3200 WASHINGTON STREET, JAMAICA PLAIN

Mixed-Use Residential / Retail Development

Project Notification Form

Submitted Pursuant to Article 80B of the Boston Zoning Code

Submitted by:
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Submitted to:
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February 23, 2015

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February 23, 2015

VIA HAND DELIVERY
Mr. Brian Golden, Director
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201
Attn: Edward McGuire, Project Manager

RE: Letter of Intent to File Project Notification Form
Article 80 - Large Project Review
Mixed Use Residential / Retail Development
3200 Washington Street, Jamaica Plain

Dear Director Golden:

As counsel to 3190 Washington Street LLC and Exchange Authority LLC (the "Project Proponent"), I am pleased to submit this Project Notification Form ("PNF"), in accordance with the Article 80B-1 Large Project Review requirements of the Boston Zoning Code ("Code"), for a new mixed-use residential / retail development totaling approximately 100,000 gross square feet that will include 76 residential units, 5,364 gross square feet of street level retail space, widened sidewalks and usable open space above a garage facility for a total of 36 on-site parking spaces ("Proposed Project").

In accordance with Boston Redevelopment Authority ("BRA") requirements, please find attached ten (10) copies of the PNF plus a CD disk for placing the PNF filing on the BRA website for public review. The public notice for the PNF appears in the February 25, 2015, edition of the *Boston Herald.*

The Proposed Project will exceed the 50,000 square foot total build-out size requirement for a project within a Boston neighborhood and therefore requires the preparation of

filing(s) under the Large Project Review regulations, pursuant to the Code. A Letter of Intent to File a Project Notification Form was filed with the BRA for the Proposed Project on December 23, 2014 (attached as **Appendix A** to this PNF).

As part of the 76 proposed residential units, the Proponent will provide 11 on-site affordable units in excess of the City of Boston's Inclusionary Development Policy ("IDP"). The Proponent has also entered into discussions with community leaders about how it might potentially further exceed this inclusionary number and offer a more progressive affordability program by participating in the potential renovation and upgrade of an abutting and distressed six-unit residential property at 52 Montebello Road, which the City of Boston acquired by foreclosure and has also and has also been identified as a so-called "problem property."

The Project Proponent has conducted extensive preliminary community outreach with its surrounding neighborhood interest groups, abutting and area residents, local business owners, local elected and appointed officials and other interest parties, including presentations before the Egleston Square Neighborhood Association, Egleston Square Main Streets, Parkside / Montebello Neighborhood group, Chilcott Place / Granada Park Residents Association, Jamaica Plain Neighborhood Council's Housing Committee and the Washington Street Business Group. As a result of the input received, the Project Proponent has made certain revisions to the original design, parking and overall scope of the Proposed Project, and it looks forward to continuing to work diligently with the community in an effort to provide a design-forward development that enhances the quality of life of the neighborhood.

On behalf of the entire project team, we would like to thank you and the BRA staff assigned to the 3200 Washington Street Project, particularly the Project Manager, Edward Maguire, and the Senior Architect, Michael Cannizzo, for invaluable assistance provided allowing the Project Proponent to achieve this comprehensive PNF filing. We believe that the Proposed Project will be a significant positive addition to the Jamaica Plain neighborhood, by revitalizing this under-utilized site with much-needed housing and commercial / retail space at this thoughtfully-designed and community-minded development, and we look forward to processing this PNF with the BRA, City officials, members of the Impact Advisory Committee and the overall community.

Sincerely,

On Behalf of 3190 Washington Street LLC
and Exchange Authority LLC

Joseph P. Hanley

Joseph Hanley, Esq. - Partner

Attachment: 3200 Washington Street Project Notification Form
(10 Copies Plus CD Disk)

cc: Edward McGuire, BRA Project Manager
Erico Lopez, BRA Director of Development Review and Policy
District 6 City Councilor Matt O'Malley
Jullieanne Doherty, Mayor's Office of Neighborhood Services
State Senator Chang-Diaz
State Representative Malia
Justin Iantosco and Daniel Mangiacotti, Project Proponents
Mitchell Fischman, MLF Consulting LLC

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1.0 EXECUTIVE SUMMARY

1.1 Introduction

3190 Washington Street LLC and the Exchange Authority, LLC (the "Proponent") is submitting this Project Notification Form ("PNF"), in accordance with the Article 80B-1 Large Project Review requirements of the Boston Zoning Code ("Code"), for a new mixed-use / residential / retail development with three new building sections totaling approximately 100,000 gross square feet. The new development will include 76 residential units, 5,364 gross square feet of street level retail space, widened sidewalks and usable open space above a garage facility for a total of 36 on-site parking spaces (the "Proposed Project"). Two of the proposed new buildings will be situated along Washington Street, with street level retail space in each location, building lobby, enclosed bike storage and structured parking facility for 33 vehicles under ample usable open space at the second floor level at the center of the site at the building's rear. The two new buildings along Washington Street will vary in height, from a six-story building with a mezzanine level at the corner of Washington Street and Iffley Road to a five-story building with a stepped-back sixth level at Washington Street and Montebello Road. Towards the rear of the site along Iffley Road, a third building of three stories will feature three separate townhouse units with three dedicated on-site parking spaces and ground level open space.

The Project Site is comprised of 32,412 square feet of land, with a vacant two-story structure (formerly containing Economy Plumbing and Heating Supply Company), a single-story automotive repair garage (E & J Auto Center) on Washington Street and single-level concrete garage with an unusually wide curb-cut opening along Iffley Street. The garage structure is utilized for multi-unit automobile storage and has been identified by certain local elected officials and community leaders as a so-called "problem property." These existing buildings will be demolished to enable the new project to be constructed. Please see **Figures 1-1** and **1-2.**

As part of the Proponent's 76 proposed residential units, it would provide 11 on-site affordable units in excess of the City of Boston's Inclusionary Development Policy (the "IDP"). The Proponent has also entered into discussions with community leaders about how it might potentially further exceed this inclusionary number and offer a more progressive affordability program by participating in the potential renovation and upgrade of an abutting and distressed six-unit residential property at 52 Montebello Road, which the City of Boston acquired by foreclosure and has also been identified as a so-called "problem property."

While the Proponent's voluntary participation in the upgrade and re-purposing of the property at 52 Montebello Road is not necessary or required to meet the IDP requirements, the Proponent intends to further pursue and evaluate this measure as an additional community benefit and way to enhance affordable housing in the neighborhood.

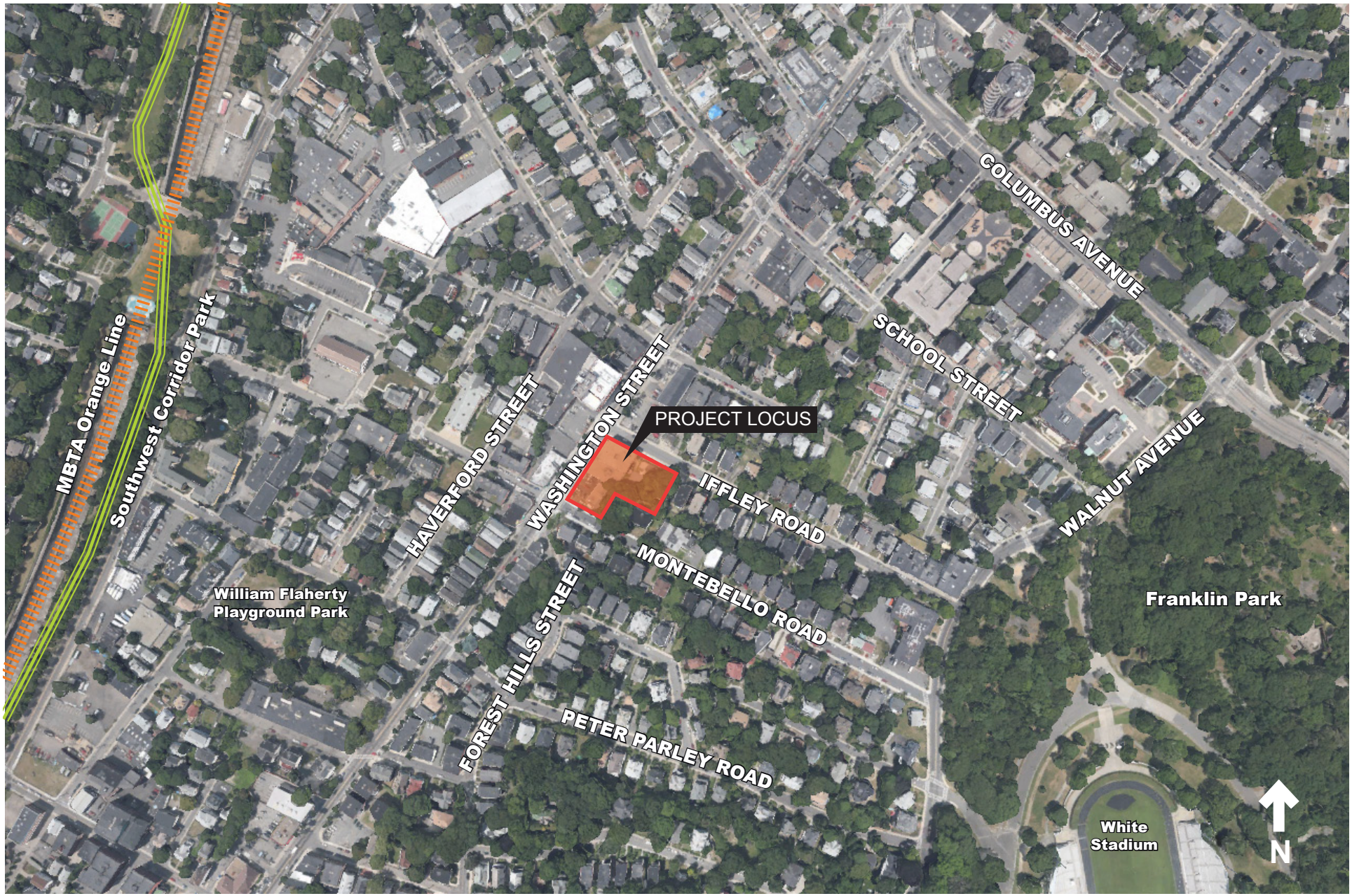


Figure 1-1
Project Locus - 3200 Washington Street

Figure 1-2
USGS Map

Finally, to ensure that no one is displaced by the development, the Project Proponent has worked closely with the owners of the existing E&J Auto Center (located at the corner of the Project Site at Montebello and Washington Streets), and it recently secured a preferred site also in the Jamaica Plain neighborhood to relocate this business. In this regard, the Project Proponent is in the process of acquiring this property site, which is located near the intersection of the Columbus Avenue and Centre Street, and it will facilitate the move and relocation of the E&J Auto Center, which owners have been supportive of the overall development and their new location.

The Proposed Project will exceed the 50,000 square foot total build-out size requirement for a project in a Boston neighborhood and therefore will require preparation of filing(s) under the Large Project Review regulations, pursuant to Article 80 of the Code. A Letter of Intent to File a Project Notification Form was filed with the Boston Redevelopment Authority for the Proposed Project on December 23, 2014 (See **Appendix A**).

1.2 Detailed Project Description

1.2.1 Project Context

The project is located in the vibrant Egleston Square area of Jamaica Plain. The Egleston community owes a vibrant identity to both its physical and social factors, in which diversity is a key player. Certainly in a social sense, it is the wide-ranging ethnic, racial, age, and economic pattern created by the occupants. The same can be said about the eclectic mix of urban form, which shows up in its natural landscape, history, buildings, and public spaces (streets, sidewalks, parks). Few neighborhoods can point to such a diverse background. This section focuses on the convergence of factors shaping urban form.

Egleston Square straddles Columbus Avenue with a southern portion located in Jamaica Plain and a Roxbury portion to the north. In the other axis, Washington Street travels north-south. This project's site is south of Columbus, on Washington Street at the corners of Iffley and Montebello Streets. As one travels north on Washington towards Boston, the Montebello intersection creates a very distinct beginning to Egleston Square. The sidewalk across Montebello is also widened in response to the acute angle of Forest Hills Street. Of the four 'legs' of Egleston's Washington and Columbus axes, this leg comprises its most condensed and well-defined commercial district. The project site is both an urban node and a marker announcing Egleston.

In terms of other factors shaping this site, we look closely at topography and building stock. As all of Egleston is built on the slope between Franklin Park and the Stony Brook, this site in particular is defined by one of the sharpest inclines. The portions of Iffley and Montebello abutting our site have an elevation change between 2 and 3 stories. Buildings in Egleston vary greatly in size, use, and era of construction. Much of the neighborhood between the primary streets is defined by residential, 3-story structures. Scattered throughout Egleston is an eclectic mix of buildings ranging from multi-family housing to schools, mixed-use, churches, and institutional uses. The Stony Brook (e.g. Southwest Corridor) was once a dominant industrial district, and in fact contained over a dozen large-scale breweries. Two of these exist today nearby the site, The Franklin Brewery and Haffenreffer & Co. Each is now adapted to new uses, but their

presence is felt in their remaining structures. The Franklin Brewery's remaining building has a façade on Washington Street (across from this site) extending over 95 feet.

1.2.2 Project Composition

The Proposed Project will be completed in a single phase, but divided into three buildings (A, B and C) in order to better assimilate to the immediate neighborhood scale along Montebello and Iffley, and to maintain the existing commercial character while maintaining a well-formed streetwall along Washington Street. Building C is a similar typology to the one found along Iffley and Montebello Road; 3 stories over a garage with a setback from the street for a yard. Building B begins to scale up the massing up with a lower height closer to Building C and progressively increasing in height as it moves closer to Washington Street. This strategy allows for the project to negotiate the large scale of the former brewery with the finer grain scale of the neighborhood. Building A also scales up towards Washington with its lowest height closer to the neighborhood. Along Washington Street, Building A changes the massing at the corner for the building to appear as two different structures and allow for a set back across from Joseph Phee Square. Along Washington Street, Building A and B pull back from the sidewalk to articulate the street and provide a generous pedestrian area.

The Site circulation plan is designed to create a safe and pleasant entry to the Proposed Project for pedestrians from Washington Street. Automobiles will enter the site from Washington Street and exit from Montebello Road. Service vehicle access will also be provided from Washington Street. On-site parking will include 33 garage spaces (in the two multi-family apartment buildings) and 3 surface parking spaces (below the townhouses).

Table 1-1: Approximate Proposed Project Dimensions of 3200 Washington Street Project

Lot Area:	32,412 sf (0.75 Acres)
Gross Building Footprint Area:	23,134 sf
Gross Square Feet:	Approx. 100,00 gsf
FAR:	3.09
Number of Floors:	5 to 6 + Mezz Floors
Height:	Up to 74' 11" feet

1.3 Summary of Project Impacts and Mitigation

1.3.1 Urban Design

3200 Washington is conceived as a catalyst for revitalization for both Egleston Square and the Washington Street corridor. Located along one of the commercial axis of Egleston Square, the project will contribute a mix of uses to support the prospect to live work and play in the neighborhood. The project will offer 76 units of housing, a restaurant and retail location that will further invigorate the commercial axis of Egleston Square and this area of Jamaica Plain. It is also part of a number of developments along the Washington Street corridor that are helping to revitalize different points along it. In the case of 3200 Washington it is among the first developments in Egleston Square that has will influence future growth in the area and along the corridor.

The building has been designed to mediate between the residential neighborhood scale and Washington Street. The neighborhood is comprised of multi-family structures of two/three families while Washington Street has a variety of uses that range from mix-use to institutional. In order to reconcile the different scale and types, the project was divided into three buildings. The buildings resemble adjacent typologies while creating a transition from the neighborhood scale to the larger and commercial scale of Washington Street.

As a transit-oriented development, the Proposed Project will feature on-site interior bike storage with an associated maintenance facility, electric car charging stations and a comprehensive transit management program which actively promotes, incentivizes and promotes MBTA ridership, car sharing and bicycle commuting to tenants and residents of the development.

The Proposed Project is located within less than a 10 minute walk to two MBTA Orange Line stations and along a continuous bus line, allowing residents to be connected the a transit network that reaches beyond the Boston Metro area, and it is also in close proximity to Hubway's bicycle sharing program located in Egleston Square and within a few minutes' walk to a number of Zipcar's vehicle-share locations. See **Appendix B** for the Proponent's **Parking Mitigation and Transit-Oriented Development Plan.**

1.3.2 Sustainable Design

The Proponent and the Project design team are committed to an integrated design approach and are using the LEED for Homes Mid-Rise Rating System Checklist and intend to meet certification requirements as presented in **Section 3.6** and in **Figure 3-22** at the end of **Section 3.0**. This rating will meet or exceed Boston's Green Building standard with a preliminary projected Silver Certification level. The LEED rating system tracks the sustainable features of the project by achieving points in following categories: Innovation and Design Process; Location and

Linkages; Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; Indoor Environmental Quality; and Awareness and Education.

1.3.3 Response to Climate Change Resiliency and Adaptability Questionnaire

The Proponent's response to the Climate Change Resiliency and Adaptability Questionnaire is contained in **Appendix G**

1.3.4 Wind

The heights of the proposed structures will not exceed 75 feet as defined by the Zoning Code. Wind conditions are expected to be similar to the existing conditions with the nearby 3-5 story buildings across Washington Street; therefore, no new pedestrian level wind impacts are anticipated.

1.3.5 Shadow

A shadow study was prepared to identify any adverse shading from Proposed Project on the neighborhood. The solstices and equinoxes were studied as a sample representative of the shadow cycle throughout a year. From the morning until the afternoon, new shadows introduced by this proposal fall primarily in the adjacent parking lots across Washington Street and Iffley Road, and on the south and east façades of the adjacent storage center. In the evening, especially in winter, shadows impact neighboring residences. However, this impact is similar in coverage to the shadows cast by existing buildings in the neighborhood. Through this analysis, we are able to conclude that the proposed building massing scheme is consistent with existing neighborhood shadow patterns (see **Section 4.1**).

1.3.6 Daylight

Although the Proposed Project will lead to an increase in daylight obstruction when compared to the existing condition, the Proposed Project is opposite Washington Street, a wide thoroughfare, was designed to relate in height and massing to existing buildings along Washington Street. The Proposed Project will reach a maximum of 70 feet in height, which is somewhat higher than the existing buildings along Washington Street as well as the existing zoning, but any new obstruction values are mitigated by Washington Street's large width. As a result, daylight obstruction values from the Proposed Project are expected to be consistent with and typical of the surrounding neighborhood.

1.3.7 Solar Glare

It is not expected that the Proposed Project will include the use of reflective glass or other reflective materials on the building facades that would result in adverse impacts from reflected solar glare.

1.3.8 Air Quality Analysis

Tech Environmental, Inc., the Project's air quality consultant, conducted analyses to evaluate the existing air quality in the Project area, predict the worst-case air quality impacts from the Project's parking garage, and evaluate the potential impacts of Project-generated traffic on the air quality at the most congested local intersections (See **Section 4.2**).

Recent representative air quality measurements from the Massachusetts Department of Environmental Protection (DEP) monitors reveal that the existing air quality in the Project area is in compliance with Massachusetts and National Ambient Air Quality Standards (NAAQS) for all of the criteria air pollutants.

The worst-case air quality impacts from the Project's parking garage will not have an adverse impact on air quality. The maximum one-hour and eight-hour ambient CO impacts from the parking garage, at all locations around the Project site, including background CO concentrations, are predicted to be safely in compliance with the NAAQS for CO.

A microscale air quality analysis was not performed for this Project due to its extremely small motor vehicle trip generation. The extremely small number of motor vehicle trips generated by the Project will not have a significant impact on the delays or the level of service at the local intersections. Therefore, the motor vehicle traffic generated by the project will not have a significant impact on air quality at any intersection in the Project area and a microscale air quality analysis is not necessary for this Project. The air quality in the Project area will remain safely in compliance with the NAAQS for CO after the Project is built.

1.3.9 Noise Analysis

Tech Environmental, Inc., the Project's noise consultant, conducted a noise study to determine whether the operation of the proposed Project will comply with the Massachusetts DEP Noise Policy and City of Boston Noise Regulations (See **Section 4.3**).

This acoustical analysis involved five steps: (1) establishment of pre-construction ambient sound levels in the vicinity of the Site; (2) identification of potential major noise sources; (3) development of noise source terms based on manufacturer specifications (where available) and similar project designs; (4) conservative predictions of maximum sound level impacts at sensitive locations using industry standard acoustic methodology; and (5) the incorporation of mitigation measures to ensure compliance with applicable City of Boston noise regulations, ordinances and guidelines and with the DEP Noise Policy.

Nighttime ambient baseline sound level (L_{90}) monitoring was conducted at two locations deemed to be representative of the nearby residential areas, during the time period when human activity is at a minimum and any future noise would be most noticeable. The lowest nighttime L_{90} measured in the Project area was 36 dBA.

The design for the Proposed Project is expected to include the following significant mechanical equipment:

- (14) 10-ton rooftop heating/cooling units on Building A;
- (13) 10-ton rooftop heating/cooling unit on Building B; and
- (1) 10-ton rooftop heating/cooling unit on the Building C (Townhouses).

The Project will not create a noise nuisance condition and will fully comply with the most stringent sound level limits set by the Massachusetts DEP Noise Policy, City of Boston Noise Regulations, and HUD's Residential Site Acceptability Standards.

1.3.10 Stormwater Management and Water Quality

The existing storm drain infrastructure surrounding the proposed site has adequate capacity to service the needs of the project. Best management practices and sustainable design will be incorporated into the Project wherever practical and applicable.

Stormwater management systems will be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS) and provide oil & water separation, as well as phosphorus reduction in compliance with current Boston Water and Sewer Commission (BWSC) requirements. Utility connections will be designed to minimize impacts to the surrounding area and all appropriate permits and approvals will be acquired prior to construction.

The proposed stormwater management systems will include a combination of water quality units and groundwater recharge systems. The project is not expected to increase the amount of impervious area at the site compared to the existing condition. It is anticipated that the stormwater recharge systems will work to passively infiltrate runoff into the ground with a gravity recharge system. The underground recharge system, and any required site closed drainage systems, will be designed so that there will be no increase in the peak rate of stormwater discharge from the project site in the developed condition compared to the existing condition. In addition, for any portions of the project where recharge systems cannot be accommodated, water quality units will be installed to reduce pollutants in runoff per BWSC standards prior to discharge.

All improvements and connections to BWSC infrastructure will be reviewed as part of the Commission's Site Plan Review process. The process includes a comprehensive design review of the proposed service connections, assessment of project demands, and system capacity.

1.3.11 Solid and Hazardous Waste

Solid Waste

During the preparation of the Site, debris, including asphalt, trash, and demolition debris will be removed from the Project Site. The Proponent will ensure that waste removal and disposal during

construction and operation will be in conformance with the City and DEP's Regulations for Solid Waste.

Hazardous Waste

On June 10, 2014, IES, Inc. completed a Phase I Environmental Site Assessment ("ESA") for the site, including 3200 and 3204 Washington Street and 11-15 Iffley Road in Jamaica Plain. The past use of these properties resulted in some contamination – long since cleaned up – and some conservative recommendations for additional soil testing and (if necessary) disposal while the project is under construction. These measures should result in improved environmental conditions at the site or, at the least, confirmation that the prior cleanup was comprehensive enough so that no additional soils will need to be excavated and disposed of. The proponent has retained an environmental consultant licensed to address hazardous waste issues – known as a Licensed Site Professional – and environmental legal counsel to ensure that the Project complies with all laws pertaining to site cleanup.

The findings of the ESA and their significance to the proposed development are discussed in more detail in **Section 4.5.2.**

1.3.12 Geotechnical/Groundwater Impacts Analysis

In general, the subsurface soil conditions within the proposed building site consist of loose silty Sand and gravel Fill material overlying natural, very dense silt, sand and gravel Glacial Till deposit overlying shallow bedrock. The top of sound bedrock was encountered in boring B1 at 5.0 feet, B2 at 6.5 feet, and refusal encountered in borings B3 at 4.0 feet and in B4 at 2.3 feet. The rock was described as hard, slightly weathered to fresh, gray-green, coarse-grained conglomerate - Roxbury Conglomerate with Rock Quality Designation (RQD) values of 67 and 100 percent corresponding to a "Fair" to "Excellent" rock quality.

The anticipated foundation system for this project is conventional spread and wall footing foundations bearing directly on the natural Glacial Till deposit, level bedrock surface or on compacted structural backfill material as needed. **Dependent on the lowest floor levels, bedrock excavation by hydraulic impact hoe ram methods will be required to construct footings and lowest floors.** In addition, it may be necessary to remove existing building foundation systems to allow for new construction.

Groundwater was not encountered at the monitoring well installed in boring B1 at 10 feet. The proposed construction is not anticipated to have adverse effects on long-term groundwater levels because the lowest floor level is above the groundwater level. Roof drains and runoff from impermeable outdoor surfaces will be led to local storm drains. Construction mitigation measures such as ground surface and adjacent building monitoring points will be incorporated into the Proposed Project to avoid any potential for ground movement and settlement.

1.3.13 Construction Impacts Analysis

Section 4.7 presents impacts likely to result from the construction of the 3200 Washington Street Project and the steps that will be taken to avoid or minimize environmental and transportation-related impacts. Construction methodologies and scheduling will aim to minimize impacts on the surrounding environment. The Proponent will insure that the general contractors will be responsible for developing construction phasing and staging plans and for coordinating construction activities with all appropriate regulatory agencies. The Project's geotechnical consultant will also provide consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

The construction period for the Proposed Project is expected to extend for approximately 15 months, commencing in the 3rd Quarter 2015 and reaching completion in the 4th Quarter 2016.

1.3.14 Wetlands/Flood Hazard Zone

The existing Project Site is not part of a wetland resource area regulated by the Massachusetts Wetland Protection Act.

Based on the Preliminary Flood Insurance Rate Maps (FIRM) for Suffolk County, the Project site is not located in a special flood hazard area, floodway area, or other flood area.

1.3.15 Historic Resources Component

According to files at the Massachusetts Historical Commission, the on-site structures are not listed in the National or State Register of Historic Places, or the Inventory of Historical and Archaeological Assets of the Commonwealth. It is not expected that the Project will cause adverse impacts on any historic or architectural elements of nearby historic resources outside the Project Site

The Project Site is not within, nor does it directly abut, any listed historic districts or resources. However, a portion of the Olmsted Park System (Franklin Park) is within one-quarter-mile radius of the Proposed Project. The area surrounding the Project Site is a mixed-use district. Residential, retail and commercial uses characterize much of the area along Washington Street. The nearby Haffenreffer Brewery on Germania Street is a National Register Historic Property within one-quarter-mile radius of the Proposed Project and there are 18 properties listed on the Massachusetts Cultural Resource Information System (MACRIS) inventory of historic places. (see **Section 5.0** for additional information and for a map of historic resources within ¼ mile of the Project Site).

1.3.16 Infrastructure Systems Component

The Project's Civil and MEP Engineers will coordinate with the City agencies and private utility companies responsible for the area's utility systems as the design progresses. Utility connections will be designed to minimize impacts to the surrounding area and all appropriate permits and approvals will be acquired prior to construction.

Washington Street contains a 15-inch combined sanitary line, a dedicated 15-inch storm drain line, a 12-inch water main, a 6" gas line, and various electric and telecommunication conduits.

Iffley Road contains a 10-inch combined sanitary sewer line, a dedicated 12-inch storm drain line, an 8-inch water main, a 6" gas line, and various electric and telecommunication conduits.

Montebello Road contains a 10-inch sanitary sewer line, a dedicated 12-inch storm drain line, a 12-inch water main, and various electric and telecommunication conduits.

The existing sewer system and water distribution and storm drain systems are shown in the figures in **Section 6.0.**

The Boston Water and Sewer Commission (BWSC) owns and operates the sanitary sewer, storm drain, and water distribution systems in the City of Boston. A BWSC approved Site Plan and General Service Application is required for the construction of proposed sewer, storm drain, and water connections to the main lines in Washington Street, Iffley Road and Montebello Road. Proposed connections to these public utilities will be designed in conformance with BWSC's design standards, Sewer Use and Water Distribution System Regulations, and Requirements for Site Plans. The Proponent's Civil Engineer will submit a Site Plan Review Application to BWSC. Upon approval of the Site Plan, a General Service Application will be submitted by the Utility Contractor, for approval prior to construction. The Site Plans will indicate the existing and proposed sewer lines, storm drain lines, and water mains within the site and in the abutting public ways. The Site Plans will show any existing utilities to be abandoned, the location and design of proposed utility services, and the limit of work to be performed in the public ways. Abandoned services will be cut and capped at the main lines according to BWSC standards.

The following items will be coordinated with the respective city agencies and utility companies:

- The Boston Fire Department reviews projects with respect to fire protection measures such as fire department connections, standpipes and hydrants.
- Energy and telecommunication system sizing and connections will be coordinated by the MEP Engineer with the respective utility providers.
- New utility connections are authorized by the City of Boston Public Works Department through the street opening permit process.

1.3.17 Transportation Component

Section 7.0 presents the comprehensive transportation study completed by HSH for the proposed Project in conformance with the BTD *Transportation Access Plan Guidelines* (2001). The study analyzes existing conditions within the Project study area, as well as conditions forecast to be in place under the five-year planning horizon of 2019.

The Project will provide a total of 36 parking spaces on-site, including 33 spaces for the rental apartment units located in an at grade garage and 3 spaces for the townhouse units located off of Iffley Road. The parking supply results in a parking ratio of 0.47 parking spaces per unit. Based on the nature of the Project, including its proximity to nearby transit opportunities, vehicle and bike share outlets, coupled with the detailed measures and principals of the Proponent's **Parking Mitigation and Transit-Oriented Development Plan (Appendix B),** it is expected that this parking ratio will be adequate to accommodate the overall parking demand for the Project.

Vehicular access to the garage will be provided off of Washington Street and egress will be provided off of Montebello Road. Access and egress to the residential townhouse units will be provided off of Iffley Road. The Project will significantly reduce the length of the curb cuts that currently serve the Project site. Primary pedestrian access to the apartments and the retail space will be provided off of Washington Street. Primary pedestrian access to the townhouse units will be provided off of Iffley Road. Loading, deliveries, move-in/move-out, and trash pick-up will take place on-site within the garage and will not impact the public sidewalk, parking, or roadway.

The Proponent is committed to implementing a transportation demand management ("TDM") program that supports the City's efforts to reduce dependency on the automobile by encouraging alternatives to driving alone, especially during peak travel periods. Proposed measures include, but are not limited to, designating an on-site transportation coordinator, secure covered bicycle parking and associated maintenance facility, MBTA ridership, vehicle and bike-share incentive programs for tenants and residents of the development and other measures.

The transportation analysis employed mode use data for the area surrounding the Project site based on 2000 U.S. Census data and BTD data for Area 6, and identifies the number of trips generated by the Project by mode. Due to the transit-oriented nature of the Project and non-auto alternatives such as Zipcar, and Hubway, is anticipated that many of the Project-generated trips will occur via transit, on foot, and by bicycle.

The Project is expected to generate only approximately 21 vehicle trips (6 in and 15 out) during the weekday a.m. peak hour and 30 vehicle trips (16 in and 14 out) during the weekday p.m. peak hour. This corresponds to an increase of less than one vehicle trip per minute on the adjacent roadway network during the peak periods.

Due to the low volume of vehicle trips generated by the Project, the overall LOS at the study area intersections will remain unchanged from No-Build Conditions.

1.3.18 Response to Accessibility Guidelines

The Proponent's response to the City of Boston Accessibility Guidelines is contained in **Appendix H.**

2.0 GENERAL INFORMATION

2.1 Applicant Information

2.1.1 Project Proponent

The Proponent is 3190 Washington Street LLC and the Exchange Authority LLC, consisting of Paul Iantosca, Dan Mangiacotti and Justin Iantosca.

Paul Iantosca is the founder and president of Arborview Realty and has over thirty years of experience in property management, development and real estate sales in the Jamaica Plain neighborhood. Under Paul's supervision, Arborview manages approximately 200 residential units and provides rental services for many landlords throughout Jamaica Plain and surrounding neighborhoods.

Dan Mangiacotti has built or renovated over 70 homes in the Boston area, including new construction as well as historical renovations and rehabilitations. Dan's work has been focused primarily on Jamaica Plain over since 2006 with an aim to achieve innovative designs with a high level of architectural detail. Recent projects include new construction of townhouses at 1, 3 & 5 Danforth St. as well as the renovation of properties at 58 Green St., 25-27 South St, 58 Orchard St. and 108 McBride St.

Justin Iantosca is a Jamaica Plain resident with over five years of experience in development and property management. Justin has managed the renovation of two multi-family properties.

Paul and Dan have collaborated on approximately 15 projects within Jamaica Plain, with Justin participating in two of those projects.

2.1.2 Project Team

Project Name	3200 Washington Street
Property Owner/Developer	**3190 Washington Street LLC** and **Exchange Authority, LLC** 709 Centre Street, Suite 202 Jamaica Plain, MA 02130 Justin Iantosca justin@arborviewcompanies.com Tel: 617-543-1949 Dan Mangiacotti danmang@hotmail.com Tel: 617-872-0517
Article 80 Permitting Consultant	**Mitchell L. Fischman Consulting** **("MLF Consulting") LLC** 41 Brush Hill Road Newton, MA 02461 Mitch Fischman mitchfischman@gmail.com Tel: 781-760-1726
Legal Counsel/Outreach	**McDermott Quilty & Miller LLP** 131 Oliver Street, 5th Floor Boston, MA 02110 Tel: 617/946-4600 Joseph Hanley, Esq. - Partner jhanley@mqmllp.com Tel: 617-946-4600, Ext. 4438
Architect	**RODE ARCHITECTS Inc.** 535 Albany Street #405 Boston, MA 02118 Rodearchitects.com Tel: 617-422-0090 Kevin S. Deabler Kevin@rodearchitects.com Andres Bernal Andres@rodearchitects.com

Transportation Planner/Engineer	**Howard/ Stein-Hudson Associates, Inc.** 38 Chauncy Street, 9th Floor Boston, MA 02111 Tel: 617-482-7080 Mike Santos, P.E., PTOE msantos@hasassoc.com Tel: 617-348-3350 Joe SanClemente, P.E. jsanclemente@hshassoc.com Tel: 617/348-3334
Civil Engineer	**Sherwood Consulting & Design LLC** 26 Smith Place, Suite 2 Cambridge, MA 02138 Joseph Oliveira, P.E. joo@sherwood.com Tel: 617-945-0940
Landscape Architect	**Radner Design Associates, Inc.** 945 Concord Street, Suite 100 Framingham, MA 01701 Michael Radner, ASLA, LEED AP mradner@radnerdesign.com Tel: 508-736-6144
Noise and Air Consultant	**Tech Environmental, Inc.** Hobbs Brook Office Park 303 Wyman Street, Suite 295 Waltham, MA 02451 Tel: 781-890-2220 Marc C. Wallace mwallace@techenv.com 781-890-2220 x30 Ryan Callahan rcallahen@techenv.com 781-890-2220 x27
Environmental/21E Engineer	**IES, Inc.** 7 Kimball Lane, Building A Lynnfield, MA 01940 Tel: 617-623-8880 Daniel G. Jaffe, President

Surveyor	**Spatial Data & Design** 99 Main Street Millbury, MA 01527 Tel: 508-277-6735
Geotechnical Engineer	**Brierley Associates** 26 Smith Place, Suite 2 Cambridge, MA 02138 Tel: 617-714-5784
Sustainability Consultant	**Price Sustainability Associates, Inc.** 28 Walnut Street Maynard, MA 01754 Tel: 978-760-2723 Mark Price mark@pricesustainability.com

Schedule	3200 Washington Street Project
Construction Commencement	3rd Quarter 2015
Construction Completion	4th Quarter 2016
Status of Project Design	Schematic

2.1.3 Legal Information

Legal Judgments or Actions Pending Concerning the Proposed Project:

None.

