project and an additional community access point to the existing rear alley.

The site currently functions as a surface parking facility with a capacity of 169 vehicles and two of the three existing curb cuts in use. Prior to this current use, the site served as a drive-through McDonalds Restaurant with some additional commercial parking. Once converted to all surface parking, the lot received new paving, landscaping, and fencing. The built condition will result in the elimination of two of the three existing curb cuts.

The site is ideally located in the center of the Fenway Boylston Street corridor amidst other successful, recently completed higher density development as well as additional projects in the pipeline. This location enjoys excellent access to the Green Line Fenway and Kenmore stations, the Yawkey Commuter Rail Station, bus lines, and Storrow Drive.

Figure 2-1 - Site locus map

2.2 Proposed Development Program

2.2.1 Building Program

The proposed project consists of approximately 333,000 gross square feet of mixed-use space. The new building will contain 210 residential units, 99,000 square feet of office space and 15,000 square feet of ground floor retail space and underground parking for approximately 295 vehicles. Each building use will have independent, direct pedestrian access from Boylston Street and direct elevator access into the parking garage. This will serve to provide excellent security and clear demarcation of each building use for its visitors.

Residences begin on the fifth floor where the building splits into two towers and continue through the rest of the building to the sixteenth floor. The dedicated residential lobby is positioned in the center of the building and contains two elevator banks, one for each tower. The apartments are a mix of studio, one-bedroom, two-bedroom, and three-bedroom units to provide stylish and efficient space at a highly competitive rate in the Fenway marketplace.

Office space will occupy the full building footprint on floors two, three and four and can be served by two independent and dedicated lobbies on either end of the building. The flexibility of this layout will allow the building to accommodate users as small as 7,500 sf or one single user of 99,000 sf. The two commercial lobbies will also give potential users the opportunity to have a branded entrance depending on their space requirements.

Smaller retail spaces with strong sidewalk presence and visibility will be created with the goal of attracting neighborhood friendly amenities and a coffee shop café with outdoor seating located off of the residential lobby.

2.2.2 Approximate Dimensions

Table 2-1 - Building dimensions

Element	Existing	PDA Zoning	Proposed
Project Site	1.088 AC (47,379 SF)	1.088 AC (47,379 SF)	1.088 AC (47,379 SF)
FAR	0.00	7.00	7.00
Height	0’	150’-0”	138’-8” (East Tower) 178’-0” (West Tower)
Loading	0	-	1

Table 2-2 - Building square footage

Floor	Gross Floor Area	Occupied Floor Area	Use	Floor Height
Ground Floor	27,511	26,375	Retail, Loading, Lobby	0’-0”
Floor 2	31,084	29,587	Office	17’-0”
Floor 3	31,335	29,826	Office	34’-0”
Floor 4	33,245	31,644	Office	46’-6”
Floor 5	23,189	22,072	Residential	60’-0”
Floor 6	23,007	21,899	Residential	69’-10”
Floor 7	23,007	21,899	Residential	79’-8”
Floor 8	23,326	22,203	Residential	89’-6”
Floor 9	23,200	22,083	Residential	99’-4”
Floor 10	20,997	19,986	Residential	109’-2”
Floor 11	20,817	19,814	Residential	119’-0”
Floor 12	20,817	19,814	Residential	128’-10”
Floor 13	11,675	11,113	Residential	138’-8”
Floor 14	11,675	11,113	Residential	148’-6”
Floor 15	11,675	11,113	Residential	158’-4”
Floor 16	11,675	11,113	Residential	178’-0”
Total	348,235	331,653		178’-0”

2.3 Schedule

It is anticipated that the project construction could commence as early as the third quarter of 2012, with an expected construction period of 23 months.

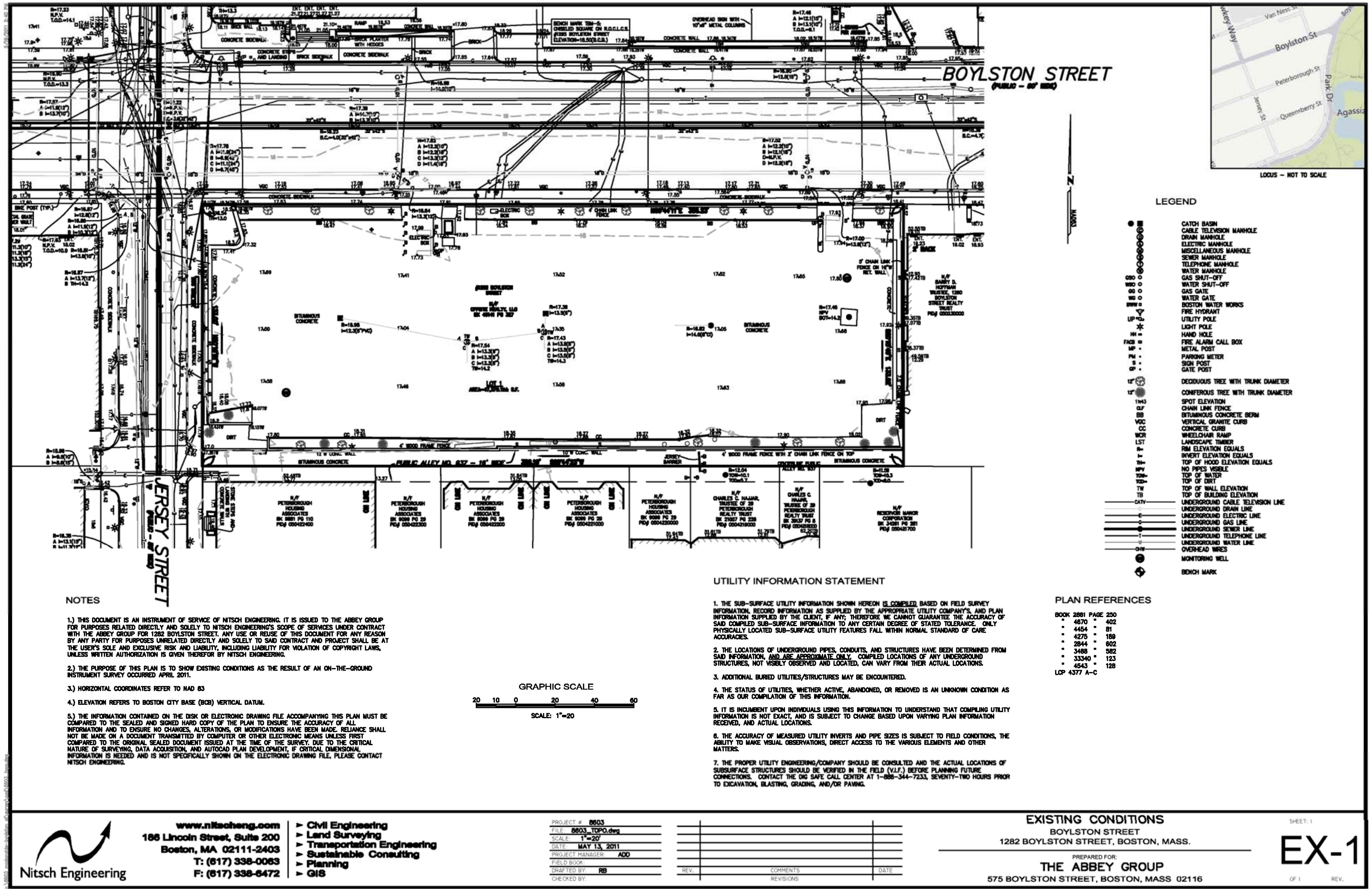

Figure 2-2 - Existing site survey

3 Assessment of Development Review Components

3.1 Transportation

3.1.1 Introduction

The purpose of this report is to evaluate the traffic impacts of a proposed mixed-use development on 1282 Boylston Street in Boston, MA. This development will include 99,000 square feet of office space, 15,000 square feet of retail space, and approximately 211 residential units. In addition, 295 parking spaces will be provided in the form of a garage underneath these uses. The previous uses of this property were a McDonalds and more recently, a surface Parking Lot with approximately 170 spaces.

This section of Boylston Street is an area of attraction due to its proximity to Fenway Park, the Longwood Medical Area, and academic institutions. A location map is included as Figure 3-1 of this report.

The purpose of this report is to analyze, review, and evaluate the anticipated traffic impacts resulting from the proposed development. The traffic impacts were evaluated at the following signalized intersections:

- Boylston Street @ Park Drive/Brookline Avenue
- Boylston Street @ Kilmarnock Street
- Boylston Street @ New Street (part of Fenway Triangle project)
- Boylston Street @ Yawkey Way/Jersey Street
- Boylston Street @ Ipswich Street

In addition, the following unsignalized intersection was also evaluated:

- Boylston Street @ Proposed Site Drive

The study intersections are shown in Figure 3-1 of this report.

The proposed site is located in a very dense area with extensive public transportation options. As a result, the traffic impacts to the new development will be significantly reduced due to a high rate of walking, biking, and public transit uses. These alternative modes would be encouraged by a transportation demand management plan that provides incentives to users.

It is the conclusion of this report that the impacts of traffic generated by the proposed development are negligible, especially as compared to the high level of traffic volumes currently on Boylston Street. The proposed primary access drive to the site which serves passenger vehicles and delivery vehicles will be off Boylston Street, east of the signalized intersection of Boylston Street and

Jersey Street. However, vehicles that wish to exit the site and head west on Boylston Street, will use the back alley to Jersey Street and turn left at the signalized intersection. Based on the capacity analysis completed for this signalized intersection, the Jersey Street approach has the lowest volumes and can handle additional traffic before reaching capacity.

The parking supply and demand has also been evaluated, and it was determined that the proposed facility will accommodate the future parking demands.

Figure 3-1 - Locus Map

3.1.2 Project Description

The Abbey Group is proposing a new mixed-use building consisting of office, retail and residential uses on top of a new parking garage. The composition of the proposed uses includes the following:

Office Space	99,000 sf
Retail	15,000 sf
Residential	211 units
Parking	295 spaces

3.1.3 Site Access

The primary access and egress point to 1282 Boylston Street is located at a driveway on Boylston Street. However, a portion of traffic will also use Jersey Street and drive down the alley behind the site. This will be the primary access for loading.

This section of the report highlights the existing characteristics of the roadways and intersections in the study area..

3.1.3.1 Existing Roadway Conditions

Boylston Street

Boylston Street is a minor arterial generally oriented in the east-west direction. Boylston Street is a two-way roadway from Brookline Avenue to Park Drive. Sidewalks are present on both sides of the street. The city permits on-street parking on both sides of Boylston Street. The primary activity along Boylston Street includes commercial and residential uses. Figure 3-2 shows the layout of Boylston Street.

Figure 3-2 - Roadway Conditions

3.1.3.2 Existing Intersection Conditions

Boylston Street and Park Drive/Brookline Avenue

Figure 3-3 - Boylston Street looking westbound

Figure 3-4 - Park Drive looking northbound

This is a five-way signalized intersection with Boylston Street approaching from the east, Park Drive approaching from the north and south, and Brookline Avenue approaching from the northeast and southwest. The Boylston Street WB approach consists of a through lane and a shared through/right lane. Park Drive NB consists of a shared through/left lane, two through lanes, and one right turn lane. Park Drive SB does not have an intersection approach because it is a one-way street going northbound. Brookline Avenue NEB approach consists of two through lanes and two shared right turn lanes. Brookline Avenue SWB approach consists of two through lanes and one right turn lane. Double yellow centerlines separate bi-directional travel on Boylston Street and Brookline Avenue SWB. A raised median separates bi-directional travel on Brookline Avenue NEB.

Crosswalks are present across all the approaches. Stop lines are also present across the Boylston Street WB, Park Drive NB, and Brookline Avenue SWB approaches. The pavement markings are faded and require repainting. Pedestrian ramps are present on all the crosswalks, but are not ADA compliant.

A three-phase signal controls the intersection, with the Boylston Street WB approach and Brookline Avenue NEB right turns operating concurrently during the first phase. The Brookline Avenue NEB and SWB approaches operate concurrently during the second phase. The Park Drive NB approach operates during the third phase. The pedestrian movements operate concurrently with the vehicular phases. The sequential phasing in the existing condition is shown below.

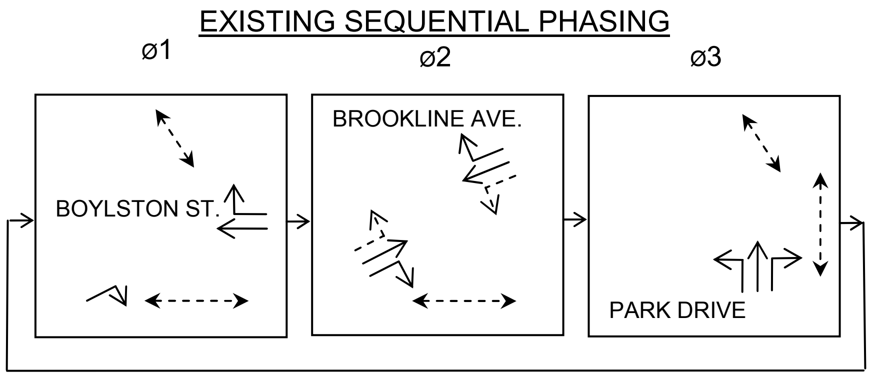

Figure 3-5 - Boylston Street and Kilmarnock Street

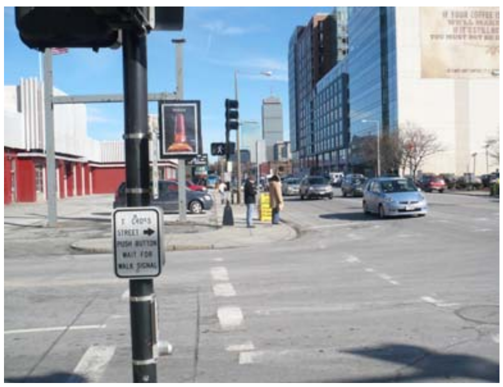

Figure 3-6 - Boylston Street looking eastbound

Figure 3-7 - Kilmarnock Street looking southbound

This is a four-way signalized intersection with Boylston Street approaching from the east and the west and Kilmarnock Street approaching from north and south. The Boylston Street EB and WB approaches consist of a shared left/through lane and a shared through/right lane. Kilmarnock Street NB consists of one general purpose lane. Kilmarnock Street SB approach consists of one left turn lane and one shared through/right lane. Double yellow centerlines separate bi-directional travel on Boylston Street and Kilmarnock Street.

Crosswalks are present on all the approaches. Stop lines are also present across the Boylston Street and Kilmarnock Street approaches. The pavement markings are faded and require repainting. Pedestrian ramps are present on all the crosswalks, but are not ADA compliant.

A two-phase signal controls the intersection, with the Boylston Street EB and WB approaches operating concurrently during the first phase. The Kilmarnock Street NB and SB approaches operate concurrently during the second phase.

The pedestrian movements operate concurrently with the vehicular phases. The sequential phasing in the existing condition is shown below.

EXISTING SEQUENTIAL PHASING

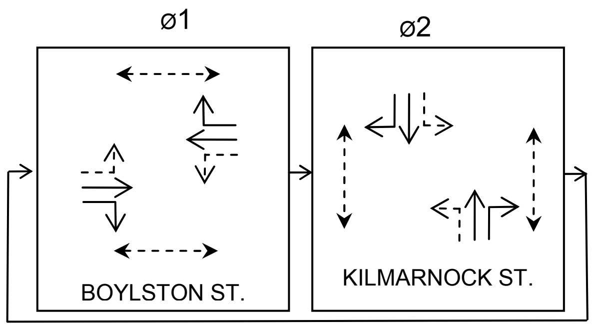

Figure 3-8 - Bolyston Street and Yawkey Way/Jersey Street

Figure 3-9 - Boylston Street looking eastbound

Figure 3-10 - Jersey Street looking northbound

This is a four-way signalized intersection with Boylston Street approaching from the east and the west, Jersey Street approaching from the south and Yawkey Way forming the north leg. Yawkey Way does not have an intersection approach because it is a one-way street going northbound. The Boylston Street EB and WB approaches consist of a shared left/through lane and a shared through/right lane. Jersey Street NB consists of one general purpose lane and one right turn lane. The lane markings are not visible and vehicles use the lanes based on the volumes. Double yellow centerlines separate bi-directional travel on Boylston Street and Jersey Street.

Crosswalks are present on all the approaches. Stop lines are also present on the Boylston Street and Jersey Street approaches. The pavement markings are faded and require repainting. Pedestrian ramps are present on all the crosswalks, but are not ADA compliant.

A three-phase signal controls the intersection, with the Boylston Street EB and WB approaches operating concurrently during the first phase. The Jersey Street NB approach operates during the second phase. The Boylston Street EB approach operates during the third phase with a protected left turning movement. The pedestrian movements operate concurrently with the vehicular phases. The sequential phasing in the existing condition is shown below.

EXISTING SEQUENTIAL PHASING

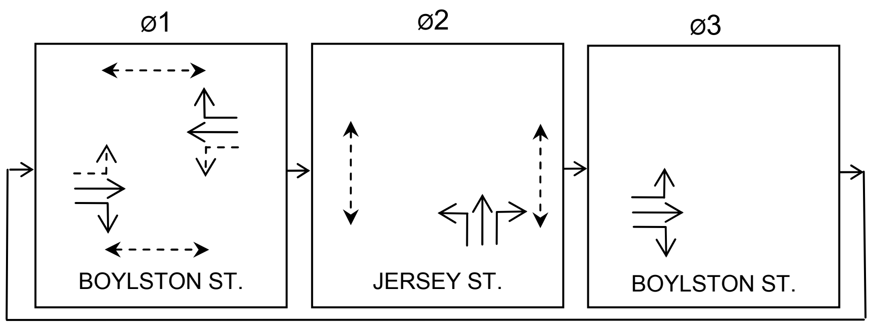

Figure 3-11 - Bolyston Street and Jersey Street

Figure 3-12 - Boylston Street looking eastbound

Figure 3-13 - Ipswich Street looking southbound

This is a four-way signalized intersection with Boylston Street approaching from the east and the west, Ipswich Street approaching from the north, and a gas station driveway approaching from the south. The Boylston Street EB and WB approaches consist of a shared left/through lane and a shared through/right lane. Ipswich Street SB consists of one wide approach that is used as two lanes but with no pavement markings. The gas station driveway

NB approach consists of one lane with no pavement markings. The NB approach does not have a signal head. Double yellow centerlines separate bi-directional travel on Boylston Street and Ipswich Street.

Crosswalks are present on all the approaches. Stop lines are also present on the Boylston Street and Ipswich Street approaches. The pavement markings are faded and require repainting. Pedestrian ramps are present on all the crosswalks, but are not ADA compliant.

A three-phase signal controls the intersection, with the Boylston Street EB and WB approaches operating concurrently during the first phase. The second phase is an exclusive pedestrian phase. The Ipswich Street SB approach operates during the third phase. The sequential phasing in the existing condition is shown below.

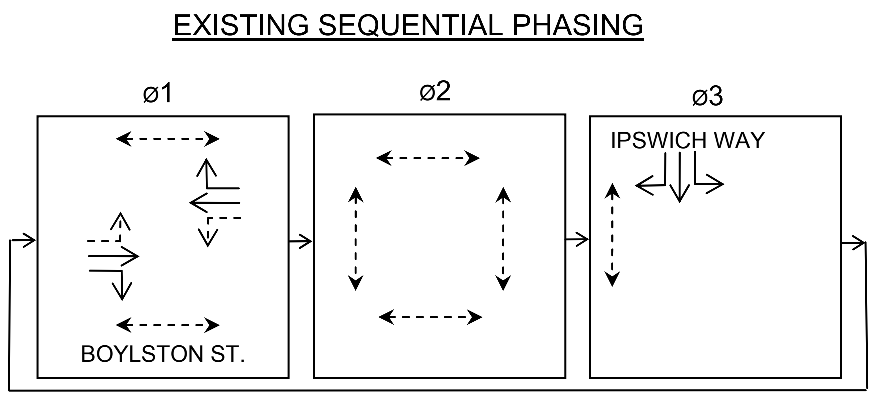

Figure 3-14 - Existing sequential phasing

3.1.4 Public Transportation

The proposed development is conveniently located within walking distance of the MBTA Green Line (D Branch) Fenway Station (0.35 miles) and Kenmore Station (0.3 miles) which is accessible by the Green Line B, C, and D branches. The MBTA bus lines CT2, 8, 19, 47, 55, 60, 65 also run through the area. Bus stops are within walking distance (a maximum of 10 minutes walking time) from the proposed site.

The availability of public transportation supports reducing the number of vehicle trips generated by the site and reducing the demand for site parking. The public transportation routes are shown in Figure 3-15.

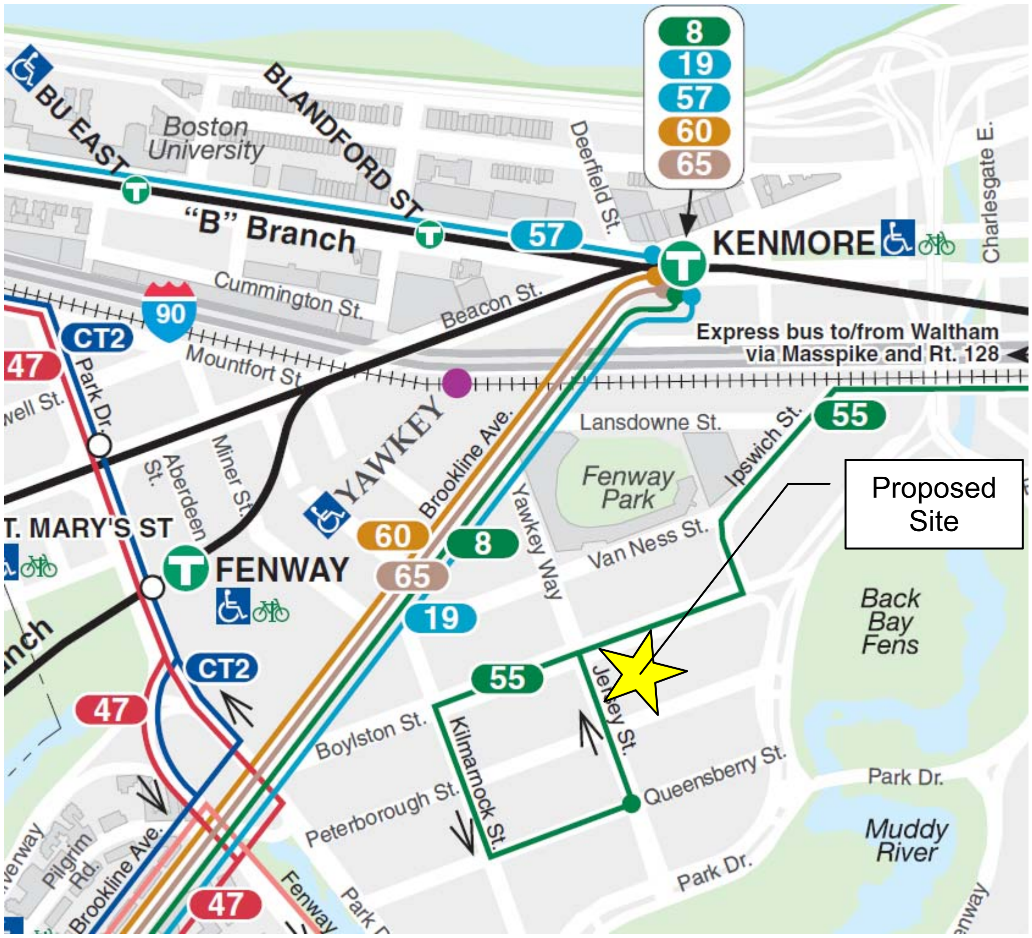

Figure 3-15 - Public Transportation

3.1.5 Transportation Impact Overview

3.1.5.1 Existing Site Trip Generation

The existing traffic volumes were obtained from Turning Movement Counts (TMCs) and taken in April of 2011 obtained for the city of Boston by Precision Data on behalf of Jacobs. The counts included passenger cars, heavy vehicles, pedestrians and bicyclists. Based on the counts, the morning peak hour of traffic was from 7:15 to 8:15 AM, and the evening peak hour of traffic was from 4:30 to 5:30 PM. A majority of the traffic was travelling east-west on Boylston Street, with fewer vehicles arriving from the side streets.

Based on the 2007 seasonal adjustment data made available by the Massachusetts Department of Transportation (MassDOT), traffic counts in April were slightly higher than counts during the average month. MassDOT recommends a correction factor of 0.92 for April traffic counts; however, to remain conservative we did not adjust the traffic counts. 2011 Existing Turning Movement counts are show in Figure 3-16.

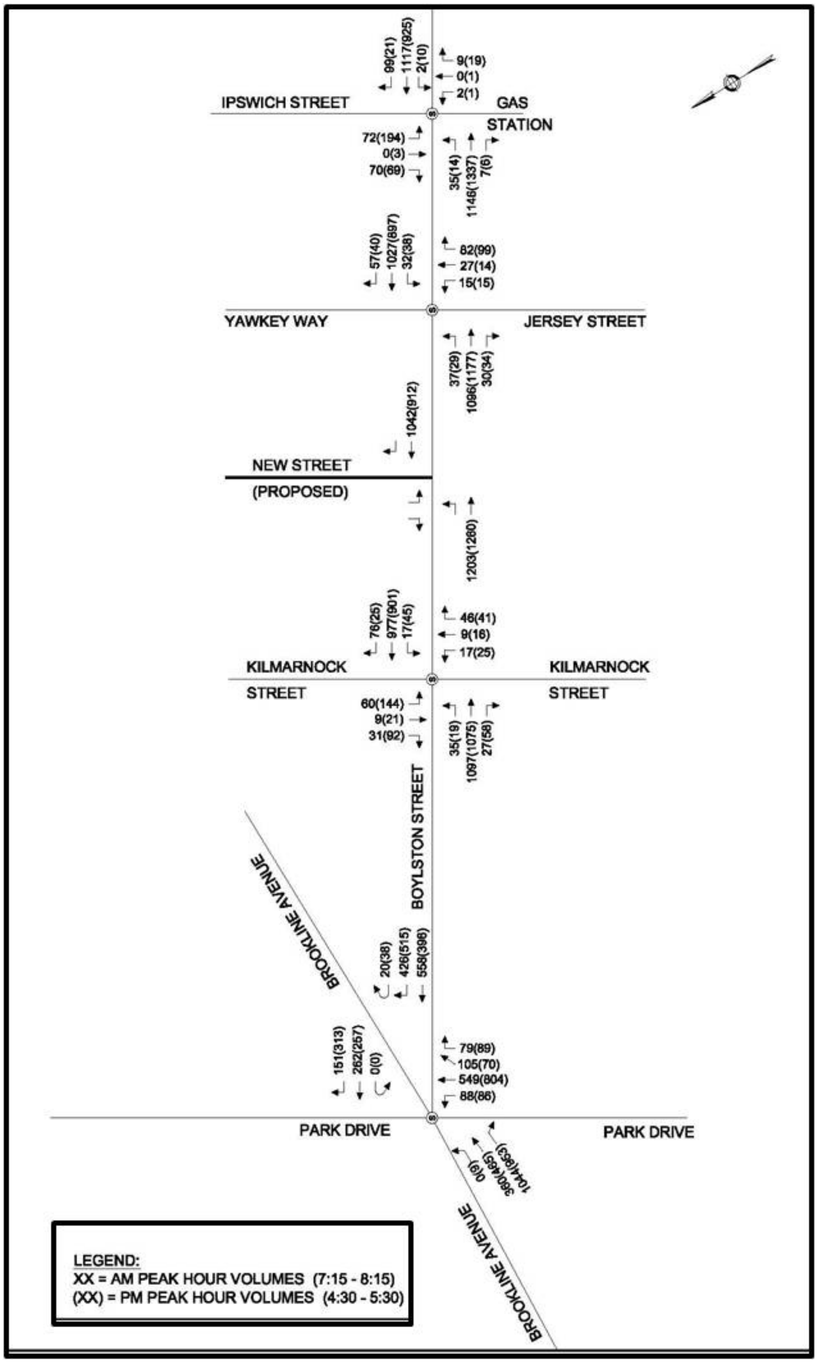

Figure 3-16 - Existing Traffic Volumes

3.1.5.2 Project Trip Generation

The proposed mixed-use development on Boylston Street includes 99,000 square feet of office, 15,000 square feet of retail, and 211 residential units. In order to determine the number of vehicle trips this will generate, ITE Trip Generation, 8th Edition was used to evaluate the proposed development. ITE methodology typically includes projects that are built in non-urban environments. The only current use at this location is a parking lot. However, in 2009, this location was being used by a McDonald's restaurant, with parking and a drive through. Traffic counts at the McDonald's driveway were taken in March of 2009. The trip generation for the proposed site, minus the trips that have been eliminated from the roadway network due to the removal of the McDonald's restaurant, shows the number of new trips that the proposed site will generate.

The study area for the proposed development has a very low driving rate compared to the standard ITE development. Therefore, mode-split credits were used to adjust the gross site generated trips to account for other methods of transportation, such as public transit, walking, and biking. These credits were obtained from the Expanded Project Notification Form (EPNF) for the Fenway Triangle project and were originally produced by BTD guidelines for area 4, which includes Boylston Street in this location. In addition, this project contains multiple uses in one building. This type of project will capture a number of trips internally, and reduce the number of trips coming from outside of the building. The internal capture credit was obtained using ITE Trip Generation Handbook, 2nd edition. This credit was only taken during the PM peak hour as there is limited data available for the AM peak hour. Table 3-1 shows the breakdown of site generated trips. The mode split and internal capture calculations are included in the technical appendix.

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Table 3-1 – Site Generation Trips

	AM Peak Hour	PM Peak Hour	Average Weekday
Gross Site Generated Trips	302	449	3816
McDonalds Trips	79	141	2106
New Site Generated Trips	**223**	**308**	**1710**
Net Vehicle Site Trips	**99**	**131**	**1028**
In	74	44	514
Out	25	87	514

The net vehicle site trips from the proposed project were distributed onto adjacent roadways and intersections based on the flow of existing traffic patterns and movements. The incoming vehicle trips were distributed based on the existing volumes on Boylston Street. During the morning peak hour, a slight majority of trips will be entering the site from the westbound direction, and during the evening peak hour a slight majority of trips will be entering the site from the eastbound direction. The outgoing vehicle trips were distributed onto Boylston Street based on the existing traffic patterns of vehicles turning onto Boylston Street at intersections in the study area, travelling in the northbound direction.

Vehicles making a right turn (travelling eastbound) onto Boylston Street will do so at the proposed site driveway. This intersection will operate under STOP control. Vehicles making a left turn (travelling westbound) onto Boylston

Street, or going straight (travelling northbound) to Brookline Avenue will use the rear exit onto the alley way, and take Jersey Street to the signalized intersection with Boylston Street. There will be no left turns allowed out of the driveway onto Boylston Street. The distribution of traffic into and out of the site is shown in Table 3-2.

Table 3-2 – Trip Distribution

	AM	**PM**
Incoming Traffic		
Travelling Eastbound	47%	56%
Travelling Westbound	53%	44%
Outgoing Traffic		
Travelling Eastbound	66%	69%
Travelling Northbound	18%	13%
Travelling Westbound	16%	18%

The parking generation was determined based on ITE Parking Generation Handbook, 3rd Edition. Most of the sites studied by ITE for use in the handbook are located in suburban sites, or urban sites with limited transit options. However, they do have some information available on sites in central business districts. This data was used in lieu of the standard ITE data when possible.

The parking demand generated by the apartment units was based on Land Use Code (LUC) 222, High Rise Apartment. There were two studies completed for this land use in a central business district. Those projects had peak parking demand rates of 0.34 and 0.56 spaces. For this project, we used the average of those two rates, at 0.45 parking spaces per unit.

The parking demand generated by the office building was based on LUC 710, General Office Building. For this land use, a number of additional studies were conducted in downtown areas where high quality transit options exist. These studies documented parking ratios between 1.0 and 2.0 vehicles per 1,000 sq. ft. For this project, we used an average rate of 1.5 vehicles per 1,000 sq. ft.

The proposed retail development was evaluated using LUC 820, Shopping Center. This land use does not have any additional information provided for downtown areas, however there is a note stating that in areas with transit, parking demand was typically reduced by 1% to 8%. For the purpose of this study, the standard ITE rate of 2.65 vehicles per 1,000 sq. ft. (on a Monday through Thursday, non-December) was used to determine the proposed parking demand.

The total parking demand for all three uses is approximately 284 spaces. There will be 295 spaces provided at the site, which will accommodate the parking demand.

Table 3-3 shows the calculated parking demand.

Table 3-3 – Parking Demand

Use	Land Use Code	Size		Parking Demand
High Rise Apartment	222	211	Units	95
General Office	710	99,000	Square Feet	149
Shopping Center	820	15,000	Square Feet	40
Combined				**284**

3.1.5.3 Service and Loading

A designated loading zone will be provided at the rear of the site to facilitate deliveries and service vehicles. Access to this area is off of the Alley at the rear of the site, which can be reached via Jersey Street. The loading zone is separated from the Alley and will be provided on site, which will minimize the impacts to the adjacent properties. Trucks will exit the loading zone onto the new site drive that will act as the primary entrance to the site. The loading dock provided is designed to accommodate WB-50 type vehicles, and the space will be sufficient for the vehicle to enter and exit the site, make the required turns, and dock at the loading bay.

3.1.5.4 Proposed Study Area

The traffic impacts were evaluated at the following signalized intersections:

- Boylston Street @ Park Drive/Brookline Avenue
- Boylston Street @ Kilmarnock Street
- Boylston Street @ New Street (will be created from another proposed development's access driveway)
- Boylston Street @ Yawkey Way/Jersey Street
- Boylston Street @ Ipswich Street

In addition, the following unsignalized intersection was also evaluated:

- Boylston Street @ Proposed Site Drive

Capacity analyses have been performed at these intersections for existing and future conditions, with and without the proposed development.

The intersection conditions were evaluated to determine a baseline LOS, delay, capacity, and queue experienced in the study area. Level of Service (LOS) is a qualitative measure describing operational conditions within a traffic stream. Six levels of LOS are used to describe the quality of traffic flow for any type of facility controls, with LOS-A representing the best operating conditions and LOS-F representing the worst operating conditions. Levels of service for signalized intersections are calculated using the operational analysis methodology of the Highway Capacity Manual (HCM). The methodology for signalized intersections assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on average *control* delay. Control delay includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Table 3-4 summarizes the relationship between level of service and average control delay for signalized intersections.

Table 3-4 – Level of Service for Signalized Intersections

Level of Service[1]	Stopped Delay per Vehicle[1] (Seconds)
A	0 to 10
B	>10 to 20
C	>20 to 35
D	>35 to 55
E	>55 to 80
F	Over 80

1 Reference: 2000 Highway Capacity Manual, TRB

A summary of the capacity analysis results for existing conditions, including volume to capacity (v/c) ratio, vehicle delay, level-of-service (LOS), and vehicle queue are provided in Table 3-5.

Table 3-5 – Level of Service for Existing Conditions

NAME	MOVEMENT	AM PEAK HOUR				PM PEAK HOUR			
		V/C[1]	DELAY[2]	LOS[3]	95th Q[4]	V/C[1]	DELAY[2]	LOS[3]	95th Q[4]
Boylston Street @ Park Drive/Brookline Avenue									
	WB LR	1.04	80.1	F	365	1.14	63.8	E	330
	WB R	0.96	80.3	F	323	1.42	231.3	F	353
	NW LT	0.61	32	C	165	0.81	37.7	D	235
	NW R	0.81	49.4	D	185	0.52	34	C	133
	NE T	0.45	30.3	C	129	0.58	23.8	C	162
	NE R	0.95	22	C	428	0.9	21.8	C	200
	SW T	0.35	26.5	C	103	0.31	19.8	B	96
	SW R	0.6	35.7	D	142	1.17	126.3	F	390
	Intersection	0.93	44	D		1.15	55.9	E	
Boylston Street and Kilmarnock Street									
	EB LTR	0.72	9.3	A	163	1.19	110.7	F	485
	WB LTR	0.5	4.2	A	236	0.86	13.1	B	430
	NB LTR	0.25	36.4	D	25	0.28	30.7	C	48
	SB L	0.78	63.6	E	65	0.87	66.5	E	190
	SB TR	0.11	35.6	D	16	0.17	29.9	C	31
	Intersection	0.72	10.4	B		1.12	61.9	E	
Boylston Street and Yawkey Street/ Jersey Street									
	EB LTR	0.53	3.3	A	63	3.88	1309.2	F	313
	WB LTR	0.59	14.3	B	326	0.43	8.7	A	162
	NB LTR	0.4	37.8	D	76	0.74	44.6	D	118
	Intersection	0.56	10.5	B		3.23	1038.7	F	
Boyslton Street and Ipswich Street									
	EB LT	1.01	41.3	D	570	1.04	46.6	D	84
	WB TR	0.7	8.1	A	290	0.71	10.9	B	280
	SB L	0.55	37.5	D	72	0.79	47.7	D	182
	SB TR	0.08	32.1	C	0	0.09	28.8	C	24
	Intersection	0.93	25.2	C		0.98	33.3	C	

[1] Volume to Capacity Ratio; [2] Vehicle Delay, measured in seconds; [3] Level Of Service; [4] 95th Percentile Queue, measured in feet

Nitsch Engineering consulted with the Boston Redevelopment Authority (BRA) and Boston Transportation Department (BTD) and established an acceptable traffic growth factor of 0.5% per year in the corridor. Using this growth factor, we projected existing year 2021 no build traffic volumes.

In addition to the proposed mixed-use development on Boylston Street, Samuels & Associates are proposing a new road between Kilmarnock Street and Jersey Street, as part of a Fenway Triangle mixed use project. The design of the New Street would be undertaken by others and is not part of the current project. The Expanded Project Notification Form (EPNF) for the Fenway

Triangle project was reviewed[1] to establish the net new trips that would be added/redistributed on to the Boylston Street corridor under the design conditions with the New Street in place. We included trips to be generated by other projects that were part of the background growth for the Fenway Triangle project and used and use them in conjunction with the Fenway Triangle trips and a 0.5% background growth to determine 2021 volumes for this project. The 2021 No Build Traffic Volumes are shown in Figure 3-17

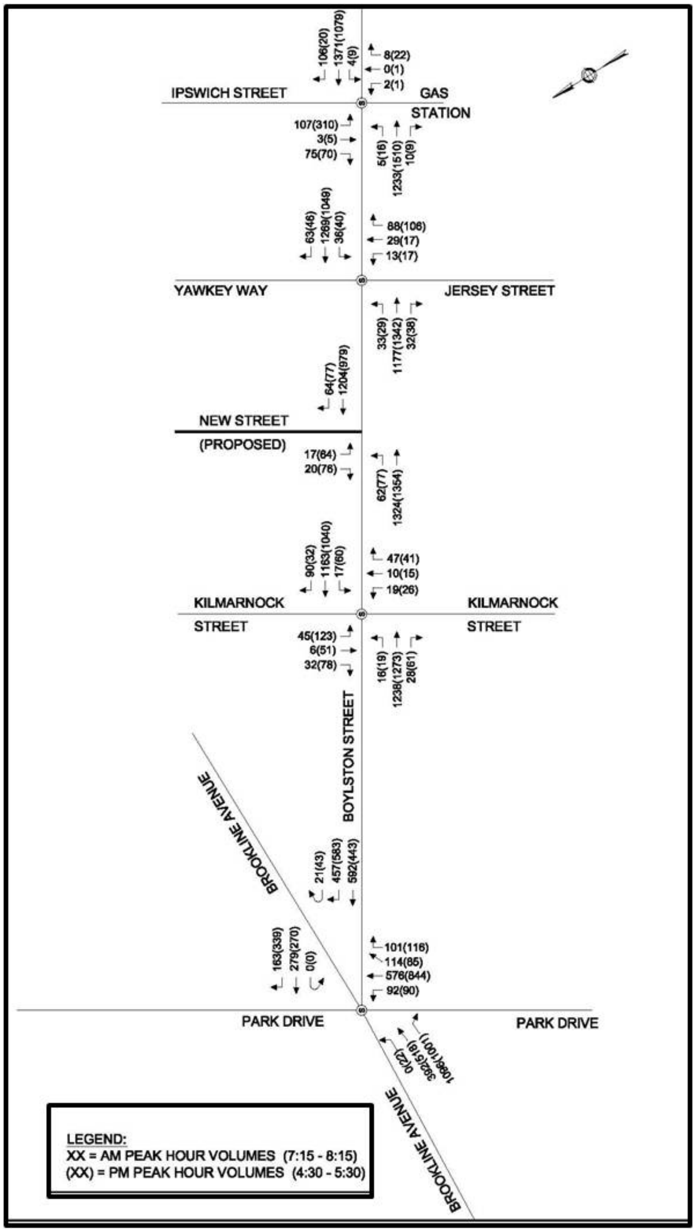

Figure 3-17 - No Build Traffic Volumes

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[1] Expanded Project Notification Form, Fenway Triangle Mixed Use Project, Pg XX.

A summary of the capacity analysis results for 2021 No Build Conditions, including volume to capacity (v/c) ratio, vehicle delay, level-of-service (LOS), and vehicle queue are provided in Table 3-6.

Table 3-6 – Level of Service for 2021 No Build Conditions

NAME	MOVEMENT	AM PEAK HOUR				PM PEAK HOUR			
		V/C[1]	DELAY[2]	LOS[3]	95th Q[4]	V/C[1]	DELAY[2]	LOS[3]	95th Q[4]
Boylston Street and Brookline Avenue/ Park Drive									
	WB LR	1.11	93.2	F	394	1.29	108	F	325
	WB R	1.02	85.6	F	342	1.6	306.4	F	349
	NW LT	0.64	32.5	C	174	0.85	39.9	D	257
	NW R	0.95	70.3	E	245	0.66	39.1	D	168
	NE T	0.49	30.7	C	140	0.7	25.7	C	210
	NE R	1	29.2	C	469	0.95	25.2	C	263
	SW T	0.37	26.8	C	109	0.33	20	B	102
	SW R	0.65	37.9	D	155	1.26	164.8	F	430
	Intersection	1.01	51.1	D		1.26	74.4	E	
Boylston Street and Kilmarnock Street									
	EB LTR	0.77	9.3	A	176	1.37	186.2	F	597
	WB LTR	0.58	8.2	A	332	0.99	41.1	D	545
	NB LTR	0.31	37.8	D	27	0.3	31.9	C	46
	SB L	0.7	56.1	E	52	0.82	60.6	E	153
	SB TR	0.09	36.6	D	14	0.38	32.5	C	67
	Intersection	0.77	11.2	B		1.26	107.8	F	
Boylston Street and New Street									
	EB L	0.38	11.2	B	31	0.27	3.8	A	8
	EB T	0.61	9.9	A	349	0.57	5.8	A	93
	WB TR	0.59	4.6	A	4	0.44	7.3	A	120
	SB LR	0.06	26.1	C	36	0.28	31	C	98
	Intersection	0.46	7.6	A		0.5	7.7	A	
Boylston Street and Yawkey Street/ Jersey Street									
	EB LTR	0.57	4.8	A	374	4.45	1567.4	F	420
	WB LTR	0.74	17.7	B	220	0.5	19.6	B	361
	NB LTR	0.49	38.1	D	100	0.77	47.5	D	129
	Intersection	0.68	13	B		3.67	1243.6	F	
Boyslton Street and Ipswich Street									
	EB LT	1.08	63.5	E	575	1.28	139.9	F	61
	WB TR	0.87	14.8	B	686	0.89	22.4	C	450
	SB L	0.74	46.4	D	99	0.99	78.7	E	360
	SB TR	0.08	30.8	C	41	0.09	24.9	C	25
	Intersection	1.01	37.2	D		1.2	88.7	F	

[1] Volume to Capacity Ratio; [2] Vehicle Delay, measured in seconds; [3] Level Of Service; [4] 95th Percentile Queue, measured in feet

The proposed trips were added to the 2021 No Build roadway network in order to determine 2021 Build conditions. Although there is an existing parking lot at this location, the trips associated with that parking lot were not eliminated from the roadway network. This is due to the fact that these trips are not generated by the parking lot itself, but rather from auxiliary neighborhood uses that will not be going away. However, this traffic may be moved onto alternate routes under future conditions, ultimately reducing traffic on Boylston Street. In order to provide a more conservative analysis, we have kept these traffic volumes on Boylston Street under build conditions. The 2021 Build Traffic Volumes are shown in Figure 3-18.

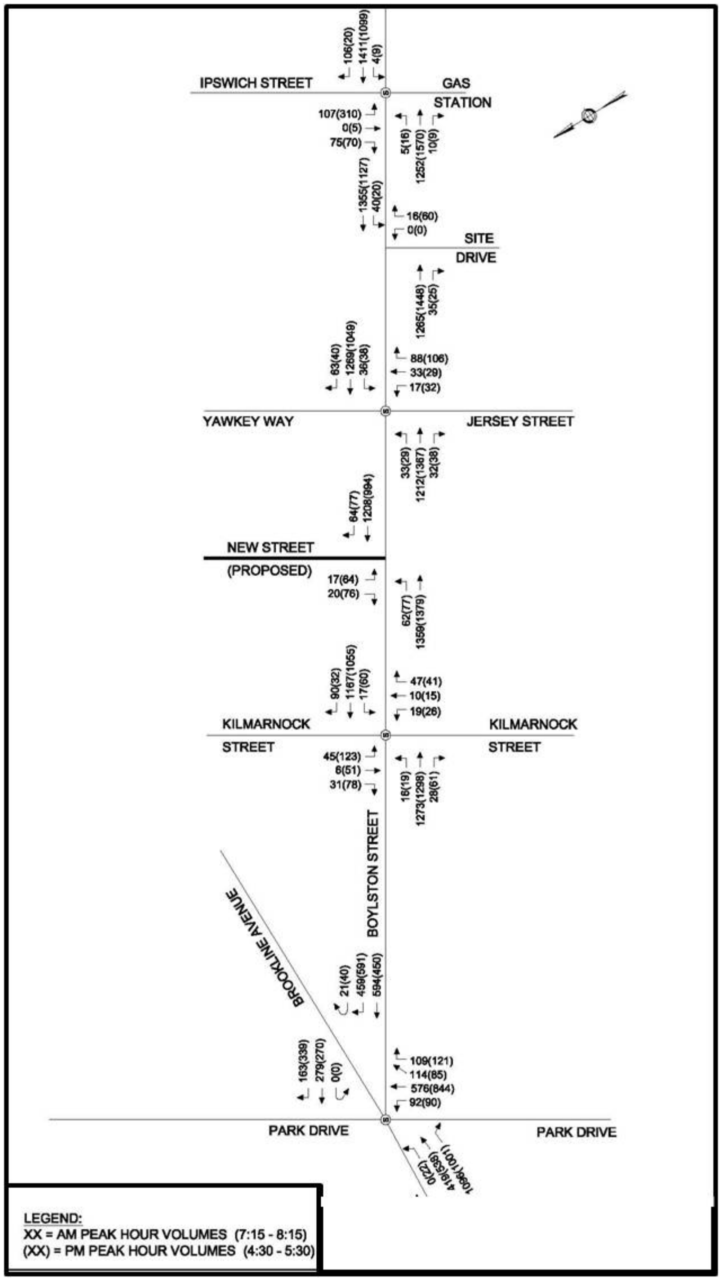


Figure 3-18 - Build Traffic Volumes

The capacity analyses were also performed for 2021 Build Conditions to determine the level of operation at the study intersections. This analysis indicates that there would be no major impacts to the study area intersections due to the proposed development. The existing volumes on Boylston Street are currently very high, and the impacts of the new traffic would be negligible. There are only three turning movements that see a degraded LOS from the no build condition to the build condition. The Boylston Street eastbound movement at the intersections of Boylston Street @ Kilmarnock Street and Boylston Street @ New Street go from a LOS A to a LOS B during the AM peak hour. The Boylston westbound movement at the intersection of Boylston Street @ Yawkey Way/Jersey Street goes from a LOS B to a LOS C during the PM peak hour. However, all of these movements remain at an acceptable LOS.

The turning movements that are at LOS F during the no build scenario will see some increase in delay under build conditions. However, with the exception of Boylston Street and Ipswich Street, this increase represents either less than 10 seconds, or less than 10% of the no build delay for these movements. During the PM peak hour, the delay for the Boylston Street eastbound approach at Ipswich Street will increase by 22 seconds, which is approximately 16% of the no build delay. The delay at this location will still be lower than the eastbound Boylston Street delay experienced at other intersections during the PM peak hour.

In addition, this location has previously contained a McDonalds, which can generate a similar number of trips as the proposed scenario. The summary results of the capacity analysis are shown in Table 3-7.

Table 3-7 – Level of Service for 2021 Build Conditions

NAME	MOVEMENT	AM PEAK HOUR V/C[1]	AM DELAY[2]	AM LOS[3]	AM 95th Q[4]	PM PEAK HOUR V/C[1]	PM DELAY[2]	PM LOS[3]	PM 95th Q[4]
Boylston Street and Brookline Avenue/ Park Drive									
	WB LR	1.12	94.2	F	390	1.3	115.4	F	327
	WB R	1.03	85.3	F	340	1.62	314	F	350
	NW LT	0.64	32.5	C	174	0.85	39.9	D	257
	NW R	0.99	78.8	E	261	0.68	39.8	D	172
	NE T	0.53	31.1	C	150	0.72	26.1	C	217
	NE R	1	29.2	C	469	0.95	25.2	C	263
	SW T	0.37	26.8	C	109	0.33	20	B	102
	SW R	0.65	37.9	D	155	1.26	164.8	F	430
	Intersection	1.02	52	D		1.26	76.4	E	
Boylston Street and Kilmarnock Street									
	EB LTR	0.79	10.3	B	279	1.39	197.1	F	616
	WB LTR	0.58	9.9	A	371	1	45	D	555
	NB LTR	0.31	37.9	D	27	0.3	31.9	C	46
	SB L	0.71	57.5	E	52	0.82	60.6	E	153
	SB TR	0.09	36.7	D	14	0.38	32.5	C	67
	Intersection	0.78	12.4	B		1.28	114.7	F	
Boylston Street and New Street									
	EB L	0.43	13.2	B	30	0.27	3.5	A	8
	EB T	0.66	12.2	B	376	0.57	5.2	A	94
	WB TR	0.62	6	A	5	0.44	7	A	116
	SB LR	0.05	23.8	C	36	0.3	32.1	C	98
	Intersection	0.47	9.5	A		0.51	7.3	A	
Boylston Street and Yawkey Street/ Jersey Street									
	EB LTR	0.59	4.7	A	126	4.62	1644.9	F	456
	WB LTR	0.75	18.3	B	406	0.51	20.7	C	355
	NB LTR	0.53	38.6	D	98	0.82	50.5	D	153
	Intersection	0.69	13.3	B		3.75	1302.7	F	
Boyslton Street and Ipswich Street									
	EB LT	1.1	70.2	E	626	1.33	161.9	F	68
	WB TR	0.89	16.4	B	617	0.9	23.9	C	464
	SB L	0.74	46.4	D	100	0.99	78.7	E	360
	SB TR	0.08	30.8	C	0	0.09	24.9	C	25
	Intersection	1.03	40.6	D		1.23	101.2	F	
Boylston Street and Proposed Site Drive									
	WB L	0.1	3	A	8	0.07	2.3	A	5
	NB LR	0.04	12.6	B	3	0.11	12	B	9
	Intersection		0.6	D			0.6	B	

[1] Volume to Capacity Ratio; [2] Vehicle Delay, measured in seconds; [3] Level Of Service; [4] 95th Percentile Queue, measured in feet

The capacity analyses worksheets are included in the technical Appendix.

3.1.6 Transportation Demand Management

Transportation Demand Management (TDM) is the application of strategies and policies designed to reduce automobile travel demand, or to redistribute this demand in space or in time. TDM often encourages the use of alternative mode of transportation such as transit, carpools, vanpools for commuting to work and all other trips. TDM also promotes human powered modal choice such as walking or bicycling, shifting travel outside the peak period and eliminating work trips with telework or compressed work weeks.

The City of Boston will be implementing the following improvements to Boylston Street prior to the completion of this development:

- Provide 5' bicycle lanes alongside the existing travel lanes
- Create neck downs at all the intersections to reduce pedestrian crossing distances and to define parking lanes
- Create a new intersection between Kilmarnock Street and Yawkey Way/Jersey Street. The proposed side street would connect Brookline Avenue with Boylston Street near the existing Mobil gas station.

The neck downs would separate the travelled way from the parking lanes and reduce the length of crosswalk thereby reducing crossing times for pedestrians. The exclusive five-foot bicycle lanes in each direction would help accommodate multi-modal use in the corridor.

The following sections highlight the strategies that will further improve the efficiency of the existing transportation system.

3.1.6.1 Alternative Mode Benefits / Tactics

Providing access to alternative modes of transportation and encouraging their use has the following benefits.

- Reduce traffic congestion
- Improve air quality
- Improve overall community health
- Reduce greenhouse gas emissions
- Reduce infrastructure investment costs such as parking spaces, road maintenance, etc.
- Reduce dependence on fossil fuels
- Reduce demand for on-site parking

3.1.6.2 Public Transportation

The MBTA public transportation system (train and bus lines) is easily accessible from the proposed site. In order to reduce congestion, air pollution, and energy consumption due to vehicular traffic, the proponent of this project would encourage tenants' employers to provide incentives to employees to use the public transportation system that is already in place and within walking distance of the proposed site.

3.1.6.3 Ridesharing / Car-Sharing

In order to reduce congestion, air pollution, and energy consumption due to vehicular traffic, the TDM measures would include the following options:

- Encourage its tenants to carpool, vanpool etc.
- Provide preferential parking for carpooling

Implementing one or more of these TDM measures would help reduce vehicle trips and alleviate the demand for additional parking at the project site.

3.1.6.4 Bicycle / Pedestrian Trips

To promote the use of bicycles and walking to the site, the following measures should be implemented:

- Encourage employees to bicycle and walk to and from work
- Provide bicycle racks or lockers to store the bicycles onsite

3.1.7 Construction Period Impacts

Construction on the proposed site will be contained to the limits of the property without encroachment on adjacent streets, intersections, and neighboring businesses. Every effort will be made to limit the impacts on neighboring tenants.

It is anticipated that construction vehicles will be entering and exiting the site for delivery of materials. These deliveries will be required to avoid any prohibited routes and the morning and evening peak hours. Construction trucks will also be required to enter the site during off peak hours, and must obtain the proper permits from the City of Boston.

Pedestrian access to the site will not be impacted by construction.

3.1.8 Conclusions and Recommendations

The purpose of this study was to investigate, analyze, and evaluate the traffic impacts of a proposed mixed-use development on 1282 Boylston Street in

Boston, MA. This development will include 99,000 square feet of office space, 15,000 square feet of retail space, and 211 residential units in one 16 story building. In addition, 295 parking spaces will be provided in the form of a garage underneath these uses. The previous uses of this property were a McDonalds and more recently, a surface Parking Lot with approximately 170 spaces.

The proposed site is located in a very dense area with extensive public transportation options. As a result, the traffic impacts to the new development will be significantly reduced due to a high rate of walking, biking, and public transit use. These alternative modes should be encouraged by a transportation demand management plan that provides incentives to users.

From the capacity analysis, we found that the impacts generated by traffic to the proposed development are negligible, especially as compared to the high level of traffic currently on Boylston Street. Primary access to the site will be provided at an unsignalized site driveway on Boylston Street. However, vehicles that wish to exit the site by turning left onto Boylston Street, or travelling straight to Brookline Avenue will use the exit provided at the back alley that leads to Jersey Street. They can then turn left onto, or cross, Boylston Street at the signalized intersection of Boylston Street @ Yawkey Way/Jersey Street. The signalized intersection at this location can accommodate the additional traffic with limited impacts to level of service.

The parking supply and demand has also been evaluated, and it was determined that the proposed facility will accommodate the future parking demands.

3.2 Environmental Protection

3.2.1 Wind

A wind study has been compiled and is presented in Appendix A at the end of this report.

3.2.2 Shadow

The following shadow study describes and graphically depicts anticipated new shadow impacts from the proposed project compared to the shadows from existing buildings. The study presents the existing and built conditions for the proposed project for the hours 09:00, 12:00 (noon), 15:00 (3pm), and 18:00 (6pm), for the spring equinox, summer solstice, autumn equinox, and winter solstice. Existing shadows are shown in grey; new shadows from the proposed project are shown in orange.

Spring Equinox (March 20)

At 9am (Figure 3-19), new shadow is cast across Boylston Street at the intersection with Yawkey Way in a west-northwesterly direction. New shadow is cast across the site of Tasty Burger and onto the parking lot and southern façade of 1295 Boylston Street.

At noon (Figure 3-20), new shadow is cast across Boylston Street in front of the proposed project in a northerly direction. Shadows cover most of the southern façade of 1295 Boylston Street, and most of the southern façade of the Hong Kong Restaurant and Howard Johnson Hotel.

At 3pm (Figure 3-21), new shadow is cast in a northeasterly direction across Boylston Street, partially covering the roof of the Baseball Tavern and 1260 Boylston Street.

At 6pm (Figure 3-22), new shadow is cast in a easterly direction, covering the western wall and roof of the Baseball Tavern, the previously unobscured remainder of the roof of 1260 Boylston Street, as well as the western corner and roof of 11 Park Drive. Portions of the northern wall of 1-25 Peterborough Street receive glancing shadows at sunset. New shadows will stretch across the Richard Parker Memorial CG and end on the western facades of 44-50 Fenway St.

Summer Solstice (June 21)

On the longest day of the year, during summer solstice, the sun rises in the northern hemisphere of the sky. At 9am (Figure 3-23), the new shadow of the proposed project is cast to the west, onto the eastern façade of 1330 Boylston Street, and across the intersection of Jersey Street and Boylston Street, and the eastbound lanes of Boylston Street.

The sun at noon (Figure 3-24), is at its highest altitude of the year, and casts shadows just slightly north. New shadow from the proposed project is cast on the southern sidewalk of 1282 Boylston Street, and part of the eastbound lanes of Boylston Street.

At 3pm (Figure 3-25), new shadow is cast in an east-northeasterly direction across the western façade and the roof of the Baseball Tavern.

At 6pm (Figure 3-26), new shadows are cast in an east-southeasterly direction across the northern wall of 1-39 Peterborough Street and falling on the southwest corner of the roof of 11 Park Drive. Existing shadows currently are cast across the northern wall of 41-45 Peterborough Street and 86 Jersey Street.

Autumn Equinox (September 23)

Conditions during the autumn equinox are nearly identical to those of the spring equinox. At 9am (Figure 3-27), new shadow is cast in a west-northwesterly direction across the intersection of Jersey Street and Boylston Street. New shadow is cast across the site of Tasty Burger and onto the parking lot and southern façade of 1295 Boylston Street.

At noon (Figure 3-28), new shadow is cast across Boylston Street in front of the proposed project in a northerly direction. Shadows cover most of the southern façade of 1295 Boylston Street, and most of the southern façade of the Hong Kong Restaurant and Howard Johnson Hotel.

At 3pm (Figure 3-29), new shadow is cast in a northeasterly direction across Boylston Street, partially covering the roof of the Baseball Tavern and 1260 Boylston Street. The southern edge of the Hong Kong Restaurant is partially in shadow.

At 6pm (Figure 3-30), new shadow is cast in a easterly direction, covering the western wall and roof of the Baseball Tavern, the previously unobscured remainder of the roof of 1260 Boylston Street, as well as the western corner and roof of 11 Park Drive. Portions of the northern wall of 1-25 Peterborough Street receive glancing shadows at sunset. New shadows will stretch across the Richard Parker Memorial CG and end on the western facades of 44-50 Fenway St.

Winter Solstice (December 21)

During the winter, when shadows are longest and days shortest, the new shadows stretch the farthest afield from the site proper. At 9am (Figure 3-31), new shadow is cast as far as Beacon Street, onto the roofs of 95 & 109 Brookline Avenue, across a portion of Van Ness Street, and glancing across the southern corner of Fenway Park at Van Ness and Yawkey Way. The southern façade of 1295 Boylston Street is covered by new shadow. A Much of the ground is already under shadow from existing conditions at this time of day and year.

At noon (Figure 3-32), new shadow is cast in the northerly direction across the eastern portion of the southern façade of 1295 Boylston Street, and most of the Howard Johnson’s. Some shadow extends to Fenway Park but does not obscure its façade.

At 3pm (Figure 3-33), new shadow is cast in a northeasterly direction, across the southern facades of addresses between 1249-1271 Boylston Street, and extending onto the parking lots at Van Ness and Ipswich Street.

At 6pm, the sun has already set.

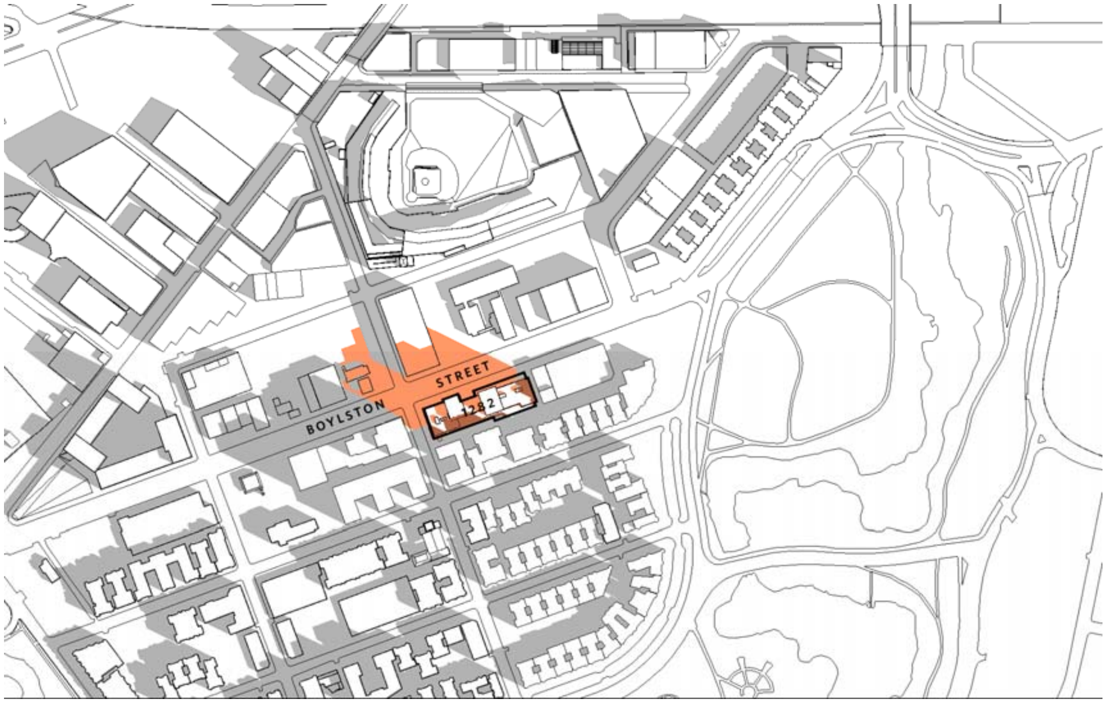


Figure 3-19 - Spring Equinox, March 20, 09:00

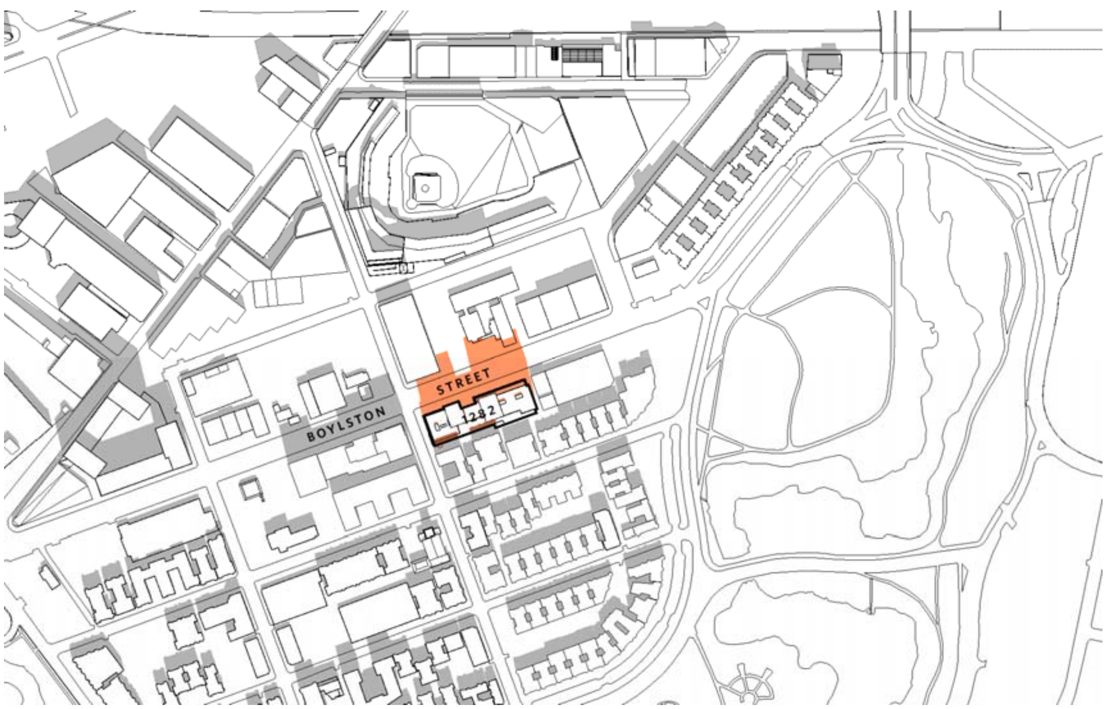


Figure 3-20 - Spring Equinox, March 20, 12:00

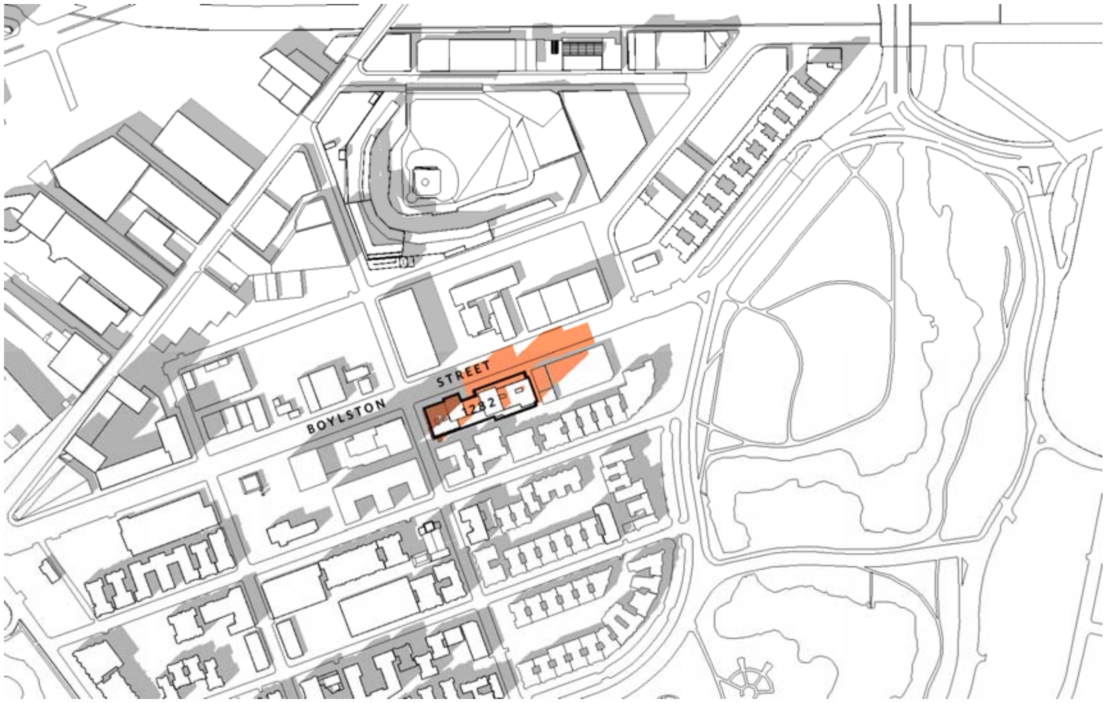


Figure 3-21 - Spring Equinox, March 20, 15:00

Figure 3-22 - Spring Equinox, March 20, 18:00

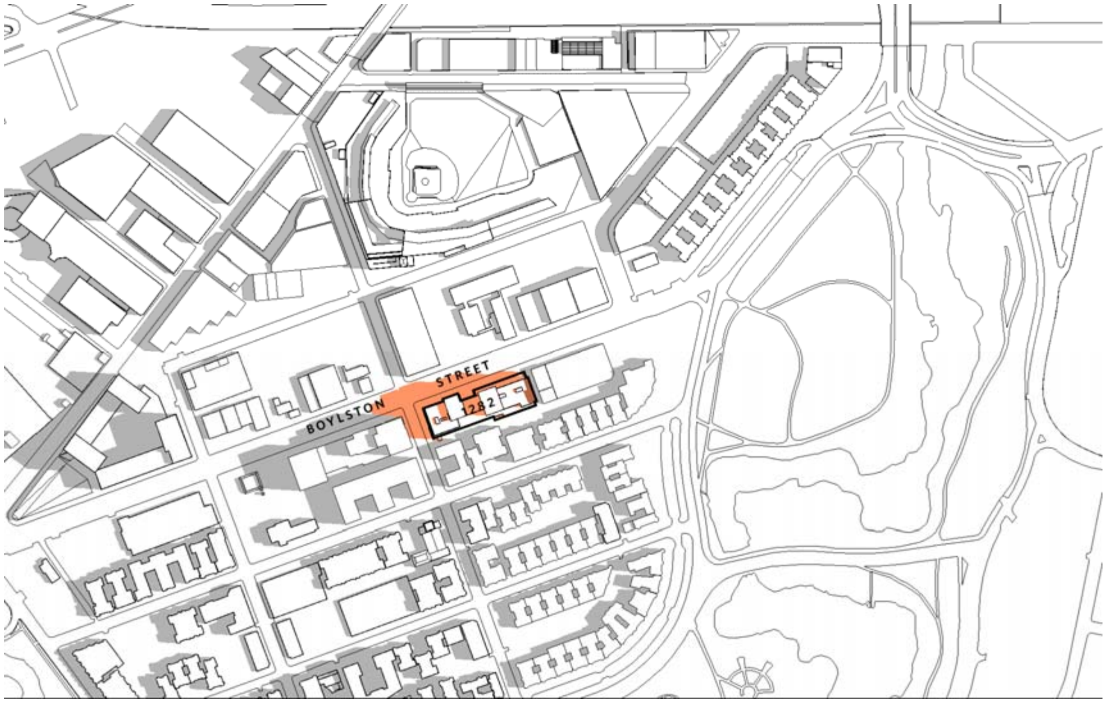


Figure 3-23 - Summer Solstice, June 21, 09:00

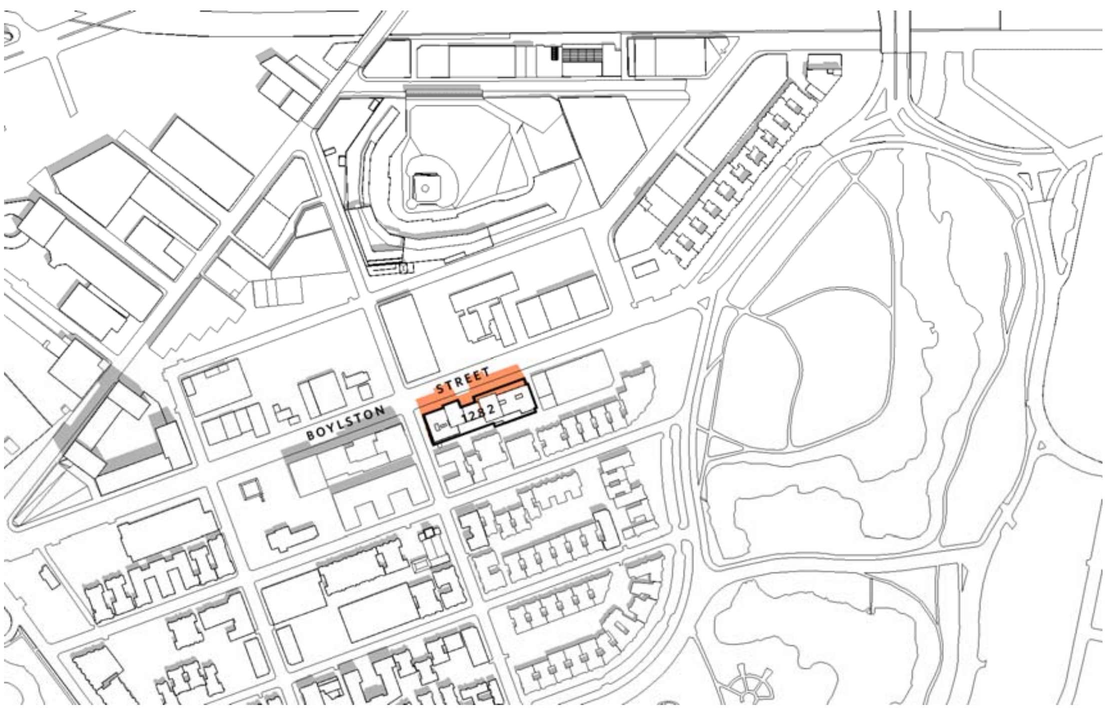


Figure 3-24 - Summer Solstice, June 21, 12:00

Figure 3-25 - Summer Solstice, June 21, 15:00

Figure 3-26 - Summer Solstice, June 21, 18:00

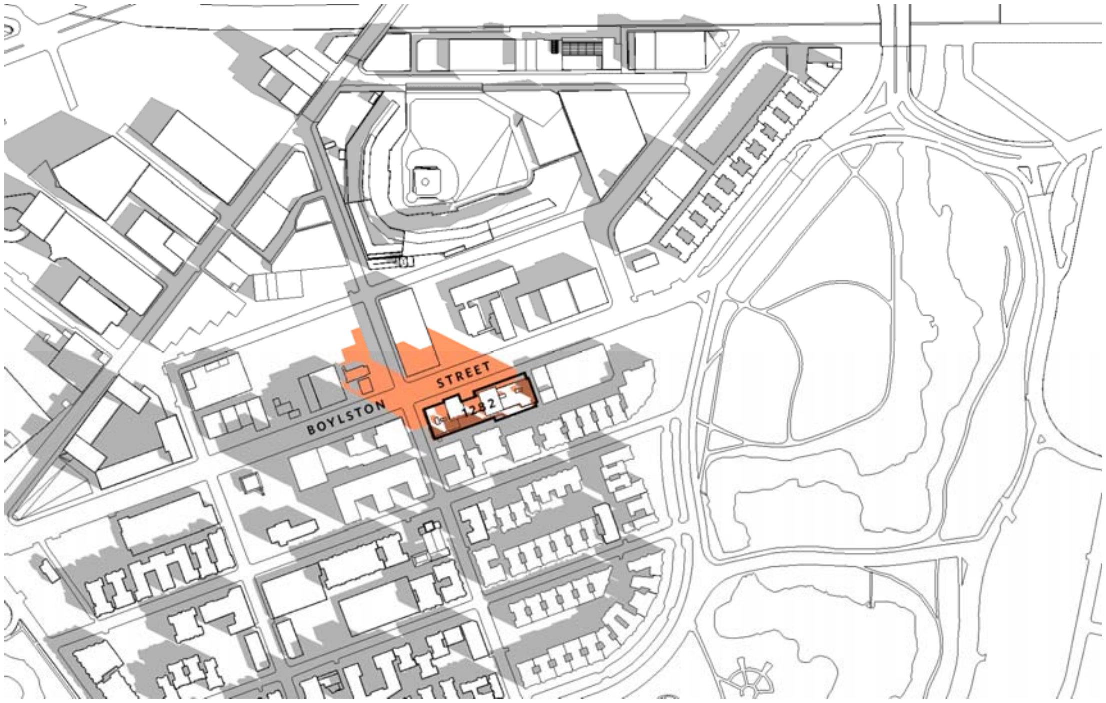


Figure 3-27 - Autumn Equinox, September 23, 09:00

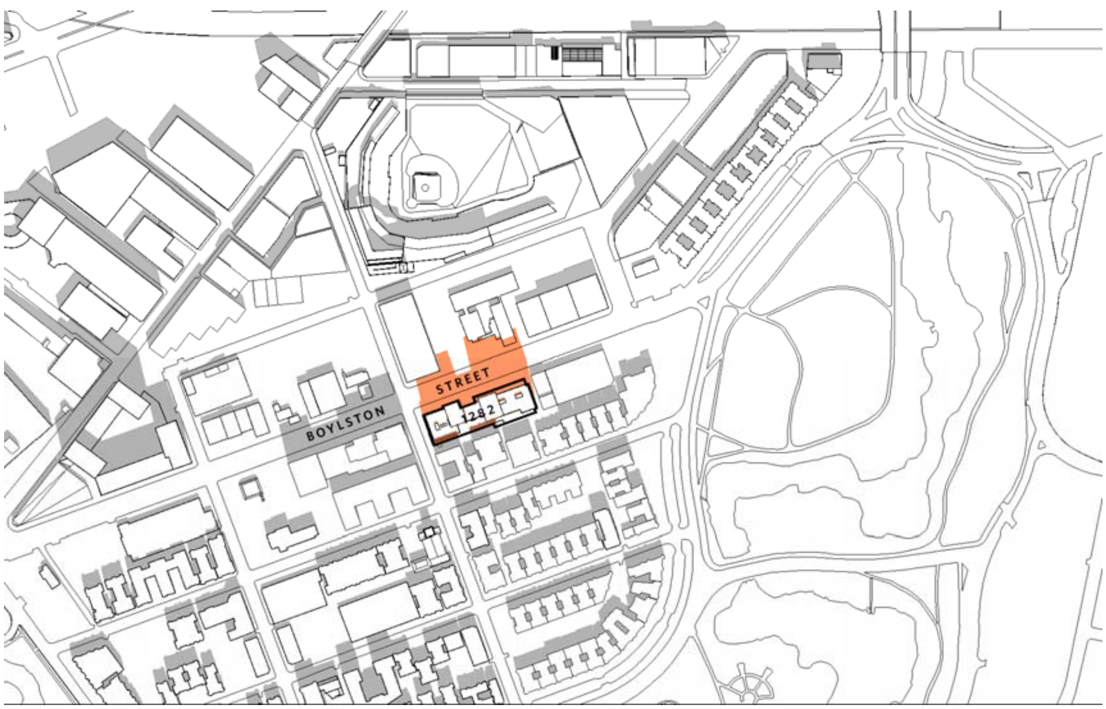


Figure 3-28 - Autumn Equinox, September 23, 12:00

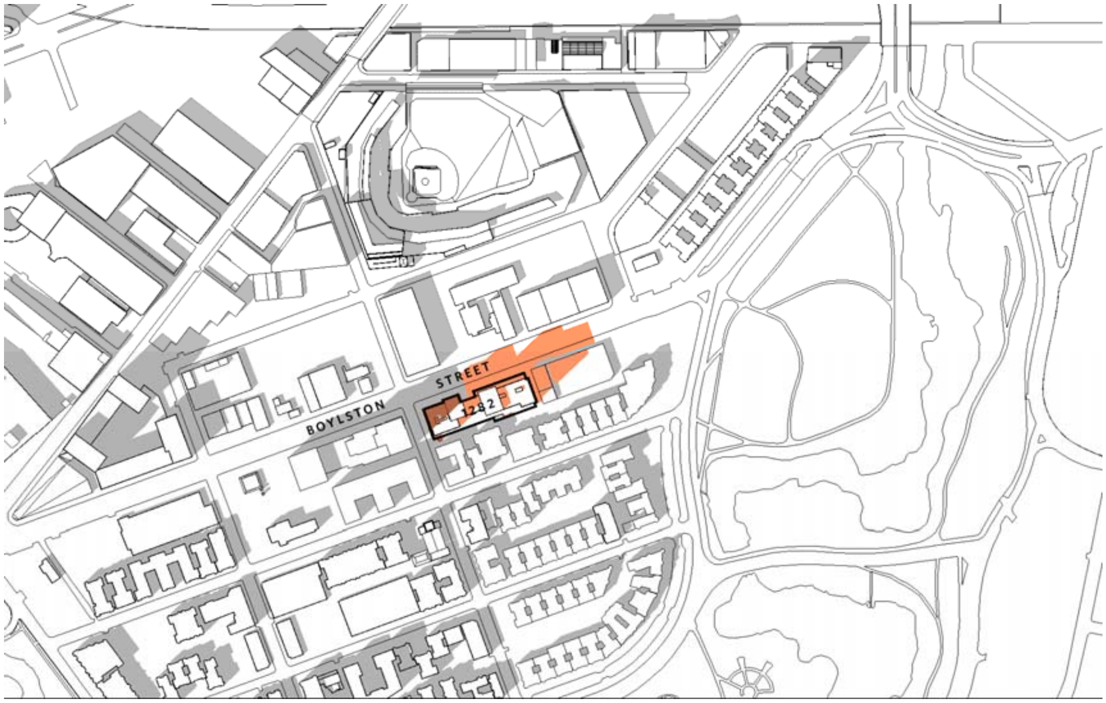


Figure 3-29 - Autumn Equinox, September 23, 15:00

Figure 3-30 - Autumn Equinox, September 23, 18:00

Figure 3-31 - Winter Solstice, December 21, 09:00

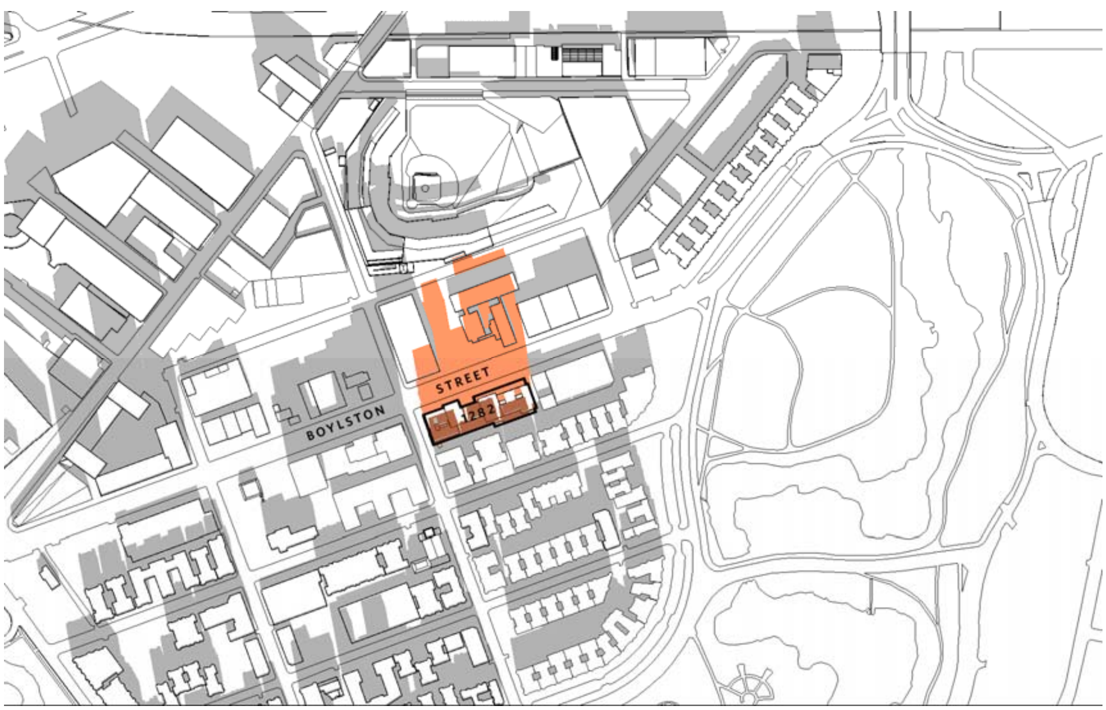


Figure 3-32 - Winter Solstice, December 21, 12:00

Figure 3-33 - Winter Solstice, December 21, 15:00

3.2.3 Daylight

3.2.3.1 Introduction and Summary of Analysis

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of a project site. As is typically required by the BRA, the daylight analysis for the project considers both existing and proposed daylight conditions, as well as those of the surrounding area.

The project site is bound by Boylston Street to the north, an alley to the south, Jersey Street to the west, and a building to the east. The site is currently used as a surface parking lot. Since the existing site is vacant, the daylight obstruction value is 0%, and therefore new construction on the site will inherently increase the daylight obstruction value above the existing condition. The daylight obstruction values for proposed project are similar to the surrounding area, as determined by the analysis of area context viewpoints.

3.2.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program. This program measures the percentage of “sky dome” that is obstructed by a project, and is a useful tool in evaluating the net change in obstruction from existing to build conditions at a specific site.

Using BRADA, a silhouette view of the building is taken at ground level from the middle of the adjacent city streets centered on the proposed building. The façade of the building facing the viewpoint, including heights, setbacks, corners and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the sky dome from the viewpoint chosen. Due to the constraints of the BRADA program, the setbacks of the building may be simplified or the building may be divided into sections in some cases. The BRADA program calculates the percentage of daylight that will be obstructed on a scale of 0% to 100% based on the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of the sky dome from a given viewpoint.

The BRA typically requests that the analysis treats the following elements as controls for data comparison:

- Existing Condition;
- Proposed Condition; and
- The Context of the Area.

Viewpoints for the existing and proposed conditions were chosen along Jersey Street (Viewpoint 1) and Boylston Street (Viewpoint 2) looking at the project site. Additionally, this study considered area context points to provide a basis of comparison to existing conditions in the surrounding area. These viewpoints were taken along Boylston Street looking north at 1295 Boylston Street (AC1); Boylston Street looking north at Fenway Triangle Trilogy (AC2); and Jersey Street looking east at 108-112 Jersey Street (AC3). The viewpoints are illustrated on Figure 3-34 at the end of this section.

3.2.3.3 Daylight Analysis Results

The results for each viewpoint for the existing and proposed conditions, as well as for the area context viewpoints are described in Table 3-1. Since the project site does not contain any buildings, the daylight obstruction value for the existing site is 0%. Figure 3-35 through Figure 3-36 illustrate the BRADA results for each viewpoint and are located at the end of this section.

Table 3-8 - Viewpoint Locations

Viewpoint Locations		**Existing Conditions**	**Proposed Conditions**
Viewpoint 1	Jersey Street	0%	57.3%
Viewpoint 2	Boylston Street	0%	42.5%
Area Context Points			
AC1	Boylston Street looking north at 1295 Boylston Street	39.2%	
AC2	Boylston Street looking north at Fenway Triangle Trilogy	72.1%	
AC3	Jersey Street looking east at 108-112 Jersey Street	57.0%	

Jersey Street – Viewpoint 1

Jersey Street runs along the west side of the project site and includes residential and commercial buildings. The daylight obstruction value for the proposed project is 61.6%. The width of the sidewalk and the setback of the building from the property line limit the impact to the sky dome. The daylight obstruction value is within the range of daylight obstruction values in the area and is lower than a typical downtown urban area.

Boylston Street – Viewpoint 2

Boylston Street runs along the south side of the project site. The daylight obstruction value for the proposed project is 41.4%. The wide street, sidewalk, and setback from the property line all minimize the impact of the building on the sky dome. In addition, the gap between the two taller portions of the project provides for a large view of the sky. The daylight obstruction value is within the range of daylight obstruction values in the area, and is lower than a typical downtown urban area.

Area Context Viewpoints

The project site is located between an established neighborhood and the area around Fenway Park where construction is planned and has been occurring for many years. The new construction and planned developments, including Landmark Center, 1330 Boylston Street, Fenway Triangle Trilogy and Air Rights Parcel 7, include building heights that are significantly different from the existing neighborhood to the south, but are similar to the proposed project's building heights.

The area context viewpoints looked at the existing, older building on Boylston Street (AC1), newer construction on Boylston Street (AC2), and the existing neighborhood to the south (AC3). The buildings analyzed for the area context include their tall components closer to the property line with few setbacks in the massing, but also vary in height which results in the variety in daylight obstruction values. The daylight obstruction values ranged from 39.2% to 72.1%.

3.2.3.4 Conclusions

The daylight analysis conducted for the project analyzes the existing condition as well as the proposed condition at the project site. The analysis also looked at locations in the surrounding area for context. The project design places the building back from the property line along both Boylston and Jersey streets, reducing the impact to the sky dome. The proposed project includes a gap in the massing when viewed from Boylston Street, limiting the building's impact on the sky dome when viewed from this location. The results of the BRADA analysis indicate that while the development of the project will result in increased daylight obstruction at the site since the existing site does not contain any buildings, the resulting condition will be consistent with or lower than the area context and is lower than a typical downtown urban area.