History of Tax Arrears on Property Owned in Boston by the Applicant:

There are no tax arrears on property owned by the Proponent.

Nature and Extent of Any and All Public Easements:

The Project Site is bounded by streets containing sewer, electric, telephone, and gas utilities.

2.2 Public Benefits

The Proposed Project will provide substantial public benefits to the City of Boston and the Jamaica Plain neighborhood. The Proposed Project will generate both direct and indirect significant economic benefits. The Proposed Project provides for:

- Promoting the development of Egleston Square as a lively transit-oriented area of housing and restaurant/retail space, establishing a significant gateway to the Egleston Square Neighborhood;
- Creating 76 units of much-needed residential housing, with a diverse mix of market-rate and on-site affordability that exceeds the City's Inclusionary Development Program requirements, by providing 11 affordable units;
- Pursuing a further community benefit of participating in the potential renovation and upgrade of an abutting and distressed six-unit residential property at 52 Montebello Road, which the City of Boston recently acquired by foreclosure and identifies as a so-called "problem property" to re-purpose in as affordable housing. (While voluntary and not required to meet the IDP requirements, the Proponent intends to further pursue and evaluate this measure as an additional community benefit and to assist in enhancing affordable housing in the neighborhood).
- Providing additional needed retail / commercial opportunities to attract businesses and employers to the area;
- Introducing residents who will provide support to the local community and utilize local businesses;
- Creating a restaurant space with patio seating along Washington Street to add vibrancy to this stretch of street;
- Enhancing a very active transportation node that including the MBTA Orange Line stations at Green Street and Stony Brook and bus stop, and encouraging other alternative modes of transport such as the use of bikes and Zip Cars;
- Replacing a blighted lot used for garage storage and a lot formerly used for warehouse space but currently unused, improving the safety and visual appearance of the area, and improving environmental conditions on these properties;
- Introducing street trees, widened sidewalks and other streetscape amenities to improve and enhance the pedestrian landscape and experience;
- Establishing a premier example of sustainable and environmentally responsible construction and development;
- Creating construction period jobs;
- Creating 8 new on street parking spaces by closing existing curb cuts; and
- Adding new annual property taxes for the City of Boston.

2.3 Regulatory Controls and Permits

The Proposed Project is located within the Washington Street Local Industrial Subdistrict (LI) in the Jamaica Plain Neighborhood District (JPND), Article 55. It is also located within a Neighborhood Design Overlay District. Article 55-18 of the JPND of the Boston Zoning Code establishes Local Industrial Subdistricts within the JPND of the Code. Pursuant to this section:

> "The purpose of the Local Industrial Subdistricts is to encourage the preservation of the existing manufacturing and industrial base in a manner that is sensitive to and preserves the quality of life of the surrounding neighborhoods, and to encourage the development of new job opportunities within the Jamaica Plain Neighborhood District".

Furthermore, Article 55-28 of the JPND of the Boston Zoning Code establishes Neighborhood Design Overlay Districts. Pursuant to this section:

> "The Neighborhood Design Overlay Districts are established to protect the historic character, existing scale, quality of pedestrian environment, character of the residential neighborhoods, and concentrations of historic buildings within the Neighborhood Design Overlay Districts."

In this regard, project legal counsel has performed an initial zoning analysis and reviewed the applicability of the zoning requirements at issue with the Proposed Project. The Inspectional Services Department issued zoning refusal notifications on December 8, 2014, and January 13, 2015, listing Zoning Code violations as Article 55, Section 19; Use Regulations in Local Industrial Multifamily Dwelling (Forbidden), Article 55, Section 20; Floor Area Ratio Excessive, and Article 55, Section 20; Height Excessive, as well as Article 80 Large Project Review required. The Proponent filed its Zoning Code Appeals on January 16, 2015, and was the Proposed Project was assigned BOA#442292 and BOA#442289 (see **Appendix C** for copies of these Appeals).

2.4 Boston Zoning Code – Use Requirements

The Proposed Project will include residential, retail and restaurant space and accessory uses thereto. It will contain approximately 76 total units and 36 parking spaces. Article 55 states that all Residential Uses are Forbidden in a Local Industrial Subdistrict, a Restaurant Use is Allowed, and all take-out restaurant uses are Conditional. A Restaurant Use is defined as:

> " Lunch room, restaurant, cafeteria, or other place for the service or sale of food or drinks for on-premises consumption, provided that there is no dancing nor entertainment other than phonograph, radio and television, and that neither food nor drink is served to, or consumed by, persons while seated in motor vehicles."

A Hardware Store Retail Use in a Local Industrial Subdistrict would be considered Use Item #34 "Retail Business" as a "store primarily serving the local retail business needs of the residents of the neighborhood, including . . . paint, hardware and minor household appliances" and is Allowed, except

Conditional "if the hours during which such establishment is open to the public before 6:00 AM or extend beyond 12 midnight, *or if such merchandise is sold or displayed out of doors on the premises of such store*." The Proposed Project will provide services in an area that is presently lacking in such amenities.

The premises currently contains multiple uses and occupancies. The current use and occupancy of the property at 3190 Washington Street is "Retail Plumbing Supply" per the Zoning information (ISD Long Form 2669/1980). The previous use and occupancy of the property was "Manufacturing of Wadding" (ISD Long Form 501/46). The Assessing Department Classification Code is #316 categorized as "Storage Warehouse and Distribution Facilities." The building has not been used for several years and is currently sitting empty with no systems and is essentially a shell. The current use and occupancy of the property at 3204 Washington Street is "Lubritorium and Office" per the Zoning information (ISD Long Form 1077/1979). The Assessing Department Classification Code is #332 categorized as "Retail Trade – Automotive, Marine Craft and Auto Repair Facilities." The property currently contains a four (4) vehicle repair garage and service station. The current use and occupancy of the property at 11 Iffley Road is "Private Garage" per the Zoning information. The Assessing Department Classification Code is 391 (Vacant Land - Accessory to Commercial parcel/Potentially developable Land).

The multiple existing uses and occupancies at the Premises are legal pre-existing uses, which were previously permitted by the City of Boston. The existing Retail Plumbing Supply Use at the Premises is ALLOWED in the Washington Street LI-Local Industrial sub-district pursuant to the Table C of the Use Regulations of Article 55 and other related requirements of the Zoning Code. The existing Private Garage which is accessory to a commercial parcel is ALLOWED in the Washington Street LI-Local Industrial sub-district pursuant to the Table C of the Use Regulations of Article 55 and other related requirements of the Zoning Code. The existing Lubritorium/Service Station and Repair Garage Use is CONDITIONAL in the Washington Street LI- Local Industrial sub-district pursuant to Table C of the Use Regulations of Article 55 as a result of footnote 15, which states "Except Conditional if within one hundred (100) feet of a Residential Subdistrict." The Premises is within 100 feet of a 3F-4000 sub-district and therefore this Use is CONDITIONAL. This Use was permitted by the City of Boston in 1938 via ISD Long Form 37/1938, thus it is a pre-existing permitted use.

2.5 Boston Zoning Code – Dimensional Requirements

The Proposed Project is a new mixed-use residential / retail development including approximately 100,00 gsf with the proposed floor area spread out over two large buildings, and three (3) townhouses accommodating a total of 76 residential units, 36 associated parking spaces, two commercial spaces totaling 5,364 gsf, and associated landscaped areas. In this regard, with the two proposed larger buildings, Building A would be six (6) floors and Building B would be six (6) floors plus a Mezzanine Level. The Proposed project includes first floor parking, adjacent to the commercial space, at the base of both buildings containing 28 parking spaces. The proposed townhouses would be three (3) floors over one story of parking accommodating a total of eight (8) parking spaces. The Project Site comprises 32,412 square feet and will have an approximate proposed Floor Area Ratio of 3.09 as a result.

As referenced, the Proposed Project is located within the Washington Street Local Industrial Subdistrict (LI) in the JPND, Article 55. The LI Subdistrict allows a maximum building height of 35 feet, a minimum usable open space per Dwelling Unit of 50 square feet, a rear yard minimum of 20 feet, and a Maximum FAR of 1.0 pursuant to Table H of Article 55 of the Code.

It is important to note that Article 13, Section 13-4 "Dwellings in Nonresidential Districts" of the Code typically applies to this type of Proposed Project. This section states that any dwelling in a L or I district "shall conform to the lot area, lot width, usable open space and yard requirements for the nearest S, R or H district . . .". However, per Article 55, Section 55-4 Applicability – JPND - of the Code, "except where specifically indicated to the contrary in this Article, the provisions of this Article supersede Section 8-7 and Articles 13 through 24 of this Code for the Jamaica Plain Neighborhood District". Therefore, Article 13 Section 4 pertains only to the Underlying Zoning and is not applicable to the JPND.

There are also special provisions for Corner Lots. If a Lot abuts more than one street, the requirements for Front Yards shall apply along every Street Line except as otherwise provided in this Section 55-41. The Front Yard requirements of this Article, and not the Side Yard requirements, shall apply to that part of a side Lot line that is also a Street Line extending more than one hundred (100) feet from the intersection of such line with another Street.

For a project that is subject to Large Project Review, required off-street parking spaces and off-street loading facilities are expected to be determined as a part of the Large Project Review in accordance with the provisions of Article 80 of the Boston Zoning Code. Design elements of the Proposed Project will also be reviewed pursuant to Large Project Review.

However, please note that pursuant to Table J of the Jamaica Plain Neighborhood District Off-Street Parking Requirements, Industrial Uses require 0.5 parking spaces per 1,000 Square Feet of Gross Floor Area, 2.0 parking spaces for Retail Uses per 1,000 Square Feet of Gross Floor Area, and Restaurant Uses require 0.3 spaces per seat. Residential Uses require the following:

1-3 Units	1.0 Spaces per Dwelling Unit
4-9 Units	1.25 Spaces per Dwelling Unit
10+ Units	1.5 Spaces per Dwelling Unit

Table 2-1: 3200 Washington Street - Zoning Compliance

Categories	Local Industrial Sub District	Existing Condition	Proposed Project
Lot Area (Square Feet)	None	32,412 S.F.	32,412 S.F.
Floor Area Ratio	1.0	n/a	3.09
Minimum Lot Width	None	100 feet	100 feet
Minimum Lot Frontage	None	202 feet	113 feet, 2 inches
Minimum Front Yard	None	n/a	10 inches
Minimum Side Yard	None	n/a	4 feet, 5 inches
Minimum Rear Yard	20 feet	n/a	24 feet, 10 inches
Maximum Building Height	35 ft	n/a	75 feet
Maximum Building Height (Stories)	N/A	n/a	Building A – 6 Building B – 6+ Mezz.
Minimum Useable Open Space Per Dwelling Unit (Square Feet):	50 sq. ft.	n/a	16,140 S.F.
Off-Street Parking Spaces	(To be Reviewed in Accordance with Article 80 Large Project Review)[1]	n/a	36
Maximum Rear Yard Occupancy by Accessory Buildings	25%	n/a	0%

[1] Per ISD Plan Examiner for the Project, Luis Santana, there is no parking violation listed on the Zoning Code refusal letters as this is an Article 80 Project and the parking program will be specifically addressed during Large Project Review. Per Article 55, Section 55-40 Off-Street Parking and Loading Requirements, for any proposed project that is subject to Large Project Review, required off-street parking spaces and off-street loading facilities shall be determined through such review in accordance with the provisions of Article 80.

2.6 Preliminary List of Permits or Other Approvals Which May be Sought

Agency Name	Permit or Action*
State Agencies	
MA Department of Environmental Protection, Division of Water Pollution Control	Sewer Connection Self Certification
Local Agencies	
Boston Redevelopment Authority	Article 80 Review and Execution of Related Agreements; Section 80B-6 Certificate of Compliance;
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Plan
Boston Department of Public Works Public Improvements Commission	Possible Sidewalk Repair Plan; Curb-Cut Permit; Street/Sidewalk Occupancy Permit; Permit for Street Opening;
Boston Zoning Board of Appeals	Possible Variances and Dimensional Relief from the Existing Zoning Code Requirements
Boston Landmark Commission	Article 85 Demolition Delay – Building located on 3190 Washington Street falls within the parameters of Article 85 as it is at least fifty (50) years of age and is located within a Neighborhood Design Overlay District.
Boston Public Safety Commission Committee on Licenses	Permit for Storage of Fuel in (Emergency Storage) Tanks, Garage License
Boston Fire Department	Approval of Fire Safety Equipment
Boston Water and Sewer Commission	Approval for Sewer and Water and Connections; Construction Site Dewatering; and Storm Drainage
Boston Department of Inspectional Services	Building Permits; Certificates of Occupancy; Other Construction-Related Permits

*This is a preliminary list based on project information currently available. It is possible that not all of these permits or actions will be required, or that additional permits may be needed.

2.7 Public Review Process and Agency Coordination

The Proponent has discussed the Proposed Project with representatives of the Boston Redevelopment Authority ("BRA") prior to filing this Project Notification Form in order to identify issues/concerns as well as design requirements related to the Proposed Project. Meetings have been held with the BRA's planners and urban design staff.

Numerous organized meetings with the surrounding neighborhood interest groups, abutting property owners, organizations and nearby residents have been held, including the following:

- Egleston Square Main Streets, July 21, 2014;
- Egleston Square Neighborhood Association, July 23, 2014;
- Parkside Neighborhood Association, August 13, 2014;
- Chilcott Place / Granada Park Neighborhood Association, September 10, 2014;
- Washington Street Businessmen's Association, October 14, 2014;
- Community presentation in Spanish, October 20, 2014;
- Egleston Square Neighborhood Association and Egleston Main Streets, joint Housing and Economic Development committees, November 6, 2014;
- Jamaica Plain Neighborhood Council, Housing Committee, December 3, 2014;
- Egleston Square Neighborhood Association and Egleston Main Streets, joint Housing and Economic Development committees, January 14, 2014;
- Meeting with representatives from abutting and local non-profit housing providers Urban Edge and the Jamaica Plain Community Development Corporation, February 5, 2015; and
- Meeting with group of residential neighbors on Chilcott Place, February 5, 2015.

In accordance with Article 80 requirements, an Impact Advisory Group ("IAG") has been formed and BRA-sponsored neighborhood meeting will be scheduled to review the PNF and receive community comments on the Proposed Project during the public review period.

The Proponent will continue to meet with public agencies, neighborhood representatives, local business organizations, abutting property owners, and other interested parties, and will follow the requirements of Article 80 pertaining to the public review process.

2.8 Development Impact Payment ("DIP") Status

Based on current schematic design plans, it is not anticipated that Development Impact Payments ("DIP"), in accordance with Article 80B-7 of the Code, will be required for Proposed Project. That project is expected to have approximately 5,364 gross non-residential FAR square feet, and be below the 100,000 gsf threshold where DIP is required.

3.0 URBAN DESIGN AND SUSTAINABILITY COMPONENT

3.1 Building Massing

The building massing is informed by the surrounding neighborhood, its diverse building typologies and dramatic sloping topography. The adjacent neighborhood is comprised of multifamily structures between Washington Street and Franklin Park with larger structures at both ends of Montebello and Iffley Roads - essentially bookending the block with larger buildings. The scale of buildings also vary greatly from Washington Street towards the Southwest Corridor, ranging from houses, institutional and industrial buildings. Along Washington Street from the site towards Egleston Square the buildings are primarily mixed-use residential and street-front commercial. These are larger buildings in footprint and height. Towards Forest Hills, the existing buildings are mostly multi-family residential of different scales and commercial uses reappear around Green Street where they form another node of activity. Notably, across from the site is an eight to nine story brick building that was built as a brewery, and now currently used for rental storage.

The Proposed Project has been divided into three building (A, B and C) in order to better assimilate to the immediate neighborhood scale along Montebello and Iffley, and to maintain the commercial character while maintaining a well-formed streetwall along Washington Street. Building C is a similar typology to the one found along Iffley and Montebello Roads; 3 stories over a garage with a setback from the street for a yard. Building B begins to scale up the massing up with a lower height closer to Building C and progressively increasing in height as it moves closer to Washington Street. This strategy allows for the Proposed Project to negotiate the large scale of the former brewery with the finer grain scale of the neighborhood. Building A also scales up towards Washington with its lowest height closer to the neighborhood. Along Washington Street, Building A changes the massing at the corner for the building to appear as two different structures and allow for a set back across from Joseph Phee Square. Along Washington Street, Buildings A and B pull back from the sidewalk to articulate the street and provide a generous pedestrian area.

3.2 Building Design

Building A: The building is divided into two volumes that are different in height and materials to appear as two building. The portion of the building along Washington is composed of 1 story commercial with 4 stories of residential above. The commercial ground floor is mostly clad with glass and the residential will exhibit a beige finish not found in other parts of the development in order to accentuate this façade. The portion of the building along Montebello Road is composed of 5 stories of residential over the garage. The top residential story on the side of the neighborhood is pushed back to create terraces for the apartment and lower the presence of the building on the street. Balconies also negotiate change in planes and volumes that help articulate the façade and reduce the appearance of the massing on the street.

Building B: The design of this building mediates the architectural diversity of the site by responding to former brewery building height and scaling down as it progresses into the neighborhood. The building comprises two heights, a six story plus mezzanine and a six story volume. Both of these volumes are intended to read from the street as different compositions by changing the material as well as relationship to the street. The volume at the corner of Washington and Iffley Road responds to the former brewery building by becoming the highest point of the project, changing to a smaller cladding pattern and color that related to the brewery's masonry work.

Building C: The massing and design of this building is uses the same typology as the adjacent two to three family structures. The building will be similar in scale, street set back, use of front porches and balconies in the back. The three stories of residential will be located over a half garage with side entry and a driveway to the street. The windows are double hung similar in size to the neighborhood and the roof is flat.

3.3 Materials

The main cladding material for Building A and B is a porcelain tile rain screen system that will be applied in three different finishes and two stacking patterns. The joints will be a 3/16" reveal that generate a strong shadow line between tiles. Fenestration will consist of aluminum punched windows at the residential level and aluminum curtain wall at the ground level.

Building A: A smaller tile with a reddish brown finish (siding 1) laid out in a consistent stacking pattern is used at the base along with areas of curtain wall. Above the base, the building is divided into two, Washington Street and Montebello Road volume. On Washington Street, a larger tile organized in a random stacking pattern with a beige color (siding 3) that is not found in other parts of the development will be used to provide distinction to this area. The Montebello side will be mainly cladded by a gray tile (siding 2) with the same proportions and staking pattern as siding 3. This side is further articulated by a set of balconies that divide the mass into two volumes. In order to make this division apparent siding 2 is reintroduced around the balconies and allowed to continue onto the sixth floor portion that has been set back.

Building B: This building uses siding 1 and 2 to articulate its volumes and create an intermediate scale. Similarly to Building A, the base of Building B is mainly cladded with siding 1 with areas of aluminum curtain wall at the retail areas. In this case siding 1 extends up 5 stories in this particular location to relate to the brewery across the street at the corner of Washington and Iffley. The larger volume at the corner is cladded with siding 1 and an accent material is introduced at the 6th floor and mezzanine. As the building progresses towards the neighborhood another set of balconies clad with siding 2 are used to differentiate the taller mass on Washington Street and a smaller one on Iffley road. This smaller volume is also cladded with siding 1 on three intermediate floors and siding 2 is used at the top and base. The joint will be approximately ¼" reveal and generate a shadow line between tiles. Windows are punched aluminum at the residential level and aluminum storefront at the ground level.

Building C: Materials in Building C assimilate the immediate residential neighborhood context. A fiber cement lap siding and trim is proposed for the building above the garage. Windows will be double hung in a couple of different sizes and will be grouped at bays and bedrooms.

3.4 Views

The views along Washington Street have been carefully articulated to create variation along the street wall. Building heights as well as materials changes create variation along the street. The gap between the buildings allow for sunlight to run through the project and reach Washington Street in order to further differentiate Building A and B. On both Montebello and Iffley Roads, the buildings have also been articulated with different heights and materials with the difference that the building height progress down as the buildings move deeper into the hill and neighborhood. Consequently the roof line is nearly continuous from the project to the adjacent residences.

3.5 Landscape Design

The components of the landscape include three edge conditions which have a public face, an interior courtyard at the second floor level that is only partially visible to the public, and a fourth edge which borders neighboring properties. The landscape treatment for each edge of the site takes its cues from the surrounding neighborhood context and will seamlessly blend into the existing landscape.

The most prominent public face of the project faces Washington Street. The landscape design first and foremost is guided by Boston's Complete Streets initiative, which features a multimodal, green, and smart approach to design. Because the building setback from the Washington Street curb varies from 14' to 26', we have the opportunity to create a variety of types of pedestrian and landscaped spaces between the building face and the curb.

Starting at the curbline, a 5'-0" wide greenspace/furnishing zone is established which will contain street trees in open treeways, street light poles, bicycle racks (parking for up to 12 bicycles), road signage, and will be finished in scored concrete to provide a stable and even walking surface. The scoring pattern in this zone will vary slightly more decorative as compared to the next zone inboard, the pedestrian zone. New vertical granite curbing will be set along Washington Street.

The 5'-6" wide pedestrian zone will be paved with scored concrete in a standard square pattern, only interrupted by the driveway garage entrance. The garage entry will be raised to the sidewalk level (rather than at the street level) to give pedestrians priority. The back of the sidewalk roughly coincides with the property line.

The frontage zone is contained within the subject site and its width varies from 3'-4" to 15'-7". This space contains curbed planters, the plaza entry to the residential lobby, entries to the ground floor retail spaces, and additional bicycle parking for eight. In addition, an approximately 7' wide raised outdoor café space is proposed at the Washington Street/Montebello corner of the site which will also act as an entry space for the southernmost ground floor retail space. The corner entry for the building and small

plaza space acknowledges J Phee Square to the south. The paving materials in this zone consist of permeable unit pavers to allow for maximum stormwater infiltration.

At the northern edge of the site, Iffley Road slopes up from Washington Street toward the east. The building is proposed to be set back 24" from the right of way line, which allows for a 6' wide concrete sidewalk and 24" of landscaped space for the first 80 feet, and then 5' of landscaped space for the next 60'. Because of the narrow landscaped space for the first 80 feet, vertical gardens will be installed along the face of the building to help mitigate the scale of the building wall. These will consist of 4'-6' tall wire mesh panels and will be planted with flowering vines to provide seasonal foliage and color. The next 60 feet along the façade widens out to allow for traditional foundations plantings consisting of a hedge.

Continuing east up Iffley Road, the landscape treatment in front of the proposed four unit house takes its cues from the neighborhood context. Similar to surrounding houses, a set of stairs will lead up to a front porch and a low retaining wall will be built to establish the street edge. A 6' wide landscaped space will contain new foundation plantings.

On the southern edge of the site, along Montebello Street, a new 8 foot wide concrete sidewalk will be installed, only interrupted by the garage exit. Here again, the walk at the garage exit will be raised to sidewalk level to signal to drivers that pedestrians take priority over vehicles. Along this edge, the building lands right behind the right of way, so the sidewalk pavement extends right to the building face.

The proposed landscape courtyard space is approximately 4,600 square feet in area and will be mostly a common space for use by the residents of the building, but will also have small private terraces for those units facing the courtyard. This landscape will be built on top of the structural slab over the covered parking, and will consist of a mix of permeable unit pavers, raised planting beds, and small lawn area. Low level landscape lighting will not be visible and will not spill onto neighboring properties.

To the east of the courtyard space is a tree-covered lot totaling approximately 5,600 square feet, known as the Department of Neighborhood Development (DND) parcel. This piece of land also is steeply sloped toward Washington Street and has several ledge outcroppings of Roxbury Puddingstone. The nature of the land provides a significant buffer to neighboring properties on Montebello Road and is proposed to remain in its undeveloped state. Any invasive vegetation will be removed and slopes without vegetation and open bare soil will be stabilized with new, native plantings. Because the land slopes severely toward the back of the Montebello Road sidewalk, a new stone retaining wall (similar the existing wall at No. 52 Montebello Road) will be built to retain the earth. The lot will be further secured from Montebello Road by a decorative metal picket fence on top of the retaining wall, and will be accessed from the subject site at the courtyard level.

3.6 Sustainable Design/Energy Conservation

3.6.1 Introduction

Sustainability informs every design decision. Enduring and efficient buildings conserve embodied energy and reduce the need for natural resources. The Proposed Project embraces the opportunity to positively influence the urban environment. Its urban location takes advantage of existing infrastructure while enabling convenient access to mass transportation that will reduce dependence on single occupant vehicle trips and minimize transportation impacts. Photovoltaic Systems (PV) are intended to be incorporated into this project to provide site-produced electricity which will reduce the need to purchase grid power.

The Proponent and the Project design team are committed to an integrated design approach and are using the LEED for Homes Mid-Rise Project Checklist and the LEED for Homes Project Checklist along with third-party oversight and intend to be LEED Silver certifiable as presented in **Figure 3.22** and **Figure 3.23** at the end of this section. This rating will meet or exceed Boston's Green Building standard. The LEED rating system tracks the sustainable features of the project by achieving points in following categories: Innovation and Design Process, Location and Linkages, Sustainable Sites; Water Efficiency; Energy and Atmosphere; Materials and Resources; Indoor Environmental Quality; and Awareness and Education.

3.6.2 Innovation and Design Process

The prerequisites and credits, which the Proposed Project hopes to achieve in this category, are listed below:

ID 1.1 Preliminary Rating: (Prerequisite)

- The project team gathered on November 14, 2014, Price Sustainability Associates (PSA) (Green Rater) conducted the Preliminary Rating meeting with the design team and completed the Preliminary Checklist; it was decided to pursue Silver certification as the target goal.

ID 1.2 Energy Expertise for Mid-Rise: (Prerequisite)

- The team has both expertise for Mid-Rise systems and experience modeling ASHRAE 90.1 energy simulation for LEED for Homes Mid-Rise.

ID 2.1 Durability planning: (Prerequisite)

- The durability evaluation form and durability inspection checklist will be completed as the design advances.

ID 2.2 Durability Management: (Prerequisite)

- The Proponent plans to use the durability inspection checklist throughout construction as both an inspection tool and a project management tool for weekly review, to ensure each measures is completed.

ID 2.3 Third-Party Durability Management Verification (3 credits)

- PSA will periodically conduct on-site inspections using the Durability Management Checklist.

3.6.3 Location and Linkages

LL 2 Site Selection: (2 credits)

- The Site does not violate any of the listed environmental sensitivity criteria.

LL 3.2 Infill: (2 credits)

- 75% or more of the perimeter borders previously developed land. The Site is composed of several existing buildings with offices, repair garage, and storage garage uses; the surrounding neighborhood is built-up with two and three-family homes.

LL 4 Existing Infrastructure: (1 credit)

- The Site is within ½ mile of existing water and sewer service lines.

LL 5.1 – 5.3 Community Resources/Public Transit: (3 credits)

- The Site has outstanding transit options. The site is located within a half-mile of the Green Street and Stonybrook Stations along the MBTA Orange Line. The Orange Line operates with headways of approximately 5 minutes during the peak periods and 8 minute headways during the off peak periods. Several MBTA bus routes are also located within a quarter-mile of the Project site. The Proposed Project is expected to generate a total of 190 transit trips per day.

LL 6 Access to Open Space: (1 credit)

- The Site will meet the criteria of being proximate to space greater than ¾ acre within ¼ mile. Franklin Park at the end of Iffley and Montebello Roads is within ¼ mile of the site is greater than ¾ acre.

3.6.4 Sustainable Sites

The development of sustainable sites is at the core of sustainable design. The sustainable sites credit category encourages development on previously developed land, minimizing a building's impact on ecosystems and waterways, regionally appropriate landscaping, smart transportation choices, stormwater runoff management, and reduction of erosion, light pollution, heat island effect, and pollution related to construction and site maintenance.

The points which the Proposed Project hopes to achieve in this category are listed below:

SS 1.1 Erosion Controls during Construction: (Prerequisite)

- The project team will develop and implement an erosion control plan prior to start of construction which will meet each of the required LEED provisions (a – e).

SS 1.2 Minimize Disturbed Area of Site for Mid-Rise: (1 credit)
- Project density is estimated at 102 units/ acre, exceeding the 40 units/acre threshold.

SS 2.1 No invasive plants: (Prerequisite)
- No invasive species will be scheduled or specified in the landscape plan.

SS 2.2 Basic Landscape Design: (1 credit)
- Any installed turf will be drought-tolerant; will not be used in densely shaded areas; and will not be placed in areas with > 25% slope. Mulch, or soils amendments will be used as appropriate, and compacted soil will be tilled to >/= 6 inches.

SS 2.3 Limit Conventional Turf: (1 credit)
- Conventional turf will be kept to 40% of designed softscape, or less.

SS 2.4 Drought Tolerant Plants: (1 credit)
- The landscape architect will select drought tolerant plants (90% or more) for the landscaping plan. Lists of plants and their quantities of each plant will be provided..

SS3.2 Reduce Local Heat Island Effects: (1 credit)
- The roof will be installed with high-albedo material on 75% or more of the roof area.

SS4.1 Permeable Lot for Mid-Rise: (3-4 credits)
- The lot, not including area under roof, will be designed such that at least 90% (potentially 100%) will be permeable to infiltrate stormwater on site.

SS4.2 Permanent Erosion Controls: (1 credit)
- Terracing and retaining walls will be used on steep sloped areas of the Site.

SS 4.3 Storm Water Quality Control for Mid-Rise: (2 credits)
- The Proposed Project will use in-field performance monitoring to demonstrate compliance.

SS 6.1 – 6.3 Compact Development, Very-High Density: (4 credits)
- The Proposed Project will have an approximate density of 102 units per acre, meeting the Very High Density threshold.

SS7.1 Public Transit Mid-Rise: (2 credits)
- The number of transit rides available within ½ mile of the project is in excess of 60 per weekday.

3.6.5 Water Efficiency

Buildings are major users of our potable water supply and conservation of water preserves a natural resource while reducing the amount of energy and chemicals used for sewage treatment. The goal of the Water Efficiency credit category is to encourage smarter use of water, inside and out. Water reduction is typically achieved through more efficient appliances, fixtures and fittings inside and water-wise landscaping outside.

The points which the Proposed Project hopes to achieve in this category are listed below:

WE 2.1 High-Efficiency Irrigation system, Mid-Rise (2 credits)
- Irrigation best-practices will be employed to maximize this credit.

WE 3.1 and WE 3.2 Indoor Water Use: (5 credits)
- Shower heads with 1.75 or less GPM, lavatory faucets will use 1.5 or less GPM and the toilets selected will be less than 1.3 gallons per flush.

WE 3.3 Water Efficient Appliances for Mid-Rise: (2 credits)
- The project will be using high-efficiency clothes washers and dishwashers.

3.6.6 Energy and Atmosphere

According to the U.S. Department of Energy, buildings use 39% of the energy and 74% of the electricity produced each year in the United States. The Energy and Atmosphere credit category encourages a wide variety of energy strategies: commissioning; energy use monitoring; efficient design and construction; efficient appliances, systems and lighting; the use of renewable and clean sources of energy, generated on-site or off-site; and other innovative practices.

The points which the Proposed Project hopes to achieve in this category are listed below:

EA 1.1 Minimum Energy Performance for Mid-Rise: (Prerequisite)
- The Proposed Project will exceed the 15% minimum reduction in energy use according to the ASHRAE90.1 simulation.

EA 1.2 Testing and Verification for Mid-Rise: (Prerequisite)
- The Proposed Project intends to comply with Option 1, Testing & Verification protocol.

EA 1.3 Optimize Energy Performance for Mid-Rise: (5 credits)
- The Proposed Project intends to reach at least a 20% better than reference in the ASHRAE with EPA simulation modeling.

EA 7.2 Pipe Insulation: (1 credit)
- All domestic hot water piping will have R4 pipe insulation installed.

EA 11.1 Refrigerant Charge Test: (Prerequisite)

- All refrigerant lines for air conditioning will be third-party charge tested per manufacturer's standards.

EA 11.2 Appropriate HVAC Refrigerants: (1 credit)

- R410A refrigerant will used on space cooling systems.

3.6.7 Materials and Resources

During both construction and operations, buildings generate a lot of waste and use a lot of materials and resources. This credit category encourages the selection of sustainable materials, including those that are harvested and manufactured locally, contain high-recycled content, and are rapidly renewable. It also promotes the reduction of waste through building and material reuse, construction waste management, and ongoing recycling programs.

The points which the Proposed Project hopes to achieve in this category are listed below:

MR 1.1 Framing Order Waste Factor: (Prerequisite)

- A calculation of the wood necessary to frame the building and orders of the amount of wood purchased will be made. Orders are not expected to exceed the calculation by more than 10%.

MR 1.5 Off-Site Fabrication: (4 credits)

- Panelized construction is proposed to be used in this Project.

MR 2.1 FSC Certified Tropical Woods: (Prerequisite)

- Suppliers will be notified of preference for FSC products and requested to provide information for the country of origin for each wood product. Any tropical woods used will be FSC Certified.

MR 2.2 Environmentally Preferable Products (min. 3 credits)

- The Proposed Project will select environmentally preferable products in accordance with the EPP table to earn a minimum of 3 credits.

MR 3.1 Construction Waste Management Planning: (Prerequisite)

- The Proposed Project will investigate any recycling opportunities in the area and document the waste diverted from the landfill.

MR 3.2 Construction Waste Reduction: (1 credit)

- The Proposed Project will limit the total amounts of waste that will go to the landfill by targeting a 50% reduction.

3.6.8 Indoor Environmental Quality

The U.S. Environmental Protection Agency estimates that Americans spend about 90% of their day indoors, where the air quality can be significantly worse than outside. The Indoor Environmental Quality credit category promotes strategies that can improve indoor air through low emitting materials selection and increased ventilation. It also promotes access to natural daylight and views.

The points which the Proposed Project hopes to achieve in this category are listed below:

EQ 2 Basic Combustion Venting Measures for Mid-Rise: (Prerequisite)
- These measures are included in the design as requirements for basic code compliance in our region. There will be no fireplaces in any of the units and all other measures will be met.

EQ 4.1 Basic Outdoor Air Ventilation: (Prerequisite)
- Continuous ventilation will be provided to each unit to meet the ASHRAE 62.2 – 2007 and ASHRAE 62.1 – 2007 (sec. 4-7) ventilation standards.

EQ 5.1 Basic Local Exhaust: (Prerequisite)
- Bath fans and kitchen area exhaust fans will be ASHRAE 62.2 – 2007 compliant. All of the LEED and ENERGY STAR criteria will be met.

EQ 6.1 Room by Room Load Calculations: (Prerequisite)
- Room by room load calculations will be provided by the HVAC engineer or responsible party stating the calculations were performed according to ACCA Manual J and D.

EQ 7.2 Air Filtering: (Prerequisite)
- MERV 8 filters will be installed on ducted distribution systems.

EQ 8.1 Indoor Contaminant Control During Construction: (1 credit)
- All ductwork will be sealed throughout construction so that debris doesn't contaminate the distribution systems.

EQ 8.2 Indoor Contaminant Control for Mid-Rise (2 credits)
- The Proposed Project will install a central entryway system and in-unit shoe removal and storage near entryways.

EQ 8.3 Preoccupancy Flush (1 credit)
- The buildings will be flushed of airborne contaminants per LEED guidance prior to building turnover.

EQ 10.1 No HVAC in Garage: (Prerequisite)
- There will be no HVAC unit equipment located in the garage.

EQ 10.2 Minimize Pollutants from Garage: (2 credits)

- All penetrations, cracks at base of walls, as well as joist bays will be sealed.
- At conditioned spaces, all doors will be weather-stripped.
- CO detectors will be installed at stairwell leading from garage to living space.

EQ 11 Environmental Tobacco Smoke Control (0.5 credit)

- Restrictions on public smoking will be implemented to reduce smoke exposure and transfer.

EQ 12.1 Compartmentalization of Units (Prerequisite)

- A thorough air-sealing protocol will be implemented to ensure leakage below 0.30 CFM50 per sq. ft. of enclosure.

3.6.9 Awareness and Education

The points which the Proposed Project hopes to achieve in this category are listed below:

AE 1.1 Education of the Homeowner: (Prerequisite)

- An electronic Home Owner's Manual will be created and provided to all occupants.
- A one-hour walk through will be conducted with the occupants in group trainings.

AE 1.3 Public Awareness: (1 credit)

- The Proponent will create a website about the project, highlighting the benefits of LEED Homes.
- The Proponent will work with regional publications on a newspaper article about the Proposed Project.
- The contractor's project sign will include LEED for Homes signage at the exterior of the building site.

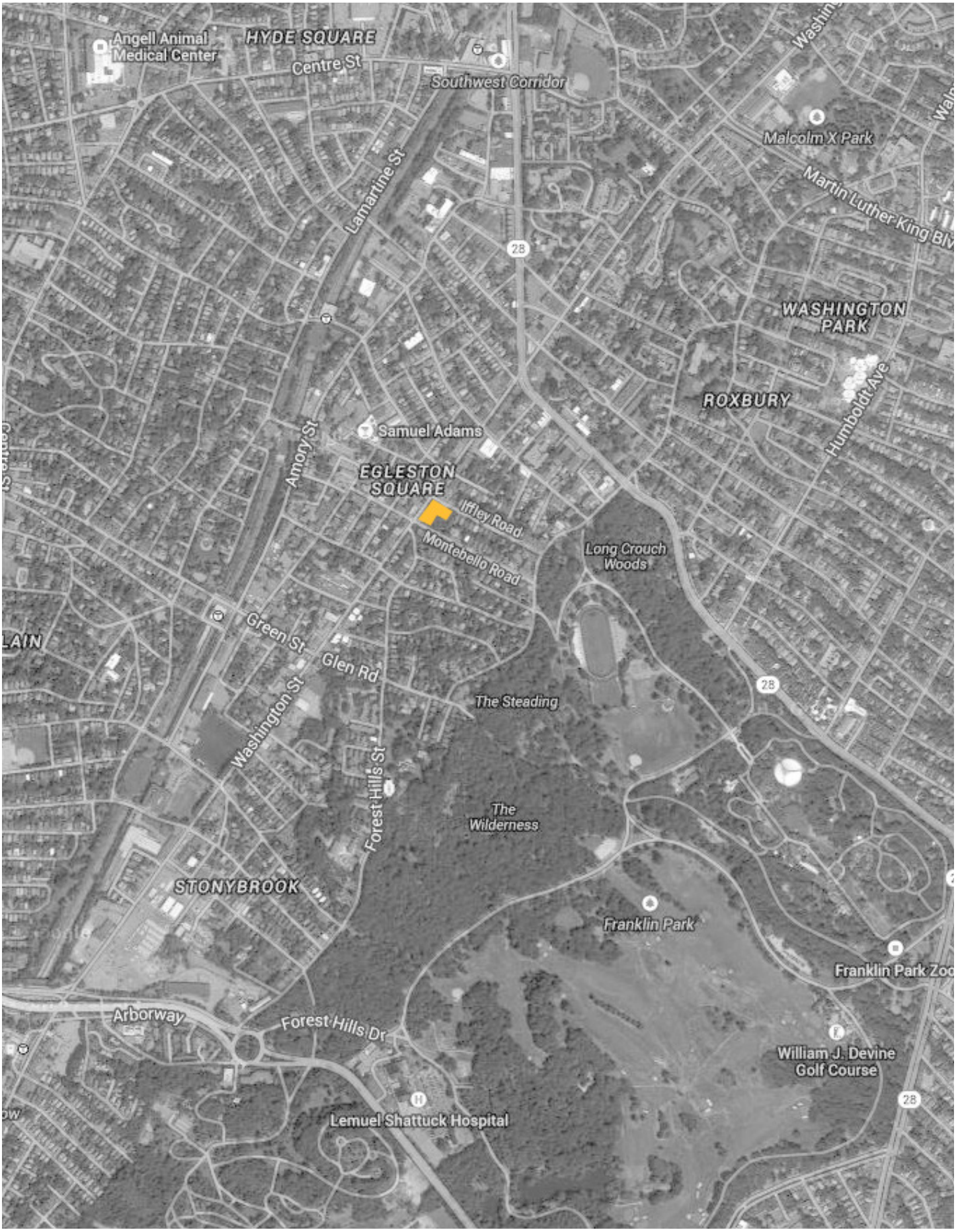
AE 2 Education of the Building Manager: (1 credit)

- An operations and training manual will be created and provided to the building manager and a one-hour walk-through will be conducted with the building manager.

3.7 Urban Design Drawings and LEED Checklist

A listing of the urban design drawings and perspectives, and the LEED Checklist is contained below with the figures on the following pages:

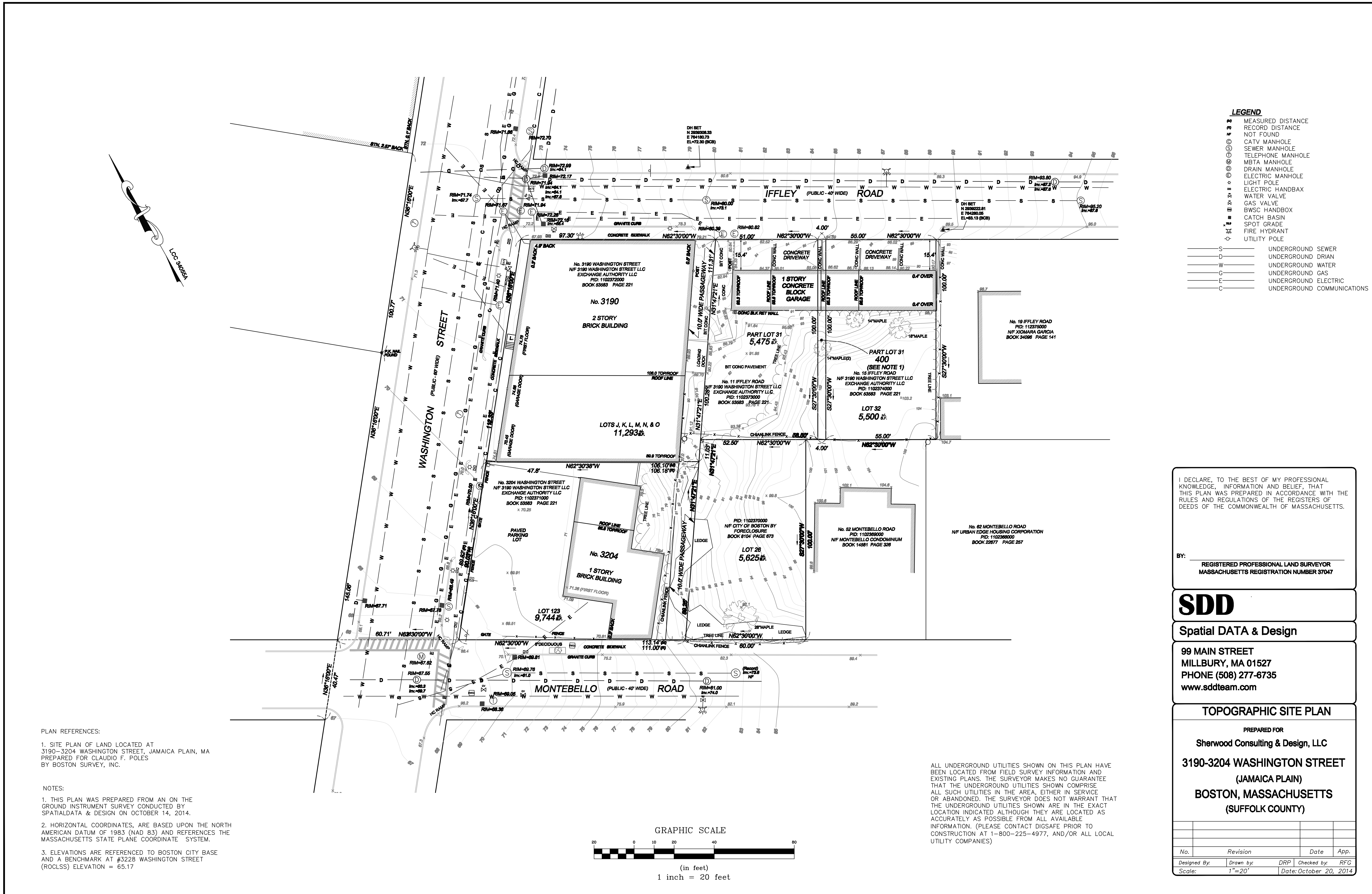
Figure 3.1: Locus Plan
Figure 3.2: Existing Site Survey
Figure 3.3: Existing Conditions Photographs
Figure 3.4: Existing Conditions Photographs
Figure 3.5: Existing Conditions Photographs
Figure 3.6: Site Plan
Figure 3.7: First Floor/Landscape Plan
Figure 3.8: Second Floor/Landscape Plan
Figure 3.9: Typical Floor Plans - Third and Fourth Floors
Figure 3.10: Typical Floor Plans – Fifth and Sixth Floors
Figure 3.11: Floor Plans - Mezzanine Floor and Roof
Figure 3.12: Longitudinal Section: AA Section – Washington Street
Figure 3.13: Cross Section: BB Section – Iffley Road
Figure 3.14: Elevations – Washington Street and Iffley Road
Figure 3.15: Elevations – Montebello Road and East Facade
Figure 3.16: Existing Condition Photographs for Renderings
Figure 3.17: Project Renderings - Washington Street Looking North
Figure 3.18: Project Rendering – Montebello Road Looking West
Figure 3.19: Project Rendering – Iffley Road Looking West
Figure 3.20: Project Rendering – Washington Street Looking South
Figure 3.21: Project Rendering – Corner of Washington Street and Montebello Road
Figure 3.22: LEED for Homes Simplified Project Checklist
Figure 3.23: LEED for Homes Mid-rise Simplified Project Checklist



RODE

LOCUS PLAN
3200 Washington Street

Figure 3.1



LEGEND
MEASURED DISTANCE
RECORD DISTANCE
NOT FOUND
CATV MANHOLE
SEWER MANHOLE
TELEPHONE MANHOLE
MBTA MANHOLE
DRAIN MANHOLE
ELECTRIC MANHOLE
LIGHT POLE
ELECTRIC HANDBAX
WATER VALVE
GAS VALVE
BWSC HANDBOX
CATCH BASIN
SPOT GRADE
FIRE HYDRANT
UTILITY POLE
UNDERGROUND SEWER
UNDERGROUND DRIAN
UNDERGROUND WATER
UNDERGROUND GAS
UNDERGROUND ELECTRIC
UNDERGROUND COMMUNICATIONS
IFFLEY (PUBLIC - 40' WIDE) ROAD
WASHINGTON (PUBLIC - 60' WIDE) STREET
MONTEBELLO (PUBLIC - 40' WIDE) ROAD
No. 3190 2 STORY BRICK BUILDING
LOTS J, K, L, M, N, & O 11,293±
No. 3204 1 STORY BRICK BUILDING
LOT 123 9,744±
PAVED PARKING LOT
1 STORY CONCRETE BLOCK GARAGE
PART LOT 31 5,475±
PART LOT 31 400 (SEE NOTE 1)
LOT 32 5,500±
LOT 26 5,625±
10.0' WIDE PASSAGEWAY
PLAN REFERENCES:
1. SITE PLAN OF LAND LOCATED AT 3190-3204 WASHINGTON STREET, JAMAICA PLAIN, MA PREPARED FOR CLAUDIO F. POLES BY BOSTON SURVEY, INC.
NOTES:
1. THIS PLAN WAS PREPARED FROM AN ON THE GROUND INSTRUMENT SURVEY CONDUCTED BY SPATIALDATA & DESIGN ON OCTOBER 14, 2014.
2. HORIZONTAL COORDINATES, ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983 (NAD 83) AND REFERENCES THE MASSACHUSETTS STATE PLANE COORDINATE SYSTEM.
3. ELEVATIONS ARE REFERENCED TO BOSTON CITY BASE AND A BENCHMARK AT #3228 WASHINGTON STREET (ROCLSS) ELEVATION = 65.17
GRAPHIC SCALE
(in feet)
1 inch = 20 feet
ALL UNDERGROUND UTILITIES SHOWN ON THIS PLAN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING PLANS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM ALL AVAILABLE INFORMATION. (PLEASE CONTACT DIGSAFE PRIOR TO CONSTRUCTION AT 1-800-225-4977, AND/OR ALL LOCAL UTILITY COMPANIES)
I DECLARE, TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, THAT THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS OF THE COMMONWEALTH OF MASSACHUSETTS.
BY:
REGISTERED PROFESSIONAL LAND SURVEYOR
MASSACHUSETTS REGISTRATION NUMBER 37047
SDD
Spatial DATA & Design
99 MAIN STREET
MILLBURY, MA 01527
PHONE (508) 277-6735
www.sddteam.com
TOPOGRAPHIC SITE PLAN
PREPARED FOR
Sherwood Consulting & Design, LLC
3190-3204 WASHINGTON STREET
(JAMAICA PLAIN)
BOSTON, MASSACHUSETTS
(SUFFOLK COUNTY)
No. Revision Date App.
Designed By: Drawn by: DRP Checked by: RFG
Scale: 1"=20' Date: October 20, 2014

View of existing building from Iffley Road looking Southwest

View of existing building from property looking North

View of existing building from Montebello Road looking Northeast

View of existing building from Washington Street looking Southeast

Context view from the corner of Washington Street and Montebello Road

Context view from Iffley Road looking Northwest

RODE

SITE PLAN
3200 WASHINGTON STREET

Figure 3.6

RODE

1ST FLOOR / LANDSCAPE PLAN
3200 WASHINGTON STREET

0’ 10’ 20’ 40’ Figure 3.7

Room Legend

- 1 BEDROOM
- 2 BEDROOM
- 3 BEDROOM
- STUDIO

RODE

2ND FLOOR / LANDSCAPE PLAN
3200 WASHINGTON STREET

N 0' 10' 20' 40' Figure 3.8

3RD FLOOR PLAN

4TH FLOOR PLAN

Room Legend

- 1 BEDROOM
- 2 BEDROOM
- 3 BEDROOM
- STUDIO

5TH FLOOR PLAN

Room Legend

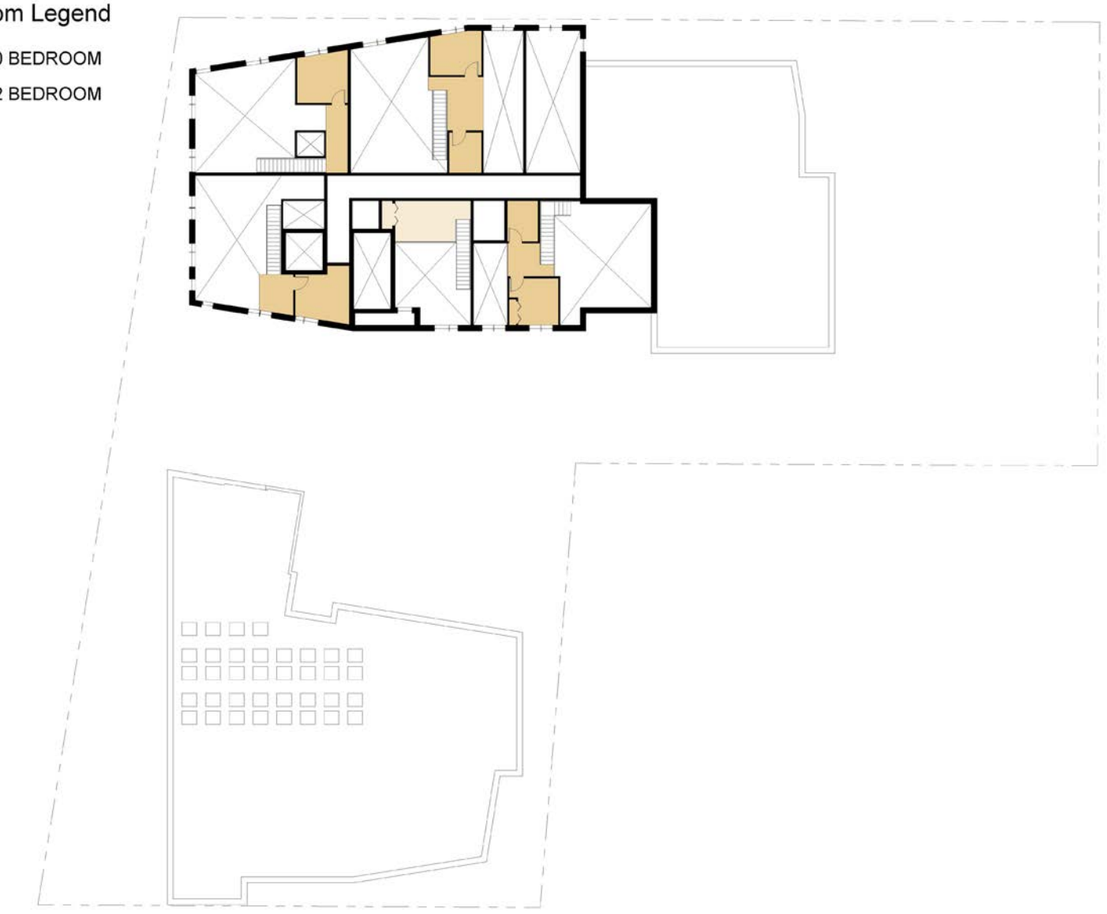
- 1 BEDROOM
- 2 BEDROOM
- 3 BEDROOM
- STUDIO

6TH FLOOR PLAN

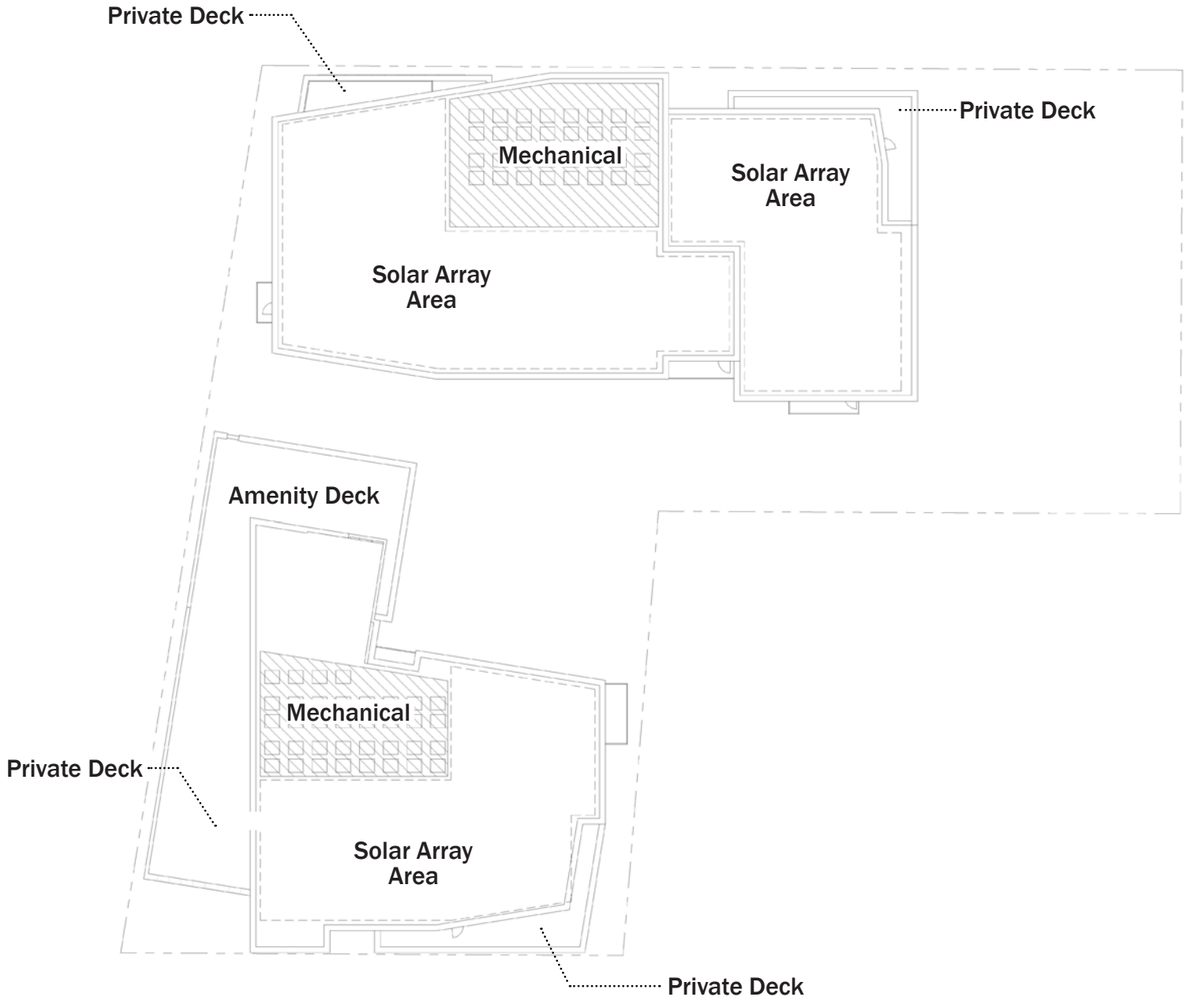
Room Legend

0 BEDROOM

2 BEDROOM

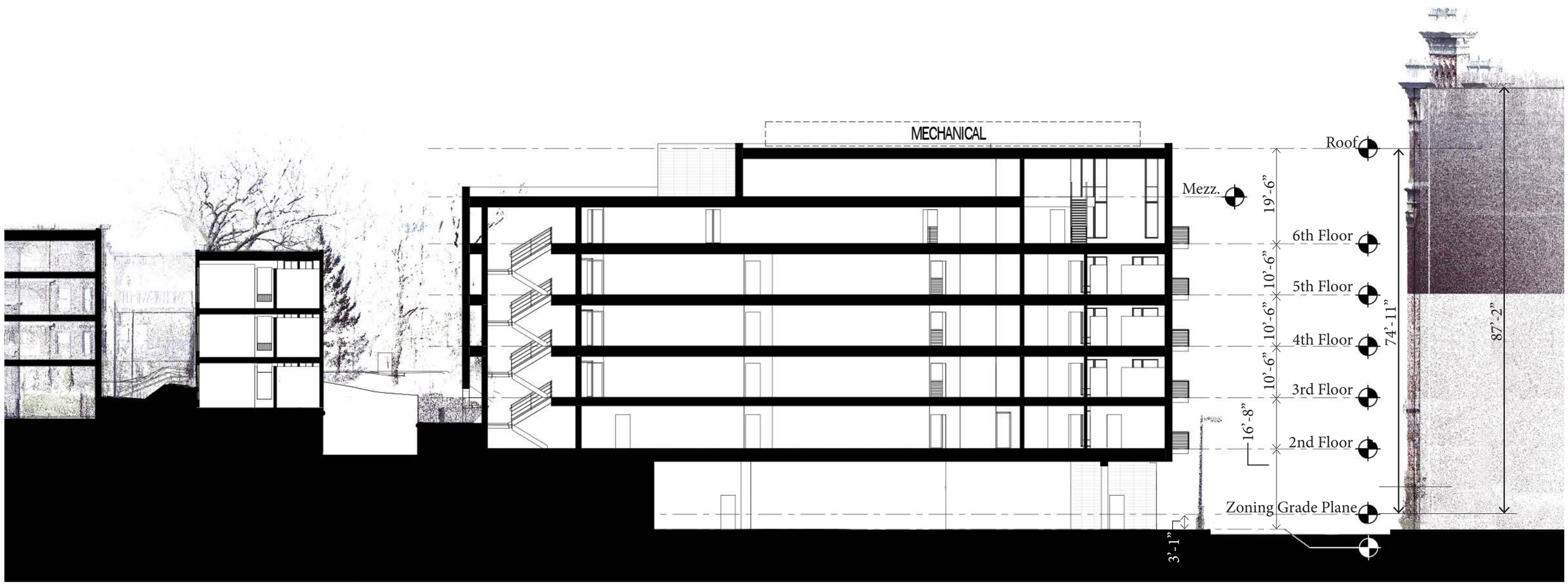


MEZZANINE PLAN



ROOF PLAN

AA SECTION - WASHINGTON STREET



BB SECTION - IFFLEY ROAD

RODE

CROSS SECTION
3200 WASHINGTON STREET

0' 5' 10' 20' 40'

Figure 3.13

ELEVATION - WASHINGTON STREET

ELEVATION - IFFLEY ROAD

ELEVATION - MONTEBELLO ROAD

ELEVATION - EAST FACADE

WASHINGTON STREET LOOKING NORTH

MONTEBELLO RD LOOKING WEST

IFFLEY ROAD LOOKING WEST

WASHINGTON STREET LOOKING SOUTH

WASHINGTON STREET LOOKING NORTH

MONTEBELLO RD LOOKING WEST

RODE

PROJECT RENDERING
3200 WASHINGTON STREET

Figure 3.18

IFFLEY RD LOOKING WEST

RODE

PROJECT RENDERING
3200 WASHINGTON STREET

Figure 3.19

WASHINGTON STREET LOOKING SOUTH

RODE

PROJECT RENDERING
3200 WASHINGTON STREET

Figure 3.20

CORNER OF WASHINGTON ST & MONTEBELLO RD

RODE

PROJECT RENDERING
3200 WASHINGTON STREET

Figure 3.21

LEED for Homes Simplified Project Checklist

for Homes

Builder Name:	*To Be Determined*
Project Team Leader (if different):	*Kevin Deabler, RODE Architects*
Home Address (Street/City/State):	*10 Iffley Rd, Boston, MA*

Project Description:

Building type: ***Multi-family*** Project type: ***Multi-family De***

# of units: ***3*** Avg. Home Size Adjustment: ***-10***

Adjusted Certification Thresholds

Certified: ***35.0*** Gold: ***65.0***

Silver: ***50.0*** Platinum: ***80.0***

Project Point Total

Prelim: *78 + 15 maybe pts* Final: *25.5*

Certification Level

Prelim: *Gold* Final: *Not Certified*

Final Credit Category Total Points

ID: 0 *SS: 8* *EA: 16* *EQ: 0*

LL: 0 *WE: 0* *MR: 1.5* *AE: 0*

Minimum Point Thresholds Not Met for Final Rating

date last updated :

last updated by :

					Max Points	Project Points Preliminary			Final
Innovation and Design Process (ID)			(No Minimum Points Required)		Max	Y/Pts	Maybe	No	Y/Pts
1. Integrated Project Planning		1.1	Preliminary Rating		Prereq				
		1.2	Integrated Project Team		1	1	0		0
		1.3	Professional Credentialed with Respect to LEED for Homes		1	0	0	N	0
		1.4	Design Charrette		1	0	1		0
		1.5	Building Orientation for Solar Design		1	0	0	N	0
2. Durability Management Process		2.1	Durability Planning		Prereq	Y			
		2.2	Durability Management		Prereq	Y			
		2.3	Third-Party Durability Management Verification		3	3	0		0
3.Innovative or Regional Design	✎	3.1	Innovation #1 _____		1	0	1		0
	✎	3.2	Innovation #2 _____		1		0	N	0
	✎	3.3	Innovation #3 _____		1	0	0	N	0
	✎	3.4	Innovation #4		1	0	0	N	0
			Sub-Total for ID Category:		**11**	4	2		0
Location and Linkages (LL)			(No Minimum Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. LEED ND		1	LEED for Neighborhood Development	**LL2-6**	10	0	0	N	0
2. Site Selection	✎	2	Site Selection		2	2	0		0
3. Preferred Locations		3.1	Edge Development	**LL 3.2**	1	0	0	N	0
		3.2	Infill		2	2	0		0
		3.3	Previously Developed		1	0	1		0
4. Infrastructure		4	Existing Infrastructure		1	1	0		0
5. Community Resources/ Transit		5.1	Basic Community Resources / Transit	**LL 5.2, 5.3**	1	0	0	N	0
		5.2	Extensive Community Resources / Transit	**LL 5.3**	2	0	0	N	0
		5.3	Outstanding Community Resources / Transit		3	3	0		0
6. Access to Open Space		6	Access to Open Space		1	1	0		0
			Sub-Total for LL Category:		**10**	9	1		0
Sustainable Sites (SS)			(Minimum of 5 SS Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Site Stewardship		1.1	Erosion Controls During Construction		Prereq	Y			
		1.2	Minimize Disturbed Area of Site		1	1	0		0
2. Landscaping	✎	2.1	No Invasive Plants		Prereq	Y			
	✎	2.2	Basic Landscape Design	**SS 2.5**	2	2	0		0
	✎	2.3	Limit Conventional Turf	**SS 2.5**	3	2	0		2
	✎	2.4	Drought Tolerant Plants	**SS 2.5**	2	2	0		2
	✎	2.5	Reduce Overall Irrigation Demand by at Least 20%		6	0	0	N	0
3. Local Heat Island Effects	✎	3	Reduce Local Heat Island Effects		1	0	1		0
4. Surface Water Management	✎	4.1	Permeable Lot		4	3	0		0
		4.2	Permanent Erosion Controls		1	1	0		0
	✎	4.3	Management of Run-off from Roof		2	2	0		0
5. Nontoxic Pest Control		5	Pest Control Alternatives		2	0	0	N	0
6. Compact Development		6.1	Moderate Density	**SS 6.2, 6.3**	2	0	0	N	0
		6.2	High Density	**SS 6.3**	3	0	0	N	0
		6.3	Very High Density		4	4	0		4
			Sub-Total for SS Category:		**22**	17	1		8

Figure 3.22: LEED for Homes Simplified Project Checklist

LEED for Homes Simplified Project Checklist (continued)

					Max Points	Project Points Preliminary			Final
Water Efficiency (WE)			(Minimum of 3 WE Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Water Reuse		1.1	Rainwater Harvesting System	**WE 1.3**	4	0	0	N	0
		1.2	Graywater Reuse System	**WE 1.3**	1	0	0	N	0
		1.3	Use of Municipal Recycled Water System		3	0	0	N	0
2. Irrigation System	✎	2.1	High Efficiency Irrigation System	**WE 2.3**	3	3	0		0
		2.2	Third Party Inspection	**WE 2.3**	1	1	0		0
	✎	2.3	Reduce Overall Irrigation Demand by at Least 45%		4	0	0	N	0
3. Indoor Water Use		3.1	High-Efficiency Fixtures and Fittings		3	1	0		0
		3.2	Very High Efficiency Fixtures and Fittings		6	4	0		0
				Sub-Total for WE Category:	**15**	9	0		0
Energy and Atmosphere (EA)			(Minimum of 0 EA Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Optimize Energy Performance		1.1	Performance of ENERGY STAR for Homes		Prereq	Y			
		1.2	Exceptional Energy Performance		34	16	0		16
7. Water Heating	✎	7.1	Efficient Hot Water Distribution		2	0	2		0
		7.2	Pipe Insulation		1	1	0		0
11. Residential Refrigerant Management		11.1	Refrigerant Charge Test		Prereq	Y			
		11.2	Appropriate HVAC Refrigerants		1	1	0		0
				Sub-Total for EA Category:	**38**	18	2		16
Materials and Resources (MR)			(Minimum of 2 MR Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Material-Efficient Framing		1.1	Framing Order Waste Factor Limit		Prereq	Y			
		1.2	Detailed Framing Documents	**MR 1.5**	1	0	0	N	0
		1.3	Detailed Cut List and Lumber Order	**MR 1.5**	1	0	0	N	0
		1.4	Framing Efficiencies	**MR 1.5**	3	0	0	N	0
		1.5	Off-site Fabrication		4	4	0		0
2. Environmentally Preferable Products	✎	2.1	FSC Certified Tropical Wood		Prereq	Y			
	✎	2.2	Environmentally Preferable Products		8	3	3		0
3. Waste Management		3.1	Construction Waste Management Planning		Prereq				
		3.2	Construction Waste Reduction		3	1	1		1.5
				Sub-Total for MR Category:	**16**	8	4		1.5
Indoor Environmental Quality (EQ)			(Minimum of 6 EQ Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. ENERGY STAR with IAP		1	ENERGY STAR with Indoor Air Package		13	0	0	N	0
2. Combustion Venting		2.1	Basic Combustion Venting Measures	**EQ 1**	Prereq	Y			
		2.2	Enhanced Combustion Venting Measures	**EQ 1**	2	2	0		0
3. Moisture Control		3	Moisture Load Control	**EQ 1**	1	0	0	N	0
4. Outdoor Air Ventilation	✎	4.1	Basic Outdoor Air Ventilation	**EQ 1**	Prereq	Y			
	✎	4.2	Enhanced Outdoor Air Ventilation		2	0	0	N	0
		4.3	Third-Party Performance Testing	**EQ 1**	1	0	1		0
5. Local Exhaust	✎	5.1	Basic Local Exhaust	**EQ 1**	Prereq	Y			
		5.2	Enhanced Local Exhaust		1	1	0		0
		5.3	Third-Party Performance Testing		1	0	1		0
6. Distribution of Space Heating and Cooling	✎	6.1	Room-by-Room Load Calculations	**EQ 1**	Prereq	Y			
		6.2	Return Air Flow / Room by Room Controls	**EQ 1**	1	0	0	N	0
		6.3	Third-Party Performance Test / Multiple Zones	**EQ 1**	2	0	2		0
7. Air Filtering		7.1	Good Filters	**EQ 1**	Prereq	Y			
		7.2	Better Filters	**EQ 7.3**	1	0	1		0
		7.3	Best Filters		2	0	0	N	0
8. Contaminant Control	✎	8.1	Indoor Contaminant Control during Construction	**EQ 1**	1	1	0		0
		8.2	Indoor Contaminant Control		2	2	0		0
	✎	8.3	Preoccupancy Flush	**EQ 1**	1	1	0		0
9. Radon Protection	✎	9.1	Radon-Resistant Construction in High-Risk Areas	**EQ 1**	Prereq	N/A			
	✎	9.2	Radon-Resistant Construction in Moderate-Risk Areas	**EQ 1**	1	0	0	N	0
10. Garage Pollutant Protection		10.1	No HVAC in Garage	**EQ 1**	Prereq	Y			
		10.2	Minimize Pollutants from Garage	**EQ 1, 10.4**	2	0	0	N	0
		10.3	Exhaust Fan in Garage	**EQ 1, 10.4**	1	0	0	N	0
		10.4	Detached Garage or No Garage	**EQ 1**	3	3	0		0
				Sub-Total for EQ Category:	**21**	10	5		0
Awareness and Education (AE)			(Minimum of 0 AE Points Required)		Max	Y/Pts	Maybe	No	Y/Pts
1. Education of the Homeowner or Tenant	✎	1.1	Basic Operations Training		Prereq	Y			
	✎	1.2	Enhanced Training		1	1	0		0
		1.3	Public Awareness		1	1	0		0
2. Education of Building Manager	✎	2	Education of Building Manager		1	1	0		0
				Sub-Total for AE Category:	**3**	3	0		0

LEED for Homes Simplified Project Checklist

Addendum: Prescriptive Approach for Energy and Atmosphere (EA) Credits

Points cannot be earned in both the Prescriptive (below) and the Performance Approach (pg 2) of the EA section.