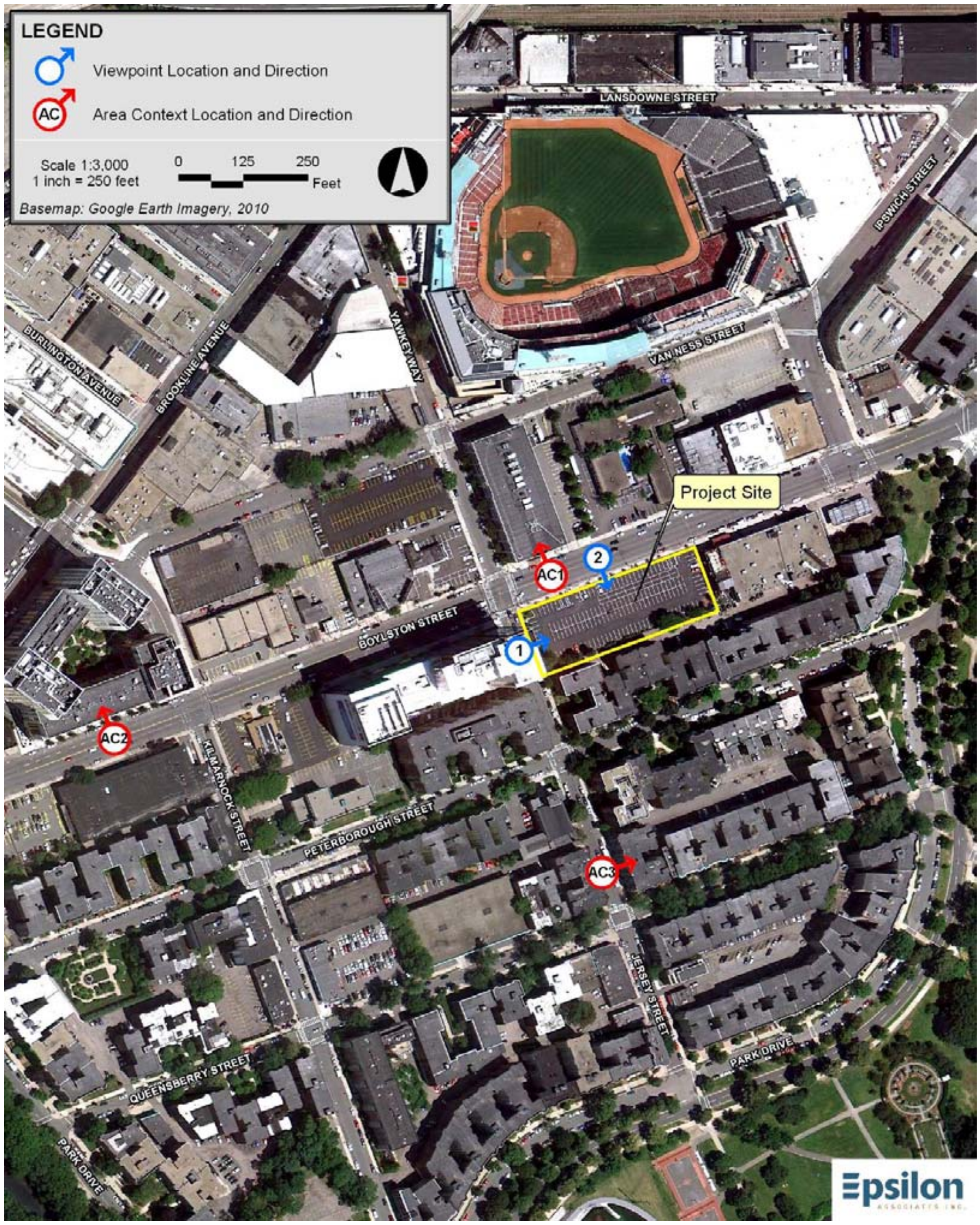


Figure 3-34 – Daylight Analysis Viewpoints and Area Context Viewpoints

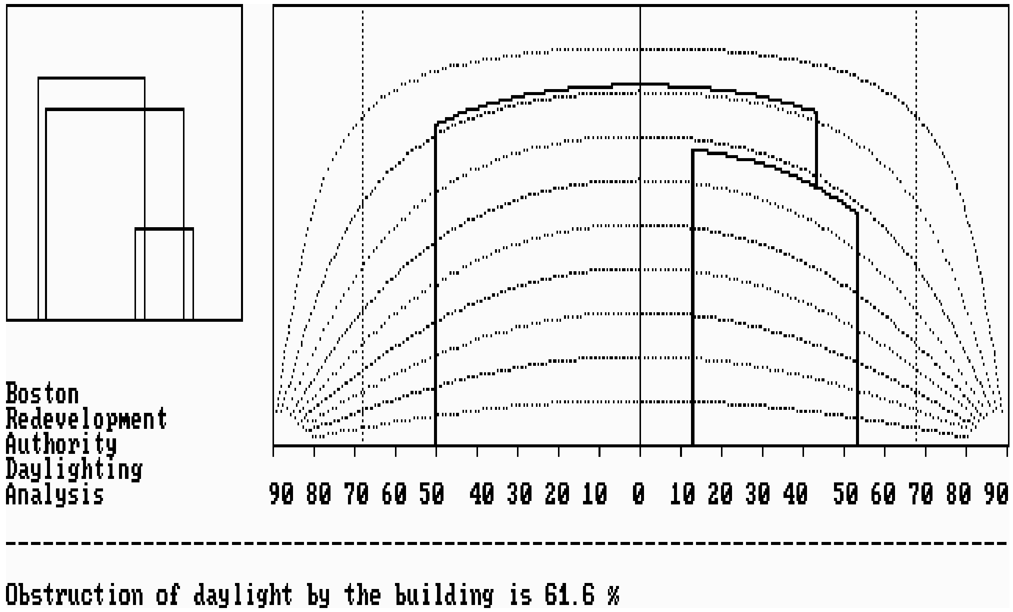


Figure 3-35 – Viewpoint 1 – Jersey Street Looking East at the Project Site

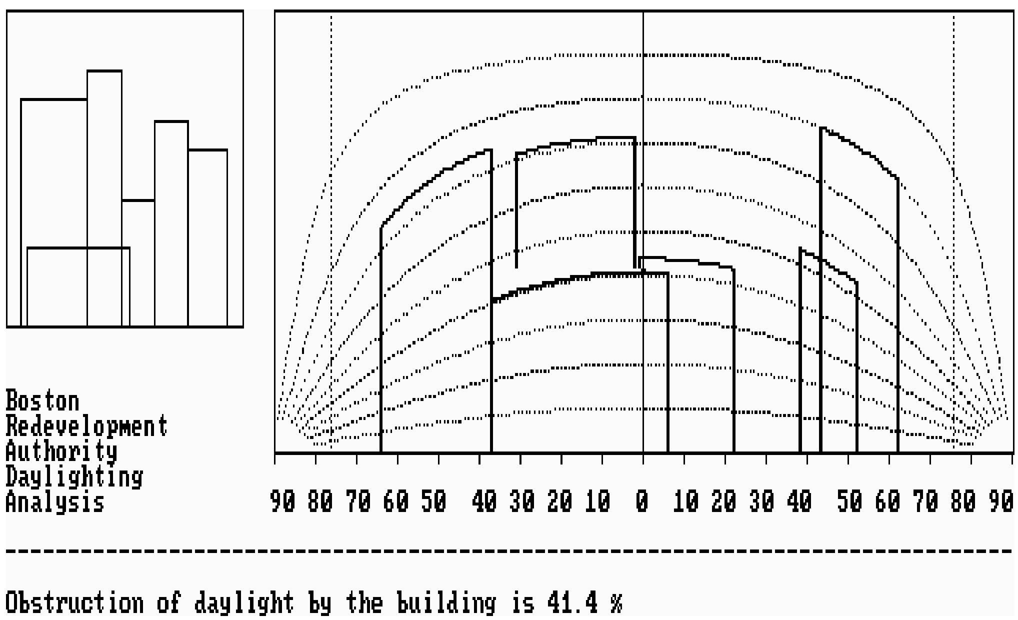


Figure 3-36 – Viewpoint 2 – Boylston Street Looking South at the Project Site

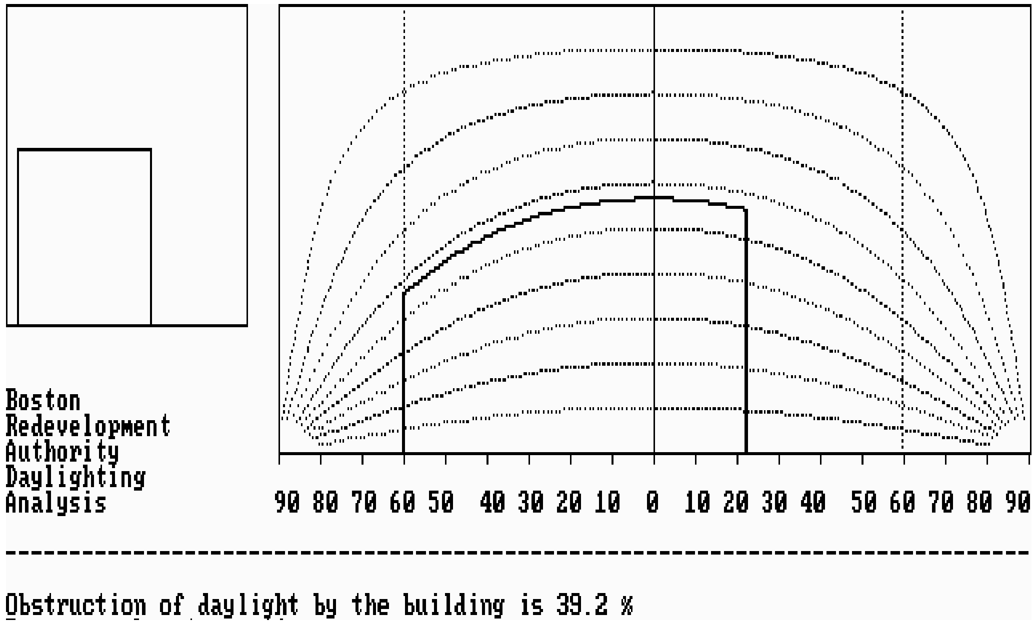


Figure 3-37 - Area Context 1 – Boylston Street Looking North at 1295 Boylston Street

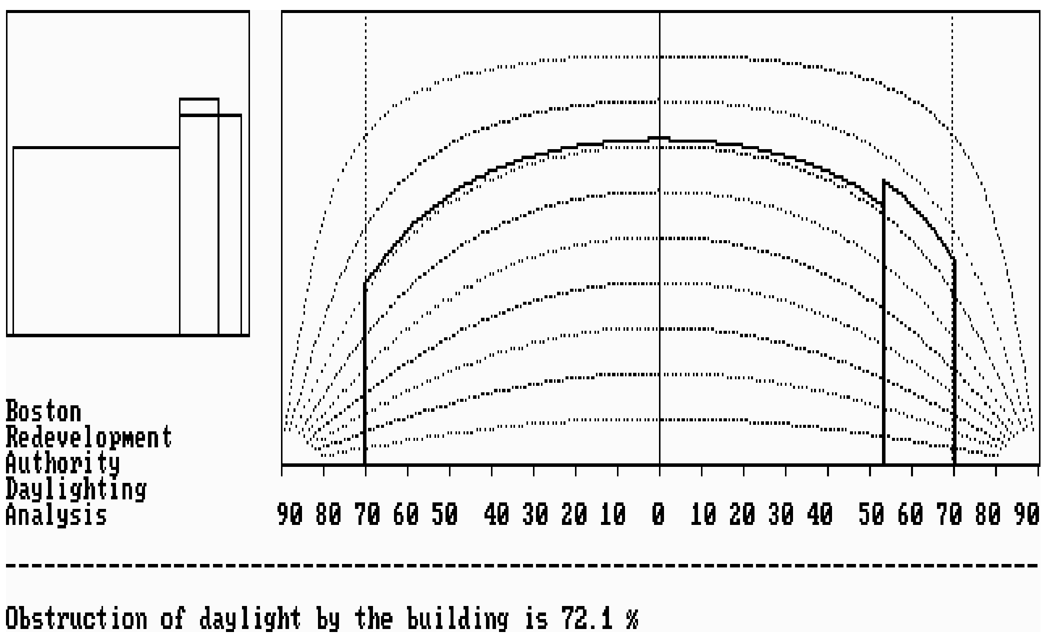


Figure 3-38 - Area Context 2 – Boylston Street Looking North at Fenway Triangle Trilogy

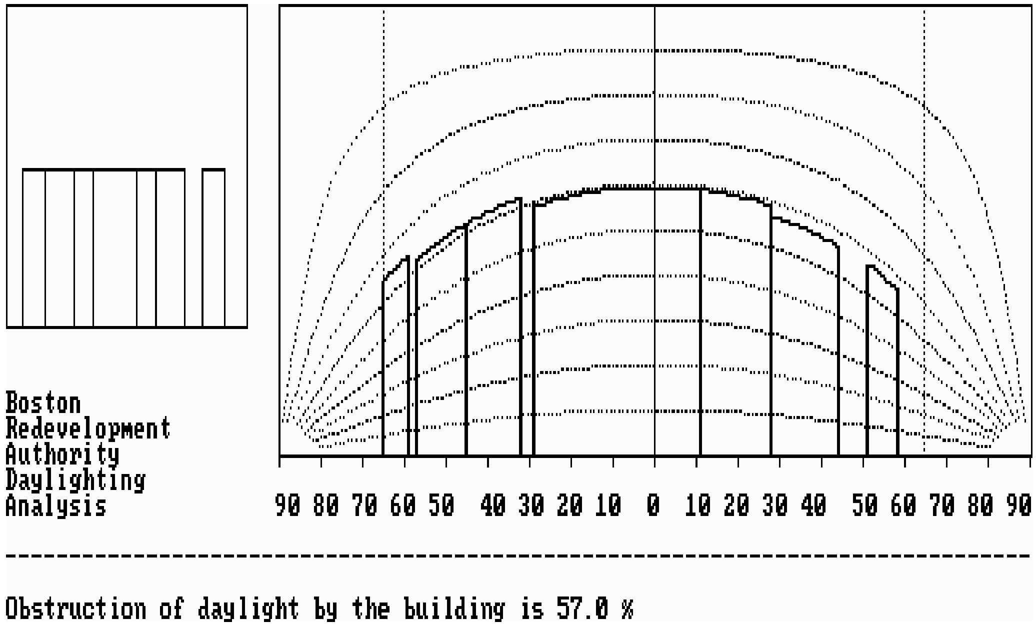


Figure 3-39 - Area Context 3 – Jersey Street Looking East at 108-112 Jersey Street

3.2.4 Solar Glare

The façade materials of the project will include a blend of glass, painted metal and/or cellulose fiber panels and masonry. The matte surfaces of the painted panels and masonry should not contribute significantly to glare.

The use of a non-reflective, insulating Low-E glass in the curtainwall of the proposed project will diffuse incoming solar rays, resulting in minimal solar glare impact.

In addition, the inherent urban density of the area reduces solar glare impact in two ways:

- The inherent oblique, as opposed to direct, vantage points result in minimal solar glare impact on passing pedestrians and drivers, and
- The proposed building will be shaded by the adjacent buildings during many of the hours when the glass would otherwise reflect solar rays, thus there will be minimal solar heat loading impact on these nearby buildings. The north façade of the building that is not currently shielded as well by adjacent structures, is unlikely to receive direct sun except very obliquely, thus impacting the adjacent buildings very little.

3.2.5 Air Quality

1282 Boylston Street will include new ventilated below grade structured parking. The parking garage will be mechanically ventilated at 0.75 CFM per square foot in accordance with the IMC 2009. Garage ventilation fans will be provided with Variable Speed Controllers (VFC) which will be modulated in response to CO sensors located per the manufacturers recommended spacing to maintain acceptable levels of CO within the garage.

The project will include gas fired heating equipment for building heating and domestic hot water. This equipment will be located in roof mechanical penthouse with independent flues through the high roof of the building. Gas will also be provided for potential restaurant tenants as part of the retail portion of the project. Gas from cooking equipment will be vented via the dedicated kitchen hood exhaust systems to be installed as part of the tenant fit out of the retail to fan equipment at the roof of the building. The installation of gas fired equipment will be in accordance with Massachusetts Department of Environmental Protection regulations and required permits will be filed during the design and construction of the project.

The project will include a diesel oil fired standby generator to provide required power for life safety and legally required standby power for the building. The generator will be located in a screened enclosure at the roof of the building and the diesel generator flue will be provided above the level of the high roof of the building. The installation of the diesel generator will be in accordance with Massachusetts Department of Environmental Protection regulations and required permits will be filed during the design and construction of the project.

3.2.6 Stormwater/Water Quality

The Project will not affect the water quality of nearby water bodies. Erosion and sediment control measures will be implemented during construction to minimize the transport of site soils to off-site areas and Boston Water and Sewer Commission (“BWSC”) storm drain systems. During construction, existing catch basins will be protected with filter fabric, hay bales and/or crushed stone, to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until all areas of disturbance have been stabilized through the placement of pavement, structure, or vegetative cover.

All necessary dewatering will be conducted in accordance with a Massachusetts Water Resource Authority (MWRA) and BWSC discharge permit currently being prepared. Once construction is complete, the Project will be in compliance with all local and state stormwater management policies. See below for additional information.

In February of 2008, the DEP revised their Stormwater Management Standards to better address water quality and water quantity issues associated with project sites. The revisions promote increased stormwater recharge, treatment of more runoff from polluting land uses, low impact development (LID) techniques, pollution prevention, the removal of illicit discharges, and improved operation and maintenance of stormwater best management practices (BMPs).

A brief explanation of each Standard and the system compliance is provided below:

<u>Standard #1:</u> No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

Compliance: The proposed design will comply with this Standard. No new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Proposed Project.

<u>Standard #2:</u> Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Compliance: The proposed design will not increase the impervious area compared to the pre-development condition. Therefore, there will be no detention system needed to mitigate the peak rate of runoff from the site.

<u>Standard #3:</u> Loss of annual recharge to ground water shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required

recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

Compliance: The Project will meet and exceed this standard by complying with the Boston Redevelopment Authority's requirement of recharging 1-inch of stormwater over the entire new impervious area.

<u>Standard #4:</u> Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This standard is met when:

a) Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;

b) Structural stormwater best management practices are sized to capture the required water quality volume as determined in accordance with the Massachusetts Stormwater Handbook; and

c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Compliance: The project will meet or exceed all standards.

Standard #5: *For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention, all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.*

Compliance: The project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-8). This project complies with this standard.

Standard #6: *Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00.5 Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of the public water supply.*

Compliance: The project will not discharge untreated stormwater to a sensitive area or any other area.

Standard #7: *A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best* *management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.*

Compliance: The project will meet or exceed all standards.

<u>*Standard #8:*</u> *A plan to control construction related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.*

Compliance: The project will comply with this standard. Sedimentation and erosion controls will be incorporated as part of the design of this project and employed during Site construction.

<u>*Standard #9:*</u> *A long term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

Compliance: A long term Operations and Maintenance Plan shall be developed and maintained for this project.

<u>*Standard #10:*</u> *All illicit discharges to the stormwater management system are prohibited.*

Compliance: There will be no illicit discharges associated with this project.

3.2.7 Flood Hazard Zones/Wetlands

The site is not located within the 100-year flood plain according to the Federal Emergency Management Agency (FEMA) Map No. 25025C0076G. The FEMA Map, Figure 3-40, is included in this report.

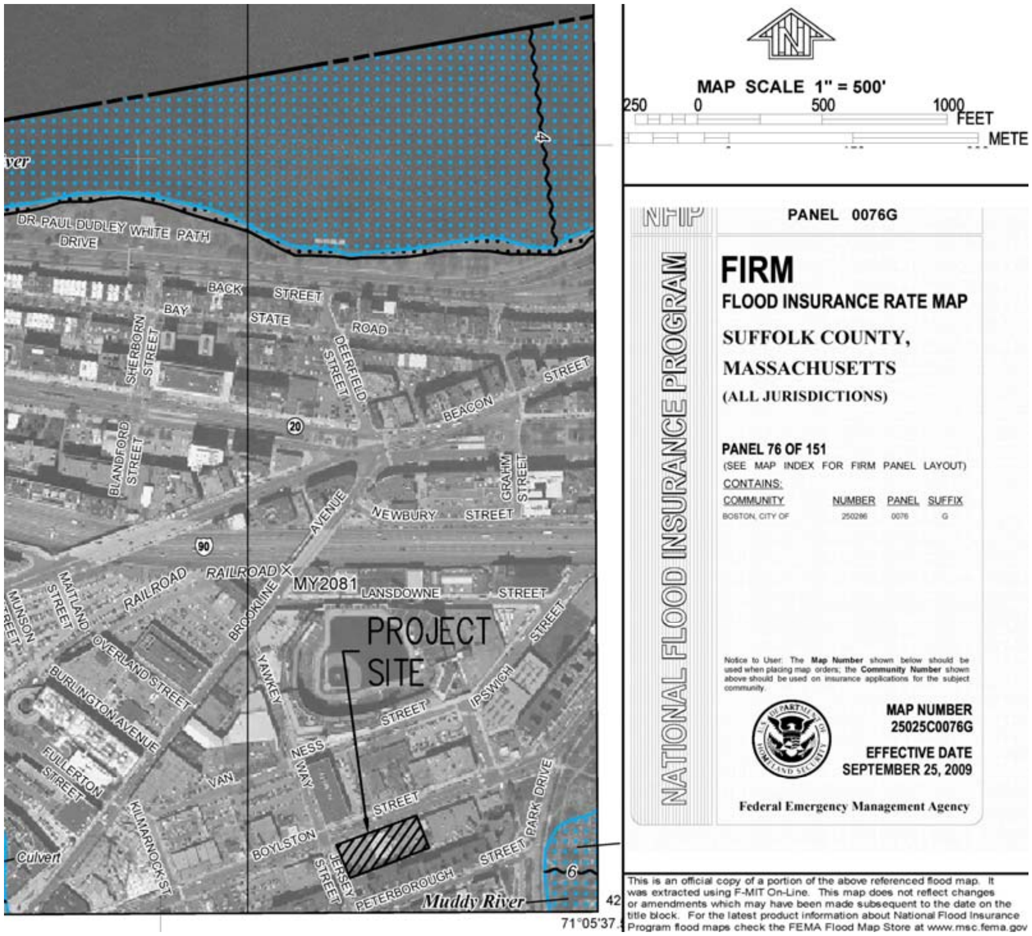


Figure 3-40 - Flood plain map

3.2.8 Solid and Hazardous Waste

In the future, it is planned to obtain site specific information regarding environmental conditions to evaluate for the presence of oil and hazardous materials. Foundation construction for the new building will generate soil requiring off site transport. Chemical testing of the material will be required by receiving facilities to identify chemical constituents and any contaminants present. Chemical testing of the material will be conducted prior to construction in accordance with facility requirements.

Any material leaving the site will be required to be legally transported in accordance with local, state and federal requirements. In addition any regulated soil and/or groundwater conditions related to oil and hazardous materials will be managed in accordance with appropriate Massachusetts Department of Environmental Protection (MA DEP) regulatory requirements.

3.2.9 Noise

The Boston Air Pollution Control Commission regulates noise in the City of Boston based on land use classification. These limits apply only to mechanical equipment noise from buildings and not to project-related traffic. The proposed project has both commercial and residential uses. The regulations establish a maximum sound level for a residential area of 60 dBA during the day and 50 dBA at night. Noise from construction sites cannot exceed 75 dBA at the lot line in a residential or institutional area.

The design for the building is in' the preliminary stage. The following mechanical equipment is being considered for the noise impact analysis:

- Cooling towers at roof mechanical screen
- Standby generator at roof mechanical screen.
- Energy recovery ventilating units serving the residential and office portions of the project located at the roof level
- Electric refrigeration machines and associated pumps in the mechanical roof penthouse
- Gas fired hot water boilers and associated pumps in the mechanical roof penthouse
- Various fans inside the penthouse or on the high roof levels.
- Garage ventilation fans located inside the parking garage.

The above listed mechanical and electrical devices will be located at a significantly higher elevation than the immediately surrounding buildings. The garage ventilation fans will be located inside the parking garage structure. The emergency generator will be operated only when the electrical service to the building is interrupted and for occasional brief periods for testing purposes. Tests will occur only during daytime periods. A critical exhaust silencer will be provided for the generator.

The proposed 1282 Boylston Street building will comply with the City of Boston and Massachusetts DEP noise regulations. Compliance requirements will be established and developed as the design process continues.

3.2.10 Construction Impacts

3.2.10.1 Introduction

This draft Construction Management Plan (CMP), will be submitted to Boston Transportation Department (BTD) for their approval prior to the start of construction and , includes specific mitigation measures and staging plans to minimize impacts to abutters. The Construction Manager will be bound by the CMP.

3.2.10.2 Construction Activity Schedule

The construction period for this project is expected to be approximately 23 months in duration. It is anticipated that construction could begin in the third quarter of 2012. Typical construction hours will be from 7:00 am to 10:00 pm, Monday through Saturday. Weekend or off hours activity would be the exception and would take place to minimize impact on vehicular and pedestrian traffic during delivery of large construction equipment (i.e. cranes, excavation equipment, etc.) as may be necessary to meet permitting restrictions. No truck idling, construction activity or staging after 10:00 pm and before 7:00 am will be allowed.

3.2.10.3 Construction Staging Area

The proposed staging plan is designed to isolate the construction while providing safe access for pedestrians and automobiles during normal day to day activities and emergencies.

The project at 1282 Boylston Street consists of site demolition and constructing a new structure containing apartments, office and retail space above grade and three levels of parking below grade. The project has frontage on Boylston Street and on Jersey Street. There is a common alley to the north of the site that must be maintained constantly for neighboring properties.

A 6' high chain link fence will be placed along the entire perimeter of the jobsite. One 40' rolling and three 12' access gates will be installed; the 40' gate will be located on Boylston Street along with two 12' access gates. One 12' gate will be located on Jersey Street.

All construction material delivery trucks will be directed to the gated delivery points during the construction period. During the demolition phase, trucks and equipment will follow the designated truck route, which leads them to Boylston Street In-bound where the site is located.

During the excavation phase, the same procedure will be used. Alternatively, during some phases of the excavation process, the trucks will be able to drive directly into the site to load/unload and then drive directly out of the site. 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 area will be utilized. The exact location will be determined as these major trades are purchased. Specific language regarding the locations and the fact that no "shaking out" or "staging" of materials will be allowed in the neighborhood streets will be specifically called out in all subcontracts. The location of any and all staging areas will be forwarded to BTD for record. A wheel wash station will be located at the entry/exit to the site and adjacent streets/sidewalks will be swept as necessary to minimize accumulations of dirt and dust. Mechanical sweeping will be utilized, continuously during this phase.

During concrete placements for the majority of the building, the concrete pump will be parked inside the Boylston Street entrance, and concrete trucks, dispatched one at a time, will back up to the pump hopper from Boylston Street, assisted by the detail officer. Trucks will not be allowed to wash out on site. In order to conserve the space normally taken up by the outriggers of the pump, a riser and slick line will be utilized during deck placements instead of the boom section of the pump.

Steel deliveries will be staged in the drive lane on Boylston Street. Deliveries will arrive one at a time to the site, to insure that no trucks are parked and/or idling in the street. Erection will be sequenced from the East towards Jersey Street, utilizing two tower cranes for both the steel and precast erection.

Proper signage will direct all pedestrians safely around the construction jobsite and activities.

3.2.10.4 Perimeter Protection / Public Safety

Suffolk Construction will work to ensure the staging areas minimize impact to pedestrian and vehicular flow. The specific configurations of staging and pedestrian access around the site will vary depending on the phase of work being performed. Please refer to the accompanying plans for the specific measures proposed (See attached Exhibit A)

In general, secured fencing will be used to isolate construction areas from pedestrian traffic with the site. Police details will be provided as needed to facilitate traffic flow. Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.

Each subcontractor will implement and manage its own Safety and Health Program for the project. These programs will be reviewed, and compliance insured by Suffolk Construction's field staff and Safety Department. This program will insure that the subcontractor's employees, subcontractors and suppliers, regardless of tier, know and understand the complete safety and health requirements of the project.

Snow removal and ice treatment will be provided on the surrounding sidewalks, as will trash and debris clean up.

Adequate site lighting will be provided until the permanent street lighting is installed.

3.2.10.5 Material Handling / Construction Waste

Suffolk Construction will take an active role in with regard to the processing and recycling of construction waste. The disposal contract will include specific requirements that will insure that procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per DEP's Regulations for Solid Waste Facilities, 310 CMR 16.00. Refer to section X, trucking.

3.2.10.6 Construction Traffic Impacts

Construction Trip Generation and Worker Parking

The number of workers required during the construction will vary with an estimated average daily workforce of 150 during the 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 at the project construction site or in the adjacent neighborhood. Terms and conditions related to workforce parking and public transportation use will be written into each subcontract.

Truck Routes and Volumes

Truck traffic will vary throughout the construction period, depending on the activity. It is expected that truck traffic will range on average between 5-8 trucks daily spread evenly throughout the day. The exception to this will be during the excavation phase when an average of approximately 15 trucks, again spread evenly throughout the day, can be expected.

Specific truck routes have been identified and described to the Boston Transportation Department and are reflected on the staging and logistics drawings. Construction contracts will include clauses restricting truck travel to BTD requirements. As indicated on the referenced attached drawings, primary access to and egress from the site will be restricted to the gates at locations approved by BTD.

3.2.10.7 Construction Air Quality

To reduce emission of fugitive dust and minimize impacts on the location environment, the construction 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 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.
- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials.
- All trucks 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 located at the Boylston Street entrances/exits to the site during sitework activities.

3.2.10.8 Construction Noise

The project will require the use of equipment that can be heard from off site locations. Construction of this project is expected to commence in TBD and be completed in TBD, a period of approximately 23 months. This project is committed to mitigate noise impacts of the construction of the project. Increased community sound levels, however, are an inherent consequence of construction activities. The area currently has ambient noise due to urban activities including traffic noise from Boylston Street and the Turnpike.

The proposed construction process for the project has been designed around the constraints at the site. The exact pieces of equipment will be finalized after subcontractor selection is completed. Construction will occur during the daytime hours as defined by the Boston Noise Regulation (7:00 am to 6:00 pm except Sundays). In some instances, second shifts may be required. When these events arise, all required permits will be in place.

Every reasonable effort will be made to minimize the noise impact of construction activities. Mitigation measures will include:

- Scheduling of work during daytime hours. Project construction hours are planned to be from 7:00 am to 6:00 pm. This includes “start-up” time.

- Using appropriate mufflers on all equipment and providing ongoing maintenance of intake and exhaust mufflers.

- Maintaining muffler enclosures on continuously operating equipment, such as air compressors and welding generators.

- Replacing specific construction operations by less noisy ones where feasible and practical.

- Selecting the quietest practical items of equipment – e.g., electric instead of diesel powered equipment.

- Selecting equipment operations to keep average levels low, to synchronize noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels.

- Turn off idle equipment.

3.2.10.9 Geotechnical Impacts and Monitoring

Excavation for the project is required for foundations and to accommodate the three levels of below grade parking. Support of excavation will be required due to the depth of excavation, proximity of existing structures and lack of lay back area. It is anticipated that driven sheet piles will be used as the earth support system with cross-lot braces for support. Piles will be driven rather than vibrated in order to minimize impact on adjacent structures and utilities. The Owner will conduct a full existing conditions survey of the existing structures prior to the start of construction, with follow up on completion.

3.2.10.10 Utilities

Utility tie-ins will take place at both the Boylston Street and Jersey Street sides of the site. Sewer, drainage, domestic water, fire protection water, telephone, gas and electric will be tied in to the existing infrastructure on Jersey Street. An additional sewer, drainage, CATV and fire connection will be tied into existing infrastructure on Boylston Street.

The following new utilities will be connected to the new building:

Table 3-9 - Utility connections

Service	Company	Target Date
Water	City of Boston	TBD
Sewer	City of Boston	TBD
Gas	Keyspan	TBD
Electric	Nstar	TBD
Telephone	Verizon	TBD

Specific traffic management plans will be developed for the work required to perform these tie-ins. Connections to the existing services will be coordinated with the proper utilities and their respective contractors as necessary. All shutdowns will be arranged with affected parties and proper notice will be given prior to any shutdowns. Any and all work requiring a BTD Permit will be approved in writing by the controlling contractor, Suffolk Construction, at the time of permit application. The written approval of Suffolk Construction will be presented to BTD by the contractor performing the work at the time of application of permit to BTD.

3.2.10.11 Groundwater Impacts

The construction of the project is not expected to impact area groundwater levels. Dewatering will be required inside the excavation to remove any rainwater or surface water runoff during excavation. Any groundwater removed from the excavation will be discharged to a catchbasin under a

MWRA discharged permit provided by the Owner. Water is assumed to be non-contaminated and treatment is limited to filtering. Monitoring will be done per contract specifications.

3.2.10.12 Emergency Contacts

A 24 hour emergency contact list will be distributed to all parties involved in the project. Additionally, appropriate signage (BTD-CWS) will be displayed at both gate locations.

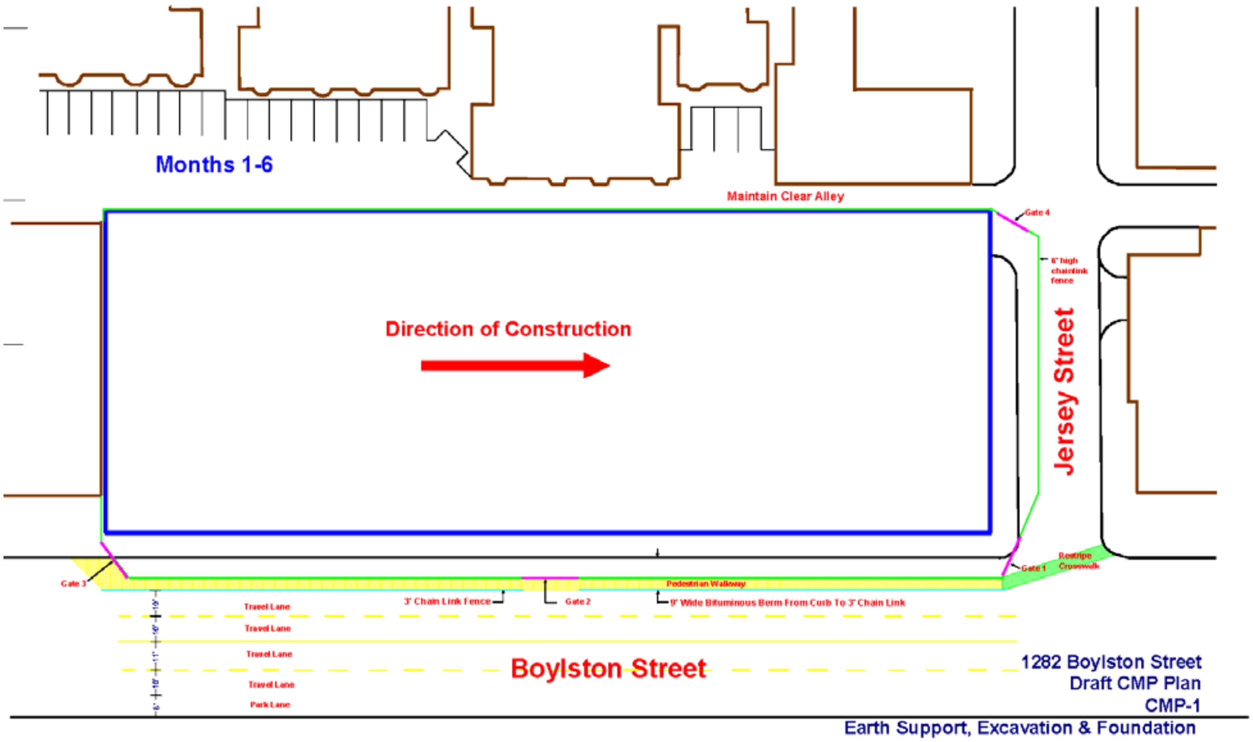


Figure 3-41 - Construction management part 1

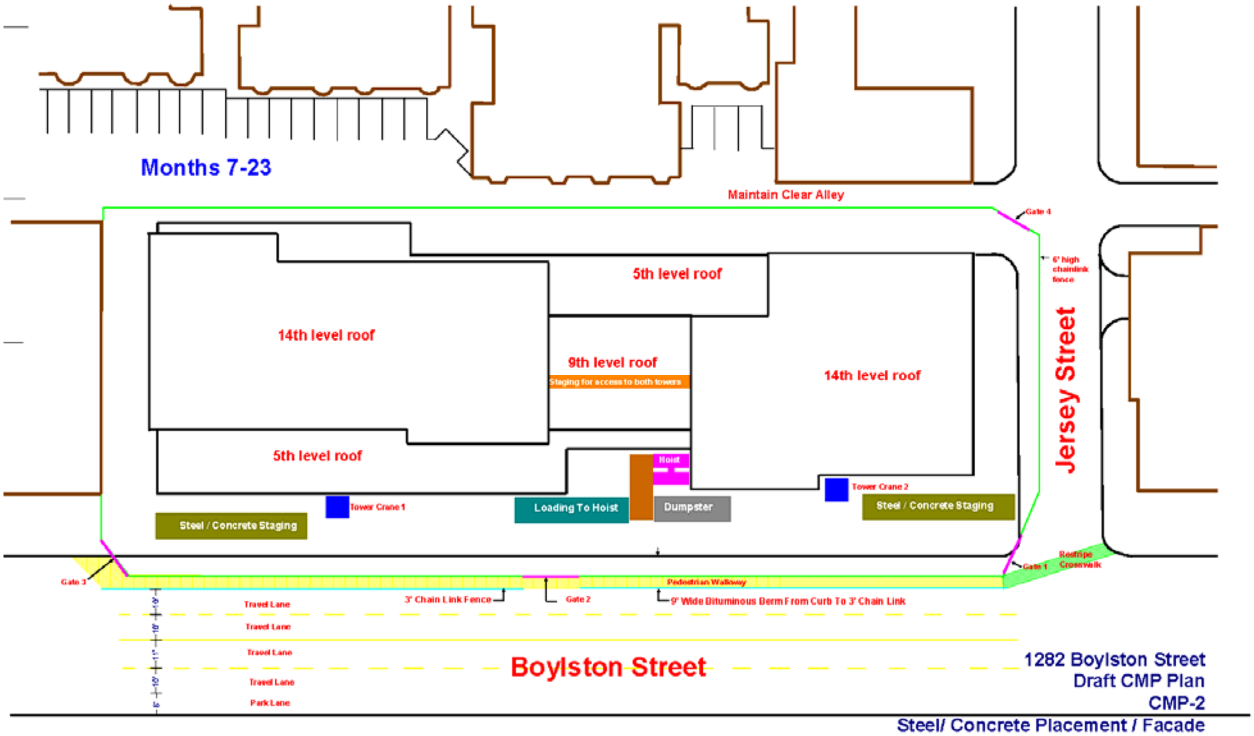


Figure 3-42 - Construction management part 2

3.2.11 Rodent Control

The City of Boston has declared that the infestation of rodents in the City is a serious problem. In order to control this infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550 and the State Building Code, Section 108.6. Policy Number 87-4 (City of Boston) established that extermination of rodents shall be required for issuance of permits for demolition, excavation, foundation and basement rehabilitation. The proposed project will develop a rodent control program prior to its construction start. The program will include performance of extermination and control procedures on a bi-weekly basis, and the placement of tamper resistant bait boxes around the perimeter of the site.

3.2.12 Wildlife Habitat

The Project is located on an imbedded, previously developed urban site and will not have an impact on any wildlife habitat.

3.2.13 Geotechnical and Groundwater Analysis

3.2.13.1 Subsurface Soil and Bedrock Conditions

Based on available information, general subsurface soil conditions at the site consist of the following:

Table 3-10 - Subsurface conditions

Generalized Description	Approximate Soil Stratum Thickness (ft)
Fill	13
Organic Deposit	6
Sand Deposit	9
Marine Clay	Greater than 100

The depth to glacial till and bedrock in the area is approximately 180 to 190 ft. below the ground surface.

3.2.13.2 Groundwater Conditions

Several groundwater monitoring wells exist in close proximity to the site. Data obtained from the Boston Groundwater Trust (BGwT) wells indicate that groundwater levels range from El. 7 to El. 8 BCB (approximately 10 ft below-grade).

3.2.13.3 Groundwater Overlay District

The project is located within the City of Boston's Groundwater Conservation Overlay District and will be capturing and recharging one-inch of rainfall over new impervious areas as required by Article 32. This may be accomplished in two ways, a system of perforated pipe and crushed stone outside the limit of the building foundation or with a storage tank within the building and a system of groundwater recharge wells.

3.2.13.4 Groundwater Impacts

The proposed structure includes three below grade levels. The foundation walls and lowest basement level will extend down to competent soils below the groundwater level. The structure will not cause the groundwater to raise, pond or be lowered in the general surrounding area.

A program of monitoring existing observation wells located in the vicinity of the site will be conducted prior to and during construction to document groundwater levels. There are several existing wells in the area as shown on the BGwT website.

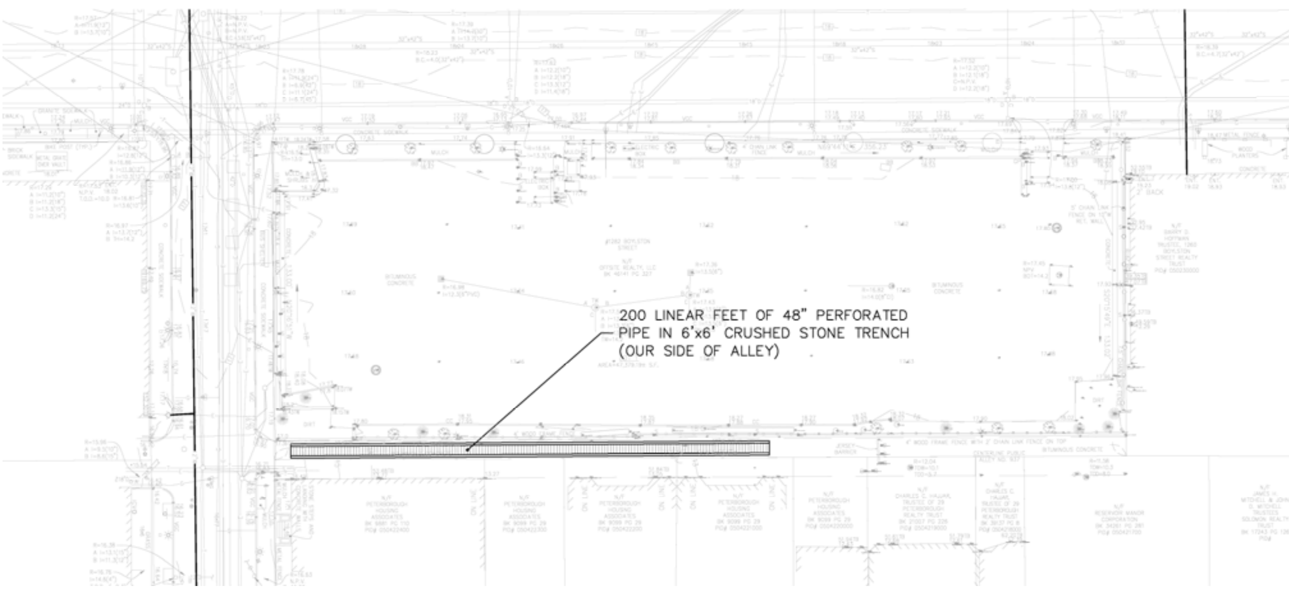


Figure 3-43 - Groundwater recharge strategy

3.2.13.5 Proposed Foundation Construction

The planned foundation construction will be conducted inside the limits of an excavation support system installed around the basement limits. The support system will be relatively impermeable to maintain groundwater levels.

After the excavation is completed to the proposed foundation bearing level, reinforced concrete footings or a reinforced concrete mat foundation will be constructed to support the building loads.

3.2.13.6 New Foundations

The proposed building will be supported on either soil bearing spread footings or a continuous mat foundation. For a three level deep basement, these foundations will likely bear in the marine clay deposit.

The basement walls will consist of cast-in-place concrete walls, with waterproofing, or reinforced concrete diaphragm walls (slurry walls).

The foundation design that consists of spread footings would include a slab-on-grade for the lowest basement level, with an underslab drainage system to relieve hydrostatic uplift pressures. The underslab drainage system would bear on the relatively impermeable clay deposit. Groundwater flow will be minimal to the underslab drainage because lateral flow would be cut off by the excavation support wall (steel sheeting or slurry wall) that extends down into the clay deposit (all around the site).

3.2.13.7 Excavation and Dewatering

A temporary lateral earth support system will be required to complete the excavation for the below grade space. The earth support system will be a relatively impermeable wall such as continuous interlocking steel sheet piles or a slurry wall. The excavation support wall will extend into the underlying marine clay to create a groundwater cut-off around the perimeter of the site.

Temporary construction dewatering will be required inside the limits of the excavation support wall. A National Pollutant Discharge Elimination System permit for temporary construction dewatering will be obtained for discharge of dewatering effluent.

3.3 Sustainable Design / Energy Conservation

The new building at 1282 Boylston Street will incorporate state of the art "green" design elements including energy efficient mechanical and building control systems, and environmentally responsible materials to meet LEED goals.

3.3.1 LEED Certification Goals

The project will be designed with the goal of reaching the points needed from the USGBC for the LEED Silver Level for New Construction (NC). A LEED Scorecard has been completed (see Table 3-11), outlining the projects preliminary goals.

As per the City of Boston's Article 80, Section 80B-6, the project will meet the requirements set forth in Article 37: Green Buildings, and the building will be designed to meet the requirements of the US Green Building Council's (USGBC's) LEED Certification program.

The building includes variety of sustainable initiatives, from its densely populated urban neighborhood, to the use of energy of resources and the working environment inside the building. Careful thought has been applied to initiatives that make the most sense for this building and locale.

Sustainable Sites

1282 Boylston Street sits in a densely populated neighborhood of Boston, with easy access to public transportation, shops, entertainment, public parks, and housing. In addition, there is will be ample bike storage and racks for building occupants and visitors. For those who prefer to drive, discounted permits will be provided to those who carpool or drive low-emitting vehicles.

Because of the building's urban location, "heat island effect" is a concern. To address this, the addition will have a combination of a reflective roof and a planted "green roof", which will also improve the building's energy efficiency.

Water Efficiency

Potable water use will be reduced for irrigation and within the building. High-efficiency flush fixtures will be used throughout the building, as well as ultra low-flow lavatories. Highly efficient irrigation systems will be used to maintain the planted areas.

Energy and Atmosphere

The building envelope will be high-performance and will make use of high R-value walls and roof, and low-e glazing for the windows. The mechanical system will separate space conditioning and ventilation, and make use of heat recovery for the ventilation system. A professional Commissioning Agent will commission the building. The building's energy-intensive systems will be metered and sub-metered, and the tenant spaces will be designed to allow for sub-metering.

Materials and Resources

Materials selected for the addition will be recycled and local where possible. Wood used on the project will be certified by the Forest Stewardship Council (FSC) whenever available. Waste generated as part of the addition will be diverted from landfills via salvage or recycling whenever feasible.

Indoor Environmental Quality

Paints, carpets, sealants and adhesives will be low-VOC, and wood products will contain no added urea-formaldehyde. The building will be ventilated to ensure high air quality, exceeding the requirements of ASHRAE. During construction, the contractor will provide an Indoor Air Quality Plan, to prevent dust and mold contamination of materials and mechanical equipment. Thermal comfort controls will be provided for occupants, and the building has been designed to ensure a high level of access to daylight and views for all occupants.

Table 3-11 - LEED scorecard

Y	?	N	d/C		**Sustainable Sites**	Possible Points: **26**
20	4	2				
Y			C	Prereq 1	Construction Activity Pollution Prevention	
1			d	Credit 1	Site Selection	1
5			d	Credit 2	Development Density and Community Connectivity	5
1			d	Credit 3	Brownfield Redevelopment	1
6			d	Credit 4.1	Alternative Transportation—Public Transportation Access	6
		1	d	Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			d	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			d	Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		C	Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		d	Credit 5.2	Site Development—Maximize Open Space	1
	1		d	Credit 6.1	Stormwater Design—Quantity Control	1
	1		d	Credit 6.2	Stormwater Design—Quality Control	1
1			C	Credit 7.1	Heat Island Effect—Non-roof	1
1			d	Credit 7.2	Heat Island Effect—Roof	1
		1	d	Credit 8	Light Pollution Reduction	1

Y	?	N			**Water Efficiency**	Possible Points: **10**
5	0	5				
Y			d	Prereq 1	Water Use Reduction—20% Reduction	
2		2	d	Credit 1	Water Efficient Landscaping	2 to 4
					[2] Reduce by 50%	2
					[ ] No Potable Water Use or Irrigation	4
		2	d	Credit 2	Innovative Wastewater Technologies	2
3		1	d	Credit 3	Water Use Reduction	2 to 4
					[ ] Reduce by 30%	2
					[3] Reduce by 35%	3
					[4] Reduce by 40%	4

Y	?	N					
11	8	16				**Energy and Atmosphere**	Possible Points: **35**
Y	?	N					
Y			C	Prereq 1		Fundamental Commissioning of Building Energy Systems	
Y			d	Prereq 2		Minimum Energy Performance	
Y			d	Prereq 3		Fundamental Refrigerant Management	
7	3	9	d	Credit 1		Optimize Energy Performance	1 to 19
						Improve by 12% for New Buildings or 8% for Existing Building Renovations	1
						Improve by 14% for New Buildings or 10% for Existing Building Renovations	2
						Improve by 16% for New Buildings or 12% for Existing Building Renovations	3
						Improve by 18% for New Buildings or 14% for Existing Building Renovations	4
						Improve by 20% for New Buildings or 16% for Existing Building Renovations	5
						Improve by 22% for New Buildings or 18% for Existing Building Renovations	6
					7	Improve by 24% for New Buildings or 20% for Existing Building Renovations	7
						Improve by 26% for New Buildings or 22% for Existing Building Renovations	8
						Improve by 28% for New Buildings or 24% for Existing Building Renovations	9
					10	Improve by 30% for New Buildings or 26% for Existing Building Renovations	10
						Improve by 32% for New Buildings or 28% for Existing Building Renovations	11
						Improve by 34% for New Buildings or 30% for Existing Building Renovations	12
						Improve by 36% for New Buildings or 32% for Existing Building Renovations	13
						Improve by 38% for New Buildings or 34% for Existing Building Renovations	14
						Improve by 40% for New Buildings or 36% for Existing Building Renovations	15
						Improve by 42% for New Buildings or 38% for Existing Building Renovations	16
						Improve by 44% for New Buildings or 40% for Existing Building Renovations	17
						Improve by 46% for New Buildings or 42% for Existing Building Renovations	18
						Improve by 48%+ for New Buildings or 44%+ for Existing Building Renovations	19
		7	d	Credit 2		On-Site Renewable Energy	1 to 7
						1% Renewable Energy	1
						3% Renewable Energy	2
						5% Renewable Energy	3
						7% Renewable Energy	4
						9% Renewable Energy	5
						11% Renewable Energy	6
						13% Renewable Energy	7
2			C	Credit 3		Enhanced Commissioning	2
2			d	Credit 4		Enhanced Refrigerant Management	2
	3		C	Credit 5		Measurement and Verification	3
	2		C	Credit 6		Green Power	2

Y	?	N					
5	4	5				**Materials and Resources**	Possible Points: **14**
Y	?	N					
Y			d	Prereq 1		Storage and Collection of Recyclables	
		3	C	Credit 1.1		Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
						Reuse 55%	1
						Reuse 75%	2
						Reuse 95%	3
		1	C	Credit 1.2		Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			C	Credit 2		Construction Waste Management	1 to 2
						50% Recycled or Salvaged	1
					2	75% Recycled or Salvaged	2
1	1		C	Credit 3		Materials Reuse	1 to 2
					1	Reuse 5%	1
					2	Reuse 10%	2
1	1		C	Credit 4		Recycled Content	1 to 2
					1	10% of Content	1
					2	20% of Content	2
1	1		C	Credit 5		Regional Materials	1 to 2
					1	10% of Materials	1
					2	20% of Materials	2
		1	C	Credit 6		Rapidly Renewable Materials	1
	1		C	Credit 7		Certified Wood	1

Y	?	N				
9	5	1			**Indoor Environmental Quality**	Possible Points: **15**
Y			d	Prereq 1	Minimum Indoor Air Quality Performance	
Y			d	Prereq 2	Environmental Tobacco Smoke (ETS) Control	
	1		d	Credit 1	Outdoor Air Delivery Monitoring	1
	1		d	Credit 2	Increased Ventilation	1
1			C	Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			C	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			C	Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			C	Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			C	Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			C	Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			d	Credit 5	Indoor Chemical and Pollutant Source Control	1
1			d	Credit 6.1	Controllability of Systems—Lighting	1
	1		d	Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			d	Credit 7.1	Thermal Comfort—Design	1
		1	d	Credit 7.2	Thermal Comfort—Verification	1
	1		d	Credit 8.1	Daylight and Views—Daylight	1
	1		d	Credit 8.2	Daylight and Views—Views	1

Y	?	N				
3	2	1			**Innovation and Design Process**	Possible Points: **6**
1			d/C	Credit 1.1	Innovation in Design: TBD - ex: WEc3 exemplary performance	1
1			d/C	Credit 1.2	Innovation in Design: TBD - ex: MRc2 exemplary performance	1
	1		d/C	Credit 1.3	Innovation in Design: TBD	1
	1		d/C	Credit 1.4	Innovation in Design: TBD - ex: Public Education	1
		1	d/C	Credit 1.5	Innovation in Design: TBD - ex: Green Cleaning	1
1			d/C	Credit 2	LEED Accredited Professional	1

Y	?	N				
4	0	0			**Regional Priority Credits**	Possible Points: **4**
1			d/C	Credit 1.1	Regional Priority: SSc3	1
1			d/C	Credit 1.2	Regional Priority: SSc6.1	1
1			d/C	Credit 1.3	Regional Priority: SSc7.1	1
1			d/C	Credit 1.4	Regional Priority: SSc7.2	1

57	23	30	**Total**	Possible Points: **110**

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

3.4 Urban Design

3.4.1 Urban Context

The 1282 Boylston Street project proposes to support and realize the city's South Boylston Street Shopping District (NS-1) planning goals for positive neighborhood growth.

The proposed project will offer our Fenway neighbors new housing options, expanded retail alternatives, enhanced urban design, and improved office spaces.

The goals of the project are consistent with the neighborhood's master plan to promote housing while preserving the unique character of the area and providing an active 24/7 environment repopulated with retail and restaurant patrons as well as office workers. The new energy emanating from this project will contribute to the desired "urban village" atmosphere in the area, as well as bring jobs and additional economic activity to the Fenway.

The mixed-use project is conceived as a defining edge between the low-rise residential Fenway neighborhood, and the new development of the South Boylston retail district and the Fenway Park sports venue.

The site, currently occupied solely by on-grade parking, will be transformed: revitalized and repurposed with the addition of ground-level retail, commercial lease space, and the remaining 65% of the space will be residential rental units, which will be located above the commercial spaces, similar to other successful historical building arrangements in the area (See Figure 3-45 - Project locus map).

The site is bordered by the busy Boylston Street thoroughfare, which is soon to enjoy enhanced pedestrian features and bicycle amenities, and enjoys the already invigorated level of activity from recent improvements in the area. Jersey Street borders the side of the property, and is the main pedestrian and vehicular link back to the residential Fenway/Kilmarnock neighborhood to the south. A shared alley between Boylston and Peterborough Streets serves as the service access to both the commercial and residential uses (See Figure 3-48 - Site plan).

The project is proposing a new mid-block private way (open to public travel) at the east end of the site, to reduce the length of travel to and from the rear service alley for all users. This divides the unusually long block into a more manageable size and scale, allows the project's parking garage and users to enter/egress from the street, reduces maneuvering and stacking on Jersey and Boylston Streets, and provides welcome visual relief along the streetscape of the 800' long block.

The retail and commercial floors will buffer the existing low and mid-rise residential to the south of the site in the Fenway neighborhood, while knitting back together the neighborhood by eliminating the divide created by the on-grade parking, and focusing on uses the entire neighborhood will enjoy. Three levels of parking will be placed below grade. The building will also help dilute the light and noise produced by the ballpark, benefitting the neighborhood residences to the south.

The current streetwall of the neighborhood is completely inconsistent along Boylston Street, and is a collection of buildings ranging from single-story suburban fast-food establishments, set far from the street, to 2 to 15-story buildings of various uses, historical periods, and materials. The new zoning plan for the area will soon facilitate the emergence of a more consistent urban environment that this project will integrate with well (See Figure 3-55 through Figure 3-66).

3.4.2 Building Design

3.4.2.1 Design Concept

The building's form is conceived of as a series of engaging sculptural blocks, composed of several different materials and colors, painting them as objects, while not necessarily coding them for the functions they enclose (See Figure 3-46- Rendering).

The intent of the shape is to break down the scale on the long site, as well as the height of the building vertically, as the building serves to form a permeable transition between the low-rise historic Fenway residential neighborhood, and the more institutional and retail-scaled environment north of Boylston Street.

Because the site is over 350' long, the building has been broken horizontally into two towers, resting on a 4-story plinth of retail and commercial office lease space. The two residential towers, with a rooftop garden between them, create a break in the streetscape massing, similar to what have might been on the original four-parcel site when first developed.

The inclusion of a welcoming residential entry court was encouraged by the neighborhood as an additional device to break down the scale of the frontage of the site's long dimension.

The levels above the fourth floor are set back from the streetwall and from the rear lot line, to create a reduction in scale, and to create roof decks and a shared roof garden. Roof-plantings spill over the parapet at the top of the streetwall, hinting at the roof gardens above (See Architectural Drawings, Figure 3-48 through Figure 3-53).

3.4.2.2 Height and Massing

1282 Boylston Street seeks to fulfill the intent of the district's zoning envelope and character goals. In order to reduce the shear bulk of an as-of-right zoning envelope and a long site, which would create a 150 foot high mass almost 400 feet long, two residential towers were developed to subdivide the mass and create two slots of light and view to the sky plane above.

One view to the sky occurs between the two towers, and the other occurs at the new 30' wide street at the end of the site, where in addition to the street itself, the adjacent building carries a covenant that will not allow development more than one-story above its current height (See Figure 3-50 - North elevation). This creates two significant views to the sky, each about 60' wide, which would not exist if one were to create a design which fully maximized the zoning envelope available, staying within the height limit suggested by the city. In order to achieve this massing, and still maximize the potential of the project's area, the east tower is four floors higher than the zoning height limit, while the western tower and bridge connector element are below the as-of-right elevation of 150 feet.

The 4-story, 60' high base plinth creates an inviting human-scaled streetwall, which relates to the massing of the residential neighborhood adjacent composed of 5-7 story structures. More than 2/3rds of the façade length sets back 18 feet at the roof garden level. This has the effect of reducing the visual impact of the building substantially from most eye-level street vantage points (See Figure 3-60 - Boylston St looking east).

The building height at the Jersey/Boylston Street intersection is several stories below the adjacent project's massing at 1330 Boylston Street height (See Figure 3-50 - North elevation). This was done to relieve the tightness of the narrow Jersey Street streetscape, where the two corner buildings flank the street.

At the opposite end of the building, at mid-block, the massing is higher to compensate for the loss of area created by the lower height at Jersey Street. The proponent seeks relief from the zoning height limit of 150 feet for the east wing, for a tower roof deck height of 178'-0". Overall, the varying heights of the building mass elements produce a façade height variation similar to what may have previously existed on the smaller four original historic parcels on this project site.

For additional perspective views of the project, reference section 3.5 - Historic and Archaeological Resources.

3.4.2.3 Character and Materials

The project maintains a focus on a design aesthetic that is warm, yet modern, and is sympathetic with the surrounding buildings. A lightweight trio of rainscreen panel materials and colors will allow the building surfaces to respond deftly to their sculptural purpose.

The multi-material façade articulation, as well as increased sidewalk width, added lighting and new landscape enhancements will bring a warm pedestrian “urban village” feeling to the area.

The curtainwall system, used to clothe both residential and commercial uses, consists of a series of multiple-story projected frames, which create the illusion that the building contains fewer stories. The framing system will be painted aluminum and will likely contain low-E insulated glass units and colored spandrel panels.

The more solid punched window and panel system is composed in multi-story vertical staggered modules, and is also working to reduce scale and add depth and shadow.

Ground floor retail will be composed with significant areas of clear glass curtainwall systems paired with more durable stone or masonry columns and framing elements.

3.4.2.4 Existing Site Considerations

The new structure supplants an on-grade parking lot, formerly the site of a one-story McDonald’s fast food restaurant with a surface lot and drive-through function. The multi-use residential/office/retail project proposed is more in keeping with the urban context of the five to seven-story Fenway residential structures, and the varied commercial environment of the Fenway Park area, than its former suburban typology of site usage.

3.4.2.5 Neighborhood Considerations

Through extensive involvement with the local neighborhood associations the newly proposed project addresses its neighborhood context and concerns. The massing along Boylston Street complies with the streetwall setback of fifteen feet, and also incorporates a 7’ setback along the residential Jersey Street streetwall, which is currently not required by zoning regulations. This gesture reduces the building’s potential floor area, which will be partly made up in the extra height that the building’s east tower is seeking. The proposed street on the east side of the site, allowing access and egress to and from the existing rear alleyway, also provides a break in the mega-block that the site occupies, which is almost 800’ long.

The project maintains a 20’ rear setback, where the adjacent Fenway 5-story residential structures abut it tightly, in fact, right to the actual alley easement line. The building’s exterior extends to the alley easement (an 8’ setback) only at the eastern side of the building, where existing neighbors are spaced farther from the site boundaries (Figure 3-53 - Sections 1 & 2). This encroachment is to make up some of the area lost due to the light slots, entry courts, and the Jersey Street setbacks, which serve to make the building narrower in profile horizontally, and varied in height along Boylston Street.

3.4.2.6 **Views and Vistas**

The existing site contains only an on-grade parking lot. The proposed project will create new vistas and views from all around the neighborhood. The new massing will focus views down Boylston Street from the west toward the Prudential Center area (See Figure 3-60 - Boylston St looking east).

Views from the higher roof garden and residential units will be panoramic, and take in Fenway Park, The arch of The Fens and the Museum of Fine Arts, the Prudential Center area, as well as the Riverway and Landmark Center area.

For additional perspective views of the project, reference section 3.5 - Historic and Archaeological Resources. For the daylight effect of the project, reference section 3.2.3 - Daylight.

3.4.3 Site Design

3.4.3.1 **Streetscape Design**

The improvements along the Boylston Street pedestrian way envisioned in the *Fenway - Longwood – Kenmore Transportation and Pedestrian Safety Action Plan* will be incorporated into the design of the sidewalks and the three lobby entrances to the building. (See Figure 3-48 - Site plan)

The pedestrian ways will be designed to city standards and will include street lighting and street trees and pockets, and possibly accent paving materials in zones parallel to the street edge to define the public/private edges. Features from the Fenway-Longwood-Kenmore plan will be incorporated, including a raised planter seat wall feature at Jersey Street and extended curb lines at the Jersey and Boylston Street intersection.

The building will be set back fifteen feet from the property line on Boylston St., to match the adjacent building streetwall lines, and the Article 66 zoning regulations. This will create a 23'-4" wide pedestrian way which will be divided roughly into the following zones:

- 7' tree pocket area
- 6' pedestrian way (5' of which will be an easement on the proponent's property)
- 10'-4" retail zone for potential sidewalk café seating, plantings at entrances and/or pedestrian travel

Along Jersey Street the building will be set back approx. 7 feet to align with the streetwall. This will provide a wide sidewalk for pedestrian access back into the neighborhood from Boylston St. It will allow pedestrians to circulate behind the existing bus stop shelter, instead of in front of it, as currently exists.

3.4.3.2 Open Space

The existing site contains only an on-grade parking lot. The proposed project will maintain a 15' setback along the 356' long Boylston Street façade, and a 7' setback along Jersey Street to support and improve the existing pedestrian ways around the site. In addition, the proposed 30' wide public street on the eastern side of the site will provide an additional vehicular and pedestrian amenity for rear alley and parking garage access.

Underlying zoning from Article 66 (Table E) requires 75 SF of open space per dwelling unit, or 15,825 SF. The proposed open space that the 1282 Boylston Street project will offer includes the setback areas on the first floor (grade) areas which total 16,464 SF, and the Fifth Floor roof garden areas of 8,402 SF, for a total open space area of 24,866 SF.

The pedestrian open space in the front of the building will help complete a nearly contiguous retail district from the Back Bay Fens on the west and east ends of Boylston Street. Roof garden views will include vistas over the tops of the Fenway-Kilmarnock neighborhood to the south, of The Fens and the Prudential Center to the east, and Kenmore Square and Fenway Park to the north/northeast.

3.4.3.3 Pedestrian Circulation

The *Fenway - Longwood – Kenmore Transportation and Pedestrian Safety Action Plan* commits to creating major improvements the to Boylston Street corridor. These improvements, which include turning lanes, bike lanes, tree pockets, raised seat wall planters, and intersection curb extensions at crosswalks will be incorporated and coordinated into the streetscape of the project as required or necessary.

These improvements, along with new landscaped entry areas will substantially green this rather dry and hot stretch of pavement, making it much more cool, secure, organized and friendly to pedestrian and retail users.

Along Jersey Street, the main connection back in to the Fenway neighborhood, the sidewalk will widen 7', as mentioned earlier in the Streetscape section. This improvement will allow pedestrians to avoid having to cross parking garage traffic as occurs on the opposite side of Jersey Street. This will greatly improve circulation around the rear of the existing bus shelter at Jersey and Boylston.

The newly proposed street access at the eastern end of the site will include a sidewalk for access to the rear alley, and parking garage access for the public as well, making the rear alley more open, well-lit, and secure for the users. It will substantially reduce the length of travel for the rear alley ingress and egress as well.

3.4.3.4 Vehicular Parking and Loading

1282 Boylston Street will sit atop a below-grade parking garage for 295 vehicles. The vehicular ingress and egress will occur off the proposed public street easement on the east end of the site. All east or westbound vehicles may enter the garage from Boylston Street to the project driveway. Vehicles leaving the site may egress to Boylston for eastbound travel, or through the rear alley to Jersey Street for west or south-bound travel. (See Figure 3-48 - Site plan)

Service vehicles for the site will access the service drive on the rear property setback from Jersey Street. A roll-over sidewalk curb is proposed to allow truck access, and egress will be via the proposed street on the eastern end of the site. A single loading bay will accommodate a WB-50 service vehicle (55' length). A screen wall will buffer the loading area from the adjacent residences to the south.

A portion of the curbline along Boylston Street will be designated as a loading zone for the building as well.

Reference section 3.1.4- Public Transportation for further information.

Figure 3-44 - Aerial photo

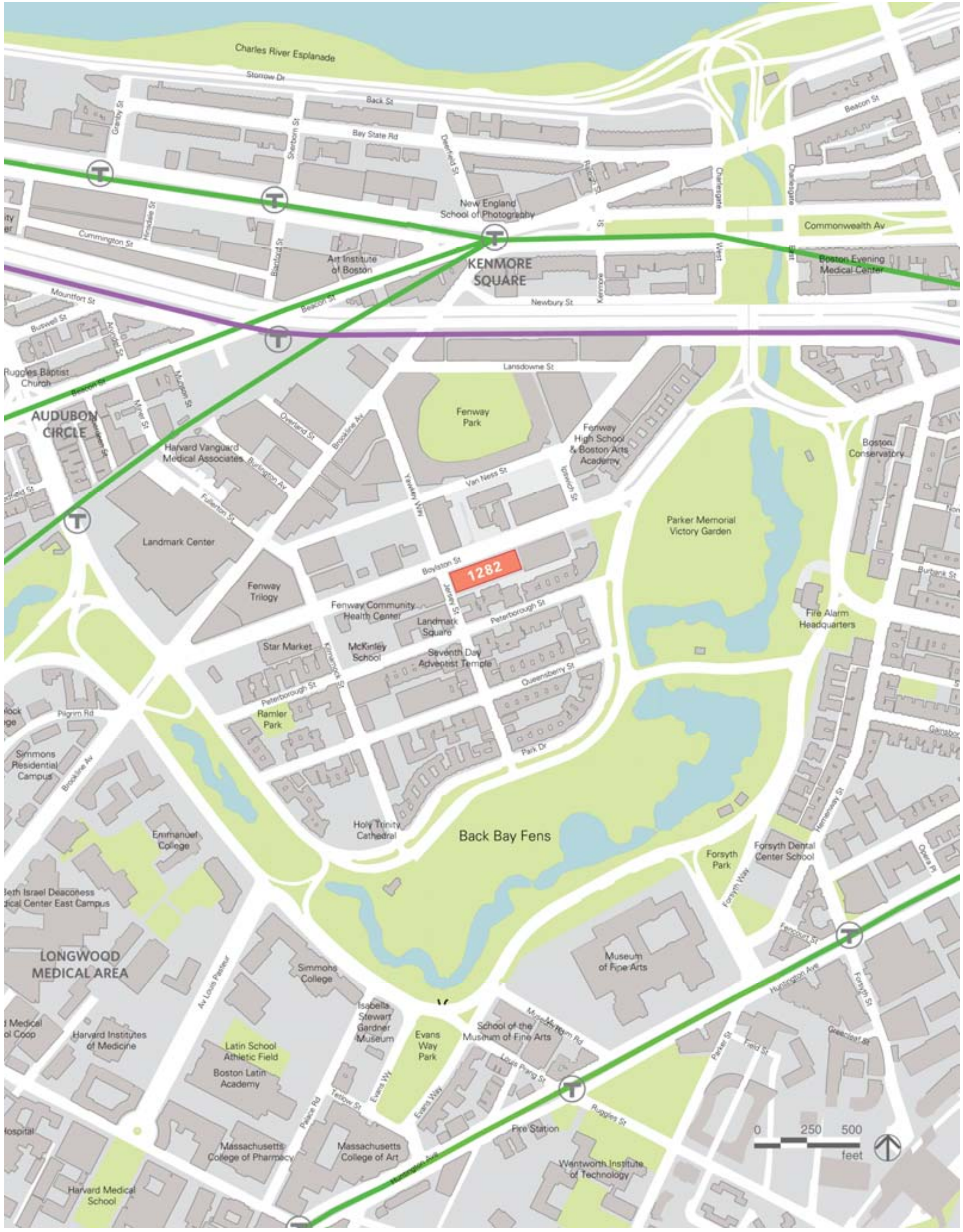


Figure 3-45 - Project locus map

Figure 3-46 - Building rendering of view from Boylston Street

Figure 3-47 - Boylston Streetscape Improvements

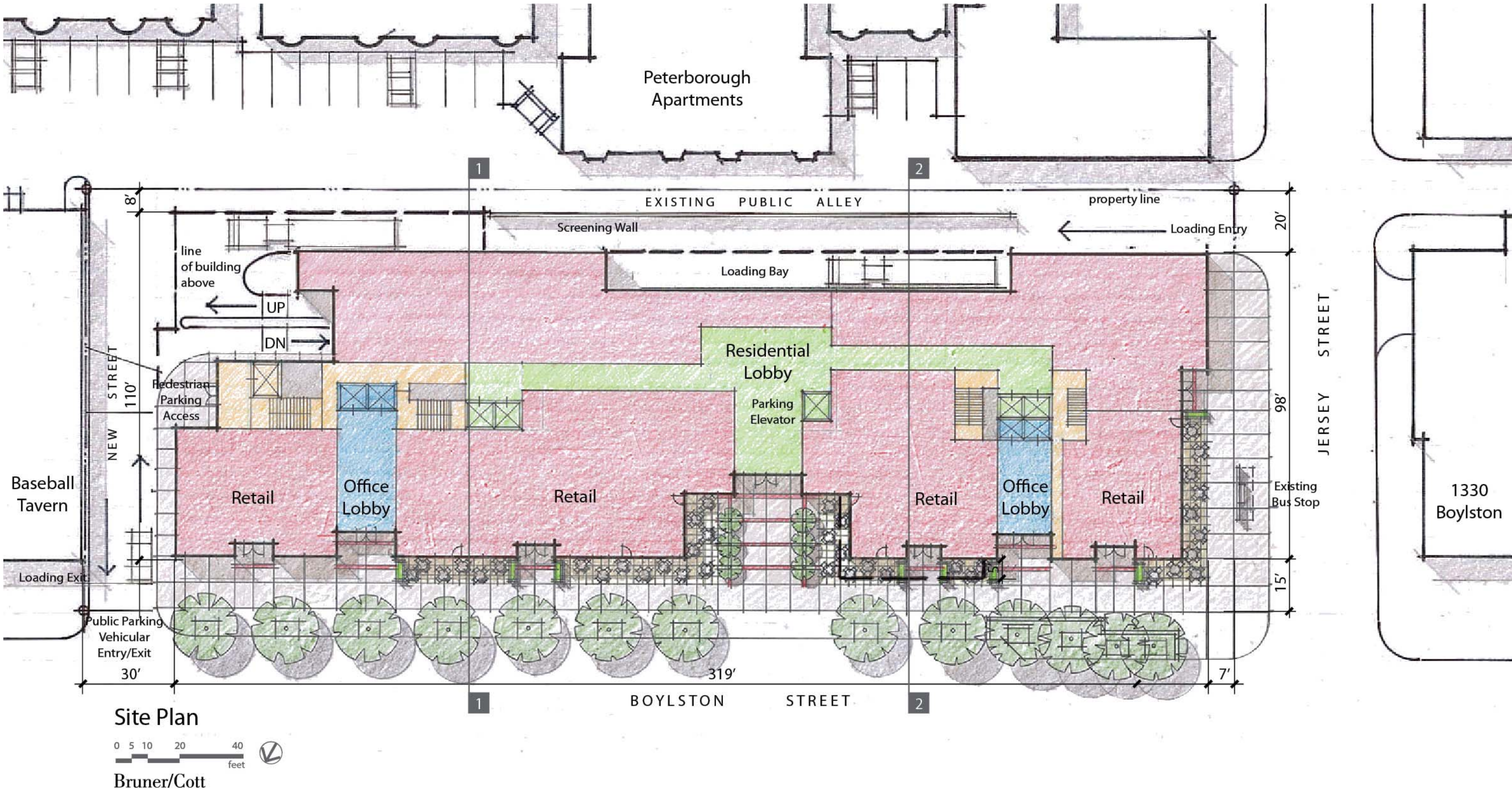
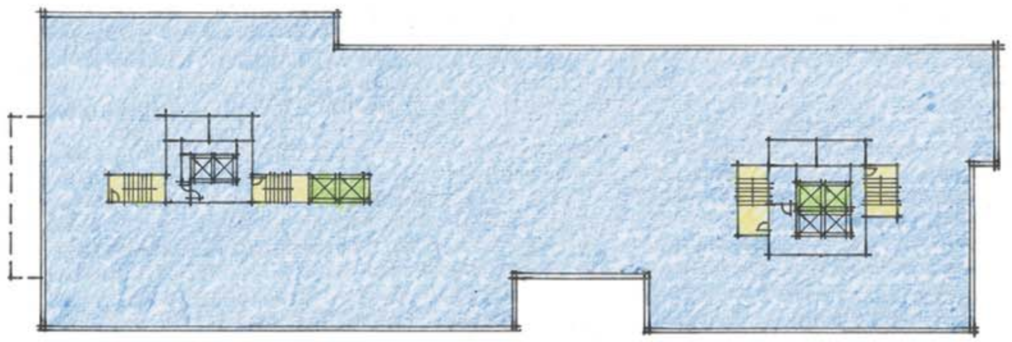
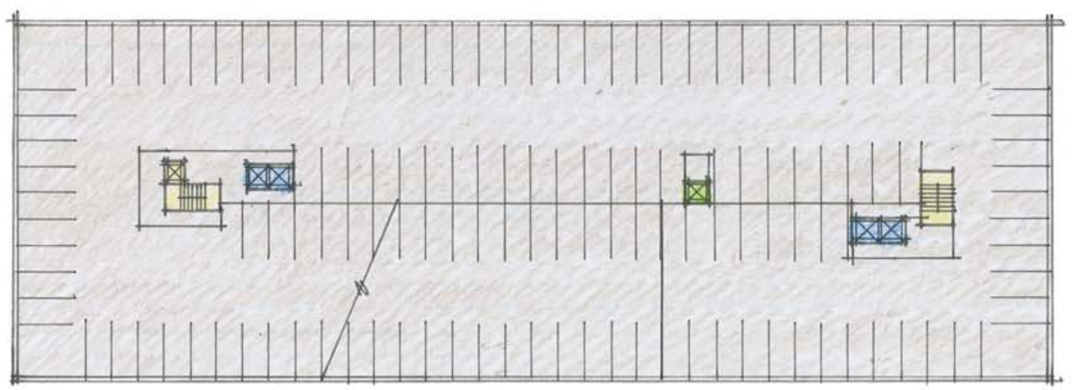


Figure 3-48 - Site plan

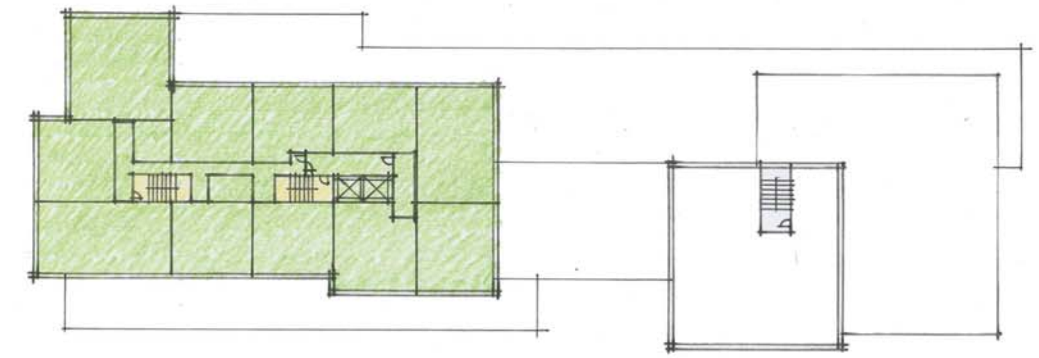


Office Plan (floors 2 - 4)

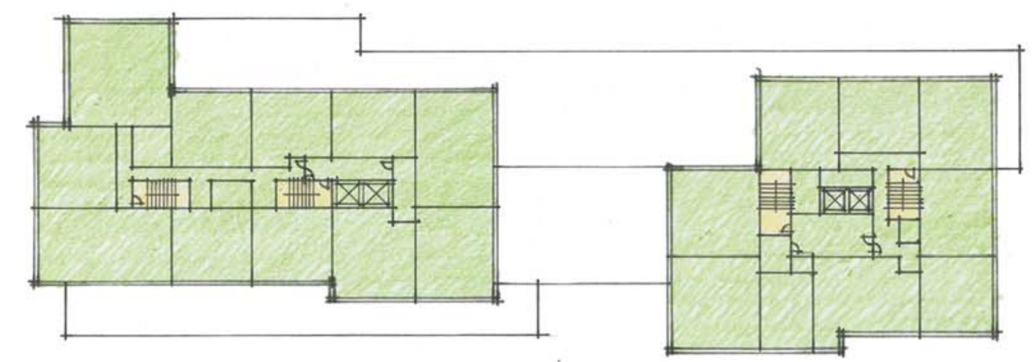


Parking Plan (floors P1 - P3)

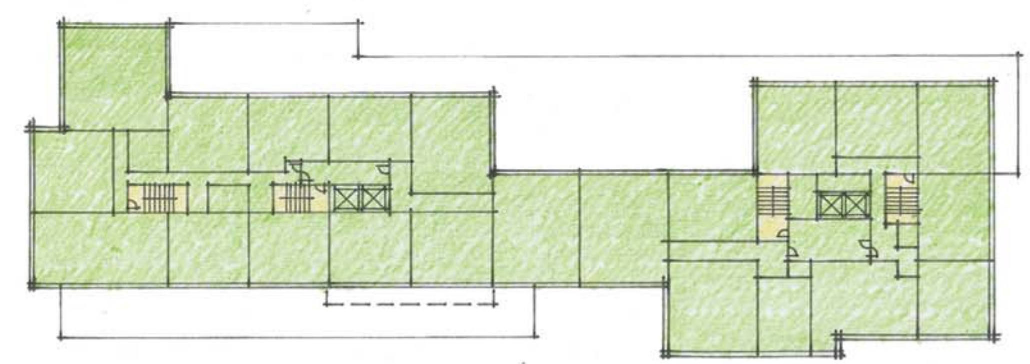
Bruner/Cott



Residential Plan (floors 13 - 16)



Residential Plan (floors 9 - 12)



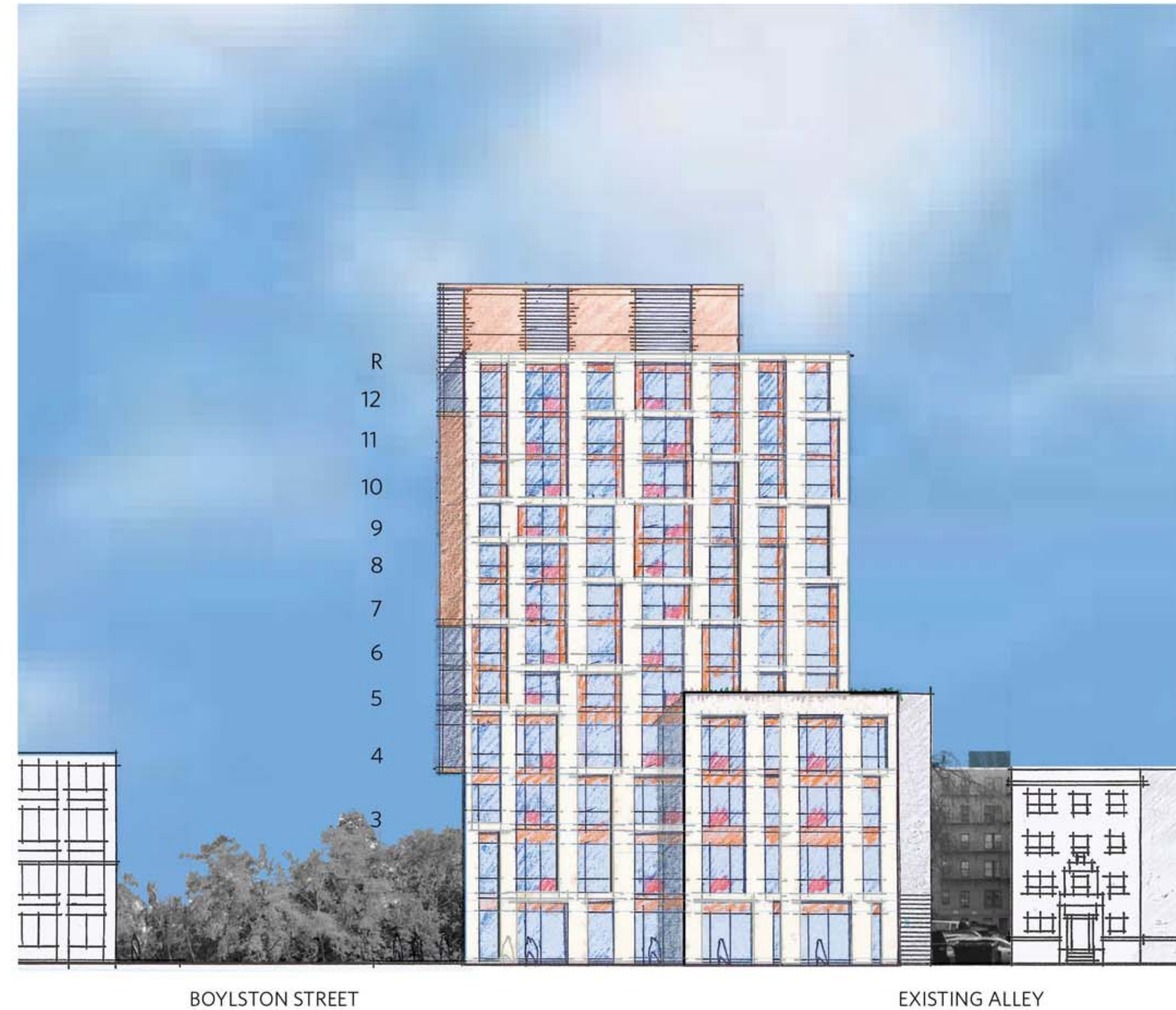
Residential Plan (floors 5 - 8)

Figure 3-49 - Floor plans

North Elevation (Boylston Street)

0 5 10 20 50
feet

Figure 3-50 - North elevation



East Elevation (New Street)

West Elevation (Jersey Street)

0 5 10 20 50
feet

Bruner/Cott

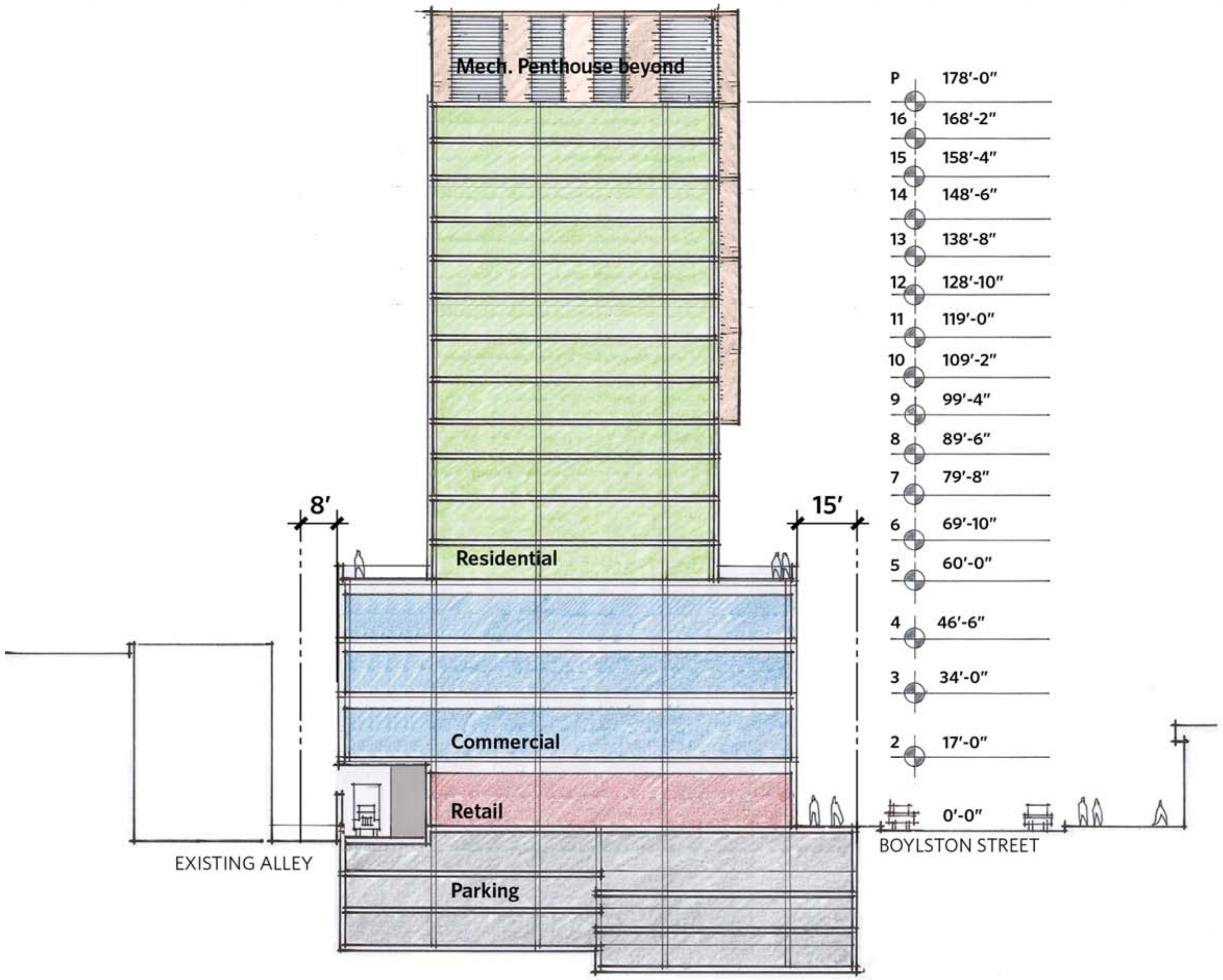
Figure 3-51 – East & West elevations

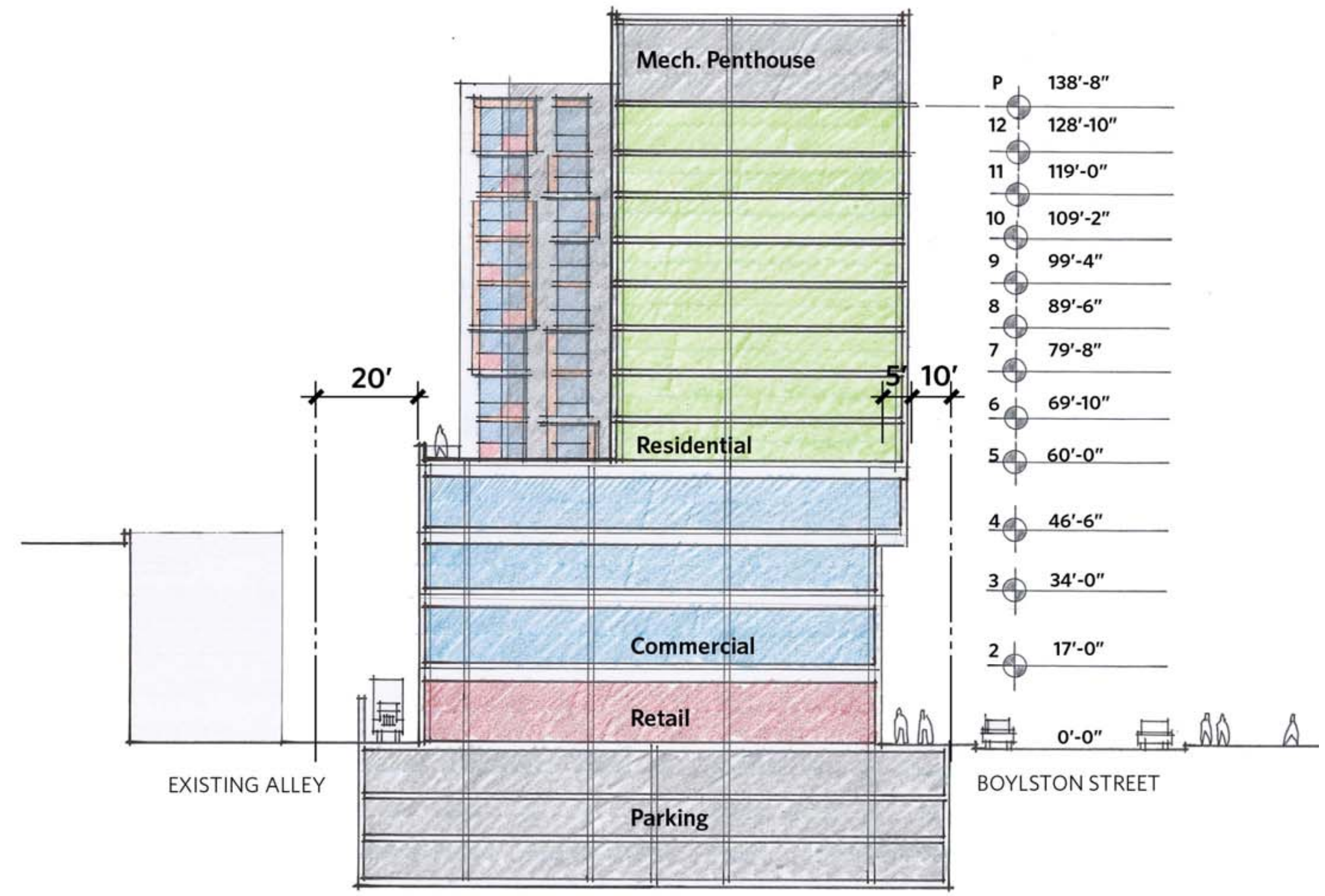
South Elevation (Existing Alley)

0 5 10 20 50
feet

Bruner/Cott

Figure 3-52 - South elevation





Section 1

Section 2

0 5 10 20 50
feet

Bruner/Cott

Figure 3-53 - Sections 1 & 2

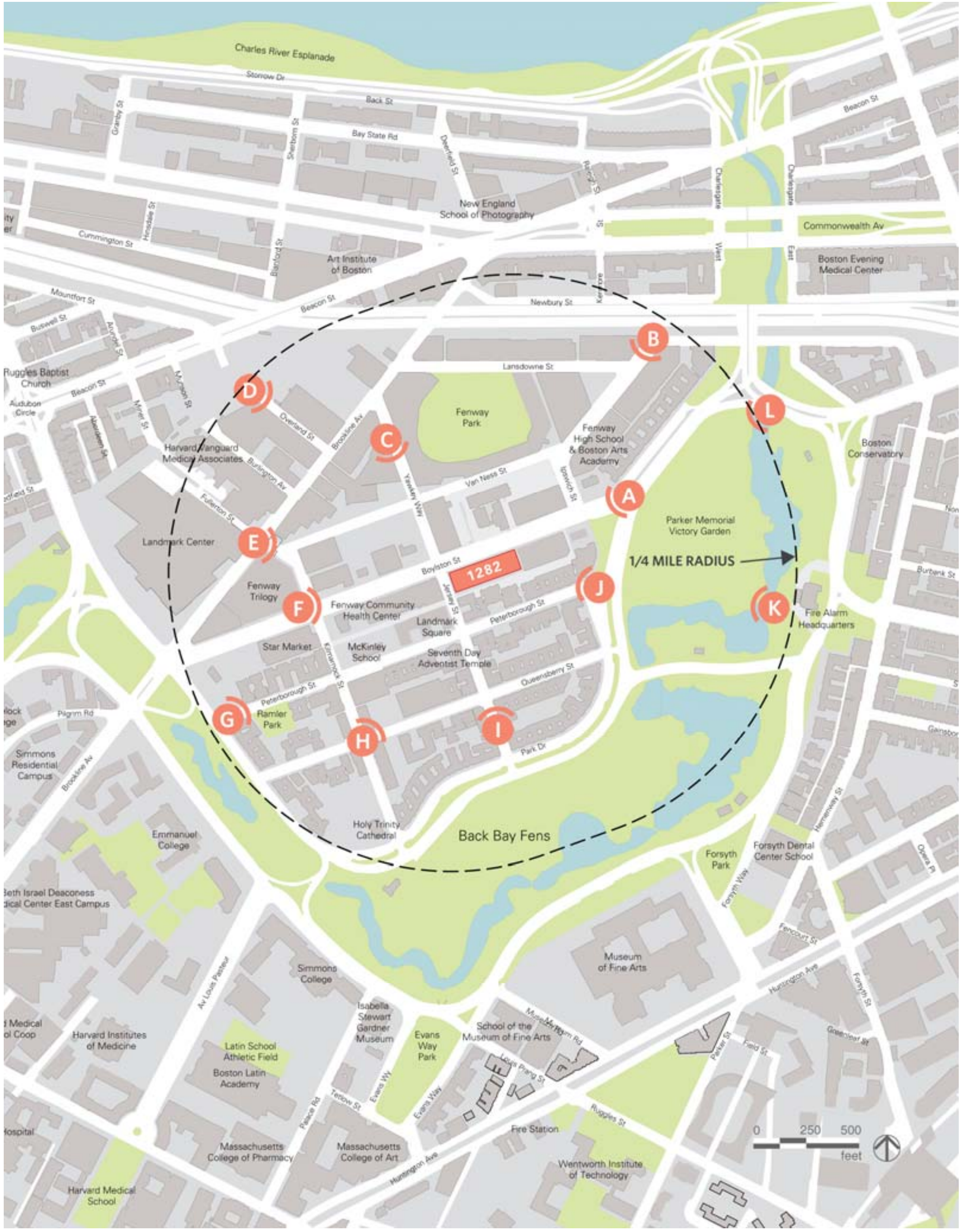


Figure 3-54 - View impact location map

Figure 3-55 - Boylston St looking west

Figure 3-56 - Ipswich St looking south

Figure 3-57 - Yawkey Way looking south

Figure 3-58 - Overland St looking east

Figure 3-59 - Kilmarnock St & Brookline Av looking east

Figure 3-60 - Boylston St looking east

Figure 3-61 - Peterborough St looking east

Figure 3-62 - Queensberry St & Kilmarnock St looking north

Figure 3-63 - Jersey St looking north

Figure 3-64 - Peterborough St & Park Dr looking west

Figure 3-65 - Fenway looking west

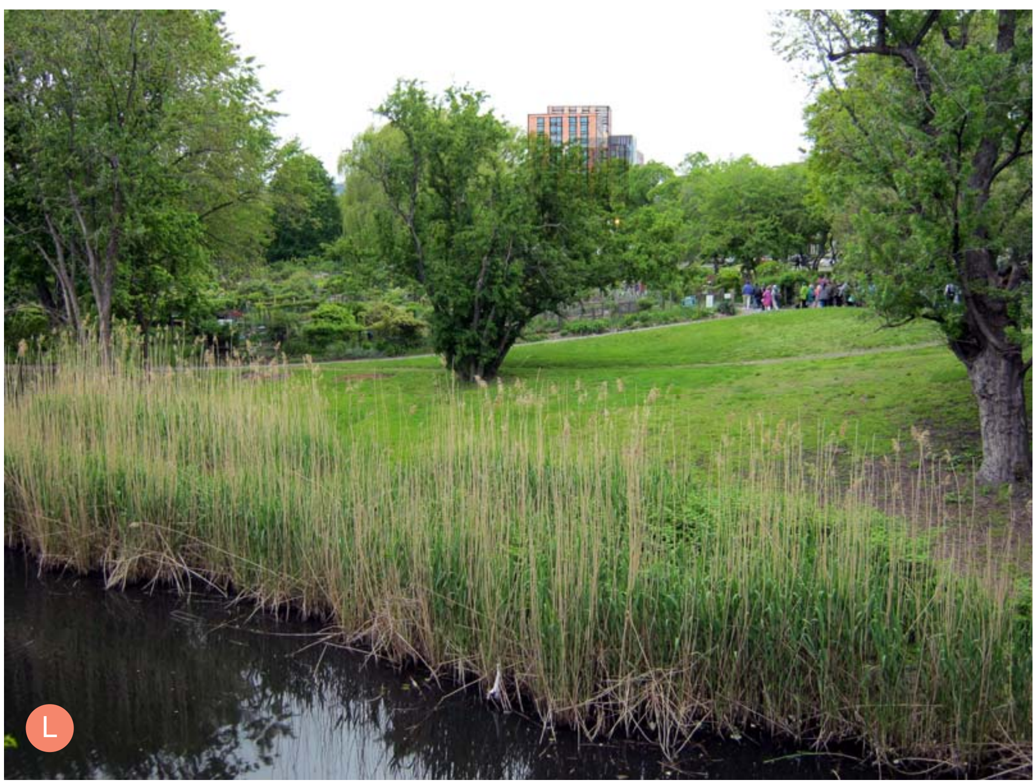


Figure 3-66 - Boylston St & Fenway looking west

3.5 Historic and Archaeological Resources

3.5.1 Archaeological Resources

According to the USGS archaeological map on file at the Massachusetts Historical Commission, there are no known or designated archaeological properties on the Project Site. According to the Bromley atlases 1888 - 1938, the west end of the property facing on Jersey Street was first developed between 1912 and 1922 with small one-story brick connected stores. Immediately to the east was an automobile service station, which also was built between 1912 and 1922. The most recent building on the site was a McDonald's. The site is currently vacant and paved.