Energy and Atmosphere (EA)			(No Minimum Points Required)	OR	Max Points Max	Project Points Preliminary Y/Pts	Preliminary Maybe	Preliminary No	Final Y/Pts
2. Insulation		2.1	Basic Insulation		Prereq				
		2.2	Enhanced Insulation		2	*0*	*0*		***0***
3. Air Infiltration		3.1	Reduced Envelope Leakage		Prereq				
		3.2	Greatly Reduced Envelope Leakage		2	*0*	*0*		***0***
		3.3	Minimal Envelope Leakage	**EA 3.2**	3	*0*	*0*		***0***
4. Windows		4.1	Good Windows		Prereq				
		4.2	Enhanced Windows		2	*0*	*0*		***0***
		4.3	Exceptional Windows	**EA 4.2**	3	*0*	*0*		***0***
5. Heating and Cooling Distribution System		5.1	Reduced Distribution Losses		Prereq				
		5.2	Greatly Reduced Distribution Losses		2	*0*	*0*		***0***
		5.3	Minimal Distribution Losses	**EA 5.2**	3	*0*	*0*		***0***
6. Space Heating and Cooling Equipment	✎	6.1	Good HVAC Design and Installation		Prereq				
		6.2	High-Efficiency HVAC		2	*0*	*0*		***0***
		6.3	Very High Efficiency HVAC	**EA 6.2**	4	*0*	*0*		***0***
7. Water Heating	✎	7.1	Efficient Hot Water Distribution		2	*0*	*0*		***0***
		7.2	Pipe Insulation		1	*0*	*0*		***0***
		7.3	Efficient Domestic Hot Water Equipment		3	*0*	*0*		***0***
8. Lighting		8.1	ENERGY STAR Lights		Prereq				
		8.2	Improved Lighting		2	*0*	*0*		***0***
		8.3	Advanced Lighting Package	**EA 8.2**	3	*0*	*0*		***0***
9. Appliances		9.1	High-Efficiency Appliances		2	*0*	*0*		***0***
		9.2	Water-Efficient Clothes Washer		1	*0*	*0*		***0***
10. Renewable Energy	✎	10	Renewable Energy System		10	*0*	*0*		***0***
11. Residential Refrigerant Management		11.1	Refrigerant Charge Test		Prereq				
		11.2	Appropriate HVAC Refrigerants		1	*0*	*0*		***0***
				Sub-Total for EA Category:	***38***	*18*	*2*		***16***

LEED for Homes Mid-rise Simplified Project Checklist

for Homes

Builder Name:	***To Be Determined***
Project Team Leader (if different):	***Kevin Deabler, RODE Architects***
Home Address (Street/City/State):	***3200 Washington Street, Boston, MA***

Project Description:

Building type: ***Mid-rise multi-family*** # of stories: ***7***

# of units: ***76*** Avg. Home Size Adjustment: ***-9***

Adjusted Certification Thresholds

Certified: ***36.0*** Gold: ***66.0***

Silver: ***51.0*** Platinum: ***81.0***

Project Point Total

Prelim: ***66 + 20 maybe pts*** Final: ***9.5***

Certification Level

Prelim: ***Gold*** Final: ***Not Certified***

Final Credit Category Total Points

ID: 0 SS: 1 EA: 7 EQ: 0

LL: 0 WE: 0 MR: 1.5 AE: 0

Minimum Point Thresholds Not Met for Final Rating

date last updated :

last updated by :

					Max Pts	Project Points Preliminary			Final
Innovation and Design Process (ID)			(No Minimum Points Required)		Max	Y/Pts	Maybe	No	Y/Pts
1. Integrated Project Planning		1.1	Preliminary Rating		Prereq	Y			
		1.2	Energy Expertise for MID-RISE		Prereq	Y			
		1.3	Professional Credentialed with Respect to LEED for Homes		1	0	0	N	0
		1.4	Design Charrette		1	0	1		0
		1.5	Building Orientation for Solar Design		1	0	0	N	0
		1.6	Trades Training for MID-RISE		1	0	1		0
2. Durability Management Process		2.1	Durability Planning		Prereq	Y			
		2.2	Durability Management		Prereq	Y			
		2.3	Third-Party Durability Management Verification		3	3	0		0
3.Innovative or Regional Design	✎	3.1	Innovation #1 _____		1	0	1		0
	✎	3.2	Innovation #2 _____		1	0	0		0
	✎	3.3	Innovation #3 _____		1	0	0		0
	✎	3.4	Innovation #4		1	0	0		0
				Sub-Total for ID Category:	**11**	3	3		0
Location and Linkages (LL)			(No Minimum Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. LEED ND		1	LEED for Neighborhood Development	**LL2-6**	10	0	0	N	0
2. Site Selection	✎	2	Site Selection		2	2	0		0
3. Preferred Locations		3.1	Edge Development		1	0	0	N	0
		3.2	Infill	**LL 3.1**	2	2	0		0
		3.3	Brownfield Redevelopment for MID-RISE		1	0	1		0
4. Infrastructure		4	Existing Infrastructure		1	1	0		0
5. Community Resources/ Transit		5.1	Basic Community Resources for MID-RISE		1	0	0	N	0
		5.2	Extensive Community Resources for MID-RISE	**LL 5.1, 5.3**	2	0	0	N	0
		5.3	Outstanding Community Resources for MID-RISE	**LL 5.1, 5.2**	3	3	0		0
6. Access to Open Space		6	Access to Open Space		1	1	0		0
				Sub-Total for LL Category:	**10**	9	1		0
Sustainable Sites (SS)			(Minimum of 5 SS Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Site Stewardship		1.1	Erosion Controls During Construction		Prerequisite	Y			
		1.2	Minimize Disturbed Area of Site for MID-RISE		1	1	0		0
2. Landscaping	✎	2.1	No Invasive Plants		Prerequisite	Y			
	✎	2.2	Basic Landscape Design	**SS 2.5**	1	1	0		0
	✎	2.3	Limit Conventional Turf for MID-RISE	**SS 2.5**	2	1	1		1
	✎	2.4	Drought Tolerant Plants for MID-RISE	**SS 2.5**	1	1	0		0
	✎	2.5	Reduce Overall Irrigation Demand by at Least 20% for MID-RISE		3	0	0	N	0
3. Local Heat Island Effects	✎	3.1	Reduce Site Heat Island Effects for MID-RISE		1	0	1		0
	✎	3.2	Reduce Roof Heat Island Effects for MID-RISE		1	1	0		0
4. Surface Water Management	✎	4.1	Permeable Lot for MID-RISE		2	1.5	0.5		0
		4.2	Permanent Erosion Controls		1	1	0		0
	✎	4.3	Stormwater Quality Control for MID-RISE		2	2	0		0
5. Nontoxic Pest Control		5	Pest Control Alternatives		2	0	0	N	0
6. Compact Development		6.1	Moderate Density for MID-RISE		2	0	0	N	0
		6.2	High Density for MID-RISE	**SS 6.1, 6.3**	3	0	0	N	0
		6.3	Very High Density for MID-RISE	**SS 6.1, 6.2**	4	4	0		
7. Alternative Transportation		7.1	Public Transit for MID-RISE		2	2	0		0
		7.2	Bicycle Storage for MID-RISE		1	1	0		0
		7.3	Parking Capacity/Low-Emitting Vehicles for MID-RISE		1	1	0		0
				Sub-Total for SS Category:	**22**	17.5	2.5		1

Figure 3.23: LEED for Homes Mid-Rise Simplified Project Checklist

LEED for Homes Mid-rise Pilot Simplified Project Checklist (continued)

					Max Pts	Project Points Preliminary			Final
Water Efficiency (WE)			(Minimum of 3 WE Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Water Reuse		1	Water Reuse for MID-RISE		5	0	0	N	0
2. Irrigation System		2.1	High Efficiency Irrigation System for MID-RISE	**WE 2.2**	2	2	0		0
		2.2	Reduce Overall Irrigation Demand by at Least 45% for MID-RISE		2	0	0	N	0
3. Indoor Water Use		3.1	High-Efficiency Fixtures and Fittings		3	1	1		0
		3.2	Very High Efficiency Fixtures and Fittings		6	4	0		0
		3.3	Water Efficient Appliances for MID-RISE		2	2	0		0
				Sub-Total for WE Category:	**15**	9	1		0
Energy and Atmosphere (EA)			(Minimum of 0 EA Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Optimize Energy Performance		1.1	Minimum Energy Performance for MID-RISE		Prereq	Y			
		1.2	Testing and Verification for MID-RISE		Prereq	Y			
		1.3	Optimize Energy Performance for MID-RISE		34	7			7
7. Water Heating		7.1	Efficient Hot Water Distribution		2	0	2		0
		7.2	Pipe Insulation		1	1	0		0
11. Residential Refrigerant		11.1	Refrigerant Charge Test		Prereq	Y			
Management		11.2	Appropriate HVAC Refrigerants		1	1	0		0
				Sub-Total for EA Category:	**38**	9	2		7
Materials and Resources (MR)			(Minimum of 2 MR Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
1. Material-Efficient Framing		1.1	Framing Order Waste Factor Limit		Prereq	Y			
		1.2	Detailed Framing Documents	**MR 1.5**	1	0	0	N	0
		1.3	Detailed Cut List and Lumber Order	**MR 1.5**	1	0	0	N	0
		1.4	Framing Efficiencies	**MR 1.5**	3	0	0	N	0
		1.5	Off-site Fabrication		4	4	0		0
2. Environmentally Preferable		2.1	FSC Certified Tropical Wood		Prereq	Y			
Products		2.2	Environmentally Preferable Products		8	3	3		0
3. Waste Management		3.1	Construction Waste Management Planning		Prereq	Y			
		3.2	Construction Waste Reduction		3	1	1		1.5
				Sub-Total for MR Category:	**16**	8	4		1.5
Indoor Environmental Quality (EQ)			(Minimum of 6 EQ Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts
2. Combustion Venting		2	Basic Combustion Venting Measures		Prereq	Y			
3. Moisture Control		3	Moisture Load Control		1	0	0	N	0
4. Outdoor Air Ventilation		4.1	Basic Outdoor Air Ventilation for MID-RISE		Prereq	Y			
		4.2	Enhanced Outdoor Air Ventilation for MID-RISE		2	0	0	N	0
		4.3	Third-Party Performance Testing for MID-RISE		1	0	1		0
5. Local Exhaust		5.1	Basic Local Exhaust		Prerequisite	Y			
		5.2	Enhanced Local Exhaust		1	1	0		0
		5.3	Third-Party Performance Testing		1	0	1		0
6. Distribution of Space		6.1	Room-by-Room Load Calculations		Prereq	Y			
Heating and Cooling		6.2	Return Air Flow / Room by Room Controls		1	0	0	N	0
		6.3	Third-Party Performance Test / Multiple Zones		2	0	2		0
7. Air Filtering		7.1	Good Filters		Prereq	Y			
		7.2	Better Filters	**EQ 7.3**	1	0	1		0
		7.3	Best Filters		2	0	0	N	0
8. Contaminant Control		8.1	Indoor Contaminant Control during Construction		1	1	0		0
		8.2	Indoor Contaminant Control for MID-RISE		2	2	0		0
		8.3	Preoccupancy Flush		1	1	0		0
9. Radon Protection		9.1	Radon-Resistant Construction in High-Risk Areas		Prereq	N/A			
		9.2	Radon-Resistant Construction in Moderate-Risk Areas		1	0	0	N	0
10. Garage Pollutant Protection		10.1	No HVAC in Garage for MID-RISE		Prereq	Y			
		10.2	Minimize Pollutants from Garage for MID-RISE	**EQ 10.3**	2	2	0		0
		10.3	Detached Garage or No Garage for MID-RISE		3	0	0	N	0
11. ETS Control		11	Environnmental Tobacco Smoke Reduction for MID-RISE		1	0.5	0.5		0
12. Compartmentalization		12.1	Compartmentalization of Units		Prereq	Y			
of Units		12.2	Enhanced Compartmentalization of Units		1	0	1		0
				Sub-Total for EQ Category:	**21**	7.5	6.5		0
Awareness and Education (AE)			(Minimum of 0 AE Points Required)		Max	Y/Pts	Maybe	No	Y/Pts
1. Education of the		1.1	Basic Operations Training		Prereq	Y			
Homeowner or Tenant		1.2	Enhanced Training		1	1	0		0
		1.3	Public Awareness		1	1	0		0
2. Education of Building Manager		2	Education of Building Manager		1	1	0		0
				Sub-Total for AE Category:	**3**	3	0		0

4.0 ENVIRONMENTAL PROTECTION COMPONENT

4.1 Shadow Impacts Analysis

4.1.1 Introduction

The following shadow analysis was prepared to analyze the shade impact of the project on the surrounding neighborhood. It was used to avoid adverse conditions for the neighborhood. In accordance with BRA development review guidelines, the following times and dates were evaluated as a sample representative of the shadow cycle throughout a year.

Time of Year/Date	Time of Day
Vernal Equinox (March 21)	9:00 am, 12:00 noon, 3:00 pm
Summer Solstice (June 22)	9:00 am, 12:00 noon, 3:00 pm, 6:00 pm
Autumnal Equinox (September 21)	9:00am, 12:00noon, 3:00pm, 6:00 pm
Winter Solstice (December 21)	9:00 am, 12:00 noon, 3:00 pm

4.1.2 Vernal Equinox (March 21)

Figure 4.1 depicts shadows on March 21 during three time periods.

At 9:00 am shadows extend across Washington Street and fall mostly into the parking lot in front of the storage center.

At 12:00 noon, the shadows fall mostly into the Washington/Iffley intersection and on the sidewalk across from the site on Iffley.

At 3:00 pm the shadows extend onto Iffley, a parking lots and garages across the street. Some shadow is also cast into the wooded parcel east of the site.

4.1.3 Summer Solstice (June 21)

Figure 4.2 depicts shadow impacts on June 21 during four time periods.

At 9:00 am shadows fall onto Washington Street only.

At 12:00 noon, shadows fall onto Washington Street and Iffley Road.

A t 3:00 pm, shadows fall across Iffley Road and touch on side of the neighboring triple decker at 12 Iffley Road.

At 6:00 pm, shadows extend up the sidewalk on Iffley road, and cover portions of the west facades of 12 Iffley and 52 Montebello Road. However, this coverage is similar to the shadows caused by other buildings on these roads.

4.1.4 Autumnal Equinox (September 21)

Figure 4.3 depicts shadow impacts on September 21 during four time periods.

At 9:00 am shadows extend across Washington Street and fall mostly into the parking lot in front of the storage center.

At 12:00 noon, the shadows fall mostly into the Washington/Iffley intersection and on the sidewalk across from the site on Iffley.

At 3:00 pm the shadows extend across Iffley onto the adjacent parking lots. Some shadow is also cast into the wooded parcel east of the site.

At 6:00 pm the shadows extend across Iffley, shading elevations from 18 to 26 Iffley Road, as well as the west façade of 19 Iffley. Shadows cast throughout the neighborhood at this point are very long; many buildings are completely shaded.

4.1.5 Winter Solstice (December 21)

Figure 4.4 depicts shadow impacts on December 21 during three time periods. Winter sun casts the longest shadows of the year.

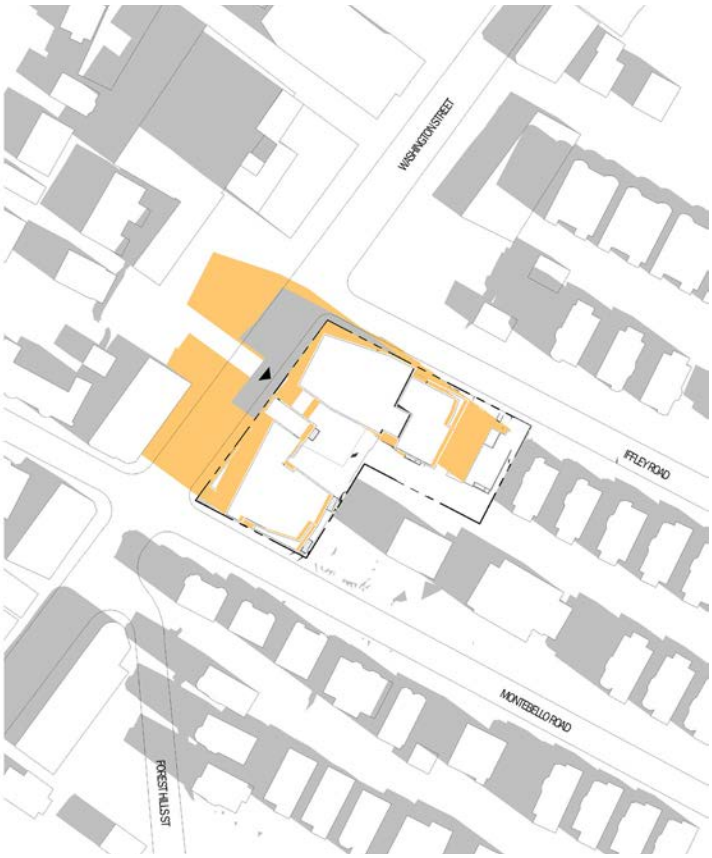
At 9:00 am shadows cross Washington Street, mostly covering the adjacent parking garage and half of the commercial building at 3193 Washington Street. New shadows also touch on 35 and 41 Haverford Street, both heavily shadowed already.

At 12:00 noon, shadows fall mostly onto the Washington/Iffley intersection and in the parking lot across Iffley Road.

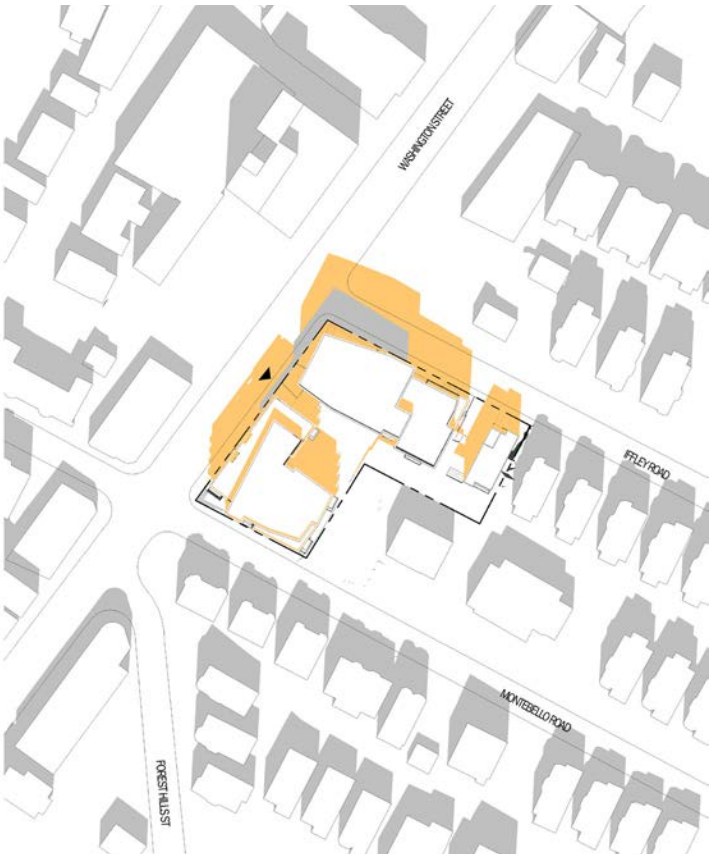
At 3:00 pm, shadows extend across Iffley, notably causing shadow on the south façade of the commercial building at 1 Chilcott Place and the south façade of residence 18 Iffley Road.

4.1.6 Summary

New shadows introduced by the Proposed Project fall primarily in the adjacent parking lots across Washington Street and Iffley Road. When the shadows impact neighboring residences, it is a similar coverage to the shadows cast by existing buildings in the neighborhood. Our analysis does not account for foliage shadows; only building shadows and site topography.



9:00 AM Azimuth 125.75° Elevation 33.11°



12:00 PM Azimuth 183.24° Elevation 48.01°

3:00 PM Azimuth 238.35° Elevation 30.52°

RODE

SHADOW STUDY
3200 Washington Street

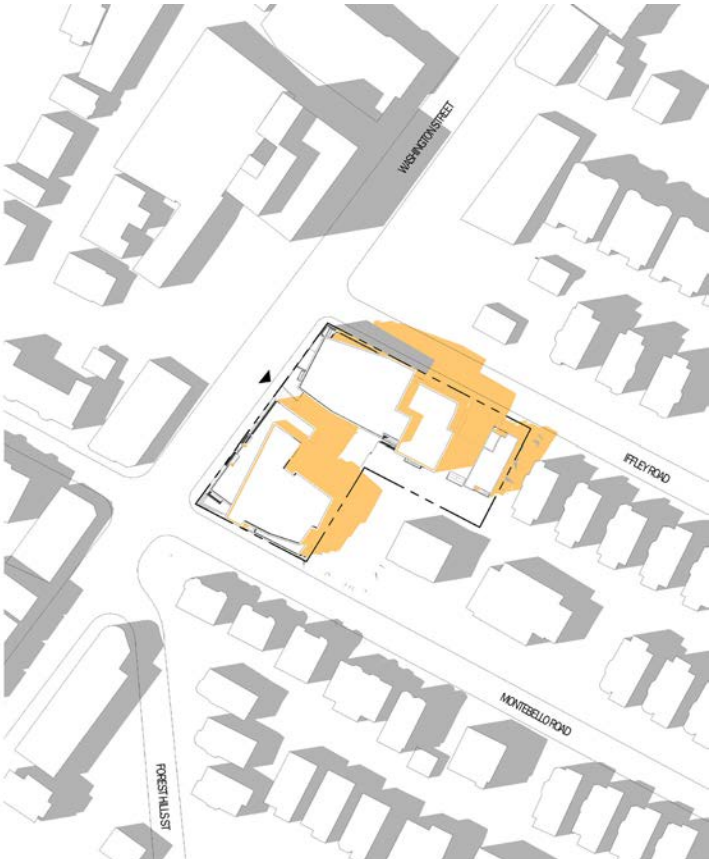
Net New Shadow
Existing Shadow

N

Figure 4.1

9:00 AM Azimuth 105.49° Elevation 50.84°

12:00 PM Azimuth 189.67° Elevation 70.87°



3:00 PM Azimuth 260.38° Elevation 45.88°

6:00 PM Azimuth 289.85° Elevation 13.2°

RODE

SHADOW STUDY
3200 Washington Street

Net New Shadow
Existing Shadow

N

Figure 4.2

9:00 AM Azimuth 129.02° Elevation 35.37°

12:00 PM Azimuth 188.49° Elevation 47.89°

3:00 PM Azimuth 241.49° Elevation 28.31°

6:00 PM Azimuth 274.18° Elevation -3.84°
(astronomical twilight at -18°)

RODE

SHADOW STUDY
3200 Washington Street

Net New Shadow
Existing Shadow

N

Figure 4.3

9:00 AM Azimuth 141.98° Elevation 14.36°

12:00 PM Azimuth 184.43° Elevation 24.12°

3:00 PM Azimuth 225.01° Elevation 10.07°

RODE

SHADOW STUDY
3200 Washington Street

Net New Shadow
Existing Shadow

N

Figure 4.4

4.2 Air Quality

Tech Environmental, Inc. performed air quality analyses for the proposed mixed-use residential / retail development at 3200 Washington Street in Boston, MA. These analyses consisted of: 1) an evaluation of existing air quality; 2) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's parking garages, and 3) a microscale CO analysis for intersections in the Project area that meet the BRA criteria for requiring such an analysis.

Tech Environmental, Inc. performed air quality analyses for the proposed mixed-use residential/retail development at 3200 Washington Street in Jamaica Plain, MA. These analyses consisted of: 1) an evaluation of existing air quality; 2) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's parking garage, and 3) a microscale CO analysis for intersections in the Project area that meet the BRA criteria for requiring such an analysis.

4.2.1 Existing Air Quality

The City of Boston is currently classified as being in attainment of the Massachusetts and National Ambient Air Quality Standards ("NAAQS") for all of the criteria air pollutants except ozone (see **Table 4.2-1**). These air quality standards have been established to protect the public health and welfare in ambient air, with a margin for safety.

The Massachusetts Department of Environmental Protection ("DEP") currently operates air monitors in various locations throughout the city. The closest, most representative, DEP monitors for carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), fine particulate matter ($PM_{2.5}$), coarse particulate matter (PM_{10}), and lead are located at Dudley Square (Harrison Avenue). Harrison Avenue, Boston, MA. The closest, most representative, DEP monitor for ozone is located at Dudley Square (Harrison Avenue).

Table 4.2-2 summarizes the DEP air monitoring data, for the most recent available, complete, three-year period (2010-2012), that are considered to be representative of the project area. **Table 4.2-2** shows that the existing air quality in the Project area is generally much better than the NAAQS. The highest impacts relative to a NAAQS are for ozone and $PM_{2.5}$. Ozone is a regional air pollutant on which the small amount of additional traffic generated by this Project will have an insignificant impact. The Project's operations will not have a significant impact on local $PM_{2.5}$ concentrations.

Table 4.2-1: Massachusetts and National Ambient Air Quality Standards (NAAQS)

Pollutant	Averaging Time	NAAQS (µg/m^3)
SO_2	1-hour^{P}	196[a]
CO	1-hour^{P} 8-hour^{P}	40,000[b] 10,000[b]
NO_2	1-hour^{P} Annual$^{P/S}$ (Arithmetic Mean)	188[c] 100
PM_{10}	24-hour$^{P/S}$	150
$PM_{2.5}$	24-hour$^{P/S}$ Annual$^{P/S}$ (Arithmetic Mean)	35[d] 12[e,f]
O_3	8-hour$^{P/S}$	147[g]
Pb	Rolling 3-Month Avg.$^{P/S}$ Calendar Quarter$^{P/S}$ (Arithmetic Mean)	0.15 1.5

P = primary standard; S = secondary standard.
[a] 99th percentile 1-hour concentrations in a year (average over three years).
[b] One exceedance per year is allowed.
[c] 98th percentile 1-hour concentrations in a year (average over three years).
[d] 98th percentile 24-hour concentrations in a year (average over three years).
[e] Three-year average of annual arithmetic means.
[f] As of March 18, 2013, the U.S. EPA lowered the $PM_{2.5}$ annual standard from 15 ug/m^3 to 12 ug/m^3.
[g] Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.075 ppm (147 ug/m^3) (effective May 27, 2008) and the annual PM_{10} standard was revoked in 2006.

Table 4.2-2: Representative Existing Air Quality in the Project Area

Pollutant, Averaging Period	Monitor Location	Value (ug/m^3)	NAAQS (ug/m^3)	Percent of NAAQS
CO, 1-hour	Harrison Avenue, Boston	2,519	40,000	6%
CO, 8-hour	Harrison Avenue, Boston	1,832	10,000	18%
NO_2, 1-hour	Harrison Avenue, Boston	91.5	188	49%
NO_2, Annual	Harrison Avenue, Boston	34.8	100	35%
Ozone, 8-hour	Harrison Avenue, Boston	129	147	86%
PM_{10}, 24-hour	Harrison Avenue, Boston	41	150	27%
$PM_{2.5}$, 24-hour	Harrison Avenue, Boston	19.2	35	46%
$PM_{2.5}$, Annual	Harrison Avenue, Boston	8.1	12	62%
Lead, Quarterly	Harrison Avenue, Boston	0.003	0.15	2.0%
SO_2, 1-hour	Harrison Avenue, Boston	40.1	196	20%

Source: MassDEP, http://www.mass.gov/dep/air/priorities/aqreports.htm., downloaded October 22, 2014.

Notes:

(1) Annual averages are highest measured during the most recent three-year period for which data are available (2010 - 2013). Values for periods of 24-hours or less are highest, second-highest over the three-year period unless otherwise noted.

(2) The eight-hour ozone value is the 3-year average of the annual fourth-highest values, the 24-hour $PM_{2.5}$ value is the 3-year average of the 98th percentile values, the annual $PM_{2.5}$ value is the 3-year average of the annual values – these are the values used to determine compliance with the NAAQS for these air pollutants.

(3) The one-hour NO_2 value is the 3-year average of the 98th percentile values and the one-hour SO_2 value is the -year average of the 99th percentile values

(4) The one-hour ozone standard was revoked by the US EPA in 2005; the annual PM_{10} standard was revoked in 2006 and the 3-hour SO_2 standard was revoked by the US EPA in 2010.

4.2.2 Impacts from Parking Garage Ventilation

The 3200 Washington Street project includes a parking garage designed to provide parking spaces for 33 vehicles. An analysis of the worst-case air quality impacts from the proposed parking garage was performed (see **Appendix D**). The procedures used for this analysis are consistent with U.S. EPA's Volume 9 guidance.[2] The objective of this analysis was to determine the maximum CO concentrations inside the garage and at the closest sensitive receptors surrounding the Project. These closest sensitive receptors include: air intakes located on the proposed building and nearby existing buildings and pedestrians at ground level anywhere near the Project. CO emissions from motor vehicles operating inside the garage were calculated and

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

the CO concentrations inside the garage and surrounding the Project were based on morning and afternoon peak traffic periods. The garage exhaust CO emissions were modeled using an U.S. EPA-approved air model.

Garage Ventilation System

The proposed parking garage will require mechanical ventilation. The garage ventilation system will be designed to provide adequate dilution of the motor vehicle emissions before they are vented outside. The design of the garage ventilation system will meet all building code requirements. Full ventilation of the garage will require a maximum flow of approximately 16,500 cubic feet per minute (cfm) of fresh air. This quantity of air is designed to meet the building code and will be more than adequate to dilute the emissions inside the parking garage to safe levels before they are vented outside. The garage ventilation exhausts will likely be located at two side vents.

Peak Garage Traffic Volumes

Parking for the apartment component of the Project will be provided in a ground-level garage. The peak morning and afternoon one-hour entering and exiting traffic volumes for the garage are shown in **Table 4.2-3**.

Table 4.2-3: Peak-Hour Garage Traffic Volumes

Period	Entering (vehicles/hour)	Exiting (vehicles/hour)	Total (vehicles/hour)
Morning Peak Hour	6	15	21
Afternoon Peak Hour	10	0	10

Source: Howard-Stein Hudson, Inc.

Motor Vehicle Emission Rates

The U.S. Environmental Protection Agency (EPA) MOVES2010b emission factor model was used to calculate single vehicle CO emissions rates, for a vehicle speed of 5 mph. The inputs to the MOVES2010b model followed the latest guidance from the Massachusetts Department of Environmental Protection (DEP) and were performed for the future traffic year of 2019. The CO emission rate calculated by MOVES2010b, for idling vehicles, was 0.51 grams per hour (gph) for each entering and exiting vehicle. These emission rates apply to wintertime conditions when

motor vehicle CO emissions are greatest due to cold temperatures. MOVES2010b model output is provided in the **Appendix D.**

To determine the maximum one-hour CO emissions inside the garage it was necessary to estimate the amount of time each motor vehicle will be in the parking garage with its engine running. To be conservative, it was assumed that every car entering or leaving the garage will be operating during that peak hour. The calculations in **Appendix D** show how long each vehicle will be operating in the garage for both the morning and afternoon peak periods.

Peak Garage CO Emission Rate and CO Concentration Inside the Garage

The peak one-hour CO emission rate for the parking garage was calculated to be 0.18 grams per minute for the morning peak hour and 0.085 grams per minute for the afternoon peak hour. Applying the maximum volumetric garage ventilation flow rate for the parking garage, the peak one-hour CO concentration inside the garage was calculated to be 0.33 parts of CO per million parts of air (ppm) for the morning peak hour and 0.16 ppm for the afternoon peak hour. Therefore, the peak one-hour CO concentration inside the garage will be 0.33 ppm with a peak one-hour emission rate of 0.18 grams/minute (0.003 grams/second), corresponding to the afternoon peak period. These predictions represent conservative estimates of the peak garage CO emissions and concentrations.

Peak Ambient CO Concentration

Worst-case concentrations of CO from the parking garage were predicted for locations around the building with using AERMOD model (Version 14134) in screening-mode. The results of the air quality analysis for locations outside and around the building are summarized in **Table 4.2-4**. The results in **Table 4.2-4** represent all outside locations on and near the Project Site, including nearby building air intakes and nearby residences. **Appendix D** contains the AERMOD model output.

The AERMOD model in screening-mode was used to predict the maximum concentration of CO by modeling the garage emissions as a volume source with aerodynamic building downwash using worst-case meteorological conditions for an urban area. The screening-mode option simulates modeling results predicted by AERSCREEN. AERMOD was used to predict the total maximum concentration of CO by modeling the garage emissions as one volume source with the total peak morning CO emissions (0.003 grams/sec). The predicted concentrations presented here represent the worst-case air quality impacts from the garage at all locations on and around the Project. AERMOD predicted one-hour average concentrations of air pollutants.

AERMOD predicted that the maximum one-hour CO concentration from the garage exhausts will be 0.005 ppm (5.07 $\mu g/m^3$). This concentration represents the maximum CO concentration at any location surrounding the Project.

The maximum predicted eight-hour CO concentration at any ambient (outside) location will be significantly smaller than the one-hour prediction. This is because: 1) the average number of vehicles entering and exiting the garage over the peak eight-hour period will be significantly less than the peak one-hour values used to predict the peak one-hour CO impact, and 2) the worst-case meteorological conditions used to predict the peak one-hour impact will not persist for eight consecutive hours. AERSCREEN guidance allows the maximum eight-hour CO impact to be conservatively estimated by multiplying the maximum one-hour impact by a factor of 0.9 (i.e. the eight-hour impact is 90% of the one-hour impact). The maximum predicted eight-hour CO concentration was determined to be approximately 0.0045 ppm (0.005 ppm x 0.9).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare in ambient air, with a margin for safety. The NAAQS for CO are 35 ppm for a one-hour average and 9 ppm for an eight-hour average. The Commonwealth of Massachusetts has established the same standards for CO. Conservative, urban CO background values of 1.8 ppm for a one-hour period and 1.5 ppm for an eight-hour period were added to the maximum predicted garage ambient impacts to represent the CO contribution from other, more distant, sources. With the conservative background concentration added, the peak, total, one-hour and eight-hour CO impacts from the garage, at any location around the building, will be no larger than 1.50 ppm and 1.80 ppm, respectively. These maximum predicted total CO concentrations (garage exhaust impacts plus background) are safely in compliance with the NAAQS. This analysis demonstrates that the operation of the parking garage will not have an adverse impact on air quality.

Table 4.2-4: Peak Predicted Parking Garage Air Quality Impacts

Location	Peak Predicted One-Hour Impact (ppm)	One-Hour NAAQS (ppm)	Peak Predicted Eight-Hour Impact (ppm)	Eight-Hour NAAQS (ppm)
Outside – Surrounding the Building* (Parking Garage)	1.80**	35 (NAAQS)	1.50**	9 (NAAQS)

NAAQS = Massachusetts and National Ambient Air Quality Standards for CO (ppm = parts per million)
* Representative of maximum CO impact at all nearby residences, buildings, and sidewalks.
** Includes background concentrations of 1.8 ppm for the one-hour period and 1.5 ppm for the eight-hour period.

Conclusions

A conservative air quality analysis demonstrates that there will be no adverse air quality impacts from the operation of the Project's proposed parking garage.

4.2.3 Microscale CO Analysis for Selected Intersections

The Boston Redevelopment Authority (BRA) and the Massachusetts DEP typically require a microscale air quality analysis for any intersection in the Project study area where the level of service (LOS) is expected to deteriorate to D and the proposed project causes a 10% increase in traffic or where the level of service is E or F and the project contributes to a reduction in LOS. For such intersections, a microscale air quality analysis is required to examine the carbon monoxide (CO) concentrations at sensitive receptors near the intersection.

A microscale air quality analysis was not performed for this Project due to its extremely small motor vehicle trip generation. The Project generates only 21 motor vehicle trips during the morning peak traffic hour and only 30 motor vehicle trips during the afternoon traffic hour. The Project will add no more than 30 motor vehicle trips to any of the intersections included in the transportation impact analysis during either the morning or afternoon peak traffic period. **Table 4.2-5** shows that the Project will not deteriorate the LOS at any of the analyzed intersections and will increase the traffic at either intersection by no more than 1.5%. The small motor vehicle trip generation from the Project will not have a significant impact on motor vehicle delays and air pollutant emissions at the analyzed intersections. Therefore, the motor vehicle traffic generated by the Project will not have a significant impact on air quality at any intersection in the Project area and a microscale air quality analysis is not necessary for this Project.

Table 4.2-5: Summary of Build Case Level of Service

Intersection	Build LOS (AM/PM)	Requires Analysis?
Washington Street/Montebello – signalized	E/D	NO*
Washington Street/School Street-signalized	B/B	NO
Washington Street/Iffley Road-unsignalized	A/A	NO
Washington Street/Site Driveway	D/C	NO

The LOS shown represents the overall delay at each signalized intersection and the worst approach at the unsignalized intersection. Percentages shown for LOS D are percent increase in traffic from the Project.
*Project does not contribute to reduction in level of service.

Source: Howard/Stein-Hudson Associates, Inc.

Conclusions

The traffic generated by the proposed project will have an insignificant impact on the peak-hour traffic volumes at local intersections. Therefore, the proposed Project will have an insignificant impact on the local air quality. The air quality in the Project area will remain safely in compliance with the NAAQS for CO after the Project is built.

4.3 Noise Impacts

Tech Environmental, Inc., performed a noise study to determine whether the operation of the proposed 3200 Washington Street project will comply with the City of Boston Noise Regulations and the Massachusetts Department of Environmental Protection ("DEP") Noise Policy.

4.3.1 Common Measures of Community Noise

The unit of sound pressure is the decibel (dB). The decibel scale is logarithmic to accommodate the wide range of sound intensities to which the human ear is subjected. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. Thus, every 3 dB increase represents a doubling of sound energy. For broadband sounds, a 3 dB change is the minimum change perceptible to the human ear. **Table 4.3-1** gives the perceived change in loudness of different changes in sound pressure levels.[3]

Table 4.3-1: Subjective Effects of Changes in Sound Pressure Levels

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

Non-steady noise exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting 1 second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. To establish the background ambient sound level in an area, the L_{90} metric, which is the sound level exceeded 90 percent of the time, is typically used. The L_{90} can also be thought of as the level representing the quietest 10 percent of any time period. Similarly, the L_{10} can also be thought of as the level representing the quietest 90 percent of any time period. The L_{10} and L_{90} are broadband sound pressure measures, i.e., they include sounds at all frequencies.

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

Sound level measurements typically include an analysis of the sound spectrum into its various frequency components to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves, and typically the frequency analysis examines nine octave bands from 32 Hz to 8,000 Hz. A source is said to create a pure tone if acoustic energy is concentrated in a narrow frequency range and one octave band has a sound level 3 dB greater than both adjacent octave bands.

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on local and distant streets, aircraft over-flights, mechanical equipment on nearby buildings, and general city noises such as street sweepers and police/fire sirens. Typical sound levels associated with various activities and environments are presented in **Table 4.3-2**.

4.3.2 Noise Regulations

Commonwealth Noise Policy

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

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

1. An increase in the broadband sound pressure level of more than 10 dBA above the ambient level; or
2. A "pure tone" condition.

The ambient background level is defined as the L_{90} level as measured during equipment operating hours. A "pure tone" condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more.

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

Local Regulations

The City of Boston Environment Department regulates noise through the Regulations for the Control of Noise as administered by the Air Pollution Control Commission. The Project is located in an area consisting of commercial and residential uses. The Project will have low-rise

residential uses to the north, east, and south. The Project must comply with Regulation 2.2 for noise levels in Residential Zoning Districts at these residential locations**. Table 4.3-3** lists the maximum allowable octave band and broadband sound pressure levels for residential and business districts. Daytime is defined by the City of Boston Noise Regulations as occurring between the hours of 7:00 a.m. and 6:00 p.m. daily except Sunday. Compliance with the most restrictive nighttime residential limits will ensure compliance for other land uses with equal or higher noise limits.

4.3.3 Pre-Construction Sound Level Measurements

Existing baseline sound levels in the Project area were measured during the quietest overnight period when human activity and street traffic were at a minimum, and when the Project's mechanical equipment (the principal sound sources) could be operating. Since the Project's mechanical equipment may operate at any time during a 24-hour day, a weekday between 11:00 p.m. and 4:00 a.m. was selected as the worst-case time period, i.e., the time period when Project-related sounds may be most noticeable due to the quieter background sound levels. Establishing an existing background (L_{90}) during the quietest hours of the facility operation is a conservative approach for noise impact assessment and is required by the DEP Noise Policy.

Table 4.3-2: Common Indoor and Outdoor Sound Levels

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

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

Table 4.3-3: Maximum Allowable Sound Pressure Levels (dB) City of Boston

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

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

Monitoring Location #1: South of Project area on Montebello Road.

Monitoring Location #2: Northwest of Project area on Washington Street.

Monitoring Location #3: Northeast of Project area on Iffley Road.

Broadband (dBA) and octave band sound level measurements were made with a Bruel and Kjaer Model 2250 environmental sound level analyzer, at each monitoring location, for a duration of approximately thirty minutes. The full octave band frequency analysis was performed on the frequencies spanning 16 to 16,000 Hertz. A time-integrated statistical analysis of the data used to quantify the sound variation was also performed, including the calculation of the L_{90}, which is used to set the ambient background sound level.

The B&K model 2250 is equipped with a ½" precision condenser microphone and has an operating range of 5 dB to 140 dB and an overall frequency range of 3.5 Hz to 20,000 Hz. This meter meets or exceeds all requirements set forth in the ANSI S1.4-1983 Standards for Type 1 quality and accuracy and the State and City requirements for sound level instrumentation. Prior to any measurements, this sound analyzer was calibrated with an ANSI Type 1 calibrator that has an accuracy traceable to the National Institute of Standards and Technology (NIST). During all measurements, the B&K 2250 was tripod mounted at approximately five feet above the ground in open areas away from vertical reflecting surfaces.

The nighttime sound level monitoring was conducted on Wednesday and Thursday, September 10 and 11, 2014. Weather conditions during the sound survey were conducive to accurate sound

level monitoring: the temperature was 63°F, the skies were overcast, and the winds were 0 to 5 mph. The microphone of the sound level analyzer was fitted with a 3-inch windscreen to negate any effects of wind-generated noise.

The nighttime sound level measurements taken in the vicinity of the Project Site reveal sound levels that are typical for an urban area. The significant sources of existing sound at all locations are motor vehicle traffic on local streets, pedestrian traffic, natural sounds such as crickets, wind, and leaves, and the occasional siren/ ambulance.

The results of the nighttime baseline sound level measurements are presented in **Table 4.3-4**. The nighttime background L_{90} level was 36.7 dBA at Location #1, 43.3 dBA at Location #2, and 36.2 dBA at Location #3. The octave band data in **Table 4.3-4** shows an existing pure tone in the 32 Hz band at Location #2 likely due to existing traffic.

Table 4.3-4: Nighttime Baseline Sound Level Measurements, September 10 and 11, 2014

Sound Level Measurement	(Location #1) Northwest of Project on Montebello Road 11:03 – 11:33 p.m.	(Location #2) Northwest of Project on Washington St. 11:38 p.m. - 12:08 a.m.	(Location #3) Northeast of Project on Iffley Road. 12:12 a.m. - 12:42 a.m.
Broadband (dBA) Background (L_{90})	36.7	43.3	36.2
Octave Band L_{90} (dB)			
16 Hz	44.9	46.7	41.2
32 Hz	48.4	56.3	43.2
63 Hz	45.5	49.0	44.5
125 Hz	39.1	46.6	40.6
250 Hz	34.0	43.4	35.7
500 Hz	32.8	40.0	32.7
1000 Hz	31.7	38.3	31.4
2000 Hz	28.4	33.7	27.0
4000 Hz	23.4	26.9	22.2
8000 Hz	17.2	18.5	16.5
16000 Hz	12.9	12.6	12.2
Pure Tone?	No	Yes	No

Noise monitoring at the Project Site during the morning peak traffic period was used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by HUD for residential development. The purpose of the HUD guidelines is to provide standards for determining the acceptability of residential project locations with regards to existing sound levels. The HUD criteria regarding the day-night average sound level (L_{dn}) are listed below. These standards apply to L_{dn} measurements taken several feet from the building in the direction of the predominant source of noise.

- Normally Acceptable – L_{dn} not exceeding 65 dBA
- Normally Unacceptable – L_{dn} above 65 dBA but not exceeding 75 dBA
- Unacceptable – L_{dn} above 75 dBA.

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

Daytime sound level measurements were taken to help estimate the L_{dn} for the Project Site. A 30-minute sound level measurement was taken at each location listed above during the morning, on Wednesday, September 10, 2014 between 7:24 a.m. and 9:07 a.m., representing the closest locations to the Project Site. The weather conditions during the sound survey were conducive to accurate sound level monitoring: the temperature was 61°F, skies were overcast, and the winds were 5-10 mph from the north. The microphone of the sound level analyzer was fitted with a 3-inch windscreen to negate any effects of wind-generated noise.

The daytime sound level measurements taken in the vicinity of the Project Site reveal sound levels that are typical for an urban area. The main sources of noise during the peak morning traffic period sound level measurement were motor vehicle traffic on nearby local streets, cars idling, mechanical equipment from nearby auto garages, pedestrian traffic, and natural sounds such as birds and squirrels. The L_{eq} measured during the morning period at location #1 was 56 dBA, 70 dBA at location #2, and 57 dBA at location #3. The L_{eq} sound level measured during the nighttime at the same locations was 50 dBA, 75 dBA, and 47 dBA, respectively. Using both the daytime and nighttime L_{eq} sound levels, the calculated L_{dn} for location #1 is 58 dBA, 81 dBA for location #2, and 57 dBA for location #3. The L_{dn} for location #2 is above the HUD guideline noise limit of 65 dBA.

It is assumed that standard building construction practices will result in at least a 20 dBA reduction of sound from outdoor sound levels. The Proponent will incorporate sound mitigation, as necessary, to assure that motor vehicle sound sources do not result in noise impacts greater than 45 dBA inside the residential units closest to the neighboring streets.

4.3.4 Reference Data and Candidate Mitigation Measures

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

The design for the Proposed Project is expected to include the following significant mechanical equipment:

- (14) 10-ton rooftop heating/cooling units on Building A
- (13) 10-ton rooftop heating/cooling unit on Building B

- (1) 10-ton rooftop heating/cooling unit on the Building C (Townhouses)

All (28) rooftop units were assumed to be low noise units, similar to Mitsubishi PURY-P120T type. These units were modeled with a sound power level (L_w) = 68 dBA. The equipment listed above was included in the noise impact analysis. The Project's traffic was not included in the noise analysis because motor vehicles are exempt under both the City of Boston and Massachusetts DEP noise regulations.

The sound generation profiles for the mechanical equipment noise sources operating concurrently under full-load conditions were used to determine the maximum possible resultant sound levels from the Project Site as a whole, to define a worst-case scenario. To be in compliance with City and DEP regulations, the resultant sound level must not exceed the allowable octave band limits in the City of Boston noise regulation and must be below the allowable incremental noise increase, relative to existing noise levels, as required in the DEP Noise Policy.

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

4.3.5 Calculated Future Sound Levels

Methodology

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

The Cadna-A computer program, a comprehensive 3-dimensional acoustical modeling software package was used to calculate Project generated sound propagation and attenuation.[4] The model is based on ISO 9613, an internationally recognized standard specifically developed to ensure the highly accurate calculation of environmental noise in an outdoor environment. ISO 9613 standard incorporates the propagation and attenuation of sound energy due to divergence with distance, surface and building reflections, air and ground absorption, and sound wave diffraction and shielding effects caused by barriers, buildings, and ground topography.

Receptors

The closest/worst-case sensitive (residential) location is to the east of the project on Iffley Road (R2). This location was selected based on the proximity of the equipment (smaller distances correspond to larger noise impacts) and the amount of shielding by other buildings (taller nearby residential locations will experience less shielding from the Project's rooftop mechanical

[4]Cadna-A Computer Aided Noise Abatement Program, Version 4.4

equipment, which may result in larger potential noise impacts from the Project). This location is expected to receive the largest sound level impacts from the Project's rooftop mechanical equipment. It can be classified as a residential zone.

The sound level impacts from the building's mechanical equipment were predicted at the closest residential location, as well as at five other residential locations to the north and south of the project area, and 1 commercial location to the west of the project area. Figure 1 in Appendix E shows the locations of the modeled noise receptors. Noise impacts at other nearby noise-sensitive locations (residences, parks, etc.) farther from the Project Site will be less than those predicted for these receptors.

4.3.6 Compliance with State and Local Noise Standards

The City of Boston and DEP noise standards apply to the operation of the mechanical equipment at the proposed Project. The details of the noise predictions are presented in **Tables 4.3-6** through **4.3-12**. The sound impact analysis includes the simultaneous operation of the Project's rooftop HVAC equipment. The predicted sound levels are worst-case predictions that represent all hours of the day, as the analysis assumes full operation of the mechanical equipment 24-hours a day. The typical sound level impacts from the mechanical equipment will likely be lower than what is presented here, since most of the mechanical equipment will operate at full-load only during certain times of the day and during the warmer months of the year, it is not likely that all of the mechanical equipment will operate at the same time. Sound level impacts at locations farther from the Project (e.g. other residences, etc.) will be lower than those presented in this report.

City of Boston Noise Standards

The noise impact analysis results, presented in **Tables 4.3-6** through **4.3-12**, reveal that the sound level impact at the worst-case property line and the closest residence will be 31.4 dBA. The smallest sound level impact of 19.6 dBA is predicted to occur at R3 on Montebello Road. Noise impacts predicted at all locations are in compliance with the City of Boston's nighttime noise limit (50 dBA) for a residential area. Note that sound levels from the Project will be below the residential nighttime limits at all times. The results also demonstrate compliance with the City of Boston, residential, non-daytime, octave band noise limits at all locations.

The City of Boston noise limits for business areas are significantly higher than the nighttime noise limits for residential areas (see **Table 4.3-3**). The Project will also easily comply with the City of Boston business area noise limits at all surrounding commercial properties.

Massachusetts DEP Noise Regulations

The predicted sound level impacts at the worst-case property line and the worst-case residential locations were added to the measured L_{90} value of the quietest daily hour to test compliance with DEP's noise criteria. Assuming the Project's mechanical noise is constant throughout the day, the Project will cause the largest increase in sound levels during the period when the lowest

background noise occurs. Minimum background sound levels (diurnal) typically occur between 12:00 a.m. and 5:00 a.m.

The predicted sound level impacts at the worst-case property line and the closest residences were added to the L_{90} values measured during the period with the least amount of background noise to test compliance with DEP's noise criteria. The predicted noise impacts at the property line and the closest residences were added to the most-representative measured L_{90} values to determine the largest possible increase in the sound level at each location during the quietest hour at the Project Site.

As shown in **Tables 4.3-6** through **4.3-12**, the Project is predicted to produce only at 2 dBA or less change in the background sound levels at all modeled locations. Therefore, the Project's worst-case sound level impacts during the quietest nighttime periods will be in compliance with the Massachusetts DEP allowed noise increase of 10 dBA. The noise predictions for each octave band indicate that the mechanical equipment will not create a pure tone condition at any location.

Table 4.3-6: Estimated Future Sound Level Impacts – Anytime 20 Iffley Road – Location R1

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	28.9
63 Hz	67	31.2
125 Hz	61	29.2
250 Hz	52	21.5
500 Hz	46	26.8
1000 Hz	40	27.3
2000 Hz	33	19.3
4000 Hz	28	12.8
8000 Hz	26	10.7
Broadband (dBA)	**50**	**29.8**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 3)	36.2
3200 Washington St Project*	29.8
Calculated Combined Future Sound Level	37.1
Calculated Incremental Increase	+0.9
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-7: Estimated Future Sound Level Impacts – Anytime 21 Iffley Road (closest property line and residence) – Location R2

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	31.4
63 Hz	67	34.4
125 Hz	61	33.6
250 Hz	52	26.2
500 Hz	46	31.5
1000 Hz	40	31.1
2000 Hz	33	23.5
4000 Hz	28	17.4
8000 Hz	26	16.9
Broadband (dBA)	**50**	**34**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 3)	36.2
3200 Washington St Project*	34
Calculated Combined Future Sound Level	38.3
Calculated Incremental Increase	+2.1
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-8: Estimated Future Sound Level Impacts – Anytime 41 Montebello Road – Location R3

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	28.9
63 Hz	67	29.8
125 Hz	61	25.6
250 Hz	52	15.6
500 Hz	46	18.3
1000 Hz	40	15.5
2000 Hz	33	6.7
4000 Hz	28	< 5
8000 Hz	26	< 5
Broadband (dBA)	**50**	**19.6**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 1)	36.7
3200 Washington St Project*	19.6
Calculated Combined Future Sound Level	36.8
Calculated Incremental Increase	+0.1
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-9: Estimated Future Sound Level Impacts – Anytime 43 & 45 Montebello Road – Location R4

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	28.1
63 Hz	67	29.1
125 Hz	61	25.5
250 Hz	52	16
500 Hz	46	19.4
1000 Hz	40	17.9
2000 Hz	33	10.2
4000 Hz	28	< 5
8000 Hz	26	< 5
Broadband (dBA)	**50**	**21.4**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 1)	36.7
3200 Washington St Project*	21.4
Calculated Combined Future Sound Level	36.8
Calculated Incremental Increase	+0.1
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-10: Estimated Future Sound Level Impacts – Anytime 47 Montebello Road – Location R5

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	27.9
63 Hz	67	29.7
125 Hz	61	27.3
250 Hz	52	18.9
500 Hz	46	23.5
1000 Hz	40	22.6
2000 Hz	33	13.7
4000 Hz	28	5.8
8000 Hz	26	< 5
Broadband (dBA)	**50**	**25.5**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 1)	36.7
3190 Washington St Project*	25.5
Calculated Combined Future Sound Level	37
Calculated Incremental Increase	+0.3
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-11: Estimated Future Sound Level Impacts – Anytime 60 Montebello Road – Location R6

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	31.3
63 Hz	67	33.8
125 Hz	61	31.8
250 Hz	52	24.4
500 Hz	46	30.1
1000 Hz	40	29.4
2000 Hz	33	21.6
4000 Hz	28	15
8000 Hz	26	12.8
Broadband (dBA)	**50**	**32.3**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 1)	36.7
3190 Washington St Project*	32.3
Calculated Combined Future Sound Level	38
Calculated Incremental Increase	+1.3
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

Table 4.3-12: Estimated Future Sound Level Impacts – Anytime 3195 Washington Street – Location R7

Octave Bands	Residential Nighttime	Maximum Predicted Sound Levels*
32 Hz	68	28.9
63 Hz	67	31
125 Hz	61	28.7
250 Hz	52	20.5
500 Hz	46	25.6
1000 Hz	40	25.6
2000 Hz	33	18.6
4000 Hz	28	12.4
8000 Hz	26	10.5
Broadband (dBA)	**50**	**28.4**
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 2)	43.3
3190 Washington St Project*	28.4
Calculated Combined Future Sound Level	43.4
Calculated Incremental Increase	+0.1
Compliance with DEP Noise Policy?	Yes

* Assumes full-load operation of all mechanical equipment.
Note: DEP Policy allows a sound level increase of up to 10 dBA

4.3.7 Conclusions

Sound levels at all nearby sensitive locations and at all property lines will fully comply with the most stringent City of Boston and DEP daytime and nighttime sound level limits, and HUD's Residential Site Acceptability Standards. This acoustic analysis demonstrates that the Project's design will meet the applicable acoustic criteria.

4.4 Stormwater Management and Water Quality

The Proposed Project will improve the quality of stormwater leaving this site. Erosion and sediment control measures will be implemented during construction to minimize the transport of site soils to off-site areas and BWSC storm drain systems. During construction, existing catch basins will be protected with filtrating silt sacs to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until the areas of disturbance have been stabilized through the placement of pavement, structure, or vegetative cover.

The Proposed Project will promote stormwater recharge to groundwater. It is anticipated that the equivalent of 1 inch over the site's impervious area will be recharged as prescribed in BWSC's Site Plan Requirements. Stormwater runoff from vehicular areas will be pretreated through the use of deep sump catch basins equipped with oil & water separators, and water quality treatment structures where warranted. An operation and maintenance plan will be developed to support the long-term functionality of the proposed stormwater management system.

The project will meet the Department of Environmental Protection's (DEP) Stormwater Management Standards for Redevelopment (Standard 7). All necessary dewatering will be conducted in accordance with applicable MWRA, BWSC, or NPDES discharge permits. The combined project site area is less than 1 acre, and therefore will not require an EPA NPDES Construction General Permit. Once construction is complete, the Project will be in compliance with local and state stormwater management policies.

4.5 Solid and Hazardous Waste Materials

4.5.1 Solid Waste

During the preparation of the Project Site, debris, including asphalt, trash, and demolition debris will be removed from the Project Site. The Proponent will ensure that waste removal and disposal during construction and operation will be in conformance with the City and DEP's Regulations for Solid Waste.

Upon completion of construction, the Proposed Project will generate approximately 131 tons of solid waste per year, based on the assumption that each residential unit generates 8 lbs of solid waste per day and retail uses generate .02 lb/sf/day - translating into approximately 111 tons / year for the residential units and approximately 20 tons / year for the retail. Residential waste

will be handled through a trash chute extending to all floors, and then compacted before being brought to the loading / unloading area in the garage.

The Proposed Project will also include ambitious goals for construction waste management in order to meet the requirements for the LEED™ rating system. This strategy will divert demolition and construction waste by reusing and recycling materials.

In order to meet the requirements for the Boston Environmental Department and the LEED™ rating system, the Project will include space dedicated to the storage and collection of recyclables, including dedicated dumpsters at the loading area. The recycling program will meet or exceed the City's guidelines, and provide areas for waste paper and newspaper, metal, glass, and plastics (21 through 27, co-mingled).

4.5.2 Hazardous Waste and Materials

On June 10, 2014, IES, Inc. completed a Phase I Environmental Site Assessment ("ESA") for the Project Site, including 3190 and 3204 Washington Street and 11-15 Iffley Road in Jamaica Plain. The ESA, which is available on request, was prepared in accordance with the U.S. Environmental Protection Agency's rules for environmental due diligence, known as the "All Appropriate Inquiry" rules. Based on a site inspection and a review historical State and local records, the ESA found no visible or documented evidence of an existing or ongoing release associated with the current uses, and therefore no "Recognized Environmental Conditions" ("RECs") were identified. However, a past on-site release was considered a "Historic Recognized Environmental Condition" ("HREC") and a "Controlled Environmental Condition" ("CREC").

The past on-site release was a leak of approximately 200 gallons of gasoline in 1994 from an underground storage tank ("UST") located at 3204 Washington Street. The leak was reported to the Massachusetts Department of Environmental Protection ("MassDEP"), which then designated the property a disposal site and assigned it a release tracking number, RTN 3-11815. The contamination caused by this leak was cleaned up in 1995 to the level required by the Massachusetts Contingency Plan, 310 CMR 40.0000 ("MCP"), and the site has been closed out with a Class A-3 Response Action Outcome ("RAO") designation – meaning that a permanent remedy was achieved so that the site poses no significant threat. Part of the permanent remedy was to implement an Activity Use Limitation ("AUL") that restricted the allowed uses of the property without additional testing. This is common for releases at gas stations and automobile service and repair shops in the Boston area.

The ESA recommends that while the site is being redeveloped, any residual contamination associated with the Class A-3 RAO should be excavated and removed as a Post-RAO Abatement Measure in compliance with the requirements of the MCP and the AUL, and that soil testing should be performed to confirm that no soils remaining on the site would pose a significant risk to future residents. It is expected that these measures will improve environmental conditions at the site and allow for the AUL to be removed, or at the least, allow for the AUL to be amended in a

way that lessens the restrictions. Because the site does not require further investigation or remediation in connection with the existing uses, the benefits of additional testing and (if necessary) removal of excavated materials would flow directly from the redevelopment of the property for residential use.

The ESA also recommends that soil samples be collected from beneath the abandoned fuel oil aboveground storage tanks ("ASTs") at 11-15 Iffley Road, which may also have the possibility of a 500-gallon gasoline UST documented at that property by a 1921 permit, and from the area of the former fuel oil ASTs adjacent to the boiler room in the building at 3200 Washington Street. According to the ESA, it is likely that any residual contamination associated with these ASTs is limited in nature and can be excavated and removed as a "Limited Removal Action" ("LRA") without having to notify MassDEP beforehand.

The Proponent has retained an environmental consultant licensed to address hazardous waste issues, known as a Licensed Site Professional, and environmental legal counsel to ensure that any additional testing and cleanup and any redevelopment of the site comply with the MCP and other applicable laws governing hazardous waste cleanup.

4.6 Geotechnical/Groundwater Impacts Analysis

The following provides a summary of the geotechnical and groundwater impacts on the proposed building construction at 3200 Washington Street in Jamaica Plain, MA. Under contract with the Project Geotechnical Engineer, Brierley Associates of Cambridge, MA, four (4) test borings were completed by New England Boring Contractors of Brockton, MA during November 19 and 24, 2014.

All four test borings were drilled within the proposed building footprint to depths of between 2.3 and 11.5 feet below existing grades. Standard Penetration Test (SPT) N-values and split-spoon samples were obtained at 5-foot intervals beginning at the ground surface to the bottom of each boring. Five feet of Nx-size (2.0-inch diameter) rock core was obtained from boring B1 and 3 feet of rock core was obtained from boring B2. Bedrock refusal was encountered in the remaining two borings. In addition, a groundwater monitoring well was installed to the bottom of boring B1 upon completion.

In general, the subsurface soil conditions within the proposed building site consist of loose silty Sand and gravel Fill material overlying natural, very dense silt, sand and gravel Glacial Till deposit overlying shallow bedrock. The top of sound bedrock was encountered in boring B1 at 5.0 feet, B2 at 6.5 feet, and refusal encountered in borings B3 at 4.0 feet and in B4 at 2.3 feet. The rock was described as hard, slightly weathered to fresh, gray-green, coarse-grained conglomerate - Roxbury Conglomerate with Rock Quality Designation (RQD) values of 67 and 100 percent corresponding to a "Fair" to "Excellent" rock quality.

The anticipated foundation system for this project is conventional spread and wall footing foundations bearing directly on the natural Glacial Till deposit, level bedrock surface or on compacted structural backfill material as needed. **Dependent on the lowest floor levels, bedrock excavation by hydraulic**

impact hoe ram methods will be required to construct footings and lowest floors. In addition, it may be necessary to remove existing building foundation systems to allow for new construction.

Groundwater was not encountered at the monitoring well installed in boring B1 at 10 feet. The proposed construction is not anticipated to have adverse effects on long-term groundwater levels because the lowest floor level is above the groundwater level. Roof drains and runoff from impermeable outdoor surfaces will be led to local storm drains. Construction mitigation measures such as ground surface and adjacent building monitoring points will be incorporated into the Proposed Project to avoid any potential for ground movement and settlement.

4.7 Construction Impact

The following section describes impacts likely to result from the construction of the 3200 Washington Street Project and the steps that will be taken to avoid or minimize environmental and transportation-related impacts. Construction methodologies and scheduling will aim to minimize impacts on the surrounding environment. The Proponent will insure that the general contractors will be responsible for developing staging plans and for coordinating construction activities with all appropriate regulatory agencies. The Project's geotechnical consultant will also provide consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

4.7.1 Construction Management Plan

The Proponent will comply with applicable state and local regulations governing construction of the Project. The Proponent will insure that general contractors comply with the Construction Management Plan, ("CMP") developed in consultation with and approved by the Boston Transportation Department ("BTD"), prior to the commencement of construction. The CMPs will establish the guidelines for the duration of the Project phases and will include specific mitigation measures and staging plans to minimize impacts on abutters.

Construction methodologies that will ensure safety will be employed, signage will include General Contractor contact information with emergency contact numbers.

4.7.2 Proposed Construction Program

Construction Activity Schedule

The construction period for the proposed 3200 Washington Street Project is expected to last approximately 15 months, beginning in the 3rd Quarter 2015 and reaching completion in the 4th Quarter 2016. The City of Boston Noise and Work Ordinances will dictate the normal work hours, which will be from 7:00 AM to 6:00 PM, Monday through Friday. Saturday work will be only in the event of schedule delay or unusual tasks such as street openings, etc.

Perimeter Protection/Public Safety

The CMP will describe any necessary sidewalk closures, pedestrian re-routings, and barrier placements and/or fencing deemed necessary to ensure safety around the Site perimeter. When possible, the sidewalk will remain open to pedestrian traffic during the construction period. Barricades and secure fencing will be used to isolate construction areas from pedestrian traffic. In addition, sidewalk areas and walkways near construction activities will be well marked to ensure pedestrian safety.

Proper signage will be placed at every corner of the Proposed Project as well as those areas that may be confusing to pedestrians and automobile traffic.

The Proponent will continue to coordinate with all pertinent regulatory agencies and representatives of the surrounding neighborhoods to ensure they are informed of any changes in construction activities.

4.7.3 Construction Traffic Impacts

Construction Vehicle Routes

Specific truck routes will be established with BTD through the CMPs. These established truck routes will prohibit truck travel on residential side streets. Construction contracts will include clauses restricting truck travel to BTD requirements. Maps showing approved truck routes will be provided to all suppliers, contractors, and subcontractors. It is anticipated that all deliveries will be via Washington Street directly to the site, not passing through residential areas in Jamaica Plain.

Construction Worker Parking

The number of workers required for construction of the Proposed Project will vary during the construction period. However, it is anticipated that all construction workers will arrive and depart prior to peak traffic periods.

Limited parking in designated areas of the Project Site and lay-down area(s) will be allowed. Parking will be discouraged in the immediate neighborhood. Further, given the Proposed Project's close proximity to transit service (e.g., MBTA Orange Line as well as bus service) public transit use will be encouraged with the Proponent and general contractor working to ensure the construction workers are informed of the many public transportation options immediately adjacent to this area. Terms and conditions related to worker parking will be written into each subcontractor's contract. The general contractors will provide a weekly orientation with all new personnel to ensure enforcement of this policy.

Pedestrian Traffic

The Site abuts sidewalks on three streets. Pedestrian traffic may be temporarily impacted in these areas. The general contractors will minimize the impact the construction of the proposed building will have on the adjacent sidewalks. The general contractors will implement plans that will clearly denote all traffic patterns. Safety measures such as jersey barriers, fencing, and signage will be used to direct pedestrian traffic around the construction site and to secure the work area.

4.7.4 Construction Environmental Impacts and Mitigation

Construction Air Quality

Construction activities may generate fugitive dust, which will result in a localized increase of airborne particle levels. Fugitive dust emission from construction activities will depend on such factors as the properties of the emitting surface (e.g. moisture content), meteorological variables, and construction practices employed.

To reduce the emission of fugitive dust and minimize impacts on the local environment the construction contractor will adhere to a number of strictly enforceable mitigation measures. These measures may include:

- Using wetting agents to control and suppress dust from construction debris;
- Ensuring that all trucks traveling to and from the Project Site will be fully covered;
- Removing construction debris regularly;
- Monitoring construction practices closely to ensure any emissions of dust are negligible;
- Cleaning streets and sidewalks to minimize dust and dirt accumulation;
- Monitoring construction activities by the job site superintendent; and
- Wheel-washing trucks before they leave the Project Site during the excavation phase.

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 ("BWSC") storm drain systems. During construction, existing catch basins will be protected from sediments with filter fabric, silt sacks or hay bale filters.

Construction Noise Impacts

To reduce the noise impacts of construction on the surrounding neighborhood, a number of noise mitigation measures will be included in the CMP. Some of the measures that may be taken to ensure a low level of noise emissions include:

- Initiating a proactive program for compliance to the City of Boston's noise limitation requirements;

- Scheduling of work during regular working hours as much as possible;
- Using mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously operating equipment, such as air compressors and power and welding generators;
- Scheduling construction activities so as to avoid the simultaneous operation of the noisiest construction activities;
- Turning off all idling equipment;
- Reminding truck drivers that trucks cannot idle more than five (5) minutes unless the engine is required for operational activity;
- Locating noisy equipment at locations that protect sensitive receptors and neighborhood homes through shielding or distance;
- Installing a site barricade as required;
- Identifying and maintaining truck routes to minimize traffic and noise throughout the project;
- Maintaining all equipment to have proper sound attenuation devices.

4.7.5 Rodent Control

The City of Boston enforces the requirements established under Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550. This policy establishes that the elimination of rodents and ongoing rodent control is required for issuance of any building permits. Before and during construction, rodent control service visits will be made by a certified rodent control firm to monitor the situation.