3.5.2 Coordination of Historic Resource Reviews

3.5.2.1 Boston Landmarks Commission Article 80 Review

The Project will be subject to Large Project Review in accordance with Article 80 of the Boston Zoning Code and will include the evaluation of impacts to historic districts and structures, specifically properties shown on the map in Figure 3.5-1. The Boston Landmarks Commission will provide their comments to the BRA as part of the Article 80 comment process.

3.5.2.2 Massachusetts Historical Commission State Register Review

The Project Site has no known historic resources on the property. It is a paved lot with no buildings. Review of the Project by the Massachusetts Historical Commission (MHC) will be required in the event the project requires funding or permitting by a state agency (M.G.L. c. 9, ss. 26-27C as amended by St. 1988, c. 254). To initiate the process, a Project Notification Form will be submitted to the MHC. MHC will make a determination whether there are any impacts to State Register properties. In the event of a determination of adverse effect by MHC, the owner will begin a consultation process with MHC and other interested parties. As a result of consultation, a Memorandum of Agreement may be executed outlining stipulations to avoid or mitigate potential adverse effects of the project.

3.5.2.3 Massachusetts Environmental Policy Act

The Project does not involve demolition of any buildings. Review of the Project by the Massachusetts Historical Commission (MHC) under MEPA with respect to historic resources is not required in accordance with MEPA Regulation 301 CMR 11.03 (10) (b)1. In the event there is MEPA review for other issues, MHC will comment on the ENF or EIR pertaining to impacts on historic and archeological resources.

3.5.2.4 **Historic Resources**

This section identifies and briefly describes the historic resources located within 1/4 mile of 1282 Boylston Street. A thorough and comprehensive historic resources survey of the Fenway Neighborhood was completed in 1984 under the Boston Landmarks Commission and the BRA. It identified numerous historic individual properties and districts. While many of these are not yet listed as Local Landmarks or in the State or National Registers, those that were recommended for listing in the 1984 survey are listed here to provide an accurate context of the historic resources in the vicinity of the Project Site.

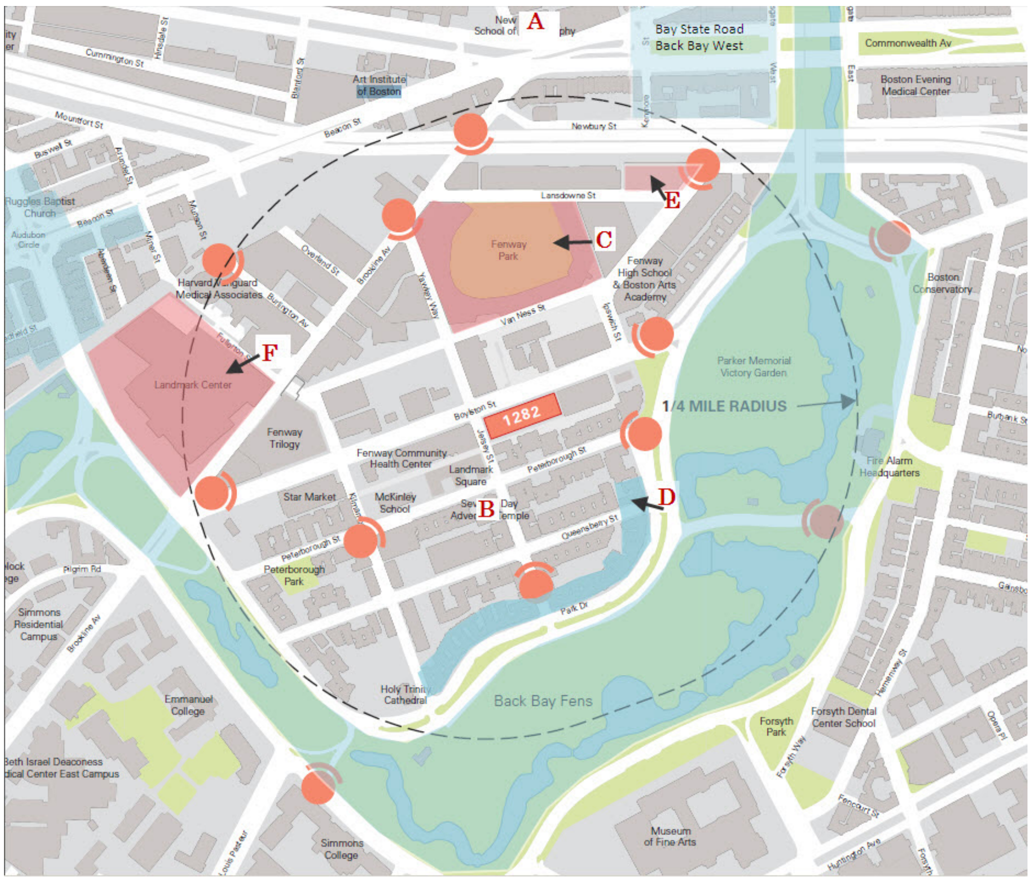


Figure 3-67 - Historic districts and properties

Historic Districts

Table 3-12 - Historic districts

District Name	Status/Recommendation*
Audubon Circle	Recommended for NR & ACD
Bay State Road - Back Bay West	11/08/1979; LL
Olmsted Park System	NRDIS 12/8/1971; Back Bay Fens LL 11/1/1983
Park Drive District	Recommended for NR & ACD

ACD – Architectural Conservation District LL – Local Landmark
NR – National Register Individual NRDIS – National Register District

Audubon Circle St. Mary's Street, Park Drive, Miner Street, Buswell Street

Anchored by the Ralph Adams Cram designed Second Church in Boston, the Audubon Circle district encompasses a variety of town-houses, three family row houses and apartment blocks dating from 1888 to ca. 1915, and ranging from three to five stories. A full complement of turn of the century styles are represented in the district with many buildings exhibiting a composite of styles including Queen Anne/Romanesque, Renaissance Revival, Georgian/Classical Revival, Jacobethan, and Romanesque/Georgian Revival. Audubon Circle contains excellent examples of work by several local architects, and Frederick Law Olmsted designed the plan for Audubon Circle and Beacon Street.

Bay State Road – Back Bay West Architectural Conservation District, Bay State Road

Closely allied with the Back Bay as a later phase of made land that first created the Back Bay, Bay State Road – Back Bay West is also similar in the scale and materials (red brick and stone) of the architecture. The original development of the district, which was primarily built in the short time span between 1895 and 1899, was restricted to residential use by agreement of the property owners. The district is characterized by good examples of late-19th century Revival Styles.

Fenway Park and John B. Smith Building *Brookline Ave, Yawkey Way, Van Ness Street & Lansdowne Street*

Built in 1912, Fenway Park is the nation's oldest operating major league baseball stadium. The home of Boston Red Sox for almost 100 years, and initially the largest ballpark in the major leagues, it is now among the smallest. Fenway Park retains its original tapestry brick, two-story facade, its single-deck grandstand (1912 and 1934), and general configuration of the original playing field. The adjacent Smith Building (1914), designed by noted architect Arthur H. Bowditch, is defined by a continuous street-level arcade of segmental-arched storefronts.

Designed by James E. McLaughlin, a Boston architect, and Osborne Engineering of Cleveland, Fenway Park was connected to the Smith Building through the party walls in 1948 and 1949. As a media headquarters housing radio and television broadcasting companies, the Smith Building was the site of the first simultaneous transmission of a radio and television in 1930. The media connection has created a strong association between the Smith Building and Fenway Park. Since the 1930s, the Smith Building also housed administrative offices, a ticket office and other spaces used by the Boston Red Sox.

Olmsted Park System Back Bay Fens, Muddy River, Boston & Brookline

Frederick Law Olmsted's park system (commonly referred to as the Emerald Necklace) was designed in the late 1870s to address the health hazards of the Back Bay marshlands while offering Bostonians a continuous open space that stretched from the historic Common to Franklin Park. It was Olmsted's belief that recreational parkland alleviated the deleterious effects of urban living and promoted democracy by offering all citizens the opportunity for sociable outings in a natural setting. The Back Bay Fens (1880s) were the first completed portion of the "Emerald Necklace," followed shortly thereafter by the artful re-channeling of the Muddy River between the Fenway and Jamaica Pond (ca. 1890). The resulting park was planted to mimic rural New England landscapes and included walkways, bridle paths, and carriage drives. The river was crossed by rustic bridges, including the Agassiz Bridge designed by John Charles Olmsted and built in 1888 and 1891. A cast stone field house and low stadium were built by architect William D. Austin in 1928 near the intersection of the Fenway and Park Drive. The Muddy River Restoration Project is being undertaken to restore landscape and historic structures within the parkland. Plans include reopening the waterway in the park immediately in front of Landmark Center.

Park Drive District Queensberry St., Park Drive and all parks facing the Back Bay Fens between Queensberry St. and Kilmarnock St.

Described in the Fenway survey report as having the “highest quality designs in the West Fens,” the Park Drive District consists of connected blocks that follow the serpentine curve of Park Drive and face the Back Bay Fens. Characterized by large apartment buildings and town houses built from 1899 - 1930, the district’s common features are the consistent four and five-story height, full-height projecting bays and classical ornament. It includes the home of Robert Treat Paine, Jr. designed by Charles K. Cummings as well as the work of Silverman, Brown and Hienan, George N. Jacobs and Theodore M. Clark exhibiting a blend of Second Empire, Queen Anne and Georgian Revival Styles.

Individual Properties

Table 3-13 - Individual properties

	Name	Address
A	Citgo Sign	660 Beacon Street
B	Church of Disciples	105 Jersey Street
C	Fenway Park & John B. Smith Building	24 Yawkey Way and 4 Yawkey Way
D	Robert Treat Paine, Jr. Hse	1 Queensbury Street
E	Park Riding School	145 - 151 Ipswich Street
F	Sears Roebuck & Co./ Landmark Center	Park Drive and Brookline Avenue

Citgo Sign

Representing a fine and rare example of a neon sign dating from 1965, the Citgo sign's lights were converted to LED in 2005. It continues to cycle through the original patterns of lights and represents a notable commercial display that is in part associated with the automobile-oriented era and with popular culture of the time. It is a prominent visual landmark in its location in Kenmore Square.

Church of Disciples

The Church of Disciples was built in 1905 to the design of James Purdon. The red brick building with cast stone and marble trim is a significant example of the Classical Revival Style and was one of the earliest built in the West Fens. The colossal Classical portico is the focal point of the façade and a tall central square brick tower rises above the two-story block behind the portico.

Fenway Park and John B. Smith Building *Brookline Ave, Yawkey Way, Van Ness Street & Lansdowne Street*

Built in 1912, Fenway Park is the nation's oldest operating major league baseball stadium. The home of Boston Red Sox for almost 100 years, and initially the largest ballpark in the major leagues, it is now among the smallest. Fenway Park retains its original tapestry brick, two-story facade, its single-deck grandstand (1912 and 1934), and general configuration of the original playing field. The adjacent Smith Building (1914), designed by noted architect Arthur H. Bowditch, is defined by a continuous street-level arcade of segmental-arched storefronts.

Designed by James E. McLaughlin, a Boston architect, and Osborne Engineering of Cleveland, Fenway Park was connected to the Smith Building through the party walls in 1948 and 1949. As a media headquarters housing radio and television broadcasting companies, the Smith Building was the site of the first simultaneous transmission of a radio and television in 1930. The media connection has created a strong association between the Smith Building and Fenway Park. Since the 1930s, the Smith Building also housed administrative offices, a ticket office and other spaces used by the Boston Red Sox.

Landmark Center/Sears Roebuck & Company Mail Order Store

Built as the Sears Roebuck & Company Mail Order Store (Sears Building) in 1928, Landmark Center was designed by George C. Nimmons, a prolific architect and author. The building commands the corner of Park Drive and Brookline Avenue. Designed in the Art Deco Style, the buff brick building is enriched with intricately carved limestone detail. The focal point of the façade is a stepped 12-story tower rising above the main 8-story block. The main building was constructed in sections between 1928 and 1930 with later additions.

The Sears Building is significant for its association with the development of the Fenway area of Boston, and for its association with the Sears Company, representing a period of changing consumer habits and method of purchasing (by mail order). It is also an excellent example of the work of George C. Nimmons and a rare example of Art Deco architecture in Boston.

Park Riding School

Built by successful real estate speculator Eban Jordan, the red brick building was designed by the prominent Boston firm of Wheelwright and Haven in the Queen Anne/Classical Revival Style. The north and south elevations are distinguished by an arcade of two-story-tall round arched windows at the upper portion of the walls. Its tall gable roof shelters the main body of the building, and a flat roof shelters the northeast corner.

Robert Treat Paine, Jr. House

Built in 1899 – 1901, the red brick Georgian Revival Residence is said to be the oldest building in the West Fens. Architect Charles K. Cummings designed the building, which exemplifies the original intention for Park Drive to be lined with substantial townhouses. The impressive residence on the corner of Queensbury Street and Park Drive is surrounded by apartment blocks.

3.6 Infrastructure Systems

The following sections describe the existing water, sewer, and drainage systems surrounding the site and explain how these systems will service the Project.

3.6.1 Sewage System

3.6.1.1 Existing Conditions

Currently, the Boston Water and Sewer Commission (BWSC) maintains a 32x42-inch sanitary sewer Boylston Street and an 18-inch sanitary sewer in Jersey Street. The BWSC lines connect to the Massachusetts Water Resource Authority ("MWRA") system and ultimately discharge into the Deer Island Treatment Facility. An analysis was done on both sewer lines to determine their capacity. It was determined that the 32x42-inch pipe has the capacity to handle approximately 17.1 million gallons per day flow at full capacity and the 18-inch has the capacity to handle approximately 3.2 million gallons per day flow at full capacity.

3.6.1.2 Proposed Sewage Generation

The Project's sewage generation rates were estimated using Massachusetts State Environmental Code (Title 5) at 310 CMR 15.203. This reference lists typical generation values for the sources listed in Table 3-6. Other wastewater generation includes the cooling system. As shown in Table 3-6, the Project will have average daily flows of approximately 58,155 gpd of sanitary sewage.

Table 3-14 – Sewage Generation

Use	Number	Sewage Generation Rate	Total gpd
Residential	329 bedrooms	110 gpd/bedroom	36,190
Retail	10,100 SF	50 gpd/1,000 SF	505
Restaurant	400 Seats	35 gpd/seat	14,000
Office	99,461 SF	75 gpd/1,000 SF	7,460
Total			58,155 gpd

3.6.1.3 System Connections

The construction of all connections will be performed so as to minimize any effects on adjacent streets and to ensure that adequate facilities are available to service the Site and surrounding area during construction. It should be noted that these water flows will be kept separate from all storm drain service connections. All appropriate permits and approvals will be obtained prior to construction.

3.6.2 Water Supply System

3.6.2.1 Existing Conditions

BWSC maintains a 16-inch diameter southern low water main within Boylston Street and a 12-inch southern low water main in Jersey Street immediately adjacent to the site. These mains are connected. There are no capacity issues expected for serving the Project with water from the city system. A test will be requested on hydrants adjacent to the site to determine existing flows. The project requires two fire service connections to meet the new code requirements.

3.6.2.2 Proposed Water System

The Project's water demand estimates for domestic sources are based on the Project's estimated sewage generation. A conservative factor of 1.1 is applied to the average daily wastewater flows. This factor accounts for consumption and other miscellaneous losses. Therefore, it is estimated that the proposed Project will consume 63,971 gpd of domestic water. The water will be supplied by the BWSC.

3.6.3 Stormwater System

3.6.3.1 Existing Conditions

Currently, the site is occupied by a bituminous concrete parking area with a stormwater collection system.

3.6.3.2 Proposed Stormwater System

BWSC currently maintains an 18-inch storm drain within Boylston Street and a 42-inch storm drain in Jersey Street. Connections to one or both of these mains will be investigated as part of this project.

*TAG *Projects that exceed 50,000 gpd of sanitary sewer flow will more than likely trigger Infiltation/Inflow (I:I)separation with DEP. Review paragraph below and advise if you would like to include.*

The BWSC and the Department of Environmental Protection are attempting to separate stormwater and wastewater over time to prevent flooding of the system resulting in periodic overflows of combined sewer and stormwater into receiving waters. The Project will work with these two offices to help with the separation of stormwater and wastewater.

As the existing site consists largely of a paved parking area, the development of the Project will result in essentially the same amount of impervious surface area. The project is located within the City of Boston's Groundwater Conservation Overlay District and will be capturing and recharging one-inch of rainfall over new impervious services as required. Thereby, a reduction in the rate and volume of stormwater discharge leaving the site will result.

This project is proposing a three-level underground parking garage containing 295 spaces. An oil water separator will be installed to collect and treat runoff from this garage prior to discharging to the city system. This system will connect to the sanitary sewer system.

The water quality of the stormwater discharge will also be improved by replacing stormwater runoff from a bituminous concrete parking lot with clean runoff from a new rooftop.

All proposed connections to the Commission's water, sanitary sewer, and storm drain system will be designed in conformance with the Commission's design standards, Sewer Use and Water Distribution System Regulations, and Requirements for Site Plans. The proponent will submit a General Service Applicant and a site plan for review and approval prior to construction. The site plan will indicate the existing and proposed water mains, sanitary sewers, storm sewers, telephone, gas, electric, steam, and cable television. The plan will include the disconnections of the existing services as well as the proposed connections.

3.6.4 Energy & Telecommunications

Proposed Electrical Distribution System

1282 Boylston Street will be provided with power from the existing NSTAR 13.8 kV radial service in Boylston Street. The 13.8 kV feeders will be routed to an interior transformer vault located at the upper garage level where two transformers each rated at 2,500 kVA will transformer 13.8 kV to 480V/277V, 3 phase, 4 wire service for use in the building.

Individual utility company metering will be provided for each retail tenant, office tenant and residential unit.

Emergency Power System

Emergency power for the building will be provided for life safety and legally required standby power in accordance with the building code requirements. A new 750-1000 kW diesel driven generator set with fuel tank and fuel transfer system located in a dedicated room at the lowest level of the building in the structured parking. The generator would provide 480/277 volt, three-phase, four-wire power and shall start automatically in the event of a power outage and provide life safety loads with emergency power within 10 seconds of utility outage. The generator will be located outdoors within a screened enclosure at the high roof of the building in a "walk-in" type acoustical enclosure which will provide sound attenuation and provide for maintenance access.

Telecommunications Systems

Verizon provides telephone and data services in the project area. The project will be provided with multiple input connections to provide service for retail, office and residential components. The building will be provided with Voice, Data and Television signal for use throughout the building. The building will be capable of accepting service from multiple providers for the proposed building services.

3.6.5 Natural Gas

The building will be provided with natural gas from the existing infrastructure in Boylston Street to provide building heating and domestic hot water. During the design of the project the loads will be coordinated by the engineering team with the gas provider to coordinate the size of the gas service to the project. A meter will be located in a gas meter room within the building at the upper garage level to provide service for the project. Estimated peak demands for gas are as follows:

Building Heating	7,500 MBH
Domestic Hot Water	5,000 MBH
Future Restaurant (s)	2,000 MBH
Total Building Load	14,500 MBH

4 Coordination With Other Government Agencies

4.1 Massachusetts Environmental Policy Act

It is not anticipated that an Environmental Notification Form (ENF) will be required as part of this project submission.

4.2 Massachusetts Historical Commission

As stated above in section 3.5.2.2, review of the Project by the Massachusetts Historical Commission (MHC) would be required in the event the project required funding or permitting by a state agency (M.G.L. c. 9, ss. 26-27C as amended by St. 1988, c. 254). If MHC review was determined to be required, a Project Notification Form would be submitted to initiate the process.

4.3 Boston Landmarks Commission

As stated above in section 3.5.2.1, The Project will be subject to Large Project Review in accordance with Article 80 of the Boston Zoning Code and will include the evaluation of impacts to historic districts and structures, specifically properties shown on the map in Figure 3.5-1. The Boston Landmarks Commission will provide their comments to the BRA as part of the Article 80 comment process.

4.4 Architectural Access Board Requirements

All components of the project design will comply with the requirements and regulations of the Architectural Access Board as well as the ADA (Americans with Disabilities Act).

4.5 Boston Civic Design Commission

As part of the Article 80 approval process, the BRA will submit a copy of this Project Notification Form to the BCDC for review.

4.6 Anticipated Permits and Approvals

Agency Name	Permit / Approval
FEDERAL	
United States Environmental Protection Agency	NPDES General Permit for Discharge from Small Construction Activity
STATE	
Executive Office of Environmental Affairs (MEPA Unit)	Secretary's Certificate (if required)
Department of Environmental Protection, Division of Water Pollution Control	Sewer Connection (if required) or Sewer Connection Self-Certification
Division of Air Quality Control Air Plan Approval	Pre-construction Notice
Massachusetts Water Resources Authority	Sewer Use Discharge Permit; Construction Dewatering Permit (if required
Massachusetts Historical Commission	Project Notification Form (if required)
LOCAL	
Boston Air Pollution Control Commission	Parking Freeze Permit (if required)
Boston Civic Design Commission	Review and Approval
Boston Redevelopment Authority	Article 80B Large Project Review; Article 80C Planned Development Area Review

Boston Transportation Department	Transportation Access Plan Agreement (TAPA) Construction Management Plan
Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Construction Dewatering Permit
City of Boston Committee on Licenses	Parking Garage Permit, License for Storage of Inflammables (in tanks of vehicles)
Boston Fire Department	Fuel Storage License
Boston Public Improvement Commission / Department of Public Works	Layout of private way (open to public travel), Street and Sidewalk Occupation Permits; Tieback/Earth Retention Permit (if required); Specific Repair Plan; License for installation of groundwater monitoring (if required)
Boston Zoning Commission	Planned Development Area Approval; Zoning Code Amendment

*This is a preliminary list based on the current information for the Proposed Project. It is possible that not all of the above-listed approvals will be required or additional permits or approvals may be required.

4.7 Community Outreach

The Proponent has held several meetings with community groups and abutters to the project site. Response to the proposed development and its various public benefits has been very positive.

5 Project Certification

5.1 Project Certification

This report is being submitted to the Boston Redevelopment Authority as required by Article 80 of the Boston Zoning Code.

Signature of Proponent

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Signature of Preparer

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A Wind Study Report

Alan G. Davenport Wind Engineering Group

A STUDY OF WIND EFFECTS FOR

1282 Boylston Street
Boston, MA

D. Garnham / P. Case

General Information, Pedestrian Level Wind Environment
BLWT-SS13-2011 / May 2011

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Western

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ACKNOWLEDGEMENTS

The study of wind effects for the 1282 Boylston Street project was initiated by Mr. William Keravuori of The Abbey Group His co-operation and continued interest has been greatly appreciated. The contributions of Mr. Robert B. Simmons of Bruner/Cott are also gratefully acknowledged.

Acknowledgment is also made of the contributions by various members of the technical staff of the Laboratory, particularly: Messrs. Ryan Geoghegan and Gerry Dafoe who carried out the experimental phases of the study and constructed the models.

SUMMARY AND MAIN FINDINGS

This report on the study of wind action on the 1282 Boylston Street project in Boston provides information on pedestrian-level wind speeds in areas around the site.

Figure 1 provides some elevation and plan views along with some typical dimensions of the project.

Rigid models of the three proposed building schemes for the new 1282 Boylston Street tower were designed and instrumented for pedestrian level wind speed measurements at 34 locations around the project area. They were tested in turbulent boundary layer flow conditions for 36 wind angles; the existing bare site was also tested. Figure 4 shows close-up views of the pedestrian level wind speed models.

Winds in the Boston area are associated with two basic types of weather systems: hurricane and non-hurricane winds. For non-hurricane winds, a design probability distribution of upper level (500 m) wind speed and direction has been developed for the area on the basis of full scale meteorological records from Logan International Airport. For hurricane winds, a simulation technique is used, involving thousands of simulated hurricanes matching the characteristics of actual recorded hurricanes that have been felt in Boston. For evaluation of pedestrian level winds, only non-hurricane winds are considered, as is typical of pedestrian level wind speed studies. Predictions are made using the “upcrossing” method, see Reference 1.

The highlights and main findings of this study are as follows:

Wind Climate

- The ASCE 7-05 design wind speed for Boston is about 108 mph (48 m/s) at 33 feet in open country terrain. This wind speed is derived from 500 year hurricane wind speed contours divided by √1.5. Therefore, this wind speed corresponds to a 500 year 3-sec gust speed of 132 mph (59 m/s), which in turn corresponds to a 500 year mean hourly wind speed of about 87 mph at 33 feet in open country. The BLWTL combined wind climate model agrees well with this value, see Figure 2a.
- For evaluation of pedestrian wind speeds only extratropical winds are considered. The 1 year mean wind hourly speed at 33 feet in open country terrain is about 49 mph (22 m/s). For the analysis of the wind tunnel data the design wind speed at 10m is converted to an upper level wind speed. Predictions of mean hourly wind speeds at the 500 m reference height for various return periods are shown in Figure 2b. The predicted 1 and 50 year mean recurrence interval mean hourly wind speeds at a height of 500m are about 87 and 118 mph respectively.
- The directional characteristics associated with the wind climate model are shown in Figure 3 for various return periods. It can be seen that for common winds, westerly directions are the most important, for strong winds easterly directions are most important.

Pedestrian Wind Environment

- Figure 11 shows the locations where pedestrian-level wind speeds were measured. Measurements were made for 4 configurations of the surroundings, namely, the existing (bare site) condition and the 3 future conditions, one for each of the proposed building schemes. The future conditions include the new 1282 Boylston Street development while all other surrounding buildings remain the same as in the existing condition.
- Experimental results have been combined with the extratropical wind climate to provide predictions of the wind speeds expected to be exceeded for 1% and 5% of the time and those expected to be exceeded once per year. The 5% predictions can be compared directly with acceptance criteria for pedestrian comfort and safety, respectively. The wind speeds expected to be exceeded once per annum are used to evaluate pedestrian safety.

- Mean wind speeds exceeded 1% of the time are provided as per client's initial specifications, and can be found in Tables 1, 2, 3 and 4 for the bare site and model 1, 2 and 3 configurations, respectively. Similarly, peak wind speeds exceeded 1% of the time can be found in Tables 5, 6, 7 and 8 for the bare site and model 1, 2 and 3 configurations, respectively. The wind speeds in these tables are presented on both an annual and seasonal basis.
- Figures 12 through 15 show the predicted wind speeds at the various locations along with the criteria for pedestrian comfort and safety for the four configurations tested. For comparison, predictions for typical suburban and open country areas are also shown.
- Locations 8 and 9 exceed the fair-weather criteron for the existing bare site condition. Locations 6 and 9 fail to meet this criterion for each of the three tested future building options. At location 9, the number of exceedances per annum of the fair-weather criteria increases slightly from 1 to 2 between the bare site and future configurations. Location 8 shows an appreciable improvement as a result of the future development; this is due largely to the prevailing westerly to north-westerly winds being redirected around the proposed development. However, the re-direction of these winds for the future developed conditions does have a lesser desirable impact on the wind conditions near the southwest corner of project site (locations 3, 4, 5 and 6).
- Locations 3, 4, 5, 8, 13 and 27 fail to meet the criteria for an all-weather area, for each of the future building configurations, with locations 14 and 20 also exceeding the criteria for the model 1 configuration. Locations 6, 10, 26 and 27 exceed the all-weather criteria for the current bare site configuration.
- With respect to pedestrian comfort the following observations have been made:

Probe Locations	**Comments / Observations**
2, 11, 12, 16, 21, 23, 24, 28, 32, 33 and 34	Wind speeds are moderate for all conditions - suitable for standing or sitting.
1, 5, 19 and 31	Wind speeds are suitable for leisurely walking. May be uncomfortable for sitting or standing.
22 and 25	Wind speeds are suitable for leisurely walking for the existing condition and for sitting for the future conditions. The wind speeds at these locations decrease for the future condition.
7, 13, 14, 15, 17, 18, 20, 27, 29 and 30	Wind speeds are suitable for sitting for the existing condition and for walking for the future conditions. The wind speeds at these locations increase from the existing to the future condition.
6	Wind speeds are suitable for fast walking for the bare site condition; may be uncomfortable for sitting or standing. This location increases to a category C1+ for all three future configurations.
26	Wind speeds are suitable for fast walking but may be uncomfortable for sitting or standing for the bare site configuration. This location is suitable for leisurely walking in all three future conditions.
3 and 4	Wind speeds are suitable for leisurely walking for the bare site condition and are suitable for fast walking for the future configurations.

9	Wind speeds exceed the criteria at a category C1+ for all four configurations.
8 and 10	Wind speeds exceed the criteria at a category C1+ for the bare site, conditions improve and are suitable for walking in the all three future configurations.
32, 33 and 34 which are located in Fenway Park	These locations show negligible difference in wind speed for all configurations tested. Wind speeds are moderate for all conditions - suitable for standing or sitting.

- Figures 16 and 17 provide colour coded diagrams which summarize the suitability of each measurement location with respect to pedestrian level safety and comfort respectively. The comfort and safety categories used in these figures correspond to those summarized in Table 9.
- Compared to the annual wind speeds presented above, wind speeds during the winter months are about 52% higher, in summer and autumn they are about 18% and 5% lower respectively, and in spring they are about 5% higher.

Notes

- Predictions for an R-year return period (mean recurrence interval of R years) represent levels which are expected to occur *on average* once in R years. For reference, the risk of exceeding an R-year return period load in a design life of L years is $1-(1-1/R)^L$. Thus, for example, the risk of exceeding a 50 year load in a design lifetime of 50 years is about 64%, whereas the risk of exceeding a 1000 year load in a 50 year design life is about 5%.
- The predictions in this report are best estimates and **have not been factored** in any way. For instance, no load factors, such as those typically required by building codes, have been applied.

DETAILS OF THE STUDY

Project Name:	The 1282 Boylston Street Project
Project Location:	At the intersection of Boylston Street and Yawkey Way in the Fenway District of Boston.
Project Description:	The proposed 1282 Boylston Street buildings range in total height from 168' to 196'. The overall plan dimensions of the tower, as shown in Figure 1 for all three models, are about 110' wide and range in length from 326' to 356' to 375'.
Test Dates:	Pedestrian Level Wind Speeds – May 2011

Report Scope and Format:

The results presented in this report include the following components:

1. The full-scale wind climate in order to determine the strength and directionality of the wind;
2. experimental wind tunnel measurements to determine the aerodynamic data relevant to this project.

The combination of (1) and (2) provide statistical predictions of wind speeds for various return periods. These predictions are obtained by summing the contributions to the probability from all wind directions. The report is then organized as follows:

Section 1 – The wind climate for Boston
Section 2 – The modelling of the site and the wind
Section 3 – The determination of pedestrian-level wind speeds

General Reference:

Discussion and details of the general methodology used by the Alan G. Davenport Wind Engineering Group can be found in “Wind Tunnel Testing – A General Outline” (Reference 1).

1 THE WIND CLIMATE FOR BOSTON

1.1 Meteorological Data

- In addition to synoptic extratropical winds, which are of primary significance to the evaluation of pedestrian level wind speeds, strong winds in the Boston area are associated with tropical cyclones originating in the Atlantic Ocean. In North America, severe tropical cyclones, for which sustained one minute wind speeds at 10m above water exceed 64 knots (about 74 mph), are referred to as hurricanes. A complete statistical wind climate for strong winds in Boston requires a probability distribution of wind speed and wind direction from a hurricane wind climate model, the development of which is detailed below.
- The statistical wind climate model for Boston comprises the combined effect of two complementary probability distributions of wind speed and direction:
    1. The first represents the non-hurricane or extra-tropical winds and has been derived from available surface hourly wind speed and direction data, recorded at the Logan International Airport for the period from 1964 to 2006. Readings associated with hurricanes have been excluded from the record.
    2. The second wind climate model was obtained from a hurricane simulation study for Boston. It employs an updated version of ARA's HURSIM hurricane simulation code (References 2-4), which is the same model used to define the design wind speeds given in ASCE 7-05.
        i. The wind field model used in the computer code has been extensively validated for surface level winds at both coastal and inland stations. The uncertainties associated with the prediction of hurricane wind speeds resulting from the use of the original HURSIM model are discussed in Reference 5 for the Miami area. The results of the uncertainty study suggest that the coefficient of variation of the predicted surface level wind speeds in the Miami area is in the range of 9% to 11% and this uncertainty increases with increasing return periods.
        ii. Predictions of wind speed vs. return period are given for reference height (500 m) winds and are based upon a simulation of 100,000 years of storms passing within 250 km of Boston. For storms within the 250 km limit, wind speeds and directions are computed every 10 minutes.
        iii. Predicted wind speeds at the site have been derived using the conditional wind speed exceedence probabilities obtained by rank ordering the simulated maximum wind speeds resulting from the simulation of the 100,000 years of storms. An interpolation technique is then used to obtain wind speed exceedence probabilities.

1.2 Statistical Wind Climate Model

- The ASCE 7-05 design wind speed for Boston is about 108 mph (48 m/s) (108 mph) at 33 feet in open country terrain. This wind speed is derived from 500 year hurricane wind speed contours divided by $\sqrt{1.5}$. Therefore, this wind speed corresponds to a 500 year 3-sec gust speed of 132 mph (59 m/s), which in turn corresponds to a 500 year mean hourly wind speed of about 87 mph (39 m/s) in open country. The predicted extreme mean hourly wind speeds for various recurrence intervals at a height of 33 feet (10m) are shown in Figure 2a, along with the 108 mph (ASCE 7-05) requirement.
- For evaluation of pedestrian wind speeds only extratropical winds are considered. The 1 year mean wind hourly speed at 33 feet in open country terrain is about 49 mph (22 m/s). For the analysis of the wind tunnel data the wind speeds at 10m are converted to upper level wind speeds using a standard ESDU open exposure profile. Predictions of mean hourly wind speeds at the 500m upper level reference height for various return periods are shown in Figure 2b. The

predicted 1 year and 50 year mean recurrence interval mean hourly wind speeds at a height of 500m are about 87 and 118 mph, respectively.

- The design probability distribution of mean-hourly wind speed and wind direction at reference height is shown in Appendix A for the extratropical wind climate model. Both annual and seasonal distributions are shown.

- Directional characteristics of winds, accounting for both non-hurricane and hurricane winds, are indicated by the relative importance factors shown in Figure 3.

2 THE MODELLING OF THE SITE AND THE WIND

2.1 Overall Approach

- The basic tool used is the Laboratory's boundary layer wind tunnel. The tunnel is designed with a very long test section, which allows extended models of upwind terrain to be placed in front of the model of the building under test. The modelling is done in more detail close to the site. The wind flow then develops characteristics which are similar to the wind over the terrain approaching the actual site. This methodology has been highly developed (see References 6 and 7) and is detailed below.
- Four configurations of the building site were evaluated. These included a bare site configuration and three possible future building configurations (models 1, 2 and 3).

2.2 Model Design

- Close-up views of the 1:300 scale pedestrian level wind speed models are shown in Figure 4 for each of the four tested configurations.
- Components:
    1. The pedestrian model, built in detail from foam and equipped with pedestrian level wind speed sensors.
    2. A detailed proximity model of the surrounding city built in block outline from Styrofoam for a radius of approximately 1200’.
    3. Generic models of upstream terrain, see below.
- The building model and the proximity model are rotated to simulate different wind directions with the upstream terrain being changed as appropriate.
- The upstream terrain was modelled using generic roughness blocks and turbulence-generating spires to produce wind characteristics representative of those at the project site. Three different terrain models were used. These are shown in Figures 5 to 8 for the bare site and models 1, 2 and 3 test conditions, respectively. The azimuth ranges over which the exposures were used are shown in Figure 9.

2.3 Characteristics of the Modelled Wind

- Figure 10 presents vertical profiles of the mean speed and of the intensity of the longitudinal component of turbulence, measured just upstream of the centre of the turntable, for each upstream terrain exposure.
- The model profiles are good representations of the expected variation of full-scale wind speed and turbulence over the building height. The reference wind speed measured in the wind tunnel has been scaled such that the expected full-scale wind speeds at roof height are achieved.

3 THE DETERMINATION OF PEDESTRIAN-LEVEL WIND SPEEDS

3.1 Overall Approach

- Detailed measurements were made of pedestrian-level wind speeds at locations of interest around the project. These wind-tunnel findings were then combined with the extratropical wind climate to provide statistical predictions of expected pedestrian-level wind speeds around the site.
- Views of the models in the wind tunnel are shown in Figures 5 through 8 for the bare site and models 1, 2 and 3 configurations, respectively.
- General descriptions of the testing and analysis procedure are given in Reference 1.

3.2 Model Instrumentation

- Figure 11 indicates the 34 locations at which speed measurements were taken. Landscaping details were not modelled. As a result, these data provide somewhat conservative estimates of full-scale wind speeds.
- Measurements were made using omni-directional pressure sensors which measure both mean and fluctuating components of the wind speed parallel to the ground at a height of about 4.5 to 5 feet in full scale.

3.3 Aerodynamic Data

- Measurements were taken at 10° intervals for the full range of azimuths.
- Measured coefficients of mean and gust wind speeds at the 34 measuring locations are presented in Appendices B and C. respectively. The gust wind speed, based on considerations of pedestrian comfort described elsewhere (references 8, 9), is taken as the mean speed plus 1.5 standard deviations of the wind speed.
- The polar plots in Appendices B and C show the wind speed at each of the sensors, expressed as a ratio of the mean wind speed at reference height. The angular coordinate gives the direction of the approach wind, relative to true North.
- The radial magnitudes and the shapes of the polar plots in Appendices B and C provide valuable indications of the relative magnitudes of wind speeds at different locations and their sensitivity to the direction of the approach wind. For example, the relative magnitude of the wind speed at Location 4 increases for all three future building configurations in comparison to the bare site configuration, as the wind is forced around the corner of the project buildings for winds from the southeast and northwest.
- Location 23 is clearly sheltered for wind directions where it is downstream of the adjacent buildings, while it also shows higher wind speeds for wind directions where the wind is funnelled between the project buildings and the existing adjacent buildings to the south.
- Probes 32, 33 and 34, which are located in Fenway Park, show little difference in wind speed between the different test configurations.

3.4 Statistical Prediction of Pedestrian-Level Winds

- The prediction process, described in detail in Reference 1, combines the probability distribution of wind speed and direction with the aerodynamic data measured in the wind tunnel. Three types of prediction are provided:
    1. Wind speeds exceeded during 1% of the time on an annual basis. These are provided for information as per client specifications for a quantitative pedestrian impact analysis.
    2. Wind speeds exceeded during 5% of the time on an annual basis. These are used for the evaluation of pedestrian comfort.

3. Wind speeds exceeded once per year. These are used for evaluating pedestrian safety.

- Criteria for pedestrian comfort and safety, for temperate climates are as follows:

CRITERIA	DESCRIPTION	MEAN WIND SPEED EXCEEDED 5% OF THE TIME
Comfort level 4	**Standing, Sitting - long exposure**	**9 mph**
Comfort level 3	**Standing, Sitting - short exposure**	**13 mph**
Comfort level 2	**Leisurely Walking**	**18 mph**
Comfort level 1	**Fast Walking**	**22 mph**

CRITERIA	DESCRIPTION	MEAN WIND SPEED EXCEEDED ONCE PER YEAR
Safety level 2	**All-Weather Areas**	**34 mph**
Safety level 1	**Fair-Weather Areas**	**45 mph**

The comfort categories can be basically described as follows:

- **Comfort Level 4 (C4) - Standing, Sitting for long exposure:** Wind felt on faces, leaves rustle slightly. Suitable for promenades, outdoor restaurants, or park benches where people may linger for long periods to eat, relax, or read a newspaper.
- **Comfort Level 3 (C3) - Standing, Sitting for short exposure:** Leaves and small twigs in constant motion; wind extends light flags. These winds are comfortable for building entrances or bus stops where people are likely to linger for a short time.
- **Comfort Level 2 (C2) - Leisurely Walking:** Raises dust and loose paper; small branches are moved. Wind speeds experienced are appropriate for activities which involve slow walking such as a leisurely stroll or window shopping.
- **Comfort Level 1 (C1) - Fast Walking:** Small trees in leaf begin to sway; can cause movement to hair and loose clothing. Areas experiencing these winds would be appropriate for sidewalks, parks, or playing fields where people are active with little notice of moderate wind activity and unlikely to be in one location very long.
- **Areas which exceed Comfort Level 1 wind speeds (C1+)** could experience winds that are felt as a force on the body, cause large branches or whole trees to sway, or perhaps be an inconvenience to walking.

The safety categories are established to recognize that strong winds may cause a loss of balance or the toppling of an infirm or elderly person. More stringent safety requirements are recommended for essential areas which are expected to be used in all weather conditions. The following gives a description of the levels for evaluating safety:

- **All-weather areas (S2):** areas that need to be used in all weather conditions, such as building entrances, sidewalks, etc.
- **Fair-weather areas (S1):** areas that are not used or can be closed in severe weather, such as park benches, lookout points, etc.
- **Areas which exceed Safety Level 1 (S1+)** are considered to pose a serious hazard and are undesirable regardless of activity.

These criteria reflect the findings of many pedestrian wind studies at The Boundary Layer Wind Tunnel Laboratory. These criteria were first published by Kapoor et al (Reference 10).

- Figures 12 to 15 show the predicted wind speeds at the various locations along with the criteria for pedestrian comfort and safety for the bare site and model 1, 2 and 3 configurations, respectively.
- With respect to pedestrian safety:
    1. Locations 8 and 9 exceed the fair-weather criteria for the existing bare site test condition. Locations 6 and 9 fail to meet the criteria for fair-weather areas, for each of the model 1, 2 and 3 configurations. At location 9, the number of exceedances per annum of the fair-weather criteria increases slightly from 1 to 2 between the bare site and future configurations. Location 8 shows an appreciable improvement as a result of the future development; this is due largely to the prevailing westerly to north-westerly winds being redirected by the proposed development. However, the re-direction of these winds for the developed conditions does have a less desirable impact on the wind conditions at the southwest corner of project site (locations 3, 4, 5 and 6).
    2. Locations 3, 4, 5, 8, 13 and 27 exceed the criteria for all-weather areas for the model 1, 2 and 3 test configurations; locations 14 and 20 also exceed the all-weather criteria for the model 1 configuration. Locations 6, 10, 26 and 27 exceed the criteria for the current bare site configuration. These locations fall into the fair-weather criteria category which carries the recommendation that pedestrian access to these areas during extreme wind events be restricted. This can be problematic in areas near main entrances and on sidewalks, where access is needed regardless of the presence of a storm. Therefore, additional wind breaks may be needed in these regions. It is noteworthy that the presence of the building in the future condition can substantially influence the local wind environment. Particularly at location 8, the winds can be seen to decrease in speed by over 25% from the existing bare site condition. Conversely, for the future development winds at locations 3, 4 and 5 increase from the bare site conditions.
    3. All other areas not discussed meet the criteria for all-weather areas, for both bare site and future configurations.
- With respect to pedestrian comfort:
    1. Probe Locations 2, 11, 12, 16, 21, 23, 24, 28, 32, 33 and 34: wind speeds are moderate and are suitable for activities involving standing or sitting. In general, there is no change in the functionality of these areas and the future conditions.
    2. Probe Locations 1, 5, 19 and 31: wind speeds are suitable for leisurely walking but may be uncomfortable for sitting or standing for all tested configurations. For these probe locations there is no change in the functionality of the area between the bare site and the future conditions.
    3. Locations 22 and 25: wind speeds are improved slightly from the bare site configuration to the future configurations, thus making these areas more suitable for longer duration activities involving sitting and standing. Conversely, at locations 7, 13, 14, 15, 17, 18, 20, 27, 29 and 30 the common winds may be slightly increased with the future development such that shorter term activities involving sitting or standing may be uncomfortable.
    4. At location 26, the wind speeds decrease slightly with the presence of the future development making them more suitable for short linger time activities. On the other hand, locations 3 and 4 show the reverse trend. At locations 6 wind speeds are suitable for fast walking for the bare site configuration but may become unsuitable for most any activity with the presence of the future development.
    5. Location 9 exceeds the criteria at a category C1+ for all four tested configurations. While locations 8 and 10 are a category C1+ for the bare site condition they improve to be suitable for walking in the all three future configurations.
- Mean wind speeds exceeded 1% of the time can be found in Tables 1 through 4 for the bare site and model 1, 2 and 3 test conditions respectively. Similarly, peak wind speeds exceeded 1% of the time can be found in Tables 5 through 8 for the bare site and model 1, 2 and 3 test conditions

respectively. The wind speeds in these tables are presented for both an annual and seasonal basis. These data are provided for information as per the client specifications for quantitative wind speed studies. The use of the 1% exceedance per annum criteria is similar to the criteria used historically by the BLWTL. However, it has since been replaced with the 5% criteria, which is believed to be more practical criteria for evaluating common winds.

- Figures 16 and 17 provide colour-coded diagrams which summarize the suitability of each measurement location with respect to pedestrian-level safety and comfort, respectively. The comfort and safety categories used in these figures correspond to those summarized in the tables above, where C1 to C4 represent Comfort levels 1 to 4 and S1 to S2 represent Safety levels 1 to 2. C1+ and S1+ indicate that Comfort level 1 and/or Safety level 1 was exceeded for the measurement location in question.
- Tables 10 through 13 summarize the number of times per year the wind speeds exceed the safety criteria. Without effective mitigating measures at locations along the west side of the development, pedestrians may be exposed to a higher than recommended risk of wind-induced loss of balance and/or potential injury for the future conditions. The magnitudes of wind speed exceedances are summarized in Figures 12 through 15 for the bare site and model 1, 2 and 3 configurations, respectively.

3.5 Seasonal Differences

- Compared to the annual wind speeds presented above, wind speeds during the summer and autumn are about 18% and 5% lower respectively, and in spring they are about 5% higher. In winter wind speeds are about 52% higher than the annual wind speeds. Gale winds are typically more severe and more frequent during the winter. In addition to prevailing westerly and north-westerly winds, winter may also see nor'easters accompanied with cold brisk north to north-easterly winds.
- It is important then to note that the results contained in this report are quantitative wind speed predications. Consequently, the comfort of a site due to solar heating, temperature or humidity is not assessed. These conditions, particularly through the winter months, may be influential to overall comfort.

A SUMMARY OF THIS REPORT IS PRESENTED AT THE BEGINNING

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TABLES

TABLE 1 MEAN WIND SPEEDS EXCEEDED 1% OF THE TIME – BARE SITE

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	17.8	18.9	15.6	17.2	24.2
2	15.3	16.9	12.0	14.5	21.1
3	23.2	24.0	18.7	22.2	34.2
4	21.1	22.4	19.4	20.5	29.4
5	22.0	23.7	17.2	21.1	29.4
6	26.8	27.3	21.6	25.7	40.6
7	10.5	10.6	9.0	10.2	15.5
8	33.7	34.2	26.2	31.5	50.2
9	32.2	32.7	25.2	30.4	47.7
10	31.1	31.5	24.0	29.0	46.6
11	21.5	21.8	16.5	20.1	32.4
12	15.6	16.2	12.6	15.0	22.1
13	15.6	16.5	12.5	15.0	21.1
14	15.5	15.8	12.1	14.7	23.0
15	17.4	17.6	13.4	16.4	25.4
16	13.7	14.0	10.6	12.9	20.1
17	15.9	17.2	12.1	15.2	21.0
18	7.9	8.1	6.3	7.5	11.7
19	19.4	19.8	15.1	18.2	28.6
20	16.1	16.4	12.4	15.1	23.8
21	12.9	13.2	10.1	12.1	19.6
22	20.0	20.3	15.5	18.6	30.7
23	14.2	14.6	11.1	13.4	20.7
24	16.3	16.6	12.8	15.5	24.4
25	19.9	20.4	15.8	19.0	29.3
26	27.2	27.8	20.8	25.8	39.6
27	21.3	24.0	16.3	20.4	26.1
28	13.5	13.9	11.2	13.0	19.7
29	13.5	14.3	11.9	13.1	18.6
30	16.6	16.9	13.2	15.8	24.4
31	18.1	18.5	14.7	17.3	26.2
32	15.2	15.5	11.8	14.3	23.1
33	13.9	14.3	10.7	13.2	19.9
34	14.9	15.3	11.3	14.2	21.3

TABLE 2 MEAN WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 1 (MODEL 1)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	20.7	21.1	16.1	19.5	30.9
2	14.4	15.7	11.1	13.5	20.2
3	26.2	26.6	20.4	24.5	39.5
4	30.1	30.5	23.2	28.3	45.0
5	23.4	25.1	18.8	22.3	32.5
6	37.1	37.6	28.6	34.7	55.7
7	20.9	22.8	16.4	20.1	28.6
8	24.5	25.9	19.2	23.3	34.2
9	33.1	33.6	25.8	30.9	49.8
10	20.2	20.9	15.6	19.1	29.0
11	18.2	18.7	14.1	17.2	26.2
12	16.0	16.3	12.2	15.1	23.9
13	25.6	25.8	19.6	24.3	36.8
14	24.1	24.4	18.7	22.6	35.6
15	19.9	20.2	15.3	18.7	29.3
16	14.7	14.9	11.4	13.8	21.5
17	20.0	21.1	17.6	19.2	27.8
18	19.0	20.2	17.6	18.4	25.5
19	19.9	20.8	17.2	19.3	28.5
20	23.4	25.2	18.7	22.4	31.8
21	20.4	23.1	15.7	19.5	25.6
22	16.3	17.6	15.5	15.6	21.0
23	11.8	12.2	9.4	11.3	17.0
24	14.2	14.4	11.0	13.3	21.8
25	16.1	16.4	12.4	15.1	24.0
26	22.6	23.3	17.6	21.4	32.7
27	22.7	24.9	17.4	21.8	29.5
28	12.7	13.1	10.5	12.1	17.8
29	17.5	17.8	13.9	16.8	25.0
30	17.9	18.2	14.2	17.2	25.7
31	20.2	20.5	15.7	19.1	29.4
32	14.1	14.4	11.0	13.2	21.2
33	13.7	14.1	10.6	12.9	19.4
34	14.9	15.5	11.3	14.2	21.2

TABLE 3 MEAN WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 2 (MODEL 2)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	20.0	20.3	15.5	18.8	29.6
2	14.7	16.2	11.4	13.8	20.3
3	27.0	27.2	20.9	25.1	40.7
4	29.8	30.2	23.0	27.9	44.7
5	23.3	25.2	18.7	22.2	32.3
6	36.9	37.3	28.4	34.4	55.4
7	20.0	21.5	15.8	19.1	27.7
8	24.2	25.2	19.0	23.0	34.2
9	33.6	34.1	26.2	31.4	50.7
10	20.4	21.1	15.6	19.3	29.5
11	17.8	18.5	13.7	16.9	25.6
12	16.9	17.2	12.9	15.9	25.1
13	24.0	24.4	18.7	22.6	34.9
14	22.2	22.5	17.3	20.8	32.8
15	19.1	19.3	14.6	17.9	27.9
16	14.7	15.0	11.4	14.0	21.5
17	20.2	21.4	17.9	19.5	28.1
18	18.2	19.4	16.5	17.8	25.2
19	20.9	21.9	18.0	20.3	29.8
20	18.9	20.7	15.2	18.1	25.6
21	15.0	16.7	11.5	14.4	19.6
22	17.1	18.5	15.4	16.2	23.1
23	14.5	14.7	11.1	13.7	21.4
24	16.7	17.0	12.8	15.7	25.4
25	16.5	16.9	12.8	15.5	24.8
26	22.9	23.5	17.8	21.7	33.3
27	22.7	24.6	17.3	21.7	29.9
28	13.6	14.3	12.1	13.1	18.7
29	18.0	18.4	14.4	17.2	25.7
30	18.2	18.6	14.6	17.5	26.0
31	20.6	21.0	16.3	19.6	29.9
32	14.0	14.3	10.9	13.1	21.1
33	13.7	14.1	10.6	12.9	19.4
34	14.7	15.3	11.2	14.0	20.9

TABLE 4 MEAN WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 3 (MODEL 3)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	20.3	20.7	15.7	19.1	30.0
2	14.8	16.0	11.5	14.0	21.0
3	25.8	26.1	19.9	24.0	38.6
4	28.4	28.8	21.9	26.5	42.5
5	23.6	25.1	18.9	22.4	32.9
6	36.6	37.1	28.1	34.2	55.0
7	20.4	22.0	16.1	19.5	28.2
8	23.8	24.9	18.8	22.6	33.6
9	33.4	33.9	26.0	31.2	50.3
10	20.7	21.4	15.8	19.5	29.6
11	16.5	17.2	13.2	15.8	23.2
12	14.2	14.5	11.0	13.5	20.0
13	23.7	24.6	19.4	22.5	33.0
14	23.2	23.6	18.2	21.8	34.3
15	21.2	21.5	16.4	19.9	31.3
16	15.3	15.4	11.8	14.4	22.6
17	20.7	21.9	18.5	20.0	28.8
18	19.8	20.9	17.9	19.3	27.7
19	20.5	21.6	17.8	19.9	29.2
20	18.9	20.6	15.6	18.1	25.4
21	16.5	18.5	12.6	15.8	21.2
22	18.6	20.3	16.9	17.7	24.8
23	10.5	11.1	9.1	10.1	14.3
24	11.5	11.8	9.0	10.9	17.3
25	15.4	15.8	12.0	14.5	23.0
26	22.1	22.7	17.4	20.9	32.2
27	22.4	24.6	17.1	21.6	28.6
28	13.1	13.7	11.2	12.6	18.5
29	18.6	18.9	14.6	17.8	26.6
30	18.8	19.1	15.1	18.1	27.0
31	21.4	21.8	16.7	20.2	31.2
32	13.9	14.1	10.8	13.0	20.9
33	13.6	14.0	10.6	12.9	19.4
34	14.9	15.5	11.3	14.2	21.1

TABLE 5 PEAK WIND SPEEDS EXCEEDED 1% OF THE TIME – BARE SITE

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	28.5	30.1	24.3	27.5	39.4
2	25.9	28.2	20.3	24.5	35.3
3	33.9	34.9	27.3	32.6	49.7
4	31.7	33.4	28.0	30.9	44.4
5	31.9	33.9	25.8	30.9	43.5
6	42.2	42.9	33.8	40.2	63.4
7	19.9	20.3	16.8	19.2	29.1
8	45.0	45.7	35.0	42.2	66.6
9	45.1	45.7	35.1	42.6	66.0
10	42.6	43.2	33.0	39.9	63.1
11	35.1	35.6	27.0	32.9	52.8
12	26.1	26.8	20.6	24.9	37.2
13	24.6	25.8	19.4	23.5	33.6
14	27.5	28.0	21.4	25.8	40.8
15	28.7	29.1	22.0	27.1	42.1
16	23.6	24.1	18.2	22.2	34.9
17	25.3	26.6	19.2	24.1	35.2
18	15.4	15.9	12.6	14.7	22.4
19	28.9	29.6	22.4	27.2	42.4
20	25.1	25.6	19.3	23.6	37.0
21	23.0	23.4	17.9	21.5	34.5
22	32.5	33.0	25.2	30.3	49.8
23	24.5	25.2	19.3	23.1	35.8
24	27.1	27.6	21.3	25.6	40.2
25	31.4	32.1	24.4	29.7	45.5
26	38.2	39.0	29.4	36.3	55.1
27	32.3	36.1	24.7	31.1	40.5
28	23.6	24.2	19.0	22.6	34.5
29	21.9	22.9	18.8	21.4	30.5
30	26.1	26.6	20.5	24.9	38.1
31	27.8	28.4	22.3	26.7	39.9
32	24.4	24.9	18.9	23.0	36.7
33	23.3	23.9	17.7	22.2	33.2
34	24.9	25.5	18.9	23.6	35.7

Notes:

1. Peak wind speed is taken as the mean wind speed plus 1.5 standard deviations of the wind speed.

TABLE 6 PEAK WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 1 (MODEL 1)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	32.2	32.8	25.0	30.3	47.5
2	25.8	27.3	20.1	24.2	36.9
3	38.6	39.1	29.9	36.1	58.0
4	41.9	42.4	32.1	39.5	62.2
5	35.5	37.5	28.2	33.9	49.8
6	50.4	51.1	38.8	47.1	75.1
7	32.6	34.5	25.7	31.1	45.4
8	35.1	36.7	27.4	33.3	49.6
9	46.6	47.3	36.4	43.6	69.6
10	32.4	33.3	24.8	30.5	47.3
11	30.0	31.0	23.0	28.3	43.5
12	27.9	28.3	21.3	26.2	41.6
13	36.6	37.0	27.9	34.8	52.4
14	36.8	37.4	28.8	34.5	54.3
15	31.3	31.7	24.2	29.4	45.8
16	25.7	26.1	20.0	24.1	37.9
17	30.8	32.0	25.6	29.4	44.4
18	28.0	29.8	25.4	27.3	38.5
19	28.5	29.5	24.0	27.5	41.2
20	33.0	34.7	26.3	31.6	46.2
21	29.9	33.5	22.9	28.5	38.7
22	25.4	27.4	23.7	24.5	33.7
23	20.5	21.1	16.1	19.7	29.7
24	24.1	24.5	18.6	22.6	36.5
25	27.3	27.8	21.3	25.7	40.5
26	34.4	35.4	27.2	32.7	49.4
27	33.9	36.7	25.8	32.5	44.7
28	22.1	22.9	18.0	21.2	31.1
29	27.4	27.8	21.4	26.2	39.3
30	26.6	27.1	21.2	25.8	38.1
31	28.9	29.4	22.9	27.5	41.4
32	22.9	23.4	17.8	21.5	34.0
33	22.9	23.6	17.5	21.7	32.2
34	24.7	25.5	18.8	23.5	35.5

Notes:

1. Peak wind speed is taken as the mean wind speed plus 1.5 standard deviations of the wind speed.

TABLE 7 PEAK WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 2 (MODEL 2)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	31.5	32.2	24.5	29.7	46.4
2	25.9	27.7	20.2	24.3	36.7
3	40.0	40.5	30.9	37.3	60.2
4	42.1	42.6	32.3	39.5	62.7
5	35.2	37.2	28.0	33.5	49.3
6	50.3	50.9	38.8	47.0	74.9
7	31.1	32.7	24.7	29.7	43.8
8	34.5	35.8	27.0	32.8	49.2
9	46.9	47.5	36.6	43.9	69.9
10	32.9	33.6	25.0	30.8	48.2
11	29.8	30.7	22.8	28.1	43.3
12	28.8	29.1	21.9	27.0	42.6
13	35.6	36.0	27.5	33.6	51.8
14	34.5	35.1	27.1	32.4	50.9
15	29.9	30.4	23.1	28.2	43.6
16	25.2	25.6	19.6	23.8	37.1
17	30.8	31.9	25.5	29.5	44.3
18	26.8	28.1	23.5	26.2	37.9
19	30.0	31.2	24.8	28.8	42.9
20	26.3	28.4	21.5	25.2	36.0
21	24.1	26.6	18.6	23.1	32.0
22	25.6	27.6	23.2	24.5	34.3
23	24.6	25.1	18.9	23.3	36.4
24	27.5	27.9	21.0	25.9	41.2
25	27.8	28.3	21.7	26.2	41.4
26	34.7	35.7	27.4	33.0	50.0
27	33.9	36.2	25.7	32.3	45.0
28	23.2	24.2	19.9	22.3	32.2
29	27.9	28.4	21.8	26.7	40.1
30	26.7	27.3	21.3	25.8	38.2
31	29.4	30.0	23.6	28.2	42.0
32	22.7	23.2	17.6	21.4	33.9
33	22.8	23.4	17.5	21.6	32.2
34	24.4	25.2	18.6	23.3	34.9

Notes:

1. Peak wind speed is taken as the mean wind speed plus 1.5 standard deviations of the wind speed.

TABLE 8 PEAK WIND SPEEDS EXCEEDED 1% OF THE TIME – BUILDING OPTION 3 (MODEL 3)

PROBE LOCATION	ANNUAL (mph)	SPRING (mph)	SUMMER (mph)	FALL (mph)	WINTER (mph)
1	32.2	32.9	24.9	30.4	47.5
2	26.7	28.2	20.8	25.1	38.5
3	38.6	39.1	29.7	36.1	57.7
4	39.4	40.0	30.3	36.9	58.6
5	35.9	37.6	28.4	34.1	51.0
6	51.2	52.0	39.5	47.8	76.4
7	32.1	33.6	25.4	30.6	45.3
8	35.1	36.3	27.6	33.3	50.2
9	47.4	48.0	36.9	44.3	70.7
10	32.7	33.5	24.9	30.7	47.6
11	28.0	28.9	21.7	26.5	40.1
12	25.5	26.1	19.5	24.2	36.9
13	35.4	36.1	28.0	33.6	50.3
14	35.5	36.1	28.0	33.4	52.5
15	32.6	33.1	25.3	30.7	47.9
16	26.8	27.1	20.7	25.1	39.9
17	31.0	32.2	26.0	29.8	44.6
18	28.8	30.1	25.2	28.1	40.9
19	29.6	30.9	24.7	28.5	42.1
20	26.7	28.7	22.5	25.8	36.4
21	26.0	28.9	19.8	24.9	33.9
22	27.5	29.8	25.0	26.4	36.6
23	18.2	19.1	15.6	17.6	24.8
24	20.1	20.6	15.9	19.1	29.9
25	26.9	27.4	21.0	25.3	39.8
26	34.1	35.2	27.2	32.4	49.2
27	33.7	36.3	25.8	32.3	44.0
28	23.1	24.1	19.6	22.3	32.5
29	28.3	28.7	21.8	27.1	40.5
30	27.5	27.9	21.8	26.5	39.3
31	30.0	30.5	23.8	28.7	43.0
32	22.7	23.1	17.5	21.3	33.7
33	22.7	23.4	17.4	21.6	32.0
34	24.8	25.6	18.8	23.6	35.3

Notes:

1. Peak wind speed is taken as the mean wind speed plus 1.5 standard deviations of the wind speed.

TABLE 9 GUIDELINES FOR EVALUATING PEDESTRIAN LEVEL WINDS

Comfort Guidelines

Comfort Level Guideline	Description	Mean Wind Speed Exceeded 5% of the Time	Description of Wind Effects
C1+	Exceeds comfort criteria	> 22 mph	• Umbrellas used with difficulty • Hair blown straight • Difficult to walk steadily • Wind noise on ears unpleasant
C1	Walking purposefully or business walking	22 mph	• Force of wind felt on body • Trees in leaf begin to move • Limit on agreeable wind on land • Wind noise on ears unpleasant
C2	Strolling or "window shopping"	18 mph	• Moderate, raises dust, loose paper • Hair disarranged • Small branches are moved
C3	Standing or sitting – short exposure	13 mph	• Hair is disturbed, clothing flaps • Light leaves and twigs in motion • Wind extends a lightweight flag
C4	Standing or sitting – long exposure	9 mph	• Light wind felt on face • Leaves rustle

Safety Guidelines

Safety Level Guideline	Description	Mean Wind Speed Exceeded Once/Year	Description of Wind Effects
S1+	Exceeds safety guidelines	> 45 mph	• Generally impedes progress
S1	Typical Fair-Weather Use	45 mph	• Inconvenience felt when walking against wind
S2	Sensitive Use	34 mph	• Umbrellas used with difficulty • Hair blown straight • Difficult to walk steadily • Wind noise on ears unpleasant

TABLE 10 NUMBER OF EXCEEDANCES OF SAFETY LEVELS PER YEAR – BARE SITE

	Number of Exceedances per Annum	
Probe No.	All-Weather Areas (1)	Fair-Weather Areas (2)
1	<1	0
2	<1	0
3	<1	0
4	<1	<1
5	1	0
6	4	<1
7	0	0
8	18	2
9	13	1
10	10	<1
11	<1	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	<1	0
20	0	0
21	0	0
22	<1	0
23	0	0
24	0	0
25	<1	0
26	3	<1
27	1	<1
28	0	0
29	0	0
30	0	0
31	<1	0
32	0	0
33	0	0
34	0	0

Note:

1. To assure public safety in all-weather areas, it is recommended that an hourly mean wind speed of 34 mph is not exceeded once per year.
2. To assure public safety in fair-weather areas, it is recommended that an hourly mean wind speed of 45 mph is not exceeded once per year.

TABLE 11 NUMBER OF EXCEEDANCES OF SAFETY LEVELS PER YEAR – BUILDING OPTION 1 (MODEL 1)

	Number of Exceedances per Annum	
Probe No.	All-Weather Areas (1)	Fair-Weather Areas (2)
1	<1	0
2	0	0
3	3	<1
4	8	<1
5	2	<1
6	32	4
7	<1	0
8	2	<1
9	16	2
10	<1	0
11	0	0
12	0	0
13	2	<1
14	1	0
15	<1	0
16	0	0
17	<1	0
18	<1	0
19	<1	0
20	1	<1
21	<1	0
22	<1	0
23	0	0
24	0	0
25	0	0
26	<1	0
27	2	<1
28	0	0
29	0	0
30	<1	0
31	<1	0
32	0	0
33	0	0
34	0	0

Note:

1. To assure public safety in all-weather areas, it is recommended that an hourly mean wind speed of 34 mph is not exceeded once per year.
2. To assure public safety in fair-weather areas, it is recommended that an hourly mean wind speed of 45 mph is not exceeded once per year.

TABLE 12 NUMBER OF EXCEEDANCES OF SAFETY LEVELS PER YEAR – BUILDING OPTION 2 (MODEL 2)

	Number of Exceedances per Annum	
Probe No.	All-Weather Areas (1)	Fair-Weather Areas (2)
1	<1	0
2	0	0
3	4	<1
4	8	<1
5	2	<1
6	31	4
7	0	0
8	1	0
9	18	2
10	<1	0
11	0	0
12	0	0
13	1	<1
14	<1	0
15	0	0
16	0	0
17	<1	0
18	<1	0
19	<1	0
20	<1	0
21	0	0
22	<1	0
23	0	0
24	0	0
25	0	0
26	<1	0
27	1	<1
28	0	0
29	<1	0
30	<1	0
31	<1	0
32	0	0
33	0	0
34	0	0

Note:

1. To assure public safety in all-weather areas, it is recommended that an hourly mean wind speed of 34 mph is not exceeded once per year.
2. To assure public safety in fair-weather areas, it is recommended that an hourly mean wind speed of 45 mph is not exceeded once per year.

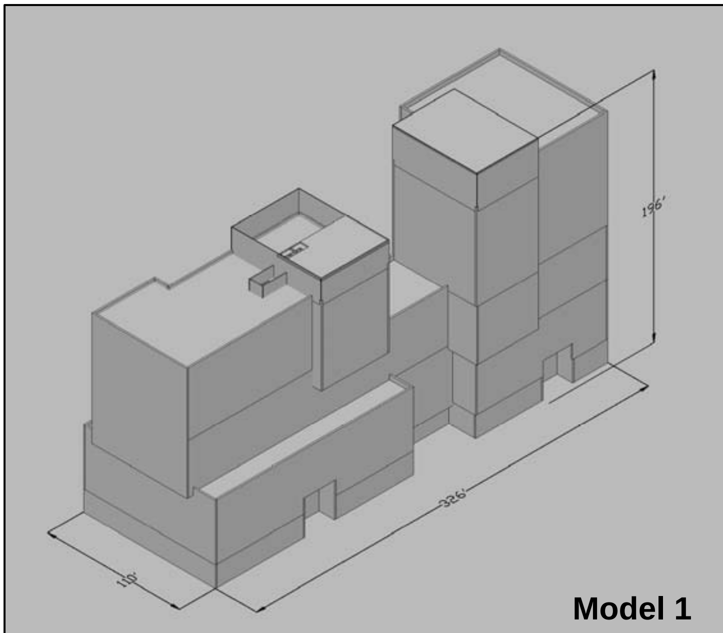
TABLE 13 NUMBER OF EXCEEDANCES OF SAFETY LEVELS PER YEAR – BUILDING OPTION 3 (MODEL 3)

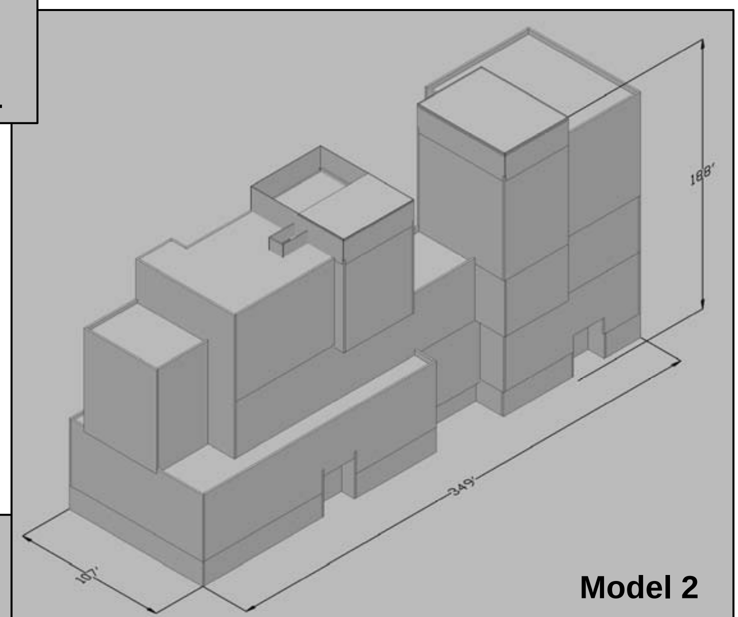
	Number of Exceedances per Annum	
Probe No.	All-Weather Areas (1)	Fair-Weather Areas (2)
1	<1	0
2	0	0
3	2	<1
4	5	<1
5	2	<1
6	30	4
7	<1	0
8	1	0
9	17	2
10	<1	0
11	0	0
12	0	0
13	2	<1
14	<1	0
15	<1	0
16	0	0
17	<1	0
18	<1	0
19	<1	0
20	<1	0
21	<1	0
22	<1	0
23	0	0
24	0	0
25	0	0
26	<1	0
27	2	<1
28	0	0
29	<1	0
30	<1	0
31	<1	0
32	0	0
33	0	0
34	0	0

Note:

1. To assure public safety in all-weather areas, it is recommended that an hourly mean wind speed of 34 mph is not exceeded once per year.
2. To assure public safety in fair-weather areas, it is recommended that an hourly mean wind speed of 45 mph is not exceeded once per year.