4.7.6 Utility Protection During Construction

During construction, the City and the Commonwealth's infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The general contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The contractor will also be required to provide adequate notification to the utility owner/operator prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during a switch-over to a temporary or permanent system, the general contractor will be required to coordinate the shutdown with the utility owners/operators and Project abutters to minimize impacts and inconveniences accordingly.

4.8 Wetlands/Flood Hazard Zone

The existing Project Site is not a part of a wetland resource area regulated by the Massachusetts Wetland Protection Act.

Based on the Preliminary Flood Insurance Rate Maps (FIRM) for Suffolk County, the Project site is not located in a special flood hazard area, floodway area, or other flood area (See **Figure 4.8** Wetlands/Flood Hazard Zones).

Source:
Preliminary Flood Insurance Rate Maps for Suffolk County
https://msc.fema.gov/portal

Figure 4.8
Wetlands/Flood Hazard Zones

5.0 HISTORIC RESOURCES COMPONENT

This section provides a discussion of the history of the Project Site and the historic resources/districts in the Project vicinity.

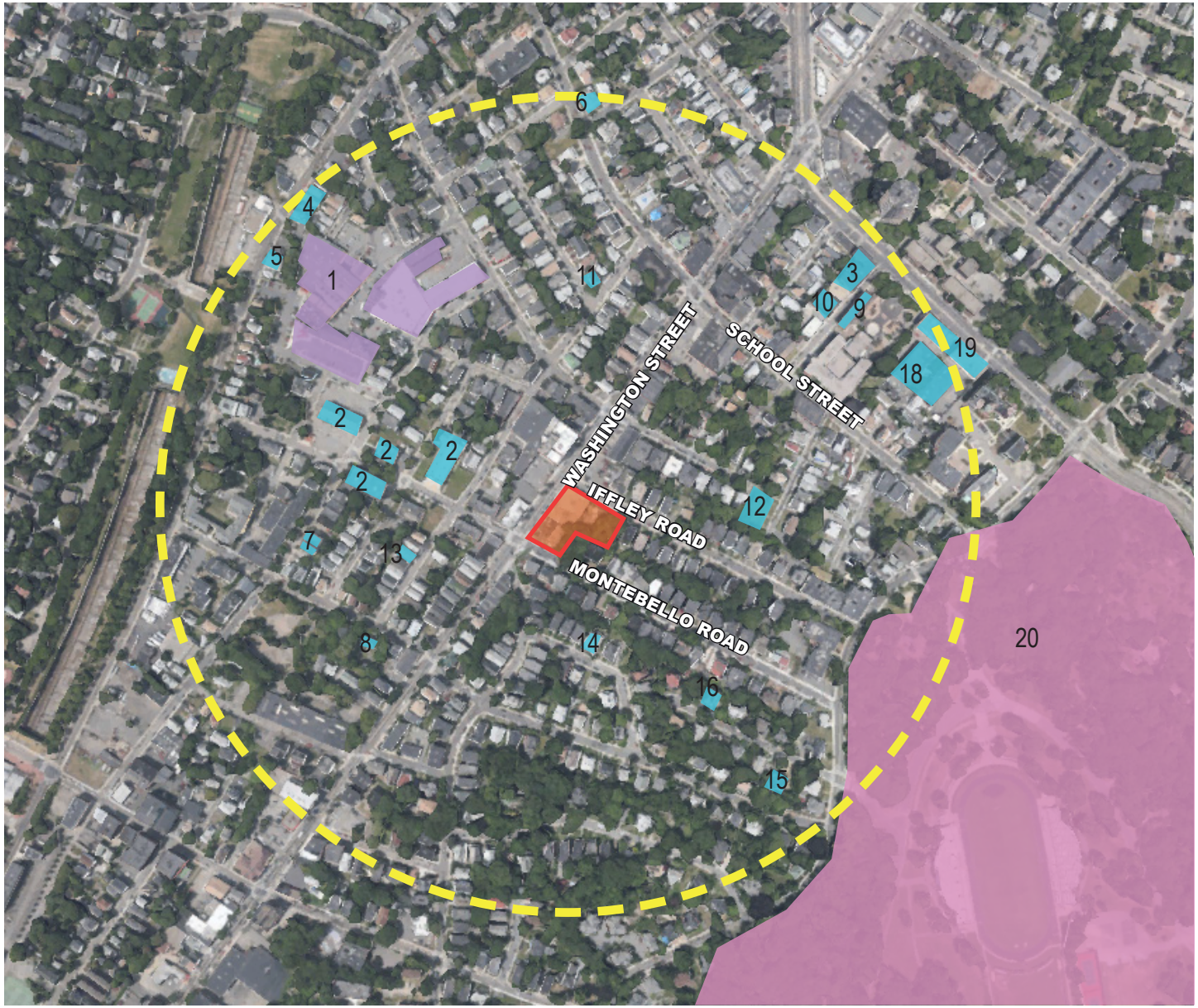
5.1 Historic Resources on the Project Site and Property History

The Project Site comprises 32,412 square feet, and contains an existing two story structure (formerly containing Economy Plumbing and Heating Supply Company) and a single-story automotive repair garage (E & J Auto Center) along Washington Street, as well as a single-level concrete garage with an unusually wide curb-cut opening along Iffley Road. The Economy Plumbing and Heating Supply Company building was constructed in 1905 by Joseph Willcutt. This small warehouse was built along Washington Street as the elevated train was being extended from Dudley Square to Forest Hills. The Pratt Bread Company occupied the building until the 1930s when it then transitioned to a wood working shop. Following the wood working shop, the building became home to Donnelly Advertising, a billboard company, from the 1930's through the middle 1940's, and then Forest Wadding, a manufacturer of corrugated boxes, from 1949 through 1980. Economy Plumbing and Heating Supply Company, a plumbing contractor, occupied the building beginning in 1980. The portion of the site occupied by E & J Auto Center has been an automotive repair garage since 1936, and also operated as a gasoline filling station from 1936 through 1994. Lastly, the third structure on the site has been utilized as a multi-unit automobile storage garage since its construction in 1921.

According to files at the Massachusetts Historical Commission, the on-site structures are not listed in the National or State Register of Historic Places, or the Inventory of Historical and Archaeological Assets of the Commonwealth. It is not expected that the Project will cause adverse impacts on any historic or architectural elements of nearby historic resources outside the Project Site (see **Figure 5-1** for identification of historic resources in the Project vicinity).

5.2 Historic Districts and Resources

The Project Site is not within, nor does it directly abut, any listed historic districts or resources. However, a portion of the Olmsted Park System (Franklin Park) is within one-quarter-mile radius of the Proposed Project. The area surrounding the Project Site is a mixed-use district. Residential, retail and commercial uses characterize much of the area along Washington Street. The nearby Haffenreffer Brewery on Germania Street is a National Register Historic Property within one-quarter-mile radius of the Proposed Project and there are 18 properties listed on the Massachusetts Cultural Resource Information System (MACRIS) inventory of historic places.



1 Haffenreffer Brewery
2 Our Lady of Lourdes Roman Catholic Church Complex
3 Washington Apartments
4 Charles J. Page House
5 Jamaica Plain Neighborhood House
6 E.B. Evans Double House
7 Milton M. Favor Three Decker
8 Charles Cunningham Double House
9 Dixwell Apartments
10 Elizabeth Gleason Apartment Building
11 William Brophy House
12 John A. Byron House
13 John Beisty Three Decker
14 F.J. Parker Double House
15 Thomas J. Stearns House
16 15 Park Lane
17 Patrick W. Ford House
18 Cleaves Court Apartments
19 2029-2049 Columbus Avenue
20 Olmsted Park System (Franklin Park)

= 1/4 mile buffer
= Property on Inventory of Historic Places
= National Register Historic District
= Project Site
= National Register Individual Property

Figure 5 - 1
Historic Resources

The historic resources within one-quarter-mile radius of the Proposed Project are summarized in **Table 5-1** that follows.

Table 5.1: Historic Resources Within ¼ Mile of the Project Site

Key to Historic Resources Figure (Figure 5-1)	Historic Resource	Address/Description
National Register Individual Properties		
1	Haffenreffer Brewery	Germania Street
National Register Historic District		
20	Olmsted Park System (Franklin Park)	Franklin Park is located in the Jamaica Plains, Roxbury, and Dorchester neighborhoods
Inventory of Historic Places		
2	Our Lady of Lourdes Roman Catholic Church Complex	14-15 Montebello Road
3	Washington Apartments	1989-1991 Columbus Ave
4	Charles J. Page House	248-260 Amory Street
5	Jamaica Plain Neighborhood House	276 Amory Street
6	E.B. Evans Double House	1-2 Arcadia Street
7	Milton M. Favor Three Decker	66-68 Brookside Avenue
8	Charles Cunningham Double House	18 Cornwall Street
9	Dixwell Apartments	14-20 Dixwell Street
10	Elizabeth Gleason Apartment Building	21-23 Dixwell Street
11	William Brophy House	17 Egleston Street
12	John A. Byron House	14 Grenada Park
13	John Beisty Three Decker	14 Haverford Street
14	F. J. Parker Double House	14-16 Olmstead Street
15	Thomas J. Stearns House	4 Park Lane
16	15 Park Lane	15 Park Lane
17	Patrick W. Ford House	48 Peter Parley Road
18	Cleaves Court Apartments	Cleaves Street
19	2029-2040 Columbus Avenue	2029-2040 Columbus Avenue

The Proposed Project is not expected to have effects on any of the listed historically significant resources in **Table 5-1.**

5.3 Archaeological Resources

No known archaeological resources were located within the Project site during the review of Massachusetts Historic Commission files and MACRIS, therefore no impacts to archaeological resources are anticipated.

6.0 INFRASTRUCTURE SYSTEMS COMPONENT

This section outlines the existing utilities surrounding the Project site, the connections required to provide service to the Propose Project, and any impacts on the existing utility systems that may result from the construction of the Proposed Project and identifies mitigation measures to address these impacts. The following utility systems are discussed herein:

- Sewer
- Domestic Water
- Fire Protection
- Drainage
- Electricity
- Telecommunications and Cable
- Steam and Gas

A detailed infrastructure analysis will be performed when the Proposed Project proceeds into the Design Development Phase. The Project's team will coordinate with the appropriate utilities to address the capacity of the area utilities to provide services for the new building. A Boston Water and Sewer Commission (BWSC) Site Plan and General Service Application is required for the new water, sanitary sewer, and storm drain connections. In addition, a Storm Water Pollution Prevention Plan will be submitted specifying best management measures for protecting the BWSC drainage systems during construction.

A Drainage Discharge Permit Application is required from BWSC for any construction dewatering. The appropriate approvals from the Massachusetts Department of Environmental Protection (MassDEP), and the U.S. Environmental Protection Agency (EPA) will be sought if needed.

The Proposed Project is a new mixed-use residential / retail development including approximately97,107 gsf spread out of proposed floor area over two large buildings, and four townhouses accommodating a total of 76 residential units, 36 associated parking spaces, two commercial spaces totaling 5,364 gsf, and associated landscaped areas. The two new buildings along Washington Street will vary in height, from a six-story building with a mezzanine level at the corner of Washington Street and Iffley Road to a five-story building with a stepped-back sixth level at Washington Street and Montebello Road. Towards the rear of the site along Iffley Road, a third building of three stories will feature three separate townhouse units with three dedicated on-site parking spaces and ground level open space. The Project Site comprises 32,412 square feet, and contains an existing two story structure (formerly containing Economy Plumbing and Heating Supply Company) and a one-story garage utilized as an automotive repair garage (E & J Auto Center) along Washington Street, and a one-story concrete block structure along Iffley Road, which is utilized as a multi-unit automobile storage garage. These existing buildings will be demolished to allow the new project to be constructed.

6.1 Sanitary Sewer System

6.1.1 Existing Sewer System

The Boston Water and Sewer Commission ("BWSC") owns and maintains the sewer systems adjacent to the site (See **Figure 6-1**). Currently, BWSC has 12-inch sanitary sewer pipes in Montebello Road and Iffley Road which flow downhill to a 15-inch combined sanitary sewer pipe in Washington Street. The BWSC lines connect to the Massachusetts Water Resource Authority (MWRA) system and ultimately discharge into the Deer Island Treatment Facility.

6.1.2 Project-Generated Sewage Flow

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 6-1**. Other wastewater generation includes the cooling systems of each building. As shown in the **Table 6-1,** the residential area will have average daily flows of approximately 16,720 gallons per day (gpd) of sanitary sewage, the retail space will have average daily flows of approximately 200 gpd, and the restaurant area will have average daily flows of approximately 4,900 gpd.

Table 6-1: Projected Sanitary Sewer Flows- Sewage Generation

Use*	GSF	314 CMR Value (gpd/unit)		Estimated Maximum Daily Flow (gpd)
Residential	152 bedrooms	110	/bedroom	16,720
Retail	2,700 sf	50 gpd	/1,000 sf	200**
Restaurant	140 Seats	35 gpd	/seat	4,900
			Total	**21,820**

*Uses identified are preliminary and subject to change in the final plans.

**The minimum allowable sanitary flow for retail space is 200 gpd.

6.1.3 Sanitary Sewage Connection

3190 Washington Street, 3204 Washington Street, and 11 Iffley Road will each have a six-inch sanitary service lateral. An interior grease trap is planned for treatment of the restaurant kitchen sewage prior to discharge. The construction of all connections and structures will be performed so as to minimize any effects on the adjacent streets and to ensure that adequate facilities are available to service the site and surrounding area during construction. It should be noted these sewer flows will be kept separate from all storm drain service connections. All appropriate permits and approvals will be obtained prior to construction.

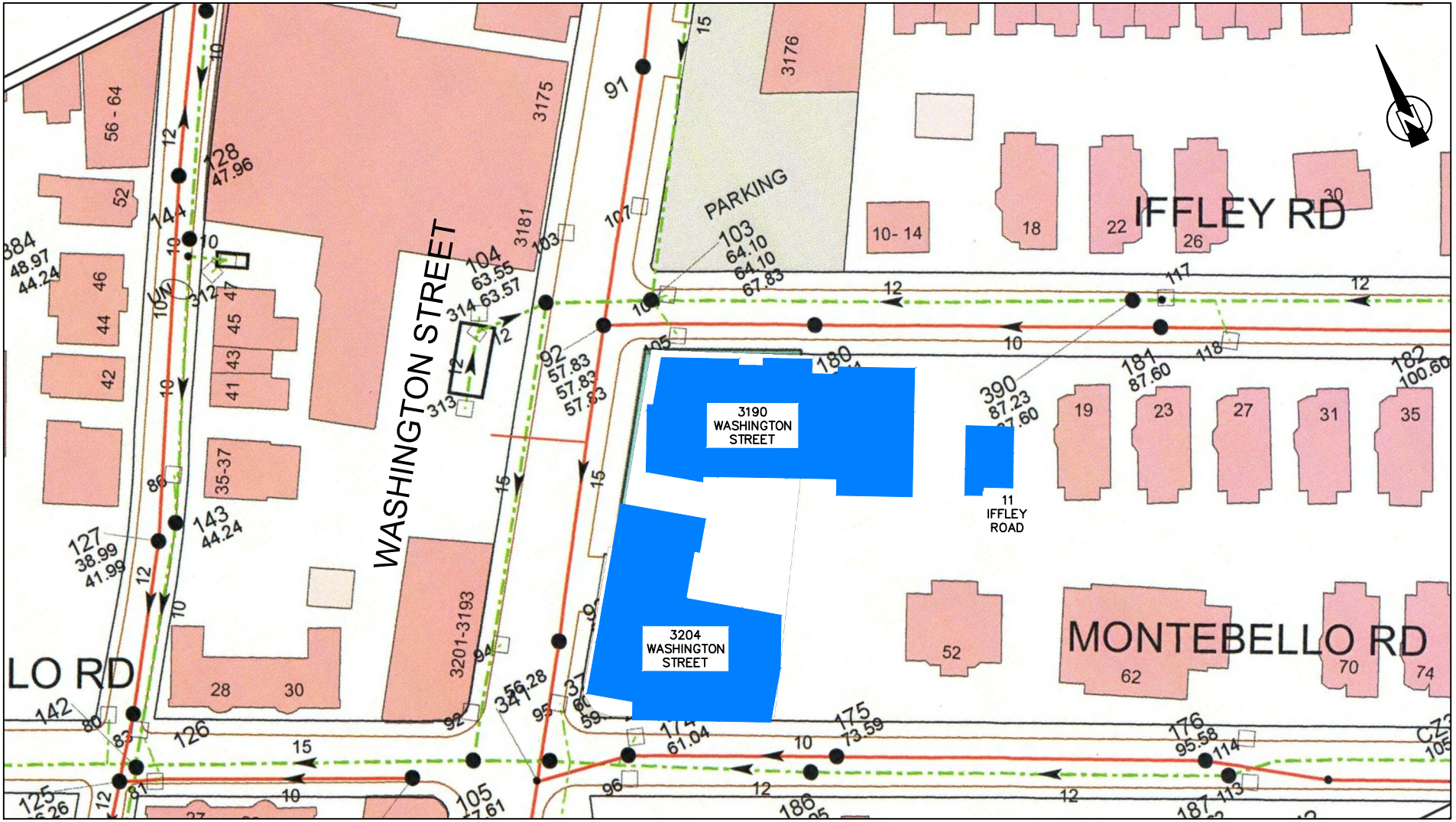


FIGURE 6-1
BWSC SEWER AND DRAIN SYSTEM MAP
SCALE: N.T.S.

6.2 Water Supply System

6.2.1 Existing Conditions:

A 12-inch diameter ductile iron pipe (DIP) water main runs within Washington Street adjacent to the proposed buildings. A 12-inch diameter water main runs within Montebello Road adjacent to the proposed buildings. An eight-inch diameter water main runs within Iffley Road adjacent to the proposed buildings. 3190 Washington Street is serviced by a 4" fire protection line from the Washington Street and a ¾" domestic water line from Iffley Road. 3204 Washington Street has a ¾" domestic water service from Montebello Road. The single-story garages on Iffley Road do not have any water service (see **Figure 6-2**).

There are existing fire hydrants directly across the street from the project site on Montebello Road, Washington Street, and Iffley Road. There are no capacity issues anticipated for serving the Project with water from the city system.

6.2.2 Proposed Water System

The Project's water demand estimates for domestic water sources are based on the Project's estimated sewage generation detailed in **Table 6-1**. 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 site will consume approximately 24,000 gpd of domestic water. Numbers 3190 Washington Street and 3204 Washington Street will be serviced by a single domestic water service line and a single 6" fire protection line. Number 11 Iffley Road will be serviced by a domestic service water service line. It is anticipated that all service lines will be connected to the eight-inch diameter water main within Iffley Road. The water will be supplied by the BWSC's system.

6.3 Stormwater System

6.3.1 Existing Conditions

Currently, the site is occupied by three masonry buildings, single-story garage structures, bituminous concrete parking areas, bituminous concrete driveways, concrete driveways, and vegetation. The site stormwater runoff enters catch basins via sheet flow or from roof leader connections from existing buildings and is discharged into Iffley Road, Montebello Road, and Washington Street. There are no existing detention or infiltration facilities, nor water quality methods in place currently to treat stormwater runoff.

6.3.2 Proposed Conditions

The BWSC and the Massachusetts Department of Environmental Protection (MassDEP) are systematically separating stormwater and wastewater over time to prevent flooding of the system

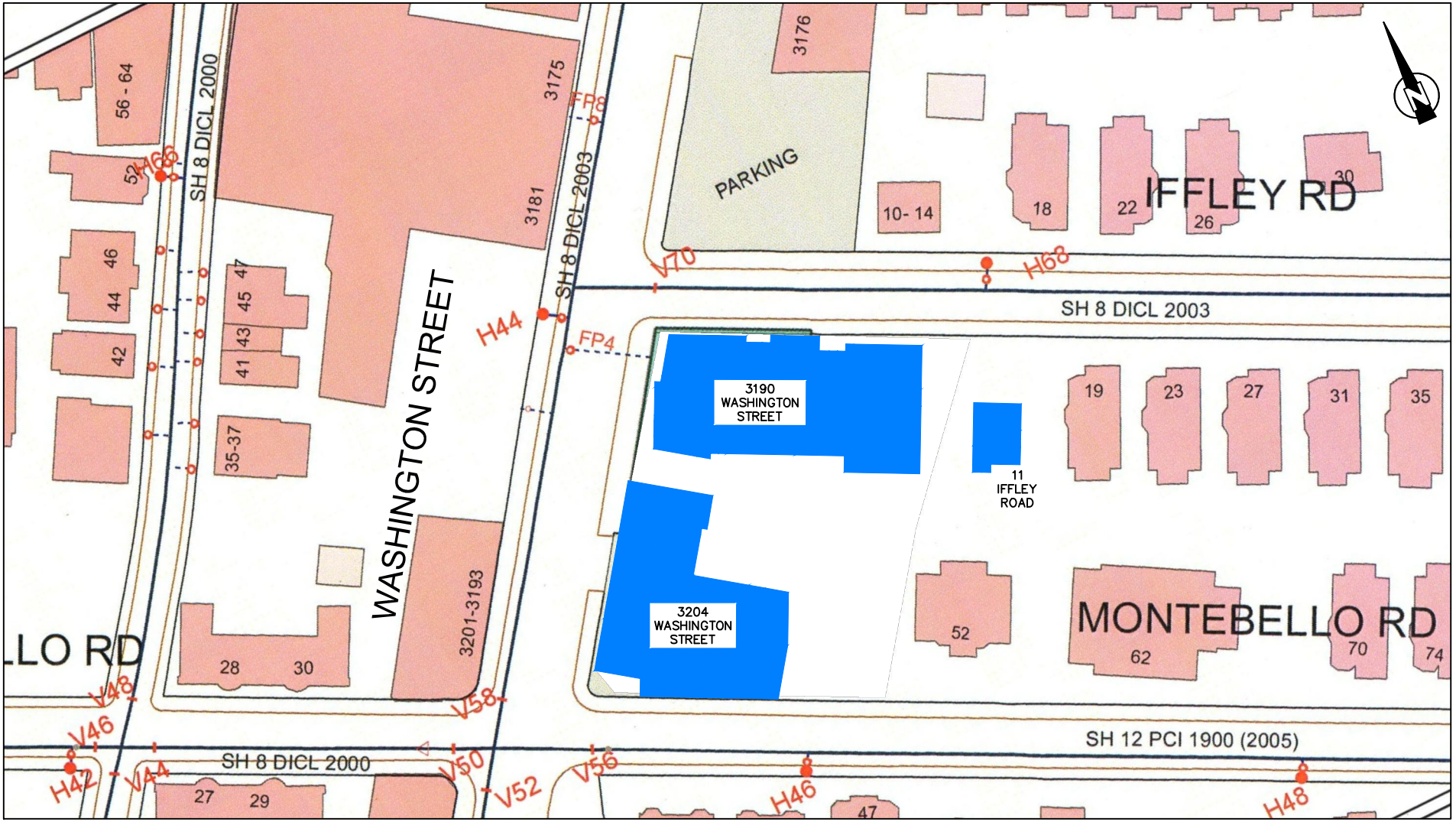


FIGURE 6-2
BWSC WATER SYSTEM MAP
SCALE: N.T.S.

resulting in periodic overflows of combined sewage into receiving waters. Within the City of Boston, the BWSC is the agency charged with applying and enforcing all stormwater management requirements for projects that do not fall within Conservation Commission jurisdiction. The Proponent will work with the BWSC to meet their separation objectives.

6.3.3 Water Quality and Stormwater Management

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 the 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 and vegetative cover.

All necessary dewatering will be conducted in accordance with any applicable MWRA and BWSC construction discharge permits as they apply to the project. Once construction is complete, the Project will be in compliance with all BWSC stormwater management policies. See below for additional information.

6.3.4 Mitigation Measures

Based on an initial project introduction meeting with the BWSC, the following stormwater management objectives will need to be met:

1. Match pre development peak runoff rates for the 2 through 100-Yr., 24 –Hr. rainfall events
2. Infiltrate 1" first flush runoff from all impervious surfaces on site.
3. Separate all stormwater from sanitary sewage discharges from the project

These objectives are independent of any performance requirements for LEED Certification that the project may pursue.

All necessary dewatering will be conducted in accordance with applicable MWRA and BWSC discharge permits. Once construction is complete, the Proposed Project will be in compliance with local and state stormwater management policies, Coordination with the Boston Water and Sewer Commission

Proposed connections to the BWSC's water, sanitary sewer and storm drain system will be designed in conformance with the BWSC's design standards, Sewer Use and Water Distribution System Regulations, and Requirements for Site Plans. The Proponent will submit a Site Plan Review application package for approval prior to construction. The site plan will indicate existing and proposed water mains, sanitary sewers, and stormwater lines. The preliminary plan includes cutting & capping of the existing services as well as proposed connections (see **Figure 6-3**).

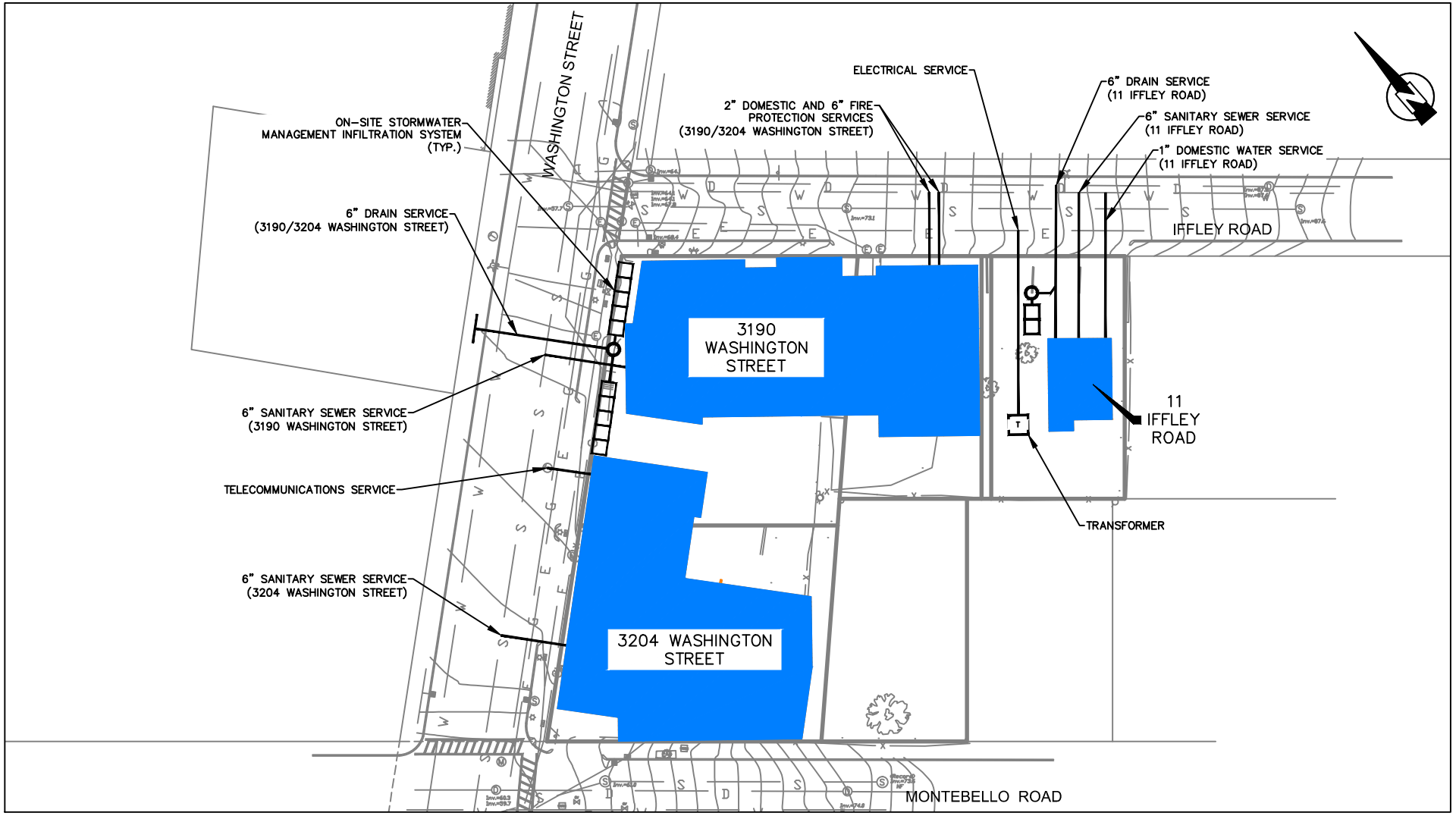


FIGURE 6-3
PROPOSED UTILITY MAP
SCALE: 1"=60'±

MLF CONSULTING LLC

Sherwood Consulting & Design, LLC
26 Smith Place, Suite 2
Cambridge, MA
(617) 945-0940
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6.4 Energy Requirements and Service

6.4.1 Existing and Proposed Electrical Service

Nstar provides electric service to the City of Boston. The site is currently served with underground electric wires connecting to electric duct banks within the streets adjacent to the property. Electric power design for new services will be coordinated with NSTAR as the design phase progresses and electric consumption is determined.

6.4.2 Natural Gas Requirements

National Grid provides natural gas services in the area. It is anticipated that new gas services will be provided to each of the proposed buildings from the mains in the adjacent streets. Gas meter locations will be coordinated with the project architect and the utility provider.

6.4.3 Telecommunications System

Verizon New England and Comcast provide telephone and cable services in the area. These are underground telephone and cable service lines in the adjacent streets. New telephone and cable lines will be constructed underground to the proposed buildings. The exact number of providers and duct bank conduit requirements will be determined during the design phase (see **Figure 6-3** for preliminary connection location on Washington Street).

6.5 Steam Systems

At this time, the Proposed Project is not expected to require steam service.

6.6 Utility Protection During Construction

Existing public and private infrastructure located within nearby public rights-of-way will be protected during Project construction. The installation of proposed utility connections within public ways will be undertaken in accordance with BWSC, Boston Public Works Department, the Dig-Safe Program, and applicable utility company requirements. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer, and drain facilities will be reviewed by the BWSC as part of its Site Plan Review process. All necessary permits will be obtained before the commencement of work.

7.0 TRANSPORTATION COMPONENT

7.1 Introduction

7.1.1 Purpose of the Transportation Component

Howard/Stein-Hudson Associates, Inc. (HSH) has conducted an evaluation of the transportation impacts of the proposed redevelopment project at 3200 Washington Street (the "Project" and/or the "Site") located in Egleston Square, a district overlapping both the Jamaica Plain and Roxbury neighborhoods of Boston. The following transportation study adheres to the Boston Transportation Department (BTD) *Transportation Access Plan Guidelines* and Boston Redevelopment Authority's (BRA) *Development Review Guidelines* (2006). This study includes an evaluation of existing transportation conditions; future transportation conditions with and without the Project; roadway, pedestrian, and bicycle conditions; transportation issues; parking and loading; pedestrian and bicycle circulation; proposed mitigation; and transportation goals for the Project.

7.1.2 Project Description

The Project site is bounded by Iffley Road to the north, Washington Street to the west, and Montebello Road to the south, as shown in **Figure 7-1**. The Project involves the demolition of the existing buildings on the site, which currently house an automobile service and inspection station and a plumbing and heating supply company. The existing uses on the site are currently accessed by a an approximately 20-foot wide curb cut along Montebello Road, a 100-foot wide curb cut along Washington Street, and a 110-foot wide curb cut along Iffley Road.

The Project will replace the existing uses on the site and will consist of 73 rental apartment units, three residential townhouse units, and approximately 5,516 square feet (sf) of retail/restaurant space. The Washington Street and the residential townhouse units will be located off of Iffley Road. A total of 33 parking spaces will be provided for the rental apartment units in an at-grade garage with access off of Washington Street and egress off of Montebello Road. A total of 3 parking spaces will be provided for the townhouse units that will be accessed off of Iffley Road. Covered, secure storage for 80 bicycles will be provided on the Project site for the residential uses. The Project proponent is actively working with Zipcar to provide a car-sharing service on the site.

Vehicular access to the garage will be provided off of Washington Street and egress will be provided off of Montebello Road. Access and egress to the residential townhouse units will be provided off Iffley Road. The Project will significantly reduce length of curb cuts that serve the Project site. Primary pedestrian access to the apartments and the retail space will be provided off

Figure 7-1.
Site Locus and Study Area Map

of Washington Street. Primary pedestrian access to the townhouse units will be provided off of Iffley Road. Loading, deliveries, and trash pick-up will take place on-site within the garage.

The Project site is also well served by public transportation. The MBTA Bus Route 42 runs along Washington Street adjacent to the site, with stops located at Forest Hills Street, immediately south of the site. The Green Street and Stony Brook MBTA stations are also within a ten minute walk of the Project site and provide access to the MBTA Orange Line. MBTA Bus Routes 22, 29, and 44 can also be accessed at the intersection of Washington Street/Columbus Avenue, which is located approximately a quarter-mile north of the site.

The study area consists of the following intersections in the vicinity of the Project site, also shown in **Figure 7-1:**

- Washington Street at Montebello Road and Forest Hills Street (signalized);
- Washington Street at School Street (signalized); and
- Washington Street at Iffley Road (unsignalized);

7.1.3 Study Methodology

The existing conditions analysis includes an inventory of the transportation conditions such as roadway capacities, traffic characteristics, parking and curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. As required by the BTD, existing counts were conducted for vehicles, bicycles, and pedestrians at the study area intersections. The traffic counts form the basis for the transportation analysis conducted as part of this evaluation.

The future transportation conditions analysis evaluates potential transportation impacts associated with the Project. Long-term impacts are evaluated for the year 2019, based on a five-year horizon from the existing year (2014). Expected roadway, parking, transit, pedestrian, bicycle accommodation, and loading capacities and deficiencies are identified. This section includes the following scenarios:

- The 2019 No-Build conditions scenario includes both general background traffic growth and traffic growth associated with specific developments and transportation improvements that are planned in the vicinity of the Project site.
- The 2019 Build conditions scenario includes adding project-generated traffic volume estimates for a full-build-out scenario to the traffic volumes developed as part of the 2019 No-Build conditions scenario.

The final part of the transportation study identifies measures to mitigate Project-related impacts, if any exist. These impacts include any traffic, pedestrian, bicycle, transit, parking, safety, or construction-related issues that are necessary to accommodate the Project.

An evaluation of short-term traffic impacts associated with construction activities is also provided.

7.2 Existing Transportation Conditions

This section includes descriptions of existing study area roadway geometries, intersection traffic control, peak-hour vehicular, bicycle, and pedestrian volumes, transit availability, parking and curb usage, and loading conditions.

7.2.1 Existing Roadway Conditions

The major study area roadways are described below. The descriptions reflect functional classifications by the Massachusetts Department of Transportation (MassDOT) Highway Division's Office of Transportation Planning.

Washington Street is a two-way roadway located adjacent to the west side of the Project site. It is classified as an urban principal arterial under BTD jurisdiction and runs in a north-south direction between Government Center to the north and Forest Hills Station to the south, where the roadway becomes Hyde Park Avenue. In the vicinity of the Project site, Washington Street consists of one travel lane in each direction with curbside parking allowed on both sides. Sidewalks are provided along both sides of the roadway.