FIGURES





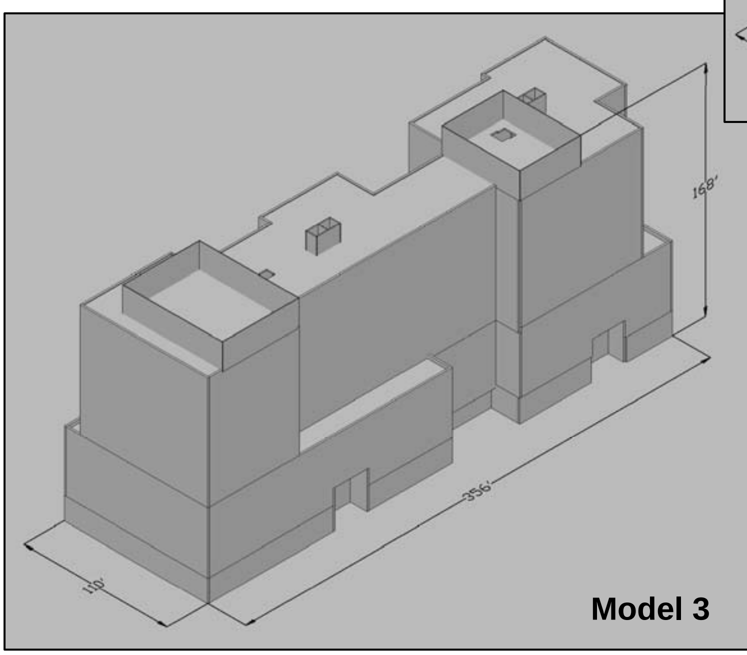


FIGURE 1 ISOMETRIC VIEWS OF THE BUILDINGS, SHOWING OVERALL DIMENSIONS

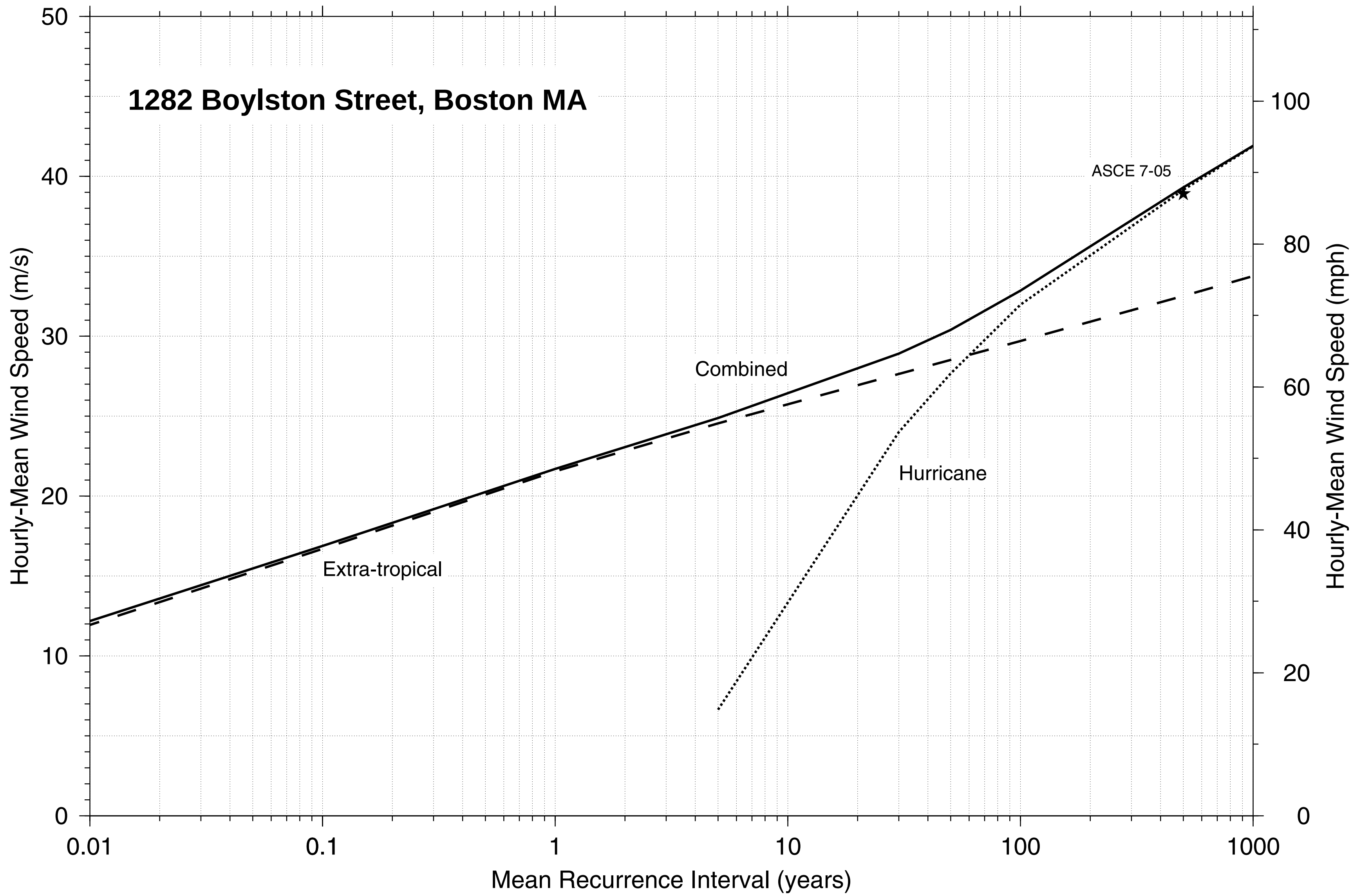


FIGURE 2a **PREDICTED ANNUAL EXTREME WIND SPEEDS AT 10m FOR VARIOUS MEAN RECURRENCE INTERVALS.**

FIGURE 2b **PREDICTED ANNUAL EXTREME WIND SPEEDS AT 500m FOR VARIOUS MEAN RECURRENCE INTERVALS.**

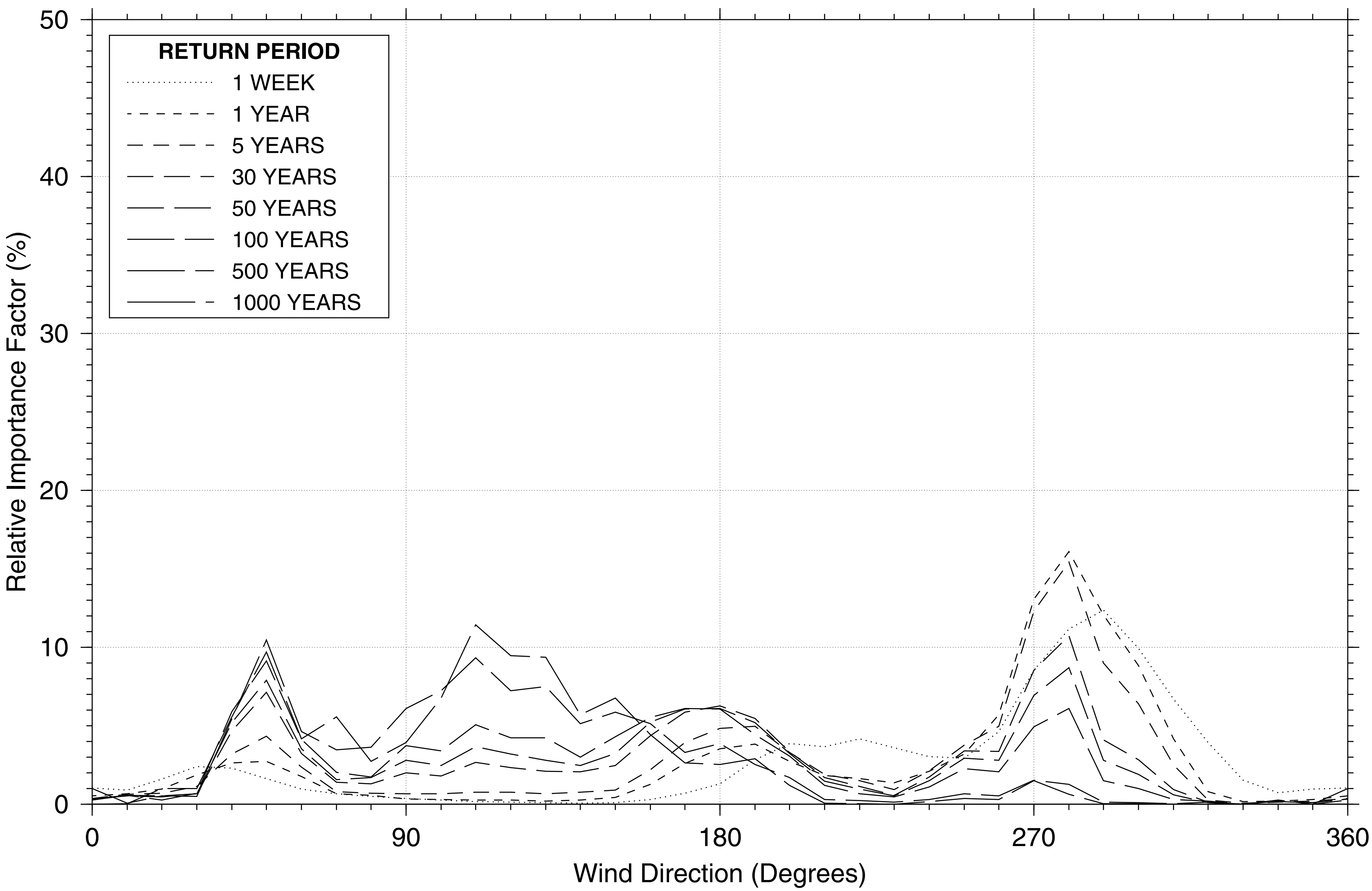


FIGURE 3a **RELATIVE IMPORTANCE OF AZIMUTHAL SECTOR TO THE PROBABILITY OF EXCEEDING VARIOUS RETURN-PERIOD WIND SPEEDS**

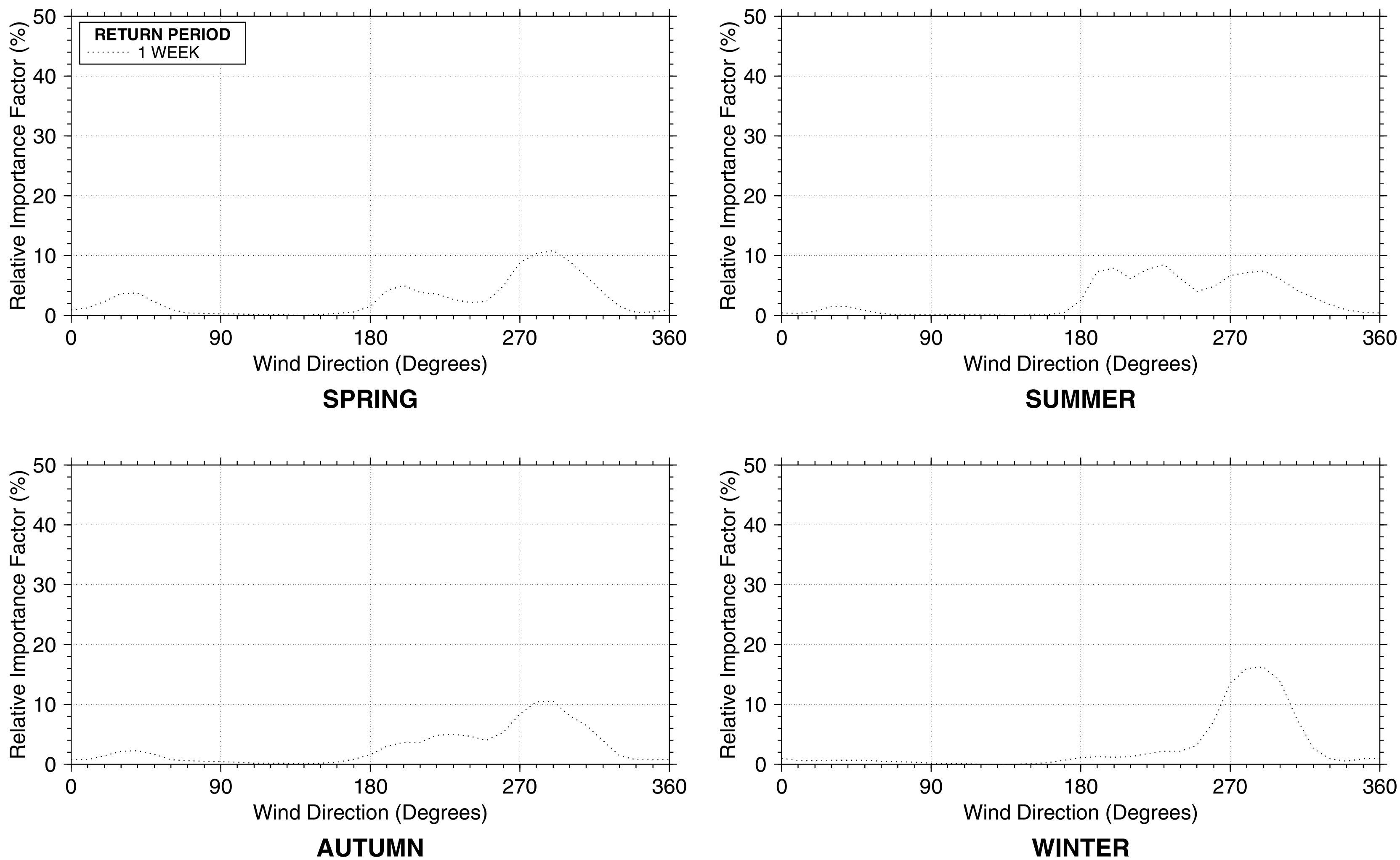
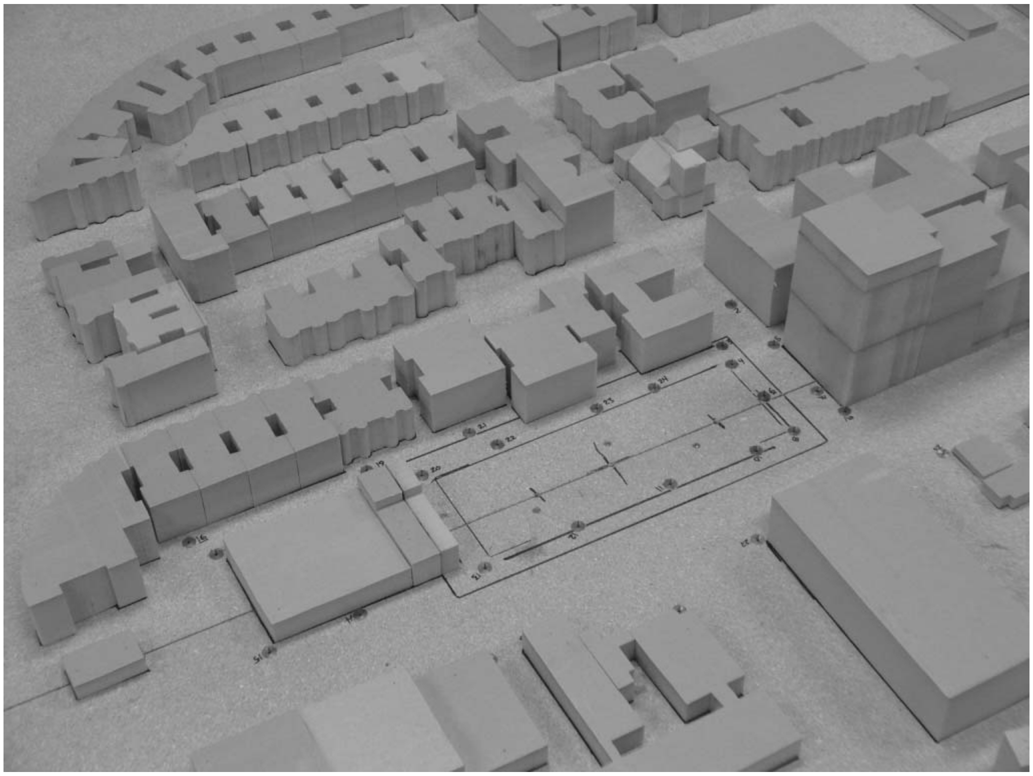
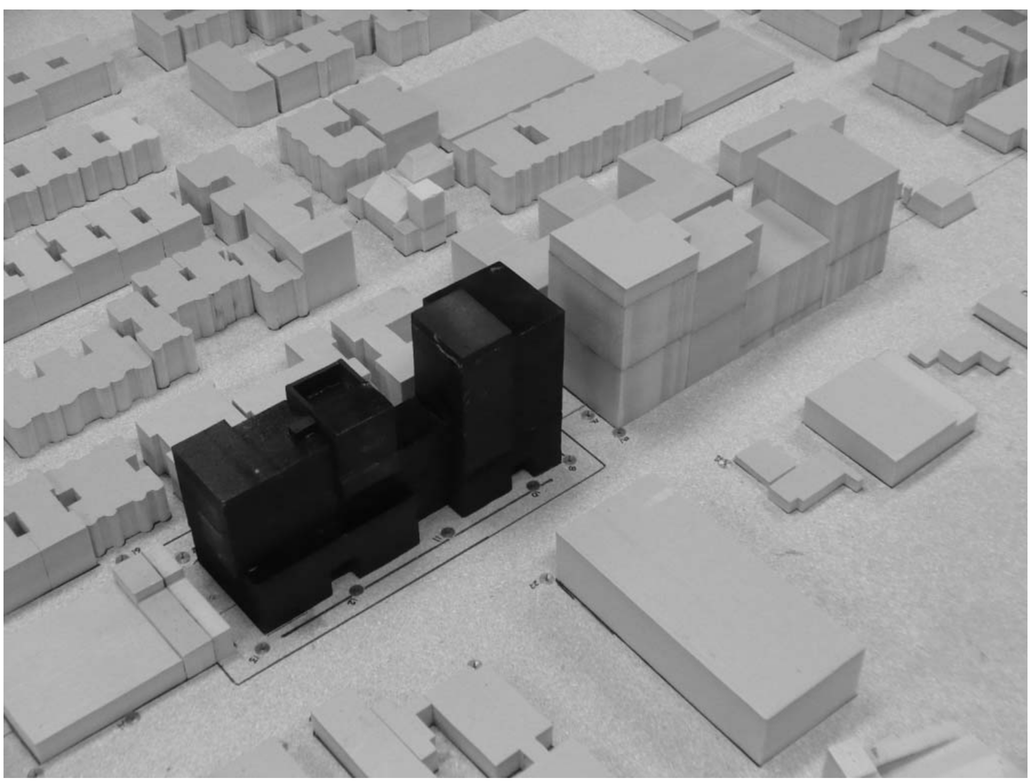


FIGURE 3b RELATIVE IMPORTANCE OF AZIMUTHAL SECTOR TO THE PROBABILITY OF EXCEEDING VARIOUS RETURN-PERIOD WIND SPEEDS

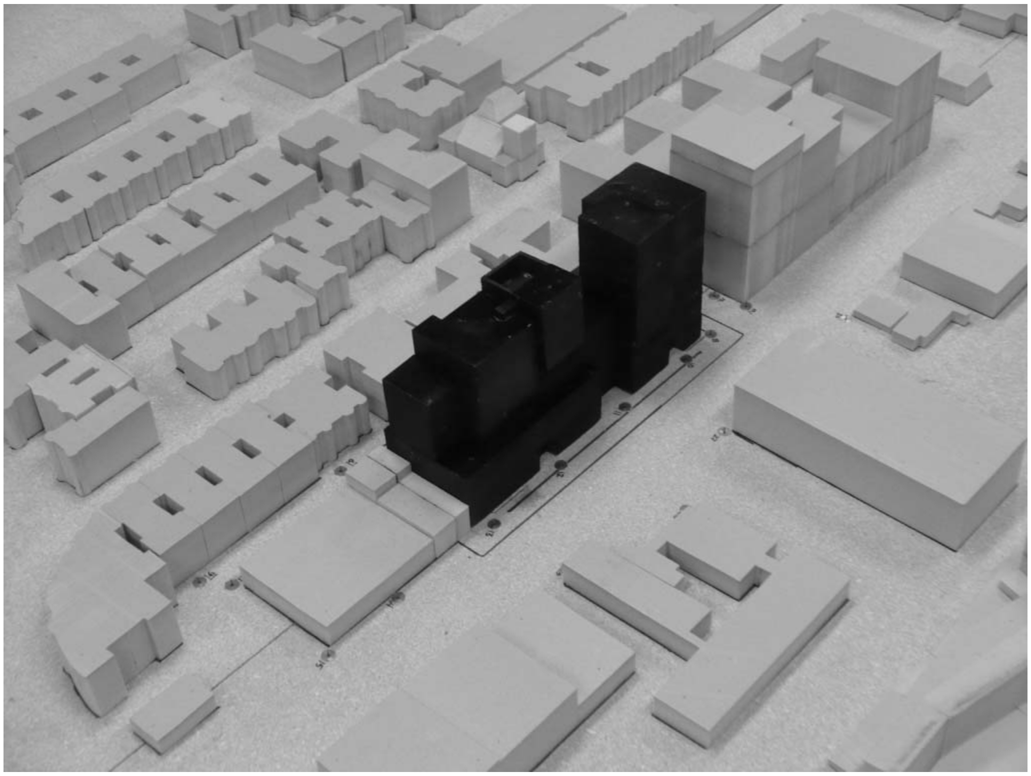


BARE SITE

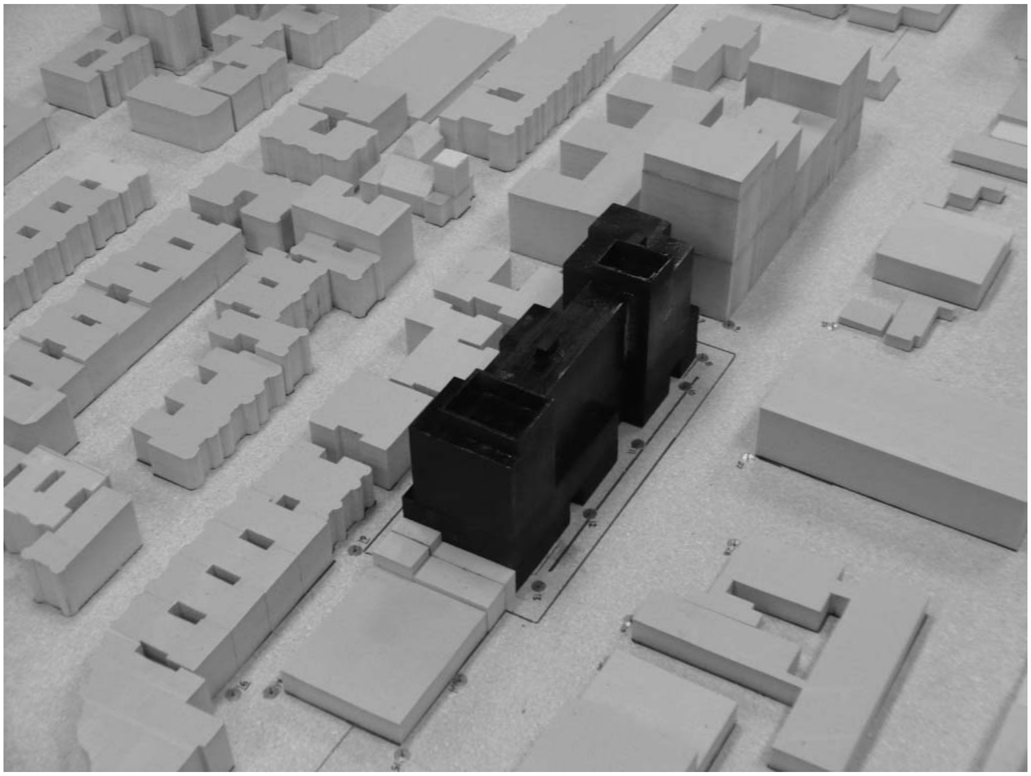


MODEL 1

FIGURE 4a CLOSE UP VIEWS OF THE PEDESTRIAN LEVEL WIND SPEED MODEL CONFIGURATIONS



MODEL 2



MODEL 3

FIGURE 4b CLOSE UP VIEWS OF THE PEDESTRIAN LEVEL WIND SPEED MODEL CONFIGURATIONS

FIGURE 5a PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **BARE SITE CONDITION**

FIGURE 5b PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **BARE SITE CONDITION**

FIGURE 6a PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 1**

FIGURE 6b PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 1**

FIGURE 7a PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 2**

FIGURE 7b PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 2**

FIGURE 8a PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 3**

FIGURE 8b PHOTOGRAPHS OF THE MODEL IN THE WIND TUNNEL SHOWING THE UPSTREAM TERRAIN MODELS (EXPOSURES) USED – **FUTURE CONDITION – MODEL 3**

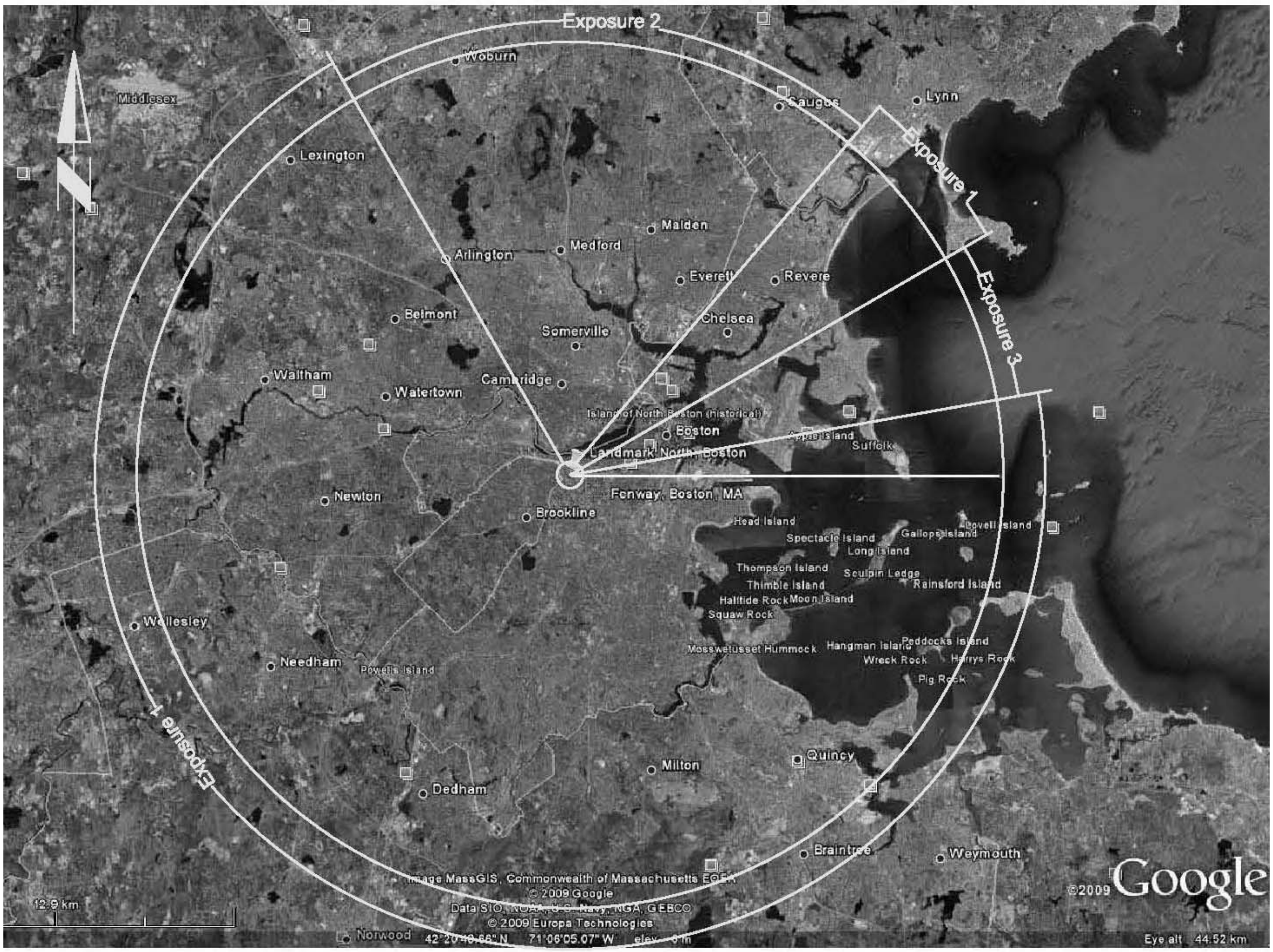


FIGURE 9 AZIMUTH RANGES OVER WHICH THE UPSTREAM TERRAIN MODELS WERE USED

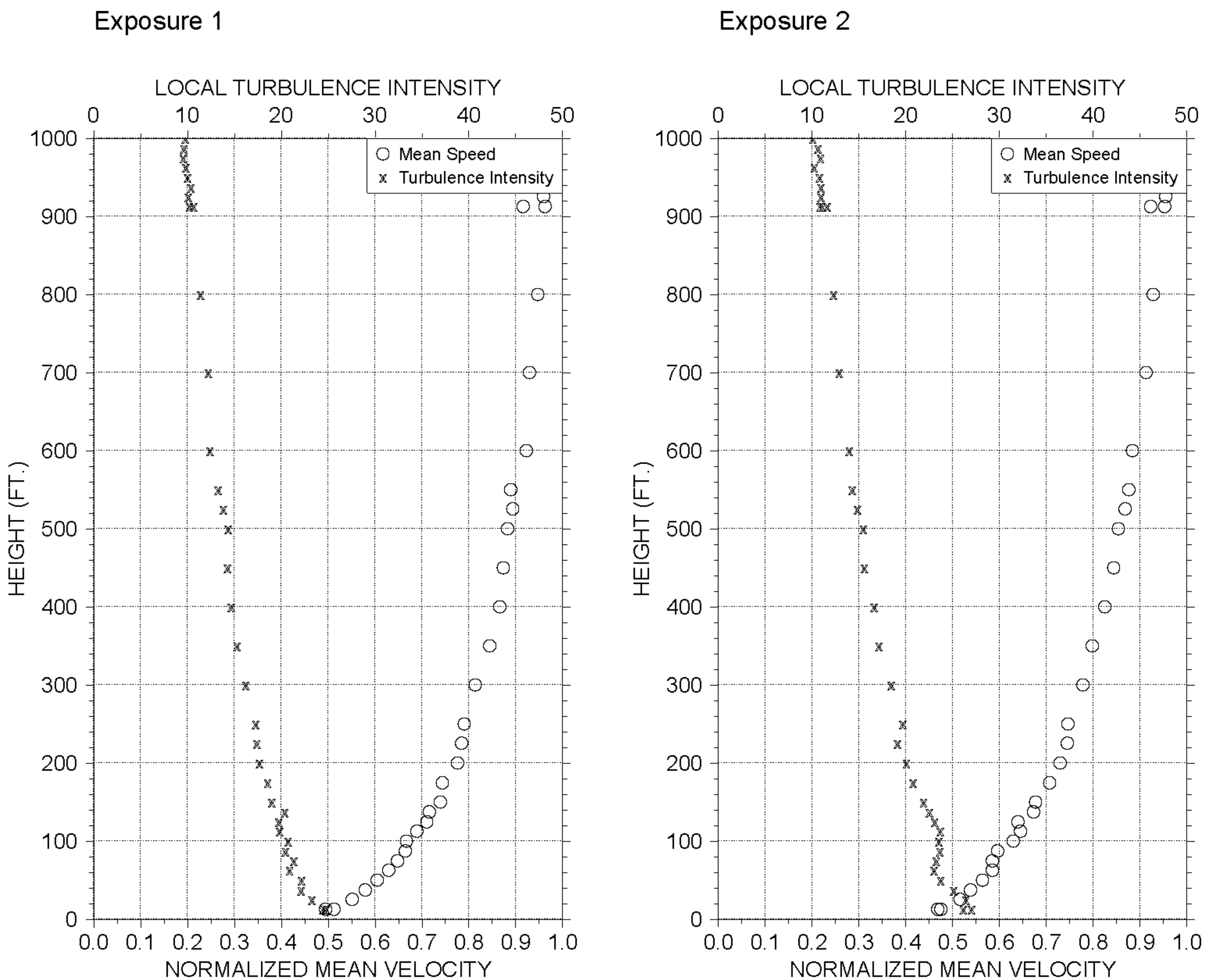


FIGURE 10a VERTICAL PROFILES OF MEAN WIND SPEED AND LONGITUDINAL TURBULENCE INTENSITY MEASURED JUST UPSTREAM OF THE PROXIMITY MODEL.

Exposure 3

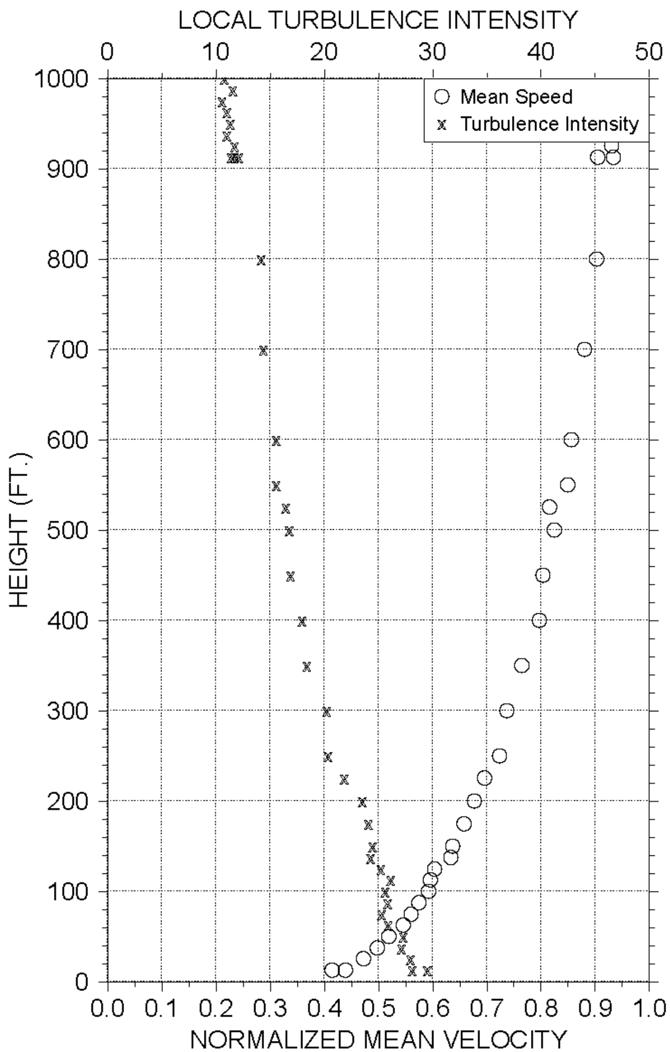


FIGURE 10b VERTICAL PROFILES OF MEAN WIND SPEED AND LONGITUDINAL TURBULENCE INTENSITY MEASURED JUST UPSTREAM OF THE PROXIMITY MODEL.

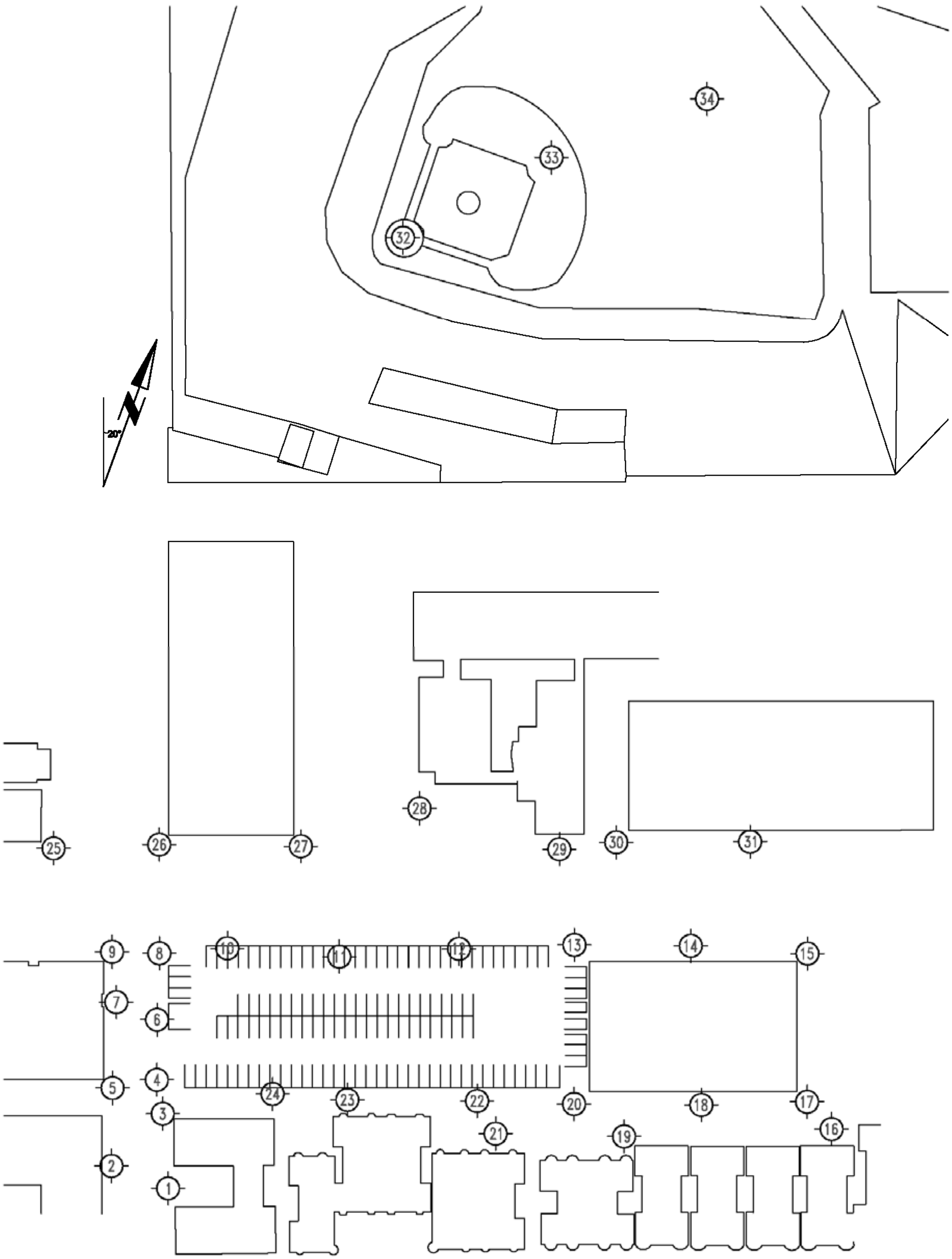
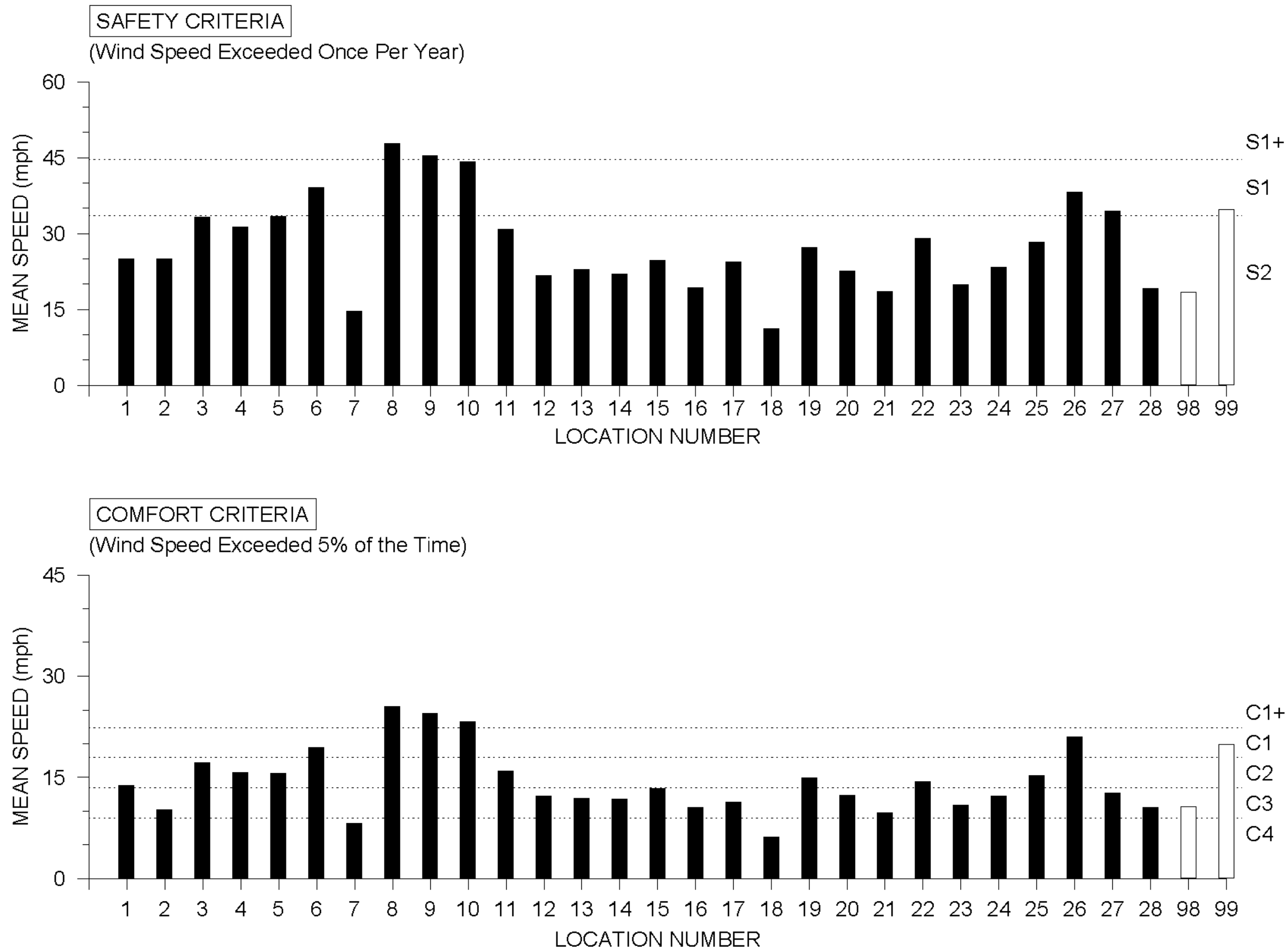


FIGURE 11 MEASUREMENT LOCATIONS FOR PEDESTRIAN-LEVEL WIND SPEEDS – BARE SITE SHOWN



LOCATION 98: TYPICAL SUBURBAN
LOCATION 99: TYPICAL OPEN COUNTRY

ANNUAL WINDS

FIGURE 12a PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **BARE SITE CONDITION.**

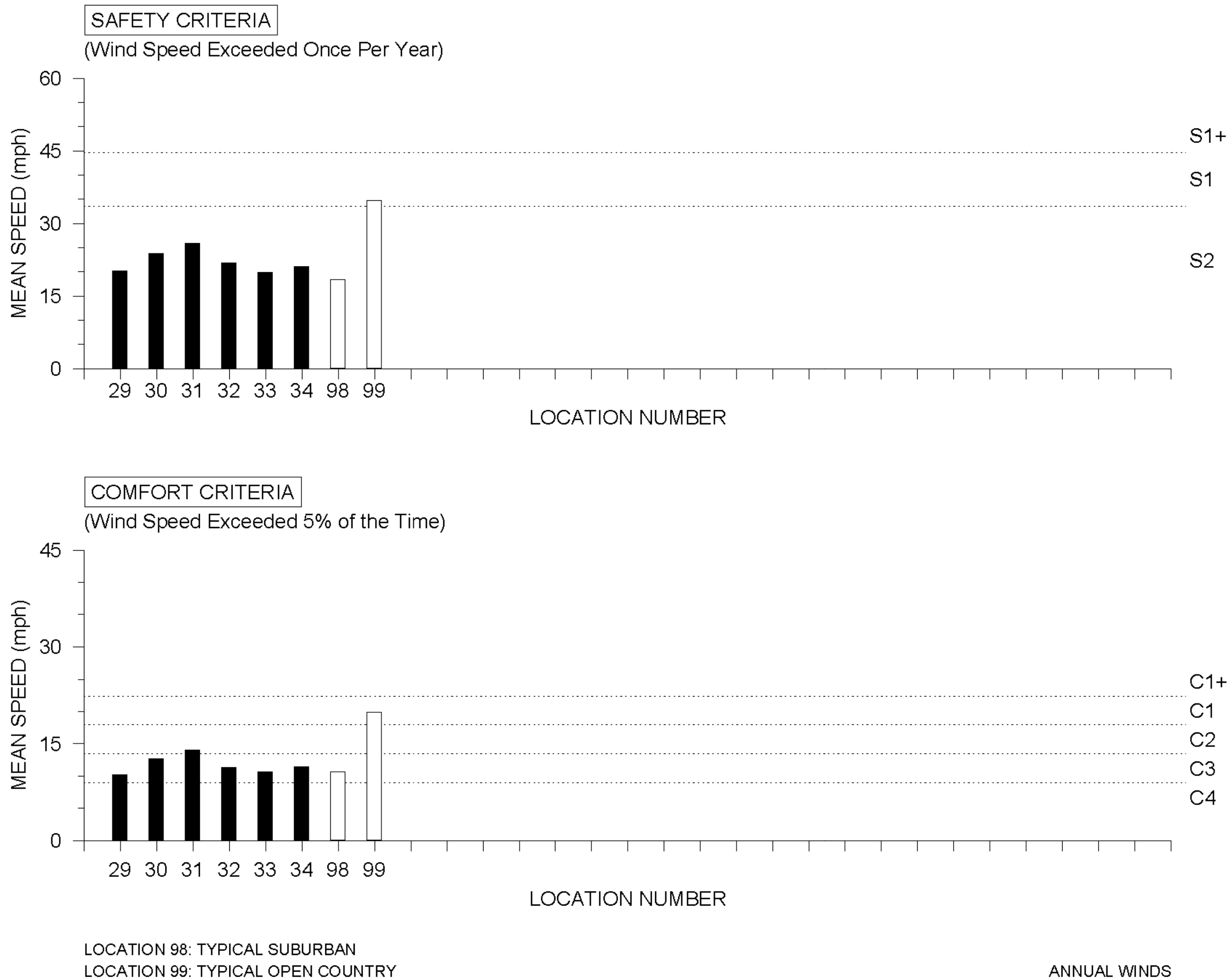


FIGURE 12b PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **BARE SITE CONDITION.**

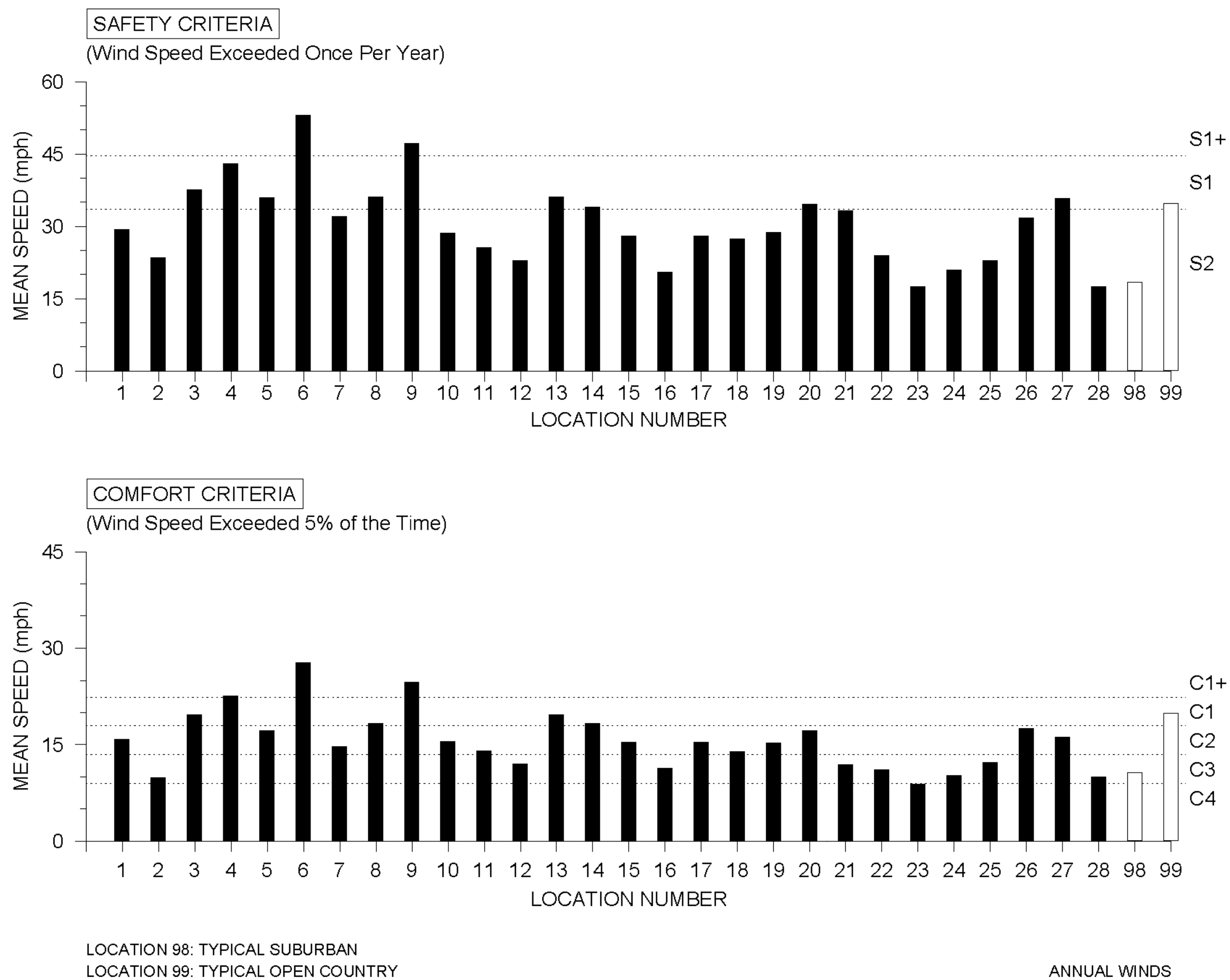


FIGURE 13a PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION – MODEL 1.**

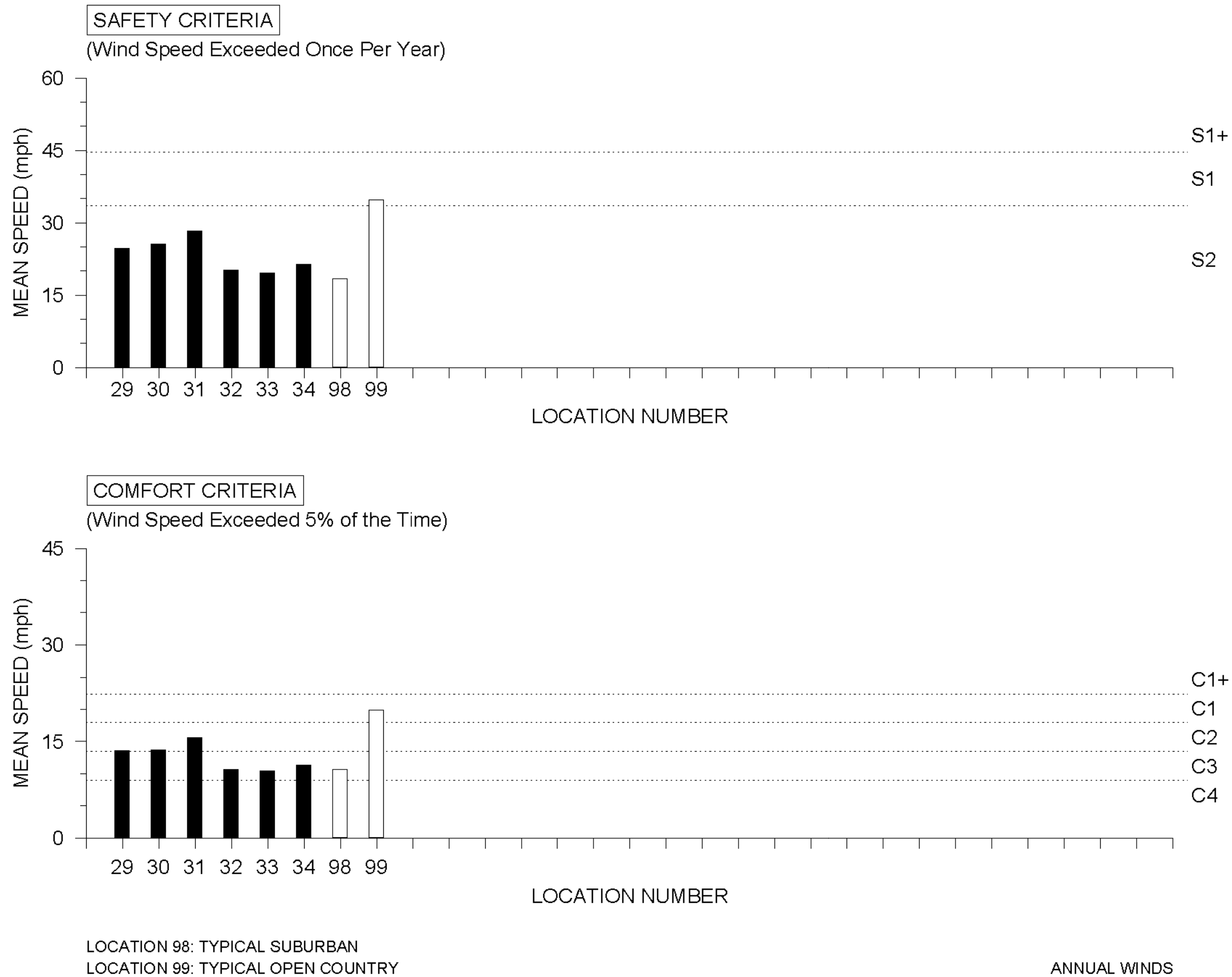
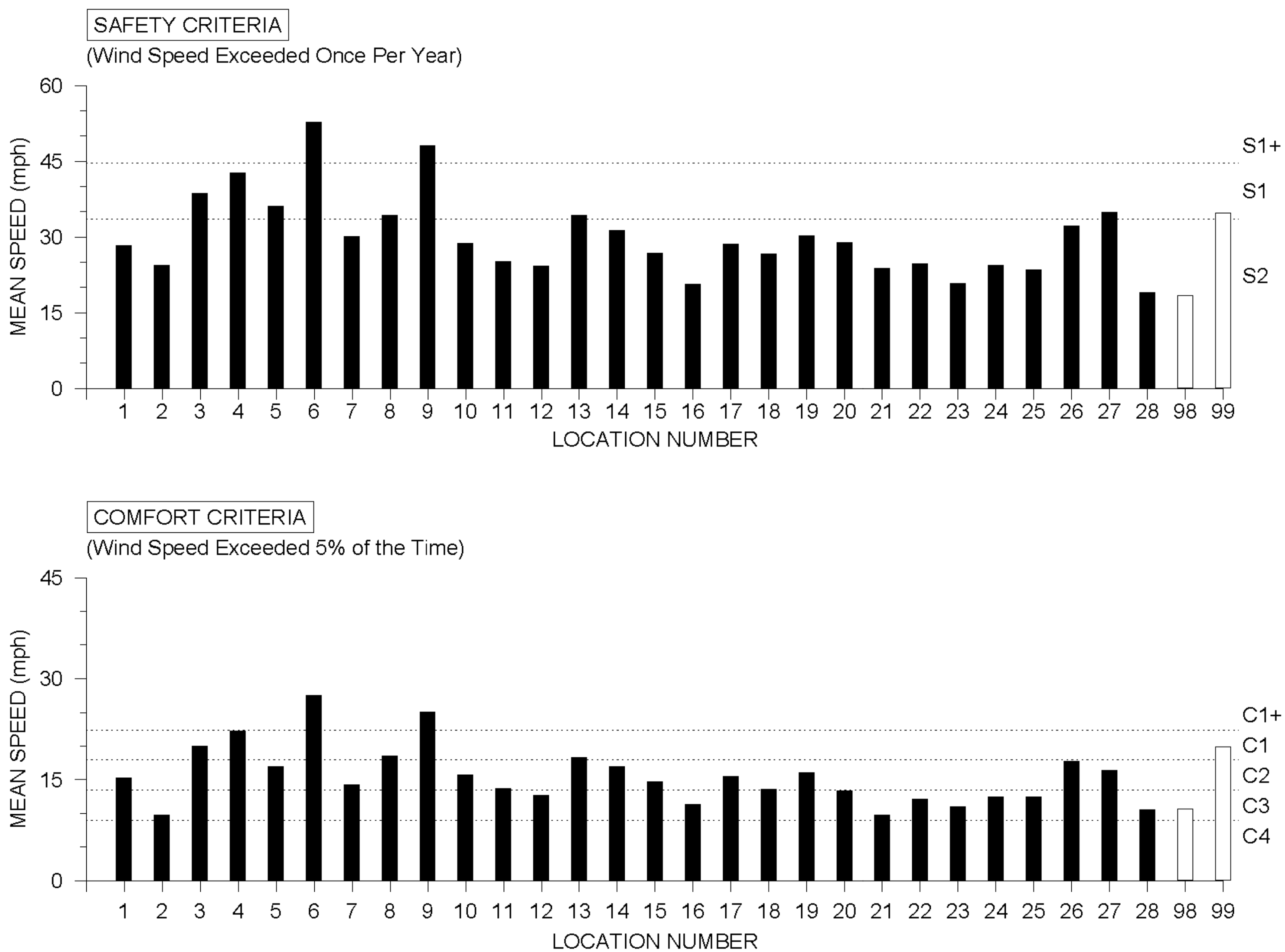


FIGURE 13b PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION – MODEL 1.**



LOCATION 98: TYPICAL SUBURBAN
LOCATION 99: TYPICAL OPEN COUNTRY

ANNUAL WINDS

FIGURE 14a PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION MODEL 2.**

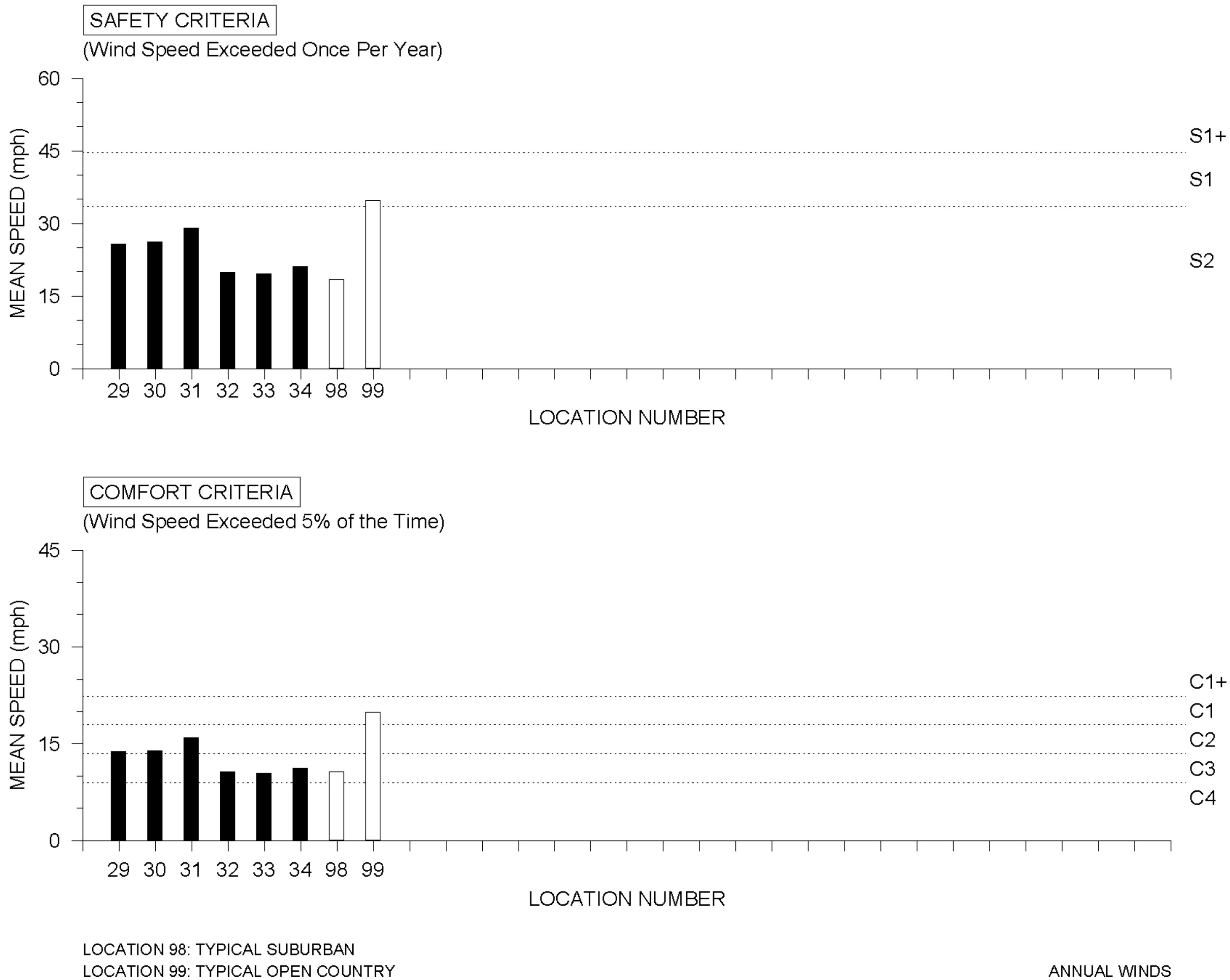


FIGURE 14b PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION*MODEL 2*.

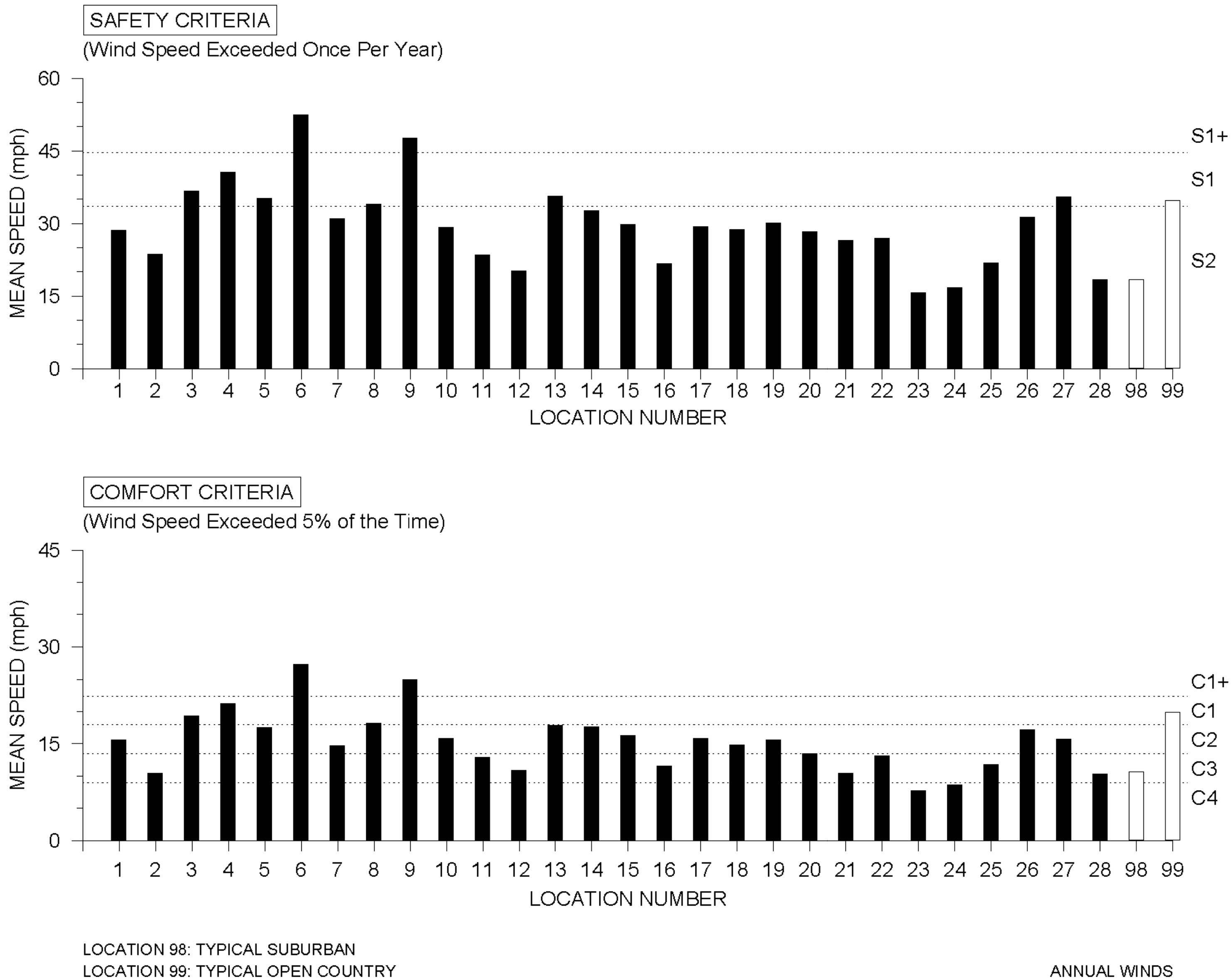
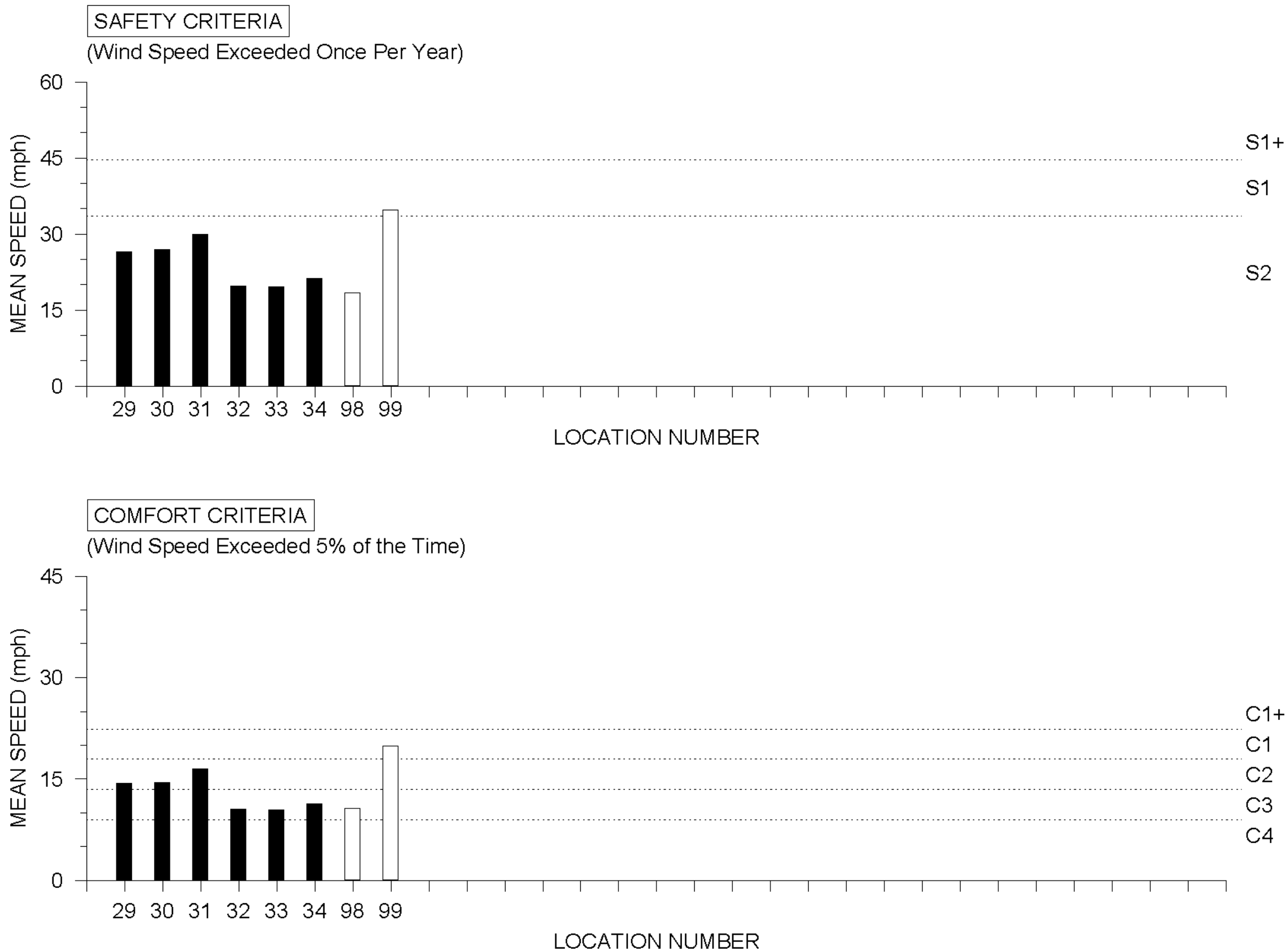


FIGURE 15a PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION - MODEL 3.**



LOCATION 98: TYPICAL SUBURBAN
LOCATION 99: TYPICAL OPEN COUNTRY

ANNUAL WINDS

FIGURE 15b PREDICTED MEAN WIND SPEEDS COMPARED WITH CRITERIA FOR PEDESTRIAN COMFORT AND SAFETY – **FUTURE CONDITION - MODEL 3.**

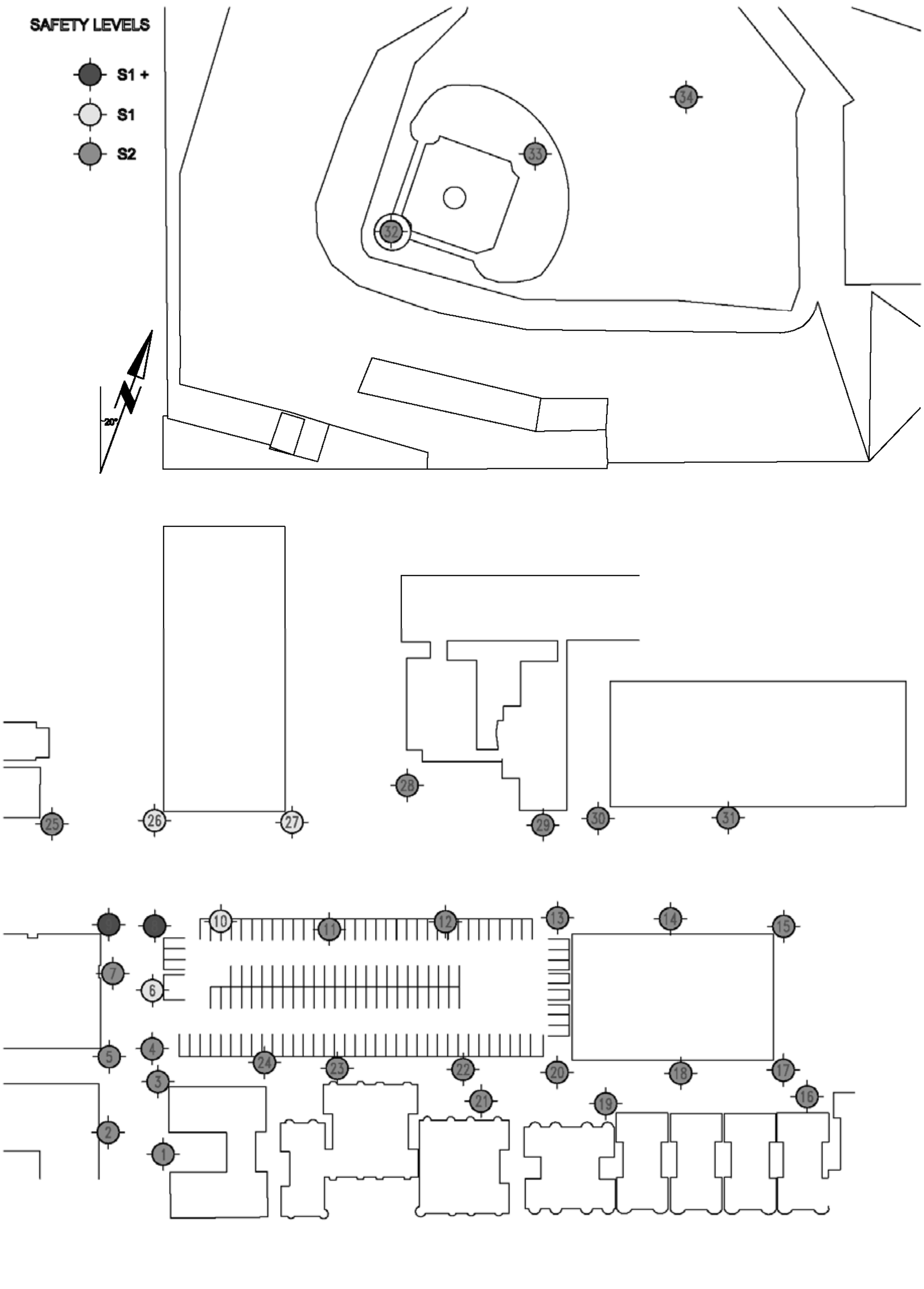


FIGURE 16a SUMMARY OF PREDICTED SAFETY LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS
****BARE SITE - CONDITION****

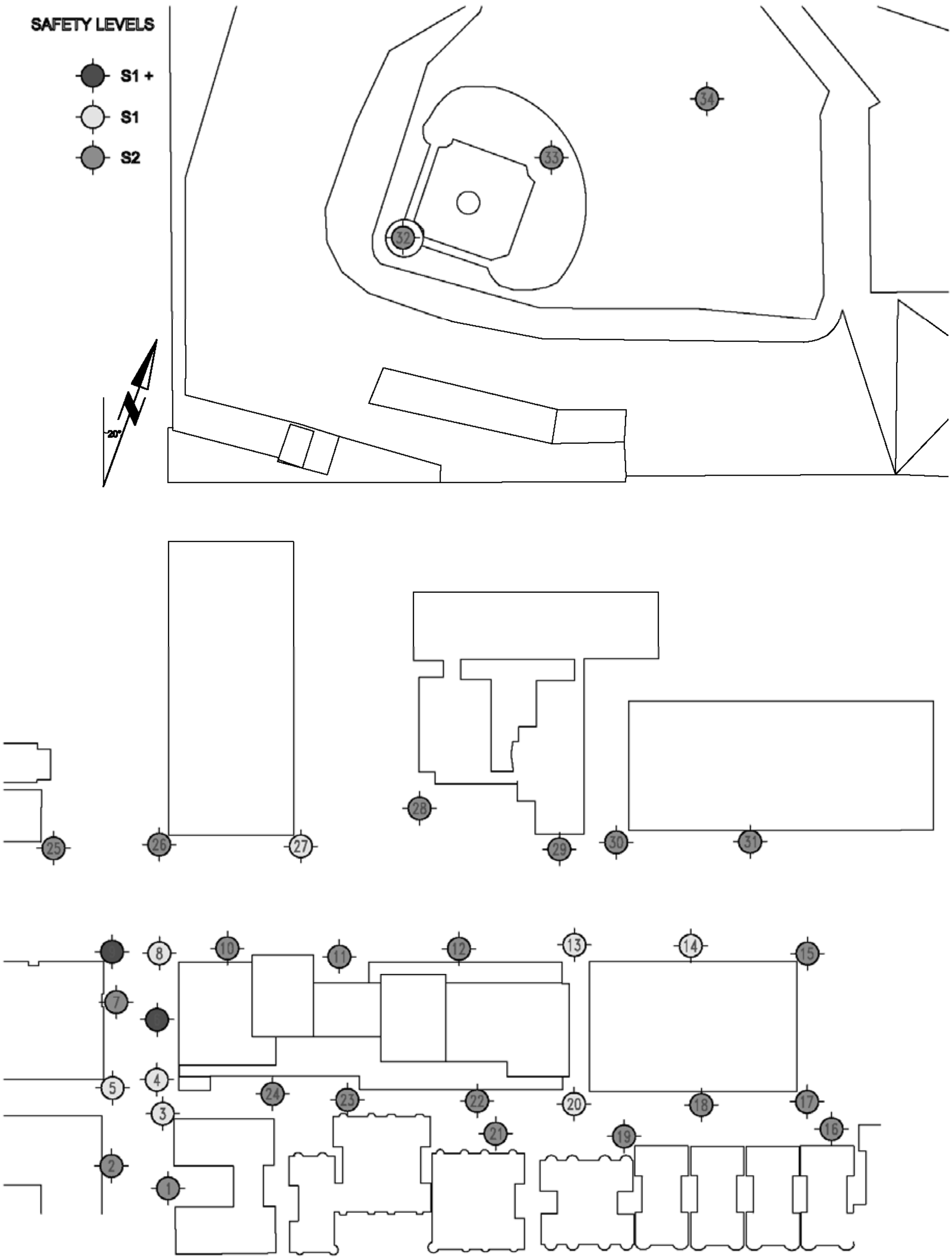


FIGURE 16b SUMMARY OF PREDICTED SAFETY LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS
****FUTURE CONDITION – MODEL 1****

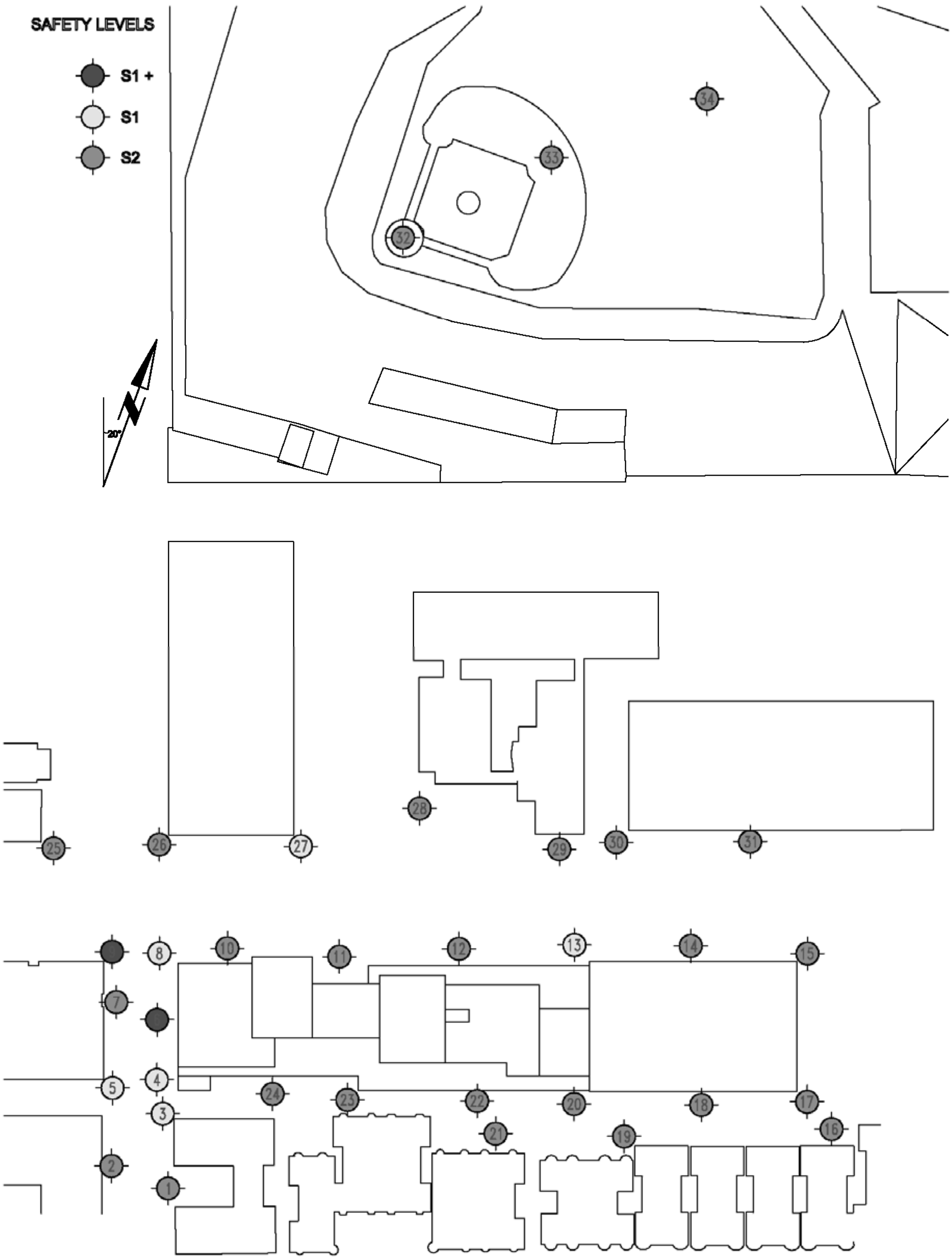


FIGURE 16c SUMMARY OF PREDICTED SAFETY LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS
****FUTURE CONDITION – MODEL 2****

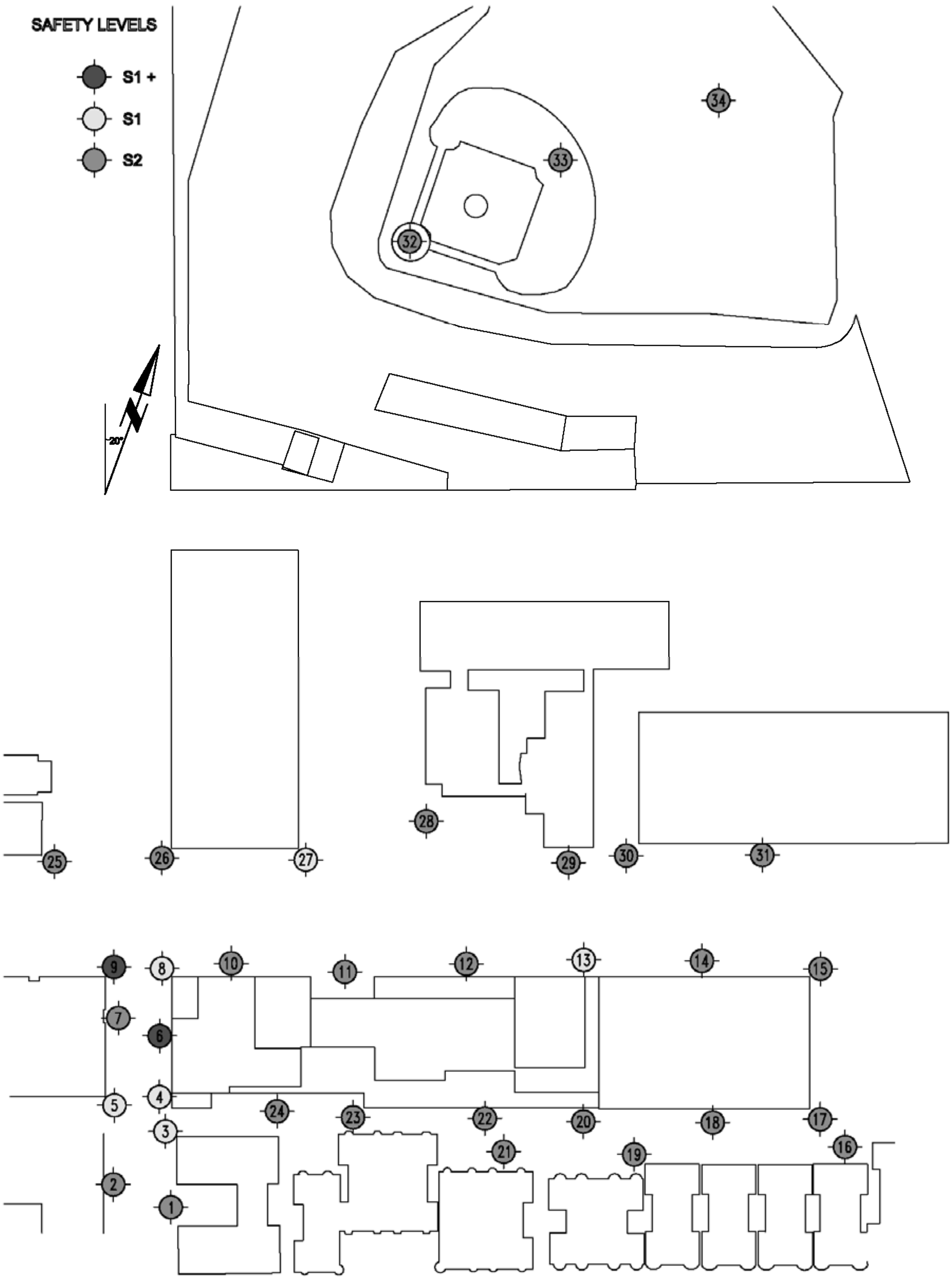


FIGURE 16d SUMMARY OF PREDICTED SAFETY LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS
****FUTURE CONDITION – MODEL 3****

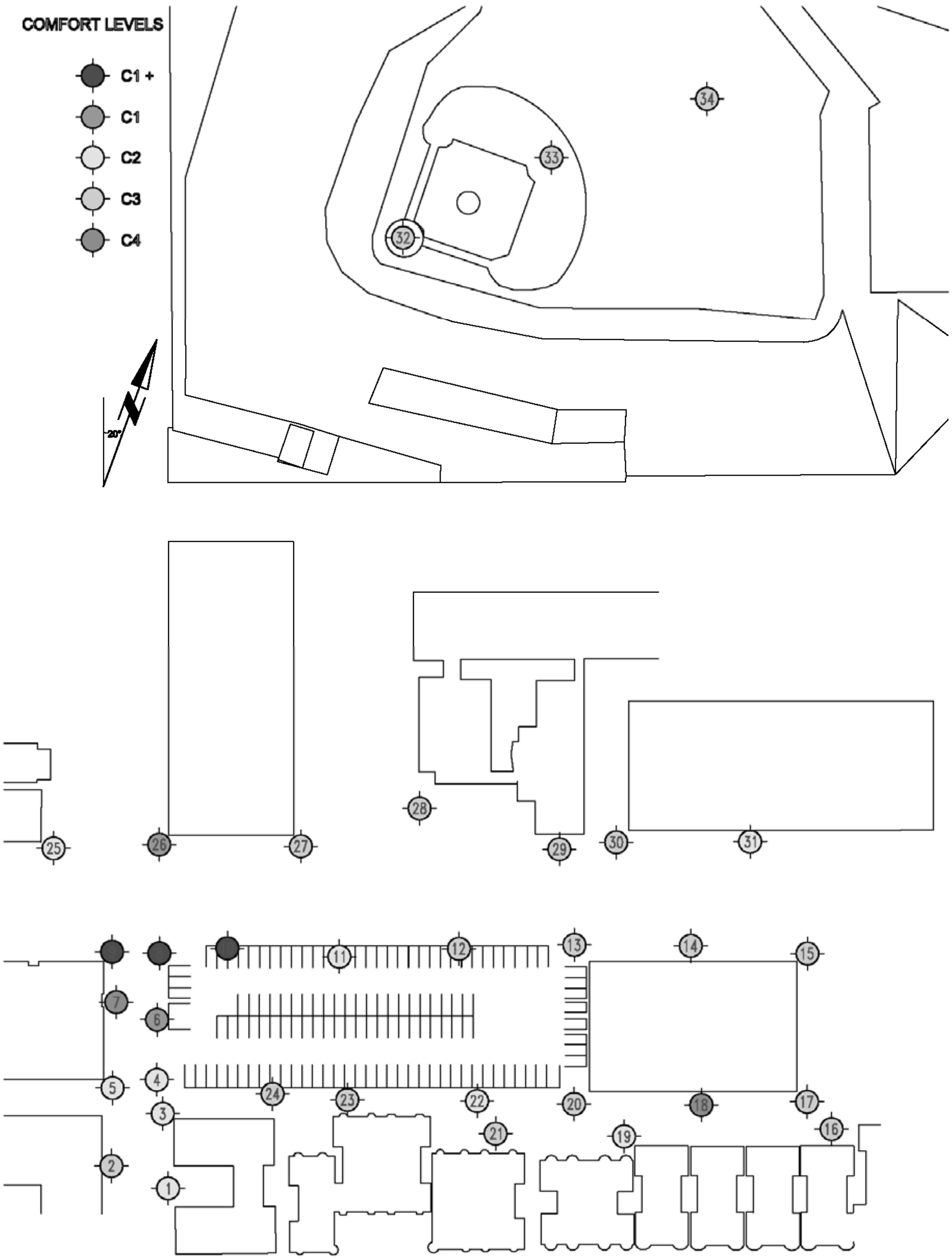


FIGURE 17a SUMMARY OF PREDICTED COMFORT LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS **BARE SITE CONDITION**

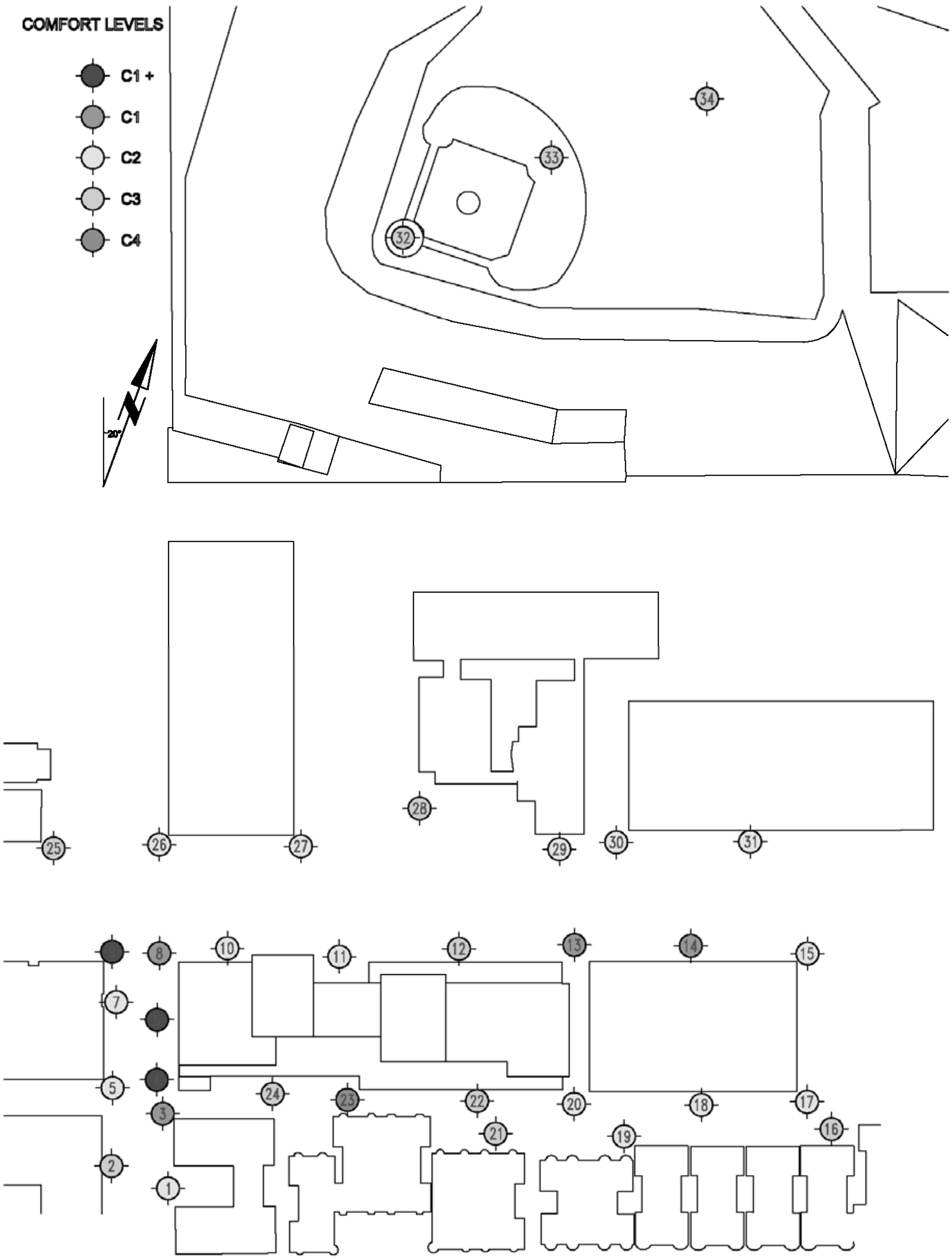


FIGURE 17b SUMMARY OF PREDICTED COMFORT LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS **FUTURE CONDITION – MODEL 1**

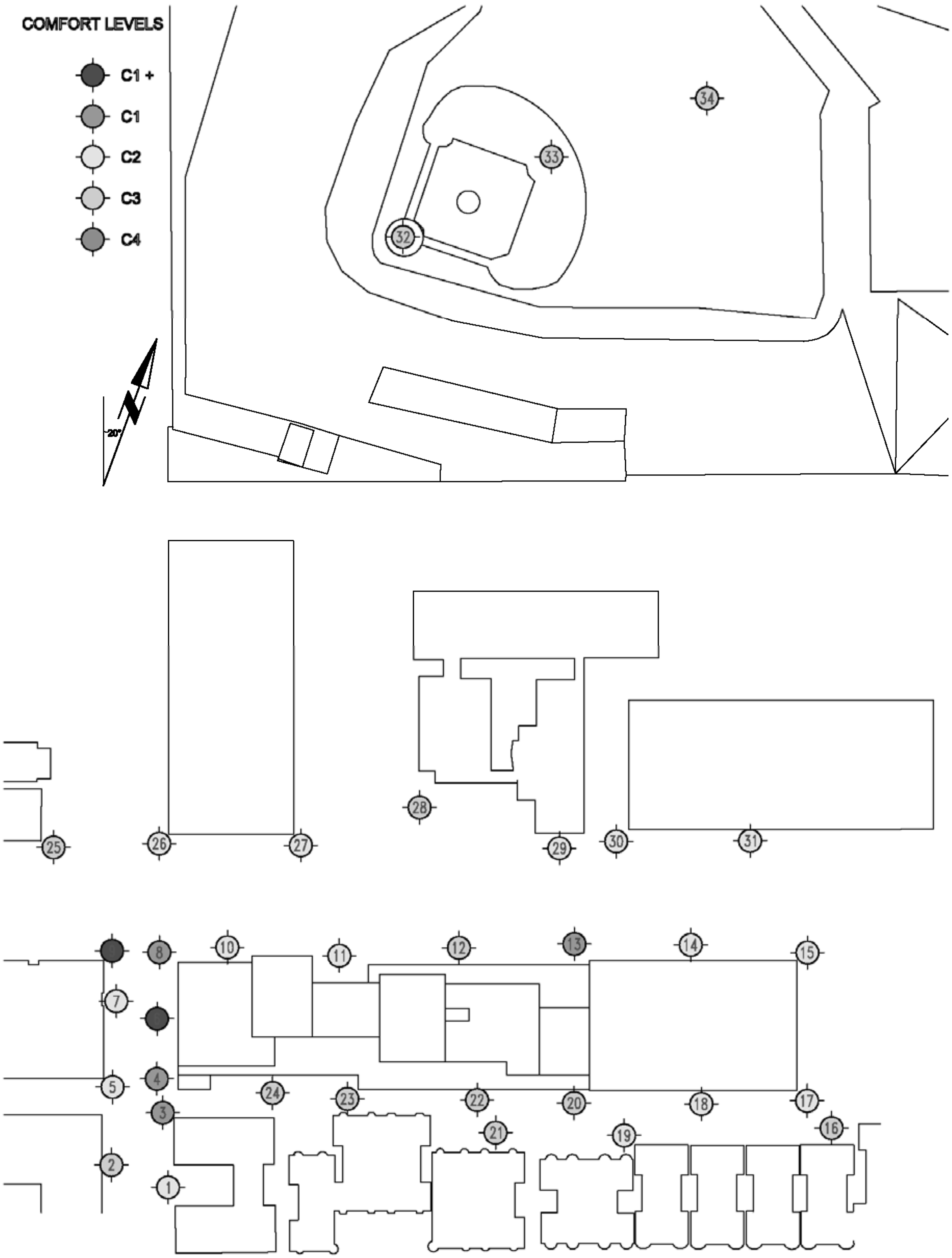


FIGURE 17c SUMMARY OF PREDICTED COMFORT LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS **FUTURE CONDITION – MODEL 2**

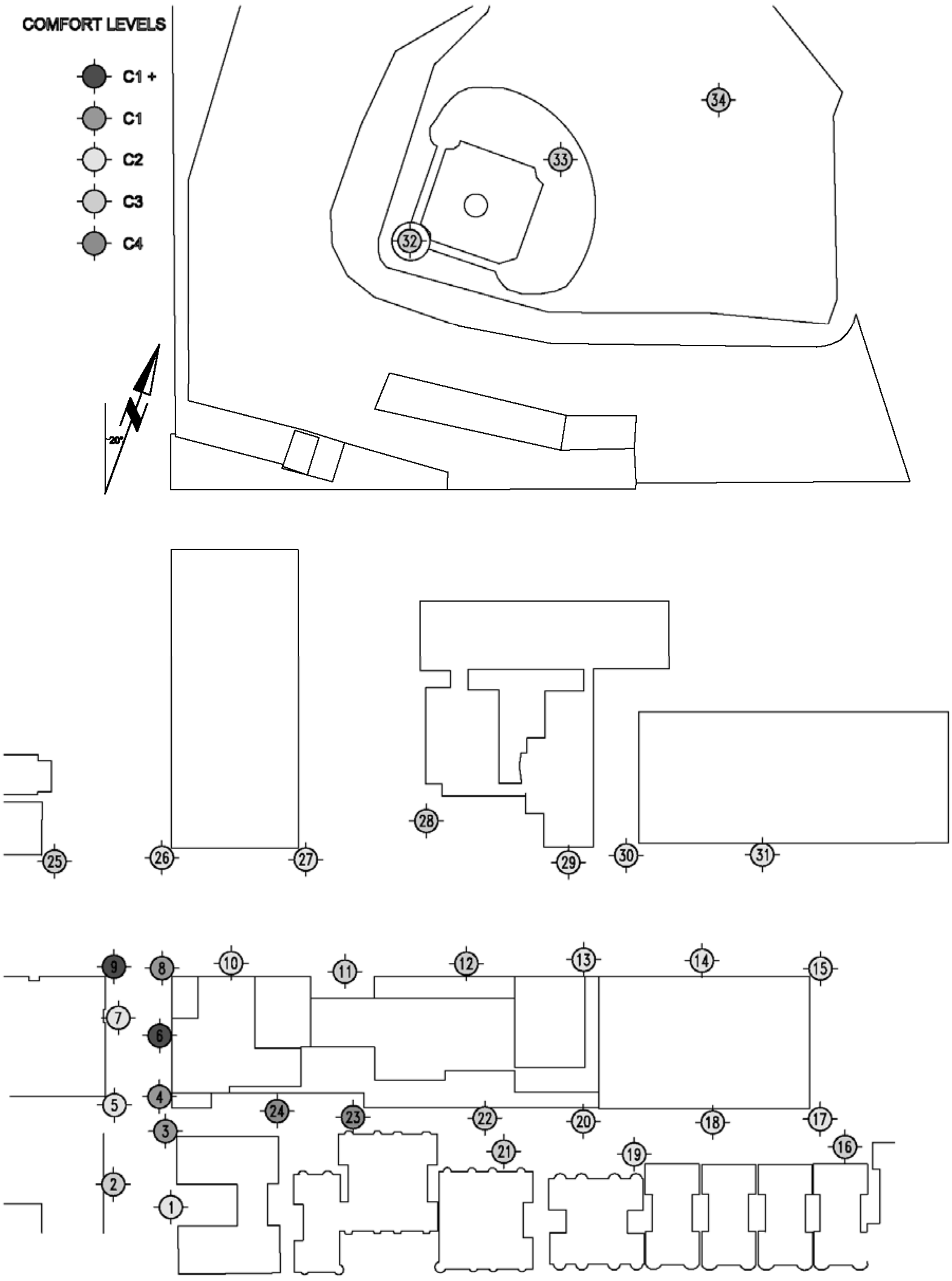


FIGURE 17d SUMMARY OF PREDICTED COMFORT LEVELS FOR PEDESTRIAN-LEVEL WIND SPEEDS **FUTURE CONDITION – MODEL 3**

APPENDIX A

PROBABILITY DISTRIBUTIONS OF WIND SPEED AND DIRECTION

In the plots, the radial distance represents the wind speed. Contours are plotted for four probability levels: the innermost contour is for a probability level of 0.01 or 1% of the time. The other contours represent 0.1%, 0.01% and 0.001% of the time. Thus the more-common winds are represented by the inner contours and the more-rare winds by the outer contours.

These plots have been derived using data at 16 compass directions, which were interpolated to every 10°. Thus, a point on the innermost contour would represent the wind speed that is exceeded 1% of the time within a 10° sector centred on that wind direction.

To determine the probability of exceeding a particular wind speed at a particular direction, interpolate between the contour levels. For example, to determine the probability of exceeding 12 m/s from the east, find the point on the plot corresponding to this speed and direction. If, for example, the point is halfway between the 1% and 0.1% contours, then the probability of exceeding 12 m/s from the east is 0.5% or 0.005.

The probability of a particular wind speed being exceeded regardless of direction can be obtained by summing the probabilities of exceeding that wind speed at every 10° over the full 360° azimuth range.

APPENDIX B

POLAR PLOTS OF MEAN SPEED COEFFICIENTS

- Speed ratios are the speed at the probe height divided by the speed at reference height (see Figure 2B).
- The azimuth indicated refers to the direction of the oncoming reference-height wind flow, measured from true North. Surface wind directions may vary considerably from these.
- In the labelling ‘Building Option 1’, ‘Building Option 2’, and ‘Building Option 3’ and used synonymously with future building Models 1, 2 and 3 configurations, respectively.

APPENDIX C

POLAR PLOTS OF PEAK SPEED COEFFICIENTS

- Speed ratios are the speed at the probe height divided by the speed at reference height (see Figure 2B).
- The azimuth indicated refers to the direction of the oncoming reference-height wind flow, measured from true North. Surface wind directions may vary considerably from these.
- Note: Peak = Mean + 1.5 Standard Deviations
- In the labelling 'Building Option 1', 'Building Option 2', and 'Building Option 3' and used synonymously with future building Models 1, 2 and 3 configurations, respectively.

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B PDA Development Plan

BOSTON REDEVELOPMENT AUTHORITY

DEVELOPMENT PLAN

for

1282 BOYLSTON STREET, BOSTON

within

PLANNED DEVELOPMENT AREA NO. ___

THE ABBEY GROUP, Developer

_______________, 2011

1. **Development Plan**: In accordance with Article 3, Section 3-1A and Article 80, Section 80C of the Boston Zoning Code (the "Code"), this development plan sets forth information on the development of a proposed project at 1282 Boylston Street, Boston (the "Project"), including the proposed location and appearance of structures, the proposed uses of the Project, the proposed dimensions of the structure, the proposed density, the proposed parking and loading facilities, access to public transportation and other major elements of the Project (the "Development Plan").

2. **Developer**: The developer of the Project is The Abbey Group, 575 Boylston Street, Boston, MA, its successors and assigns (the "Developer"), on behalf of Offsite Real Estate, LLC.

3. **Site**: The Project site consists of approximately 1.1 acres located at 1282 Boylston Street in Boston (the "Site"). A Site Location Plan is included in the set of plans referenced in Appendix 1. The Site has approximately 356 feet of frontage on Boylston Street. Currently it contains a surface parking lot for 169 vehicles. The Project Site was formerly used as a McDonald's restaurant; this building was demolished in 2010. The Site is more particularly bounded and described as shown on the existing conditions plan prepared by Nitsch Engineering (the "Survey Plan"), a copy of which is included in the set of plans referenced in Appendix 1.

4. **Proposed Location and Appearance of Structures**: The Project consists of the construction of an approximately 348,235 gross sq. ft. mixed-

use building containing approximately 210 residential units, approximately 99,000 gross sq. ft. of office space and approximately 15,000 gross sq. ft. of ground floor retail space, totaling 331,653 of occupied sq. footage, and with underground parking for approximately 295 vehicles. The parking spaces will be contained in a below-grade garage within the building. The loading bays and service areas will be located to the rear of the building on the Site.

The Developer has engaged the architectural firm of Bruner/Cott & Associates, Inc. to design the Project. The Project is being designed to increase pedestrian accessibility in the area and to revive and reinvigorate a long-neglected parcel. The preliminary architectural drawings referenced in Appendix 1 reflect the following design intentions:

The Project maintains a focus on a design aesthetic that is warm, yet modern, and is sympathetic to the surrounding buildings. The multi-material façade articulation, as well as increased sidewalk width, added lighting and new landscape enhancements will bring a warm pedestrian "urban village" feeling to the area. The curtainwall system consists of a series of multiple-story projected frames, which are proposed to be painted aluminum and will likely contain low-E insulated glass units and colored spandrel panels. The more solid punched window and panel system is composed in multi-story vertical staggered modules, and is also working to reduce scale and add depth and shadow. The ground floor retail façade will be composed with significant areas of clear glass curtainwall systems paired with more durable stone or masonry columns and framing elements.

The exterior design of the retail and office floors will buffer the existing low and mid-rise residential buildings located to the south of the Site in the Fenway neighborhood and will provide retail and other ground floor uses that the entire neighborhood will enjoy. The uses and design of the Project will fulfill the intent of the Fenway Neighborhood Zoning District.

The massing along Boylston Street complies with the streetwall setback of 15 feet, and also incorporates a 7 foot setback along Jersey Street. The proposed accessway along on the east side of the Site (adjacent to the Baseball Tavern) will allow access to the Project garage as well as public vehicular and pedestrian access from Boylston Street to the public alley to the rear of the Site.

The proposed project will provide a dynamic, flexible, programmable neighborhood space (the "Community Space") that is available to all individuals and groups in the neighborhood. It is located on the ground floor of the building, and is attached to a neighborhood café, restaurant or coffee shop. To make this space accessible to all in the neighborhood it is unaffiliated with any one particular group, but rather can be occupied by individuals throughout the day and by groups on a reservation or first come first served basis.

The space will be flexible to allow for individual and small group seating to meet and congregate and be supported and served by the café, but when called upon can be segregated from the café and the furniture rearranged to hold larger meetings.

Programming opportunities exist for the space as well. Ideas include free WiFi for personal use, a reading library, gallery shows of local artists and support for live music.

The community center will be handicap accessible.

5. **Open Spaces and Landscaping**: The portion of the Site which faces Boylston Street will provide appropriate visual and physical transition from the Fenway neighborhood to Boylston Street. The Boylston street sidewalk will be approximately 23 feet wide (including a 10 foot sidewalk café seating zone) and the Jersey Street sidewalk will be approximately 13 feet wide. The ground floor retail spaces will enliven the pedestrian experience along Boylston Street. The widened sidewalk along Jersey Street will be inviting to the neighborhood as a more open transition to the Boylston Street.

6. **Project Uses**: The Project may be used for those retail, restaurant, office and residential,off-street parking, and loading uses listed in Appendix 3 attached hereto. It is intended that the uses of the Project will conform generally to the uses enumerated in Table B of Article 66 of the Code, however, the uses for the Project set forth on said Appendix 3 may include modifications of such uses in accordance with the provisions of Section 66-28.1 of the Code.

7. **Size and Dimensions of Structures**: The Project consists of the construction of an approximately 348,235 gross sq. ft. mixed-use building containing approximately 210 residential units, approximately 99,000 gross sq. ft. of office space and approximately 15,000 gross sq. ft. of ground floor retail space with underground parking for approximately 295 vehicles. The parking spaces will be contained in a below-grade garage within the building. The loading bays and service areas will be located to the rear of the building on the Site.

8. **The Project data and approximate dimensions** are as follows:

Height:

To roof ridge	178 feet
Street Wall Height	60 feet

Setbacks:

Setback above Street Wall height	18 feet

Lot Area and Floor Area Ratio:

Lot Area:	47,379 SF

F.A.R. (excludes parking below-grade): 7.0 (331,653 SF)

Parking:

Parking Spaces (all below-grade) 295 spaces

*F.A.R. Square Feet excludes below-grade parking, voids in floor areas, such as mechanical shafts and elevator shafts, and space occupied by mechanical and electrical closets, laundry and storage areas.

9. **Zoning Actions**: The Project is presently situated within the South Boylston Neighborhood Shopping subdistrict of the Fenway Neighborhood District and is governed by Article 66 of the Code. Pursuant to Section 66-27 of the Code, Planned Development Areas ("PDA") are allowed in this District, provided that a PDA must be approved prior to October 22, 2011. The height of a structure in a PDA area is limited to 150 feet. and it is proposed that the zoning for the Project Site will be amended to provide for a height limit of 178 feet. A PDA in this district is also required to devote 70% of the gross floor area of a project to residential uses, this amount may be reduced to 60% of the gross floor area if a community facility use operated by a non-profit is located within the project. A PDA is also required to contain Affordable Housing in the percentages set forth in Section 66-28.1(b) of the Code. While the Project will devote approximately 66% of the gross floor area to residential uses, the Community Space will not be operated by a non-profit.

Also, the Project will provide that ten percent (10%) of the residential units will be set aside (on-site) as Affordable Housing and the Community Space will fulfill the equivalent contribution required by Section 66-28.1(b)2 of the Code (even though the Community Space will not be operated by a non-profit).

It is proposed that the zoning for the Project Site be amended to permit the height deviations and the community use deviations for the Project Site.

The Project will also seek an interpretation or modification of Section 66-28.1(c) of the Code in order to allow the parking ratio to be between 0.75 and 1.0 spaces per dwelling unit for longer-term residents and/or future condominium ownership.

10. **Dimensional Requirements**. The Project will be subject to the following dimensional requirements in lieu of the underlying zoning requirements otherwise required by the Code:

Dimensional Requirements	Project Dimensions
Maximum Floor Area Ratio	7.0

Dimensional Requirements	Project Dimensions
Maximum Building Height (ft)	178
Street Wall Height (ft.)	60
Setback above Street Wall Heights	18

11. **Signs**. Section 66-41 of the Code regulates the size and location of signs in the Fenway Neighborhood District and provides that the sign requirements for the Project may be established through design review and Large Project Review under Article 80B of the Code. In accordance therewith, signs for the Project will be approved by the Urban Design Department of the Boston Redevelopment Authority ("BRA").

12. **Other Zoning Approvals**. In addition to addressing the above-referenced zoning provisions, the Project is also subject to Large Project Review by the BRA. In accordance with the requirements set forth in Section 80B of the Code, the Developer has filed an Expanded Project Notification Form with the BRA and will comply with the Development Impact Project requirements for the payment of Housing and Jobs Exactions as provided in Section 80B-7 of the Code. The Site will be subject to the use and dimensional controls set forth herein, which are comprehensive development controls delineating the uses and dimensions for the Project.

13. **Projected Number of Employees**: It is anticipated that the Project will generate approximately 600 construction jobs, 250 of which will be for trade jobs. It is anticipated that the project will generate approximately 360 on site permanent jobs.

14. **Traffic Circulation**: Traffic circulation for the Project will be accomplished off of Jersey Street and Boylston Street. An approximately 30 ft wide private accessway (open to public travel) will be provided from Boylston Street to the public alley to the rear of the Site. The garage entrance to the Project will be located off this new accessway. This new accessway will allow vehicles to exit the garage and either take a right turn onto Boylston inbound or take a right from the garage and enter onto the public alley and exit onto Jersey Street. Vehicles coming to the Project will access the garage via the new accessway off Boylston Street or from the public alley off Jersey Street.

15. **Loading Requirements**: Truck and loading access to the Project will take place on the rear of the Site and trucks will enter the Site from Jersey Street and exit the Site to Boylston Street.

16. **Access to Public Transportation**: The Site is close to the Fenway subway stop on the MBTA Green Line. There are also MBTA bus routes that directly pass the Site. The sidewalk abutting the MBTA bus stop on Jersey Street will be widened to more easily accommodate the bus stop, the community use space and the retail space along Jersey Street.

17. **Compliance with the Groundwater Conservation Overlay District**. The Project Site is located within the Groundwater Conservation Overlay District. The Developer will incorporate systems into its Project that meet the groundwater conservation standards of Article 32 and the Developer will obtain a written determination from the Boston Water and Sewer Commission as to whether said standards are met. The Developer will provide a copy of this letter to the BRA and Boston Groundwater Trust prior to the issuance of a Certification of Consistency or Certification of Compliance, as applicable. Accordingly, the Developer will not be required to obtain a conditional use permit from the Board of Appeal, and shall be deemed to be in compliance with Article 32.

18. **Green Building**. The Developer has incorporated the LEED Building Rating System criteria in the design of the Project. As a result, the Project has been designed to meet LEED standards, which incorporates the following Green Building Attributes:

- Sustainable Site Credit with respect to site location, development density and community connectivity, public transportation access, bicycle storage and changing rooms, parking capacity, storm water design and light pollution reduction.
- Water Efficiency Credit with respect to efficient landscaping.
- Energy Atmospheric Credit with respect to optimizing energy performance.
- Materials and Resources Credit with respect to construction waste management and reuse of materials.
- Indoor Environmental Quality Credit with respect to air delivery monitoring system, construction IAQ Management Plan, use of low emitting materials.

19. **Public Benefits**: The direct public benefits of the Project are many. The Project will:

Fenway Neighborhood Community Center

- The proposed project will include a ground floor space, attached to a restaurant or café, that is for the use and enjoyment of the neighborhood.

Affordable Housing

- The project will provide 10% of its total residential units as affordable, onsite housing for the benefit of the neighborhood.

Economic Benefits

- Add over 200 new housing units to the ever-increasing demand of the Fenway Neighborhood.
- Introduce new retail and residential vitality along Boylston and Jersey Streets.
- Increase economic activity to the Fenway with mixed-use property for residents, workers, shoppers, and diners.
- Create 600 construction jobs with as many as 250 trades-people working onsite.
- Create a public transit accessible employment center with up to 360 jobs on-site once completed.
- Create new job opportunities and provide diversification and expansion of the Fenway's economy
- Increase tax revenue for the city.
- Total Linkage payments of approximately $132,000.

Neighborhood Design Enhancements:

- Create a vibrant pedestrian and public transit accessible multi-use residential, retail, and office project in an existing surface parking lot.
- Reduce the ground floor footprint of the building to create a dedicated truck drive lane away from the existing neighborhood alley to lessen

vehicular congestion and pull the loading functions away from the neighboring residential buildings.

- Use varied multi-level and multi-material façade articulation to bring a warm pedestrian "urban village" feeling to the area.

- Support the Boylston Street Reconstruction Plan through sidewalk and streetscape design.

- Reduce building foot print on Jersey Street to align with existing building setback, extending to residential street wall to Boylston Street. At the corner of Jersey and Boylston reducing the building footprint even further to provide as much visual space as possible between the buildings of 1282 and 1330 Boylston at the gateway to the residential West Fens.

- Create a new, two lane private way (open to public travel) for alley access and development access.

- Eliminate two curb cuts on Boylston Street.

- Continue the recent trend of bringing high quality architecture to the neighborhood.

- Provide improvements to urban design characteristics and aesthetic character of the Site and its surrounding, and the enhancement of existing open space or the creation of new open space.

Sustainable Design Focus:

- Incorporate state of the art "green" design elements including energy efficient mechanical and building control systems and environmentally responsible materials.

- Build onsite bicycle storage with easy access to encourage bicycle use.

Additionally, pursuant to Section 80B-7 of Article 80 of the Boston Zoning Code, the Project will make total contributions to the City, as Housing and Jobs Exactions, of approximately $132,160.00. This contribution is divided in the following manner: Housing Exaction of $110,180.00, and a Jobs Exaction contribution of $21,980.00.

20. **Development Review Procedures**: All design plans for the Project are subject to on-going development review and approval by the BRA. Such

review is to be conducted in accordance with Article 80 of the Code and the BRA Development Review Guidelines, dated 2006.

LIST OF APPENDICES

to

DEVELOPMENT PLAN

For

1282 BOYLSTON STREET

APPENDIX 1

PROJECT DRAWINGS, SITE SURVEY AND PHOTOGRAPHS (ALSO SHOWN IN 1282 BOYLSTON STREET EXPANDED PNF, FIGURE 2-2 and 3-43 THROUGH 3-64).

APPENDIX 2

TRANSPORTATION AND TRAFFIC ESTIMATES (ALSO SHOWN IN 1282 BOYLSTON STREET EXPANDED PNF, SECTION 3.1 – TRANSPORTATION COMPONENT AND TRANSPORTATION TECHNICAL APPENDIX (VOL. 2)).

APPENDIX 3 ALLOWED USES - SEE ATTACHED

APPENDIX 3

1282 BOYLSTON STREET

ALLOWED USES

Automatic Teller Machine

Bank

Community Uses

Library

Day Care Center

Community Center

Art Gallery

Art Use

Museum

Public Art

Display Space

Studios, Art

Studios, Production

Ticket Sales

College Or University Use

Elementary or Secondary School

Kindergarten

Professional School

Trade School

Amusement Game Machines In Commercial Establishment

Restaurant With Live Entertainment, Not Operating After 10:30 pm

Restaurant With Live Entertainment Operating After 10:30 pm

Clinic

Clinical Laboratory

Hospital

Artist Mixed Use

Agency or Professional Office

General Office

Office of Wholesale Business

Automatic Telephone Exchange

Telecommunication Data Distribution Center

Telephone Exchange

Product Development or Prototype Manufacturing

Research Laboratory

Multi-Family Dwelling

Restaurant

Take-Out Restaurant – Small

Take-Out Restaurant – Large

Sidewalk Cafe

Bakery

General Retail Business

Liquor Store

Local Retail Business

Barber or Beauty Shop

Caterer’s Establishment

Dry Cleaning Shop

Laundry, Retail Service

Laundry, Self-Service

Photocopying Establishment

Shoe Repair

Tailor Shop

Photographer’s Studio

Radio/Television Repair

Upholsterer’s Shop

Car Wash

Indoor Sale Without Installation Of Automotive Parts, Accessories And Supplies

Public Parking Garage (including, without limitation, parking for Fenway Park)

Rental Agency For Cars

All Accessory Uses To The Foregoing

Accessory Storage of flammable liquids and gases, small and large

Accessory Outdoor Cafe

Accessory Service Use

Accessory Services for Apartments

Accessory Services for Accessory Parking

Ancillary Parking

1282 BOYLSTON STREET

1282 Boylston Street
Boston, Massachusetts 02215

Transportation Study Technical Appendix

SUBMITTED TO:

The Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts

SUBMITTED BY:

The ABBEY Group
575 Boylston Street
Boston, Massachusetts

1282 Boylston Street

Boston, MA 02215

Transportation Study Technical Appendix

Submitted pursuant to Article 80c of the Boston Zoning Code

Submitted to:

The Boston Redevelopment Authority
One City Hall Square
Boston, Massachusetts

Submitted by:

The Abbey Group
575 Boylston Street
Boston, Massachusetts

In Association with:

Bruner/Cott & Associates
Nitsch Engineering, Inc.
Cosentini Engineers
Epsilon Associates, Inc.
Haley & Aldrich, Inc.
Suffolk Construction
Alan G. Davenport Wind Engineering Group
Tremont Preservation Associates
Rubin and Rudman, LLP
Weidlinger Associates, Inc.

July 2011

TECHNICAL APPENDIX - TRANSPORTATION

2007 Turning Movement Vehicle Counts - McDonalds

Nitsch Engineering

186 Lincoln Street, Suite 200
Boston, MA 02111
T: 617-338-0063
F: 617-338-6472

City: Boston
Client: Landmark Center
Location: Boylston St at McDonald Lot
E/W: Boylston Street

Date Start: 26-Feb-09
Date End: 01-Mar-09
Site Code: McDonald Parking
Station ID: Lot Driveway

Start	23-Feb-09		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T	Entering	Exiting T
12:00 AM	*	*	*	*	*	*	*	*	15	5	15	5	29	**31**	**13**	6
01:00	*	*	*	*	*	*	*	*	6	4	6	4	10	13	7	3
02:00	*	*	*	*	*	*	*	*	8	4	8	4	9	7	6	5
03:00	*	*	*	*	*	*	*	*	1	0	1	0	13	29	4	4
04:00	*	*	*	*	*	*	*	*	0	0	0	0	0	3	0	0
05:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0
06:00	*	*	*	*	*	*	*	*	0	0	0	0	1	0	0	0
07:00	*	*	*	*	*	*	*	*	12	13	12	13	8	4	2	1
08:00	*	*	*	*	*	*	*	*	23	11	23	11	20	9	5	1
09:00	*	*	*	*	*	*	*	*	32	35	32	35	38	7	12	**10**
10:00	*	*	*	*	*	*	*	*	34	**61**	34	**61**	**48**	15	11	3
11:00	*	*	*	*	*	*	*	*	**51**	47	**51**	47	46	27	12	5
12:00 PM	*	*	*	*	*	*	*	*	40	57	40	57	27	24	**23**	8
01:00	*	*	*	*	*	*	*	*	**81**	**89**	**81**	**89**	24	17	16	7
02:00	*	*	*	*	*	*	*	*	43	73	43	73	**43**	30	14	**9**
03:00	*	*	*	*	*	*	14	**57**	48	65	31	61	39	**32**	*	*
04:00	*	*	*	*	*	*	**32**	53	33	36	32	44	31	21	*	*
05:00	*	*	*	*	*	*	25	25	20	34	22	30	17	13	*	*
06:00	*	*	*	*	*	*	18	21	39	51	28	36	27	32	*	*
07:00	*	*	*	*	*	*	12	5	38	25	25	15	26	22	*	*
08:00	*	*	*	*	*	*	23	17	31	22	27	20	34	17	*	*
09:00	*	*	*	*	*	*	12	19	48	45	30	32	20	11	*	*
10:00	*	*	*	*	*	*	15	7	25	18	20	12	16	12	*	*
11:00	*	*	*	*	*	*	10	6	25	21	18	14	19	16	*	*
Total	0	0	0	0	0	0	161	210	653	716	579	663	545	392	125	62
Day	0		0		0		371		1369		1242		937		187	
AM Peak									11:00	10:00	11:00	10:00	10:00	00:00	00:00	09:00
Vol.									51	61	51	61	48	31	13	10
PM Peak							16:00	15:00	13:00	13:00	13:00	13:00	14:00	15:00	12:00	14:00
Vol.							32	57	81	89	81	89	43	32	23	9
Comb. Total	0		0		0		371		1369		1242		937		187	
ADT	ADT 1,153		AADT 1,153													

City: Boston
Client: Landmark Center
Location: Boylston Street at McDonald Dr
DriveThrough Entering Traffic

Nitsch Engineering

186 Lincoln Street, Suite 200
Boston, MA 02111
T: 617-338-0063
F: 617-338-6472

Date Start: 26-Feb-09
Date End: 01-Mar-09
Site Code: McDonald DriveThrou.
Station ID: Entering Traffic

Start	23-Feb-09		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Entering	Channel	Entering	Channel	Entering	Channel	Entering	Channel	Entering	Channel	Entering	Channel	Entering	Channel	Entering	Channel
12:00 AM	*	*	*	*	*	*	*	*	5	**4**	5	**4**	28	0	12	0
01:00	*	*	*	*	*	*	*	*	4	0	4	0	7	0	5	0
02:00	*	*	*	*	*	*	*	*	3	2	3	2	12	**1**	8	**1**
03:00	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0
04:00	*	*	*	*	*	*	*	*	1	0	1	0	0	0	0	0
05:00	*	*	*	*	*	*	*	*	7	0	7	0	5	0	1	0
06:00	*	*	*	*	*	*	*	*	17	0	17	0	9	0	6	0
07:00	*	*	*	*	*	*	*	*	54	0	54	0	12	0	7	0
08:00	*	*	*	*	*	*	*	*	**75**	0	**75**	0	44	0	25	0
09:00	*	*	*	*	*	*	*	*	54	0	54	0	**47**	0	22	0
10:00	*	*	*	*	*	*	*	*	51	0	51	0	46	0	11	0
11:00	*	*	*	*	*	*	*	*	56	0	56	0	42	0	**26**	0
12:00 PM	*	*	*	*	*	*	*	*	**80**	**1**	**80**	**1**	**55**	0	**44**	0
01:00	*	*	*	*	*	*	**57**	0	68	0	62	0	53	0	*	*
02:00	*	*	*	*	*	*	45	0	48	0	46	0	45	0	*	*
03:00	*	*	*	*	*	*	42	0	44	0	43	0	38	0	*	*
04:00	*	*	*	*	*	*	32	0	43	0	38	0	18	0	*	*
05:00	*	*	*	*	*	*	31	0	44	0	38	0	25	**5**	*	*
06:00	*	*	*	*	*	*	51	0	59	0	55	0	41	0	*	*
07:00	*	*	*	*	*	*	32	0	55	0	44	0	23	0	*	*
08:00	*	*	*	*	*	*	15	0	53	0	34	0	28	0	*	*
09:00	*	*	*	*	*	*	33	0	31	0	32	0	20	0	*	*
10:00	*	*	*	*	*	*	16	0	35	0	26	0	20	0	*	*
11:00	*	*	*	*	*	*	16	0	49	0	32	0	26	0	*	*
Total	0	0	0	0	0	0	370	0	936	7	857	7	644	6	167	1
Day	0		0		0		370		943		864		650		168	
AM Peak									08:00	00:00	08:00	00:00	09:00	02:00	11:00	02:00
Vol.									75	4	75	4	47	1	26	1
PM Peak							13:00		12:00	12:00	12:00	12:00	12:00	17:00	12:00	
Vol.							57		80	1	80	1	55	5	44	
Comb. Total	0		0		0		370		943		864		650		168	

ADT ADT 796 AADT 796

2011 Turning Movement Vehicle Counts - Existing

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	8	1	7	15	247	7	0	13	1	2	9	239	2	0	551
07:15 AM	8	1	14	18	257	4	0	11	2	4	5	289	7	0	620
07:30 AM	6	4	11	18	261	4	0	11	2	5	7	288	12	0	629
07:45 AM	9	4	23	24	234	4	0	13	1	5	9	229	8	0	563
Total	31	10	55	75	999	19	0	48	6	16	30	1045	29	0	2363
08:00 AM	8	0	12	16	225	5	0	11	4	3	6	291	8	0	589
08:15 AM	5	5	19	22	259	0	0	13	4	5	10	240	11	0	593
08:30 AM	7	4	9	27	270	1	0	13	4	3	6	247	7	0	598
08:45 AM	10	1	22	18	260	1	0	8	4	3	11	209	4	0	551
Total	30	10	62	83	1014	7	0	45	16	14	33	987	30	0	2331
09:00 AM	8	7	17	18	194	3	0	18	0	1	7	234	5	0	512
09:15 AM	7	2	24	11	204	6	0	16	1	4	6	222	9	0	512
09:30 AM	5	8	17	12	253	3	0	15	3	9	5	241	4	0	575
09:45 AM	4	5	14	12	262	3	0	7	1	2	10	234	4	0	558
Total	24	22	72	53	913	15	0	56	5	16	28	931	22	0	2157
10:00 AM	4	5	20	12	174	4	0	5	2	4	6	228	6	0	470
10:15 AM	12	5	14	5	185	4	0	9	2	2	10	228	5	0	481
10:30 AM	12	4	15	4	201	2	0	8	1	3	15	198	7	0	470
10:45 AM	12	2	14	8	201	6	0	11	2	8	11	251	4	1	531
Total	40	16	63	29	761	16	0	33	7	17	42	905	22	1	1952
11:00 AM	6	3	19	11	206	2	0	8	3	12	8	210	2	0	490
11:15 AM	9	2	16	10	220	0	1	11	2	15	5	245	5	0	541
11:30 AM	13	0	20	18	211	0	0	10	1	4	0	232	1	0	510
11:45 AM	11	2	24	8	191	3	0	10	3	5	0	232	7	0	496
Total	39	7	79	47	828	5	1	39	9	36	13	919	15	0	2037
12:00 PM	7	0	19	7	216	2	1	6	2	3	3	258	3	0	527
12:15 PM	11	0	26	5	223	3	0	12	3	4	0	247	6	0	540
12:30 PM	13	0	19	8	197	0	0	4	4	4	0	249	10	0	508
12:45 PM	12	0	15	21	145	0	0	5	2	3	0	269	9	0	481
Total	43	0	79	41	781	5	1	27	11	14	3	1023	28	0	2056
01:00 PM	11	3	25	5	191	1	0	12	4	4	0	220	0	0	476
01:15 PM	9	1	26	7	180	3	0	5	0	1	1	258	4	1	496
01:30 PM	10	6	28	6	227	4	0	10	2	4	0	245	9	0	551
01:45 PM	9	5	29	12	198	3	1	11	2	7	0	238	7	0	522
Total	39	15	108	30	796	11	1	38	8	16	1	961	20	1	2045
02:00 PM	4	1	26	14	191	6	0	12	7	5	11	231	1	0	509
02:15 PM	15	6	29	13	186	6	0	9	6	8	10	252	6	0	546
02:30 PM	10	6	23	16	199	5	0	10	4	7	9	245	4	0	538
02:45 PM	8	3	17	12	195	6	0	18	7	3	15	285	4	0	573
Total	37	16	95	55	771	23	0	49	24	23	45	1013	15	0	2166
03:00 PM	6	8	26	20	211	6	0	15	3	2	15	228	3	0	543
03:15 PM	9	7	17	20	174	3	0	11	6	5	10	226	5	0	493
03:30 PM	8	7	21	11	191	7	0	11	0	5	12	239	9	0	521
03:45 PM	11	3	28	19	217	5	1	13	4	5	16	288	4	0	614
Total	34	25	92	70	793	21	1	50	13	17	53	981	21	0	2171
04:00 PM	13	7	25	6	218	3	0	15	4	7	8	256	3	0	565
04:15 PM	16	5	23	11	235	4	0	11	4	6	22	270	4	0	611

PRECISION
D A T A
INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars - Heavy Vehicles

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	21	4	34	6	230	8	0	6	5	8	13	264	5	0	604
04:45 PM	25	7	34	3	212	11	0	10	6	8	18	278	7	0	619
Total	75	23	116	26	895	26	0	42	19	29	61	1068	19	0	2399
05:00 PM	26	8	36	11	236	16	0	8	1	6	10	261	3	0	622
05:15 PM	20	2	40	5	223	10	0	17	4	3	17	272	4	0	617
05:30 PM	14	2	30	7	217	6	1	17	2	5	17	282	2	0	602
05:45 PM	13	6	39	9	202	5	0	17	4	4	10	265	4	0	578
Total	73	18	145	32	878	37	1	59	11	18	54	1080	13	0	2419
Grand Total	465	162	966	541	9429	185	5	486	129	216	363	10913	234	2	24096
Apprch %	29.2	10.2	60.6	5.3	92.8	1.8	0	58.5	15.5	26	3.2	94.8	2	0	
Total %	1.9	0.7	4	2.2	39.1	0.8	0	2	0.5	0.9	1.5	45.3	1	0	
Cars	444	151	911	534	9248	153	5	465	116	206	340	10671	212	2	23458
% Cars	95.5	93.2	94.3	98.7	98.1	82.7	100	95.7	89.9	95.4	93.7	97.8	90.6	100	97.4
Heavy Vehicles	21	11	55	7	181	32	0	21	13	10	23	242	22	0	638
% Heavy Vehicles	4.5	6.8	5.7	1.3	1.9	17.3	0	4.3	10.1	4.6	6.3	2.2	9.4	0	2.6

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
07:15 AM	8	1	14	23	18	257	4	0	279	11	2	4	17	5	289	7	0	301	620
07:30 AM	6	**4**	11	21	18	**261**	4	0	**283**	11	2	**5**	18	7	288	**12**	0	**307**	**629**
07:45 AM	**9**	4	**23**	**36**	**24**	234	4	0	262	**13**	1	5	**19**	**9**	229	8	0	246	563
08:00 AM	8	0	12	20	16	225	**5**	0	246	11	**4**	3	18	6	**291**	8	0	305	589
Total Volume	31	9	60	100	76	977	17	0	1070	46	9	17	72	27	1097	35	0	1159	2401
% App. Total	31	9	60		7.1	91.3	1.6	0		63.9	12.5	23.6		2.3	94.7	3	0		
PHF	.861	.563	.652	.694	.792	.936	.850	.000	.945	.885	.563	.850	.947	.750	.942	.729	.000	.944	.954
Cars	30	8	56	94	76	950	12	0	1038	44	9	16	69	25	1076	34	0	1135	2336
% Cars	96.8	88.9	93.3	94.0	100	97.2	70.6	0	97.0	95.7	100	94.1	95.8	92.6	98.1	97.1	0	97.9	97.3
Heavy Vehicles	1	1	4	6	0	27	5	0	32	2	0	1	3	2	21	1	0	24	65
% Heavy Vehicles	3.2	11.1	6.7	6.0	0	2.8	29.4	0	3.0	4.3	0	5.9	4.2	7.4	1.9	2.9	0	2.1	2.7

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 11:15 AM

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
11:15 AM	9	**2**	16	27	10	**220**	0	**1**	**231**	**11**	2	**15**	**28**	**5**	245	5	0	255	**541**
11:30 AM	**13**	0	20	33	**18**	211	0	0	229	10	1	4	15	0	232	1	0	233	510
11:45 AM	11	2	**24**	**37**	8	191	**3**	0	202	10	**3**	5	18	0	232	**7**	0	239	496
12:00 PM	7	0	19	26	7	216	2	1	226	6	2	3	11	3	**258**	3	0	**264**	527
Total Volume	40	4	79	123	43	838	5	2	888	37	8	27	72	8	967	16	0	991	2074
% App. Total	32.5	3.3	64.2		4.8	94.4	0.6	0.2		51.4	11.1	37.5		0.8	97.6	1.6	0		
PHF	.769	.500	.823	.831	.597	.952	.417	.500	.961	.841	.667	.450	.643	.400	.937	.571	.000	.938	.958
Cars	38	3	69	110	43	819	5	2	869	36	6	27	69	8	937	13	0	958	2006
% Cars	95.0	75.0	87.3	89.4	100	97.7	100	100	97.9	97.3	75.0	100	95.8	100	96.9	81.3	0	96.7	96.7
Heavy Vehicles	2	1	10	13	0	19	0	0	19	1	2	0	3	0	30	3	0	33	68
% Heavy Vehicles	5.0	25.0	12.7	10.6	0	2.3	0	0	2.1	2.7	25.0	0	4.2	0	3.1	18.8	0	3.3	3.3

N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

PRECISION
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Email: datarequests@pdillc.com

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:30 PM																			
04:30 PM	21	4	34	59	6	230	8	0	244	6	5	**8**	19	13	264	5	0	282	604
04:45 PM	25	7	34	66	3	212	11	0	226	10	**6**	8	**24**	**18**	**278**	**7**	0	**303**	619
05:00 PM	**26**	**8**	36	**70**	**11**	**236**	**16**	0	**263**	8	1	6	15	10	261	3	0	274	**622**
05:15 PM	20	2	**40**	62	5	223	10	0	238	**17**	4	3	24	17	272	4	0	293	617
Total Volume	92	21	144	257	25	901	45	0	971	41	16	25	82	58	1075	19	0	1152	2462
% App. Total	35.8	8.2	56		2.6	92.8	4.6	0		50	19.5	30.5		5	93.3	1.6	0		
PHF	.885	.656	.900	.918	.568	.954	.703	.000	.923	.603	.667	.781	.854	.806	.967	.679	.000	.950	.990
Cars	91	21	137	249	25	888	41	0	954	40	14	24	78	57	1056	19	0	1132	2413
% Cars	98.9	100	95.1	96.9	100	98.6	91.1	0	98.2	97.6	87.5	96.0	95.1	98.3	98.2	100	0	98.3	98.0
Heavy Vehicles	1	0	7	8	0	13	4	0	17	1	2	1	4	1	19	0	0	20	49
% Heavy Vehicles	1.1	0	4.9	3.1	0	1.4	8.9	0	1.8	2.4	12.5	4.0	4.9	1.7	1.8	0	0	1.7	2.0

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N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	7	1	7	15	245	6	0	11	1	2	8	232	2	0	537
07:15 AM	8	1	13	18	251	3	0	11	2	3	4	285	7	0	606
07:30 AM	6	4	9	18	253	3	0	11	2	5	7	284	12	0	614
07:45 AM	9	3	22	24	229	2	0	12	1	5	9	223	7	0	546
Total	30	9	51	75	978	14	0	45	6	15	28	1024	28	0	2303
08:00 AM	7	0	12	16	217	4	0	10	4	3	5	284	8	0	570
08:15 AM	5	4	19	22	255	0	0	13	4	5	10	234	9	0	580
08:30 AM	7	4	9	27	264	0	0	13	3	3	5	240	6	0	581
08:45 AM	9	1	19	18	251	0	0	8	4	3	6	207	3	0	529
Total	28	9	59	83	987	4	0	44	15	14	26	965	26	0	2260
09:00 AM	5	7	16	17	187	2	0	17	0	1	7	224	4	0	487
09:15 AM	7	2	24	11	201	5	0	16	1	4	5	215	8	0	499
09:30 AM	5	7	15	12	247	3	0	13	3	9	4	238	4	0	560
09:45 AM	4	5	14	12	258	2	0	5	1	2	10	226	4	0	543
Total	21	21	69	52	893	12	0	51	5	16	26	903	20	0	2089
10:00 AM	4	4	16	12	169	4	0	5	2	3	6	218	5	0	448
10:15 AM	10	5	13	5	183	4	0	9	2	2	7	223	3	0	466
10:30 AM	10	4	14	4	198	1	0	7	1	3	15	191	6	0	454
10:45 AM	11	2	14	8	196	5	0	10	2	7	11	244	3	1	514
Total	35	15	57	29	746	14	0	31	7	15	39	876	17	1	1882
11:00 AM	6	3	17	11	200	1	0	8	3	12	8	205	2	0	476
11:15 AM	8	2	13	10	214	0	1	11	2	15	5	238	4	0	523
11:30 AM	13	0	15	18	207	0	0	9	1	4	0	223	0	0	490
11:45 AM	11	1	23	8	186	3	0	10	1	5	0	228	6	0	482
Total	38	6	68	47	807	4	1	38	7	36	13	894	12	0	1971
12:00 PM	6	0	18	7	212	2	1	6	2	3	3	248	3	0	511
12:15 PM	9	0	26	5	217	2	0	12	3	4	0	243	6	0	527
12:30 PM	12	0	16	8	191	0	0	4	4	4	0	240	9	0	488
12:45 PM	12	0	14	21	142	0	0	5	2	2	0	268	8	0	474
Total	39	0	74	41	762	4	1	27	11	13	3	999	26	0	2000
01:00 PM	10	3	25	5	186	1	0	11	4	4	0	216	0	0	465
01:15 PM	8	1	22	7	179	3	0	5	0	1	1	253	3	1	484
01:30 PM	10	6	27	6	224	2	0	8	2	4	0	238	8	0	535
01:45 PM	9	4	28	12	194	3	1	10	2	7	0	234	6	0	510
Total	37	14	102	30	783	9	1	34	8	16	1	941	17	1	1994
02:00 PM	4	1	24	11	186	5	0	12	5	5	11	229	1	0	494
02:15 PM	15	6	28	13	184	5	0	9	6	6	10	248	5	0	535
02:30 PM	10	5	22	15	197	4	0	9	3	6	9	239	4	0	523
02:45 PM	8	3	14	12	192	5	0	18	6	2	14	279	4	0	557
Total	37	15	88	51	759	19	0	48	20	19	44	995	14	0	2109
03:00 PM	6	7	25	18	209	4	0	14	3	2	14	222	3	0	527
03:15 PM	9	7	17	20	173	3	0	10	5	4	9	221	5	0	483
03:30 PM	8	6	20	11	189	5	0	11	0	5	10	234	8	0	507
03:45 PM	11	3	28	19	212	5	1	12	3	5	14	285	4	0	602
Total	34	23	90	68	783	17	1	47	11	16	47	962	20	0	2119
04:00 PM	12	5	25	6	214	2	0	15	4	7	8	250	3	0	551
04:15 PM	16	5	23	11	235	3	0	11	3	6	21	264	4	0	602

N/S: Kilmarnock Street
E/W: Boylston Street
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Client: Jacobs/ A. Fernandes

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Email: datarequests@pdillc.com

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	21	4	33	6	230	7	0	5	5	7	13	261	5	0	597
04:45 PM	25	7	33	3	204	11	0	10	5	8	18	273	7	0	604
Total	74	21	114	26	883	23	0	41	17	28	60	1048	19	0	2354
05:00 PM	26	8	33	11	233	14	0	8	1	6	10	254	3	0	607
05:15 PM	19	2	38	5	221	9	0	17	3	3	16	268	4	0	605
05:30 PM	13	2	30	7	214	6	1	17	2	5	17	280	2	0	596
05:45 PM	13	6	38	9	199	4	0	17	3	4	10	262	4	0	569
Total	71	18	139	32	867	33	1	59	9	18	53	1064	13	0	2377
Grand Total	444	151	911	534	9248	153	5	465	116	206	340	10671	212	2	23458
Apprch %	29.5	10	60.5	5.4	93	1.5	0.1	59.1	14.7	26.2	3	95.1	1.9	0	
Total %	1.9	0.6	3.9	2.3	39.4	0.7	0	2	0.5	0.9	1.4	45.5	0.9	0	

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	8	1	13	22	18	251	3	0	272	11	2	3	16	4	**285**	7	0	296	606
07:30 AM	6	**4**	9	19	18	**253**	3	0	**274**	11	2	**5**	**18**	7	284	**12**	0	**303**	**614**
07:45 AM	**9**	3	**22**	**34**	**24**	229	2	0	255	**12**	1	5	18	**9**	223	7	0	239	546
08:00 AM	7	0	12	19	16	217	**4**	0	237	10	**4**	3	17	5	284	8	0	297	570
Total Volume	30	8	56	94	76	950	12	0	1038	44	9	16	69	25	1076	34	0	1135	2336
% App. Total	31.9	8.5	59.6		7.3	91.5	1.2	0		63.8	13	23.2		2.2	94.8	3	0		
PHF	.833	.500	.636	.691	.792	.939	.750	.000	.947	.917	.563	.800	.958	.694	.944	.708	.000	.936	.951
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:30 AM																			
11:30 AM	**13**	0	15	28	**18**	207	0	0	**225**	9	1	4	14	0	223	0	0	223	490
11:45 AM	11	**1**	23	**35**	8	186	**3**	0	197	10	1	**5**	16	0	228	**6**	0	234	482
12:00 PM	6	0	18	24	7	212	2	**1**	222	6	2	3	11	**3**	**248**	3	0	**254**	511
12:15 PM	9	0	**26**	35	5	**217**	2	0	224	**12**	**3**	4	**19**	0	243	6	0	249	**527**
Total Volume	39	1	82	122	38	822	7	1	868	37	7	16	60	3	942	15	0	960	2010
% App. Total	32	0.8	67.2		4.4	94.7	0.8	0.1		61.7	11.7	26.7		0.3	98.1	1.6	0		
PHF	.750	.250	.788	.871	.528	.947	.583	.250	.964	.771	.583	.800	.789	.250	.950	.625	.000	.945	.954
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:30 PM																			
04:30 PM	21	4	33	58	6	230	7	0	243	5	**5**	7	17	13	261	5	0	279	597
04:45 PM	25	7	33	65	3	204	11	0	218	10	5	**8**	**23**	**18**	**273**	**7**	0	**298**	604
05:00 PM	**26**	**8**	33	**67**	**11**	**233**	**14**	0	**258**	8	1	6	15	10	254	3	0	267	**607**
05:15 PM	19	2	**38**	59	5	221	9	0	235	**17**	3	3	23	16	268	4	0	288	605
Total Volume	91	21	137	249	25	888	41	0	954	40	14	24	78	57	1056	19	0	1132	2413
% App. Total	36.5	8.4	55		2.6	93.1	4.3	0		51.3	17.9	30.8		5	93.3	1.7	0		
PHF	.875	.656	.901	.929	.568	.953	.732	.000	.924	.588	.700	.750	.848	.792	.967	.679	.000	.950	.994

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N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Heavy Vehicles

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	1	0	0	0	2	1	0	2	0	0	1	7	0	0	14
07:15 AM	0	0	1	0	6	1	0	0	0	1	1	4	0	0	14
07:30 AM	0	0	2	0	8	1	0	0	0	0	0	4	0	0	15
07:45 AM	0	1	1	0	5	2	0	1	0	0	0	6	1	0	17
Total	1	1	4	0	21	5	0	3	0	1	2	21	1	0	60
08:00 AM	1	0	0	0	8	1	0	1	0	0	1	7	0	0	19
08:15 AM	0	1	0	0	4	0	0	0	0	0	0	6	2	0	13
08:30 AM	0	0	0	0	6	1	0	0	1	0	1	7	1	0	17
08:45 AM	1	0	3	0	9	1	0	0	0	0	5	2	1	0	22
Total	2	1	3	0	27	3	0	1	1	0	7	22	4	0	71
09:00 AM	3	0	1	1	7	1	0	1	0	0	0	10	1	0	25
09:15 AM	0	0	0	0	3	1	0	0	0	0	1	7	1	0	13
09:30 AM	0	1	2	0	6	0	0	2	0	0	1	3	0	0	15
09:45 AM	0	0	0	0	4	1	0	2	0	0	0	8	0	0	15
Total	3	1	3	1	20	3	0	5	0	0	2	28	2	0	68
10:00 AM	0	1	4	0	5	0	0	0	0	1	0	10	1	0	22
10:15 AM	2	0	1	0	2	0	0	0	0	0	3	5	2	0	15
10:30 AM	2	0	1	0	3	1	0	1	0	0	0	7	1	0	16
10:45 AM	1	0	0	0	5	1	0	1	0	1	0	7	1	0	17
Total	5	1	6	0	15	2	0	2	0	2	3	29	5	0	70
11:00 AM	0	0	2	0	6	1	0	0	0	0	0	5	0	0	14
11:15 AM	1	0	3	0	6	0	0	0	0	0	0	7	1	0	18
11:30 AM	0	0	5	0	4	0	0	1	0	0	0	9	1	0	20
11:45 AM	0	1	1	0	5	0	0	0	2	0	0	4	1	0	14
Total	1	1	11	0	21	1	0	1	2	0	0	25	3	0	66
12:00 PM	1	0	1	0	4	0	0	0	0	0	0	10	0	0	16
12:15 PM	2	0	0	0	6	1	0	0	0	0	0	4	0	0	13
12:30 PM	1	0	3	0	6	0	0	0	0	0	0	9	1	0	20
12:45 PM	0	0	1	0	3	0	0	0	0	1	0	1	1	0	7
Total	4	0	5	0	19	1	0	0	0	1	0	24	2	0	56
01:00 PM	1	0	0	0	5	0	0	1	0	0	0	4	0	0	11
01:15 PM	1	0	4	0	1	0	0	0	0	0	0	5	1	0	12
01:30 PM	0	0	1	0	3	2	0	2	0	0	0	7	1	0	16
01:45 PM	0	1	1	0	4	0	0	1	0	0	0	4	1	0	12
Total	2	1	6	0	13	2	0	4	0	0	0	20	3	0	51
02:00 PM	0	0	2	3	5	1	0	0	2	0	0	2	0	0	15
02:15 PM	0	0	1	0	2	1	0	0	0	2	0	4	1	0	11
02:30 PM	0	1	1	1	2	1	0	1	1	1	0	6	0	0	15
02:45 PM	0	0	3	0	3	1	0	0	1	1	1	6	0	0	16
Total	0	1	7	4	12	4	0	1	4	4	1	18	1	0	57
03:00 PM	0	1	1	2	2	2	0	1	0	0	1	6	0	0	16
03:15 PM	0	0	0	0	1	0	0	1	1	1	1	5	0	0	10
03:30 PM	0	1	1	0	2	2	0	0	0	0	2	5	1	0	14
03:45 PM	0	0	0	0	5	0	0	1	1	0	2	3	0	0	12
Total	0	2	2	2	10	4	0	3	2	1	6	19	1	0	52
04:00 PM	1	2	0	0	4	1	0	0	0	0	0	6	0	0	14
04:15 PM	0	0	0	0	0	1	0	0	1	0	1	6	0	0	9

PRECISION
DATA
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N/S: Kilmarnock Street
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Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011
Page No : 2

Groups Printed- Heavy Vehicles

	Kilmarnock Street From North			Boylston Street From East				Kilmarnock Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	0	0	1	0	0	1	0	1	0	1	0	3	0	0	7
04:45 PM	0	0	1	0	8	0	0	0	1	0	0	5	0	0	15
Total	1	2	2	0	12	3	0	1	2	1	1	20	0	0	45
05:00 PM	0	0	3	0	3	2	0	0	0	0	0	7	0	0	15
05:15 PM	1	0	2	0	2	1	0	0	1	0	1	4	0	0	12
05:30 PM	1	0	0	0	3	0	0	0	0	0	0	2	0	0	6
05:45 PM	0	0	1	0	3	1	0	0	1	0	0	3	0	0	9
Total	2	0	6	0	11	4	0	0	2	0	1	16	0	0	42
Grand Total	21	11	55	7	181	32	0	21	13	10	23	242	22	0	638
Apprch %	24.1	12.6	63.2	3.2	82.3	14.5	0	47.7	29.5	22.7	8	84.3	7.7	0	
Total %	3.3	1.7	8.6	1.1	28.4	5	0	3.3	2	1.6	3.6	37.9	3.4	0	

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:15 AM																			
08:15 AM	0	**1**	0	1	0	4	0	0	4	0	0	0	0	0	6	**2**	0	8	13
08:30 AM	0	0	0	0	0	6	**1**	0	7	0	**1**	0	**1**	1	7	1	0	9	17
08:45 AM	1	0	**3**	**4**	0	**9**	1	0	**10**	0	0	0	0	**5**	2	1	0	8	22
09:00 AM	**3**	0	1	4	**1**	7	1	0	9	**1**	0	0	1	0	**10**	1	0	**11**	**25**
Total Volume	4	1	4	9	1	26	3	0	30	1	1	0	2	6	25	5	0	36	77
% App. Total	44.4	11.1	44.4		3.3	86.7	10	0		50	50	0		16.7	69.4	13.9	0		
PHF	.333	.250	.333	.563	.250	.722	.750	.000	.750	.250	.250	.000	.500	.300	.625	.625	.000	.818	.770
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 10:00 AM																			
10:00 AM	0	**1**	**4**	**5**	0	**5**	0	0	5	0	0	**1**	1	0	**10**	1	0	**11**	**22**
10:15 AM	**2**	0	1	3	0	2	0	0	2	0	0	0	0	**3**	5	**2**	0	10	15
10:30 AM	2	0	1	3	0	3	**1**	0	4	**1**	0	0	1	0	7	1	0	8	16
10:45 AM	1	0	0	1	0	5	1	0	**6**	1	0	1	**2**	0	7	1	0	8	17
Total Volume	5	1	6	12	0	15	2	0	17	2	0	2	4	3	29	5	0	37	70
% App. Total	41.7	8.3	50		0	88.2	11.8	0		50	0	50		8.1	78.4	13.5	0		
PHF	.625	.250	.375	.600	.000	.750	.500	.000	.708	.500	.000	.500	.500	.250	.725	.625	.000	.841	.795
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 02:15 PM																			
02:15 PM	0	0	1	1	0	2	1	0	3	0	0	**2**	2	0	4	**1**	0	5	11
02:30 PM	0	**1**	1	2	1	2	1	0	4	**1**	**1**	1	**3**	0	**6**	0	0	6	15
02:45 PM	0	0	**3**	**3**	0	**3**	1	0	4	0	1	1	2	**1**	6	0	0	**7**	**16**
03:00 PM	0	1	1	2	**2**	2	**2**	0	**6**	1	0	0	1	1	6	0	0	7	16
Total Volume	0	2	6	8	3	9	5	0	17	2	2	4	8	2	22	1	0	25	58
% App. Total	0	25	75		17.6	52.9	29.4	0		25	25	50		8	88	4	0		
PHF	.000	.500	.500	.667	.375	.750	.625	.000	.708	.500	.500	.500	.667	.500	.917	.250	.000	.893	.906

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N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Peds and Bicycles

	Kilmarnock Street From North				Boylston Street From East				Kilmarnock Street From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	0	0	3	0	8	0	0	0	5	0	0	0	7	23
07:15 AM	1	1	0	2	0	1	0	7	0	0	0	4	0	0	0	4	20
07:30 AM	0	0	0	4	0	0	0	5	0	0	0	14	0	0	1	7	31
07:45 AM	0	0	0	9	0	0	0	12	0	0	0	22	0	1	0	15	59
Total	1	1	0	15	0	4	0	32	0	0	0	45	0	1	1	33	133
08:00 AM	0	0	0	15	0	0	0	15	0	3	0	20	0	0	0	14	67
08:15 AM	0	1	0	3	0	1	0	11	1	0	0	10	0	2	0	13	42
08:30 AM	0	1	1	12	0	1	0	18	0	0	0	23	0	2	0	14	72
08:45 AM	0	0	0	19	0	0	0	30	0	2	0	27	0	5	0	9	92
Total	0	2	1	49	0	2	0	74	1	5	0	80	0	9	0	50	273
09:00 AM	0	0	1	7	0	0	0	14	1	1	0	16	0	1	0	18	59
09:15 AM	0	0	0	10	0	2	0	14	0	0	0	14	0	2	0	28	70
09:30 AM	0	1	0	17	0	0	0	16	0	0	1	26	0	3	0	12	76
09:45 AM	0	1	0	20	0	1	0	22	0	1	0	16	0	2	0	20	83
Total	0	2	1	54	0	3	0	66	1	2	1	72	0	8	0	78	288
10:00 AM	0	0	0	19	0	0	0	15	0	0	0	14	0	3	0	7	58
10:15 AM	0	2	0	9	0	0	1	8	0	0	0	21	0	1	0	17	59
10:30 AM	0	0	0	8	1	5	0	12	0	0	1	25	0	0	0	14	66
10:45 AM	0	0	0	19	0	1	0	20	0	0	0	22	0	3	0	21	86
Total	0	2	0	55	1	6	1	55	0	0	1	82	0	7	0	59	269
11:00 AM	0	0	0	12	0	0	0	11	0	0	0	20	0	1	0	16	60
11:15 AM	0	0	0	8	0	0	0	17	0	1	0	23	0	2	0	13	64
11:30 AM	0	0	0	22	1	0	0	38	0	0	0	25	0	0	0	18	104
11:45 AM	0	0	0	18	0	0	0	24	0	0	0	21	0	1	0	20	84
Total	0	0	0	60	1	0	0	90	0	1	0	89	0	4	0	67	312
12:00 PM	0	0	0	35	0	1	0	48	1	0	0	44	0	0	0	47	176
12:15 PM	0	0	0	25	0	2	0	22	0	0	0	51	0	4	1	51	156
12:30 PM	0	0	0	21	0	1	0	47	0	0	0	63	0	1	0	33	166
12:45 PM	0	0	0	27	0	3	0	19	0	0	0	60	0	1	0	51	161
Total	0	0	0	108	0	7	0	136	1	0	0	218	0	6	1	182	659
01:00 PM	0	0	0	24	0	1	0	47	0	0	0	47	0	3	0	33	155
01:15 PM	0	0	1	32	0	2	0	19	0	0	0	60	0	1	0	40	155
01:30 PM	0	0	1	31	0	2	0	41	0	1	0	42	0	3	0	33	154
01:45 PM	1	0	0	23	0	1	0	36	0	0	0	26	0	5	0	41	133
Total	1	0	2	110	0	6	0	143	0	1	0	175	0	12	0	147	597
02:00 PM	0	0	1	22	0	0	0	23	0	0	0	48	1	4	0	38	137
02:15 PM	0	3	0	24	0	0	0	13	0	0	0	41	0	3	0	36	120
02:30 PM	0	2	0	29	0	3	0	28	0	1	0	44	0	3	0	43	153
02:45 PM	0	0	0	22	0	1	0	24	0	2	0	52	0	3	0	19	123
Total	0	5	1	97	0	4	0	88	0	3	0	185	1	13	0	136	533
03:00 PM	0	1	0	23	0	0	0	22	0	1	0	38	0	1	0	22	108
03:15 PM	0	1	1	32	0	1	0	20	0	0	0	39	0	1	0	37	132
03:30 PM	0	3	0	41	0	1	0	32	0	1	0	35	0	5	0	39	157
03:45 PM	0	1	0	22	0	5	0	37	0	0	0	45	0	2	0	19	131
Total	0	6	1	118	0	7	0	111	0	2	0	157	0	9	0	117	528
04:00 PM	0	0	0	18	0	3	0	26	0	1	0	66	0	5	0	28	147
04:15 PM	0	1	0	22	0	2	0	30	0	1	1	46	0	3	0	31	137

N/S: Kilmarnock Street
E/W: Boylston Street
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Client: Jacobs/ A. Fernandes

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File Name : 112476 G
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Peds and Bicycles

	Kilmarnock Street From North				Boylston Street From East				Kilmarnock Street From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:30 PM	0	0	0	12	0	1	0	15	0	0	0	47	0	3	0	27	105
04:45 PM	0	2	0	24	0	1	0	15	0	1	0	43	0	2	0	46	134
Total	0	3	0	76	0	7	0	86	0	3	1	202	0	13	0	132	523
05:00 PM	0	0	0	45	0	1	0	23	0	0	0	68	1	1	0	33	172
05:15 PM	0	0	1	34	0	0	0	20	0	2	1	44	0	3	0	21	126
05:30 PM	0	1	0	29	0	2	0	21	1	1	0	57	1	2	0	50	165
05:45 PM	0	1	0	41	0	2	0	33	0	0	0	58	0	9	0	49	193
Total	0	2	1	149	0	5	0	97	1	3	1	227	2	15	0	153	656
Grand Total	2	23	7	891	2	51	1	978	4	20	4	1532	3	97	2	1154	4771
Apprch %	0.2	2.5	0.8	96.5	0.2	4.9	0.1	94.8	0.3	1.3	0.3	98.2	0.2	7.7	0.2	91.9	
Total %	0	0.5	0.1	18.7	0	1.1	0	20.5	0.1	0.4	0.1	32.1	0.1	2	0	24.2	

	Kilmarnock Street From North					Boylston Street From East					Kilmarnock Street From South					Boylston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:45 AM																					
08:45 AM	0	0	0	**19**	**19**	0	0	0	**30**	**30**	0	**2**	0	**27**	**29**	0	**5**	0	9	14	**92**
09:00 AM	0	0	**1**	7	8	0	0	0	14	14	**1**	1	0	16	18	0	1	0	18	19	59
09:15 AM	0	0	0	10	10	0	**2**	0	14	16	0	0	0	14	14	0	2	0	**28**	**30**	70
09:30 AM	0	**1**	0	17	18	0	0	0	16	16	0	0	**1**	26	27	0	3	0	12	15	76
Total Volume	0	1	1	53	55	0	2	0	74	76	1	3	1	83	88	0	11	0	67	78	297
% App. Total	0	1.8	1.8	96.4		0	2.6	0	97.4		1.1	3.4	1.1	94.3		0	14.1	0	85.9		
PHF	.000	.250	.250	.697	.724	.000	.250	.000	.617	.633	.250	.375	.250	.769	.759	.000	.550	.000	.598	.650	.807
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	0	0	0	**35**	**35**	0	1	0	**48**	**49**	**1**	0	0	44	45	0	0	0	47	47	**176**
12:15 PM	0	0	0	25	25	0	2	0	22	24	0	0	0	51	51	0	**4**	**1**	**51**	**56**	156
12:30 PM	0	0	0	21	21	0	1	0	47	48	0	0	0	**63**	**63**	0	1	0	33	34	166
12:45 PM	0	0	0	27	27	0	**3**	0	19	22	0	0	0	60	60	0	1	0	51	52	161
Total Volume	0	0	0	108	108	0	7	0	136	143	1	0	0	218	219	0	6	1	182	189	659
% App. Total	0	0	0	100		0	4.9	0	95.1		0.5	0	0	99.5		0	3.2	0.5	96.3		
PHF	.000	.000	.000	.771	.771	.000	.583	.000	.708	.730	.250	.000	.000	.865	.869	.000	.375	.250	.892	.844	.936
Peak Hour Analysis From 02:00 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	**45**	**45**	0	1	0	23	24	0	0	0	**68**	**68**	**1**	1	0	33	35	172
05:15 PM	0	0	**1**	34	35	0	0	0	20	20	0	**2**	**1**	44	47	0	3	0	21	24	126
05:30 PM	0	**1**	0	29	30	0	**2**	0	21	23	**1**	1	0	57	59	1	2	0	**50**	53	165
05:45 PM	0	1	0	41	42	0	2	0	**33**	**35**	0	0	0	58	58	0	**9**	0	49	**58**	**193**
Total Volume	0	2	1	149	152	0	5	0	97	102	1	3	1	227	232	2	15	0	153	170	656
% App. Total	0	1.3	0.7	98		0	4.9	0	95.1		0.4	1.3	0.4	97.8		1.2	8.8	0	90		
PHF	.000	.500	.250	.828	.844	.000	.625	.000	.735	.729	.250	.375	.250	.835	.853	.500	.417	.000	.765	.733	.850

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Client: Jacobs/ A. Fernandes

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Site Code : 407
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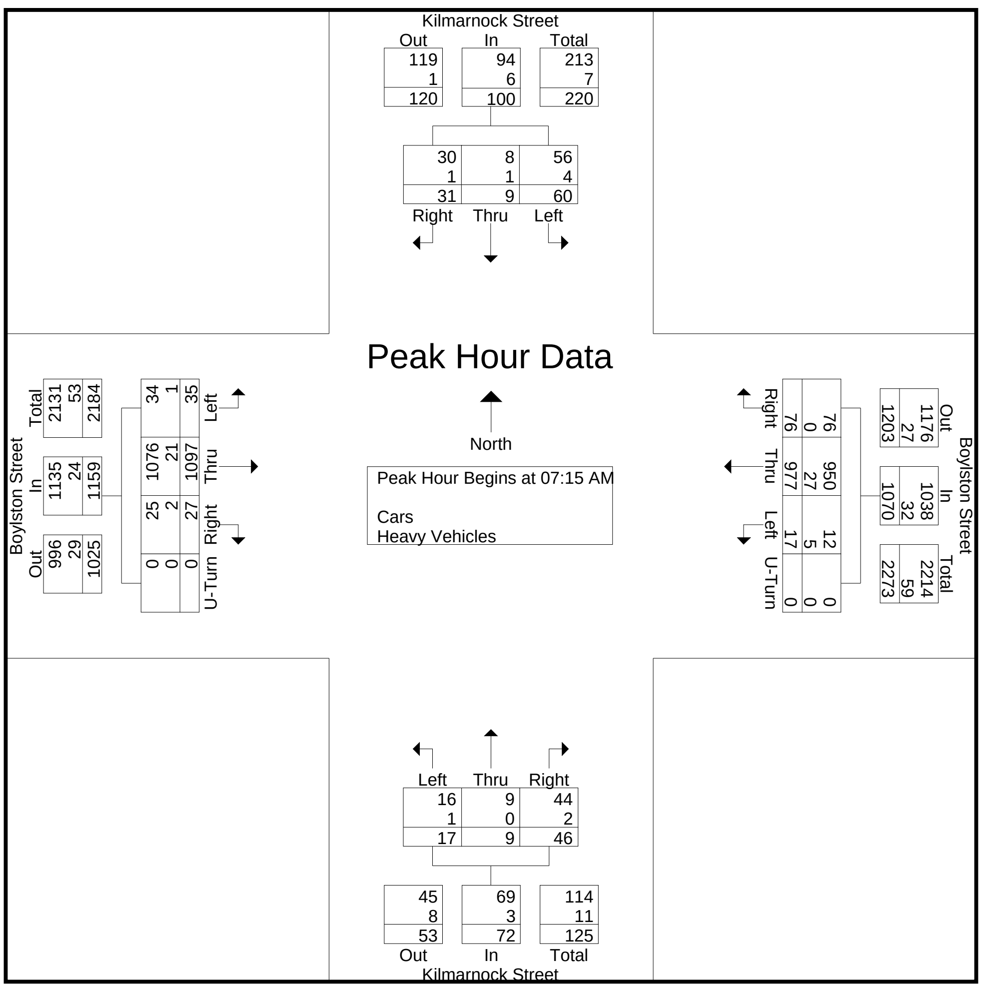
Page No : 1

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	8	1	14	23	18	257	4	0	279	11	2	4	17	5	289	7	0	301	620
07:30 AM	6	**4**	11	21	18	**261**	4	0	**283**	11	2	**5**	**18**	**7**	**288**	**12**	0	**307**	**629**
07:45 AM	**9**	4	**23**	**36**	**24**	234	4	0	262	**13**			**19**	**9**	229	8	0	246	563
08:00 AM	8	0	12	20	16	225	**5**	0	246	11	**4**	3	18	6	**291**	8	0	305	589
Total Volume	31	9	60	100	76	977	17	0	1070	46	9	17	72	27	1097	35	0	1159	2401
% App. Total	31	9	60		7.1	91.3	1.6	0		63.9	12.5	23.6		2.3	94.7	3	0		
PHF	.861	.563	.652	.694	.792	.936	.850	.000	.945	.885	.563	.850	.947	.750	.942	.729	.000	.944	.954
Cars	30	8	56	94	76	950	12	0	1038	44	9	16	69	25	1076	34	0	1135	2336
% Cars	96.8	88.9	93.3	94.0	100	97.2	70.6	0	97.0	95.7	100	94.1	95.8	92.6	98.1	97.1	0	97.9	97.3
Heavy Vehicles	1	1	4	6	0	27	5	0	32	2	0	1	3	2	21	1	0	24	65
% Heavy Vehicles	3.2	11.1	6.7	6.0	0	2.8	29.4	0	3.0	4.3	0	5.9	4.2	7.4	1.9	2.9	0	2.1	2.7



N/S: Kilmarnock Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

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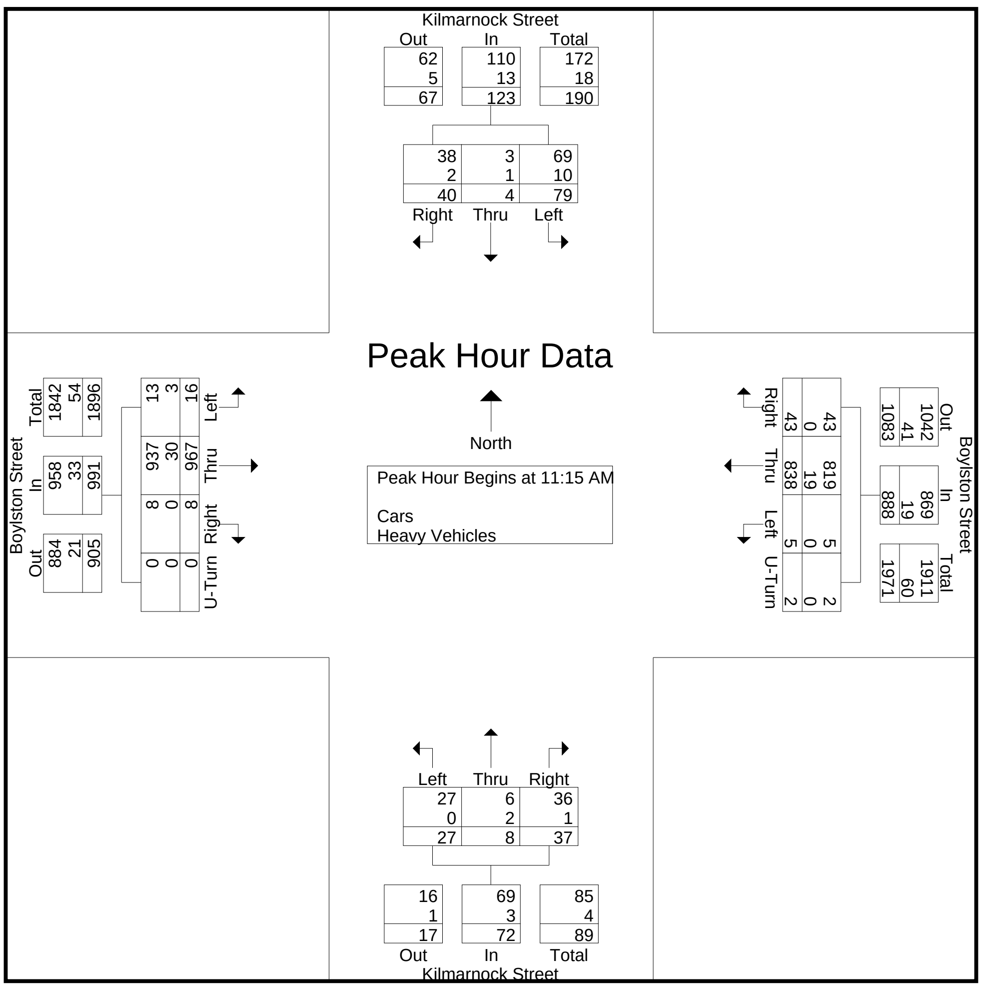
	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:15 AM																			
11:15 AM	9	**2**	16	27	10	**220**	0	**1**	**231**	**11**	**2**	**15**	**28**	**5**	245	5	0	255	**541**
11:30 AM	**13**	0	20	33	**18**	211	0	0	229	10	1	4	15	0	232	1	0	233	510
11:45 AM	11	2	**24**	**37**	8	191	**3**	0	202	10	**3**	5	18	0	232	**7**	0	239	496
12:00 PM	7	0	19	26	7	216	2	1	226	6	2	3	11	3	**258**	3	0	**264**	527
Total Volume	40	4	79	123	43	838	5	2	888	37	8	27	72	8	967	16	0	991	2074
% App. Total	32.5	3.3	64.2		4.8	94.4	0.6	0.2		51.4	11.1	37.5		0.8	97.6	1.6	0		
PHF	.769	.500	.823	.831	.597	.952	.417	.500	.961	.841	.667	.450	.643	.400	.937	.571	.000	.938	.958
Cars	38	3	69	110	43	819	5	2	869	36	6	27	69	8	937	13	0	958	2006
% Cars	95.0	75.0	87.3	89.4	100	97.7	100	100	97.9	97.3	75.0	100	95.8	100	96.9	81.3	0	96.7	96.7
Heavy Vehicles	2	1	10	13	0	19	0	0	19	1	2	0	3	0	30	3	0	33	68
% Heavy Vehicles	5.0	25.0	12.7	10.6	0	2.3	0	0	2.1	2.7	25.0	0	4.2	0	3.1	18.8	0	3.3	3.3



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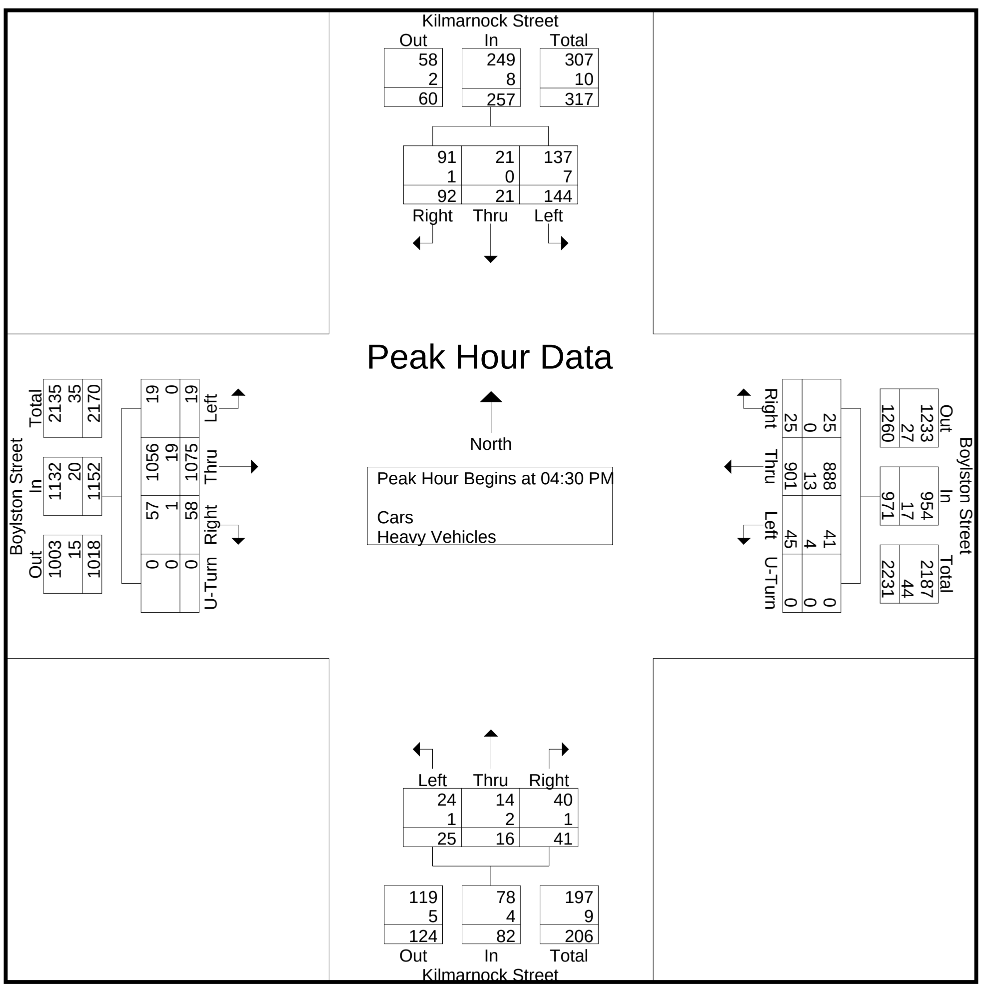
Page No : 3

	Kilmarnock Street From North				Boylston Street From East					Kilmarnock Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:30 PM																			
04:30 PM	21	4	34	59	6	230	8	0	244	6	5	**8**	**19**	**13**	**264**	**5**	**0**	**282**	**604**
04:45 PM	**25**	**7**	**34**	**66**	**3**	**212**	**11**	**0**	**226**	**10**	**6**	8	**24**	**18**	**278**	**7**	0	**303**	619
05:00 PM	**26**	**8**	36	**70**	**11**	**236**	**16**	0	**263**	8	1	6	15	10	261	3	0	274	**622**
05:15 PM	20	2	**40**	62	5	223	10	0	238	**17**									
Total Volume	92	21	144	257	25	901	45	0	971	41	16	25	82	58	1075	19	0	1152	2462
% App. Total	35.8	8.2	56		2.6	92.8	4.6	0		50	19.5	30.5		5	93.3	1.6	0		
PHF	.885	.656	.900	.918	.568	.954	.703	.000	.923	.603	.667	.781	.854	.806	.967	.679	.000	.950	.990
Cars	91	21	137	249	25	888	41	0	954	40	14	24	78	57	1056	19	0	1132	2413
% Cars	98.9	100	95.1	96.9	100	98.6	91.1	0	98.2	97.6	87.5	96.0	95.1	98.3	98.2	100	0	98.3	98.0
Heavy Vehicles	1	0	7	8	0	13	4	0	17	1	2	1	4	1	19	0	0	20	49
% Heavy Vehicles	1.1	0	4.9	3.1	0	1.4	8.9	0	1.8	2.4	12.5	4.0	4.9	1.7	1.8	0	0	1.7	2.0



PRECISION
D A T A
INDUSTRIES, LLC

P.O. Box 301 Berlin, MA 01503
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Email: datarequests@pdillc.com

N/S: Ipswich Street/Gas Station Driveway
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	21	0	8	30	285	1	2	0	0	1	250	5	603
07:15 AM	10	0	8	28	298	1	3	0	0	0	289	5	642
07:30 AM	21	0	17	26	292	1	5	0	1	3	295	12	673
07:45 AM	22	0	29	25	264	0	1	0	0	2	262	9	614
Total	74	0	62	109	1139	3	11	0	1	6	1096	31	2532
08:00 AM	17	0	18	20	263	0	0	0	1	2	300	9	630
08:15 AM	18	0	17	21	278	0	1	0	1	1	273	11	621
08:30 AM	19	0	18	17	299	0	3	0	0	4	234	8	602
08:45 AM	18	0	14	19	255	3	5	0	1	4	251	5	575
Total	72	0	67	77	1095	3	9	0	3	11	1058	33	2428
09:00 AM	12	0	14	16	231	1	3	0	1	2	246	8	534
09:15 AM	15	0	19	12	217	0	4	0	0	4	237	8	516
09:30 AM	16	1	21	10	275	1	3	0	0	3	253	9	592
09:45 AM	17	0	19	12	266	0	6	0	0	6	239	8	573
Total	60	1	73	50	989	2	16	0	1	15	975	33	2215
10:00 AM	17	1	14	9	213	0	5	0	1	3	235	3	501
10:15 AM	18	0	14	11	199	0	2	0	0	2	231	2	479
10:30 AM	12	0	18	11	191	1	3	0	2	3	200	5	446
10:45 AM	19	1	20	8	217	1	4	0	1	5	256	9	541
Total	66	2	66	39	820	2	14	0	4	13	922	19	1967
11:00 AM	20	1	24	6	187	0	2	0	0	3	213	4	460
11:15 AM	13	1	16	3	248	0	4	0	0	4	250	5	544
11:30 AM	15	1	24	4	219	1	4	0	2	2	247	12	531
11:45 AM	20	2	31	17	193	1	1	0	3	4	224	7	503
Total	68	5	95	30	847	2	11	0	5	13	934	28	2038
12:00 PM	14	0	11	5	187	0	5	0	1	4	210	6	443
12:15 PM	22	0	9	7	251	0	4	0	1	4	253	12	563
12:30 PM	16	0	20	7	240	3	5	2	1	2	229	6	531
12:45 PM	21	1	26	8	197	2	4	2	0	6	261	4	532
Total	73	1	66	27	875	5	18	4	3	16	953	28	2069
01:00 PM	17	0	30	10	190	1	3	1	1	5	232	8	498
01:15 PM	11	0	27	11	198	1	2	1	0	8	258	4	521
01:30 PM	22	0	35	9	192	1	6	1	1	10	268	11	556
01:45 PM	26	2	20	13	215	0	0	0	1	0	261	9	547
Total	76	2	112	43	795	3	11	3	3	23	1019	32	2122
02:00 PM	23	0	36	12	196	1	3	0	0	2	260	5	538
02:15 PM	18	2	36	3	223	2	6	1	1	4	282	7	585
02:30 PM	10	1	39	7	206	0	1	0	0	0	305	3	572
02:45 PM	13	0	30	6	231	0	4	0	0	1	297	1	583
Total	64	3	141	28	856	3	14	1	1	7	1144	16	2278
03:00 PM	23	1	23	4	234	2	6	0	0	2	309	6	610
03:15 PM	11	1	32	4	213	1	2	0	0	5	294	6	569
03:30 PM	19	3	39	15	202	2	5	0	0	2	280	11	578
03:45 PM	12	0	52	12	221	1	9	0	1	3	326	2	639
Total	65	5	146	35	870	6	22	0	1	12	1209	25	2396
04:00 PM	15	1	48	3	207	2	2	0	0	1	308	7	594
04:15 PM	17	0	56	1	212	1	5	0	1	3	280	2	578

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N/S: Ipswich Street/Gas Station Driveway
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars - Heavy Vehicles

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:30 PM	15	0	56	4	238	1	0	1	0	1	329	5	650
04:45 PM	19	1	49	5	201	3	5	0	0	2	306	1	592
Total	66	2	209	13	858	7	12	1	1	7	1223	15	2414
05:00 PM	16	1	46	6	242	4	5	0	1	1	334	3	659
05:15 PM	19	1	43	6	244	2	9	0	0	2	368	5	699
05:30 PM	15	0	46	6	230	2	8	0	0	6	344	6	663
05:45 PM	19	2	43	8	222	0	5	0	0	1	320	19	639
Total	69	4	178	26	938	8	27	0	1	10	1366	33	2660
Grand Total	753	25	1215	477	10082	44	165	9	24	133	11899	293	25119
Apprch %	37.8	1.3	61	4.5	95.1	0.4	83.3	4.5	12.1	1.1	96.5	2.4	
Total %	3	0.1	4.8	1.9	40.1	0.2	0.7	0	0.1	0.5	47.4	1.2	
Cars	613	25	1089	471	9952	44	164	9	24	131	11642	253	24417
% Cars	81.4	100	89.6	98.7	98.7	100	99.4	100	100	98.5	97.8	86.3	97.2
Heavy Vehicles	140	0	126	6	130	0	1	0	0	2	257	40	702
% Heavy Vehicles	18.6	0	10.4	1.3	1.3	0	0.6	0	0	1.5	2.2	13.7	2.8

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	10	0	8	18	**28**	**298**	**1**	**327**	3	0	0	3	0	289	5	294	642
07:30 AM	21	0	17	38	26	292	1	319	**5**	0	**1**	**6**	**3**	295	**12**	310	**673**
07:45 AM	**22**	0	**29**	**51**	25	264	0	289	1	0	0	1	2	262	9	273	614
08:00 AM	17	0	18	35	20	263	0	283	0	0	1	1	2	**300**	9	**311**	630
Total Volume	70	0	72	142	99	1117	2	1218	9	0	2	11	7	1146	35	1188	2559
% App. Total	49.3	0	50.7		8.1	91.7	0.2		81.8	0	18.2		0.6	96.5	2.9		
PHF	.795	.000	.621	.696	.884	.937	.500	.931	.450	.000	.500	.458	.583	.955	.729	.955	.951
Cars	53	0	66	119	98	1098	2	1198	9	0	2	11	7	1118	29	1154	2482
% Cars	75.7	0	91.7	83.8	99.0	98.3	100	98.4	100	0	100	100	100	97.6	82.9	97.1	97.0
Heavy Vehicles	17	0	6	23	1	19	0	20	0	0	0	0	0	28	6	34	77
% Heavy Vehicles	24.3	0	8.3	16.2	1.0	1.7	0	1.6	0	0	0	0	0	2.4	17.1	2.9	3.0
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	**22**	0	9	31	7	**251**	0	**258**	4	0	**1**	5	4	253	**12**	269	**563**
12:30 PM	16	0	20	36	7	240	**3**	250	**5**	**2**	1	**8**	2	229	6	237	531
12:45 PM	21	**1**	26	**48**	8	197	2	207	4	2	0	6	**6**	**261**	4	**271**	532
01:00 PM	17	0	**30**	47	**10**	190	1	201	3	1	1	5	5	232	8	245	498
Total Volume	76	1	85	162	32	878	6	916	16	5	3	24	17	975	30	1022	2124
% App. Total	46.9	0.6	52.5		3.5	95.9	0.7		66.7	20.8	12.5		1.7	95.4	2.9		
PHF	.864	.250	.708	.844	.800	.875	.500	.888	.800	.625	.750	.750	.708	.934	.625	.943	.943
Cars	64	1	75	140	31	861	6	898	16	5	3	24	17	952	25	994	2056
% Cars	84.2	100	88.2	86.4	96.9	98.1	100	98.0	100	100	100	100	100	97.6	83.3	97.3	96.8
Heavy Vehicles	12	0	10	22	1	17	0	18	0	0	0	0	0	23	5	28	68
% Heavy Vehicles	15.8	0	11.8	13.6	3.1	1.9	0	2.0	0	0	0	0	0	2.4	16.7	2.7	3.2

PRECISION
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E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	16	1	**46**	63	6	242	**4**	**252**	5	0	**1**	6	1	334	3	338	659
05:15 PM	**19**	1	43	63	6	**244**	2	252	**9**	0	0	**9**	2	**368**	5	**375**	**699**
05:30 PM	15	0	46	61	6	230	2	238	8	0	0	8	**6**	344	6	356	663
05:45 PM	19	**2**	43	**64**	**8**	222	0	230	5	0	0	5	1	320	**19**	340	639
Total Volume	69	4	178	251	26	938	8	972	27	0	1	28	10	1366	33	1409	2660
% App. Total	27.5	1.6	70.9		2.7	96.5	0.8		96.4	0	3.6		0.7	96.9	2.3		
PHF	.908	.500	.967	.980	.813	.961	.500	.964	.750	.000	.250	.778	.417	.928	.434	.939	.951
Cars	60	4	168	232	26	929	8	963	27	0	1	28	10	1345	31	1386	2609
% Cars	87.0	100	94.4	92.4	100	99.0	100	99.1	100	0	100	100	100	98.5	93.9	98.4	98.1
Heavy Vehicles	9	0	10	19	0	9	0	9	0	0	0	0	0	21	2	23	51
% Heavy Vehicles	13.0	0	5.6	7.6	0	1.0	0	0.9	0	0	0	0	0	1.5	6.1	1.6	1.9

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E/W: Boylston Street
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File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	18	0	8	30	283	1	2	0	0	1	242	3	588
07:15 AM	7	0	5	28	295	1	3	0	0	0	283	4	626
07:30 AM	17	0	16	26	286	1	5	0	1	3	291	10	656
07:45 AM	15	0	28	25	260	0	1	0	0	2	253	7	591
Total	57	0	57	109	1124	3	11	0	1	6	1069	24	2461
08:00 AM	14	0	17	19	257	0	0	0	1	2	291	8	609
08:15 AM	15	0	15	21	273	0	1	0	1	1	267	10	604
08:30 AM	13	0	14	16	293	0	3	0	0	4	228	7	578
08:45 AM	13	0	14	19	252	3	4	0	1	3	247	5	561
Total	55	0	60	75	1075	3	8	0	3	10	1033	30	2352
09:00 AM	8	0	13	16	228	1	3	0	1	2	238	7	517
09:15 AM	11	0	16	12	215	0	4	0	0	4	233	8	503
09:30 AM	11	1	15	10	272	1	3	0	0	3	249	7	572
09:45 AM	11	0	14	11	263	0	6	0	0	6	230	6	547
Total	41	1	58	49	978	2	16	0	1	15	950	28	2139
10:00 AM	15	1	12	9	206	0	5	0	1	3	229	3	484
10:15 AM	15	0	11	10	199	0	2	0	0	2	225	1	465
10:30 AM	10	0	16	11	189	1	3	0	2	3	193	4	432
10:45 AM	14	1	15	8	216	1	4	0	1	5	248	7	520
Total	54	2	54	38	810	2	14	0	4	13	895	15	1901
11:00 AM	16	1	20	6	186	0	2	0	0	3	208	4	446
11:15 AM	11	1	13	3	245	0	4	0	0	4	242	5	528
11:30 AM	14	1	20	4	217	1	4	0	2	2	235	11	511
11:45 AM	18	2	27	17	192	1	1	0	3	4	222	6	493
Total	59	5	80	30	840	2	11	0	5	13	907	26	1978
12:00 PM	12	0	8	5	185	0	5	0	1	4	206	5	431
12:15 PM	17	0	6	6	246	0	4	0	1	4	247	11	542
12:30 PM	14	0	16	7	233	3	5	2	1	2	222	3	508
12:45 PM	19	1	25	8	195	2	4	2	0	6	257	4	523
Total	62	1	55	26	859	5	18	4	3	16	932	23	2004
01:00 PM	14	0	28	10	187	1	3	1	1	5	226	7	483
01:15 PM	10	0	24	11	196	1	2	1	0	8	254	4	511
01:30 PM	18	0	30	9	190	1	6	1	1	9	261	8	534
01:45 PM	22	2	18	13	211	0	0	0	1	0	252	8	527
Total	64	2	100	43	784	3	11	3	3	22	993	27	2055
02:00 PM	19	0	33	12	193	1	3	0	0	2	253	5	521
02:15 PM	16	2	32	3	222	2	6	1	1	4	279	7	575
02:30 PM	9	1	36	7	205	0	1	0	0	0	297	2	558
02:45 PM	11	0	27	6	228	0	4	0	0	1	291	1	569
Total	55	3	128	28	848	3	14	1	1	7	1120	15	2223
03:00 PM	20	1	19	4	231	2	6	0	0	2	301	4	590
03:15 PM	8	1	32	4	212	1	2	0	0	5	288	6	559
03:30 PM	16	3	33	15	198	2	5	0	0	2	277	9	560
03:45 PM	8	0	50	12	217	1	9	0	1	3	325	2	628
Total	52	5	134	35	858	6	22	0	1	12	1191	21	2337
04:00 PM	12	1	44	3	205	2	2	0	0	1	304	6	580
04:15 PM	16	0	53	1	208	1	5	0	1	3	277	2	567