Forest Hills Street is a two-way roadway located south of the Project site. It is classified as an urban collector and runs in a north-south direction between Arborway to the south to Washington Street to the north. The roadway generally consists of one travel lane in each direction with curbside parking on allowed in the northbound direction in the vicinity of the site. Sidewalks are provided along both sides of the road within the vicinity of the site.

Montebello Road is a one-way roadway located adjacent to the south side of the Project site. It is classified as a local roadway under BTD jurisdiction and runs in an east-west direction between Walnut Avenue to the east and Brookside Avenue to the west. Montebello Road consists of one travel lane in the westbound direction with curbside parking allowed on both sides of the road. Sidewalks are provided along both sides of the road.

School Street is a one-way roadway located north of the Project site. It is classified a local roadway under BTD jurisdiction and runs in an east-west direction between Amory Street to the west and Walnut Avenue to the east. The road is generally one-way in the eastbound direction, with a small two-way segment between Erie Place and Washington Street. Curbside parking is allowed on both sides of the road. Sidewalks are provided along both sides of the road.

Iffley Road is a one-way roadway located adjacent to north side of the Project site. It is classified as a local roadway under BTD jurisdiction and runs one-way in the eastbound direction between Washington Street to the west and Walnut Avenue to the east. The road consists of a single travel

lane with curbside parking allowed on both sides of the road. Sidewalks are provided along both sides of the road.

7.2.2 Existing Intersection Conditions

The study area intersections are described below. Intersection characteristics such as traffic control, lane usage, pedestrian facilities, pavement markings, and adjacent land use are described.

Washington Street/Montebello Road/Forest Hills Street is a five-legged, signalized intersection with four approaches.

The signal operates in four phases: (1) Washington Street northbound/southbound, (2) all-pedestrian phase, (3) Montebello Road westbound, (4) Forest Hills Street northwestbound.

The Montebello Road westbound approach consists of a single travel lane with unrestricted curbside parking available on both sides of the street. Right turns on red are permitted on this approach.

The Washington Street northbound approach consists of a single travel lane. Curbside uses include unrestricted parking and a bus stop for the MBTA Route 42 bus. The Washington Street southbound approach consists of a single travel lane and unregulated curbside parking. Right turns on red are not permitted on the Washington Street northbound and southbound approaches. Left turns are not permitted along the southbound approach between 3:00 p.m. and 6:00 p.m. on Monday to Friday.

The Forest Hills Street northwestbound approach consists of a single travel lane. Parking is not allowed along Forest Hills Street at the intersection; however, unrestricted curbside parking exists along Forest Hills Street south of the intersection. Right turns on red are not permitted on this approach.

Sidewalks are provided along both sides of all roadways. Crosswalks are marked across all approaches of Washington Street and Montebello Road. A crosswalk is also marked across the Forest Hills Street approach, parallel to the east side of Washington Street. Wheelchair ramps and pedestrian signals are provided at each crosswalk.

Washington Street/School Street is a four-legged, signalized intersection with four approaches.

The signal operates in two phases: (1) Washington Street northbound/southbound with concurrent pedestrian phasing, (2) School Street eastbound/westbound with concurrent pedestrian phasing.

The School Street eastbound approach is one-way and consists of a single travel lane. There are no parking restrictions on the left (north) side of this approach and a “No Stopping Anytime” sign is posted along the right (south) side of this approach. The School Street westbound approach

consists of a single travel lane with unrestricted curbside parking. Right turns on red are not permitted on this approach.

The Washington Street northbound approach consists of a single travel lane. Curbside uses include unrestricted parking and a bus stop for the MBTA Route 42 bus. The Washington Street southbound approach consists of a single travel lane. Curbside parking is allowed along the southbound approach, with a 2-hour limit between 8:00 a.m. and 6:00 p.m., Monday-Friday.

Sidewalks are provided along both sides of all roadways. Crosswalks are marked across all approaches. Wheelchair ramps and pedestrian signals are provided at each crosswalk.

Washington Street/Iffley Road is a four-legged, unsignalized intersection with three approaches. The Iffley Road leg of the intersection is a one-way departure in the eastbound direction.

The Washington Street northbound and southbound approaches consist of single travel lanes with unrestricted curbside parking. The Iffley Road eastbound departure consists of a single travel lane with unrestricted curbside parking on both sides of the street. A driveway for a self-storage facility is located directly across Washington Street from Iffley Road. A stop for the MBTA Route 42 bus is provided along Washington Street southbound, south of the self-storage driveway.

Sidewalks are provided along both sides of all roadways. A crosswalk is marked across the Iffley Road departure, parallel to the east side of Washington Street. Wheelchair ramps are provided at both ends of this crosswalk.

7.2.3 Existing Traffic Conditions

Turning movement data was collected at the three study area intersections on Tuesday September 9, 2014 during morning and evening peak periods (7:00-9:00 a.m. and 4:00-6:00 p.m., respectively). Based on the TMCs, the morning peak hour of vehicular traffic within the study area generally occurs between 7:30 a.m. and 8:30 a.m. The evening peak hour of vehicular traffic for all intersections generally occurs between 4:15 p.m. and 5:15 p.m. The detailed traffic counts are provided in the **Appendix F**. The 2014 Existing weekday morning and evening peak hour traffic volumes are shown in **Figure 7-2** and **Figure 7-3**, respectively.

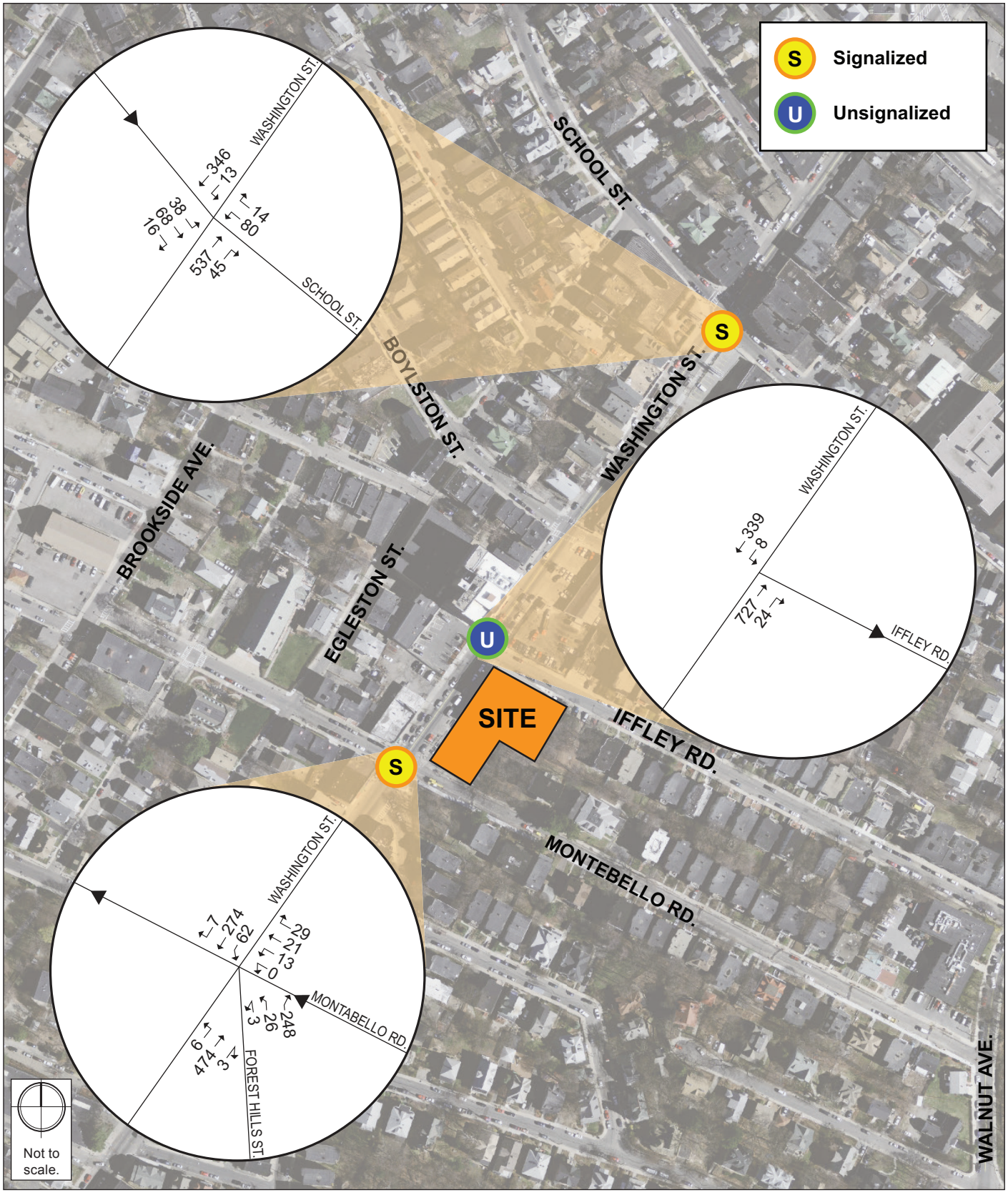


Figure 7-2.
Existing Conditions (2014) Traffic Volumes, a.m. Peak Hour

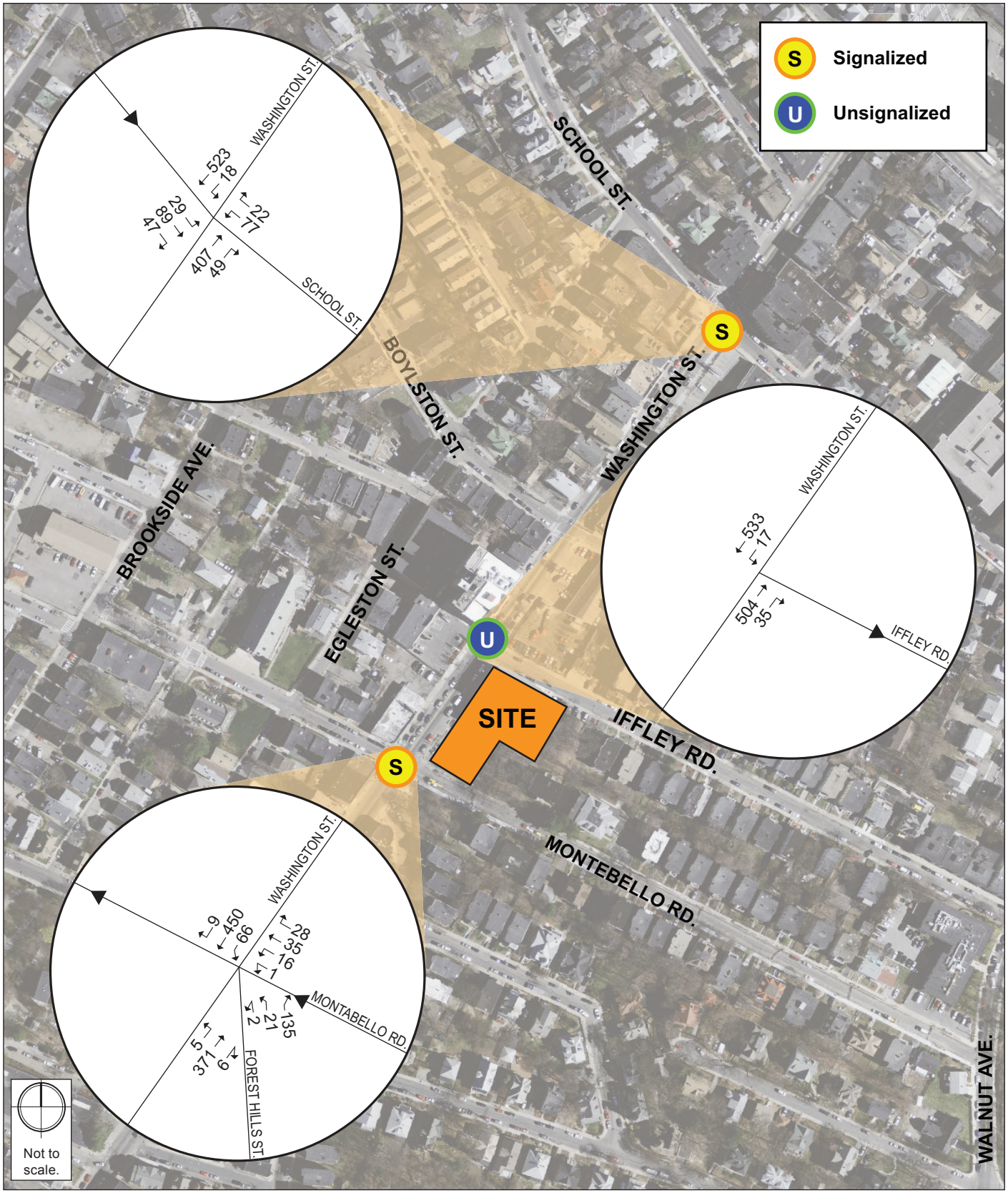


Figure 7-3.
Existing Conditions (2014) Traffic Volumes, p.m. Peak Hour

7.2.4 Existing Traffic Operations

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay incurred by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 6.0) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 *Highway Capacity Manual* (HCM).

Level of service and delay (in seconds) are based on intersection geometry, traffic data, and traffic control for each intersection. For the signalized intersections within the study area, traffic signal timing and phasing plans provided by BTD were used in the analysis.

Table 7-1 summarizes the delay and LOS thresholds for signalized and unsignalized intersections, as defined in the HCM. LOS A defines the condition with the least traffic delay. LOS F represents the condition with the most significant traffic delay. The threshold between LOS E and LOS F indicates that the intersection, or intersection approach, is theoretically at capacity. However in an urban setting, LOS E or LOS F is typical for stop-controlled minor approaches that intersect a major roadway. LOS D is generally considered acceptable in an urban environment and below theoretical operating capacity.

Table 7-1: Intersection Level of Service Criteria

Level of Service	Average Stopped Delay (sec/veh)	
	Signalized Intersection	Unsignalized Intersection
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50

Table 7-2 and **Table 7-3** present the 2014 Existing conditions operational analysis for the study area intersections for the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the **Appendix F.**

Table 7-2: Existing Conditions (2014) Level of Service Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**D**	**50.5**	**-**	**-**	**-**
Montebello Road WB left/thru/right	C	31.5	0.41	26	58
Washington Street NB left/thru/right	C	30.1	0.72	205	#504
Washington Street SB left/thru/right	C	32.1	0.71	151	#403
Forest Hills Street NWB left/right	F	>80.0	>1.00	~207	#370
Washington Street/School Street	**B**	**15.8**	**-**	**-**	**-**
School Street EB left/thru/right	C	22.4	0.50	39	72
School Street WB left/right	C	24.0	0.46	32	62
Washington Street NB thru/right	B	16.6	0.73	165	#368
Washington Street SB left/thru	A	9.4	0.45	77	141
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington Street NB thru/right	A	0.0	0.46	-	0
Washington Street SB left/thru	A	0.4	0.01	-	1

~ = 50th percentile volume exceeds capacity.
# = 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
Gray shading indicates a LOS of E or F.

Table 7-3: Existing Conditions (2014) Level of Service Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**D**	**43.7**	**-**	**-**	**-**
Montebello Road WB left/thru/right	D	46.8	0.61	59	79
Washington Street NB left/thru/right	C	21.6	0.52	133	304
Washington Street SB left/thru/right	D	48.1	0.93	299	#638
Forest Hills Street NWB left/right	E	72.3	0.85	117	#205
Washington Street/School Street	**B**	**15.2**	**-**	**-**	**-**
School Street EB left/thru/right	C	20.8	0.54	39	88
School Street WB left/right	C	24.7	0.48	32	67
Washington Street NB thru/right	B	11.0	0.56	109	201
Washington Street SB left/thru	B	15.3	0.70	161	#301
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington NB thru/right	A	0.0	0.34	-	0
Washington SB left/thru	A	0.6	0.02	-	2

= 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
Gray shading indicates a LOS of E or F.

The signalized intersection of **Washington Street/Montebello Road/Forest Hills Street** currently operates at LOS D during both the a.m. and p.m. peak hours. The Forest Hills Street approach to the intersection currently operates at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. Due to the geometry of the intersection, the signal requires an additional phase to accommodate both Montebello Road and Forest Hills Street, which increases delay at the intersection.

The signalized intersection of **Washington Street/School Street** currently operates at LOS B during both the a.m. and p.m. peak hours. The intersection currently has enough vehicular capacity to provide efficient operations.

The unsignalized intersection of **Washington Street/Iffley Road** currently operates at LOS A during both the a.m. and p.m. peak hours.

Based on this analysis, the study area intersections generally accommodate the existing levels of traffic throughout the study area with the exception of the Forest Hills Street approach to Washington Street. Field observations indicate that there is moderate queuing and delay along the Forest Hills Street approach for short periods of time during the peak hours.

7.2.5 Existing Parking and Curb Use

On-street parking regulations within the study area are illustrated in **Figure 7-4**.

Within the vicinity of the Project site, on-street parking along Washington Street is generally unrestricted with some bus stop locations and some time-restricted parking north of School Street. Parking along Forest Hills Street is generally unrestricted along the northbound side and not allowed along the southbound side. Parking along Montebello Road and Iffley Road is generally unrestricted, with some time-restricted parking along Montebello Road, west of Washington Street.

7.2.6 Existing Public Transportation

The Project site is located within a half-mile of the Green Street and Stonybrook Stations along the MBTA Orange Line. Several MBTA bus routes are also located within a quarter-mile of the Project site. The following describes the public transportation facilities in the vicinity of the Project site, with a map of the nearby public transportation services shown in **Figure 7-5**.

MBTA Orange Line – The Green Street and Stony Brook Stations are located within a half-mile of the Project site and serve the Orange Line branch of the MBTA subway system. The Orange Line provides access between Oak Grove Station to the north and Forest Hills Station to the south. The Orange Line also provides convenient access to downtown Boston, Charlestown, and Malden. The Orange Line operates with headways of approximately 5 minutes during the peak periods and 8 minute headways during the off peak periods.

Figure 7-4.
On-street Parking Regulations

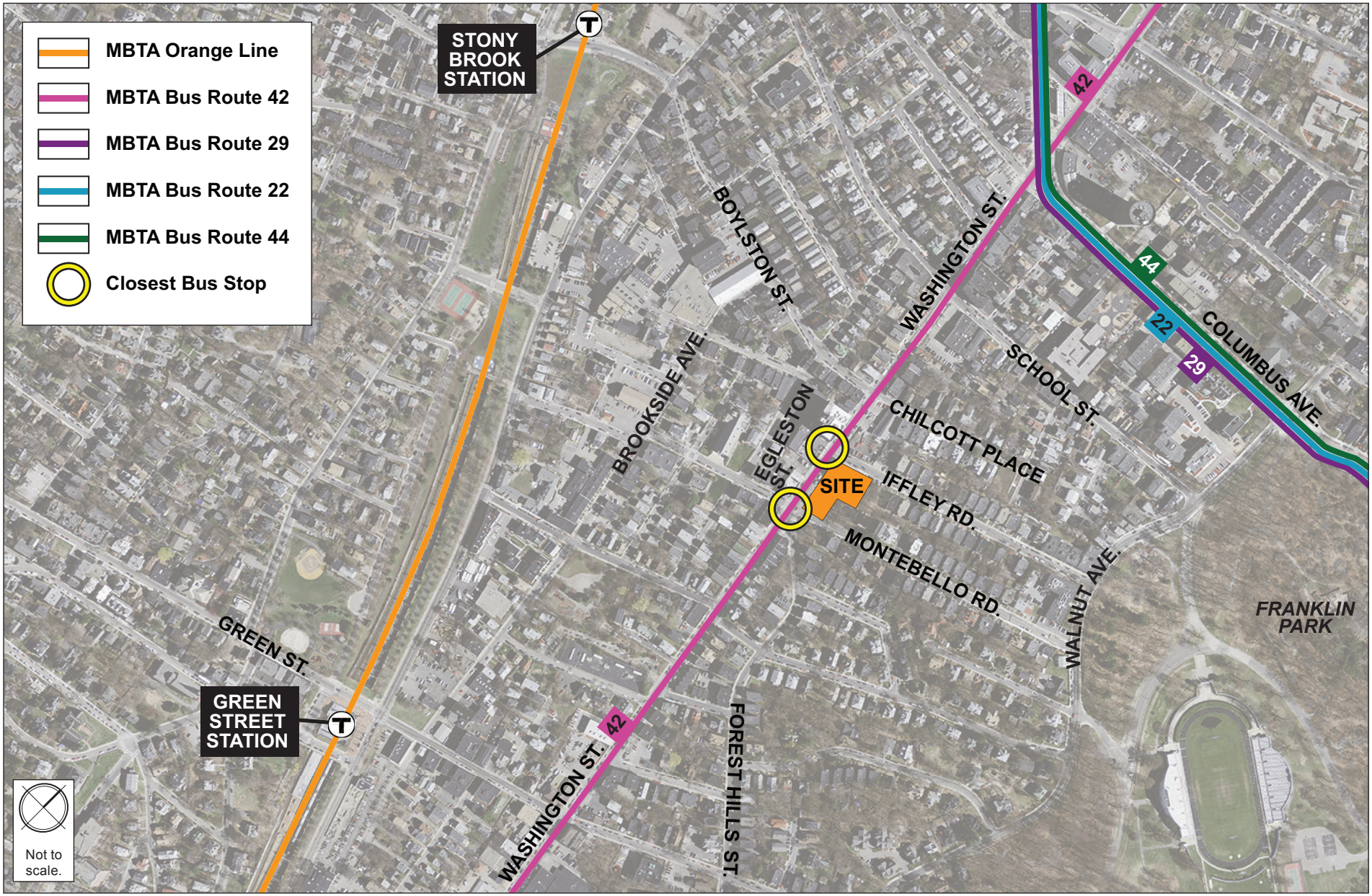


Figure 7-5.
Public Transportation

MBTA Bus Route 42 – This route provides service between Forest Hills Station and Dudley Station via Washington Street and Egleston Square. The nearest bus stops are located adjacent to the site along Washington Street. Weekday service runs from approximately 5:00 a.m. to 12:54 a.m., Saturday service runs from approximately 5:15 a.m. to 12:24 a.m., and Sunday service runs from approximately 6:00 a.m. to 12:28 a.m. Additional service is provided on school days, generally around the times schools dismiss, from about 2:00 p.m. to 4:00 p.m. Headways range from approximately 12 minutes during the peak periods to 50 minutes during the off peak periods.

MBTA Bus Route 22 – This route provides service between Ashmont Station in Dorchester and Ruggles Station via Talbot Avenue. This route travels along Columbia Avenue and stops approximately a quarter-mile north of the Project site. Weekday and Saturday service run from approximately 4:55 a.m. to 2:56 a.m., with Sunday service running from approximately 6:06 a.m. to 1:23 a.m. Headways range from approximately 8 minutes during the peak periods to 30 minutes during the off peak periods.

MBTA Bus Route 29 – This route provides service between Mattapan Station and Ruggles Station. However, before 8:10 p.m., service is only provided between Mattapan Station and Jackson Square Station. This route travels along Columbia Avenue and stops approximately a quarter-mile north of the Project site. At certain times, the route provides direct access to Franklin Field Housing in Dorchester. Weekday service runs from approximately 5:55 a.m. to 1:20 a.m., with Saturday service running from approximately 8:10 p.m. to 1:12 a.m. and no service on Sundays. Headways range from approximately 15 minutes during the peak periods to 35 minutes during the off peak periods.

MBTA Bus Route 44 – This route provides service between Jackson Square Station and Ruggles Station via Humboldt Avenue and Dudley Station. This route travels along Columbia Avenue and stops approximately a quarter-mile north of the Project site. Weekend outbound trips service John Eliot Square instead of Dudley Station. Weekday service runs from approximately 5:10 a.m. to 1:14 a.m., Saturday service runs from approximately 5:25 a.m. to 1:16 a.m., and Sunday service runs from approximately 6:15 a.m. to 12:50 a.m. Headways range from approximately 12 minutes during the morning peak period to 60 minutes during the off peak periods.

7.2.7 Existing Pedestrian and Bicycle Conditions

Sidewalks are provided along all streets within the study area and are generally in fair condition. The sidewalks along Washington Street range from seven feet to over 20 feet and are typically about ten feet wide. The sidewalks adjacent to the Project site are approximately seven feet in width along Montebello Road and Iffley Road. Pedestrian activity is moderate along Washington Street during the peak hours. The existing pedestrian activity during the weekday morning and evening peak hours is show in **Figure 7-6.**

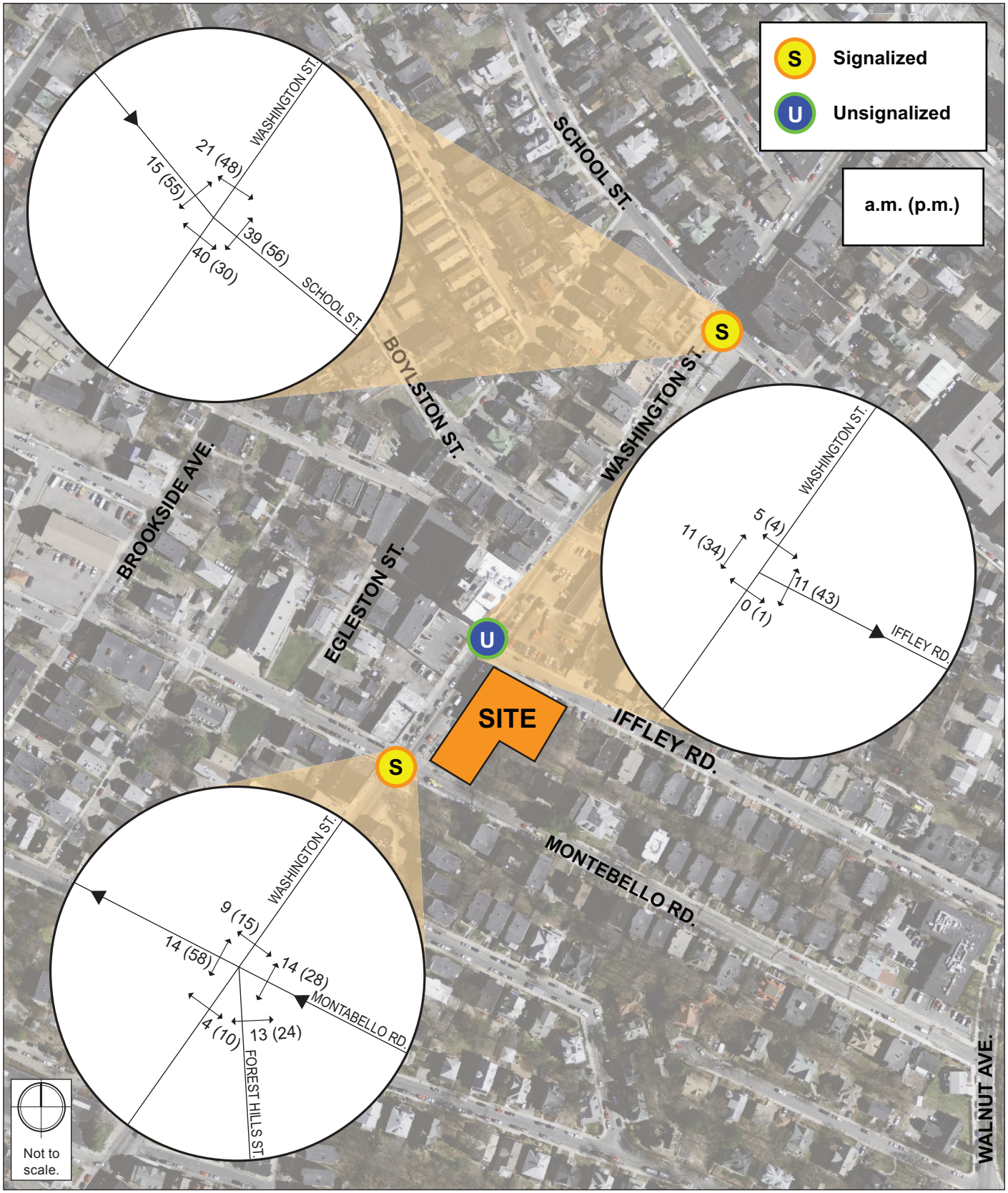


Figure 7-6.
Existing Conditions (2014) Pedestrian Volumes, a.m. and p.m. Peak Hour

Within the study area, Washington Street is designated as an advanced bicycle route and School Street is designated as an intermediate bicycle route on the 2013 Boston Bikes Map. The Southwest Corridor Park is an off-street, shared-use path that generally runs adjacent to the Orange Line and is located about a quarter-mile west of the Project site, providing access between Forest Hills and the Back Bay via Jamaica Plain and Roxbury. The existing bicycle activity during the weekday morning and evening peak hours is shown in **Figure 7-7.**

7.2.8 Bicycle and Car Sharing

Hubway is a bicycle sharing system in the Boston area, which was launched in 2011 and consists of over 140 stations and 1,300 bicycles. There is one Hubway station within a one-quarter mile radius of the site, located north of the Project site at the intersection of Washington Street/Columbus Avenue.

Car sharing, predominantly served by Zipcar in the Boston area, provides access to vehicular transportation for those who do not own cars. Vehicles are rented hourly or daily and are checked out for a specific time period and returned to their original designated location. There are a total of three Zipcar locations within a one-quarter mile radius of the Project site. **Figure 7-8** shows the location of the Hubway and Zipcar locations nearest the Project site.

7.3 Future Conditions

For transportation impact analyses, it is standard practice to evaluate two future conditions: No-Build conditions (without the proposed project) and Build conditions (with the proposed project). In accordance with BTD guidelines, these conditions are projected to a future date five years from the Existing conditions year. For this evaluation of this Project, 2019 was selected as the horizon year for the future conditions analyses.

This section presents a description of the 2019 future conditions scenarios and includes an evaluation of the transportation facilities under the No-Build and Build conditions.

7.3.1 No-Build Conditions

The No-Build conditions reflect a future scenario that incorporates any anticipated traffic growth independent of the Project and any planned infrastructure improvements that will affect travel patterns throughout the study area.

No-Build Background Growth

Two methodologies are used to account for future traffic growth independent of the Project. The first methodology accounts for general background traffic growth that may be affected by changes in demographics, automobile usage, and automobile ownership. Based on a review of recent traffic studies conducted for projects within the vicinity of the study area, a one percent annual traffic growth rate was used to develop the future conditions traffic volumes.

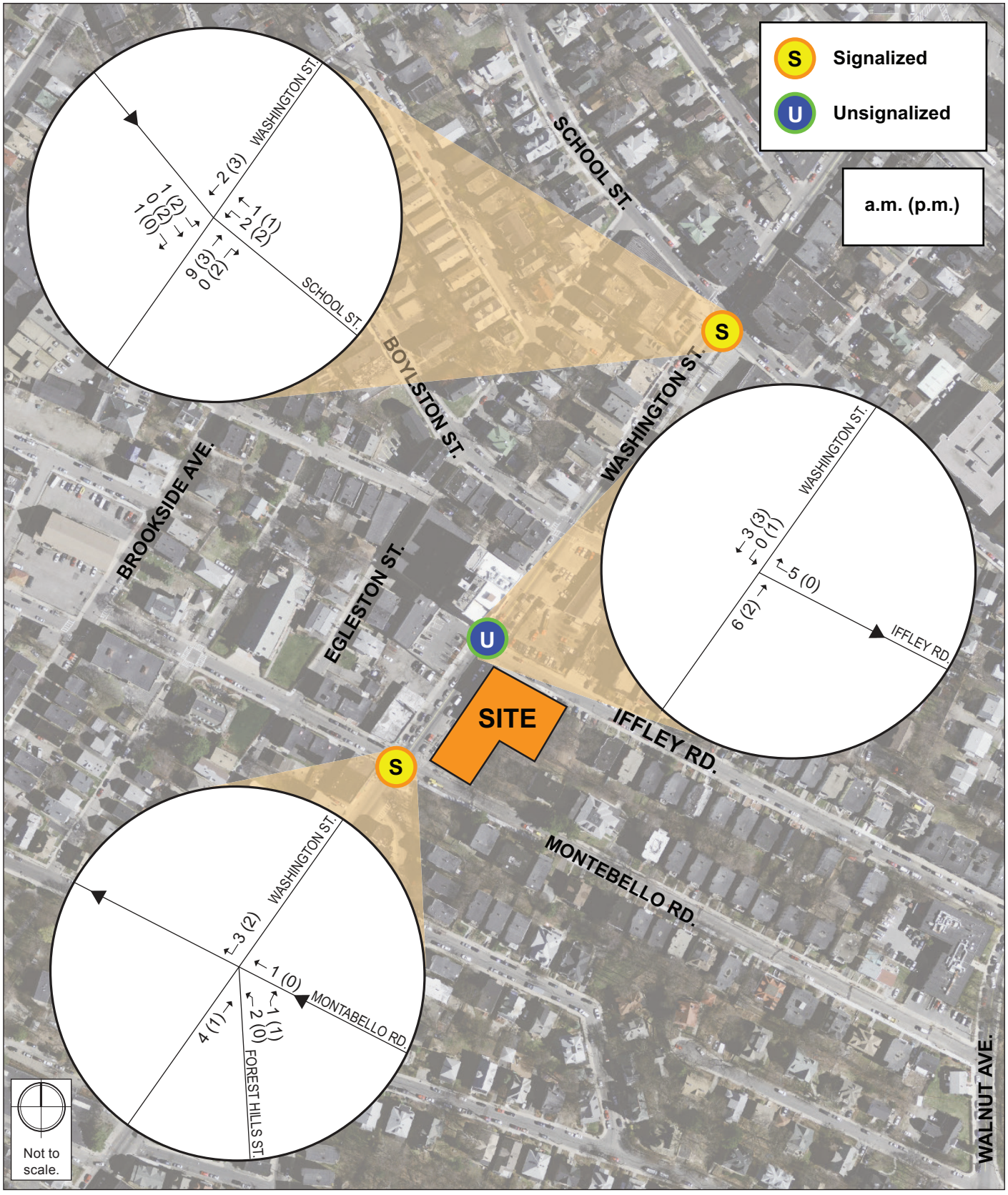


Figure 7-7.
Existing Conditions (2014) Bicycle Volumes, a.m. and p.m. Peak Hour

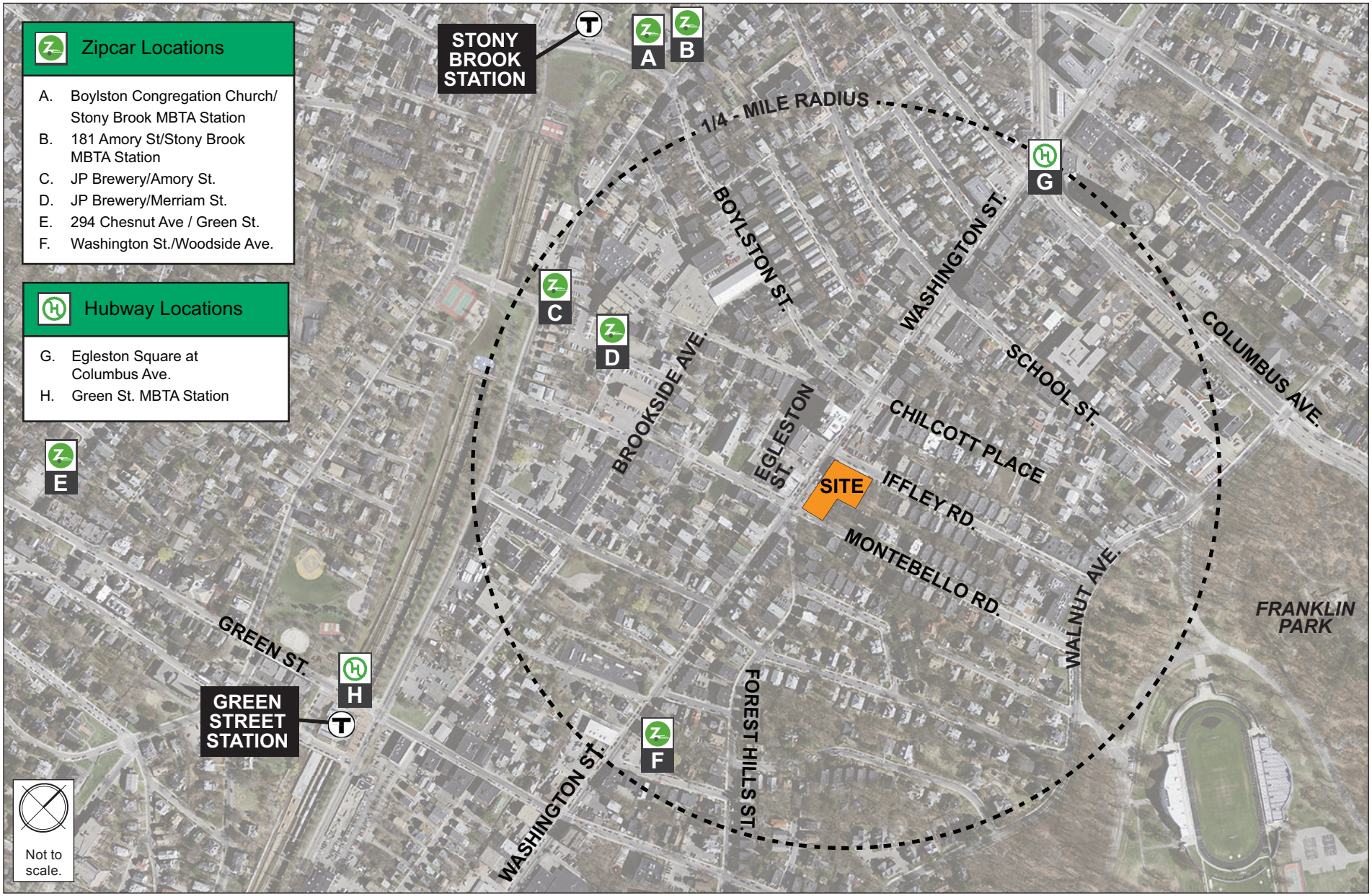


Figure 7-8.
Bicycle and Car Sharing Locations

The second methodology identifies any specific planned developments that are expected to affect traffic patterns throughout the study area within the future analysis time horizon. The following projects are located in the vicinity of the study area. However, traffic volumes associated with these projects were not deemed significant enough to be incorporated into the future conditions traffic volumes in addition to the background growth rate. **Table 7-4** provides a short description of the developments within close proximity of the Project site and **Figure 7-9** provides a map of the development projects.