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File Name : 112476 L
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Start Date : 4/14/2011

Groups Printed- Cars

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:30 PM	12	0	50	3	237	1	0	1	0	1	323	4	632
04:45 PM	14	1	48	5	197	3	5	0	0	2	303	1	579
Total	54	2	195	12	847	7	12	1	1	7	1207	13	2358
05:00 PM	13	1	42	6	238	4	5	0	1	1	324	2	637
05:15 PM	18	1	40	6	243	2	9	0	0	2	364	5	690
05:30 PM	12	0	45	6	228	2	8	0	0	6	341	5	653
05:45 PM	17	2	41	8	220	0	5	0	0	1	316	19	629
Total	60	4	168	26	929	8	27	0	1	10	1345	31	2609
Grand Total	613	25	1089	471	9952	44	164	9	24	131	11642	253	24417
Apprch %	35.5	1.4	63.1	4.5	95.1	0.4	83.2	4.6	12.2	1.1	96.8	2.1	
Total %	2.5	0.1	4.5	1.9	40.8	0.2	0.7	0	0.1	0.5	47.7	1	

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	7	0	5	12	**28**	**295**	**1**	**324**	3	0	0	3	0	283	4	287	626
07:30 AM	**17**	0	16	33	26	286	1	313	**5**	0	**1**	**6**	**3**	**291**	**10**	**304**	**656**
07:45 AM	15	0	**28**	**43**	25	260	0	285	1	0	0	1	2	253	7	262	591
08:00 AM	14	0	17	31	19	257	0	276	0	0	1	1	2	291	8	301	609
Total Volume	53	0	66	119	98	1098	2	1198	9	0	2	11	7	1118	29	1154	2482
% App. Total	44.5	0	55.5		8.2	91.7	0.2		81.8	0	18.2		0.6	96.9	2.5		
PHF	.779	.000	.589	.692	.875	.931	.500	.924	.450	.000	.500	.458	.583	.960	.725	.949	.946
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	17	0	6	23	6	**246**	0	**252**	4	0	**1**	5	4	247	**11**	262	**542**
12:30 PM	14	0	16	30	7	233	**3**	243	**5**	**2**	1	**8**	2	222	3	227	508
12:45 PM	**19**	**1**	25	**45**	8	195	2	205	4	2	0	6	**6**	**257**	4	**267**	523
01:00 PM	14	0	**28**	42	**10**	187	1	198	3	1	1	5	5	226	7	238	483
Total Volume	64	1	75	140	31	861	6	898	16	5	3	24	17	952	25	994	2056
% App. Total	45.7	0.7	53.6		3.5	95.9	0.7		66.7	20.8	12.5		1.7	95.8	2.5		
PHF	.842	.250	.670	.778	.775	.875	.500	.891	.800	.625	.750	.750	.708	.926	.568	.931	.948
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	13	1	42	56	6	238	**4**	248	5	0	**1**	6	1	324	2	327	637
05:15 PM	**18**	1	40	59	6	**243**	2	**251**	**9**	0	0	**9**	2	**364**	5	**371**	**690**
05:30 PM	12	0	**45**	57	6	228	2	236	8	0	0	8	**6**	341	5	352	653
05:45 PM	17	**2**	41	**60**	**8**	220	0	228	5	0	0	5	1	316	**19**	336	629
Total Volume	60	4	168	232	26	929	8	963	27	0	1	28	10	1345	31	1386	2609
% App. Total	25.9	1.7	72.4		2.7	96.5	0.8		96.4	0	3.6		0.7	97	2.2		
PHF	.833	.500	.933	.967	.813	.956	.500	.959	.750	.000	.250	.778	.417	.924	.408	.934	.945

PRECISION
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N/S: Ipswich Street/Gas Station Driveway
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011
Page No : 1

Groups Printed- Heavy Vehicles

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	3	0	0	0	2	0	0	0	0	0	8	2	15
07:15 AM	3	0	3	0	3	0	0	0	0	0	6	1	16
07:30 AM	4	0	1	0	6	0	0	0	0	0	4	2	17
07:45 AM	7	0	1	0	4	0	0	0	0	0	9	2	23
Total	17	0	5	0	15	0	0	0	0	0	27	7	71
08:00 AM	3	0	1	1	6	0	0	0	0	0	9	1	21
08:15 AM	3	0	2	0	5	0	0	0	0	0	6	1	17
08:30 AM	6	0	4	1	6	0	0	0	0	0	6	1	24
08:45 AM	5	0	0	0	3	0	1	0	0	1	4	0	14
Total	17	0	7	2	20	0	1	0	0	1	25	3	76
09:00 AM	4	0	1	0	3	0	0	0	0	0	8	1	17
09:15 AM	4	0	3	0	2	0	0	0	0	0	4	0	13
09:30 AM	5	0	6	0	3	0	0	0	0	0	4	2	20
09:45 AM	6	0	5	1	3	0	0	0	0	0	9	2	26
Total	19	0	15	1	11	0	0	0	0	0	25	5	76
10:00 AM	2	0	2	0	7	0	0	0	0	0	6	0	17
10:15 AM	3	0	3	1	0	0	0	0	0	0	6	1	14
10:30 AM	2	0	2	0	2	0	0	0	0	0	7	1	14
10:45 AM	5	0	5	0	1	0	0	0	0	0	8	2	21
Total	12	0	12	1	10	0	0	0	0	0	27	4	66
11:00 AM	4	0	4	0	1	0	0	0	0	0	5	0	14
11:15 AM	2	0	3	0	3	0	0	0	0	0	8	0	16
11:30 AM	1	0	4	0	2	0	0	0	0	0	12	1	20
11:45 AM	2	0	4	0	1	0	0	0	0	0	2	1	10
Total	9	0	15	0	7	0	0	0	0	0	27	2	60
12:00 PM	2	0	3	0	2	0	0	0	0	0	4	1	12
12:15 PM	5	0	3	1	5	0	0	0	0	0	6	1	21
12:30 PM	2	0	4	0	7	0	0	0	0	0	7	3	23
12:45 PM	2	0	1	0	2	0	0	0	0	0	4	0	9
Total	11	0	11	1	16	0	0	0	0	0	21	5	65
01:00 PM	3	0	2	0	3	0	0	0	0	0	6	1	15
01:15 PM	1	0	3	0	2	0	0	0	0	0	4	0	10
01:30 PM	4	0	5	0	2	0	0	0	0	1	7	3	22
01:45 PM	4	0	2	0	4	0	0	0	0	0	9	1	20
Total	12	0	12	0	11	0	0	0	0	1	26	5	67
02:00 PM	4	0	3	0	3	0	0	0	0	0	7	0	17
02:15 PM	2	0	4	0	1	0	0	0	0	0	3	0	10
02:30 PM	1	0	3	0	1	0	0	0	0	0	8	1	14
02:45 PM	2	0	3	0	3	0	0	0	0	0	6	0	14
Total	9	0	13	0	8	0	0	0	0	0	24	1	55
03:00 PM	3	0	4	0	3	0	0	0	0	0	8	2	20
03:15 PM	3	0	0	0	1	0	0	0	0	0	6	0	10
03:30 PM	3	0	6	0	4	0	0	0	0	0	3	2	18
03:45 PM	4	0	2	0	4	0	0	0	0	0	1	0	11
Total	13	0	12	0	12	0	0	0	0	0	18	4	59
04:00 PM	3	0	4	0	2	0	0	0	0	0	4	1	14
04:15 PM	1	0	3	0	4	0	0	0	0	0	3	0	11

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E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Heavy Vehicles

	Ipswich Street From North			Boylston Street From East			Gas Station Driveways From South			Boylston Street From West			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
04:30 PM	3	0	6	1	1	0	0	0	0	0	6	1	18
04:45 PM	5	0	1	0	4	0	0	0	0	0	3	0	13
Total	12	0	14	1	11	0	0	0	0	0	16	2	56
05:00 PM	3	0	4	0	4	0	0	0	0	0	10	1	22
05:15 PM	1	0	3	0	1	0	0	0	0	0	4	0	9
05:30 PM	3	0	1	0	2	0	0	0	0	0	3	1	10
05:45 PM	2	0	2	0	2	0	0	0	0	0	4	0	10
Total	9	0	10	0	9	0	0	0	0	0	21	2	51
Grand Total	140	0	126	6	130	0	1	0	0	2	257	40	702
Apprch %	52.6	0	47.4	4.4	95.6	0	100	0	0	0.7	86	13.4	
Total %	19.9	0	17.9	0.9	18.5	0	0.1	0	0	0.3	36.6	5.7	

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	**7**	0	1	8	0	4	0	4	0	0	0	0	0	**9**	**2**	**11**	23
08:00 AM	3	0	1	4	**1**	**6**	0	**7**	0	0	0	0	0	9	1	10	21
08:15 AM	3	0	2	5	0	5	0	5	0	0	0	0	0	6	1	7	17
08:30 AM	6	0	**4**	**10**	1	6	0	7	0	0	0	0	0	6	1	7	**24**
Total Volume	19	0	8	27	2	21	0	23	0	0	0	0	0	30	5	35	85
% App. Total	70.4	0	29.6		8.7	91.3	0		0	0	0		0	85.7	14.3		
PHF	.679	.000	.500	.675	.500	.875	.000	.821	.000	.000	.000	.000	.000	.833	.625	.795	.885
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 10:45 AM																	
10:45 AM	**5**	0	**5**	**10**	0	1	0	1	0	0	0	0	0	8	**2**	10	**21**
11:00 AM	4	0	4	8	0	1	0	1	0	0	0	0	0	5	0	5	14
11:15 AM	2	0	3	5	0	**3**	0	**3**	0	0	0	0	0	8	0	8	16
11:30 AM	1	0	4	5	0	2	0	2	0	0	0	0	0	**12**	1	**13**	20
Total Volume	12	0	16	28	0	7	0	7	0	0	0	0	0	33	3	36	71
% App. Total	42.9	0	57.1		0	100	0		0	0	0		0	91.7	8.3		
PHF	.600	.000	.800	.700	.000	.583	.000	.583	.000	.000	.000	.000	.000	.688	.375	.692	.845
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	0	3	4	0	**4**	0	**4**	0	0	0	0	0	3	0	3	11
04:30 PM	3	0	**6**	**9**	**1**	1	0	2	0	0	0	0	0	6	**1**	7	18
04:45 PM	**5**	0	1	6	0	4	0	4	0	0	0	0	0	3	0	3	13
05:00 PM	3	0	4	7	0	4	0	4	0	0	0	0	0	**10**	1	**11**	**22**
Total Volume	12	0	14	26	1	13	0	14	0	0	0	0	0	22	2	24	64
% App. Total	46.2	0	53.8		7.1	92.9	0		0	0	0		0	91.7	8.3		
PHF	.600	.000	.583	.722	.250	.813	.000	.875	.000	.000	.000	.000	.000	.550	.500	.545	.727

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File Name : 112476 L
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Page No : 1

Groups Printed- Peds and Bicycles

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	5	0	0	0	6	0	0	0	8	0	0	1	3	23
07:15 AM	0	0	0	9	1	2	0	16	0	0	0	8	0	0	0	3	39
07:30 AM	0	0	0	2	0	1	0	34	0	0	1	11	0	3	0	3	55
07:45 AM	0	0	0	9	0	0	0	21	0	0	0	5	0	1	0	0	36
Total	0	0	0	25	1	3	0	77	0	0	1	32	0	4	1	9	153
08:00 AM	0	0	0	5	0	2	0	19	0	0	0	21	0	0	0	12	59
08:15 AM	0	0	0	9	0	1	0	10	0	0	0	9	0	3	0	5	37
08:30 AM	0	0	0	5	0	3	0	15	0	0	0	11	0	1	0	11	46
08:45 AM	0	0	0	13	0	0	0	17	0	0	0	20	0	3	0	7	60
Total	0	0	0	32	0	6	0	61	0	0	0	61	0	7	0	35	202
09:00 AM	0	0	0	7	0	0	0	19	0	0	0	12	0	2	0	3	43
09:15 AM	0	0	0	11	1	1	0	12	0	0	0	5	0	1	0	0	31
09:30 AM	0	0	0	8	0	0	0	20	0	0	0	12	0	0	0	2	42
09:45 AM	1	0	0	7	0	0	0	11	0	0	0	13	0	1	0	3	36
Total	1	0	0	33	1	1	0	62	0	0	0	42	0	4	0	8	152
10:00 AM	0	0	1	10	0	0	0	8	0	0	1	26	0	4	0	4	54
10:15 AM	0	0	0	14	0	0	0	7	0	0	0	36	0	2	0	4	63
10:30 AM	0	0	0	13	0	3	0	16	0	0	0	16	0	0	0	7	55
10:45 AM	0	0	0	7	0	0	0	6	0	0	0	6	0	1	0	10	30
Total	0	0	1	44	0	3	0	37	0	0	1	84	0	7	0	25	202
11:00 AM	0	0	0	11	0	0	0	5	0	0	0	15	0	1	0	9	41
11:15 AM	0	0	0	12	0	0	0	122	0	0	0	109	0	2	0	7	252
11:30 AM	0	0	0	8	0	0	0	8	0	0	0	53	0	0	0	1	70
11:45 AM	0	0	0	13	0	0	0	17	0	0	0	5	0	2	0	5	42
Total	0	0	0	44	0	0	0	152	0	0	0	182	0	5	0	22	405
12:00 PM	0	0	0	18	0	0	0	44	0	0	0	14	0	0	1	9	86
12:15 PM	0	0	0	10	1	2	0	9	0	0	0	17	0	5	0	8	52
12:30 PM	0	0	0	9	0	2	0	8	0	0	0	39	0	3	0	9	70
12:45 PM	1	0	0	23	0	3	0	10	0	0	0	25	0	5	0	7	74
Total	1	0	0	60	1	7	0	71	0	0	0	95	0	13	1	33	282
01:00 PM	0	0	0	16	0	1	0	15	0	0	0	19	0	2	0	5	58
01:15 PM	0	0	0	24	0	1	0	18	0	0	0	26	0	3	0	9	81
01:30 PM	0	0	0	12	1	0	0	21	0	0	0	22	0	2	0	15	73
01:45 PM	0	0	0	10	0	0	0	9	0	0	0	16	0	4	0	11	50
Total	0	0	0	62	1	2	0	63	0	0	0	83	0	11	0	40	262
02:00 PM	0	0	0	17	0	0	0	10	0	0	0	18	0	3	0	7	55
02:15 PM	0	0	0	12	0	1	0	15	0	0	0	23	0	1	0	15	67
02:30 PM	0	0	0	19	0	0	0	15	0	0	0	18	0	2	0	12	66
02:45 PM	2	0	0	11	0	0	0	19	0	0	0	25	0	1	0	10	68
Total	2	0	0	59	0	1	0	59	0	0	0	84	0	7	0	44	256
03:00 PM	2	0	0	14	0	2	0	25	0	0	0	32	0	3	0	15	93
03:15 PM	0	0	1	14	0	0	0	23	0	0	0	8	0	0	1	17	64
03:30 PM	0	0	15	31	2	0	0	42	0	0	0	17	0	4	0	6	117
03:45 PM	0	0	0	24	0	0	0	35	0	0	0	26	0	1	0	15	101
Total	2	0	16	83	2	2	0	125	0	0	0	83	0	8	1	53	375
04:00 PM	0	0	0	21	0	2	0	28	0	0	0	35	0	5	0	18	109
04:15 PM	0	0	1	24	0	2	0	15	0	0	0	27	0	4	0	23	96

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Page No : 2

Groups Printed- Peds and Bicycles

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:30 PM	1	0	0	17	0	0	0	24	0	0	0	19	0	1	0	18	80
04:45 PM	0	0	0	29	0	1	0	29	0	0	0	25	0	3	0	27	114
Total	1	0	1	91	0	5	0	96	0	0	0	106	0	13	0	86	399
05:00 PM	0	0	0	22	0	1	0	24	0	0	0	25	0	2	0	10	84
05:15 PM	1	0	0	25	0	1	0	20	0	0	0	19	0	4	0	13	83
05:30 PM	0	0	0	35	0	0	0	18	0	0	0	33	0	1	0	20	107
05:45 PM	0	0	0	27	0	2	0	34	0	0	0	22	0	8	0	15	108
Total	1	0	0	109	0	4	0	96	0	0	0	99	0	15	0	58	382
Grand Total	8	0	18	642	6	34	0	899	0	0	2	951	0	94	3	413	3070
Apprch %	1.2	0	2.7	96.1	0.6	3.6	0	95.7	0	0	0.2	99.8	0	18.4	0.6	81	
Total %	0.3	0	0.6	20.9	0.2	1.1	0	29.3	0	0	0.1	31	0	3.1	0.1	13.5	

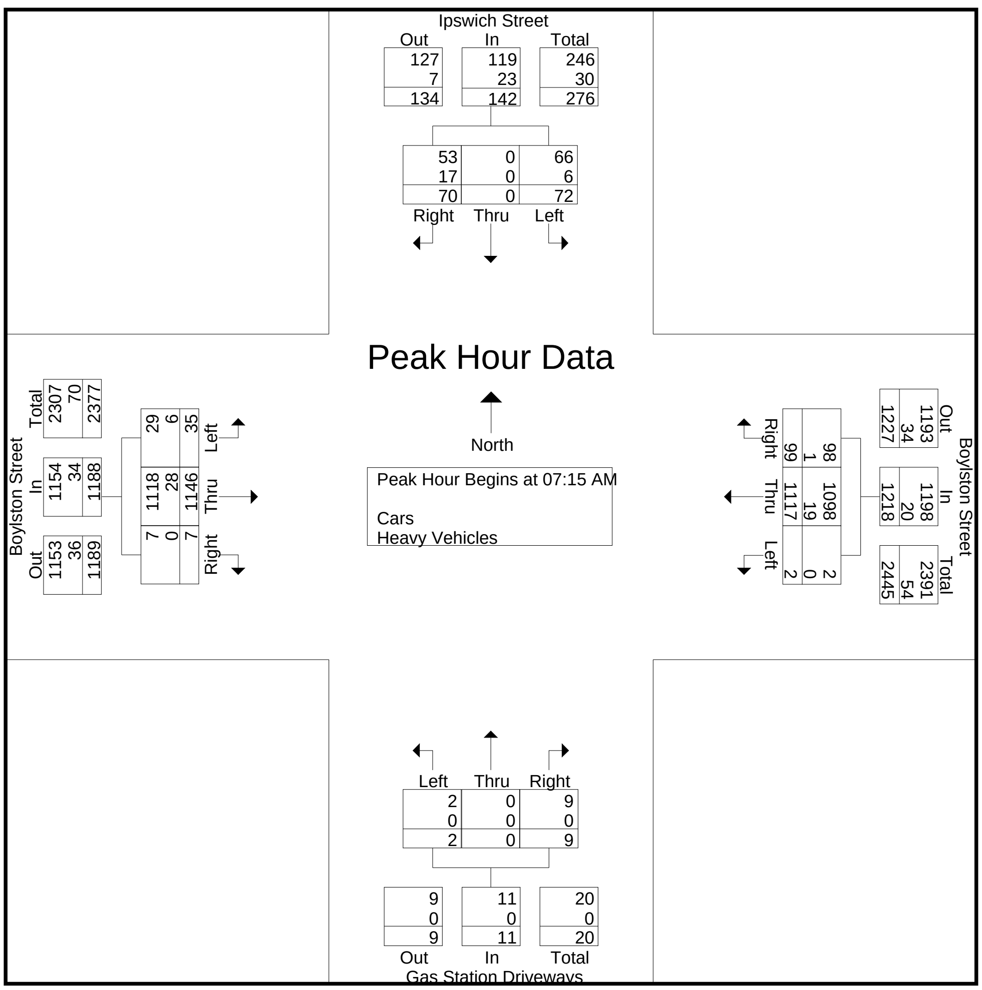
	Ipswich Street From North					Boylston Street From East					Gas Station Driveways From South					Boylston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	5	5	0	2	0	**19**	**21**	0	0	0	**21**	**21**	0	0	0	**12**	**12**	59
08:15 AM	0	0	0	9	9	0	1	0	10	11	0	0	0	9	9	0	**3**	0	5	8	37
08:30 AM	0	0	0	5	5	0	**3**	0	15	18	0	0	0	11	11	0	1	0	11	12	46
08:45 AM	0	0	0	**13**	**13**	0	0	0	17	17	0	0	0	20	20	0	3	0	7	10	**60**
Total Volume	0	0	0	32	32	0	6	0	61	67	0	0	0	61	61	0	7	0	35	42	202
% App. Total	0	0	0	100		0	9	0	91		0	0	0	100		0	16.7	0	83.3		
PHF	.000	.000	.000	.615	.615	.000	.500	.000	.803	.798	.000	.000	.000	.726	.726	.000	.583	.000	.729	.875	.842
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	0	0	0	12	12	0	0	0	**122**	**122**	0	0	0	**109**	**109**	0	**2**	0	7	9	**252**
11:30 AM	0	0	0	8	8	0	0	0	8	8	0	0	0	53	53	0	0	0	1	1	70
11:45 AM	0	0	0	13	13	0	0	0	17	17	0	0	0	5	5	0	2	0	5	7	42
12:00 PM	0	0	0	**18**	**18**	0	0	0	44	44	0	0	0	14	14	0	0	**1**	**9**	**10**	86
Total Volume	0	0	0	51	51	0	0	0	191	191	0	0	0	181	181	0	4	1	22	27	450
% App. Total	0	0	0	100		0	0	0	100		0	0	0	100		0	14.8	3.7	81.5		
PHF	.000	.000	.000	.708	.708	.000	.000	.000	.391	.391	.000	.000	.000	.415	.415	.000	.500	.250	.611	.675	.446
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	0	0	**15**	**31**	**46**	**2**	0	0	**42**	**44**	0	0	0	17	17	0	4	0	6	10	**117**
03:45 PM	0	0	0	24	24	0	0	0	35	35	0	0	0	26	26	0	1	0	15	16	101
04:00 PM	0	0	0	21	21	0	**2**	0	28	30	0	0	0	**35**	**35**	0	**5**	0	18	23	109
04:15 PM	0	0	1	24	25	0	2	0	15	17	0	0	0	27	27	0	4	0	**23**	**27**	96
Total Volume	0	0	16	100	116	2	4	0	120	126	0	0	0	105	105	0	14	0	62	76	423
% App. Total	0	0	13.8	86.2		1.6	3.2	0	95.2		0	0	0	100		0	18.4	0	81.6		
PHF	.000	.000	.267	.806	.630	.250	.500	.000	.714	.716	.000	.000	.000	.750	.750	.000	.700	.000	.674	.704	.904

N/S: Ipswich Street/Gas Station Driveway
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

PRECISION DATA INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	10	0	8	18	**28**	**298**	**1**	**327**	3	0	0	3	0	289	5	294	642
07:30 AM	21	0	17	38	26	292	1	319	**5**	0	**1**	**6**	**3**	295	**12**	310	**673**
07:45 AM	**22**	0	**29**	**51**	25	264	0	289	1	0	0	1	2	262	9	273	614
08:00 AM	17	0	18	35	20	263	0	283	0	0	1	1	2	**300**	9	**311**	630
Total Volume	70	0	72	142	99	1117	2	1218	9	0	2	11	7	1146	35	1188	2559
% App. Total	49.3	0	50.7		8.1	91.7	0.2		81.8	0	18.2		0.6	96.5	2.9		
PHF	.795	.000	.621	.696	.884	.937	.500	.931	.450	.000	.500	.458	.583	.955	.729	.955	.951
Cars	53	0	66	119	98	1098	2	1198	9	0	2	11	7	1118	29	1154	2482
% Cars	75.7	0	91.7	83.8	99.0	98.3	100	98.4	100	0	100	100	100	97.6	82.9	97.1	97.0
Heavy Vehicles	17	0	6	23	1	19	0	20	0	0	0	0	0	28	6	34	77
% Heavy Vehicles	24.3	0	8.3	16.2	1.0	1.7	0	1.6	0	0	0	0	0	2.4	17.1	2.9	3.0



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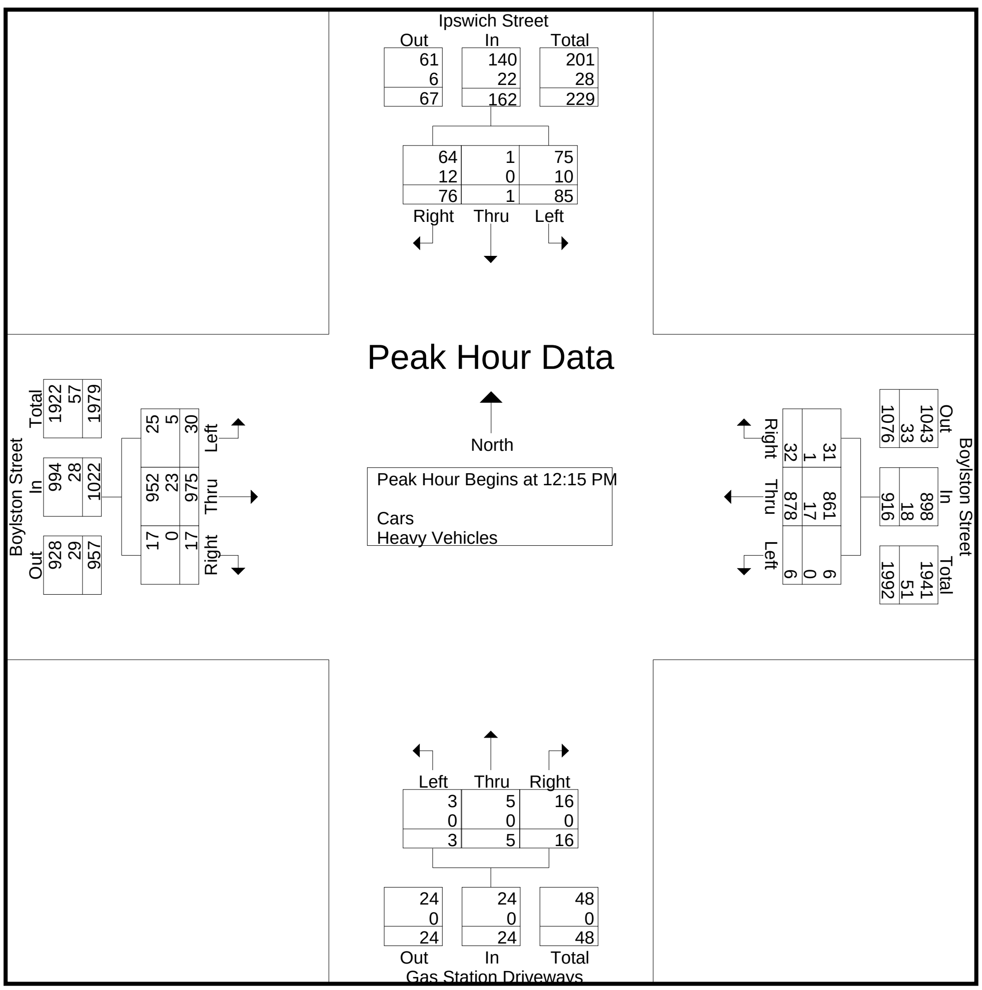
File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011
Page No : 2

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	**22**	0	9	31	7	**251**	0	**258**	4	0	**1**	5	4	253	**12**	269	**563**
12:30 PM	16	0	20	36	7	240	**3**	250	**5**	**2**	1	**8**	2	229	6	237	531
12:45 PM	21	**1**	26	**48**	8	197	2	207	4	2	0	6	**6**	**261**	4	**271**	532
01:00 PM	17	0	**30**	47	**10**	190	1	201	3	1	1	5	5	232	8	245	498
Total Volume	76	1	85	162	32	878	6	916	16	5	3	24	17	975	30	1022	2124
% App. Total	46.9	0.6	52.5		3.5	95.9	0.7		66.7	20.8	12.5		1.7	95.4	2.9		
PHF	.864	.250	.708	.844	.800	.875	.500	.888	.800	.625	.750	.750	.708	.934	.625	.943	.943
Cars	64	1	75	140	31	861	6	898	16	5	3	24	17	952	25	994	2056
% Cars	84.2	100	88.2	86.4	96.9	98.1	100	98.0	100	100	100	100	100	97.6	83.3	97.3	96.8
Heavy Vehicles	12	0	10	22	1	17	0	18	0	0	0	0	0	23	5	28	68
% Heavy Vehicles	15.8	0	11.8	13.6	3.1	1.9	0	2.0	0	0	0	0	0	2.4	16.7	2.7	3.2



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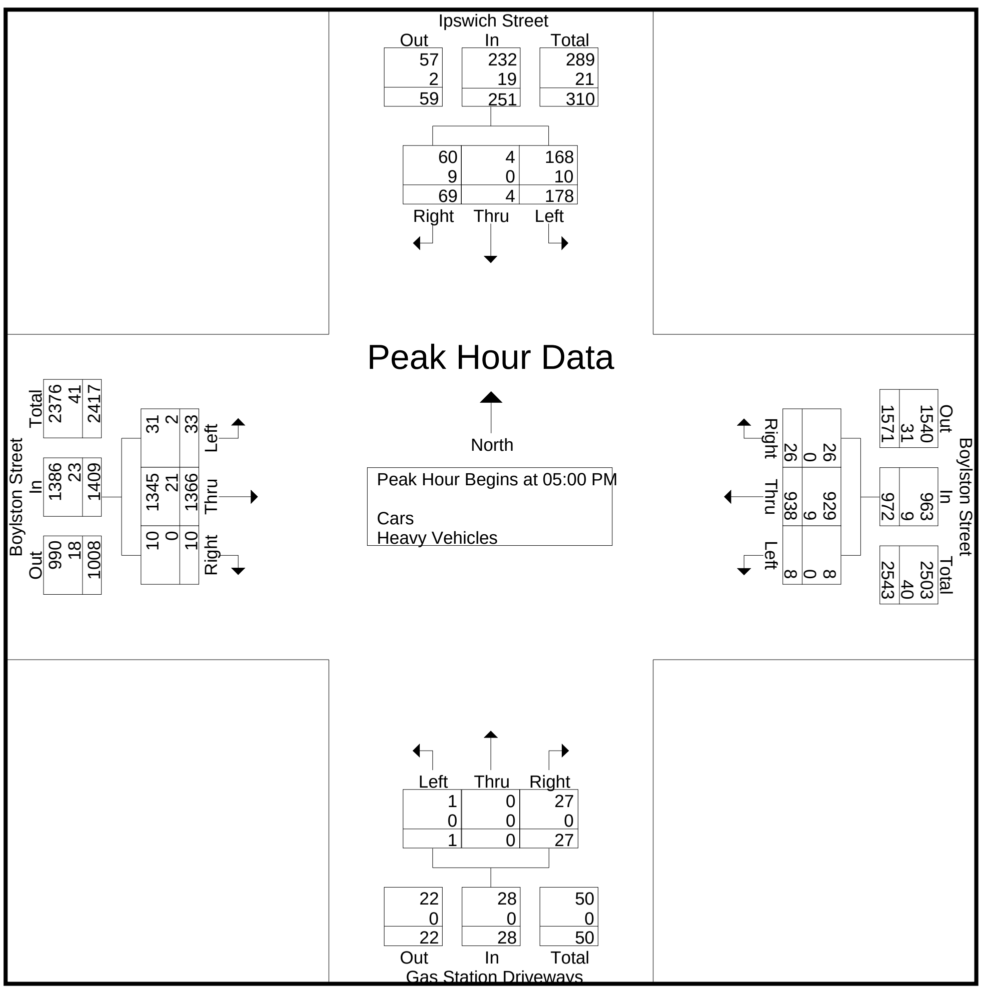
File Name : 112476 L
Site Code : 407
Start Date : 4/14/2011

	Ipswich Street From North				Boylston Street From East				Gas Station Driveways From South				Boylston Street From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	16	1	**46**	63	6	242	**4**	**252**	5	0	**1**	6	1	334	3	338	659
05:15 PM	**19**	1	43	63	6	**244**	2	252	**9**	0	0	**9**	2	**368**	5	**375**	**699**
05:30 PM	15	0	46	61	6	230	2	238	8	0	0	8	**6**	344	6	356	663
05:45 PM	19	**2**	43	**64**	**8**	222	0	230	5	0	0	5	1	320	**19**	340	639
Total Volume	69	4	178	251	26	938	8	972	27	0	1	28	10	1366	33	1409	2660
% App. Total	27.5	1.6	70.9		2.7	96.5	0.8		96.4	0	3.6		0.7	96.9	2.3		
PHF	.908	.500	.967	.980	.813	.961	.500	.964	.750	.000	.250	.778	.417	.928	.434	.939	.951
Cars	60	4	168	232	26	929	8	963	27	0	1	28	10	1345	31	1386	2609
% Cars	87.0	100	94.4	92.4	100	99.0	100	99.1	100	0	100	100	100	98.5	93.9	98.4	98.1
Heavy Vehicles	9	0	10	19	0	9	0	9	0	0	0	0	0	21	2	23	51
% Heavy Vehicles	13.0	0	5.6	7.6	0	1.0	0	0.9	0	0	0	0	0	1.5	6.1	1.6	1.9



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N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars - Heavy Vehicles

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	8	282	5	0	14	1	5	6	236	4	0	561
07:15 AM	0	0	0	18	271	8	0	21	4	4	5	293	9	0	633
07:30 AM	0	0	0	17	271	3	0	19	8	4	10	282	10	0	624
07:45 AM	0	0	0	16	245	13	1	26	7	5	6	241	9	0	569
Total	0	0	0	59	1069	29	1	80	20	18	27	1052	32	0	2387
08:00 AM	0	0	1	6	240	8	0	16	8	2	9	280	9	0	579
08:15 AM	0	0	0	11	259	9	0	23	0	6	3	242	10	0	563
08:30 AM	0	0	0	18	283	5	0	16	1	3	5	224	6	0	561
08:45 AM	0	0	0	13	252	4	0	9	0	5	5	238	7	0	533
Total	0	0	1	48	1034	26	0	64	9	16	22	984	32	0	2236
09:00 AM	0	0	0	16	229	2	0	13	4	4	7	237	9	0	521
09:15 AM	0	0	0	13	219	7	0	10	6	3	6	238	6	0	508
09:30 AM	0	0	0	17	285	6	0	10	0	1	9	254	9	0	591
09:45 AM	0	0	0	12	259	5	0	10	2	2	8	239	15	0	552
Total	0	0	0	58	992	20	0	43	12	10	30	968	39	0	2172
10:00 AM	0	0	0	15	209	5	0	7	2	1	6	225	12	0	482
10:15 AM	0	0	0	11	187	8	0	9	2	3	4	214	13	0	451
10:30 AM	0	0	0	11	200	4	0	9	1	1	1	186	7	0	420
10:45 AM	0	0	0	13	203	9	0	13	4	3	8	233	12	0	498
Total	0	0	0	50	799	26	0	38	9	8	19	858	44	0	1851
11:00 AM	0	0	0	9	195	10	0	11	5	2	8	204	7	0	451
11:15 AM	0	1	0	13	218	5	0	4	3	5	14	249	8	0	520
11:30 AM	0	0	0	16	219	3	0	8	1	2	8	240	9	0	506
11:45 AM	0	0	0	16	187	6	1	5	1	1	10	219	7	1	454
Total	0	1	0	54	819	24	1	28	10	10	40	912	31	1	1931
12:00 PM	1	0	0	6	207	9	0	11	0	1	25	203	5	0	468
12:15 PM	0	0	0	13	240	7	0	11	7	3	10	250	12	0	553
12:30 PM	0	0	1	13	215	9	0	7	1	2	16	224	8	4	500
12:45 PM	0	0	0	9	177	7	0	11	4	1	20	241	4	0	474
Total	1	0	1	41	839	32	0	40	12	7	71	918	29	4	1995
01:00 PM	1	0	1	14	188	8	0	11	4	2	8	222	11	0	470
01:15 PM	0	0	0	14	173	10	0	20	4	3	13	237	11	0	485
01:30 PM	0	0	0	12	211	7	0	16	3	2	10	262	8	0	531
01:45 PM	1	0	1	8	215	11	0	12	2	2	10	238	11	0	511
Total	2	0	2	48	787	36	0	59	13	9	41	959	41	0	1997
02:00 PM	0	0	0	10	203	10	0	9	4	2	7	239	9	0	493
02:15 PM	0	0	0	10	207	7	1	14	1	2	6	272	4	0	524
02:30 PM	0	0	0	10	207	6	0	13	3	2	9	282	5	0	537
02:45 PM	0	0	0	20	212	9	0	14	2	1	9	287	4	0	558
Total	0	0	0	50	829	32	1	50	10	7	31	1080	22	0	2112
03:00 PM	0	0	0	9	242	10	2	18	2	2	6	273	3	0	567
03:15 PM	0	0	0	6	193	6	0	12	1	1	11	251	5	0	486
03:30 PM	1	0	0	8	204	11	0	18	7	2	10	270	5	0	536
03:45 PM	0	0	0	10	220	9	1	14	3	3	8	294	5	0	567
Total	1	0	0	33	859	36	3	62	13	8	35	1088	18	0	2156
04:00 PM	0	0	0	11	216	6	0	17	3	2	7	288	5	0	555
04:15 PM	0	0	0	10	209	15	1	17	1	3	4	265	3	0	528

PRECISION
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N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars - Heavy Vehicles

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	0	0	0	15	231	7	1	15	4	6	12	301	7	0	599
04:45 PM	0	0	0	9	204	9	0	21	5	2	9	280	7	0	546
Total	0	0	0	45	860	37	2	70	13	13	32	1134	22	0	2228
05:00 PM	0	0	0	8	244	9	1	29	1	5	6	301	9	0	613
05:15 PM	1	0	0	8	218	13	1	34	4	2	7	295	6	0	589
05:30 PM	0	0	0	4	217	7	0	20	0	7	10	304	5	0	574
05:45 PM	0	0	0	8	200	10	0	17	4	4	7	284	7	0	541
Total	1	0	0	28	879	39	2	100	9	18	30	1184	27	0	2317
Grand Total	5	1	4	514	9766	337	10	634	130	124	378	11137	337	5	23382
Apprch %	50	10	40	4.8	91.9	3.2	0.1	71.4	14.6	14	3.2	93.9	2.8	0	
Total %	0	0	0	2.2	41.8	1.4	0	2.7	0.6	0.5	1.6	47.6	1.4	0	
Cars	5	1	4	475	9558	321	10	587	115	116	368	10882	289	5	22736
% Cars	100	100	100	92.4	97.9	95.3	100	92.6	88.5	93.5	97.4	97.7	85.8	100	97.2
Heavy Vehicles	0	0	0	39	208	16	0	47	15	8	10	255	48	0	646
% Heavy Vehicles	0	0	0	7.6	2.1	4.7	0	7.4	11.5	6.5	2.6	2.3	14.2	0	2.8

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	0	0	0	**18**	**271**	8	0	**297**	21	4	4	29	5	**293**	9	0	**307**	**633**
07:30 AM	0	0	0	0	17	271	3	0	291	19	**8**	4	31	**10**	282	**10**	0	302	624
07:45 AM	0	0	0	0	16	245	**13**	**1**	275	**26**	7	**5**	**38**	6	241	9	0	256	569
08:00 AM	0	0	**1**	**1**	6	240	8	0	254	16	8	2	26	9	280	9	0	298	579
Total Volume	0	0	1	1	57	1027	32	1	1117	82	27	15	124	30	1096	37	0	1163	2405
% App. Total	0	0	100		5.1	91.9	2.9	0.1		66.1	21.8	12.1		2.6	94.2	3.2	0		
PHF	.000	.000	.250	.250	.792	.947	.615	.250	.940	.788	.844	.750	.816	.750	.935	.925	.000	.947	.950
Cars	0	0	1	1	55	994	31	1	1081	75	25	14	114	30	1072	32	0	1134	2330
% Cars	0	0	100	100	96.5	96.8	96.9	100	96.8	91.5	92.6	93.3	91.9	100	97.8	86.5	0	97.5	96.9
Heavy Vehicles	0	0	0	0	2	33	1	0	36	7	2	1	10	0	24	5	0	29	75
% Heavy Vehicles	0	0	0	0	3.5	3.2	3.1	0	3.2	8.5	7.4	6.7	8.1	0	2.2	13.5	0	2.5	3.1
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:15 PM																			
12:15 PM	0	0	0	0	13	**240**	7	0	**260**	**11**	**7**	**3**	**21**	10	**250**	**12**	0	**272**	**553**
12:30 PM	0	0	**1**	1	13	215	**9**	0	237	7	1	2	10	16	224	8	**4**	252	500
12:45 PM	0	0	0	0	9	177	7	0	193	11	4	1	16	**20**	241	4	0	265	474
01:00 PM	**1**	0	1	**2**	**14**	188	8	0	210	11	4	2	17	8	222	11	0	241	470
Total Volume	1	0	2	3	49	820	31	0	900	40	16	8	64	54	937	35	4	1030	1997
% App. Total	33.3	0	66.7		5.4	91.1	3.4	0		62.5	25	12.5		5.2	91	3.4	0.4		
PHF	.250	.000	.500	.375	.875	.854	.861	.000	.865	.909	.571	.667	.762	.675	.937	.729	.250	.947	.903
Cars	1	0	2	3	45	798	29	0	872	31	14	6	51	54	914	31	4	1003	1929
% Cars	100	0	100	100	91.8	97.3	93.5	0	96.9	77.5	87.5	75.0	79.7	100	97.5	88.6	100	97.4	96.6
Heavy Vehicles	0	0	0	0	4	22	2	0	28	9	2	2	13	0	23	4	0	27	68
% Heavy Vehicles	0	0	0	0	8.2	2.7	6.5	0	3.1	22.5	12.5	25.0	20.3	0	2.5	11.4	0	2.6	3.4

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	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 02:00 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	**15**	231	7	**1**	254	15	4	**6**	25	**12**	**301**	7	0	**320**	599
04:45 PM	0	0	0	0	9	204	9	0	222	21	**5**	2	28	9	280	7	0	296	546
05:00 PM	0	0	0	0	8	**244**	9	1	**262**	29	1	5	35	6	301	**9**	0	316	**613**
05:15 PM	**1**	0	0	**1**	8	218	**13**	1	240	**34**	4	2	**40**	7	295	6	0	308	589
Total Volume	1	0	0	1	40	897	38	3	978	99	14	15	128	34	1177	29	0	1240	2347
% App. Total	100	0	0		4.1	91.7	3.9	0.3		77.3	10.9	11.7		2.7	94.9	2.3	0		
PHF	.250	.000	.000	.250	.667	.919	.731	.750	.933	.728	.700	.625	.800	.708	.978	.806	.000	.969	.957
Cars	1	0	0	1	36	881	38	3	958	94	14	14	122	34	1156	24	0	1214	2295
% Cars	100	0	0	100	90.0	98.2	100	100	98.0	94.9	100	93.3	95.3	100	98.2	82.8	0	97.9	97.8
Heavy Vehicles	0	0	0	0	4	16	0	0	20	5	0	1	6	0	21	5	0	26	52
% Heavy Vehicles	0	0	0	0	10.0	1.8	0	0	2.0	5.1	0	6.7	4.7	0	1.8	17.2	0	2.1	2.2

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Email: datarequests@pdillc.com

N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	8	279	4	0	12	1	5	5	229	4	0	547
07:15 AM	0	0	0	18	266	8	0	19	4	4	5	289	8	0	621
07:30 AM	0	0	0	17	261	3	0	18	7	3	10	277	8	0	604
07:45 AM	0	0	0	14	237	12	1	23	7	5	6	235	8	0	548
Total	0	0	0	57	1043	27	1	72	19	17	26	1030	28	0	2320
08:00 AM	0	0	1	6	230	8	0	15	7	2	9	271	8	0	557
08:15 AM	0	0	0	10	254	9	0	23	0	6	3	236	10	0	551
08:30 AM	0	0	0	17	275	4	0	14	1	3	5	220	5	0	544
08:45 AM	0	0	0	11	246	3	0	8	0	3	5	234	6	0	516
Total	0	0	1	44	1005	24	0	60	8	14	22	961	29	0	2168
09:00 AM	0	0	0	16	221	2	0	12	4	4	7	228	8	0	502
09:15 AM	0	0	0	13	212	7	0	10	6	3	6	234	4	0	495
09:30 AM	0	0	0	17	277	6	0	9	0	1	8	250	8	0	576
09:45 AM	0	0	0	11	253	5	0	10	2	2	8	230	12	0	533
Total	0	0	0	57	963	20	0	41	12	10	29	942	32	0	2106
10:00 AM	0	0	0	13	202	5	0	6	2	1	6	217	9	0	461
10:15 AM	0	0	0	11	185	7	0	8	1	3	4	208	13	0	440
10:30 AM	0	0	0	10	196	4	0	8	0	1	1	179	4	0	403
10:45 AM	0	0	0	12	199	8	0	13	4	2	8	224	11	0	481
Total	0	0	0	46	782	24	0	35	7	7	19	828	37	0	1785
11:00 AM	0	0	0	7	193	10	0	11	5	1	8	198	5	0	438
11:15 AM	0	1	0	13	213	4	0	3	3	5	13	241	6	0	502
11:30 AM	0	0	0	14	218	3	0	7	1	2	8	228	7	0	488
11:45 AM	0	0	0	16	184	6	1	4	1	1	9	216	7	1	446
Total	0	1	0	50	808	23	1	25	10	9	38	883	25	1	1874
12:00 PM	1	0	0	5	203	9	0	10	0	1	23	197	4	0	453
12:15 PM	0	0	0	12	232	7	0	8	7	3	10	244	11	0	534
12:30 PM	0	0	1	12	209	7	0	4	0	1	16	216	7	4	477
12:45 PM	0	0	0	8	174	7	0	9	4	1	20	239	3	0	465
Total	1	0	1	37	818	30	0	31	11	6	69	896	25	4	1929
01:00 PM	1	0	1	13	183	8	0	10	3	1	8	215	10	0	453
01:15 PM	0	0	0	14	171	10	0	20	3	3	13	233	9	0	476
01:30 PM	0	0	0	11	206	7	0	15	2	2	10	252	7	0	512
01:45 PM	1	0	1	7	211	10	0	11	1	2	9	231	11	0	495
Total	2	0	2	45	771	35	0	56	9	8	40	931	37	0	1936
02:00 PM	0	0	0	9	198	10	0	7	1	2	7	235	9	0	478
02:15 PM	0	0	0	10	205	7	1	14	1	2	5	268	3	0	516
02:30 PM	0	0	0	9	204	6	0	12	3	2	9	274	5	0	524
02:45 PM	0	0	0	19	209	9	0	14	2	1	8	281	3	0	546
Total	0	0	0	47	816	32	1	47	7	7	29	1058	20	0	2064
03:00 PM	0	0	0	8	236	10	2	16	2	2	6	266	2	0	550
03:15 PM	0	0	0	6	192	4	0	12	1	1	11	246	5	0	478
03:30 PM	1	0	0	5	200	11	0	17	5	2	10	265	4	0	520
03:45 PM	0	0	0	8	215	8	1	13	3	3	8	291	4	0	554
Total	1	0	0	27	843	33	3	58	11	8	35	1068	15	0	2102
04:00 PM	0	0	0	10	211	5	0	16	3	2	6	285	5	0	543
04:15 PM	0	0	0	9	208	13	1	17	0	3	4	262	2	0	519

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City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Cars

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	0	0	0	14	229	7	1	13	4	6	12	299	5	0	590
04:45 PM	0	0	0	8	197	9	0	20	5	2	9	275	7	0	532
Total	0	0	0	41	845	34	2	66	12	13	31	1121	19	0	2184
05:00 PM	0	0	0	7	239	9	1	28	1	5	6	292	7	0	595
05:15 PM	1	0	0	7	216	13	1	33	4	1	7	290	5	0	578
05:30 PM	0	0	0	3	213	7	0	18	0	7	10	302	5	0	565
05:45 PM	0	0	0	7	196	10	0	17	4	4	7	280	5	0	530
Total	1	0	0	24	864	39	2	96	9	17	30	1164	22	0	2268
Grand Total	5	1	4	475	9558	321	10	587	115	116	368	10882	289	5	22736
Apprch %	50	10	40	4.6	92.2	3.1	0.1	71.8	14.1	14.2	3.2	94.3	2.5	0	
Total %	0	0	0	2.1	42	1.4	0	2.6	0.5	0.5	1.6	47.9	1.3	0	

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	0	0	0	**18**	**266**	8	0	**292**	19	4	4	27	5	**289**	**8**	0	**302**	**621**
07:30 AM	0	0	0	0	17	261	3	0	281	18	**7**	3	28	**10**	277	8	0	295	604
07:45 AM	0	0	0	0	14	237	**12**	**1**	264	**23**	7	**5**	**35**	6	235	8	0	249	548
08:00 AM	0	0	**1**	**1**	6	230	8	0	244	15	7	2	24	9	271	8	0	288	557
Total Volume	0	0	1	1	55	994	31	1	1081	75	25	14	114	30	1072	32	0	1134	2330
% App. Total	0	0	100		5.1	92	2.9	0.1		65.8	21.9	12.3		2.6	94.5	2.8	0		
PHF	.000	.000	.250	.250	.764	.934	.646	.250	.926	.815	.893	.700	.814	.750	.927	1.000	.000	.939	.938
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 01:00 PM																			
01:00 PM	**1**	0	**1**	**2**	13	183	8	0	204	10	**3**	1	14	8	215	10	0	233	453
01:15 PM	0	0	0	0	**14**	171	**10**	0	195	**20**	3	**3**	**26**	**13**	233	9	0	255	476
01:30 PM	0	0	0	0	11	206	7	0	224	15	2	2	19	10	**252**	7	0	**269**	**512**
01:45 PM	1	0	1	2	7	**211**	10	0	**228**	11	1	2	14	9	231	**11**	0	251	495
Total Volume	2	0	2	4	45	771	35	0	851	56	9	8	73	40	931	37	0	1008	1936
% App. Total	50	0	50		5.3	90.6	4.1	0		76.7	12.3	11		4	92.4	3.7	0		
PHF	.500	.000	.500	.500	.804	.914	.875	.000	.933	.700	.750	.667	.702	.769	.924	.841	.000	.937	.945
Peak Hour Analysis From 02:00 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	**14**	229	7	**1**	251	13	4	**6**	23	**12**	**299**	5	0	**316**	590
04:45 PM	0	0	0	0	8	197	9	0	214	20	**5**	2	27	9	275	**7**	0	291	532
05:00 PM	0	0	0	0	7	**239**	9	1	**256**	28	1	5	34	6	292	7	0	305	**595**
05:15 PM	**1**	0	0	**1**	7	216	**13**	1	237	**33**	4	1	**38**	7	290	5	0	302	578
Total Volume	1	0	0	1	36	881	38	3	958	94	14	14	122	34	1156	24	0	1214	2295
% App. Total	100	0	0		3.8	92	4	0.3		77	11.5	11.5		2.8	95.2	2	0		
PHF	.250	.000	.000	.250	.643	.922	.731	.750	.936	.712	.700	.583	.803	.708	.967	.857	.000	.960	.964

PRECISION
D A T A
INDUSTRIES, LLC

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N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011
Page No : 1

Groups Printed- Heavy Vehicles

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	0	0	0	3	1	0	2	0	0	1	7	0	0	14
07:15 AM	0	0	0	0	5	0	0	2	0	0	0	4	1	0	12
07:30 AM	0	0	0	0	10	0	0	1	1	1	0	5	2	0	20
07:45 AM	0	0	0	2	8	1	0	3	0	0	0	6	1	0	21
Total	0	0	0	2	26	2	0	8	1	1	1	22	4	0	67
08:00 AM	0	0	0	0	10	0	0	1	1	0	0	9	1	0	22
08:15 AM	0	0	0	1	5	0	0	0	0	0	0	6	0	0	12
08:30 AM	0	0	0	1	8	1	0	2	0	0	0	4	1	0	17
08:45 AM	0	0	0	2	6	1	0	1	0	2	0	4	1	0	17
Total	0	0	0	4	29	2	0	4	1	2	0	23	3	0	68
09:00 AM	0	0	0	0	8	0	0	1	0	0	0	9	1	0	19
09:15 AM	0	0	0	0	7	0	0	0	0	0	0	4	2	0	13
09:30 AM	0	0	0	0	8	0	0	1	0	0	1	4	1	0	15
09:45 AM	0	0	0	1	6	0	0	0	0	0	0	9	3	0	19
Total	0	0	0	1	29	0	0	2	0	0	1	26	7	0	66
10:00 AM	0	0	0	2	7	0	0	1	0	0	0	8	3	0	21
10:15 AM	0	0	0	0	2	1	0	1	1	0	0	6	0	0	11
10:30 AM	0	0	0	1	4	0	0	1	1	0	0	7	3	0	17
10:45 AM	0	0	0	1	4	1	0	0	0	1	0	9	1	0	17
Total	0	0	0	4	17	2	0	3	2	1	0	30	7	0	66
11:00 AM	0	0	0	2	2	0	0	0	0	1	0	6	2	0	13
11:15 AM	0	0	0	0	5	1	0	1	0	0	1	8	2	0	18
11:30 AM	0	0	0	2	1	0	0	1	0	0	0	12	2	0	18
11:45 AM	0	0	0	0	3	0	0	1	0	0	1	3	0	0	8
Total	0	0	0	4	11	1	0	3	0	1	2	29	6	0	57
12:00 PM	0	0	0	1	4	0	0	1	0	0	2	6	1	0	15
12:15 PM	0	0	0	1	8	0	0	3	0	0	0	6	1	0	19
12:30 PM	0	0	0	1	6	2	0	3	1	1	0	8	1	0	23
12:45 PM	0	0	0	1	3	0	0	2	0	0	0	2	1	0	9
Total	0	0	0	4	21	2	0	9	1	1	2	22	4	0	66
01:00 PM	0	0	0	1	5	0	0	1	1	1	0	7	1	0	17
01:15 PM	0	0	0	0	2	0	0	0	1	0	0	4	2	0	9
01:30 PM	0	0	0	1	5	0	0	1	1	0	0	10	1	0	19
01:45 PM	0	0	0	1	4	1	0	1	1	0	1	7	0	0	16
Total	0	0	0	3	16	1	0	3	4	1	1	28	4	0	61
02:00 PM	0	0	0	1	5	0	0	2	3	0	0	4	0	0	15
02:15 PM	0	0	0	0	2	0	0	0	0	0	1	4	1	0	8
02:30 PM	0	0	0	1	3	0	0	1	0	0	0	8	0	0	13
02:45 PM	0	0	0	1	3	0	0	0	0	0	1	6	1	0	12
Total	0	0	0	3	13	0	0	3	3	0	2	22	2	0	48
03:00 PM	0	0	0	1	6	0	0	2	0	0	0	7	1	0	17
03:15 PM	0	0	0	0	1	2	0	0	0	0	0	5	0	0	8
03:30 PM	0	0	0	3	4	0	0	1	2	0	0	5	1	0	16
03:45 PM	0	0	0	2	5	1	0	1	0	0	0	3	1	0	13
Total	0	0	0	6	16	3	0	4	2	0	0	20	3	0	54
04:00 PM	0	0	0	1	5	1	0	1	0	0	1	3	0	0	12
04:15 PM	0	0	0	1	1	2	0	0	1	0	0	3	1	0	9

PRECISION DATA INDUSTRIES, LLC

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Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Heavy Vehicles

	Yawkey Way From North			Boylston Street From East				Jersey Street From South			Boylston Street From West				
Start Time	Right	Thru	Left	Right	Thru	Left	U-Turn	Right	Thru	Left	Right	Thru	Left	U-Turn	Int. Total
04:30 PM	0	0	0	1	2	0	0	2	0	0	0	2	2	0	9
04:45 PM	0	0	0	1	7	0	0	1	0	0	0	5	0	0	14
Total	0	0	0	4	15	3	0	4	1	0	1	13	3	0	44
05:00 PM	0	0	0	1	5	0	0	1	0	0	0	9	2	0	18
05:15 PM	0	0	0	1	2	0	0	1	0	1	0	5	1	0	11
05:30 PM	0	0	0	1	4	0	0	2	0	0	0	2	0	0	9
05:45 PM	0	0	0	1	4	0	0	0	0	0	0	4	2	0	11
Total	0	0	0	4	15	0	0	4	0	1	0	20	5	0	49
Grand Total	0	0	0	39	208	16	0	47	15	8	10	255	48	0	646
Apprch %	0	0	0	14.8	79.1	6.1	0	67.1	21.4	11.4	3.2	81.5	15.3	0	
Total %	0	0	0	6	32.2	2.5	0	7.3	2.3	1.2	1.5	39.5	7.4	0	

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	0	0	0	0	5	0	0	5	2	0	0	2	0	4	1	0	5	12
07:30 AM	0	0	0	0	0	**10**	0	0	10	1	**1**	**1**	**3**	0	5	**2**	0	7	20
07:45 AM	0	0	0	0	**2**	8	**1**	0	**11**	**3**	0	0	3	0	6	1	0	7	21
08:00 AM	0	0	0	0	0	10	0	0	10	1	1	0	2	0	**9**	1	0	**10**	**22**
Total Volume	0	0	0	0	2	33	1	0	36	7	2	1	10	0	24	5	0	29	75
% App. Total	0	0	0		5.6	91.7	2.8	0		70	20	10		0	82.8	17.2	0		
PHF	.000	.000	.000	.000	.250	.825	.250	.000	.818	.583	.500	.250	.833	.000	.667	.625	.000	.725	.852
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:15 PM																			
12:15 PM	0	0	0	0	**1**	**8**	0	0	**9**	**3**	0	0	3	0	6	**1**	0	7	19
12:30 PM	0	0	0	0	1	6	**2**	0	9	3	**1**	**1**	**5**	0	**8**	1	0	**9**	**23**
12:45 PM	0	0	0	0	1	3	0	0	4	2	0	0	2	0	2	1	0	3	9
01:00 PM	0	0	0	0	1	5	0	0	6	1	1	1	3	0	7	1	0	8	17
Total Volume	0	0	0	0	4	22	2	0	28	9	2	2	13	0	23	4	0	27	68
% App. Total	0	0	0		14.3	78.6	7.1	0		69.2	15.4	15.4		0	85.2	14.8	0		
PHF	.000	.000	.000	.000	1.000	.688	.250	.000	.778	.750	.500	.500	.650	.000	.719	1.000	.000	.750	.739
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 03:00 PM																			
03:00 PM	0	0	0	0	1	**6**	0	0	7	**2**	0	0	2	0	**7**	**1**	0	**8**	**17**
03:15 PM	0	0	0	0	0	1	**2**	0	3	0	0	0	0	0	5	0	0	5	8
03:30 PM	0	0	0	0	**3**	4	0	0	7	1	**2**	0	**3**	0	5	1	0	6	16
03:45 PM	0	0	0	0	2	5	1	0	**8**	1	0	0	1	0	3	1	0	4	13
Total Volume	0	0	0	0	6	16	3	0	25	4	2	0	6	0	20	3	0	23	54
% App. Total	0	0	0		24	64	12	0		66.7	33.3	0		0	87	13	0		
PHF	.000	.000	.000	.000	.500	.667	.375	.000	.781	.500	.250	.000	.500	.000	.714	.750	.000	.719	.794

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Page No : 1

Groups Printed- Peds and Bicycles

	Yawkey Way From North				Boylston Street From East				Jersey Street From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
07:00 AM	0	0	0	4	0	0	0	9	0	0	0	7	0	1	0	11	32
07:15 AM	1	1	0	7	0	1	0	21	0	0	0	14	0	0	0	9	54
07:30 AM	0	0	1	18	0	1	1	24	0	1	0	10	0	3	0	17	76
07:45 AM	0	0	0	12	0	0	0	29	1	0	0	16	0	0	0	19	77
Total	1	1	1	41	0	2	1	83	1	1	0	47	0	4	0	56	239
08:00 AM	0	1	0	14	0	0	0	38	0	2	0	21	0	0	0	11	87
08:15 AM	0	0	0	11	0	2	0	23	1	2	0	16	0	1	0	15	71
08:30 AM	0	0	0	8	0	4	1	24	0	0	0	10	0	3	0	15	65
08:45 AM	0	0	0	18	0	0	0	25	1	1	0	25	1	2	0	22	95
Total	0	1	0	51	0	6	1	110	2	5	0	72	1	6	0	63	318
09:00 AM	0	2	0	8	1	3	0	24	0	1	0	10	0	2	0	9	60
09:15 AM	0	0	0	8	0	1	0	16	0	0	0	16	0	1	0	17	59
09:30 AM	0	0	0	17	0	0	0	13	0	1	0	14	0	1	0	13	59
09:45 AM	0	0	0	10	0	1	0	21	0	0	0	21	0	3	0	24	80
Total	0	2	0	43	1	5	0	74	0	2	0	61	0	7	0	63	258
10:00 AM	0	0	0	16	0	1	0	12	0	0	0	19	0	4	0	27	79
10:15 AM	0	0	0	8	0	0	0	16	0	0	0	14	0	11	0	21	70
10:30 AM	0	0	0	8	1	3	0	10	0	0	0	21	0	1	0	22	66
10:45 AM	0	0	0	5	0	0	0	6	0	0	0	8	0	1	0	17	37
Total	0	0	0	37	1	4	0	44	0	0	0	62	0	17	0	87	252
11:00 AM	0	0	0	6	0	1	0	10	0	0	0	11	0	1	0	11	40
11:15 AM	0	0	0	12	0	1	0	14	0	0	0	11	0	1	0	12	51
11:30 AM	0	1	0	6	0	1	0	9	0	0	0	6	0	0	0	8	31
11:45 AM	0	0	0	13	0	3	0	19	0	0	0	4	0	2	0	19	60
Total	0	1	0	37	0	6	0	52	0	0	0	32	0	4	0	50	182
12:00 PM	0	0	0	23	0	1	0	68	0	0	0	14	0	1	0	23	130
12:15 PM	0	1	0	27	0	0	0	20	0	0	0	17	0	3	0	34	102
12:30 PM	0	0	0	30	0	1	0	25	0	0	1	29	0	3	0	41	130
12:45 PM	0	0	0	41	0	2	0	32	2	0	0	27	0	4	0	34	142
Total	0	1	0	121	0	4	0	145	2	0	1	87	0	11	0	132	504
01:00 PM	0	0	0	23	0	1	0	33	0	1	0	25	0	4	0	25	112
01:15 PM	0	0	0	22	0	1	0	33	0	0	0	36	1	3	0	32	128
01:30 PM	0	0	0	29	0	0	0	20	0	0	0	19	0	2	0	24	94
01:45 PM	1	0	0	38	0	0	0	27	0	2	0	29	1	2	0	33	133
Total	1	0	0	112	0	2	0	113	0	3	0	109	2	11	0	114	467
02:00 PM	0	2	0	27	0	0	0	23	0	0	0	31	0	4	0	19	106
02:15 PM	0	1	0	19	0	0	0	17	0	0	0	29	0	0	0	35	101
02:30 PM	0	0	1	25	0	3	0	19	0	0	0	17	0	2	0	26	93
02:45 PM	0	0	0	20	0	2	0	21	0	0	0	28	0	1	0	23	95
Total	0	3	1	91	0	5	0	80	0	0	0	105	0	7	0	103	395
03:00 PM	0	1	0	23	1	2	0	16	0	1	0	36	0	1	0	45	126
03:15 PM	1	3	0	24	0	1	0	23	0	0	0	19	1	1	0	22	95
03:30 PM	0	1	0	31	0	0	0	44	0	1	0	40	0	3	0	35	155
03:45 PM	0	0	0	25	0	1	0	33	0	1	0	24	0	2	0	19	105
Total	1	5	0	103	1	4	0	116	0	3	0	119	1	7	0	121	481
04:00 PM	0	1	0	15	0	1	1	26	0	1	0	25	0	3	2	26	101
04:15 PM	0	1	0	14	0	2	0	38	1	0	0	35	0	2	0	27	120

N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

PRECISION
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INDUSTRIES, LLC
P.O. Box 301 Berlin, MA 01503
Office: 508.481.3999 Fax: 508.545.1234
Email: datarequests@pdillc.com

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

Groups Printed- Peds and Bicycles

	Yawkey Way From North				Boylston Street From East				Jersey Street From South				Boylston Street From West				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
04:30 PM	0	0	0	30	2	1	0	47	0	0	0	29	0	5	0	40	154
04:45 PM	0	2	0	36	0	1	0	50	1	0	0	35	0	4	0	28	157
Total	0	4	0	95	2	5	1	161	2	1	0	124	0	14	2	121	532
05:00 PM	0	1	0	36	0	1	0	64	0	2	0	28	0	2	1	38	173
05:15 PM	0	1	0	21	0	5	0	33	1	3	0	42	0	2	0	31	139
05:30 PM	0	1	0	34	0	1	0	49	0	0	0	33	0	1	0	50	169
05:45 PM	0	0	0	26	0	2	2	36	0	0	0	36	0	7	0	30	139
Total	0	3	0	117	0	9	2	182	1	5	0	139	0	12	1	149	620
Grand Total	3	21	2	848	5	52	5	1160	8	20	1	957	4	100	3	1059	4248
Apprch %	0.3	2.4	0.2	97	0.4	4.3	0.4	94.9	0.8	2	0.1	97.1	0.3	8.6	0.3	90.8	
Total %	0.1	0.5	0	20	0.1	1.2	0.1	27.3	0.2	0.5	0	22.5	0.1	2.4	0.1	24.9	

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00 AM

	Yawkey Way From North					Boylston Street From East					Jersey Street From South					Boylston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
08:00 AM	0	**1**	0	14	15	0	0	0	**38**	**38**	0	**2**	0	21	23	0	0	0	11	11	87
08:15 AM	0	0	0	11	11	0	2	0	23	25	**1**	2	0	16	19	0	1	0	15	16	71
08:30 AM	0	0	0	8	8	0	**4**	**1**	24	29	0	0	0	10	10	0	**3**	0	15	18	65
08:45 AM	0	0	0	**18**	**18**	0	0	0	25	25	1	1	0	**25**	**27**	**1**	2	0	**22**	**25**	**95**
Total Volume	0	1	0	51	52	0	6	1	110	117	2	5	0	72	79	1	6	0	63	70	318
% App. Total	0	1.9	0	98.1		0	5.1	0.9	94		2.5	6.3	0	91.1		1.4	8.6	0	90		
PHF	.000	.250	.000	.708	.722	.000	.375	.250	.724	.770	.500	.625	.000	.720	.731	.250	.500	.000	.716	.700	.837

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:30 PM

	Yawkey Way From North					Boylston Street From East					Jersey Street From South					Boylston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
12:30 PM	0	0	0	30	30	0	1	0	25	26	0	0	**1**	29	30	0	3	0	**41**	**44**	130
12:45 PM	0	0	0	**41**	**41**	0	**2**	0	32	**34**	**2**	0	0	27	29	0	**4**	0	34	38	**142**
01:00 PM	0	0	0	23	23	0	1	0	**33**	34	0	**1**	0	25	26	0	4	0	25	29	112
01:15 PM	0	0	0	22	22	0	1	0	33	34	0	0	0	**36**	**36**	**1**	3	0	32	36	128
Total Volume	0	0	0	116	116	0	5	0	123	128	2	1	1	117	121	1	14	0	132	147	512
% App. Total	0	0	0	100		0	3.9	0	96.1		1.7	0.8	0.8	96.7		0.7	9.5	0	89.8		
PHF	.000	.000	.000	.707	.707	.000	.625	.000	.932	.941	.250	.250	.250	.813	.840	.250	.875	.000	.805	.835	.901

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 04:45 PM

	Yawkey Way From North					Boylston Street From East					Jersey Street From South					Boylston Street From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:45 PM	0	**2**	0	**36**	**38**	0	1	0	50	51	**1**	0	0	35	36	0	**4**	0	28	32	157
05:00 PM	0	1	0	36	37	0	1	0	**64**	**65**	0	2	0	28	30	0	2	**1**	38	41	**173**
05:15 PM	0	1	0	21	22	0	**5**	0	33	38	1	**3**	0	**42**	**46**	0	2	0	31	33	139
05:30 PM	0	1	0	34	35	0	1	0	49	50	0	0	0	33	33	0	1	0	**50**	**51**	169
Total Volume	0	5	0	127	132	0	8	0	196	204	2	5	0	138	145	0	9	1	147	157	638
% App. Total	0	3.8	0	96.2		0	3.9	0	96.1		1.4	3.4	0	95.2		0	5.7	0.6	93.6		
PHF	.000	.625	.000	.882	.868	.000	.400	.000	.766	.785	.500	.417	.000	.821	.788	.000	.563	.250	.735	.770	.922

N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

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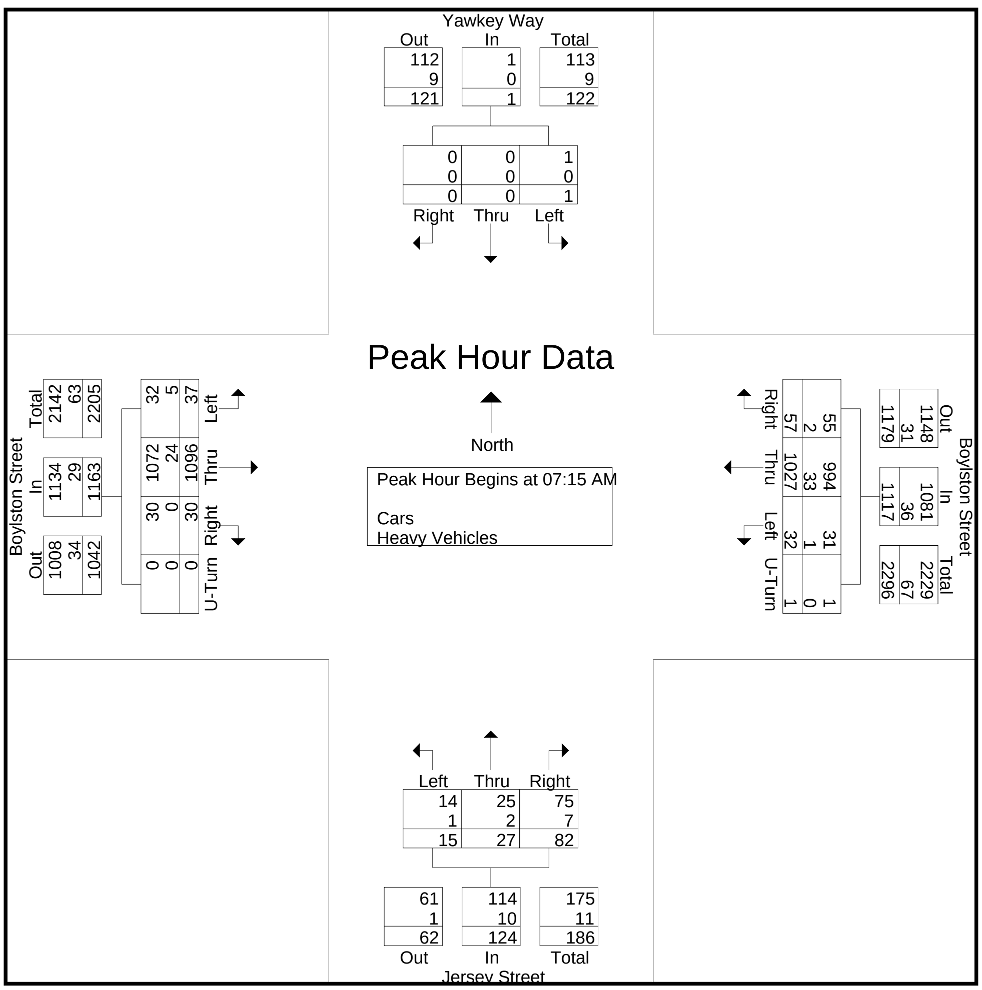
File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011
Page No : 1

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	0	0	0	**18**	**271**	8	0	**297**	21	4	4	29	5	**293**	9	0	**307**	**633**
07:30 AM	0	0	0	0	17	271	3	0	291	19	**8**	4	31	**10**	282	**10**	0	302	624
07:45 AM	0	0	0	0	16	245	**13**	**1**	275	**26**	7	**5**	**38**	6	241	9	0	256	569
08:00 AM	0	0	**1**	**1**	6	240	8	0	254	16	8	2	26	9	280	9	0	298	579
Total Volume	0	0	1	1	57	1027	32	1	1117	82	27	15	124	30	1096	37	0	1163	2405
% App. Total	0	0	100		5.1	91.9	2.9	0.1		66.1	21.8	12.1		2.6	94.2	3.2	0		
PHF	.000	.000	.250	.250	.792	.947	.615	.250	.940	.788	.844	.750	.816	.750	.935	.925	.000	.947	.950
Cars	0	0	1	1	55	994	31	1	1081	75	25	14	114	30	1072	32	0	1134	2330
% Cars	0	0	100	100	96.5	96.8	96.9	100	96.8	91.5	92.6	93.3	91.9	100	97.8	86.5	0	97.5	96.9
Heavy Vehicles	0	0	0	0	2	33	1	0	36	7	2	1	10	0	24	5	0	29	75
% Heavy Vehicles	0	0	0	0	3.5	3.2	3.1	0	3.2	8.5	7.4	6.7	8.1	0	2.2	13.5	0	2.5	3.1



PRECISION
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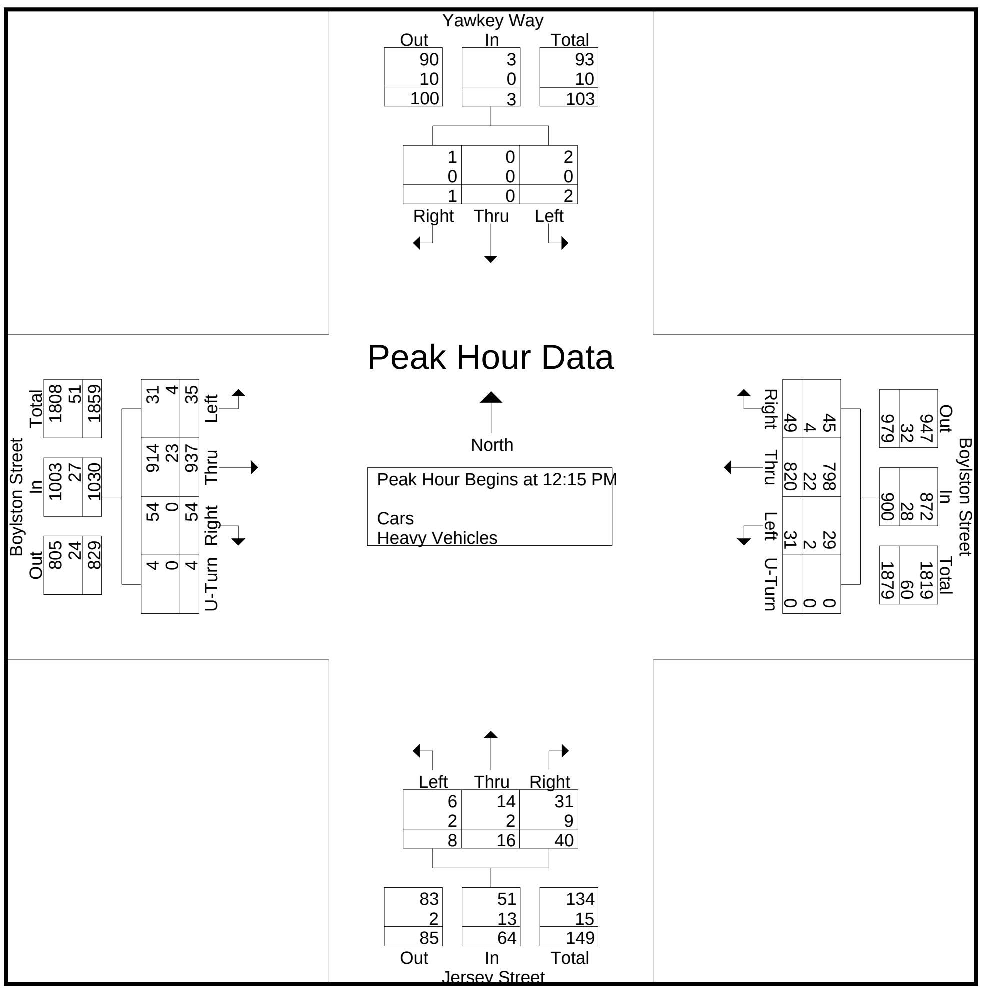
N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:15 PM																			
12:15 PM	0	0	0	0	13	**240**	7	0	**260**	**11**	**7**	**3**	**21**	10	**250**	**12**	0	**272**	**553**
12:30 PM	0	0	**1**	1	13	215	**9**	0	237	7	1	2	10	16	224	8	**4**	252	500
12:45 PM	0	0	0	0	9	177	7	0	193	11	4	1	16	**20**	241	4	0	265	474
01:00 PM	**1**	0	1	**2**	**14**	188	8	0	210	11	4	2	17	8	222	11	0	241	470
Total Volume	1	0	2	3	49	820	31	0	900	40	16	8	64	54	937	35	4	1030	1997
% App. Total	33.3	0	66.7		5.4	91.1	3.4	0		62.5	25	12.5		5.2	91	3.4	0.4		
PHF	.250	.000	.500	.375	.875	.854	.861	.000	.865	.909	.571	.667	.762	.675	.937	.729	.250	.947	.903
Cars	1	0	2	3	45	798	29	0	872	31	14	6	51	54	914	31	4	1003	1929
% Cars	100	0	100	100	91.8	97.3	93.5	0	96.9	77.5	87.5	75.0	79.7	100	97.5	88.6	100	97.4	96.6
Heavy Vehicles	0	0	0	0	4	22	2	0	28	9	2	2	13	0	23	4	0	27	68
% Heavy Vehicles	0	0	0	0	8.2	2.7	6.5	0	3.1	22.5	12.5	25.0	20.3	0	2.5	11.4	0	2.6	3.4



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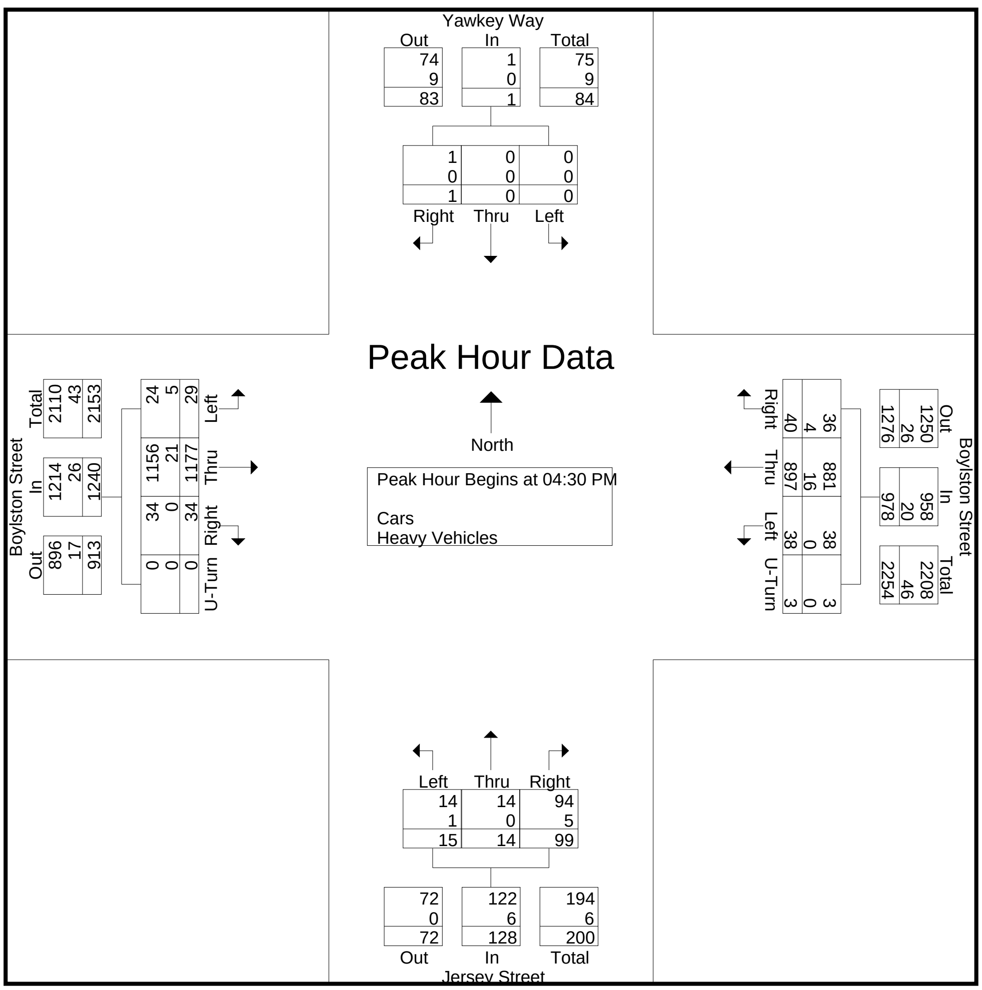
N/S: Yawkey Way/ Jersey Street
E/W: Boylston Street
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 N
Site Code : 407
Start Date : 4/14/2011

	Yawkey Way From North				Boylston Street From East					Jersey Street From South				Boylston Street From West					
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 02:00 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	**15**	231	7	**1**	254	15	4	**6**	25	**12**	**301**	7	0	**320**	599
04:45 PM	0	0	0	0	9	204	9	0	222	21	**5**	2	28	9	280	7	0	296	546
05:00 PM	0	0	0	0	8	**244**	9	1	**262**	29	1	5	35	6	301	**9**	0	316	**613**
05:15 PM	**1**	0	0	**1**	8	218	**13**	1	240	**34**	4	2	**40**	7	295	6	0	308	589
Total Volume	1	0	0	1	40	897	38	3	978	99	14	15	128	34	1177	29	0	1240	2347
% App. Total	100	0	0		4.1	91.7	3.9	0.3		77.3	10.9	11.7		2.7	94.9	2.3	0		
PHF	.250	.000	.000	.250	.667	.919	.731	.750	.933	.728	.700	.625	.800	.708	.978	.806	.000	.969	.957
Cars	1	0	0	1	36	881	38	3	958	94	14	14	122	34	1156	24	0	1214	2295
% Cars	100	0	0	100	90.0	98.2	100	100	98.0	94.9	100	93.3	95.3	100	98.2	82.8	0	97.9	97.8
Heavy Vehicles	0	0	0	0	4	16	0	0	20	5	0	1	6	0	21	5	0	26	52
% Heavy Vehicles	0	0	0	0	10.0	1.8	0	0	2.0	5.1	0	6.7	4.7	0	1.8	17.2	0	2.1	2.2



PRECISION
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N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
07:00 AM	44	60	0	0	4	87	147	0	9	26	84	14	0	220	70	1	1	0	0	0	0	767
07:15 AM	27	64	0	0	6	122	172	0	13	15	141	11	0	267	89	0	0	0	0	0	0	927
07:30 AM	46	62	0	0	4	119	141	0	34	26	132	21	0	287	81	0	0	0	0	0	0	953
07:45 AM	40	71	0	0	7	100	122	0	14	28	137	29	0	263	97	0	0	0	0	0	0	908
Total	157	257	0	0	21	428	582	0	70	95	494	75	0	1037	337	1	1	0	0	0	0	3555
08:00 AM	38	65	0	0	3	85	123	0	18	36	139	27	0	227	93	0	0	0	0	0	0	854
08:15 AM	44	76	0	0	3	90	149	0	17	24	122	21	0	249	100	1	0	0	0	0	0	896
08:30 AM	39	60	0	0	1	103	165	0	15	39	126	25	0	221	84	1	0	0	0	0	0	879
08:45 AM	42	61	0	0	2	100	146	0	13	31	108	23	0	197	87	1	0	0	0	0	0	811
Total	163	262	0	0	9	378	583	0	63	130	495	96	0	894	364	3	0	0	0	0	0	3440
09:00 AM	38	77	0	0	6	99	130	0	14	30	110	16	0	195	86	2	0	0	0	0	0	803
09:15 AM	45	70	0	0	5	84	161	0	19	24	124	16	0	222	100	0	0	0	0	0	0	870
09:30 AM	44	63	0	0	6	94	151	0	14	30	97	18	0	223	78	0	0	0	0	0	0	818
09:45 AM	46	54	0	0	6	80	163	0	19	28	111	11	0	224	76	2	0	0	0	0	0	820
Total	173	264	0	0	23	357	605	0	66	112	442	61	0	864	340	4	0	0	0	0	0	3311
10:00 AM	58	67	0	0	5	61	141	0	11	13	106	20	0	219	69	0	0	0	0	0	1	771
10:15 AM	50	61	0	0	6	83	151	0	16	20	101	15	0	202	67	0	0	0	0	0	0	772
10:30 AM	50	56	0	0	6	73	113	0	15	15	104	19	0	188	72	0	0	0	0	0	0	711
10:45 AM	59	67	0	0	2	66	103	0	17	20	121	21	0	189	72	0	0	0	0	0	0	737
Total	217	251	0	0	19	283	508	0	59	68	432	75	0	798	280	0	0	0	0	0	1	2991
11:00 AM	52	59	0	0	3	66	121	0	20	17	79	12	0	234	81	1	0	0	0	0	0	745
11:15 AM	55	51	0	0	7	80	116	0	13	13	107	16	0	229	89	5	0	0	0	0	0	781
11:30 AM	54	63	0	0	8	72	82	0	16	14	123	18	0	221	54	1	0	0	0	0	0	726
11:45 AM	60	67	0	0	4	84	104	0	22	14	96	14	0	213	76	1	0	0	0	0	0	755
Total	221	240	0	0	22	302	423	0	71	58	405	60	0	897	300	8	0	0	0	0	0	3007
12:00 PM	42	57	0	0	3	89	104	0	22	13	99	12	0	225	81	4	0	0	0	0	0	751
12:15 PM	59	63	0	0	12	92	145	0	22	17	104	16	0	247	73	4	1	0	0	0	0	855
12:30 PM	63	72	0	0	8	87	123	0	19	22	111	19	0	196	78	2	0	0	0	0	0	800
12:45 PM	43	64	0	0	9	88	114	0	22	18	113	19	0	245	75	2	0	0	0	0	0	812
Total	207	256	0	0	32	356	486	0	85	70	427	66	0	913	307	12	1	0	0	0	0	3218
01:00 PM	34	58	0	0	7	90	105	0	20	17	109	12	0	230	79	2	0	0	0	0	0	763
01:15 PM	47	57	0	0	4	94	99	0	26	14	98	17	0	199	78	1	0	0	0	0	0	734
01:30 PM	41	66	0	0	7	101	113	0	21	13	122	22	0	201	81	1	0	0	0	0	0	789
01:45 PM	57	41	0	0	8	92	125	0	19	21	106	15	0	243	88	0	0	0	0	0	0	815
Total	179	222	0	0	26	377	442	0	86	65	435	66	0	873	326	4	0	0	0	0	0	3101
02:00 PM	69	66	0	0	14	82	106	0	16	11	130	24	0	226	76	1	0	0	0	0	0	821
02:15 PM	49	45	0	0	2	101	122	0	25	13	122	23	0	228	67	0	0	0	0	0	0	797
02:30 PM	47	69	0	0	6	89	116	0	20	18	147	31	0	251	87	1	0	0	0	0	0	882
02:45 PM	61	83	0	0	9	102	111	0	34	21	151	28	0	267	80	0	0	0	0	0	0	947
Total	226	263	0	0	31	374	455	0	95	63	550	106	0	972	310	2	0	0	0	0	0	3447
03:00 PM	72	55	0	0	16	114	109	0	22	16	154	21	0	282	85	2	0	0	0	0	0	948
03:15 PM	81	71	0	0	7	102	105	0	21	21	184	21	0	278	85	0	0	0	0	0	0	976
03:30 PM	76	65	0	0	6	116	97	0	18	21	148	26	0	268	84	0	0	0	0	0	0	925
03:45 PM	79	52	0	0	9	108	120	0	30	28	159	32	0	256	112	0	0	0	0	0	0	985
Total	308	243	0	0	38	440	431	0	91	86	645	100	0	1084	366	2	0	0	0	0	0	3834
04:00 PM	71	71	0	0	4	128	118	0	21	14	182	21	0	224	91	2	0	0	0	0	0	947
04:15 PM	78	51	0	0	8	144	86	0	26	29	164	24	0	264	105	1	0	0	0	0	0	980

N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

PRECISION DATA INDUSTRIES, LLC
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Office: 508.481.3999 Fax: 508.545.1234
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File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011

Groups Printed- Cars - Heavy Vehicles

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
04:30 PM	71	76	0	0	6	121	97	0	25	20	204	18	0	241	103	1	0	0	0	0	0	983
04:45 PM	83	70	0	0	10	124	107	0	18	17	201	18	0	253	110	1	0	0	0	0	0	1012
Total	303	268	0	0	28	517	408	0	90	80	751	81	0	982	409	5	0	0	0	0	0	3922
05:00 PM	73	55	0	0	11	143	113	0	20	10	191	29	0	247	131	3	0	0	0	0	0	1026
05:15 PM	86	56	0	0	11	127	79	0	26	23	208	21	0	212	121	4	0	0	0	0	0	974
05:30 PM	78	49	0	0	8	108	97	0	33	21	188	31	0	201	124	0	0	0	0	0	0	938
05:45 PM	73	42	0	0	21	104	78	0	20	22	183	23	0	215	99	2	0	0	0	0	0	882
Total	310	202	0	0	51	482	367	0	99	76	770	104	0	875	475	9	0	0	0	0	0	3820
Grand Total	2464	2728	0	0	300	4294	5290	0	875	903	5846	890	0	10189	3814	50	2	0	0	0	1	37646
Apprch %	47.5	52.5	0	0	3	43.4	53.5	0	10.3	10.6	68.7	10.5	0	72.5	27.1	0.4	0	0	0	0	100	
Total %	6.5	7.2	0	0	0.8	11.4	14.1	0	2.3	2.4	15.5	2.4	0	27.1	10.1	0.1	0	0	0	0	0	
Cars	2346	2418	0	0	282	4227	5151	0	818	862	5632	851	0	9963	3497	48	2	0	0	0	1	36098
% Cars	95.2	88.6	0	0	94	98.4	97.4	0	93.5	95.5	96.3	95.6	0	97.8	91.7	96	100	0	0	0	100	95.9
Heavy Vehicles	118	310	0	0	18	67	139	0	57	41	214	39	0	226	317	2	0	0	0	0	0	1548
% Heavy Vehicles	4.8	11.4	0	0	6	1.6	2.6	0	6.5	4.5	3.7	4.4	0	2.2	8.3	4	0	0	0	0	0	4.1

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 07:15 AM

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
07:15 AM	27	64	0	0	91	6	**122**	**172**	0	**300**	13	15	**141**	11	180	0	267	89	0	0	356	0	0	0	0	0	927
07:30 AM	**46**	62	0	0	108	4	119	141	0	264	**34**	26	132	21	213	0	**287**	81	0	0	**368**	0	0	0	0	0	**953**
07:45 AM	40	**71**	0	0	**111**	**7**	100	122	0	229	14	28	137	**29**	208	0	263	**97**	0	0	360	0	0	0	0	0	908
08:00 AM	38	65	0	0	103	3	85	123	0	211	18	**36**	139	27	**220**	0	227	93	0	0	320	0	0	0	0	0	854
Total Volume	151	262	0	0	413	20	426	558	0	1004	79	105	549	88	821	0	1044	360	0	0	1404	0	0	0	0	0	3642
% App. Total	36.6	63.4	0	0		2	42.4	55.6	0		9.6	12.8	66.9	10.7		0	74.4	25.6	0	0		0	0	0	0		
PHF	.821	.923	.000	.000	.930	.714	.873	.811	.000	.837	.581	.729	.973	.759	.933	.000	.909	.928	.000	.000	.954	.000	.000	.000	.000	.000	.955
Cars	147	223	0	0	370	19	418	547	0	984	74	97	521	82	774	0	1027	325	0	0	1352	0	0	0	0	0	3480
% Cars	97.4	85.1	0	0	89.6	95.0	98.1	98.0	0	98.0	93.7	92.4	94.9	93.2	94.3	0	98.4	90.3	0	0	96.3	0	0	0	0	0	95.6
Heavy Vehicles	4	39	0	0	43	1	8	11	0	20	5	8	28	6	47	0	17	35	0	0	52	0	0	0	0	0	162
% Heavy Vehicles	2.6	14.9	0	0	10.4	5.0	1.9	2.0	0	2.0	6.3	7.6	5.1	6.8	5.7	0	1.6	9.7	0	0	3.7	0	0	0	0	0	4.4

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:15 PM

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
12:15 PM	59	63	0	0	122	**12**	**92**	**145**	0	**249**	**22**	17	104	16	159	0	**247**	73	**4**	**1**	**325**	0	0	0	0	0	**855**
12:30 PM	**63**	**72**	0	0	**135**	8	87	123	0	218	19	**22**	111	**19**	171	0	196	78	2	0	276	0	0	0	0	0	800
12:45 PM	43	64	0	0	107	9	88	114	0	211	22	18	**113**	19	**172**	0	245	75	2	0	322	0	0	0	0	0	812
01:00 PM	34	58	0	0	92	7	90	105	0	202	20	17	109	12	158	0	230	**79**	2	0	311	0	0	0	0	0	763
Total Volume	199	257	0	0	456	36	357	487	0	880	83	74	437	66	660	0	918	305	10	1	1234	0	0	0	0	0	3230
% App. Total	43.6	56.4	0	0		4.1	40.6	55.3	0		12.6	11.2	66.2	10		0	74.4	24.7	0.8	0.1		0	0	0	0		
PHF	.790	.892	.000	.000	.844	.750	.970	.840	.000	.884	.943	.841	.967	.868	.959	.000	.929	.965	.625	.250	.949	.000	.000	.000	.000	.000	.944
Cars	187	235	0	0	422	34	353	478	0	865	78	70	423	63	634	0	896	286	10	1	1193	0	0	0	0	0	3114
% Cars	94.0	91.4	0	0	92.5	94.4	98.9	98.2	0	98.3	94.0	94.6	96.8	95.5	96.1	0	97.6	93.8	100	100	96.7	0	0	0	0	0	96.4
Heavy Vehicles	12	22	0	0	34	2	4	9	0	15	5	4	14	3	26	0	22	19	0	0	41	0	0	0	0	0	116
% Heavy Vehicles	6.0	8.6	0	0	7.5	5.6	1.1	1.8	0	1.7	6.0	5.4	3.2	4.5	3.9	0	2.4	6.2	0	0	3.3	0	0	0	0	0	3.6

N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
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Email: datarequests@pdillc.com

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 04:15 PM																											
04:15 PM	78	51	0	0	129	8	**144**	86	0	238	**26**	**29**	164	24	243	0	**264**	105	1	0	370	0	0	0	0	0	980
04:30 PM	71	**76**	0	0	147	6	121	97	0	224	25	20	**204**	18	**267**	0	241	103	1	0	345	0	0	0	0	0	983
04:45 PM	**83**	70	0	0	**153**	10	124	107	0	241	18	17	201	18	254	0	253	110	1	0	364	0	0	0	0	0	1012
05:00 PM	73	55	0	0	128	**11**	143	**113**	0	**267**	20	10	191	**29**	250	0	247	**131**	**3**	0	**381**	0	0	0	0	0	**1026**
Total Volume	305	252	0	0	557	35	532	403	0	970	89	76	760	89	1014	0	1005	449	6	0	1460	0	0	0	0	0	4001
% App. Total	54.8	45.2	0	0		3.6	54.8	41.5	0		8.8	7.5	75	8.8		0	68.8	30.8	0.4	0		0	0	0	0		
PHF	.919	.829	.000	.000	.910	.795	.924	.892	.000	.908	.856	.655	.931	.767	.949	.000	.952	.857	.500	.000	.958	.000	.000	.000	.000	.000	.975
Cars	295	230	0	0	525	32	527	385	0	944	88	75	746	86	995	0	993	423	6	0	1422	0	0	0	0	0	3886
% Cars	96.7	91.3	0	0	94.3	91.4	99.1	95.5	0	97.3	98.9	98.7	98.2	96.6	98.1	0	98.8	94.2	100	0	97.4	0	0	0	0	0	97.1
Heavy Vehicles	10	22	0	0	32	3	5	18	0	26	1	1	14	3	19	0	12	26	0	0	38	0	0	0	0	0	115
% Heavy Vehicles	3.3	8.7	0	0	5.7	8.6	0.9	4.5	0	2.7	1.1	1.3	1.8	3.4	1.9	0	1.2	5.8	0	0	2.6	0	0	0	0	0	2.9

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N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011

Groups Printed- Cars

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
07:00 AM	43	48	0	0	4	87	144	0	8	26	76	14	0	212	61	1	1	0	0	0	0	725
07:15 AM	27	56	0	0	6	119	170	0	13	15	134	10	0	264	80	0	0	0	0	0	0	894
07:30 AM	45	51	0	0	4	118	138	0	34	24	129	20	0	282	72	0	0	0	0	0	0	917
07:45 AM	38	61	0	0	6	99	119	0	11	24	125	28	0	259	88	0	0	0	0	0	0	858
Total	153	216	0	0	20	423	571	0	66	89	464	72	0	1017	301	1	1	0	0	0	0	3394
08:00 AM	37	55	0	0	3	82	120	0	16	34	133	24	0	222	85	0	0	0	0	0	0	811
08:15 AM	42	64	0	0	3	89	145	0	13	24	114	21	0	245	88	1	0	0	0	0	0	849
08:30 AM	37	51	0	0	1	100	160	0	12	37	120	24	0	218	73	1	0	0	0	0	0	834
08:45 AM	39	47	0	0	2	98	141	0	13	31	101	22	0	187	77	1	0	0	0	0	0	759
Total	155	217	0	0	9	369	566	0	54	126	468	91	0	872	323	3	0	0	0	0	0	3253
09:00 AM	32	66	0	0	5	96	128	0	12	29	105	16	0	186	78	2	0	0	0	0	0	755
09:15 AM	42	59	0	0	5	82	158	0	17	23	114	15	0	214	89	0	0	0	0	0	0	818
09:30 AM	41	54	0	0	4	93	146	0	13	29	90	17	0	219	71	0	0	0	0	0	0	777
09:45 AM	44	45	0	0	5	78	158	0	18	25	104	10	0	215	69	2	0	0	0	0	0	773
Total	159	224	0	0	19	349	590	0	60	106	413	58	0	834	307	4	0	0	0	0	0	3123
10:00 AM	52	61	0	0	5	60	139	0	9	11	102	18	0	214	64	0	0	0	0	0	1	736
10:15 AM	47	55	0	0	6	82	147	0	15	19	96	15	0	192	61	0	0	0	0	0	0	735
10:30 AM	47	48	0	0	6	71	111	0	14	13	102	15	0	182	67	0	0	0	0	0	0	676
10:45 AM	57	60	0	0	2	66	102	0	17	18	120	21	0	183	68	0	0	0	0	0	0	714
Total	203	224	0	0	19	279	499	0	55	61	420	69	0	771	260	0	0	0	0	0	1	2861
11:00 AM	50	53	0	0	3	63	117	0	19	17	75	12	0	228	71	1	0	0	0	0	0	709
11:15 AM	50	44	0	0	7	79	115	0	9	13	104	16	0	222	80	5	0	0	0	0	0	744
11:30 AM	50	58	0	0	8	70	78	0	15	14	120	18	0	218	49	1	0	0	0	0	0	699
11:45 AM	58	61	0	0	3	82	100	0	20	13	95	14	0	205	73	1	0	0	0	0	0	725
Total	208	216	0	0	21	294	410	0	63	57	394	60	0	873	273	8	0	0	0	0	0	2877
12:00 PM	39	52	0	0	3	88	101	0	21	13	94	12	0	222	75	4	0	0	0	0	0	724
12:15 PM	55	56	0	0	11	91	143	0	21	16	102	15	0	240	71	4	1	0	0	0	0	826
12:30 PM	61	67	0	0	8	86	121	0	17	22	107	19	0	191	73	2	0	0	0	0	0	774
12:45 PM	40	61	0	0	9	87	111	0	20	17	111	17	0	238	67	2	0	0	0	0	0	780
Total	195	236	0	0	31	352	476	0	79	68	414	63	0	891	286	12	1	0	0	0	0	3104
01:00 PM	31	51	0	0	6	89	103	0	20	15	103	12	0	227	75	2	0	0	0	0	0	734
01:15 PM	45	52	0	0	4	93	96	0	24	13	95	16	0	194	73	1	0	0	0	0	0	706
01:30 PM	37	58	0	0	7	99	112	0	18	12	113	20	0	196	74	1	0	0	0	0	0	747
01:45 PM	53	36	0	0	8	90	123	0	18	21	104	15	0	236	76	0	0	0	0	0	0	780
Total	166	197	0	0	25	371	434	0	80	61	415	63	0	853	298	4	0	0	0	0	0	2967
02:00 PM	65	58	0	0	13	81	104	0	15	10	127	23	0	223	69	1	0	0	0	0	0	789
02:15 PM	45	42	0	0	2	100	118	0	24	12	115	23	0	224	64	0	0	0	0	0	0	769
02:30 PM	46	61	0	0	5	87	112	0	20	18	142	31	0	240	81	0	0	0	0	0	0	843
02:45 PM	59	73	0	0	8	101	108	0	31	20	148	27	0	262	76	0	0	0	0	0	0	913
Total	215	234	0	0	28	369	442	0	90	60	532	104	0	949	290	1	0	0	0	0	0	3314
03:00 PM	69	52	0	0	13	112	105	0	22	14	146	20	0	278	75	2	0	0	0	0	0	908
03:15 PM	79	62	0	0	6	102	102	0	19	21	179	17	0	272	78	0	0	0	0	0	0	937
03:30 PM	76	61	0	0	6	112	94	0	14	20	142	25	0	263	72	0	0	0	0	0	0	885
03:45 PM	75	46	0	0	9	105	114	0	29	25	155	31	0	250	101	0	0	0	0	0	0	940
Total	299	221	0	0	34	431	415	0	84	80	622	93	0	1063	326	2	0	0	0	0	0	3670
04:00 PM	69	67	0	0	4	127	116	0	20	13	174	18	0	223	85	2	0	0	0	0	0	918
04:15 PM	76	44	0	0	6	143	83	0	25	28	162	23	0	262	96	1	0	0	0	0	0	949

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N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011

Groups Printed- Cars

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
04:30 PM	68	70	0	0	5	120	91	0	25	20	199	18	0	236	98	1	0	0	0	0	0	951
04:45 PM	81	68	0	0	10	122	103	0	18	17	199	17	0	250	106	1	0	0	0	0	0	992
Total	294	249	0	0	25	512	393	0	88	78	734	76	0	971	385	5	0	0	0	0	0	3810
05:00 PM	70	48	0	0	11	142	108	0	20	10	186	28	0	245	123	3	0	0	0	0	0	994
05:15 PM	84	50	0	0	11	127	77	0	26	23	204	21	0	210	113	3	0	0	0	0	0	949
05:30 PM	74	46	0	0	8	106	94	0	33	21	186	30	0	201	118	0	0	0	0	0	0	917
05:45 PM	71	40	0	0	21	103	76	0	20	22	180	23	0	213	94	2	0	0	0	0	0	865
Total	299	184	0	0	51	478	355	0	99	76	756	102	0	869	448	8	0	0	0	0	0	3725
Grand Total	2346	2418	0	0	282	4227	5151	0	818	862	5632	851	0	9963	3497	48	2	0	0	0	1	36098
Apprch %	49.2	50.8	0	0	2.9	43.8	53.3	0	10	10.6	69	10.4	0	73.7	25.9	0.4	0	0	0	0	100	
Total %	6.5	6.7	0	0	0.8	11.7	14.3	0	2.3	2.4	15.6	2.4	0	27.6	9.7	0.1	0	0	0	0	0	

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 07:15 AM																											
07:15 AM	27	56	0	0	83	**6**	**119**	**170**	0	**295**	13	15	**134**	10	172	0	264	80	0	0	344	0	0	0	0	0	894
07:30 AM	**45**	51	0	0	96	4	118	138	0	260	**34**	24	129	20	**207**	0	**282**	72	0	0	**354**	0	0	0	0	0	**917**
07:45 AM	38	**61**	0	0	**99**	6	99	119	0	224	11	24	125	**28**	188	0	259	**88**	0	0	347	0	0	0	0	0	858
08:00 AM	37	55	0	0	92	3	82	120	0	205	16	**34**	133	24	207	0	222	85	0	0	307	0	0	0	0	0	811
Total Volume	147	223	0	0	370	19	418	547	0	984	74	97	521	82	774	0	1027	325	0	0	1352	0	0	0	0	0	3480
% App. Total	39.7	60.3	0	0		1.9	42.5	55.6	0		9.6	12.5	67.3	10.6		0	76	24	0	0		0	0	0	0		
PHF	.817	.914	.000	.000	.934	.792	.878	.804	.000	.834	.544	.713	.972	.732	.935	.000	.910	.923	.000	.000	.955	.000	.000	.000	.000	.000	.949
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 12:15 PM																											
12:15 PM	55	56	0	0	111	**11**	**91**	**143**	0	**245**	**21**	16	102	15	154	0	**240**	71	**4**	**1**	**316**	0	0	0	0	0	**826**
12:30 PM	**61**	**67**	0	0	**128**	8	86	121	0	215	17	**22**	107	**19**	**165**	0	191	73	2	0	266	0	0	0	0	0	774
12:45 PM	40	61	0	0	101	9	87	111	0	207	20	17	**111**	17	165	0	238	67	2	0	307	0	0	0	0	0	780
01:00 PM	31	51	0	0	82	6	89	103	0	198	20	15	103	12	150	0	227	**75**	2	0	304	0	0	0	0	0	734
Total Volume	187	235	0	0	422	34	353	478	0	865	78	70	423	63	634	0	896	286	10	1	1193	0	0	0	0	0	3114
% App. Total	44.3	55.7	0	0		3.9	40.8	55.3	0		12.3	11	66.7	9.9		0	75.1	24	0.8	0.1		0	0	0	0		
PHF	.766	.877	.000	.000	.824	.773	.970	.836	.000	.883	.929	.795	.953	.829	.961	.000	.933	.953	.625	.250	.944	.000	.000	.000	.000	.000	.942
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 04:15 PM																											
04:15 PM	76	44	0	0	120	6	**143**	83	0	232	**25**	**28**	162	23	238	0	**262**	96	1	0	359	0	0	0	0	0	949
04:30 PM	68	**70**	0	0	138	5	120	91	0	216	25	20	**199**	18	**262**	0	236	98	1	0	335	0	0	0	0	0	951
04:45 PM	**81**	68	0	0	**149**	10	122	103	0	235	18	17	199	17	251	0	250	106	1	0	357	0	0	0	0	0	992
05:00 PM	70	48	0	0	118	**11**	142	**108**	0	**261**	20	10	186	**28**	244	0	245	**123**	**3**	0	**371**	0	0	0	0	0	**994**
Total Volume	295	230	0	0	525	32	527	385	0	944	88	75	746	86	995	0	993	423	6	0	1422	0	0	0	0	0	3886
% App. Total	56.2	43.8	0	0		3.4	55.8	40.8	0		8.8	7.5	75	8.6		0	69.8	29.7	0.4	0		0	0	0	0		
PHF	.910	.821	.000	.000	.881	.727	.921	.891	.000	.904	.880	.670	.937	.768	.949	.000	.948	.860	.500	.000	.958	.000	.000	.000	.000	.000	.977

PRECISION DATA INDUSTRIES, LLC
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N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011
Page No : 1

Groups Printed- Heavy Vehicles

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
07:00 AM	1	12	0	0	0	0	3	0	1	0	8	0	0	8	9	0	0	0	0	0	0	42
07:15 AM	0	8	0	0	0	3	2	0	0	0	7	1	0	3	9	0	0	0	0	0	0	33
07:30 AM	1	11	0	0	0	1	3	0	0	2	3	1	0	5	9	0	0	0	0	0	0	36
07:45 AM	2	10	0	0	1	1	3	0	3	4	12	1	0	4	9	0	0	0	0	0	0	50
Total	4	41	0	0	1	5	11	0	4	6	30	3	0	20	36	0	0	0	0	0	0	161
08:00 AM	1	10	0	0	0	3	3	0	2	2	6	3	0	5	8	0	0	0	0	0	0	43
08:15 AM	2	12	0	0	0	1	4	0	4	0	8	0	0	4	12	0	0	0	0	0	0	47
08:30 AM	2	9	0	0	0	3	5	0	3	2	6	1	0	3	11	0	0	0	0	0	0	45
08:45 AM	3	14	0	0	0	2	5	0	0	0	7	1	0	10	10	0	0	0	0	0	0	52
Total	8	45	0	0	0	9	17	0	9	4	27	5	0	22	41	0	0	0	0	0	0	187
09:00 AM	6	11	0	0	1	3	2	0	2	1	5	0	0	9	8	0	0	0	0	0	0	48
09:15 AM	3	11	0	0	0	2	3	0	2	1	10	1	0	8	11	0	0	0	0	0	0	52
09:30 AM	3	9	0	0	2	1	5	0	1	1	7	1	0	4	7	0	0	0	0	0	0	41
09:45 AM	2	9	0	0	1	2	5	0	1	3	7	1	0	9	7	0	0	0	0	0	0	47
Total	14	40	0	0	4	8	15	0	6	6	29	3	0	30	33	0	0	0	0	0	0	188
10:00 AM	6	6	0	0	0	1	2	0	2	2	4	2	0	5	5	0	0	0	0	0	0	35
10:15 AM	3	6	0	0	0	1	4	0	1	1	5	0	0	10	6	0	0	0	0	0	0	37
10:30 AM	3	8	0	0	0	2	2	0	1	2	2	4	0	6	5	0	0	0	0	0	0	35
10:45 AM	2	7	0	0	0	0	1	0	0	2	1	0	0	6	4	0	0	0	0	0	0	23
Total	14	27	0	0	0	4	9	0	4	7	12	6	0	27	20	0	0	0	0	0	0	130
11:00 AM	2	6	0	0	0	3	4	0	1	0	4	0	0	6	10	0	0	0	0	0	0	36
11:15 AM	5	7	0	0	0	1	1	0	4	0	3	0	0	7	9	0	0	0	0	0	0	37
11:30 AM	4	5	0	0	0	2	4	0	1	0	3	0	0	3	5	0	0	0	0	0	0	27
11:45 AM	2	6	0	0	1	2	4	0	2	1	1	0	0	8	3	0	0	0	0	0	0	30
Total	13	24	0	0	1	8	13	0	8	1	11	0	0	24	27	0	0	0	0	0	0	130
12:00 PM	3	5	0	0	0	1	3	0	1	0	5	0	0	3	6	0	0	0	0	0	0	27
12:15 PM	4	7	0	0	1	1	2	0	1	1	2	1	0	7	2	0	0	0	0	0	0	29
12:30 PM	2	5	0	0	0	1	2	0	2	0	4	0	0	5	5	0	0	0	0	0	0	26
12:45 PM	3	3	0	0	0	1	3	0	2	1	2	2	0	7	8	0	0	0	0	0	0	32
Total	12	20	0	0	1	4	10	0	6	2	13	3	0	22	21	0	0	0	0	0	0	114
01:00 PM	3	7	0	0	1	1	2	0	0	2	6	0	0	3	4	0	0	0	0	0	0	29
01:15 PM	2	5	0	0	0	1	3	0	2	1	3	1	0	5	5	0	0	0	0	0	0	28
01:30 PM	4	8	0	0	0	2	1	0	3	1	9	2	0	5	7	0	0	0	0	0	0	42
01:45 PM	4	5	0	0	0	2	2	0	1	0	2	0	0	7	12	0	0	0	0	0	0	35
Total	13	25	0	0	1	6	8	0	6	4	20	3	0	20	28	0	0	0	0	0	0	134
02:00 PM	4	8	0	0	1	1	2	0	1	1	3	1	0	3	7	0	0	0	0	0	0	32
02:15 PM	4	3	0	0	0	1	4	0	1	1	7	0	0	4	3	0	0	0	0	0	0	28
02:30 PM	1	8	0	0	1	2	4	0	0	0	5	0	0	11	6	1	0	0	0	0	0	39
02:45 PM	2	10	0	0	1	1	3	0	3	1	3	1	0	5	4	0	0	0	0	0	0	34
Total	11	29	0	0	3	5	13	0	5	3	18	2	0	23	20	1	0	0	0	0	0	133
03:00 PM	3	3	0	0	3	2	4	0	0	2	8	1	0	4	10	0	0	0	0	0	0	40
03:15 PM	2	9	0	0	1	0	3	0	2	0	5	4	0	6	7	0	0	0	0	0	0	39
03:30 PM	0	4	0	0	0	4	3	0	4	1	6	1	0	5	12	0	0	0	0	0	0	40
03:45 PM	4	6	0	0	0	3	6	0	1	3	4	1	0	6	11	0	0	0	0	0	0	45
Total	9	22	0	0	4	9	16	0	7	6	23	7	0	21	40	0	0	0	0	0	0	164
04:00 PM	2	4	0	0	0	1	2	0	1	1	8	3	0	1	6	0	0	0	0	0	0	29

PRECISION
D A T A
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N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011

Groups Printed- Heavy Vehicles

	Brookline Avenue From North				Boylston Street From Northeast				Park Drive From East				Brookline Avenue From South					Park Drive From West				
Start Time	Right	Thru	Left	Hard Left	Hard Right	Bear Right	Bear Left	Hard Left	Hard Right	Right	Thru	Left	Right	Bear Right	Thru	Left	U-Turn	Right	Thru	Bear Left	Left	Int. Total
04:15 PM	2	7	0	0	2	1	3	0	1	1	2	1	0	2	9	0	0	0	0	0	0	31
04:30 PM	3	6	0	0	1	1	6	0	0	0	5	0	0	5	5	0	0	0	0	0	0	32
04:45 PM	2	2	0	0	0	2	4	0	0	0	2	1	0	3	4	0	0	0	0	0	0	20
Total	9	19	0	0	3	5	15	0	2	2	17	5	0	11	24	0	0	0	0	0	0	112
05:00 PM	3	7	0	0	0	1	5	0	0	0	5	1	0	2	8	0	0	0	0	0	0	32
05:15 PM	2	6	0	0	0	0	2	0	0	0	4	0	0	2	8	1	0	0	0	0	0	25
05:30 PM	4	3	0	0	0	2	3	0	0	0	2	1	0	0	6	0	0	0	0	0	0	21
05:45 PM	2	2	0	0	0	1	2	0	0	0	3	0	0	2	5	0	0	0	0	0	0	17
Total	11	18	0	0	0	4	12	0	0	0	14	2	0	6	27	1	0	0	0	0	0	95
Grand Total	118	310	0	0	18	67	139	0	57	41	214	39	0	226	317	2	0	0	0	0	0	1548
Apprch %	27.6	72.4	0	0	8	29.9	62.1	0	16.2	11.7	61	11.1	0	41.5	58.2	0.4	0	0	0	0	0	
Total %	7.6	20	0	0	1.2	4.3	9	0	3.7	2.6	13.8	2.5	0	14.6	20.5	0.1	0	0	0	0	0	

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 08:30 AM																											
08:30 AM	2	9	0	0	11	0	**3**	**5**	0	**8**	**3**	**2**	6	**1**	12	0	3	**11**	0	0	14	0	0	0	0	0	45
08:45 AM	3	**14**	0	0	**17**	0	2	5	0	7	0	0	7	1	8	0	**10**	10	0	0	**20**	0	0	0	0	0	**52**
09:00 AM	**6**	11	0	0	17	**1**	3	2	0	6	2	1	5	0	8	0	9	8	0	0	17	0	0	0	0	0	48
09:15 AM	3	11	0	0	14	0	2	3	0	5	2	1	**10**	1	**14**	0	8	11	0	0	19	0	0	0	0	0	52
Total Volume	14	45	0	0	59	1	10	15	0	26	7	4	28	3	42	0	30	40	0	0	70	0	0	0	0	0	197
% App. Total	23.7	76.3	0	0		3.8	38.5	57.7	0		16.7	9.5	66.7	7.1		0	42.9	57.1	0	0		0	0	0	0		
PHF	.583	.804	.000	.000	.868	.250	.833	.750	.000	.813	.583	.500	.700	.750	.750	.000	.750	.909	.000	.000	.875	.000	.000	.000	.000	.000	.947
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 01:00 PM																											
01:00 PM	3	7	0	0	10	**1**	1	2	0	**4**	0	**2**	6	0	8	0	3	4	0	0	7	0	0	0	0	0	29
01:15 PM	2	5	0	0	7	0	1	**3**	0	4	2	1	3	1	7	0	5	5	0	0	10	0	0	0	0	0	28
01:30 PM	**4**	**8**	0	0	**12**	0	**2**	1	0	3	**3**	1	**9**	**2**	**15**	0	5	7	0	0	12	0	0	0	0	0	**42**
01:45 PM	4	5	0	0	9	0	2	2	0	4	1	0	2	0	3	0	**7**	**12**	0	0	**19**	0	0	0	0	0	35
Total Volume	13	25	0	0	38	1	6	8	0	15	6	4	20	3	33	0	20	28	0	0	48	0	0	0	0	0	134
% App. Total	34.2	65.8	0	0		6.7	40	53.3	0		18.2	12.1	60.6	9.1		0	41.7	58.3	0	0		0	0	0	0		
PHF	.813	.781	.000	.000	.792	.250	.750	.667	.000	.938	.500	.500	.556	.375	.550	.000	.714	.583	.000	.000	.632	.000	.000	.000	.000	.000	.798
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 03:00 PM																											
03:00 PM	3	3	0	0	6	**3**	2	4	0	**9**	0	2	**8**	1	11	0	4	10	0	0	14	0	0	0	0	0	40
03:15 PM	2	**9**	0	0	**11**	1	0	3	0	4	2	0	5	**4**	11	0	**6**	7	0	0	13	0	0	0	0	0	39
03:30 PM	0	4	0	0	4	0	**4**	3	0	7	**4**	1	6	1	**12**	0	5	**12**	0	0	**17**	0	0	0	0	0	40
03:45 PM	**4**	6	0	0	10	0	3	**6**	0	9	1	**3**	4	1	9	0	6	11	0	0	17	0	0	0	0	0	**45**
Total Volume	9	22	0	0	31	4	9	16	0	29	7	6	23	7	43	0	21	40	0	0	61	0	0	0	0	0	164
% App. Total	29	71	0	0		13.8	31	55.2	0		16.3	14	53.5	16.3		0	34.4	65.6	0	0		0	0	0	0		
PHF	.563	.611	.000	.000	.705	.333	.563	.667	.000	.806	.438	.500	.719	.438	.896	.000	.875	.833	.000	.000	.897	.000	.000	.000	.000	.000	.911

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File Name : 112476 I
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Page No : 1

Groups Printed- Peds and Bicycles

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South					Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	Int. Total
07:00 AM	0	0	0	0	25	0	1	3	0	48	0	0	0	0	22	0	2	1	0	0	0	0	0	0	20	122
07:15 AM	0	1	0	0	30	0	0	0	0	38	0	1	1	0	21	0	0	0	0	0	0	0	0	0	20	112
07:30 AM	0	4	0	0	36	0	1	0	0	58	1	0	1	0	41	0	0	0	0	1	0	0	0	0	30	173
07:45 AM	0	5	0	0	41	0	0	0	0	71	0	2	0	0	48	0	1	2	0	0	0	0	0	0	30	200
Total	0	10	0	0	132	0	2	3	0	215	1	3	2	0	132	0	3	3	0	1	0	0	0	0	100	607
08:00 AM	0	1	0	0	45	0	0	0	0	55	0	0	1	0	33	0	1	0	1	0	0	0	0	0	32	169
08:15 AM	0	1	0	0	40	0	0	0	0	56	0	0	0	0	43	0	2	1	0	0	0	0	0	0	23	166
08:30 AM	0	0	0	0	43	0	0	0	0	64	0	0	0	0	42	0	0	1	0	0	0	0	0	0	30	180
08:45 AM	0	3	0	0	43	0	0	0	0	71	0	0	0	0	47	0	2	0	0	0	0	0	0	0	27	193
Total	0	5	0	0	171	0	0	0	0	246	0	0	1	0	165	0	5	2	1	0	0	0	0	0	112	708
09:00 AM	0	1	0	0	43	0	0	0	0	74	0	0	0	1	55	0	5	0	0	1	0	0	0	0	15	195
09:15 AM	0	2	0	0	49	0	0	1	0	67	0	0	2	0	30	0	0	0	0	0	0	0	0	0	43	194
09:30 AM	0	1	0	0	71	0	0	0	0	88	0	0	3	0	64	0	1	1	0	0	0	0	0	0	25	254
09:45 AM	0	1	0	0	37	0	0	0	0	59	0	0	0	0	41	0	1	2	0	0	0	0	0	0	33	174
Total	0	5	0	0	200	0	0	1	0	288	0	0	5	1	190	0	7	3	0	1	0	0	0	0	116	817
10:00 AM	0	0	0	0	19	0	0	2	0	40	0	0	1	0	33	0	0	0	0	0	0	0	0	0	22	117
10:15 AM	0	0	0	0	30	0	0	0	0	44	0	0	3	0	36	0	0	0	0	0	0	0	0	0	27	140
10:30 AM	0	0	0	0	49	0	0	1	0	51	0	0	3	0	61	0	0	0	0	1	0	0	0	0	14	180
10:45 AM	0	0	0	0	29	0	0	0	0	47	1	1	4	0	45	0	0	0	0	0	0	0	0	0	21	148
Total	0	0	0	0	127	0	0	3	0	182	1	1	11	0	175	0	0	0	0	1	0	0	0	0	84	585
11:00 AM	0	0	0	0	33	0	0	0	0	55	0	1	2	0	25	0	0	0	1	1	0	0	0	0	16	134
11:15 AM	0	0	0	0	34	0	1	0	0	60	0	0	1	1	48	0	1	1	0	0	0	0	0	0	21	168
11:30 AM	0	0	0	0	35	0	0	0	0	52	0	0	0	0	42	0	1	0	0	0	0	0	0	0	24	154
11:45 AM	0	1	0	1	40	1	0	0	0	71	0	0	2	0	58	0	0	1	0	1	0	0	0	0	24	200
Total	0	1	0	1	142	1	1	0	0	238	0	1	5	1	173	0	2	2	1	2	0	0	0	0	85	656
12:00 PM	0	1	0	0	48	2	2	1	0	72	0	0	4	0	43	0	0	1	0	2	0	0	0	0	34	210
12:15 PM	0	0	0	0	59	2	1	0	0	82	0	0	1	0	53	0	1	1	0	0	0	0	0	0	44	244
12:30 PM	0	1	0	0	55	1	1	0	0	93	1	0	1	0	67	0	0	1	0	0	0	0	0	0	32	253
12:45 PM	0	0	0	0	49	0	0	0	0	87	0	1	0	0	63	0	0	2	0	0	0	0	0	0	56	258
Total	0	2	0	0	211	5	4	1	0	334	1	1	6	0	226	0	1	5	0	2	0	0	0	0	166	965
01:00 PM	0	0	0	0	55	0	0	0	0	78	0	0	2	0	74	0	0	1	0	0	0	0	0	0	46	256
01:15 PM	0	0	0	0	40	0	0	0	0	64	0	0	2	0	62	0	2	1	0	1	0	0	0	0	33	205
01:30 PM	0	0	0	0	36	0	0	0	0	56	0	0	0	0	51	0	1	0	0	1	0	0	0	0	51	196
01:45 PM	0	0	0	0	60	0	0	0	0	62	0	0	2	0	46	0	2	1	0	3	0	0	0	0	35	211
Total	0	0	0	0	191	0	0	0	0	260	0	0	6	0	233	0	5	3	0	5	0	0	0	0	165	868
02:00 PM	0	0	0	0	58	2	0	0	0	70	0	1	4	0	33	0	0	0	0	0	0	0	0	0	40	208
02:15 PM	0	2	0	0	51	0	0	0	0	74	0	1	4	0	52	0	0	1	0	1	0	0	0	0	49	235
02:30 PM	0	1	0	0	70	0	1	1	0	114	0	0	2	1	62	0	0	0	0	1	0	0	0	0	54	307
02:45 PM	0	1	0	0	72	0	0	1	0	103	0	0	6	0	62	0	1	0	0	0	0	0	0	0	41	287
Total	0	4	0	0	251	2	1	2	0	361	0	2	16	1	209	0	1	1	0	2	0	0	0	0	184	1037
03:00 PM	0	0	0	0	66	0	1	0	0	88	1	0	0	0	73	0	1	1	1	0	0	0	0	0	49	281
03:15 PM	0	3	0	0	63	0	0	1	0	86	1	1	2	0	74	0	1	1	0	1	0	0	0	0	69	303
03:30 PM	1	2	0	0	54	0	0	1	0	120	0	0	0	0	82	0	0	1	0	0	0	0	0	0	77	338

N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

PRECISION
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Email: datarequests@pdillc.com

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011
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Groups Printed- Peds and Bicycles

Start Time	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South					Park Drive From West					Int. Total
	Right	Thru	Left	Hard Left	Peds	Hard Right	Bear Right	Bear Left	Hard Left	Peds	Hard Right	Right	Thru	Left	Peds	Right	Bear Right	Thru	Left	Peds	Right	Thru	Bear Left	Left	Peds	
03:45 PM	0	2	0	0	58	0	0	0	0	88	0	3	2	0	73	0	2	2	0	1	0	0	0	0	78	309
Total	1	7	0	0	241	0	1	2	0	382	2	4	4	0	302	0	4	5	1	2	0	0	0	0	273	1231
04:00 PM	0	1	0	0	43	0	1	1	0	72	0	0	0	0	66	0	0	0	0	0	0	0	0	0	61	245
04:15 PM	0	1	0	0	76	0	0	0	0	103	0	0	5	0	70	0	1	2	0	0	0	0	0	0	58	316
04:30 PM	0	0	0	0	66	0	0	0	0	83	0	0	2	0	72	0	0	2	0	0	0	0	0	0	99	324
04:45 PM	0	0	0	0	74	0	0	0	0	104	0	0	3	0	85	0	3	6	0	0	0	0	0	0	65	340
Total	0	2	0	0	259	0	1	1	0	362	0	0	10	0	293	0	4	10	0	0	0	0	0	0	283	1225
05:00 PM	0	0	0	0	66	0	1	2	0	104	0	0	1	0	103	0	4	0	0	1	0	0	0	0	95	377
05:15 PM	0	3	0	0	118	0	1	0	0	147	0	0	0	0	101	0	2	0	0	0	0	0	0	0	107	479
05:30 PM	0	2	0	0	58	0	2	0	0	126	0	0	0	0	166	0	4	6	0	2	0	0	0	0	109	475
05:45 PM	2	1	0	0	48	0	2	1	0	117	0	0	4	0	171	0	3	2	0	6	0	0	0	0	124	481
Total	2	6	0	0	290	0	6	3	0	494	0	0	5	0	541	0	13	8	0	9	0	0	0	0	435	1812
Grand Total	3	42	0	1	2215	8	16	16	0	3362	5	12	71	3	2639	0	45	42	3	25	0	0	0	0	2003	10511
Apprch %	0.1	1.9	0	0	98	0.2	0.5	0.5	0	98.8	0.2	0.4	2.6	0.1	96.7	0	39.1	36.5	2.6	21.7	0	0	0	0	100	
Total %	0	0.4	0	0	21.1	0.1	0.2	0.2	0	32	0	0.1	0.7	0	25.1	0	0.4	0.4	0	0.2	0	0	0	0	19.1	

Start Time	Brookline Avenue From North						Boylston Street From Northeast						Park Drive From East						Brookline Avenue From South						Park Drive From West						Int. Total
	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	

Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:45 AM

08:45 AM	0	**3**	0	0	43	46	0	0	0	0	71	71	0	0	0	0	47	47	0	2	0	0	0	2	0	0	0	0	27	27	193
09:00 AM	0	1	0	0	43	44	0	0	0	0	74	74	0	0	0	**1**	55	56	0	**5**	0	0	**1**	**6**	0	0	0	0	15	15	195
09:15 AM	0	2	0	0	49	51	0	0	**1**	0	67	68	0	0	2	0	30	32	0	0	0	0	0	0	0	0	0	0	**43**	**43**	194
09:30 AM	0	1	0	0	**71**	**72**	0	0	0	0	**88**	**88**	0	0	**3**	0	**64**	**67**	0	1	**1**	0	0	2	0	0	0	0	25	25	**254**
Total Volume	0	7	0	0	206	213	0	0	1	0	300	301	0	0	5	1	196	202	0	8	1	0	1	10	0	0	0	0	110	110	836
% App. Total	0	3.3	0	0	96.7		0	0	0.3	0	99.7		0	0	2.5	0.5	97		0	80	10	0	10		0	0	0	0	100		
PHF	.000	.583	.000	.000	.725	.740	.000	.000	.250	.000	.852	.855	.000	.000	.417	.250	.766	.754	.000	.400	.250	.000	.250	.417	.000	.000	.000	.000	.640	.640	.823

Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 12:15 PM

12:15 PM	0	0	0	0	**59**	**59**	**2**	**1**	0	0	82	85	0	0	1	0	53	54	0	**1**	1	0	0	**2**	0	0	0	0	44	44	244
12:30 PM	0	**1**	0	0	55	56	1	1	0	0	**93**	**95**	**1**	0	1	0	67	69	0	0	1	0	0	1	0	0	0	0	32	32	253
12:45 PM	0	0	0	0	49	49	0	0	0	0	87	87	0	**1**	0	0	63	64	0	0	**2**	0	0	2	0	0	0	0	**56**	**56**	**258**
01:00 PM	0	0	0	0	55	55	0	0	0	0	78	78	0	0	**2**	0	**74**	**76**	0	0	1	0	0	1	0	0	0	0	46	46	256
Total Volume	0	1	0	0	218	219	3	2	0	0	340	345	1	1	4	0	257	263	0	1	5	0	0	6	0	0	0	0	178	178	1011
% App. Total	0	0.5	0	0	99.5		0.9	0.6	0	0	98.6		0.4	0.4	1.5	0	97.7		0	16.7	83.3	0	0		0	0	0	0	100		
PHF	.000	.250	.000	.000	.924	.928	.375	.500	.000	.000	.914	.908	.250	.250	.500	.000	.868	.865	.000	.250	.625	.000	.000	.750	.000	.000	.000	.000	.795	.795	.980

Peak Hour Analysis From 02:00 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	66	66	0	1	**2**	0	104	107	0	0	1	0	103	104	0	**4**	0	0	1	5	0	0	0	0	95	95	377
05:15 PM	0	**3**	0	0	**118**	**121**					**147**	**148**					101	101	0	2	0	0	0	2	0	0	0	0	107	107	479
05:30 PM	0	2	0	0	58	60	0	**2**	0	0	126	128	0	0	0	0	166	166	0	4	**6**	0	2	**12**	0	0	0	0	109	109	475
05:45 PM	**2**	1	0	0	48	51	0	2	1	0	117	120	0	0	**4**	0	**171**	**175**					**6**	11	0	0	0	0	**124**	**124**	**481**
Total Volume	2	6	0	0	290	298	0	6	3	0	494	503	0	0	5	0	541	546	0	13	8	0	9	30	0	0	0	0	435	435	1812
% App. Total	0.7	2	0	0	97.3		0	1.2	0.6	0	98.2		0	0	0.9	0	99.1		0	43.3	26.7	0	30		0	0	0	0	100		
PHF	.250	.500	.000	.000	.614	.616	.000	.750	.375	.000	.840	.850	.000	.000	.313	.000	.791	.780	.000	.813	.333	.000	.375	.625	.000	.000	.000	.000	.877	.877	.942

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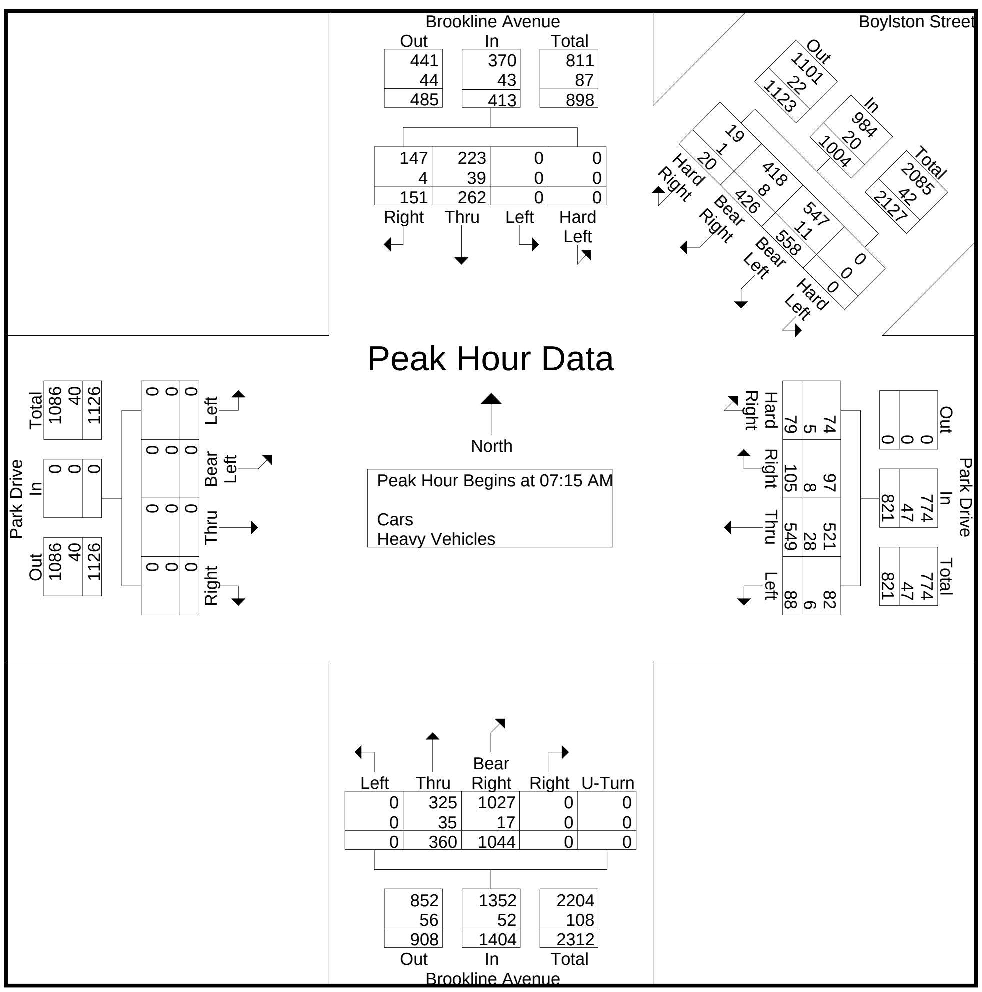
N/S/NE: Brookline Avenue/ Boylston St
E/W: Park Drive
City, State: Boston, MA
Client: Jacobs/ A. Fernandes

File Name : 112476 I
Site Code : 407
Start Date : 4/12/2011
Page No : 1

	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 07:15 AM																											
07:15 AM	27	64	0	0	91	6	**122**	**172**	0	**300**	13	15	**141**	11	180	0	267	89	0	0	356	0	0	0	0	0	927
07:30 AM	**46**	62	0	0	108	4	119	141	0	264	**34**	26	132	21	213	0	**287**	81	0	0	**368**	0	0	0	0	0	**953**
07:45 AM	40	**71**	0	0	**111**	**7**	100	122	0	229	14	28	137	**29**	208	0	263	**97**	0	0	360	0	0	0	0	0	908
08:00 AM	38	65	0	0	103	3	85	123	0	211	18	**36**	139	27	**220**	0	227	93	0	0	320	0	0	0	0	0	854
Total Volume	151	262	0	0	413	20	426	558	0	1004	79	105	549	88	821	0	1044	360	0	0	1404	0	0	0	0	0	3642
% App. Total	36.6	63.4	0	0		2	42.4	55.6	0		9.6	12.8	66.9	10.7		0	74.4	25.6	0	0		0	0	0	0		
PHF	.821	.923	.000	.000	.930	.714	.873	.811	.000	.837	.581	.729	.973	.759	.933	.000	.909	.928	.000	.000	.954	.000	.000	.000	.000	.000	.955
Cars	147	223	0	0	370	19	418	547	0	984	74	97	521	82	774	0	1027	325	0	0	1352	0	0	0	0	0	3480
% Cars	97.4	85.1	0	0	89.6	95.0	98.1	98.0	0	98.0	93.7	92.4	94.9	93.2	94.3	0	98.4	90.3	0	0	96.3	0	0	0	0	0	95.6
Heavy Vehicles	4	39	0	0	43	1	8	11	0	20	5	8	28	6	47	0	17	35	0	0	52	0	0	0	0	0	162
% Heavy Vehicles	2.6	14.9	0	0	10.4	5.0	1.9	2.0	0	2.0	6.3	7.6	5.1	6.8	5.7	0	1.6	9.7	0	0	3.7	0	0	0	0	0	4.4



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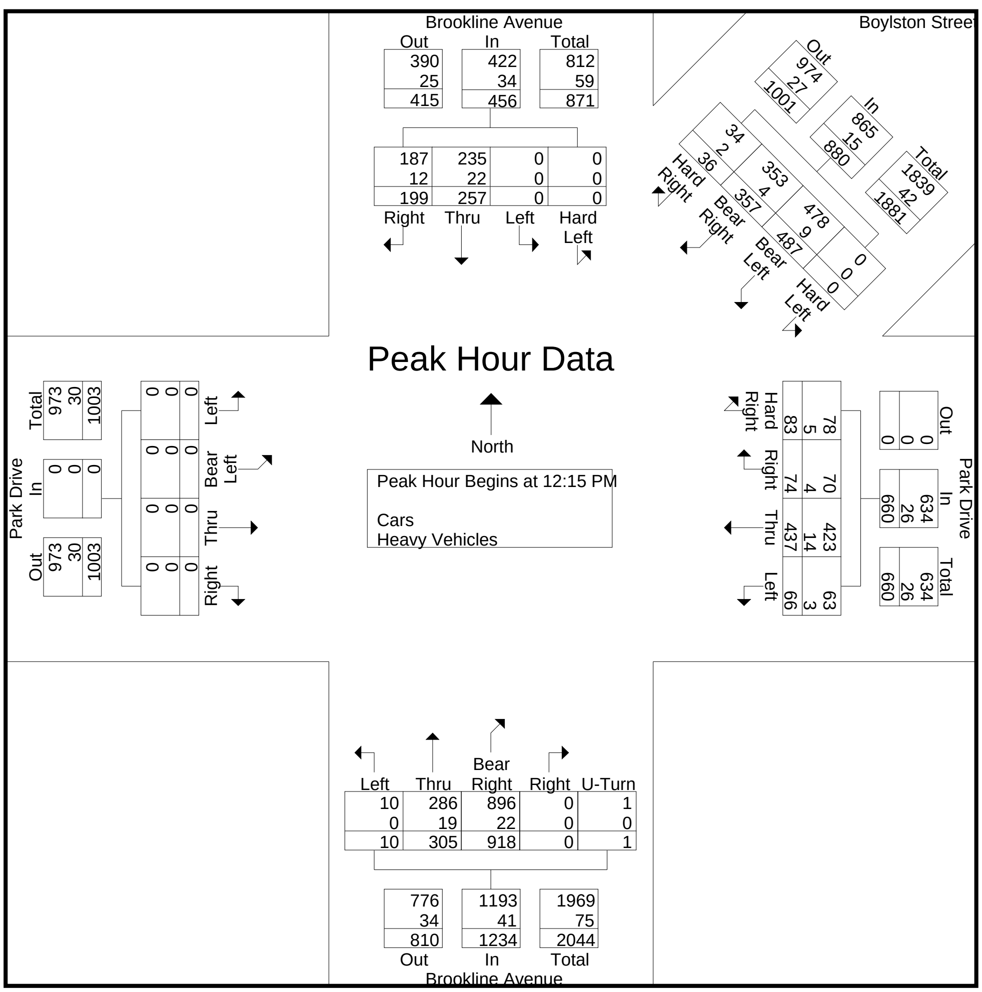
	Brookline Avenue From North					Boylston Street From Northeast					Park Drive From East					Brookline Avenue From South						Park Drive From West					
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 12:15 PM																											
12:15 PM	59	63	0	0	122	12	92	145	0	249	22	17	104	16	159	0	247	73	4	1	325	0	0	0	0	0	855
12:30 PM	63	72	0	0	135	8	87	123	0	218	19	22	111	19	171	0	196	78	2	0	276	0	0	0	0	0	800
12:45 PM	43	64	0	0	107	9	88	114	0	211	22	18	113	19	172	0	245	75	2	0	322	0	0	0	0	0	812
01:00 PM	34	58	0	0	92	7	90	105	0	202	20	17	109	12	158	0	230	79	2	0	311	0	0	0	0	0	763
Total Volume	199	257	0	0	456	36	357	487	0	880	83	74	437	66	660	0	918	305	10	1	1234	0	0	0	0	0	3230
% App. Total	43.6	56.4	0	0		4.1	40.6	55.3	0		12.6	11.2	66.2	10		0	74.4	24.7	0.8	0.1		0	0	0	0		
PHF	.790	.892	.000	.000	.844	.750	.970	.840	.000	.884	.943	.841	.967	.868	.959	.000	.929	.965	.625	.250	.949	.000	.000	.000	.000	.000	.944
Cars	187	235	0	0	422	34	353	478	0	865	78	70	423	63	634	0	896	286	10	1	1193	0	0	0	0	0	3114
% Cars	94.0	91.4	0	0	92.5	94.4	98.9	98.2	0	98.3	94.0	94.6	96.8	95.5	96.1	0	97.6	93.8	100	100	96.7	0	0	0	0	0	96.4
Heavy Vehicles	12	22	0	0	34	2	4	9	0	15	5	4	14	3	26	0	22	19	0	0	41	0	0	0	0	0	116
% Heavy Vehicles	6.0	8.6	0	0	7.5	5.6	1.1	1.8	0	1.7	6.0	5.4	3.2	4.5	3.9	0	2.4	6.2	0	0	3.3	0	0	0	0	0	3.6



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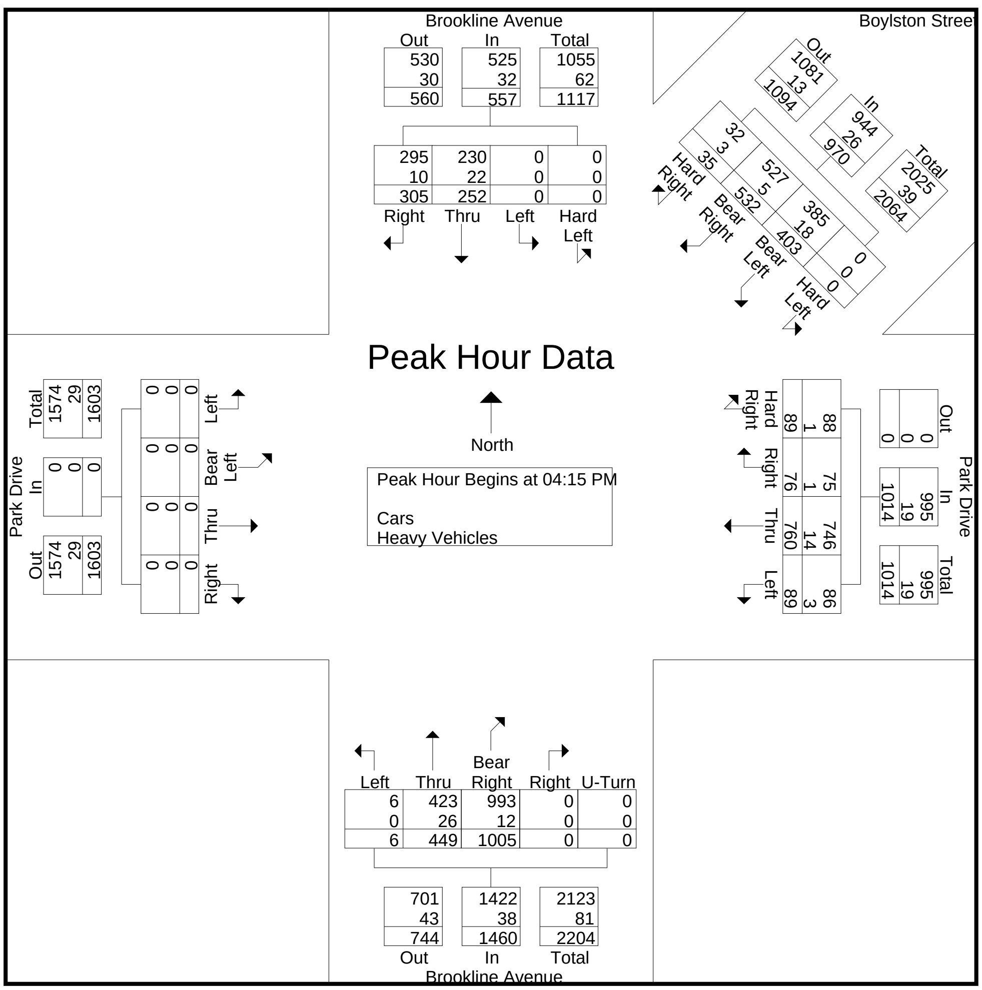
Start Time	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Right	Thru	Bear Left	Left	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																											
Peak Hour for Entire Intersection Begins at 04:15 PM																											
04:15 PM	78	51	0	0	129	8	**144**	86	0	238	**26**	**29**	164	24	243	0	**264**	105	1	0	370	0	0	0	0	0	980
04:30 PM	71	**76**	0	0	147	6	121	97	0	224	25	20	**204**	18	**267**	0	241	103	1	0	345	0	0	0	0	0	983
04:45 PM	**83**	70	0	0	**153**	10	124	107	0	241	18	17	201	18	254	0	253	110	1	0	364	0	0	0	0	0	1012
05:00 PM	73	55	0	0	128	**11**	143	**113**	0	**267**	20	10	191	**29**	250	0	247	**131**	**3**	0	**381**	0	0	0	0	0	**1026**
Total Volume	305	252	0	0	557	35	532	403	0	970	89	76	760	89	1014	0	1005	449	6	0	1460	0	0	0	0	0	4001
% App. Total	54.8	45.2	0	0		3.6	54.8	41.5	0		8.8	7.5	75	8.8		0	68.8	30.8	0.4	0		0	0	0	0		
PHF	.919	.829	.000	.000	.910	.795	.924	.892	.000	.908	.856	.655	.931	.767	.949	.000	.952	.857	.500	.000	.958	.000	.000	.000	.000	.000	.975
Cars	295	230	0	0	525	32	527	385	0	944	88	75	746	86	995	0	993	423	6	0	1422	0	0	0	0	0	3886
% Cars	96.7	91.3	0	0	94.3	91.4	99.1	95.5	0	97.3	98.9	98.7	98.2	96.6	98.1	0	98.8	94.2	100	0	97.4	0	0	0	0	0	97.1
Heavy Vehicles	10	22	0	0	32	3	5	18	0	26	1	1	14	3	19	0	12	26	0	0	38	0	0	0	0	0	115
% Heavy Vehicles	3.3	8.7	0	0	5.7	8.6	0.9	4.5	0	2.7	1.1	1.3	1.8	3.4	1.9	0	1.2	5.8	0	0	2.6	0	0	0	0	0	2.9



Seasonal Adjustment Data

MASSACHUSETTS HIGHWAY DEPARTMENT - STATEWIDE TRAFFIC DATA COLLECTION

2007 WEEKDAY SEASONAL FACTORS *

* Note: These are weekday factors. The average of the factors for the year will not equal 1, as weekend data are not considered.

FACTOR GROUP	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
GROUP 1 - WEST INTERSTATE	0.95	0.91	0.85	0.85	0.87	0.86	0.91	0.96	0.90	0.88	0.90	0.91
GROUP 2 - RURAL MAJOR COLLECTOR (R-5)	1.11	1.07	1.07	0.98	0.92	0.88	0.88	0.86	0.89	0.93	1.01	1.04
GROUP 3A - RECREATIONAL **(1-4) See below	1.26	1.20	1.18	1.04	0.96	0.86	0.78	0.79	0.93	0.99	1.07	1.12
GROUP 3B - RECREATIONAL ***(5) See below	1.22	1.18	1.20	1.04	0.96	0.88	0.73	0.74	0.99	1.02	1.12	1.17
GROUP 4 - I-495 INTERSTATE	1.05	1.03	1.03	0.95	0.93	0.87	0.86	0.83	0.89	0.93	0.93	0.96
GROUP 5 - EAST INTERSTATE	1.02	0.99	0.97	0.94	0.95	0.91	0.92	0.92	0.94	0.94	0.98	0.99
GROUP 6 - URBAN ARTERIALS, COLLECTORS & RURAL ARTERIALS (R-2, R-3)	1.03	0.99	0.97	0.92	0.91	0.90	0.92	0.91	0.92	0.93	0.97	0.97
GROUP 7 - I-84 PROXIMITY (STA. 17)	0.84	1.15	1.17	1.08	1.10	1.02	1.01	0.96	1.06	1.06	1.11	1.15
GROUP 8 - I-295 PROXIMITY (STA. 6590)	0.95	1.01	0.96	0.92	0.89	0.88	0.91	0.86	0.91	0.93	0.95	0.92
GROUP 9 - I-195 PROXIMITY (STA. 7)	1.10	1.03	1.00	0.94	0.91	0.87	0.84	0.82	0.88	0.93	1.03	0.99

RECREATIONAL: (ALL YEARS)

****GROUP 3A:**
1. CAPE COD (ALL TOWNS)
2.PLYMOUTH(SOUTH OF RTE.3A)

7014, 7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108,7178

3.MARTHA'S VINEYARD
4.NANTUCKET

*****GROUP 3B:**
5.PERMANENTS 2 & 189

1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,
1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,
1105,1106,1107,1108,1113,1114,1116,2196,2197,2198

2007 AXLE CORRECTION FACTORS

ROAD INVENTORY FUNCTIONAL CLASSIFICATION	AXLE CORRECTION FACTOR
RURAL	
1	0.90
2	0.93
3	0.98
0,5,6	0.98
URBAN	
1	0.96
2,3	0.97
5	0.99
0,6	0.99
I-84	0.83

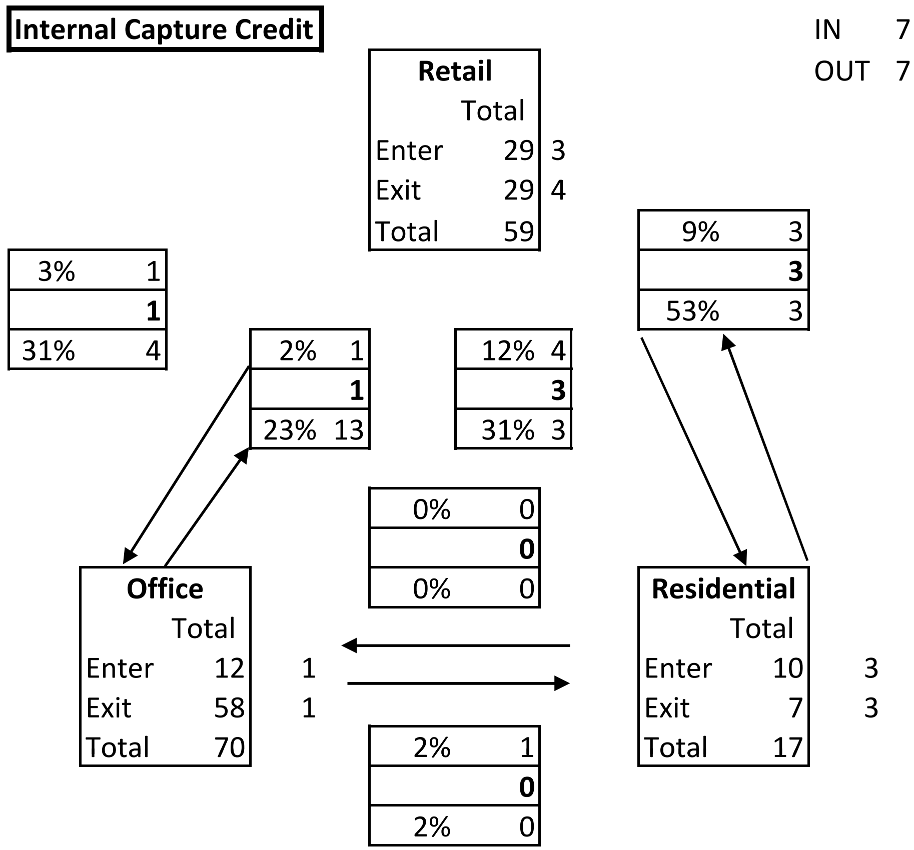
Apply I-84 factor to stations: 3290,3921,3929

ROUND OFF

0 - 999.............10
> 1,000..........100

Trip Generation Credits

Internal Capture Credit



Mode Split Credit

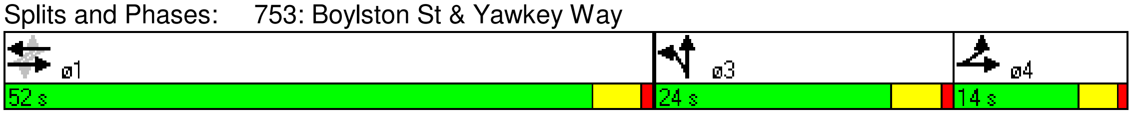
	Automobile	Public Transit	Walk/Bike/Other
Residential	21%	33%	37%
Retail	15%	36%	38%
Office	64%	31%	25%

2011 Existing Condition LOS Analysis

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	37	1096	32	1027	27
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	9.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		70.8		56.8	11.2
Actuated g/C Ratio		0.79		0.63	0.12
v/c Ratio		0.49		0.60	0.60
Control Delay		2.6		15.5	24.9
Queue Delay		0.0		0.0	0.0
Total Delay		2.6		15.5	24.9
LOS		A		B	C
Approach Delay		2.6		15.5	24.9
Approach LOS		A		B	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 70	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 9.9	Intersection LOS: A
Intersection Capacity Utilization 89.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1246	1205	156
v/c Ratio	0.49	0.60	0.60
Control Delay	2.6	15.5	24.9
Queue Delay	0.0	0.0	0.0
Total Delay	2.6	15.5	24.9
Queue Length 50th (ft)	41	242	32
Queue Length 95th (ft)	63	326	76
Internal Link Dist (ft)	553	630	256
Turn Bay Length (ft)			
Base Capacity (vph)	2521	2025	392
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.49	0.60	0.40

Intersection Summary

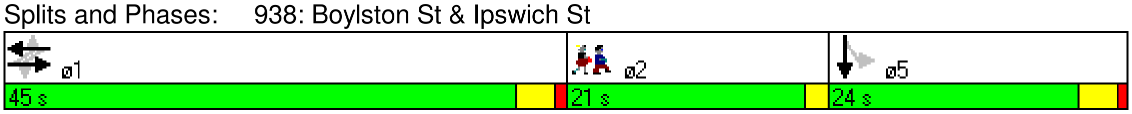
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.88				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.91				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3143			3103			1429				
Flt Permitted		0.88			0.83			0.99				
Satd. Flow (perm)		3200			3200			1429				
Volume (vph)	37	1096	30	32	1027	57	15	27	82	0	0	0
Peak-hour factor, PHF	0.93	0.94	0.75	0.62	0.95	0.79	0.75	0.84	0.79	0.92	0.92	0.92
Adj. Flow (vph)	40	1166	40	52	1081	72	20	32	104	0	0	0
RTOR Reduction (vph)	0	2	0	0	4	0	0	84	0	0	0	0
Lane Group Flow (vph)	0	1244	0	0	1201	0	0	72	0	0	0	0
Confl. Peds. (#/hr)	24		46	46		24	44		86	86		44
Confl. Bikes (#/hr)			3			2						
Heavy Vehicles (%)	14%	2%	0%	3%	3%	4%	7%	7%	9%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		65.8			55.8			10.2				
Effective Green, g (s)		66.8			56.8			11.2				
Actuated g/C Ratio		0.74			0.63			0.12				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)		2369			2020			178				
v/s Ratio Prot		c0.06						c0.05				
v/s Ratio Perm		0.33			c0.38							
v/c Ratio		0.53			0.59			0.40				
Uniform Delay, d1		4.9			9.8			36.3				
Progression Factor		0.55			1.36			1.00				
Incremental Delay, d2		0.6			1.0			1.5				
Delay (s)		3.3			14.3			37.8				
Level of Service		A			B			D				
Approach Delay (s)		3.3			14.3			37.8			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	89.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	35	1146	2	1117	72	0	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	6.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	26.7%	26.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		67.3		67.3	14.7	14.7	
Actuated g/C Ratio		0.75		0.75	0.16	0.16	
v/c Ratio		1.01		0.70	0.55	0.18	
Control Delay		44.6		9.3	43.5	0.8	
Queue Delay		47.0		12.6	0.4	0.0	
Total Delay		91.6		21.9	43.9	0.8	
LOS		F		C	D	A	
Approach Delay		91.6		21.9		25.3	
Approach LOS		F		C		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.01	
Intersection Signal Delay: 53.8	Intersection LOS: D
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1254	1304	116	88
v/c Ratio	1.01	0.70	0.55	0.18
Control Delay	44.6	9.3	43.5	0.8
Queue Delay	47.0	12.6	0.4	0.0
Total Delay	91.6	21.9	43.9	0.8
Queue Length 50th (ft)	~425	196	59	0
Queue Length 95th (ft)	#570	290	72	0
Internal Link Dist (ft)	630	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1237	1872	287	537
Starvation Cap Reductn	0	566	0	0
Spillback Cap Reductn	132	0	28	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.13	1.00	0.45	0.16

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			0.99					1.00	0.98	
Flpb, ped/bikes		1.00			1.00					0.86	1.00	
Frt		1.00			0.99					1.00	0.85	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3155			3124					1290	1144	
Flt Permitted		0.84			0.95					0.95	1.00	
Satd. Flow (perm)		1655			2500					1290	1144	
Volume (vph)	35	1146	7	2	1117	99	0	0	0	72	0	70
Peak-hour factor, PHF	0.73	0.96	0.58	0.50	0.94	0.88	0.85	0.85	0.85	0.62	0.83	0.80
Adj. Flow (vph)	48	1194	12	4	1188	112	0	0	0	116	0	88
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	74	0
Lane Group Flow (vph)	0	1254	0	0	1300	0	0	0	0	116	14	0
Confl. Peds. (#/hr)	25		14	14		25	8		95	95		8
Confl. Bikes (#/hr)			4			5						
Heavy Vehicles (%)	17%	2%	0%	0%	2%	1%	0%	0%	0%	8%	0%	24%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		67.3			67.3					14.7	14.7	
Effective Green, g (s)		67.3			67.3					14.7	14.7	
Actuated g/C Ratio		0.75			0.75					0.16	0.16	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1238			1869					211	187	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.76			0.52					c0.09		
v/c Ratio		1.01			0.70					0.55	0.08	
Uniform Delay, d1		11.4			6.0					34.6	31.9	
Progression Factor		1.24			1.00					1.00	1.00	
Incremental Delay, d2		27.1			2.2					2.9	0.2	
Delay (s)		41.3			8.1					37.5	32.1	
Level of Service		D			A					D	C	
Approach Delay (s)		41.3			8.1			0.0			35.2	
Approach LOS		D			A			A			D	

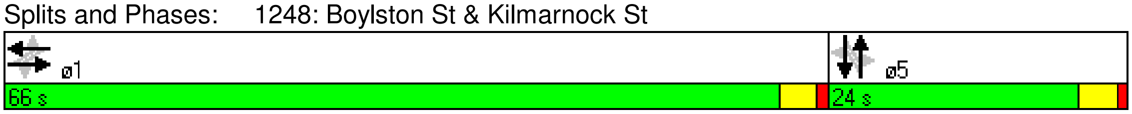
Intersection Summary			
HCM Average Control Delay	25.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	35	1097	17	977	17	9	60	9
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		5		5
Permitted Phases	1		1		5		5	
Detector Phases	1	1	1	1	5	5	5	5
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		73.0		73.0		11.8	11.8	11.8
Actuated g/C Ratio		0.81		0.81		0.13	0.13	0.13
v/c Ratio		0.70		0.49		0.37	0.65	0.22
Control Delay		12.8		5.1		20.8	56.9	17.5
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		12.8		5.1		20.8	56.9	17.5
LOS		B		A		C	E	B
Approach Delay		12.8		5.1		20.8		42.7
Approach LOS		B		A		C		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 61 (68%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.70	
Intersection Signal Delay: 11.3	Intersection LOS: B
Intersection Capacity Utilization 83.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1251	1155	88	92	52
v/c Ratio	0.70	0.49	0.37	0.65	0.22
Control Delay	12.8	5.1	20.8	56.9	17.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	5.1	20.8	56.9	17.5
Queue Length 50th (ft)	191	6	19	51	8
Queue Length 95th (ft)	m163	236	25	65	16
Internal Link Dist (ft)	668	553	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1786	2365	363	240	380
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	0.70	0.49	0.24	0.38	0.14

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

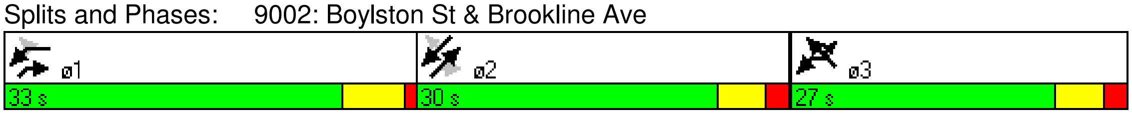
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.96		1.00	0.96	
Flpb, ped/bikes		1.00			1.00			0.99		0.96	1.00	
Frt		1.00			0.99			0.92		1.00	0.90	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3262			3202			1523		1458	1583	
Flt Permitted		0.86			0.92			0.92		0.65	1.00	
Satd. Flow (perm)		2200			2910			1424		1004	1583	
Volume (vph)	35	1097	27	17	977	76	17	9	46	60	9	31
Peak-hour factor, PHF	0.73	0.94	0.75	0.85	0.94	0.79	0.85	0.56	0.88	0.65	0.56	0.85
Adj. Flow (vph)	48	1167	36	20	1039	96	20	16	52	92	16	36
RTOR Reduction (vph)	0	1	0	0	5	0	0	46	0	0	32	0
Lane Group Flow (vph)	0	1250	0	0	1150	0	0	42	0	92	20	0
Confl. Peds. (#/hr)	6		14	14		6	27		32	32		27
Confl. Bikes (#/hr)			1			1			3			1
Heavy Vehicles (%)	3%	2%	7%	29%	3%	0%	6%	0%	4%	7%	11%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)		71.4			71.4			10.6		10.6	10.6	
Effective Green, g (s)		71.4			71.4			10.6		10.6	10.6	
Actuated g/C Ratio		0.79			0.79			0.12		0.12	0.12	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1745			2309			168		118	186	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.57			0.40			0.03		c0.09		
v/c Ratio		0.72			0.50			0.25		0.78	0.11	
Uniform Delay, d1		4.4			3.2			36.1		38.6	35.5	
Progression Factor		2.03			1.13			1.00		1.00	1.00	
Incremental Delay, d2		0.2			0.6			0.3		25.0	0.1	
Delay (s)		9.3			4.2			36.4		63.6	35.6	
Level of Service		A			A			D		E	D	
Approach Delay (s)		9.3			4.2			36.4			53.5	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Configurations								
Volume (vph)	558	426	549	105	360	1044	262	151
Turn Type		Perm		custom		pm+ov		Perm
Protected Phases	1		3	3	2	1	2	
Permitted Phases		1		3		2		2
Detector Phases	1	1	3	3	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	21.0	21.0	19.0	19.0	19.0	19.0
Total Split (s)	33.0	33.0	27.0	27.0	30.0	33.0	30.0	30.0
Total Split (%)	36.7%	36.7%	30.0%	30.0%	33.3%	36.7%	33.3%	33.3%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	29.0	29.0	23.0	23.0	26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32	0.26	0.26	0.29	0.61	0.29	0.29
v/c Ratio	1.04	0.96	0.61	0.81	0.45	1.02	0.35	0.60
Control Delay	79.9	82.0	32.2	51.1	30.7	33.4	26.8	36.9
Queue Delay	81.2	0.0	1.5	0.0	1.2	30.8	0.3	0.0
Total Delay	161.1	82.0	33.8	51.1	31.9	64.2	27.1	36.9
LOS	F	F	C	D	C	E	C	D
Approach Delay	144.1		38.8		56.0		30.9	
Approach LOS	F		D		E		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 1:WBL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 74.7	Intersection LOS: E
Intersection Capacity Utilization 74.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	947	260	682	280	387	1147	285	186
v/c Ratio	1.04	0.96	0.61	0.81	0.45	1.02	0.35	0.60
Control Delay	79.9	82.0	32.2	51.1	30.7	33.4	26.8	36.9
Queue Delay	81.2	0.0	1.5	0.0	1.2	30.8	0.3	0.0
Total Delay	161.1	82.0	33.8	51.1	31.9	64.2	27.1	36.9
Queue Length 50th (ft)	~315	175	125	150	92	~308	67	91
Queue Length 95th (ft)	#365	#323	165	185	m129	m#428	103	142
Internal Link Dist (ft)	668		176		182		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	907	272	1123	347	853	1121	816	311
Starvation Cap Reductn	0	0	0	0	265	82	0	0
Spillback Cap Reductn	142	0	259	0	0	0	155	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.96	0.79	0.81	0.66	1.10	0.43	0.60

Intersection Summary	
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

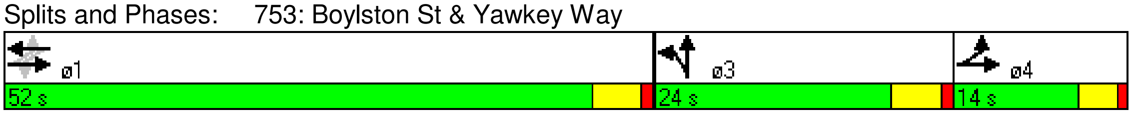
Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NET	NER	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00		0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.94	0.65			1.00	1.00		1.00	0.73	1.00	0.76
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt	0.96	0.85			1.00	0.85		1.00	0.85	1.00	0.85
Flt Protected	0.96	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (prot)	2817	845			4394	1358		2954	1834	2825	1078
Flt Permitted	0.96	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (perm)	3200	845			4394	1358		2954	1834	2825	1078
Volume (vph)	558	426	20	88	549	105	79	360	1044	262	151
Peak-hour factor, PHF	0.81	0.87	0.71	0.76	0.97	0.73	0.58	0.93	0.91	0.92	0.81
Adj. Flow (vph)	689	490	28	116	566	144	136	387	1147	285	186
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	947	260	0	0	682	280	0	387	1147	285	186
Confl. Peds. (#/hr)	1	110	133	1		133	231		231		110
Heavy Vehicles (%)	2%	2%	5%	7%	5%	8%	6%	10%	2%	15%	3%
Turn Type		Perm		Split		custom			pm+ov		Perm
Protected Phases	1			3	3	3		2	1	2	
Permitted Phases		1				3			2		2
Actuated Green, G (s)	27.0	27.0			21.0	21.0		24.0	51.0	24.0	24.0
Effective Green, g (s)	29.0	29.0			23.0	23.0		26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32			0.26	0.26		0.29	0.61	0.29	0.29
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	908	272			1123	347		853	1202	816	311
v/s Ratio Prot	c0.34				0.16	c0.21		0.13	c0.31	0.10	
v/s Ratio Perm		0.31							0.32		0.17
v/c Ratio	1.04	0.96			0.61	0.81		0.45	0.95	0.35	0.60
Uniform Delay, d1	30.5	29.9			29.5	31.4		26.2	16.3	25.3	27.5
Progression Factor	1.30	1.28			1.00	1.00		1.15	1.20	1.00	1.00
Incremental Delay, d2	40.4	42.1			2.4	18.0		0.2	2.5	1.2	8.2
Delay (s)	80.1	80.3			32.0	49.4		30.3	22.0	26.5	35.7
Level of Service	F	F			C	D		C	C	C	D
Approach Delay (s)	80.1				37.0			24.1		30.1	
Approach LOS	F				D			C		C	

Intersection Summary			
HCM Average Control Delay	44.0	HCM Level of Service	D
HCM Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	74.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	29	1177	38	897	14
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	10.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		62.0		52.0	16.0
Actuated g/C Ratio		0.69		0.58	0.18
v/c Ratio		3.87		0.43	0.74
Control Delay		1307.7		9.2	52.7
Queue Delay		0.0		0.0	0.0
Total Delay		1307.7		9.2	52.7
LOS		F		A	D
Approach Delay		1307.7		9.2	52.7
Approach LOS		F		A	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 29 (32%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 3.87	
Intersection Signal Delay: 1037.8	Intersection LOS: F
Intersection Capacity Utilization 87.5%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	4792	1087	178
v/c Ratio	3.87	0.43	0.74
Control Delay	1307.7	9.2	52.7
Queue Delay	0.0	0.0	0.0
Total Delay	1307.7	9.2	52.7
Queue Length 50th (ft)	~2674	93	96
Queue Length 95th (ft)	#313	162	118
Internal Link Dist (ft)	553	630	256
Turn Bay Length (ft)			
Base Capacity (vph)	1237	2547	302
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	3.87	0.43	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.99			0.82				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.90				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3166			3115			1359				
Flt Permitted		0.94			0.60			0.99				
Satd. Flow (perm)		1530			4400			1359				
Volume (vph)	29	1177	34	38	897	40	14	14	99	0	0	0
Peak-hour factor, PHF	0.81	0.25	0.71	0.73	0.92	0.67	0.63	0.70	0.73	0.25	0.25	0.25
Adj. Flow (vph)	36	4708	48	52	975	60	22	20	136	0	0	0
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	4791	0	0	1083	0	0	178	0	0	0	0
Confl. Peds. (#/hr)	67		158	158		67	79		116	116		79
Heavy Vehicles (%)	17%	2%	0%	0%	2%	10%	7%	0%	5%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		61.0			51.0			15.0				
Effective Green, g (s)		62.0			52.0			16.0				
Actuated g/C Ratio		0.69			0.58			0.18				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			2.0				
Lane Grp Cap (vph)		1236			2542			242				
v/s Ratio Prot		c0.43						c0.13				
v/s Ratio Perm		c2.24			0.25							
v/c Ratio		3.88			0.43			0.74				
Uniform Delay, d1		14.0			10.6			35.0				
Progression Factor		0.92			0.78			1.00				
Incremental Delay, d2		1296.3			0.4			9.6				
Delay (s)		1309.2			8.7			44.6				
Level of Service		F			A			D				
Approach Delay (s)		1309.2			8.7			44.6			0.0	
Approach LOS		F			A			D			A	

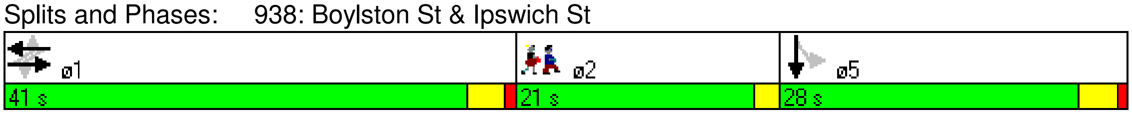
Intersection Summary			
HCM Average Control Delay	1038.7	HCM Level of Service	F
HCM Volume to Capacity ratio	3.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	14	1337	10	925	194	3	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	18.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	41.0	41.0	41.0	41.0	28.0	28.0	21.0
Total Split (%)	45.6%	45.6%	45.6%	45.6%	31.1%	31.1%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		63.1		63.1	18.9	18.9	
Actuated g/C Ratio		0.70		0.70	0.21	0.21	
v/c Ratio		1.04		0.70	0.79	0.27	
Control Delay		47.1		12.5	53.2	9.8	
Queue Delay		66.5		14.1	1.3	0.0	
Total Delay		113.6		26.6	54.5	9.8	
LOS		F		C	D	A	
Approach Delay		113.6		26.6		42.7	
Approach LOS		F		C		D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 74.6	Intersection LOS: E
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1497	1014	223	80
v/c Ratio	1.04	0.70	0.79	0.27
Control Delay	47.1	12.5	53.2	9.8
Queue Delay	66.5	14.1	1.3	0.0
Total Delay	113.6	26.6	54.5	9.8
Queue Length 50th (ft)	~455	157	120	2
Queue Length 95th (ft)	m84	280	182	24
Internal Link Dist (ft)	630	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1438	1439	358	350
Starvation Cap Reductn	0	423	0	0
Spillback Cap Reductn	189	0	38	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.20	1.00	0.70	0.23

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

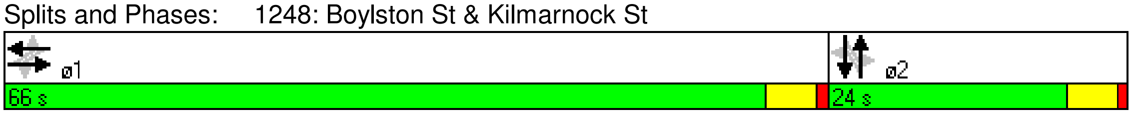
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			1.00					1.00	0.87	
Flpb, ped/bikes		1.00			1.00					0.88	1.00	
Frt		1.00			1.00					1.00	0.86	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3170			3189					1341	1102	
Flt Permitted		0.93			0.92					0.95	1.00	
Satd. Flow (perm)		2050			2050					1341	1102	
Volume (vph)	14	1337	6	10	925	21	0	0	0	194	3	69
Peak-hour factor, PHF	0.70	0.91	0.75	0.63	0.95	0.88	0.25	0.25	0.25	0.87	0.75	0.91
Adj. Flow (vph)	20	1469	8	16	974	24	0	0	0	223	4	76
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	60	0
Lane Group Flow (vph)	0	1497	0	0	1013	0	0	0	0	223	20	0
Confl. Peds. (#/hr)	48		101	101		48	83		78	78		83
Heavy Vehicles (%)	14%	2%	0%	0%	1%	5%	0%	0%	0%	7%	0%	17%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		63.1			63.1					18.9	18.9	
Effective Green, g (s)		63.1			63.1					18.9	18.9	
Actuated g/C Ratio		0.70			0.70					0.21	0.21	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1437			1437					282	231	
v/s Ratio Prot											0.02	
v/s Ratio Perm		c0.73			0.49					c0.17		
v/c Ratio		1.04			0.71					0.79	0.09	
Uniform Delay, d1		13.4			7.9					33.7	28.6	
Progression Factor		1.89			1.00					1.00	1.00	
Incremental Delay, d2		21.2			2.9					14.0	0.2	
Delay (s)		46.6			10.9					47.7	28.8	
Level of Service		D			B					D	C	
Approach Delay (s)		46.6			10.9			0.0			42.7	
Approach LOS		D			B			A			D	

Intersection Summary			
HCM Average Control Delay	33.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	19	1075	45	901	25	16	144	21
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	1	1	1	1	2	2	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	47.0	47.0	47.0	47.0	24.0	24.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		64.0		64.0		18.0	18.0	18.0
Actuated g/C Ratio		0.71		0.71		0.20	0.20	0.20
v/c Ratio		1.19		0.86		0.39	0.86	0.35
Control Delay		112.5		14.9		20.1	72.3	12.2
Queue Delay		0.0		0.0		0.0	0.0	0.0
Total Delay		112.5		14.9		20.1	72.3	12.2
LOS		F		B		C	E	B
Approach Delay		112.5		14.9		20.1		44.6
Approach LOS		F		B		C		D

Intersection Summary
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 63 (70%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 62.3 Intersection LOS: E
Intersection Capacity Utilization 87.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1208	1056	124	160	137
v/c Ratio	1.19	0.86	0.39	0.86	0.35
Control Delay	112.5	14.9	20.1	72.3	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	112.5	14.9	20.1	72.3	12.2
Queue Length 50th (ft)	~450	303	29	86	15
Queue Length 95th (ft)	m#483	#430	48	#190	31
Internal Link Dist (ft)	668	553	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1015	1226	342	208	427
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	1.19	0.86	0.36	0.77	0.32

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.93		1.00	0.91	
Flpb, ped/bikes		1.00			1.00			0.98		0.91	1.00	
Frt		0.99			0.99			0.93		1.00	0.89	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3081			3109			1447		1411	1557	
Flt Permitted		0.91			0.79			0.90		0.62	1.00	
Satd. Flow (perm)		1420			1720			1315		919	1557	
Volume (vph)	19	1075	58	45	901	25	25	16	41	144	21	92
Peak-hour factor, PHF	0.68	0.97	0.81	0.70	0.95	0.57	0.78	0.67	0.60	0.90	0.66	0.88
Adj. Flow (vph)	28	1108	72	64	948	44	32	24	68	160	32	105
RTOR Reduction (vph)	0	5	0	0	3	0	0	50	0	0	84	0
Lane Group Flow (vph)	0	1203	0	0	1053	0	0	74	0	160	53	0
Confl. Peds. (#/hr)	11		57	57		11	64		78	78		64
Heavy Vehicles (%)	0%	2%	2%	9%	1%	0%	4%	13%	2%	5%	0%	1%
Parking (#/hr)		0	0		0	0						
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		63.0			63.0			17.0		17.0	17.0	
Effective Green, g (s)		64.0			64.0			18.0		18.0	18.0	
Actuated g/C Ratio		0.71			0.71			0.20		0.20	0.20	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1010			1223			263		184	311	
v/s Ratio Prot											0.03	
v/s Ratio Perm		c0.85			0.61			0.06		c0.17		
v/c Ratio		1.19			0.86			0.28		0.87	0.17	
Uniform Delay, d1		13.0			9.7			30.5		34.9	29.8	
Progression Factor		1.49			0.57			1.00		1.00	1.00	
Incremental Delay, d2		91.0			7.5			0.2		31.7	0.1	
Delay (s)		110.4			13.1			30.7		66.5	29.9	
Level of Service		F			B			C		E	C	
Approach Delay (s)		110.4			13.1			30.7			49.6	
Approach LOS		F			B			C			D	

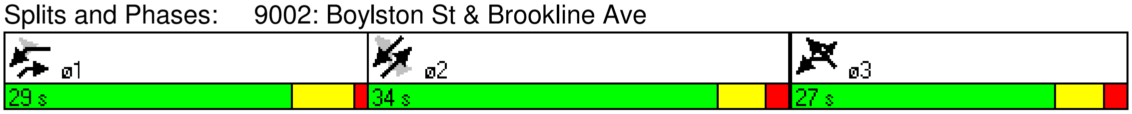
Intersection Summary			
HCM Average Control Delay	61.7	HCM Level of Service	E
HCM Volume to Capacity ratio	1.12		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NEL	NET	NER	SWT	SWR
Lane Configurations									
Volume (vph)	396	515	804	70	9	465	953	257	313
Turn Type		Perm		Prot	Perm		pm+ov		Perm
Protected Phases	1		3	3		2	1	2	
Permitted Phases		1			2		2		2
Detector Phases	1	1	3	3	2	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	24.0	24.0	19.0	19.0	19.0	19.0	19.0
Total Split (s)	29.0	29.0	27.0	27.0	34.0	34.0	29.0	34.0	34.0
Total Split (%)	32.2%	32.2%	30.0%	30.0%	37.8%	37.8%	32.2%	37.8%	37.8%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	25.0	25.0	23.0	23.0		30.0	55.0	30.0	30.0
Actuated g/C Ratio	0.28	0.28	0.26	0.26		0.33	0.61	0.33	0.33
v/c Ratio	1.19dr	1.47	0.81	0.52		0.56	0.98	0.30	1.13
Control Delay	79.4	253.7	38.1	34.8		23.2	29.5	19.2	113.8
Queue Delay	227.7	0.0	0.3	0.0		4.9	24.6	0.0	0.0
Total Delay	307.1	253.7	38.5	34.8		28.1	54.0	19.2	113.8
LOS	F	F	D	C		C	D	B	F
Approach Delay	291.7		37.9			45.1		69.6	
Approach LOS	F		D			D		E	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 90
Offset: 89 (99%), Referenced to phase 1:WBL, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.47
Intersection Signal Delay: 106.5 Intersection LOS: F
Intersection Capacity Utilization 110.6% ICU Level of Service H
Analysis Period (min) 15
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	758	308	945	195	538	1014	302	344
v/c Ratio	1.19dr	1.47	0.81	0.52	0.56	0.98	0.30	1.13
Control Delay	79.4	253.7	38.1	34.8	23.2	29.5	19.2	113.8
Queue Delay	227.7	0.0	0.3	0.0	4.9	24.6	0.0	0.0
Total Delay	307.1	253.7	38.5	34.8	28.1	54.0	19.2	113.8
Queue Length 50th (ft)	~260	~278	185	95	143	172	66	~219
Queue Length 95th (ft)	m#336	m#356	235	133	m152	m#223	m92	m#384
Internal Link Dist (ft)	668		176		183		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	701	209	1163	372	962	1030	1003	305
Starvation Cap Reductn	0	0	0	0	348	78	0	0
Spillback Cap Reductn	227	0	29	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.60	1.47	0.83	0.52	0.88	1.07	0.30	1.13

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NEL	NET	NER	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00			0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.86	0.57			1.00	1.00			1.00	0.67	1.00	0.65
Flpb, ped/bikes	1.00	1.00			1.00	1.00			0.99	1.00	1.00	1.00
Frt	0.94	0.85			1.00	0.85			1.00	0.85	1.00	0.85
Flt Protected	0.97	1.00			0.99	1.00			1.00	1.00	1.00	1.00
Satd. Flow (prot)	2523	751			4549	1454			3065	1685	3008	915
Flt Permitted	0.97	1.00			0.99	1.00			0.94	1.00	1.00	1.00
Satd. Flow (perm)	2523	751			4549	1454			2886	1685	3008	915
Volume (vph)	396	515	38	86	804	70	89	9	465	953	257	313
Peak-hour factor, PHF	0.88	0.90	0.86	0.74	0.97	0.76	0.86	0.56	0.89	0.94	0.85	0.91
Adj. Flow (vph)	450	572	44	116	829	92	103	16	522	1014	302	344
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	758	308	0	0	945	195	0	0	538	1014	302	344
Confl. Peds. (#/hr)		256	181			183	297	256		297		256
Heavy Vehicles (%)	4%	1%	3%	2%	2%	0%	0%	11%	5%	1%	8%	3%
Turn Type		Perm		Split		Prot		Perm		pm+ov		Perm
Protected Phases	1			3	3	3			2	1	2	
Permitted Phases		1						2		2		2
Actuated Green, G (s)	23.0	23.0			21.0	21.0			28.0	51.0	28.0	28.0
Effective Green, g (s)	25.0	25.0			23.0	23.0			30.0	55.0	30.0	30.0
Actuated g/C Ratio	0.28	0.28			0.26	0.26			0.33	0.61	0.33	0.33
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	701	209			1163	372			962	1105	1003	305
v/s Ratio Prot	0.30				c0.21	0.13				0.25	0.10	
v/s Ratio Perm		c0.41							0.19	0.35		c0.38
v/c Ratio	1.19dr	1.47			0.81	0.52			0.56	0.92	0.30	1.13
Uniform Delay, d1	32.5	32.5			31.5	28.8			24.6	15.5	22.2	30.0
Progression Factor	0.84	0.84			1.00	1.00			0.90	1.25	0.83	0.82
Incremental Delay, d2	50.8	227.6			6.2	5.2			0.6	4.3	0.7	86.7
Delay (s)	77.9	254.9			37.7	34.0			22.8	23.7	19.0	111.1
Level of Service	E	F			D	C			C	C	B	F
Approach Delay (s)	129.1				37.1				23.4		68.1	
Approach LOS	F				D				C		E	

Intersection Summary			
HCM Average Control Delay	59.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.15		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	110.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

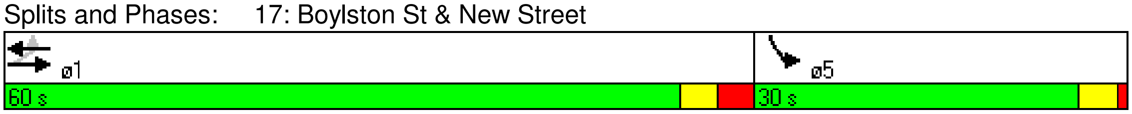
c Critical Lane Group

2021 No Build Condition LOS Analysis

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Volume (vph)	62	1324	1204	17
Turn Type	Perm			
Protected Phases		1	1	5
Permitted Phases	1			
Detector Phases	1	1	1	5
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	21.0
Total Split (s)	60.0	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)	60.0	60.0	60.0	22.0
Actuated g/C Ratio	0.67	0.67	0.67	0.24
v/c Ratio	0.42	0.61	0.59	0.09
Control Delay	15.2	10.2	4.9	18.9
Queue Delay	0.0	46.8	0.7	0.0
Total Delay	15.2	57.0	5.6	18.9
LOS	B	E	A	B
Approach Delay		55.1	5.6	18.9
Approach LOS		E	A	B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 6:, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 31.3	Intersection LOS: C
Intersection Capacity Utilization 52.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Boylston St & New Street



Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	67	1439	1379	40
v/c Ratio	0.42	0.61	0.59	0.09
Control Delay	15.2	10.2	4.9	18.9
Queue Delay	0.0	46.8	0.7	0.0
Total Delay	15.2	57.0	5.6	18.9
Queue Length 50th (ft)	16	202	2	9
Queue Length 95th (ft)	m31	349	4	36
Internal Link Dist (ft)		184	289	94
Turn Bay Length (ft)				
Base Capacity (vph)	166	2433	2418	539
Starvation Cap Reductn	0	1119	611	0
Spillback Cap Reductn	0	0	320	2
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.40	1.10	0.76	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

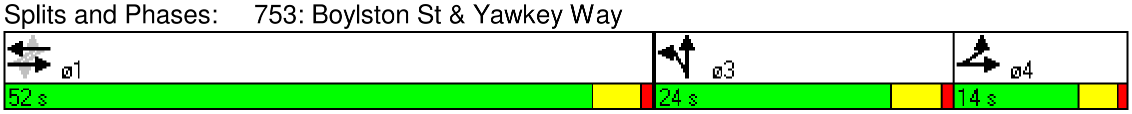
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.93	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3512		1686	
Flt Permitted	0.14	1.00	1.00		0.98	
Satd. Flow (perm)	266	3539	3512		1686	
Volume (vph)	62	1324	1204	64	17	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	1439	1309	70	18	22
RTOR Reduction (vph)	0	0	4	0	17	0
Lane Group Flow (vph)	67	1439	1375	0	23	0
Turn Type	Perm					
Protected Phases		1	1		5	
Permitted Phases	1					
Actuated Green, G (s)	58.0	58.0	58.0		22.0	
Effective Green, g (s)	60.0	60.0	60.0		22.0	
Actuated g/C Ratio	0.67	0.67	0.67		0.24	
Clearance Time (s)	6.0	6.0	6.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	177	2359	2341		412	
v/s Ratio Prot		c0.41	0.39		c0.01	
v/s Ratio Perm	0.25					
v/c Ratio	0.38	0.61	0.59		0.06	
Uniform Delay, d1	6.7	8.4	8.2		26.1	
Progression Factor	1.53	1.14	0.52		1.00	
Incremental Delay, d2	0.9	0.3	0.3		0.1	
Delay (s)	11.2	9.9	4.6		26.1	
Level of Service	B	A	A		C	
Approach Delay (s)		10.0	4.6		26.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	33	1177	36	1269	29
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	9.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		70.0		56.0	12.0
Actuated g/C Ratio		0.78		0.62	0.13
v/c Ratio		0.53		0.74	0.62
Control Delay		3.9		19.6	29.1
Queue Delay		0.1		0.0	0.0
Total Delay		4.0		19.6	29.1
LOS		A		B	C
Approach Delay		4.0		19.6	29.1
Approach LOS		A		B	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.74	
Intersection Signal Delay: 13.1	Intersection LOS: B
Intersection Capacity Utilization 95.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1330	1474	163
v/c Ratio	0.53	0.74	0.62
Control Delay	3.9	19.6	29.1
Queue Delay	0.1	0.0	0.0
Total Delay	4.0	19.6	29.1
Queue Length 50th (ft)	47	331	44
Queue Length 95th (ft)	99	414	89
Internal Link Dist (ft)	289	630	256
Turn Bay Length (ft)			
Base Capacity (vph)	2489	1994	379
Starvation Cap Reductn	264	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.60	0.74	0.43

Intersection Summary

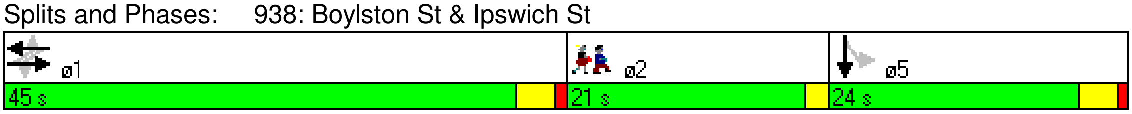
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.88				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.91				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3146			3108			1424				
Flt Permitted		0.88			0.82			0.99				
Satd. Flow (perm)		3200			3200			1424				
Volume (vph)	33	1177	32	36	1269	63	13	29	88	0	0	0
Peak-hour factor, PHF	0.93	0.94	0.75	0.62	0.95	0.79	0.75	0.84	0.79	0.92	0.92	0.92
Adj. Flow (vph)	35	1252	43	58	1336	80	17	35	111	0	0	0
RTOR Reduction (vph)	0	2	0	0	4	0	0	70	0	0	0	0
Lane Group Flow (vph)	0	1328	0	0	1470	0	0	93	0	0	0	0
Confl. Peds. (#/hr)	24		46	46		24	44		86	86		44
Confl. Bikes (#/hr)			3			2						
Heavy Vehicles (%)	14%	2%	0%	3%	3%	4%	7%	7%	9%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		65.0			55.0			11.0				
Effective Green, g (s)		66.0			56.0			12.0				
Actuated g/C Ratio		0.73			0.62			0.13				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)		2341			1991			190				
v/s Ratio Prot		c0.06						c0.07				
v/s Ratio Perm		0.35			c0.46							
v/c Ratio		0.57			0.74			0.49				
Uniform Delay, d1		5.5			11.9			36.2				
Progression Factor		0.72			1.38			1.00				
Incremental Delay, d2		0.8			1.3			2.0				
Delay (s)		4.8			17.7			38.1				
Level of Service		A			B			D				
Approach Delay (s)		4.8			17.7			38.1			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	95.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	5	1233	4	1371	107	0	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	6.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	26.7%	26.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		65.7		65.7	16.3	16.3	
Actuated g/C Ratio		0.73		0.73	0.18	0.18	
v/c Ratio		1.08		0.87	0.74	0.19	
Control Delay		67.1		17.0	53.2	0.8	
Queue Delay		57.3		56.1	1.3	0.0	
Total Delay		124.3		73.2	54.5	0.8	
LOS		F		E	D	A	
Approach Delay		124.3		73.2		35.6	
Approach LOS		F		E		D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 91.1	Intersection LOS: F
Intersection Capacity Utilization 64.4%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1308	1587	173	94
v/c Ratio	1.08	0.87	0.74	0.19
Control Delay	67.1	17.0	53.2	0.8
Queue Delay	57.3	56.1	1.3	0.0
Total Delay	124.3	73.2	54.5	0.8
Queue Length 50th (ft)	~460	315	92	0
Queue Length 95th (ft)	#613	#590	100	0
Internal Link Dist (ft)	630	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1209	1828	287	529
Starvation Cap Reductn	0	413	0	0
Spillback Cap Reductn	132	0	28	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.21	1.12	0.67	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			0.99					1.00	0.98	
Flpb, ped/bikes		1.00			1.00					0.86	1.00	
Frt		1.00			0.99					1.00	0.85	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3174			3131					1290	1144	
Flt Permitted		0.95			0.95					0.95	1.00	
Satd. Flow (perm)		1655			2500					1290	1144	
Volume (vph)	5	1233	10	4	1371	106	0	0	0	107	0	75
Peak-hour factor, PHF	0.73	0.96	0.58	0.50	0.94	0.88	0.85	0.85	0.85	0.62	0.83	0.80
Adj. Flow (vph)	7	1284	17	8	1459	120	0	0	0	173	0	94
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	0	0	77	0
Lane Group Flow (vph)	0	1307	0	0	1584	0	0	0	0	173	17	0
Confl. Peds. (#/hr)	25		14	14		25	8		95	95		8
Confl. Bikes (#/hr)			4			5						
Heavy Vehicles (%)	17%	2%	0%	0%	2%	1%	0%	0%	0%	8%	0%	24%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		65.7			65.7					16.3	16.3	
Effective Green, g (s)		65.7			65.7					16.3	16.3	
Actuated g/C Ratio		0.73			0.73					0.18	0.18	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1208			1825					234	207	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.79			0.63					c0.13		
v/c Ratio		1.08			0.87					0.74	0.08	
Uniform Delay, d1		12.1			9.0					34.8	30.6	
Progression Factor		1.15			1.00					1.00	1.00	
Incremental Delay, d2		49.5			5.9					11.6	0.2	
Delay (s)		63.5			14.8					46.4	30.8	
Level of Service		E			B					D	C	
Approach Delay (s)		63.5			14.8			0.0			40.9	
Approach LOS		E			B			A			D	

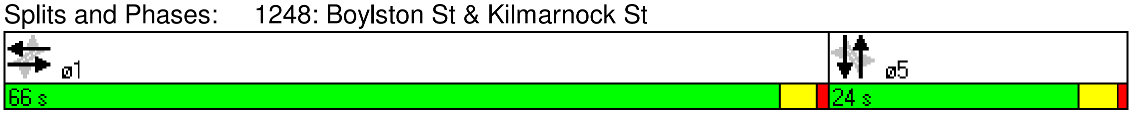
Intersection Summary			
HCM Average Control Delay	37.2	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	16	1238	17	1163	19	10	45	6
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		5		5
Permitted Phases	1		1		5		5	
Detector Phases	1	1	1	1	5	5	5	5
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		74.3		74.3		10.5	10.5	10.5
Actuated g/C Ratio		0.83		0.83		0.12	0.12	0.12
v/c Ratio		0.76		0.57		0.43	0.55	0.22
Control Delay		13.1		10.2		23.6	52.8	17.2
Queue Delay		1.0		1.0		0.0	0.0	0.0
Total Delay		14.1		11.2		23.6	52.8	17.2
LOS		B		B		C	D	B
Approach Delay		14.1		11.2		23.6		38.4
Approach LOS		B		B		C		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 61 (68%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 14.0	Intersection LOS: B
Intersection Capacity Utilization 73.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1376	1371	93	69	47
v/c Ratio	0.76	0.57	0.43	0.55	0.22
Control Delay	13.1	10.2	23.6	52.8	17.2
Queue Delay	1.0	1.0	0.0	0.0	0.0
Total Delay	14.1	11.2	23.6	52.8	17.2
Queue Length 50th (ft)	213	96	21	38	6
Queue Length 95th (ft)	m176	332	27	52	14
Internal Link Dist (ft)	668	184	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1817	2405	364	236	376
Starvation Cap Reductn	0	707	0	0	0
Spillback Cap Reductn	208	0	4	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.86	0.81	0.26	0.29	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

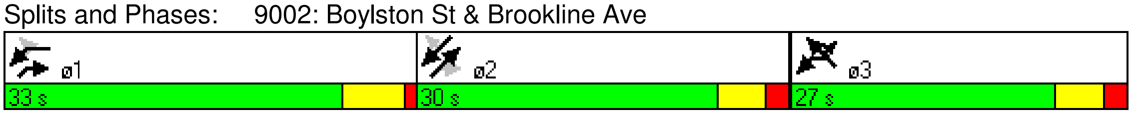
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.96		1.00	0.96	
Flpb, ped/bikes		1.00			1.00			0.99		0.96	1.00	
Frt		1.00			0.99			0.92		1.00	0.89	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3268			3205			1528		1459	1565	
Flt Permitted		0.92			0.92			0.92		0.62	1.00	
Satd. Flow (perm)		2200			2910			1417		950	1565	
Volume (vph)	16	1238	28	17	1163	90	19	10	47	45	6	31
Peak-hour factor, PHF	0.73	0.94	0.75	0.85	0.94	0.79	0.85	0.56	0.88	0.65	0.56	0.85
Adj. Flow (vph)	22	1317	37	20	1237	114	22	18	53	69	11	36
RTOR Reduction (vph)	0	1	0	0	5	0	0	48	0	0	32	0
Lane Group Flow (vph)	0	1375	0	0	1366	0	0	45	0	69	15	0
Confl. Peds. (#/hr)	6		14	14		6	27		32	32		27
Confl. Bikes (#/hr)			1			1			3			1
Heavy Vehicles (%)	3%	2%	7%	29%	3%	0%	6%	0%	4%	7%	11%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)		72.7			72.7			9.3		9.3	9.3	
Effective Green, g (s)		72.7			72.7			9.3		9.3	9.3	
Actuated g/C Ratio		0.81			0.81			0.10		0.10	0.10	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1777			2351			146		98	162	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.62			0.47			0.03		c0.07		
v/c Ratio		0.77			0.58			0.31		0.70	0.09	
Uniform Delay, d1		4.4			3.1			37.4		39.0	36.5	
Progression Factor		2.03			2.34			1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.9			0.4		17.0	0.1	
Delay (s)		9.3			8.2			37.8		56.1	36.6	
Level of Service		A			A			D		E	D	
Approach Delay (s)		9.3			8.2			37.8			48.2	
Approach LOS		A			A			D			D	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Configurations								
Volume (vph)	592	457	576	114	392	1096	279	163
Turn Type		Perm		custom		pm+ov		Perm
Protected Phases	1		3	3	2	1	2	
Permitted Phases		1		3		2		2
Detector Phases	1	1	3	3	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	21.0	21.0	19.0	19.0	19.0	19.0
Total Split (s)	33.0	33.0	27.0	27.0	30.0	33.0	30.0	30.0
Total Split (%)	36.7%	36.7%	30.0%	30.0%	33.3%	36.7%	33.3%	33.3%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	29.0	29.0	23.0	23.0	26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32	0.26	0.26	0.29	0.61	0.29	0.29
v/c Ratio	1.11	1.02	0.64	0.95	0.49	1.07	0.37	0.65
Control Delay	93.5	88.5	32.8	72.6	31.1	54.4	27.1	39.2
Queue Delay	89.6	0.0	2.0	0.0	1.6	32.0	0.3	0.0
Total Delay	183.0	88.5	34.8	72.6	32.8	86.4	27.4	39.2
LOS	F	F	C	E	C	F	C	D
Approach Delay	162.6		46.7		72.5		32.1	
Approach LOS	F		D		E		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 1:WBL, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.11	
Intersection Signal Delay: 87.9	Intersection LOS: F
Intersection Capacity Utilization 78.9%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	1008	278	715	330	422	1204	303	201
v/c Ratio	1.11	1.02	0.64	0.95	0.49	1.07	0.37	0.65
Control Delay	93.5	88.5	32.8	72.6	31.1	54.4	27.1	39.2
Queue Delay	89.6	0.0	2.0	0.0	1.6	32.0	0.3	0.0
Total Delay	183.0	88.5	34.8	72.6	32.8	86.4	27.4	39.2
Queue Length 50th (ft)	~356	~194	132	185	101	~336	72	100
Queue Length 95th (ft)	#394	#342	174	#245	m140	m#469	109	155
Internal Link Dist (ft)	668		176		182		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	907	272	1123	347	853	1121	816	311
Starvation Cap Reductn	0	0	0	0	262	74	0	0
Spillback Cap Reductn	141	0	256	0	0	0	155	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	1.02	0.82	0.95	0.71	1.15	0.46	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

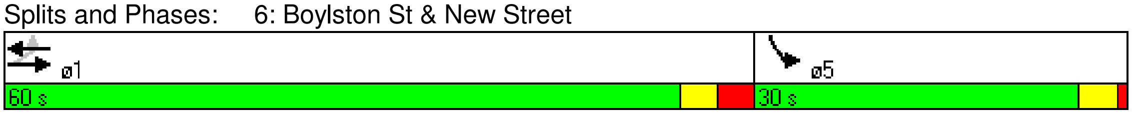
Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NET	NER	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00		0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.94	0.65			1.00	1.00		1.00	0.73	1.00	0.76
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt	0.96	0.85			1.00	0.85		1.00	0.85	1.00	0.85
Flt Protected	0.97	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (prot)	2814	845			4395	1359		2954	1834	2825	1078
Flt Permitted	0.97	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (perm)	3200	845			4395	1359		2954	1834	2825	1078
Volume (vph)	592	457	21	92	576	114	101	392	1096	279	163
Peak-hour factor, PHF	0.81	0.87	0.71	0.76	0.97	0.73	0.58	0.93	0.91	0.92	0.81
Adj. Flow (vph)	731	525	30	121	594	156	174	422	1204	303	201
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1008	278	0	0	715	330	0	422	1204	303	201
Confl. Peds. (#/hr)	1	110	133	1		133	231		231		110
Heavy Vehicles (%)	2%	2%	5%	7%	5%	8%	6%	10%	2%	15%	3%
Turn Type		Perm		Split		custom			pm+ov		Perm
Protected Phases	1			3	3	3		2	1	2	
Permitted Phases		1				3			2		2
Actuated Green, G (s)	27.0	27.0			21.0	21.0		24.0	51.0	24.0	24.0
Effective Green, g (s)	29.0	29.0			23.0	23.0		26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32			0.26	0.26		0.29	0.61	0.29	0.29
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	907	272			1123	347		853	1202	816	311
v/s Ratio Prot	c0.36				0.16	c0.24		0.14	c0.32	0.11	
v/s Ratio Perm		0.33							0.33		0.19
v/c Ratio	1.11	1.02			0.64	0.95		0.49	1.00	0.37	0.65
Uniform Delay, d1	30.5	30.5			29.8	32.9		26.6	17.5	25.5	28.0
Progression Factor	0.98	0.98			1.00	1.00		1.15	1.20	1.00	1.00
Incremental Delay, d2	63.3	55.7			2.8	37.4		0.2	8.2	1.3	10.0
Delay (s)	93.2	85.6			32.5	70.3		30.7	29.2	26.8	37.9
Level of Service	F	F			C	E		C	C	C	D
Approach Delay (s)	91.6				44.5			29.6		31.2	
Approach LOS	F				D			C		C	

Intersection Summary			
HCM Average Control Delay	51.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Volume (vph)	77	1354	979	64
Turn Type	Perm			
Protected Phases		1	1	5
Permitted Phases	1			
Detector Phases	1	1	1	5
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	20.0
Total Split (s)	60.0	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)	64.1	64.1	64.1	17.9
Actuated g/C Ratio	0.71	0.71	0.71	0.20
v/c Ratio	0.30	0.57	0.45	0.38
Control Delay	3.2	6.4	8.2	23.7
Queue Delay	0.0	68.9	0.5	0.4
Total Delay	3.2	75.3	8.6	24.1
LOS	A	E	A	C
Approach Delay		71.4	8.6	24.1
Approach LOS		E	A	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 20 (22%), Referenced to phase 6:, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 43.7	Intersection LOS: D
Intersection Capacity Utilization 52.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Boylston St & New Street



Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	81	1425	1112	147
v/c Ratio	0.30	0.57	0.45	0.38
Control Delay	3.2	6.4	8.2	23.7
Queue Delay	0.0	68.9	0.5	0.4
Total Delay	3.2	75.3	8.6	24.1
Queue Length 50th (ft)	6	83	16	44
Queue Length 95th (ft)	m8	m93	120	98
Internal Link Dist (ft)		207	266	62
Turn Bay Length (ft)				
Base Capacity (vph)	282	2680	2655	609
Starvation Cap Reductn	0	1437	976	0
Spillback Cap Reductn	0	405	307	196
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	1.15	0.66	0.36

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

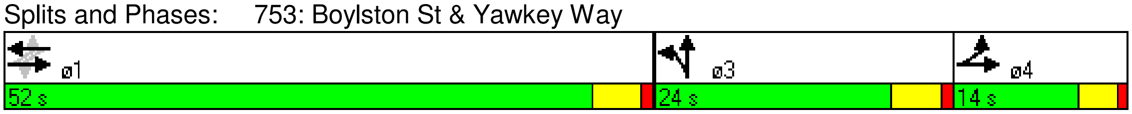
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.93	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3501		1687	
Flt Permitted	0.22	1.00	1.00		0.98	
Satd. Flow (perm)	414	3539	3501		1687	
Volume (vph)	77	1354	979	77	64	76
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	1425	1031	81	67	80
RTOR Reduction (vph)	0	0	5	0	54	0
Lane Group Flow (vph)	81	1425	1107	0	93	0
Turn Type	Perm					
Protected Phases		1	1		5	
Permitted Phases	1					
Actuated Green, G (s)	62.1	62.1	62.1		17.9	
Effective Green, g (s)	64.1	64.1	64.1		17.9	
Actuated g/C Ratio	0.71	0.71	0.71		0.20	
Clearance Time (s)	6.0	6.0	6.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	295	2521	2493		336	
v/s Ratio Prot		c0.40	0.32		c0.06	
v/s Ratio Perm	0.20					
v/c Ratio	0.27	0.57	0.44		0.28	
Uniform Delay, d1	4.6	6.2	5.5		30.6	
Progression Factor	0.82	0.92	1.32		1.00	
Incremental Delay, d2	0.0	0.0	0.1		0.5	
Delay (s)	3.8	5.8	7.3		31.0	
Level of Service	A	A	A		C	
Approach Delay (s)		5.7	7.3		31.0	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	29	1342	38	1049	17
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	10.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		61.4		51.4	16.6
Actuated g/C Ratio		0.68		0.57	0.18
v/c Ratio		4.45		0.50	0.77
Control Delay		1566.4		20.6	54.8
Queue Delay		0.0		0.0	0.0
Total Delay		1566.4		20.6	54.8
LOS		F		C	D
Approach Delay		1566.4		20.6	54.8
Approach LOS		F		C	D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 29 (32%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 4.45	
Intersection Signal Delay: 1243.3	Intersection LOS: F
Intersection Capacity Utilization 93.3%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	5458	1252	196
v/c Ratio	4.45	0.50	0.77
Control Delay	1566.4	20.6	54.8
Queue Delay	0.0	0.0	0.0
Total Delay	1566.4	20.6	54.8
Queue Length 50th (ft)	~3110	304	105
Queue Length 95th (ft)	#420	m361	129
Internal Link Dist (ft)	266	282	256
Turn Bay Length (ft)			
Base Capacity (vph)	1226	2515	305
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	4.45	0.50	0.64

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.99			0.83				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.90				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3167			3124			1372				
Flt Permitted		0.94			0.59			0.99				
Satd. Flow (perm)		1530			4400			1372				
Volume (vph)	29	1342	38	38	1049	40	17	17	106	0	0	0
Peak-hour factor, PHF	0.81	0.25	0.71	0.73	0.92	0.67	0.63	0.70	0.73	0.25	0.25	0.25
Adj. Flow (vph)	36	5368	54	52	1140	60	27	24	145	0	0	0
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	5457	0	0	1248	0	0	196	0	0	0	0
Confl. Peds. (#/hr)	67		158	158		67	79		116	116		79
Heavy Vehicles (%)	17%	2%	0%	0%	2%	10%	7%	0%	5%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		60.4			50.4			15.6				
Effective Green, g (s)		61.4			51.4			16.6				
Actuated g/C Ratio		0.68			0.57			0.18				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			2.0				
Lane Grp Cap (vph)		1226			2513			253				
v/s Ratio Prot		c0.49						c0.14				
v/s Ratio Perm		c2.54			0.28							
v/c Ratio		4.45			0.50			0.77				
Uniform Delay, d1		14.3			11.6			34.9				
Progression Factor		0.87			1.66			1.00				
Incremental Delay, d2		1555.0			0.4			12.6				
Delay (s)		1567.4			19.6			47.5				
Level of Service		F			B			D				
Approach Delay (s)		1567.4			19.6			47.5			0.0	
Approach LOS		F			B			D			A	

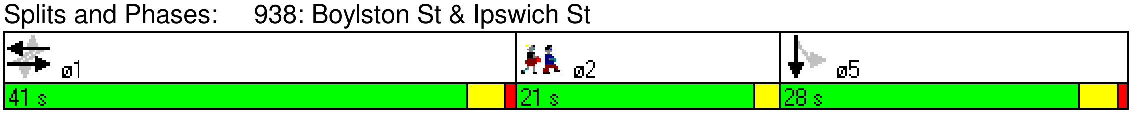
Intersection Summary			
HCM Average Control Delay	1243.6	HCM Level of Service	F
HCM Volume to Capacity ratio	3.67		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	16	1510	9	1079	310	5	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	18.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	41.0	41.0	41.0	41.0	28.0	28.0	21.0
Total Split (%)	45.6%	45.6%	45.6%	45.6%	31.1%	31.1%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		58.0		58.0	24.0	24.0	
Actuated g/C Ratio		0.64		0.64	0.27	0.27	
v/c Ratio		1.28		0.89	0.99	0.24	
Control Delay		145.5		23.6	81.5	9.2	
Queue Delay		93.0		78.3	40.5	0.0	
Total Delay		238.5		102.0	122.0	9.2	
LOS		F		F	F	A	
Approach Delay		238.5		102.0		100.5	
Approach LOS		F		F		F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.28	
Intersection Signal Delay: 171.7	Intersection LOS: F
Intersection Capacity Utilization 85.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1694	1173	356	84
v/c Ratio	1.28	0.89	0.99	0.24
Control Delay	145.5	23.6	81.5	9.2
Queue Delay	93.0	78.3	40.5	0.0
Total Delay	238.5	102.0	122.0	9.2
Queue Length 50th (ft)	~676	260	202	3
Queue Length 95th (ft)	m61	#450	#360	25
Internal Link Dist (ft)	268	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1321	1322	358	355
Starvation Cap Reductn	0	322	0	0
Spillback Cap Reductn	184	0	39	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.49	1.17	1.12	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

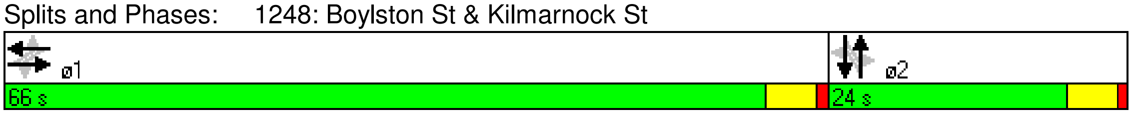
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			1.00					1.00	0.88	
Flpb, ped/bikes		1.00			1.00					0.88	1.00	
Frt		1.00			1.00					1.00	0.86	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3168			3195					1341	1119	
Flt Permitted		0.93			0.92					0.95	1.00	
Satd. Flow (perm)		2050			2050					1341	1119	
Volume (vph)	16	1510	9	9	1079	20	0	0	0	310	5	70
Peak-hour factor, PHF	0.70	0.91	0.75	0.63	0.95	0.88	0.25	0.25	0.25	0.87	0.75	0.91
Adj. Flow (vph)	23	1659	12	14	1136	23	0	0	0	356	7	77
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	56	0
Lane Group Flow (vph)	0	1694	0	0	1172	0	0	0	0	356	28	0
Confl. Peds. (#/hr)	48		101	101		48	83		78	78		83
Heavy Vehicles (%)	14%	2%	0%	0%	1%	5%	0%	0%	0%	7%	0%	17%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		58.0			58.0					24.0	24.0	
Effective Green, g (s)		58.0			58.0					24.0	24.0	
Actuated g/C Ratio		0.64			0.64					0.27	0.27	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1321			1321					358	298	
v/s Ratio Prot											0.02	
v/s Ratio Perm		c0.83			0.57					c0.27		
v/c Ratio		1.28			0.89					0.99	0.09	
Uniform Delay, d1		16.0			13.3					32.9	24.8	
Progression Factor		0.78			1.00					1.00	1.00	
Incremental Delay, d2		127.5			9.1					45.8	0.1	
Delay (s)		139.9			22.4					78.7	24.9	
Level of Service		F			C					E	C	
Approach Delay (s)		139.9			22.4			0.0			68.5	
Approach LOS		F			C			A			E	

Intersection Summary			
HCM Average Control Delay	88.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	85.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	19	1273	60	1040	26	15	123	51
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	1	1	1	1	2	2	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	47.0	47.0	47.0	47.0	24.0	24.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		65.4		65.4		16.6	16.6	16.6
Actuated g/C Ratio		0.73		0.73		0.18	0.18	0.18
v/c Ratio		1.37		0.99		0.42	0.79	0.47
Control Delay		189.5		43.2		20.5	64.4	24.3
Queue Delay		14.5		38.2		0.0	0.0	0.0
Total Delay		204.1		81.4		20.5	64.4	24.3
LOS		F		F		C	E	C
Approach Delay		204.1		81.4		20.5		42.4
Approach LOS		F		F		C		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.37	
Intersection Signal Delay: 131.5	Intersection LOS: F
Intersection Capacity Utilization 117.9%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1415	1237	123	137	166
v/c Ratio	1.37	0.99	0.42	0.79	0.47
Control Delay	189.5	43.2	20.5	64.4	24.3
Queue Delay	14.5	38.2	0.0	0.0	0.0
Total Delay	204.1	81.4	20.5	64.4	24.3
Queue Length 50th (ft)	~568	~254	28	73	52
Queue Length 95th (ft)	m#597	#545	46	#153	67
Internal Link Dist (ft)	668	207	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1035	1252	339	209	416
Starvation Cap Reductn	0	127	0	0	0
Spillback Cap Reductn	24	0	1	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.40	1.10	0.36	0.66	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.93		1.00	0.94	
Flpb, ped/bikes		1.00			1.00			0.98		0.91	1.00	
Frt		0.99			0.99			0.93		1.00	0.92	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3086			3104			1447		1411	1667	
Flt Permitted		0.91			0.70			0.87		0.61	1.00	
Satd. Flow (perm)		1420			1720			1281		908	1667	
Volume (vph)	19	1273	61	60	1040	32	26	15	41	123	51	78
Peak-hour factor, PHF	0.68	0.97	0.81	0.70	0.95	0.57	0.78	0.67	0.60	0.90	0.66	0.88
Adj. Flow (vph)	28	1312	75	86	1095	56	33	22	68	137	77	89
RTOR Reduction (vph)	0	4	0	0	3	0	0	52	0	0	48	0
Lane Group Flow (vph)	0	1411	0	0	1234	0	0	71	0	137	118	0
Confl. Peds. (#/hr)	11		57	57		11	64		78	78		64
Heavy Vehicles (%)	0%	2%	2%	9%	1%	0%	4%	13%	2%	5%	0%	1%
Parking (#/hr)		0	0		0	0						
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		64.4			64.4			15.6		15.6	15.6	
Effective Green, g (s)		65.4			65.4			16.6		16.6	16.6	
Actuated g/C Ratio		0.73			0.73			0.18		0.18	0.18	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1032			1250			236		167	307	
v/s Ratio Prot											0.07	
v/s Ratio Perm		c0.99			0.72			0.06		c0.15		
v/c Ratio		1.37			0.99			0.30		0.82	0.38	
Uniform Delay, d1		12.3			11.9			31.7		35.3	32.2	
Progression Factor		1.42			1.63			1.00		1.00	1.00	
Incremental Delay, d2		168.7			21.7			0.3		25.3	0.3	
Delay (s)		186.2			41.1			31.9		60.6	32.5	
Level of Service		F			D			C		E	C	
Approach Delay (s)		186.2			41.1			31.9			45.2	
Approach LOS		F			D			C			D	

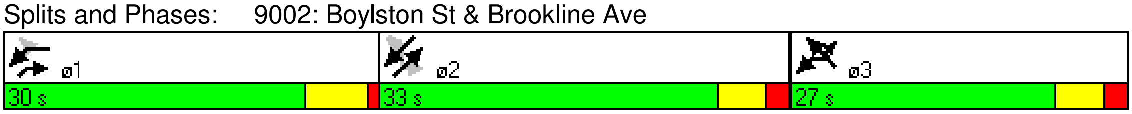
Intersection Summary			
HCM Average Control Delay	107.8	HCM Level of Service	F
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NEL	NET	NER	SWT	SWR
Lane Configurations									
Volume (vph)	443	583	844	85	22	518	1001	270	339
Turn Type		Perm		Prot	Perm		pm+ov		Perm
Protected Phases	1		3	3		2	1	2	
Permitted Phases		1			2		2		2
Detector Phases	1	1	3	3	2	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	24.0	24.0	19.0	19.0	19.0	19.0	19.0
Total Split (s)	30.0	30.0	27.0	27.0	33.0	33.0	30.0	33.0	33.0
Total Split (%)	33.3%	33.3%	30.0%	30.0%	36.7%	36.7%	33.3%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	26.0	26.0	23.0	23.0		29.0	55.0	29.0	29.0
Actuated g/C Ratio	0.29	0.29	0.26	0.26		0.32	0.61	0.32	0.32
v/c Ratio	1.29dr	1.60	0.85	0.66		0.70	1.02	0.33	1.26
Control Delay	108.7	304.0	40.5	40.0		26.1	37.3	20.2	166.3
Queue Delay	235.8	0.0	0.1	0.0		20.1	33.7	0.0	0.0
Total Delay	344.6	304.0	40.6	40.0		46.2	71.0	20.2	166.3
LOS	F	F	D	D		D	E	C	F
Approach Delay	332.8		40.5			61.9		99.1	
Approach LOS	F		D			E		F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 89 (99%), Referenced to phase 1:WBL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.60	
Intersection Signal Delay: 129.1	Intersection LOS: F
Intersection Capacity Utilization 118.6%	ICU Level of Service H
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	850	348	992	247	621	1065	318	373
v/c Ratio	1.29dr	1.60	0.85	0.66	0.70	1.02	0.33	1.26
Control Delay	108.7	304.0	40.5	40.0	26.1	37.3	20.2	166.3
Queue Delay	235.8	0.0	0.1	0.0	20.1	33.7	0.0	0.0
Total Delay	344.6	304.0	40.6	40.0	46.2	71.0	20.2	166.3
Queue Length 50th (ft)	~309	~325	197	126	171	~217	70	~260
Queue Length 95th (ft)	m#325	m#349	#257	168	m210	m#263	m102	m#430
Internal Link Dist (ft)	668		176		183		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	728	217	1163	372	893	1047	969	295
Starvation Cap Reductn	0	0	0	0	276	85	0	0
Spillback Cap Reductn	227	0	6	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.70	1.60	0.86	0.66	1.01	1.11	0.33	1.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NEL	NET	NER	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00			0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.86	0.57			1.00	1.00			1.00	0.68	1.00	0.65
Flpb, ped/bikes	1.00	1.00			1.00	1.00			0.99	1.00	1.00	1.00
Frt	0.94	0.85			1.00	0.85			1.00	0.85	1.00	0.85
Flt Protected	0.97	1.00			0.99	1.00			1.00	1.00	1.00	1.00
Satd. Flow (prot)	2521	751			4549	1454			3034	1714	3008	915
Flt Permitted	0.97	1.00			0.99	1.00			0.91	1.00	1.00	1.00
Satd. Flow (perm)	2521	751			4549	1454			2771	1714	3008	915
Volume (vph)	443	583	40	90	844	85	116	22	518	1001	270	339
Peak-hour factor, PHF	0.88	0.90	0.86	0.74	0.97	0.76	0.86	0.56	0.89	0.94	0.85	0.91
Adj. Flow (vph)	503	648	47	122	870	112	135	39	582	1065	318	373
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	850	348	0	0	992	247	0	0	621	1065	318	373
Confl. Peds. (#/hr)		256	181			183	297	256		297		256
Heavy Vehicles (%)	4%	1%	3%	2%	2%	0%	0%	11%	5%	1%	8%	3%
Turn Type		Perm		Split		Prot		Perm		pm+ov		Perm
Protected Phases	1			3	3	3			2	1	2	
Permitted Phases		1						2		2		2
Actuated Green, G (s)	24.0	24.0			21.0	21.0			27.0	51.0	27.0	27.0
Effective Green, g (s)	26.0	26.0			23.0	23.0			29.0	55.0	29.0	29.0
Actuated g/C Ratio	0.29	0.29			0.26	0.26			0.32	0.61	0.32	0.32
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	728	217			1163	372			893	1124	969	295
v/s Ratio Prot	0.34				c0.22	0.17				0.27	0.11	
v/s Ratio Perm		c0.46							0.22	0.35		c0.41
v/c Ratio	1.29dr	1.60			0.85	0.66			0.70	0.95	0.33	1.26
Uniform Delay, d1	32.0	32.0			31.9	30.0			26.6	16.2	23.1	30.5
Progression Factor	0.84	0.85			1.00	1.00			0.92	1.18	0.83	0.82
Incremental Delay, d2	81.1	279.2			8.0	9.0			1.2	6.1	0.8	139.9
Delay (s)	108.0	306.4			39.9	39.1			25.7	25.2	20.0	164.8
Level of Service	F	F			D	D			C	C	B	F
Approach Delay (s)	165.6				39.7				25.4		98.2	
Approach LOS	F				D				C		F	

Intersection Summary			
HCM Average Control Delay	74.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	118.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

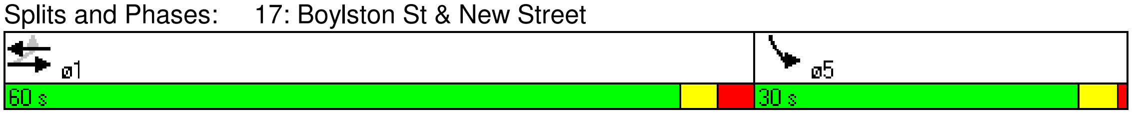
c Critical Lane Group

2021 Build Condition LOS Analysis

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Volume (vph)	62	1359	1208	17
Turn Type	Perm			
Protected Phases		1	1	5
Permitted Phases	1			
Detector Phases	1	1	1	5
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	21.0
Total Split (s)	60.0	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	None
Act Effct Green (s)	56.9	56.9	56.9	25.1
Actuated g/C Ratio	0.63	0.63	0.63	0.28
v/c Ratio	0.44	0.66	0.62	0.08
Control Delay	17.5	12.6	6.3	18.0
Queue Delay	0.0	8.5	0.8	0.0
Total Delay	17.5	21.1	7.2	18.0
LOS	B	C	A	B
Approach Delay		20.9	7.2	18.0
Approach LOS		C	A	B

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 21 (23%), Referenced to phase 6:, Start of Green	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 17: Boylston St & New Street



Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	67	1477	1383	40
v/c Ratio	0.44	0.66	0.62	0.08
Control Delay	17.5	12.6	6.3	18.0
Queue Delay	0.0	8.5	0.8	0.0
Total Delay	17.5	21.1	7.2	18.0
Queue Length 50th (ft)	27	339	67	6
Queue Length 95th (ft)	m30	370	5	36
Internal Link Dist (ft)		184	289	94
Turn Bay Length (ft)				
Base Capacity (vph)	160	2364	2349	562
Starvation Cap Reductn	0	857	313	0
Spillback Cap Reductn	0	0	606	49
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.42	0.98	0.79	0.08

Intersection Summary
m Volume for 95th percentile queue is metered by upstream signal.

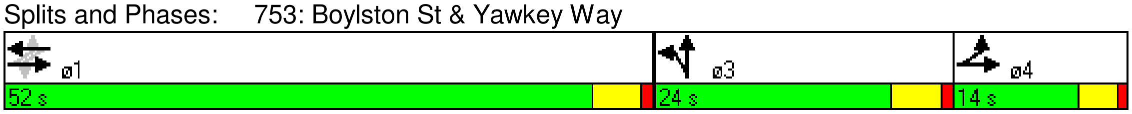
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.93	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3512		1686	
Flt Permitted	0.13	1.00	1.00		0.98	
Satd. Flow (perm)	246	3539	3512		1686	
Volume (vph)	62	1359	1208	64	17	20
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	1477	1313	70	18	22
RTOR Reduction (vph)	0	0	4	0	16	0
Lane Group Flow (vph)	67	1477	1379	0	24	0
Turn Type	Perm					
Protected Phases		1	1		5	
Permitted Phases	1					
Actuated Green, G (s)	54.9	54.9	54.9		25.1	
Effective Green, g (s)	56.9	56.9	56.9		25.1	
Actuated g/C Ratio	0.63	0.63	0.63		0.28	
Clearance Time (s)	6.0	6.0	6.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	156	2237	2220		470	
v/s Ratio Prot		c0.42	0.39		c0.01	
v/s Ratio Perm	0.27					
v/c Ratio	0.43	0.66	0.62		0.05	
Uniform Delay, d1	8.4	10.4	10.0		23.7	
Progression Factor	1.43	1.12	0.56		1.00	
Incremental Delay, d2	1.3	0.5	0.4		0.0	
Delay (s)	13.2	12.2	6.0		23.8	
Level of Service	B	B	A		C	
Approach Delay (s)		12.2	6.0		23.8	
Approach LOS		B	A		C	

Intersection Summary			
HCM Average Control Delay	9.5	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	33	1212	36	1269	33
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	9.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		69.3		55.3	12.7
Actuated g/C Ratio		0.77		0.61	0.14
v/c Ratio		0.55		0.75	0.65
Control Delay		3.9		20.2	31.4
Queue Delay		0.1		0.0	0.0
Total Delay		4.0		20.2	31.4
LOS		A		C	C
Approach Delay		4.0		20.2	31.4
Approach LOS		A		C	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 0 (0%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.75	
Intersection Signal Delay: 13.5	Intersection LOS: B
Intersection Capacity Utilization 96.1%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	1367	1474	173
v/c Ratio	0.55	0.75	0.65
Control Delay	3.9	20.2	31.4
Queue Delay	0.1	0.0	0.0
Total Delay	4.0	20.2	31.4
Queue Length 50th (ft)	31	334	52
Queue Length 95th (ft)	126	m406	98
Internal Link Dist (ft)	289	295	256
Turn Bay Length (ft)			
Base Capacity (vph)	2467	1972	379
Starvation Cap Reductn	234	0	0
Spillback Cap Reductn	0	16	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.61	0.75	0.46

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

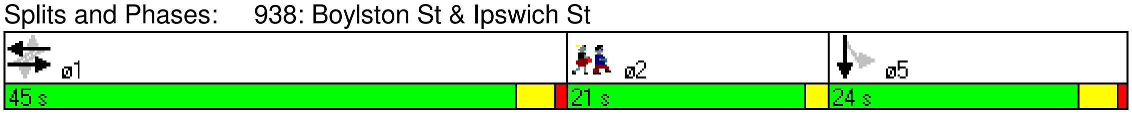
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			1.00			0.89				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.91				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3148			3108			1442				
Flt Permitted		0.88			0.81			0.99				
Satd. Flow (perm)		3200			3200			1442				
Volume (vph)	33	1212	32	36	1269	63	17	33	88	0	0	0
Peak-hour factor, PHF	0.93	0.94	0.75	0.62	0.95	0.79	0.75	0.84	0.79	0.92	0.92	0.92
Adj. Flow (vph)	35	1289	43	58	1336	80	23	39	111	0	0	0
RTOR Reduction (vph)	0	2	0	0	4	0	0	64	0	0	0	0
Lane Group Flow (vph)	0	1365	0	0	1470	0	0	109	0	0	0	0
Confl. Peds. (#/hr)	24		46	46		24	44		86	86		44
Confl. Bikes (#/hr)			3			2						
Heavy Vehicles (%)	14%	2%	0%	3%	3%	4%	7%	7%	9%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		64.3			54.3			11.7				
Effective Green, g (s)		65.3			55.3			12.7				
Actuated g/C Ratio		0.73			0.61			0.14				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			3.0				
Lane Grp Cap (vph)		2316			1966			203				
v/s Ratio Prot		c0.07						c0.08				
v/s Ratio Perm		0.36			c0.46							
v/c Ratio		0.59			0.75			0.53				
Uniform Delay, d1		5.9			12.4			35.9				
Progression Factor		0.66			1.37			1.00				
Incremental Delay, d2		0.8			1.3			2.7				
Delay (s)		4.7			18.3			38.6				
Level of Service		A			B			D				
Approach Delay (s)		4.7			18.3			38.6			0.0	
Approach LOS		A			B			D			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	5	1252	4	1411	107	0	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	6.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	21.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	26.7%	26.7%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		65.7		65.7	16.3	16.3	
Actuated g/C Ratio		0.73		0.73	0.18	0.18	
v/c Ratio		1.10		0.89	0.74	0.19	
Control Delay		73.7		18.8	53.2	0.9	
Queue Delay		58.6		60.9	1.2	0.0	
Total Delay		132.4		79.6	54.4	0.9	
LOS		F		E	D	A	
Approach Delay		132.4		79.6		35.5	
Approach LOS		F		E		D	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 34 (38%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 97.7	Intersection LOS: F
Intersection Capacity Utilization 65.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1328	1629	173	94
v/c Ratio	1.10	0.89	0.74	0.19
Control Delay	73.7	18.8	53.2	0.9
Queue Delay	58.6	60.9	1.2	0.0
Total Delay	132.4	79.6	54.4	0.9
Queue Length 50th (ft)	~270	338	92	0
Queue Length 95th (ft)	#626	#617	100	0
Internal Link Dist (ft)	255	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1209	1828	287	528
Starvation Cap Reductn	0	391	0	0
Spillback Cap Reductn	132	0	27	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.23	1.13	0.67	0.18

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			0.99					1.00	0.98	
Flpb, ped/bikes		1.00			1.00					0.86	1.00	
Frt		1.00			0.99					1.00	0.85	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3174			3132					1290	1144	
Flt Permitted		0.95			0.95					0.95	1.00	
Satd. Flow (perm)		1655			2500					1290	1144	
Volume (vph)	5	1252	10	4	1411	106	0	0	0	107	0	75
Peak-hour factor, PHF	0.73	0.96	0.58	0.50	0.94	0.88	0.85	0.85	0.85	0.62	0.83	0.80
Adj. Flow (vph)	7	1304	17	8	1501	120	0	0	0	173	0	94
RTOR Reduction (vph)	0	1	0	0	3	0	0	0	0	0	77	0
Lane Group Flow (vph)	0	1327	0	0	1626	0	0	0	0	173	17	0
Confl. Peds. (#/hr)	25		14	14		25	8		95	95		8
Confl. Bikes (#/hr)			4			5						
Heavy Vehicles (%)	17%	2%	0%	0%	2%	1%	0%	0%	0%	8%	0%	24%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		65.7			65.7					16.3	16.3	
Effective Green, g (s)		65.7			65.7					16.3	16.3	
Actuated g/C Ratio		0.73			0.73					0.18	0.18	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1208			1825					234	207	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.80			0.65					c0.13		
v/c Ratio		1.10			0.89					0.74	0.08	
Uniform Delay, d1		12.1			9.4					34.8	30.6	
Progression Factor		1.19			1.00					1.00	1.00	
Incremental Delay, d2		55.7			7.0					11.6	0.2	
Delay (s)		70.2			16.4					46.4	30.8	
Level of Service		E			B					D	C	
Approach Delay (s)		70.2			16.4			0.0			40.9	
Approach LOS		E			B			A			D	

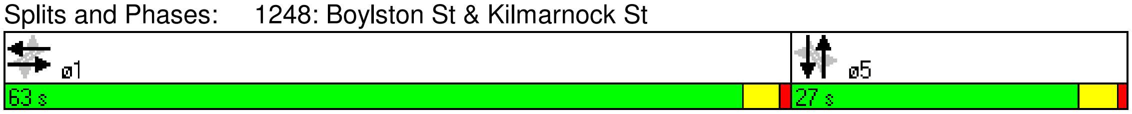
Intersection Summary			
HCM Average Control Delay	40.6	HCM Level of Service	D
HCM Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	65.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	16	1273	17	1167	19	10	45	6
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		5		5
Permitted Phases	1		1		5		5	
Detector Phases	1	1	1	1	5	5	5	5
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	45.0	45.0	45.0	45.0	24.0	24.0	24.0	24.0
Total Split (s)	63.0	63.0	63.0	63.0	27.0	27.0	27.0	27.0
Total Split (%)	70.0%	70.0%	70.0%	70.0%	30.0%	30.0%	30.0%	30.0%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None	None
Act Effct Green (s)		74.4		74.4		10.4	10.4	10.4
Actuated g/C Ratio		0.83		0.83		0.12	0.12	0.12
v/c Ratio		0.78		0.57		0.43	0.55	0.22
Control Delay		14.0		12.3		23.7	52.9	17.3
Queue Delay		8.9		4.3		0.0	0.0	0.0
Total Delay		22.9		16.6		23.7	52.9	17.3
LOS		C		B		C	D	B
Approach Delay		22.9		16.6		23.7		38.5
Approach LOS		C		B		C		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 61 (68%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 20.6	Intersection LOS: C
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1413	1375	93	69	47
v/c Ratio	0.78	0.57	0.43	0.55	0.22
Control Delay	14.0	12.3	23.7	52.9	17.3
Queue Delay	8.9	4.3	0.0	0.0	0.0
Total Delay	22.9	16.6	23.7	52.9	17.3
Queue Length 50th (ft)	282	211	21	38	6
Queue Length 95th (ft)	m272	371	27	52	14
Internal Link Dist (ft)	668	184	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1819	2409	412	275	427
Starvation Cap Reductn	0	938	0	0	0
Spillback Cap Reductn	384	0	9	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.98	0.93	0.23	0.25	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

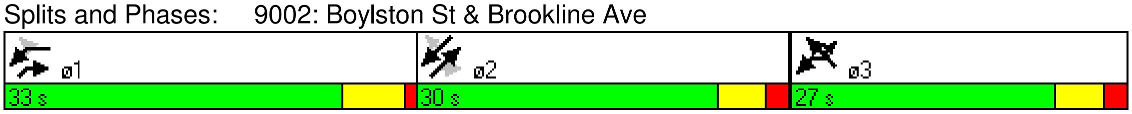
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.96		1.00	0.96	
Flpb, ped/bikes		1.00			1.00			0.99		0.96	1.00	
Frt		1.00			0.99			0.92		1.00	0.89	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3268			3205			1528		1459	1565	
Flt Permitted		0.92			0.92			0.92		0.62	1.00	
Satd. Flow (perm)		2200			2910			1416		948	1565	
Volume (vph)	16	1273	28	17	1167	90	19	10	47	45	6	31
Peak-hour factor, PHF	0.73	0.94	0.75	0.85	0.94	0.79	0.85	0.56	0.88	0.65	0.56	0.85
Adj. Flow (vph)	22	1354	37	20	1241	114	22	18	53	69	11	36
RTOR Reduction (vph)	0	1	0	0	4	0	0	48	0	0	32	0
Lane Group Flow (vph)	0	1412	0	0	1371	0	0	45	0	69	15	0
Confl. Peds. (#/hr)	6		14	14		6	27		32	32		27
Confl. Bikes (#/hr)			1			1			3			1
Heavy Vehicles (%)	3%	2%	7%	29%	3%	0%	6%	0%	4%	7%	11%	3%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			5			5	
Permitted Phases	1			1			5			5		
Actuated Green, G (s)		72.8			72.8			9.2		9.2	9.2	
Effective Green, g (s)		72.8			72.8			9.2		9.2	9.2	
Actuated g/C Ratio		0.81			0.81			0.10		0.10	0.10	
Clearance Time (s)		4.0			4.0			4.0		4.0	4.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1780			2354			145		97	160	
v/s Ratio Prot											0.01	
v/s Ratio Perm		c0.64			0.47			0.03		c0.07		
v/c Ratio		0.79			0.58			0.31		0.71	0.09	
Uniform Delay, d1		4.6			3.1			37.5		39.1	36.6	
Progression Factor		2.13			2.90			1.00		1.00	1.00	
Incremental Delay, d2		0.3			0.9			0.5		18.4	0.1	
Delay (s)		10.1			9.9			37.9		57.5	36.7	
Level of Service		B			A			D		E	D	
Approach Delay (s)		10.1			9.9			37.9			49.1	
Approach LOS		B			A			D			D	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Configurations								
Volume (vph)	594	459	576	114	419	1096	279	163
Turn Type		Perm		custom		pm+ov		Perm
Protected Phases	1		3	3	2	1	2	
Permitted Phases		1		3		2		2
Detector Phases	1	1	3	3	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	21.0	21.0	19.0	19.0	19.0	19.0
Total Split (s)	33.0	33.0	27.0	27.0	30.0	33.0	30.0	30.0
Total Split (%)	36.7%	36.7%	30.0%	30.0%	33.3%	36.7%	33.3%	33.3%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	29.0	29.0	23.0	23.0	26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32	0.26	0.26	0.29	0.61	0.29	0.29
v/c Ratio	1.12	1.03	0.64	0.99	0.53	1.07	0.37	0.65
Control Delay	94.2	88.3	32.8	81.2	31.5	54.4	27.1	39.2
Queue Delay	90.1	0.0	1.9	0.0	2.1	32.0	0.3	0.0
Total Delay	184.2	88.3	34.7	81.2	33.6	86.4	27.4	39.2
LOS	F	F	C	F	C	F	C	D
Approach Delay	163.5		49.8		72.0		32.1	
Approach LOS	F		D		E		C	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 85 (94%), Referenced to phase 1:WBL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay: 88.5	Intersection LOS: F
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	1012	279	715	344	451	1204	303	201
v/c Ratio	1.12	1.03	0.64	0.99	0.53	1.07	0.37	0.65
Control Delay	94.2	88.3	32.8	81.2	31.5	54.4	27.1	39.2
Queue Delay	90.1	0.0	1.9	0.0	2.1	32.0	0.3	0.0
Total Delay	184.2	88.3	34.7	81.2	33.6	86.4	27.4	39.2
Queue Length 50th (ft)	~358	~195	132	195	107	~336	72	100
Queue Length 95th (ft)	#390	#340	174	#261	m150	m#469	109	155
Internal Link Dist (ft)	668		176		182		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	907	272	1123	348	853	1121	816	311
Starvation Cap Reductn	0	0	0	0	260	74	0	0
Spillback Cap Reductn	141	0	252	0	0	0	155	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.32	1.03	0.82	0.99	0.76	1.15	0.46	0.65

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

\# 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NET	NER	SWT	SWR
Lane Configurations											
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00		0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.93	0.65			1.00	1.00		1.00	0.73	1.00	0.76
Flpb, ped/bikes	1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt	0.96	0.85			1.00	0.85		1.00	0.85	1.00	0.85
Flt Protected	0.97	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (prot)	2813	845			4395	1360		2954	1834	2825	1078
Flt Permitted	0.97	1.00			0.99	1.00		1.00	1.00	1.00	1.00
Satd. Flow (perm)	3200	845			4395	1360		2954	1834	2825	1078
Volume (vph)	594	459	21	92	576	114	109	419	1096	279	163
Peak-hour factor, PHF	0.81	0.87	0.71	0.76	0.97	0.73	0.58	0.93	0.91	0.92	0.81
Adj. Flow (vph)	733	528	30	121	594	156	188	451	1204	303	201
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	1012	279	0	0	715	344	0	451	1204	303	201
Confl. Peds. (#/hr)	1	110	133	1		133	231		231		110
Heavy Vehicles (%)	2%	2%	5%	7%	5%	8%	6%	10%	2%	15%	3%
Turn Type		Perm		Split		custom			pm+ov		Perm
Protected Phases	1			3	3	3		2	1	2	
Permitted Phases		1				3			2		2
Actuated Green, G (s)	27.0	27.0			21.0	21.0		24.0	51.0	24.0	24.0
Effective Green, g (s)	29.0	29.0			23.0	23.0		26.0	55.0	26.0	26.0
Actuated g/C Ratio	0.32	0.32			0.26	0.26		0.29	0.61	0.29	0.29
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	906	272			1123	348		853	1202	816	311
v/s Ratio Prot	c0.36				0.16	c0.25		0.15	c0.32	0.11	
v/s Ratio Perm		0.33							0.33		0.19
v/c Ratio	1.12	1.03			0.64	0.99		0.53	1.00	0.37	0.65
Uniform Delay, d1	30.5	30.5			29.8	33.4		26.9	17.5	25.5	28.0
Progression Factor	0.94	0.94			1.00	1.00		1.15	1.20	1.00	1.00
Incremental Delay, d2	65.4	56.7			2.8	45.5		0.2	8.2	1.3	10.0
Delay (s)	94.2	85.3			32.5	78.8		31.1	29.2	26.8	37.9
Level of Service	F	F			C	E		C	C	C	D
Approach Delay (s)	92.3				47.6			29.7		31.2	
Approach LOS	F				D			C		C	

Intersection Summary			
HCM Average Control Delay	52.0	HCM Level of Service	D
HCM Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1265	35	40	1355	0	16
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1375	38	43	1473	0	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	375			335		
pX, platoon unblocked			0.80		0.83	0.80
vC, conflicting volume			1413		2217	707
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1267		1541	386
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			90		100	96
cM capacity (veh/h)			436		79	491

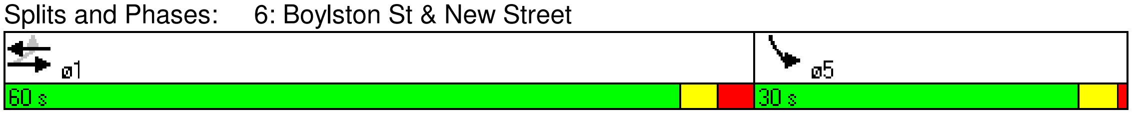
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	917	496	534	982	17
Volume Left	0	0	43	0	0
Volume Right	0	38	0	0	17
cSH	1700	1700	436	1700	491
Volume to Capacity	0.54	0.29	0.10	0.58	0.04
Queue Length 95th (ft)	0	0	8	0	3
Control Delay (s)	0.0	0.0	3.0	0.0	12.6
Lane LOS			A		B
Approach Delay (s)	0.0		1.0		12.6
Approach LOS					B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	76.3%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBT	SBL
Lane Configurations				
Volume (vph)	77	1379	994	64
Turn Type	Perm			
Protected Phases		1	1	5
Permitted Phases	1			
Detector Phases	1	1	1	5
Minimum Initial (s)	4.0	4.0	4.0	4.0
Minimum Split (s)	22.0	22.0	22.0	20.0
Total Split (s)	60.0	60.0	60.0	30.0
Total Split (%)	66.7%	66.7%	66.7%	33.3%
Yellow Time (s)	3.0	3.0	3.0	3.0
All-Red Time (s)	3.0	3.0	3.0	1.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	None	None	Min
Act Effct Green (s)	65.3	65.3	65.3	16.7
Actuated g/C Ratio	0.73	0.73	0.73	0.19
v/c Ratio	0.31	0.57	0.44	0.40
Control Delay	3.2	5.7	7.7	24.1
Queue Delay	0.0	74.7	0.6	0.5
Total Delay	3.2	80.3	8.3	24.6
LOS	A	F	A	C
Approach Delay		76.3	8.3	24.6
Approach LOS		E	A	C

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 20 (22%), Referenced to phase 6:, Start of Green	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 46.3	Intersection LOS: D
Intersection Capacity Utilization 53.0%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 6: Boylston St & New Street



Lane Group	EBL	EBT	WBT	SBL
Lane Group Flow (vph)	81	1452	1127	147
v/c Ratio	0.31	0.57	0.44	0.40
Control Delay	3.2	5.7	7.7	24.1
Queue Delay	0.0	74.7	0.6	0.5
Total Delay	3.2	80.3	8.3	24.6
Queue Length 50th (ft)	6	86	15	44
Queue Length 95th (ft)	m8	m94	116	98
Internal Link Dist (ft)		207	266	62
Turn Bay Length (ft)				
Base Capacity (vph)	276	2686	2660	590
Starvation Cap Reductn	0	1434	1019	0
Spillback Cap Reductn	0	431	361	190
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.29	1.16	0.69	0.37

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

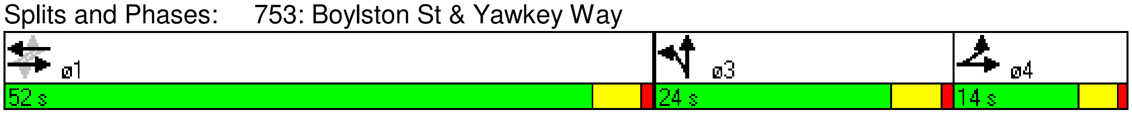
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0	4.0		4.0	
Lane Util. Factor	1.00	0.95	0.95		1.00	
Frt	1.00	1.00	0.99		0.93	
Flt Protected	0.95	1.00	1.00		0.98	
Satd. Flow (prot)	1770	3539	3501		1687	
Flt Permitted	0.22	1.00	1.00		0.98	
Satd. Flow (perm)	412	3539	3501		1687	
Volume (vph)	77	1379	994	77	64	76
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	81	1452	1046	81	67	80
RTOR Reduction (vph)	0	0	5	0	55	0
Lane Group Flow (vph)	81	1452	1122	0	92	0
Turn Type	Perm					
Protected Phases		1	1		5	
Permitted Phases	1					
Actuated Green, G (s)	63.3	63.3	63.3		16.7	
Effective Green, g (s)	65.3	65.3	65.3		16.7	
Actuated g/C Ratio	0.73	0.73	0.73		0.19	
Clearance Time (s)	6.0	6.0	6.0		4.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	299	2568	2540		313	
v/s Ratio Prot		c0.41	0.32		c0.05	
v/s Ratio Perm	0.20					
v/c Ratio	0.27	0.57	0.44		0.30	
Uniform Delay, d1	4.2	5.7	5.0		31.6	
Progression Factor	0.83	0.90	1.37		1.00	
Incremental Delay, d2	0.0	0.0	0.1		0.5	
Delay (s)	3.5	5.2	7.0		32.1	
Level of Service	A	A	A		C	
Approach Delay (s)		5.1	7.0		32.1	
Approach LOS		A	A		C	

Intersection Summary			
HCM Average Control Delay	7.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBT
Lane Configurations					
Volume (vph)	29	1367	38	1049	29
Turn Type	D.P+P		Perm		
Protected Phases	4	1 4		1	3
Permitted Phases	1		1		
Detector Phases	4	1 4	1	1	3
Minimum Initial (s)	5.0		8.0	8.0	5.0
Minimum Split (s)	10.0		33.0	33.0	24.0
Total Split (s)	14.0	66.0	52.0	52.0	24.0
Total Split (%)	15.6%	73.3%	57.8%	57.8%	26.7%
Yellow Time (s)	3.0		4.0	4.0	4.0
All-Red Time (s)	1.0		1.0	1.0	1.0
Lead/Lag	Lag				Lead
Lead-Lag Optimize?	Yes				Yes
Recall Mode	Max		C-Max	C-Max	None
Act Effct Green (s)		60.0		50.0	18.0
Actuated g/C Ratio		0.67		0.56	0.20
v/c Ratio		4.62		0.51	0.82
Control Delay		1640.5		21.4	57.6
Queue Delay		0.0		0.0	0.0
Total Delay		1640.5		21.4	57.6
LOS		F		C	E
Approach Delay		1640.5		21.4	57.6
Approach LOS		F		C	E

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 29 (32%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 4.62	
Intersection Signal Delay: 1299.6	Intersection LOS: F
Intersection Capacity Utilization 94.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 753: Boylston St & Yawkey Way



Lane Group	EBT	WBT	NBT
Lane Group Flow (vph)	5558	1252	237
v/c Ratio	4.62	0.51	0.82
Control Delay	1640.5	21.4	57.6
Queue Delay	0.0	0.0	0.0
Total Delay	1640.5	21.4	57.6
Queue Length 50th (ft)	~3186	306	126
Queue Length 95th (ft)	#456	m355	153
Internal Link Dist (ft)	266	282	256
Turn Bay Length (ft)			
Base Capacity (vph)	1204	2450	321
Starvation Cap Reductn	0	0	0
Spillback Cap Reductn	0	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	4.62	0.51	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	16	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			1.00				
Frpb, ped/bikes		1.00			0.99			0.86				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.99			0.92				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		3167			3124			1444				
Flt Permitted		0.94			0.59			0.99				
Satd. Flow (perm)		1530			4400			1444				
Volume (vph)	29	1367	38	38	1049	40	32	29	106	0	0	0
Peak-hour factor, PHF	0.81	0.25	0.71	0.73	0.92	0.67	0.63	0.70	0.73	0.25	0.25	0.25
Adj. Flow (vph)	36	5468	54	52	1140	60	51	41	145	0	0	0
RTOR Reduction (vph)	0	1	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	5557	0	0	1248	0	0	237	0	0	0	0
Confl. Peds. (#/hr)	67		158	158		67	79		116	116		79
Heavy Vehicles (%)	17%	2%	0%	0%	2%	10%	7%	0%	5%	0%	0%	0%
Turn Type	D.P+P			Perm			Split					
Protected Phases	4	1 4			1		3	3				
Permitted Phases	1			1								
Actuated Green, G (s)		59.0			49.0			17.0				
Effective Green, g (s)		60.0			50.0			18.0				
Actuated g/C Ratio		0.67			0.56			0.20				
Clearance Time (s)					5.0			5.0				
Vehicle Extension (s)					3.0			2.0				
Lane Grp Cap (vph)		1202			2444			289				
v/s Ratio Prot		c0.51						c0.16				
v/s Ratio Perm		c2.57			0.28							
v/c Ratio		4.62			0.51			0.82				
Uniform Delay, d1		15.0			12.4			34.5				
Progression Factor		0.83			1.64			1.00				
Incremental Delay, d2		1632.4			0.4			16.0				
Delay (s)		1644.9			20.7			50.5				
Level of Service		F			C			D				
Approach Delay (s)		1644.9			20.7			50.5			0.0	
Approach LOS		F			C			D			A	

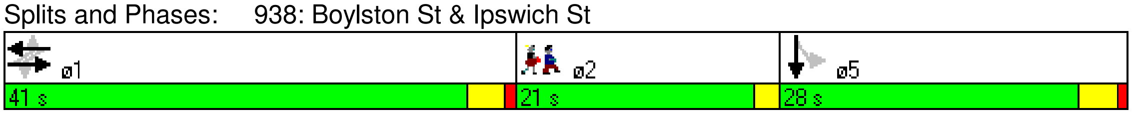
Intersection Summary			
HCM Average Control Delay	1302.7	HCM Level of Service	F
HCM Volume to Capacity ratio	3.75		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	94.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Lane Group	EBL	EBT	WBL	WBT	SBL	SBT	ø2
Lane Configurations							
Volume (vph)	16	1570	9	1099	310	5	
Turn Type	Perm		Perm		Perm		
Protected Phases		1		1		5	2
Permitted Phases	1		1		5		
Detector Phases	1	1	1	1	5	5	
Minimum Initial (s)	16.0	16.0	16.0	16.0	8.0	8.0	18.0
Minimum Split (s)	40.0	40.0	40.0	40.0	22.0	22.0	20.0
Total Split (s)	41.0	41.0	41.0	41.0	28.0	28.0	21.0
Total Split (%)	45.6%	45.6%	45.6%	45.6%	31.1%	31.1%	23%
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	0.0
Lead/Lag	Lead	Lead	Lead	Lead			Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes
Recall Mode	C-Min	C-Min	C-Min	C-Min	None	None	None
Act Effct Green (s)		58.0		58.0	24.0	24.0	
Actuated g/C Ratio		0.64		0.64	0.27	0.27	
v/c Ratio		1.33		0.90	0.99	0.24	
Control Delay		168.0		25.2	81.5	9.2	
Queue Delay		96.7		82.3	40.5	0.0	
Total Delay		264.7		107.5	122.0	9.2	
LOS		F		F	F	A	
Approach Delay		264.7		107.5		100.5	
Approach LOS		F		F		F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 35 (39%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 145	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.33	
Intersection Signal Delay: 188.1	Intersection LOS: F
Intersection Capacity Utilization 86.8%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 938: Boylston St & Ipswich St



Lane Group	EBT	WBT	SBL	SBT
Lane Group Flow (vph)	1760	1194	356	84
v/c Ratio	1.33	0.90	0.99	0.24
Control Delay	168.0	25.2	81.5	9.2
Queue Delay	96.7	82.3	40.5	0.0
Total Delay	264.7	107.5	122.0	9.2
Queue Length 50th (ft)	~719	271	202	3
Queue Length 95th (ft)	m68	#464	#360	25
Internal Link Dist (ft)	268	157		254
Turn Bay Length (ft)				
Base Capacity (vph)	1321	1322	358	355
Starvation Cap Reductn	0	313	0	0
Spillback Cap Reductn	184	0	39	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	1.55	1.18	1.12	0.24

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

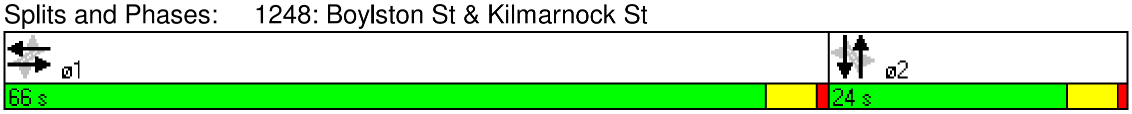
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0					4.0	4.0	
Lane Util. Factor		0.95			0.95					1.00	1.00	
Frpb, ped/bikes		1.00			1.00					1.00	0.88	
Flpb, ped/bikes		1.00			1.00					0.88	1.00	
Frt		1.00			1.00					1.00	0.86	
Flt Protected		1.00			1.00					0.95	1.00	
Satd. Flow (prot)		3169			3195					1341	1119	
Flt Permitted		0.93			0.92					0.95	1.00	
Satd. Flow (perm)		2050			2050					1341	1119	
Volume (vph)	16	1570	9	9	1099	20	0	0	0	310	5	70
Peak-hour factor, PHF	0.70	0.91	0.75	0.63	0.95	0.88	0.25	0.25	0.25	0.87	0.75	0.91
Adj. Flow (vph)	23	1725	12	14	1157	23	0	0	0	356	7	77
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	56	0
Lane Group Flow (vph)	0	1760	0	0	1193	0	0	0	0	356	28	0
Confl. Peds. (#/hr)	48		101	101		48	83		78	78		83
Heavy Vehicles (%)	14%	2%	0%	0%	1%	5%	0%	0%	0%	7%	0%	17%
Turn Type	Perm			Perm						Perm		
Protected Phases		1			1						5	
Permitted Phases	1			1						5		
Actuated Green, G (s)		58.0			58.0					24.0	24.0	
Effective Green, g (s)		58.0			58.0					24.0	24.0	
Actuated g/C Ratio		0.64			0.64					0.27	0.27	
Clearance Time (s)		4.0			4.0					4.0	4.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		1321			1321					358	298	
v/s Ratio Prot											0.02	
v/s Ratio Perm		c0.86			0.58					c0.27		
v/c Ratio		1.33			0.90					0.99	0.09	
Uniform Delay, d1		16.0			13.6					32.9	24.8	
Progression Factor		0.75			1.00					1.00	1.00	
Incremental Delay, d2		149.9			10.3					45.8	0.1	
Delay (s)		161.9			23.9					78.7	24.9	
Level of Service		F			C					E	C	
Approach Delay (s)		161.9			23.9			0.0			68.5	
Approach LOS		F			C			A			E	

Intersection Summary			
HCM Average Control Delay	101.2	HCM Level of Service	F
HCM Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Volume (vph)	19	1298	60	1055	26	15	123	51
Turn Type	Perm		Perm		Perm		Perm	
Protected Phases		1		1		2		2
Permitted Phases	1		1		2		2	
Detector Phases	1	1	1	1	2	2	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	6.0	6.0	6.0	6.0
Minimum Split (s)	47.0	47.0	47.0	47.0	24.0	24.0	24.0	24.0
Total Split (s)	66.0	66.0	66.0	66.0	24.0	24.0	24.0	24.0
Total Split (%)	73.3%	73.3%	73.3%	73.3%	26.7%	26.7%	26.7%	26.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lead/Lag	Lead	Lead	Lead	Lead	Lag	Lag	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)		65.4		65.4		16.6	16.6	16.6
Actuated g/C Ratio		0.73		0.73		0.18	0.18	0.18
v/c Ratio		1.39		1.00		0.42	0.79	0.47
Control Delay		200.6		46.7		20.5	64.4	24.3
Queue Delay		15.4		41.4		0.0	0.0	0.0
Total Delay		216.0		88.1		20.5	64.4	24.3
LOS		F		F		C	E	C
Approach Delay		216.0		88.1		20.5		42.4
Approach LOS		F		F		C		D

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 63 (70%), Referenced to phase 1:EBWB, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.39	
Intersection Signal Delay: 140.1	Intersection LOS: F
Intersection Capacity Utilization 119.2%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 1248: Boylston St & Kilmarnock St



Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	1441	1253	123	137	166
v/c Ratio	1.39	1.00	0.42	0.79	0.47
Control Delay	200.6	46.7	20.5	64.4	24.3
Queue Delay	15.4	41.4	0.0	0.0	0.0
Total Delay	216.0	88.1	20.5	64.4	24.3
Queue Length 50th (ft)	~585	~261	28	73	52
Queue Length 95th (ft)	m#616	#555	46	#153	67
Internal Link Dist (ft)	668	207	267		88
Turn Bay Length (ft)					
Base Capacity (vph)	1035	1252	339	209	416
Starvation Cap Reductn	0	127	0	0	0
Spillback Cap Reductn	25	0	1	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.43	1.11	0.36	0.66	0.40

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	13	12	12	13	12	12	14	12	12	16	12
Total Lost time (s)		4.0			4.0			4.0		4.0	4.0	
Lane Util. Factor		0.95			0.95			1.00		1.00	1.00	
Frpb, ped/bikes		1.00			1.00			0.93		1.00	0.94	
Flpb, ped/bikes		1.00			1.00			0.98		0.91	1.00	
Frt		0.99			0.99			0.93		1.00	0.92	
Flt Protected		1.00			1.00			0.99		0.95	1.00	
Satd. Flow (prot)		3087			3104			1447		1411	1667	
Flt Permitted		0.91			0.70			0.87		0.61	1.00	
Satd. Flow (perm)		1420			1720			1281		908	1667	
Volume (vph)	19	1298	61	60	1055	32	26	15	41	123	51	78
Peak-hour factor, PHF	0.68	0.97	0.81	0.70	0.95	0.57	0.78	0.67	0.60	0.90	0.66	0.88
Adj. Flow (vph)	28	1338	75	86	1111	56	33	22	68	137	77	89
RTOR Reduction (vph)	0	4	0	0	3	0	0	52	0	0	48	0
Lane Group Flow (vph)	0	1437	0	0	1250	0	0	71	0	137	118	0
Confl. Peds. (#/hr)	11		57	57		11	64		78	78		64
Heavy Vehicles (%)	0%	2%	2%	9%	1%	0%	4%	13%	2%	5%	0%	1%
Parking (#/hr)		0	0		0	0						
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		1			1			2			2	
Permitted Phases	1			1			2			2		
Actuated Green, G (s)		64.4			64.4			15.6		15.6	15.6	
Effective Green, g (s)		65.4			65.4			16.6		16.6	16.6	
Actuated g/C Ratio		0.73			0.73			0.18		0.18	0.18	
Clearance Time (s)		5.0			5.0			5.0		5.0	5.0	
Vehicle Extension (s)		2.0			2.0			2.0		2.0	2.0	
Lane Grp Cap (vph)		1032			1250			236		167	307	
v/s Ratio Prot											0.07	
v/s Ratio Perm		c1.01			0.73			0.06		c0.15		
v/c Ratio		1.39			1.00			0.30		0.82	0.38	
Uniform Delay, d1		12.3			12.3			31.7		35.3	32.2	
Progression Factor		1.39			1.66			1.00		1.00	1.00	
Incremental Delay, d2		180.0			24.6			0.3		25.3	0.3	
Delay (s)		197.1			45.0			31.9		60.6	32.5	
Level of Service		F			D			C		E	C	
Approach Delay (s)		197.1			45.0			31.9			45.2	
Approach LOS		F			D			C			D	

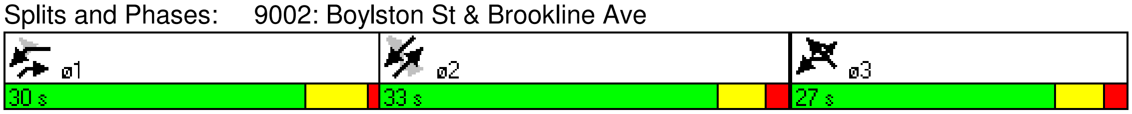
Intersection Summary			
HCM Average Control Delay	114.7	HCM Level of Service	F
HCM Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	8.0
Intersection Capacity Utilization	119.2%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	WBL	WBR	NWT	NWR	NEL	NET	NER	SWT	SWR
Lane Configurations									
Volume (vph)	450	591	844	85	22	538	1001	270	339
Turn Type		Perm		Prot	Perm		pm+ov		Perm
Protected Phases	1		3	3		2	1	2	
Permitted Phases		1			2		2		2
Detector Phases	1	1	3	3	2	2	1	2	2
Minimum Initial (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Minimum Split (s)	19.0	19.0	24.0	24.0	19.0	19.0	19.0	19.0	19.0
Total Split (s)	30.0	30.0	27.0	27.0	33.0	33.0	30.0	33.0	33.0
Total Split (%)	33.3%	33.3%	30.0%	30.0%	36.7%	36.7%	33.3%	36.7%	36.7%
Yellow Time (s)	5.0	5.0	4.0	4.0	4.0	4.0	5.0	4.0	4.0
All-Red Time (s)	1.0	1.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
Lead/Lag	Lead	Lead			Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes			Yes	Yes	Yes	Yes	Yes
Recall Mode	C-Max	C-Max	Max	Max	Max	Max	C-Max	Max	Max
Act Effct Green (s)	26.0	26.0	23.0	23.0		29.0	55.0	29.0	29.0
Actuated g/C Ratio	0.29	0.29	0.26	0.26		0.32	0.61	0.32	0.32
v/c Ratio	1.30dr	1.62	0.85	0.68		0.72	1.02	0.33	1.26
Control Delay	116.0	311.5	40.5	40.9		26.6	37.3	20.2	166.3
Queue Delay	239.8	0.0	0.0	0.0		30.3	33.7	0.0	0.0
Total Delay	355.7	311.5	40.5	40.9		56.9	71.0	20.2	166.3
LOS	F	F	D	D		E	E	C	F
Approach Delay	342.9		40.6			65.7		99.1	
Approach LOS	F		D			E		F	

Intersection Summary	
Cycle Length: 90	
Actuated Cycle Length: 90	
Offset: 89 (99%), Referenced to phase 1:WBL, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.62	
Intersection Signal Delay: 133.3	Intersection LOS: F
Intersection Capacity Utilization 119.6%	ICU Level of Service H
Analysis Period (min) 15	

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 9002: Boylston St & Brookline Ave



Lane Group	WBL	WBR	NWT	NWR	NET	NER	SWT	SWR
Lane Group Flow (vph)	863	352	992	253	643	1065	318	373
v/c Ratio	1.30dr	1.62	0.85	0.68	0.72	1.02	0.33	1.26
Control Delay	116.0	311.5	40.5	40.9	26.6	37.3	20.2	166.3
Queue Delay	239.8	0.0	0.0	0.0	30.3	33.7	0.0	0.0
Total Delay	355.7	311.5	40.5	40.9	56.9	71.0	20.2	166.3
Queue Length 50th (ft)	~317	~330	197	130	178	~217	70	~260
Queue Length 95th (ft)	m#327	m#350	#257	172	m217	m#263	m102	m#430
Internal Link Dist (ft)	668		176		183		648	
Turn Bay Length (ft)								150
Base Capacity (vph)	728	217	1163	372	895	1047	969	295
Starvation Cap Reductn	0	0	0	0	278	85	0	0
Spillback Cap Reductn	227	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.72	1.62	0.85	0.68	1.04	1.11	0.33	1.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Movement	WBL	WBR	WBR2	NWL	NWT	NWR	NWR2	NEL	NET	NER	SWT	SWR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0	4.0			4.0	4.0	4.0	4.0
Lane Util. Factor	0.97	0.91			0.91	1.00			0.95	0.88	0.95	1.00
Frpb, ped/bikes	0.86	0.57			1.00	1.00			1.00	0.68	1.00	0.65
Flpb, ped/bikes	1.00	1.00			1.00	1.00			0.99	1.00	1.00	1.00
Frt	0.94	0.85			1.00	0.85			1.00	0.85	1.00	0.85
Flt Protected	0.97	1.00			0.99	1.00			1.00	1.00	1.00	1.00
Satd. Flow (prot)	2521	751			4549	1454			3036	1714	3008	915
Flt Permitted	0.97	1.00			0.99	1.00			0.91	1.00	1.00	1.00
Satd. Flow (perm)	2521	751			4549	1454			2777	1714	3008	915
Volume (vph)	450	591	40	90	844	85	121	22	538	1001	270	339
Peak-hour factor, PHF	0.88	0.90	0.86	0.74	0.97	0.76	0.86	0.56	0.89	0.94	0.85	0.91
Adj. Flow (vph)	511	657	47	122	870	112	141	39	604	1065	318	373
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	863	352	0	0	992	253	0	0	643	1065	318	373
Confl. Peds. (#/hr)		256	181			183	297	256		297		256
Heavy Vehicles (%)	4%	1%	3%	2%	2%	0%	0%	11%	5%	1%	8%	3%
Turn Type		Perm		Split		Prot		Perm		pm+ov		Perm
Protected Phases	1			3	3	3			2	1	2	
Permitted Phases		1						2		2		2
Actuated Green, G (s)	24.0	24.0			21.0	21.0			27.0	51.0	27.0	27.0
Effective Green, g (s)	26.0	26.0			23.0	23.0			29.0	55.0	29.0	29.0
Actuated g/C Ratio	0.29	0.29			0.26	0.26			0.32	0.61	0.32	0.32
Clearance Time (s)	6.0	6.0			6.0	6.0			6.0	6.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0			3.0	3.0			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	728	217			1163	372			895	1124	969	295
v/s Ratio Prot	0.34				c0.22	0.17				0.27	0.11	
v/s Ratio Perm		c0.47							0.23	0.35		c0.41
v/c Ratio	1.30dr	1.62			0.85	0.68			0.72	0.95	0.33	1.26
Uniform Delay, d1	32.0	32.0			31.9	30.2			26.9	16.2	23.1	30.5
Progression Factor	0.84	0.85			1.00	1.00			0.92	1.18	0.83	0.82
Incremental Delay, d2	88.4	286.9			8.0	9.6			1.4	6.1	0.8	139.9
Delay (s)	115.4	314.0			39.9	39.8			26.1	25.2	20.0	164.8
Level of Service	F	F			D	D			C	C	B	F
Approach Delay (s)	172.9				39.9				25.6		98.2	
Approach LOS	F				D				C		F	

Intersection Summary			
HCM Average Control Delay	76.4	HCM Level of Service	E
HCM Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	119.6%	ICU Level of Service	H
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.
c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	1448	25	20	1127	0	60
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	1524	26	21	1186	0	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)	362			348		
pX, platoon unblocked			0.53		0.61	0.53
vC, conflicting volume			1551		2173	775
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			1151		1461	0
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			93		100	89
cM capacity (veh/h)			319		69	574

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	1016	534	416	791	63
Volume Left	0	0	21	0	0
Volume Right	0	26	0	0	63
cSH	1700	1700	319	1700	574
Volume to Capacity	0.60	0.31	0.07	0.47	0.11
Queue Length 95th (ft)	0	0	5	0	9
Control Delay (s)	0.0	0.0	2.3	0.0	12.0
Lane LOS			A		B
Approach Delay (s)	0.0		0.8		12.0
Approach LOS					B

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		