The 2019 No-Build condition volumes are shown for the a.m. and p.m. peak hours in **Figure 7-10** and **Figure 7-11,** respectively.

Table 7-4: Background Development Projects

Development Name	Address	Status	Description
Walnut Avenue Apartments	459-461 Walnut Avenue	Board Approved	30 affordable studio apartments; 7 residential parking; 20 bed medical respite facility; 12 medical parking
Westminster House Project	3012 Washington Street	Board Approved	27 affordable rental apartments; 13,000 SF of public meeting; space; classrooms; staff offices; conference areas; childcare facility; 20 parking spaces
3521-3529 Washington Street	3521-3529 Washington Street	Board Approved	132 residential units; 132,500 SF storage facility; 25,200 SF retail; 166 parking spaces
The Commons at Forest Hills Station	3593-3615 Washington Street	Board Approved	280 rental units; 7,960 SF retail; 169 residential parking; 16 retail parking
75 Amory Ave Building K Jackson Square	75 Amory Avenue	Board Approved	39 affordable rental apartments; 28 parking spaces
Parcel U	Hyde Park Avenue, south of Ukraine Way	Board Approved	48 townhomes; 76 apartment units; 1,600 sf retail space
3383-3389 Washington Street	3383-3389 Washington Street	Under Review	21 residential units; 2,373 sf retail space
3371 Washington Street/ 197-203 Green Street	3371 Washington Street/ 197-203 Green Street	Under Review	20 residential units; 4,672 sf retail space

In addition to the projects listed above, several parcels of land surrounding the Forest Hills MBTA Station, mostly owned by the MBTA, have also been identified as potential development sites including Parcel S, the Arborway Yard Parcel, and the private parking lot that serves the Forrest Hills MBTA Station while specific proposals for development have not yet been identified.

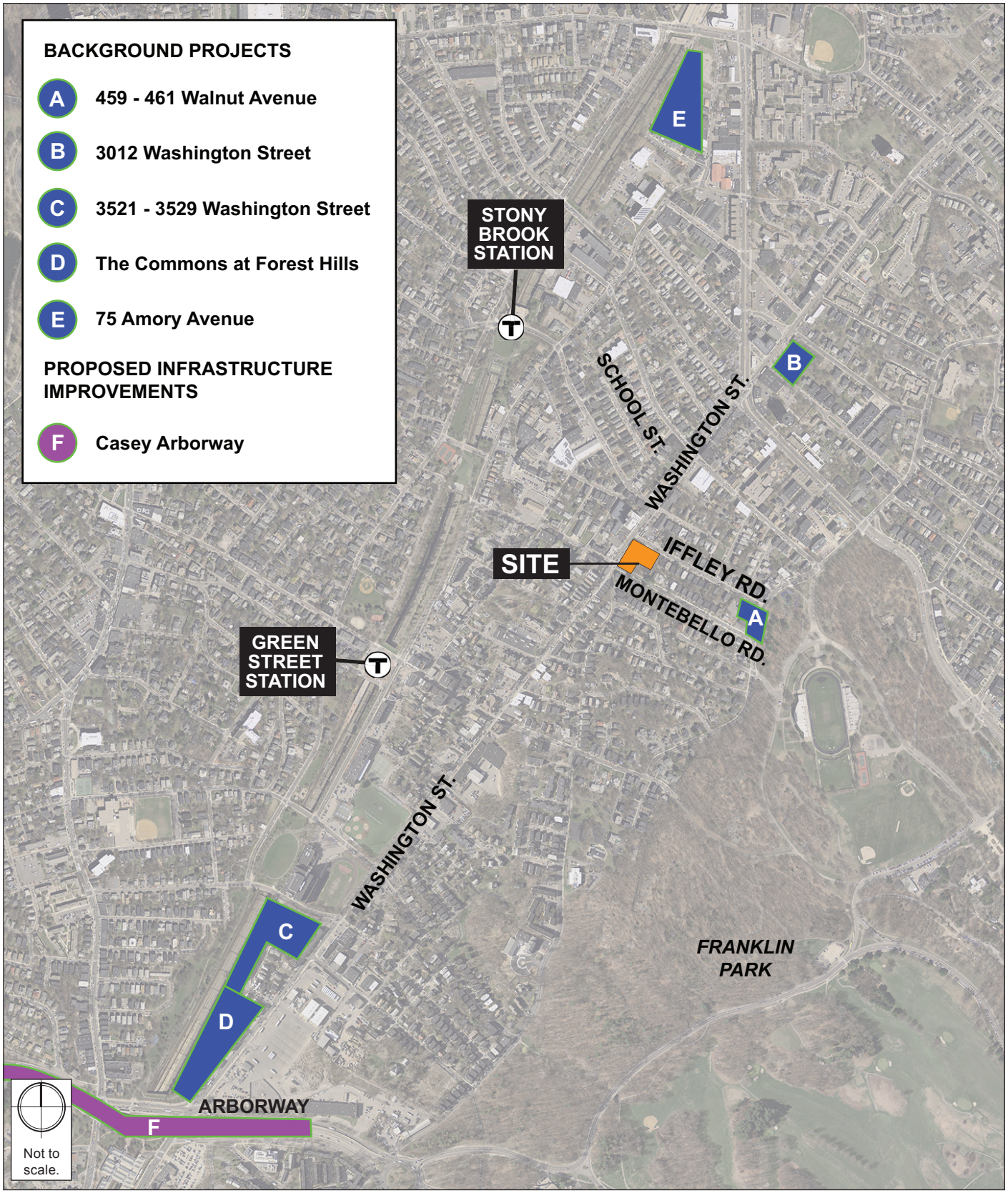


Figure 7-9.
Background Projects

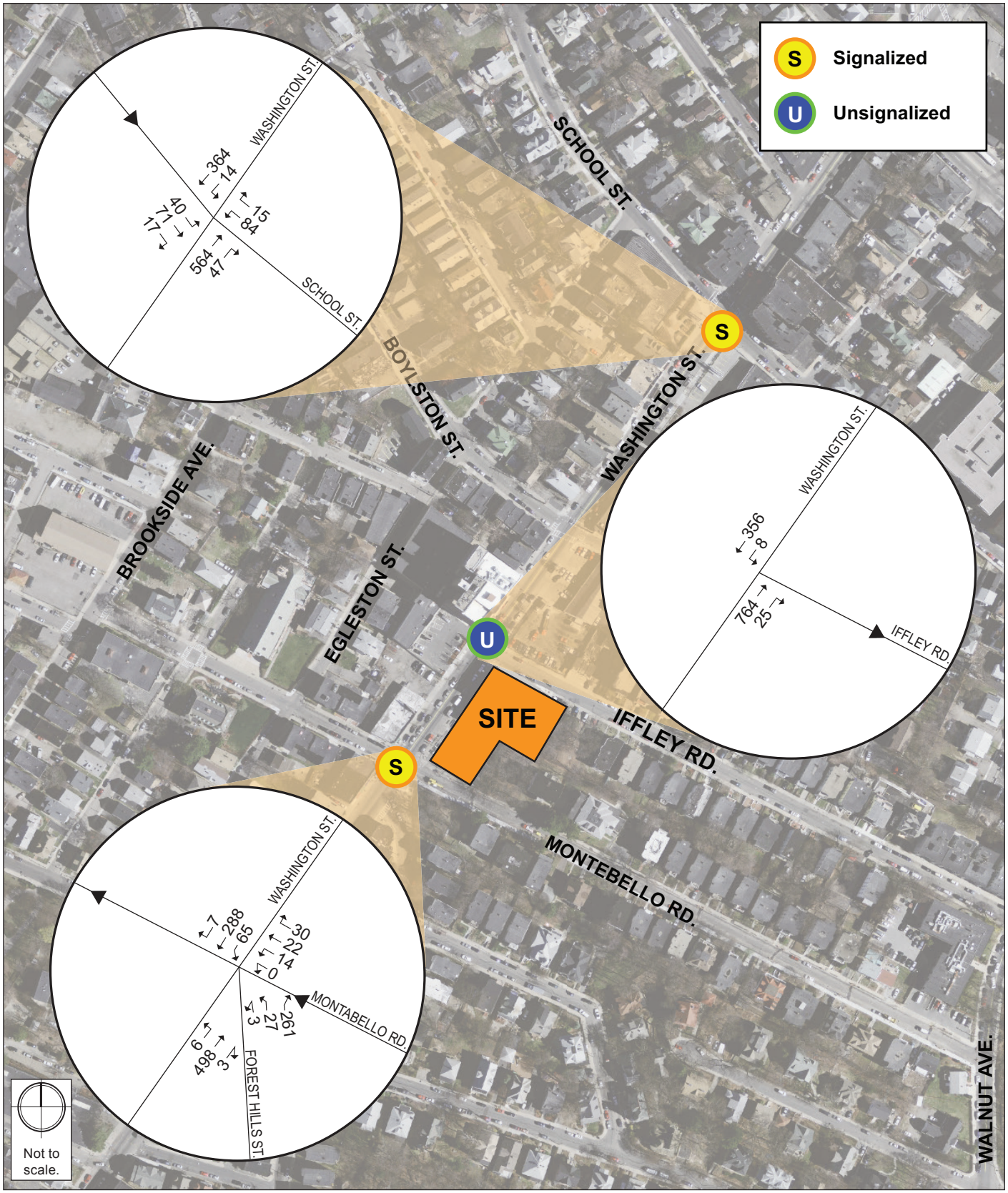


Figure 7-10.
No Build Conditions (2019) Traffic Volumes, a.m. Peak Hour

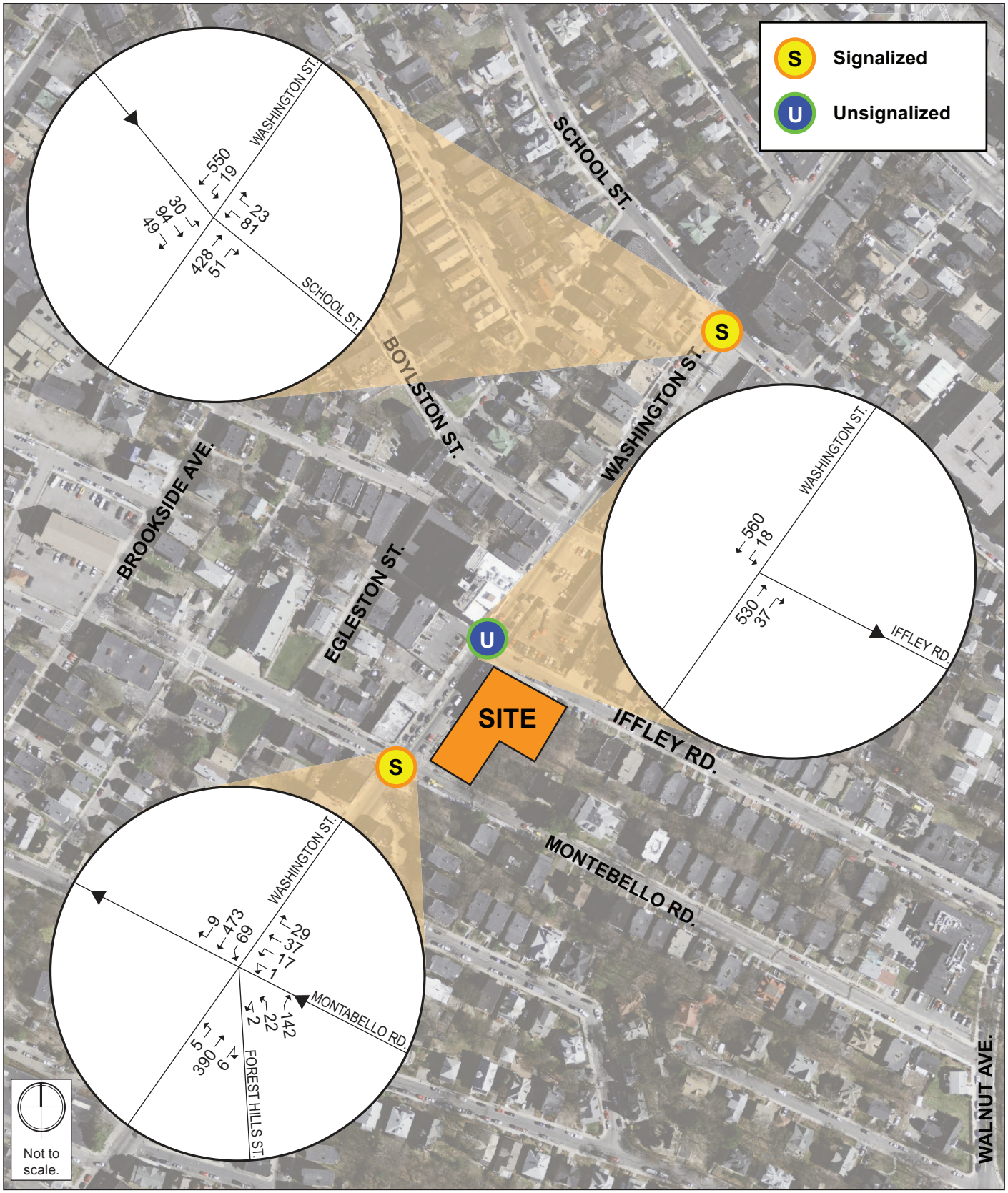


Figure 7-11.
No Build Conditions (2019) Traffic Volumes, p.m. Peak Hour

Proposed Infrastructure Improvements

A review of planned improvements to roadway, transit, bicycle, and pedestrian facilities was conducted to determine if there are any nearby projects in the vicinity of the study area. The following project is currently in the design process:

Casey Arborway Project: This Project will replace the existing structurally deficient Casey Overpass with a proposed at-grade boulevard. The intersections of Washington Street at Arborway and South Street at Arborway will be reconstructed as at-grade, signalized intersections. Left-turns from the Arborway to Washington Street and South Street will be accommodated by two new u-turns that will be located east of Washington Street (for Arborway eastbound left-turns) and west of South Street (for Arborway westbound left-turns). A separate bus lane will be provided for the MBTA buses for the Arborway westbound left-turn movement to Washington Street southbound. The Casey Arborway Project will also improve the multi-use path connections between the Southwest Corridor Park and the adjacent transportation facilities (i.e. Washington Street, South Street, and the Forest Hills MBTA Station). Shea Circle, which is located on the easterly end of the Casey Arborway Project will also be reconstructed to provide more efficient traffic flow through the area.

The Casey Arborway Project will also include improvements to the MBTA facilities at Forest Hills Station. The upper busway at the Forest Hills Station will be redesigned in order to prevent the bus headlights from shining onto homes along Aticou Road. Also, the head house at the Forest Hills Station will be relocated approximately 75 feet to the north of the current egress only head house. The proposed head house will provide both fare control access to and egress from the platform below by way of stairs or elevator.

No-Build Traffic Operations

The 2019 No-Build conditions scenario analysis uses the same methodology as the 2014 Existing conditions scenario analysis. **Table 7-5** and **Table 7-6** present the 2019 No-Build conditions operations analysis for the weekday morning and evening peak hours, respectively. The detailed analysis sheets are provided in the **Appendix F**.

Table 7-5: No-Build Conditions (2019) Level of Service Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**E**	**56.6**	**-**	**-**	**-**
Montebello WB left / thru / right	C	32.8	0.43	61	529
Washington NB left / thru / right	C	32.2	0.49	221	#545
Washington SB left / thru / right	D	36.2	0.49	166	#441
Forest Hills NWB left / right	F	>80.0	>1.00	~227	#394
Washington Street/School Street	**B**	**17.0**	**-**	**-**	**-**
School EB left / thru / right	C	23.1	0.53	41	75
School WB left / right	C	25.2	0.50	34	66
Washington NB thru / right	B	18.3	0.76	181	#395
Washington SB left /thru	A	9.8	0.47	83	151
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington NB thru/right	A	0.0	0.48	-	0
Washington SB left/thru	A	0.5	0.01	-	1

= 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
~ = Volume exceeds capacity; queue is theoretically infinite. Queue shown is maximum after 2 cycles.
Gray shading indicates a decrease from Existing Conditions to LOS of E or F.

Table 7-6: No-Build Conditions (2019) Level of Service Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**D**	**50.2**	**-**	**-**	**-**
Montebello WB left / thru / right	D	48.9	0.63	62	83
Washington NB left / thru / right	C	22.4	0.55	144	334
Washington SB left / thru / right	E	59.7	0.99	326	#680
Forest Hills NWB left / right	E	77.0	0.88	125	#220
Washington Street/School Street	**B**	**16.4**	**-**	**-**	**-**
School EB left / thru / right	C	21.6	0.56	41	92
School WB left / right	C	25.7	0.51	34	71
Washington NB thru / right	B	11.6	0.59	117	218
Washington SB left /thru	B	17.0	0.73	176	#357
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington NB thru/right	A	0.0	0.36	-	0
Washington SB left/thru	A	0.7	0.02	-	2

= 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
Gray shading indicates a decrease from Existing Conditions to LOS of E or F.

The signalized intersection of **Washington Street/Montebello Road/Forest Hills Street** is expected to worsen to LOS E during the a.m. peak hour and remain operating at LOS D during the p.m. peak hour under the 2019 No-Build conditions. Operations along each approach are generally expected to remain consistent with the existing operations.

The signalized intersection of **Washington Street/School Street** is expected to continue to operate at LOS B during both the a.m. and p.m. peak hours under the 2019 No-Build conditions.

The unsignalized intersection of **Washington Street/Iffley Road** is expected to continue to operate at LOS A during both the a.m. and p.m. peak hours under the 2019 No-Build conditions.

Based on this analysis, the study area intersections will continue to accommodate the expected levels of Hills Street approach to Washington Street.

7.3.2 Build Conditions

As previously summarized, the Project will consist of approximately 76 rental apartment units, three residential townhouse units, and approximately 5,364 sf of retail/restaurant space. The retail/restaurant space and the rental apartments will be located in two primary buildings along Washington Street and the residential townhouse units will be located off of Iffley Road. A total of 36 parking spaces will be provided for the residential apartment units and an additional three parking spaces will be provided for the residential townhouse units. Covered, secure storage for 75 bicycles will be provided on the Project site for the residential uses. The Project proponent is actively working with Zipcar to provide a car-sharing service on the site.

Site Access and Circulation

As shown in the Project site plan in **Figure 7-12**, vehicular access to the garage will be provided off of Washington Street and egress will be provided off Montebello Road. Access and egress to the residential townhouse units will be provided off Iffley Road. Primary pedestrian access to the apartments and the retail/restaurant space will be provided off of Washington Street. Primary pedestrian access to the townhouse units will be provided off of Iffley Road. Loading, deliveries, and trash pick-up will take place on-site within the garage.

7.3.3 Trip Generation

Trip generation is a multi-step process that produces an estimate of vehicle trips, transit trips, walk trips, and bicycle trips associated with a proposed project and a specific land use program. A project's location and proximity to different modes determines how people will travel to and from that project site.

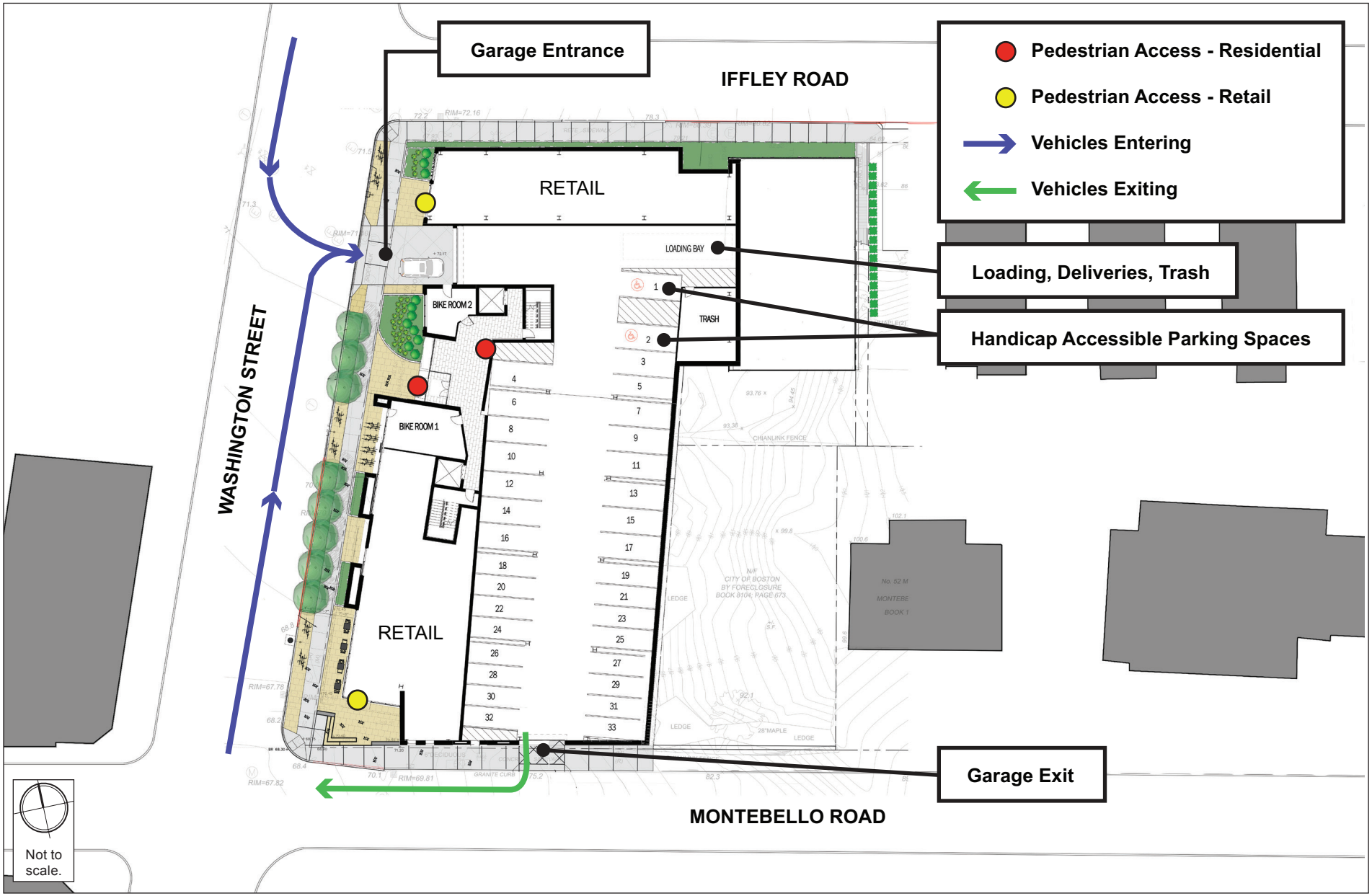


Figure 7-12.
Site Access Plan

To estimate the number of trips expected to be generated by the Project, data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*[5] were used. ITE provides data to estimate the total number of unadjusted vehicular trips associated with the Project. In an urban setting well-served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit.

To estimate the unadjusted number of vehicular trips for the Project, the following ITE land use codes (LUCs) were used:

LUC 220 – Apartment. The apartment land use is defined as rental dwellings located within the same building with at least three other dwelling units. Trip generation estimates are based on average vehicle rates per unit.

LUC 230 – Residential Condominium/Townhouse. The residential condominium/townhouse land use is defined as a building housing at least two multiple ownership units within the same structure. Trip generation estimates are based on average vehicle rates per unit.

LUC 820 – Shopping Center. The shopping center land use is defined as an integrated group of commercial establishments that is planned, developed, owned and managed as one unit. Trip generation estimates are based on average vehicular rates per 1,000 sf of gross leasable area. This land use was used to develop the trip generation characteristics of the retail/restaurant uses on the Site.

Existing Site Trip Generation. As previously discussed, the site currently contains an automobile service and inspection station and a plumbing and heating supply company. Peak hour traffic counts were conducted at the existing curb cuts to determine the trip generation for the existing uses on the site. On the day of the counts at the existing curb cuts, there was no activity during the a.m. peak hour. However, the existing uses on the site experience activity during the a.m. peak hour on some weekdays.

[5] *Trip Generation Manual*, 9th Edition; Institute of Transportation Engineers; Washington, D.C.; 2012.

Mode Share

The BTD provides vehicle, transit, and walking mode split rates for different areas of Boston. The Project is located within Area 6 (Outer Orange Line) within the neighborhood of Jamaica Plain. The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[6]. The person trips were then distributed to different modes according to the mode shares shown in **Table 7-7**.

Table 7-7: Travel Mode Shares

Land Use	Direction	Transit Share[1]	Walk/Bike Share[1]	Auto Share[1]
Daily				
Apartment & Townhouse	In	25%	14%	61%
	Out	25%	14%	61%
Commercial	In	15%	24%	61%
	Out	15%	24%	61%
a.m. Peak Hour				
Apartment & Townhouse	In	26%	18%	56%
	Out	44%	12%	44%
Commercial	In	15%	31%	54%
	Out	28%	24%	48%
p.m. Peak Hour				
Apartment & Townhouse	In	44%	12%	44%
	Out	26%	18%	56%
Commercial	In	28%	24%	48%
	Out	15%	31%	54%

1. Based on mode share data published by the Boston Transportation Department.

Vehicle Trip Generation

The trip generation process described above yields the adjusted vehicle trips associated with the Project, summarized in **Table 7-8**. The detailed trip generation information is provided in the **Appendix F**.

[6] *Summary of Travel Trends: 2009 National Household Travel Survey*; FHWA; Washington, D.C.; June 2011.

Table 7-8: Project Vehicle Trip Generation

Time Period	Direction	Apartment[1]	Townhouse[2]	Retail[3]	Total Vehicle Trips
Daily	In	146	8	53	207
	Out	146	8	53	207
	Total	292	16	106	414
a.m. Peak Hour	In	4	0	2	6
	Out	13	1	1	15
	Total	17	1	3	21
p.m. Peak Hour	In	13	0	3	16
	Out	9	1	4	14
	Total	22	1	7	30

1. Based on ITE LUC 220 – Apartment for 72 units.
2. Based on ITE LUC 230 – Residential Condominium/Townhouse for four units.
3. Based on ITE LUC 820 – Shopping Center for 6,000 sf

As shown in **Table 7-8**, the Project is expected to generate 21 vehicle trips during the morning peak hour (6 in and 15 out), 30 vehicle trips in the evening peak hour (16 in and 14 out), and 414 vehicle trips during an average weekday (207 in and 207 out).

To account for the trip generation for the existing uses on the site, peak hour counts were conducted at the existing curb cuts. **Table 7-9** summarizes the peak hour trip generation, accounting for the existing uses on the site.

As shown in **Table 7-9**, after accounting for the existing uses on the site, the Project will generate 21 new vehicular trips during the a.m. peak hour (6 entering and 15 exiting) and 10 new vehicular trips during the p.m. peak hour (12 entering and a reduction of 2 exiting trips).

Table 7-9: Net New Vehicle Trips

Time Period	Direction	Project Generated	Existing	Net New Vehicle Trips
a.m. Peak Hour	In	6	0	6
	Out	15	0	15
	Total	21	0	21
p.m. Peak Hour	In	16	4	12
	Out	14	16	-2
	Total	30	20	10

Trip Distribution

The trip distribution identifies the various travel paths for vehicles arriving and leaving the Project site. Trip distribution patterns for the Project were based on BTD's origin-destination data for Area 6. The trip distribution patterns were refined based on existing traffic patterns and review of the adjacent roadway network. The trip distribution pattern for the overall Project is illustrated in **Figure 7-13**.

The Project-generated vehicle trips were then assigned to the study area roadway network based on the trip distribution patterns and are shown in **Figure 7-14** and **Figure 7-15** for the a.m. and p.m. peak hours, respectively.

The Project-generated vehicle trips were added to the 2019 No-Build conditions traffic volumes to develop the 2019 Build conditions peak hour traffic volume networks. The 2019 Build conditions peak hour traffic volume networks are shown in **Figure 7-16** and **Figure 7-17** for the a.m. and p.m. peak hours, respectively.

Build Conditions Traffic Operations

The 2019 Build conditions analysis uses the same methodology as the 2014 Existing and 2019 No-Build conditions analyses. The results of the 2019 Build Conditions traffic analysis are presented in **Table 7-10** and **Table 7-11** for the weekday a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the **Appendix F**.

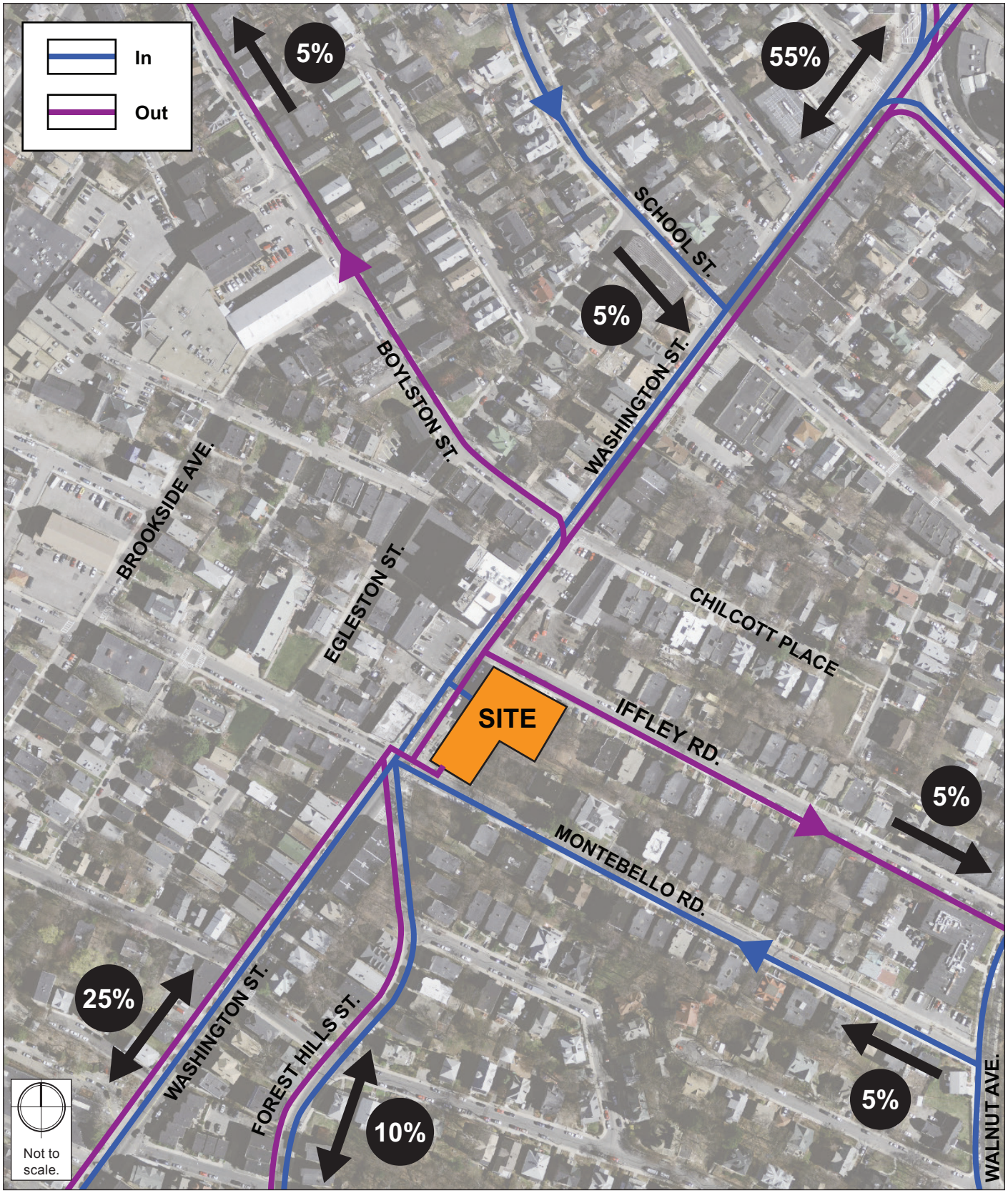


Figure 7-13.
Vehicle Trip Distribution

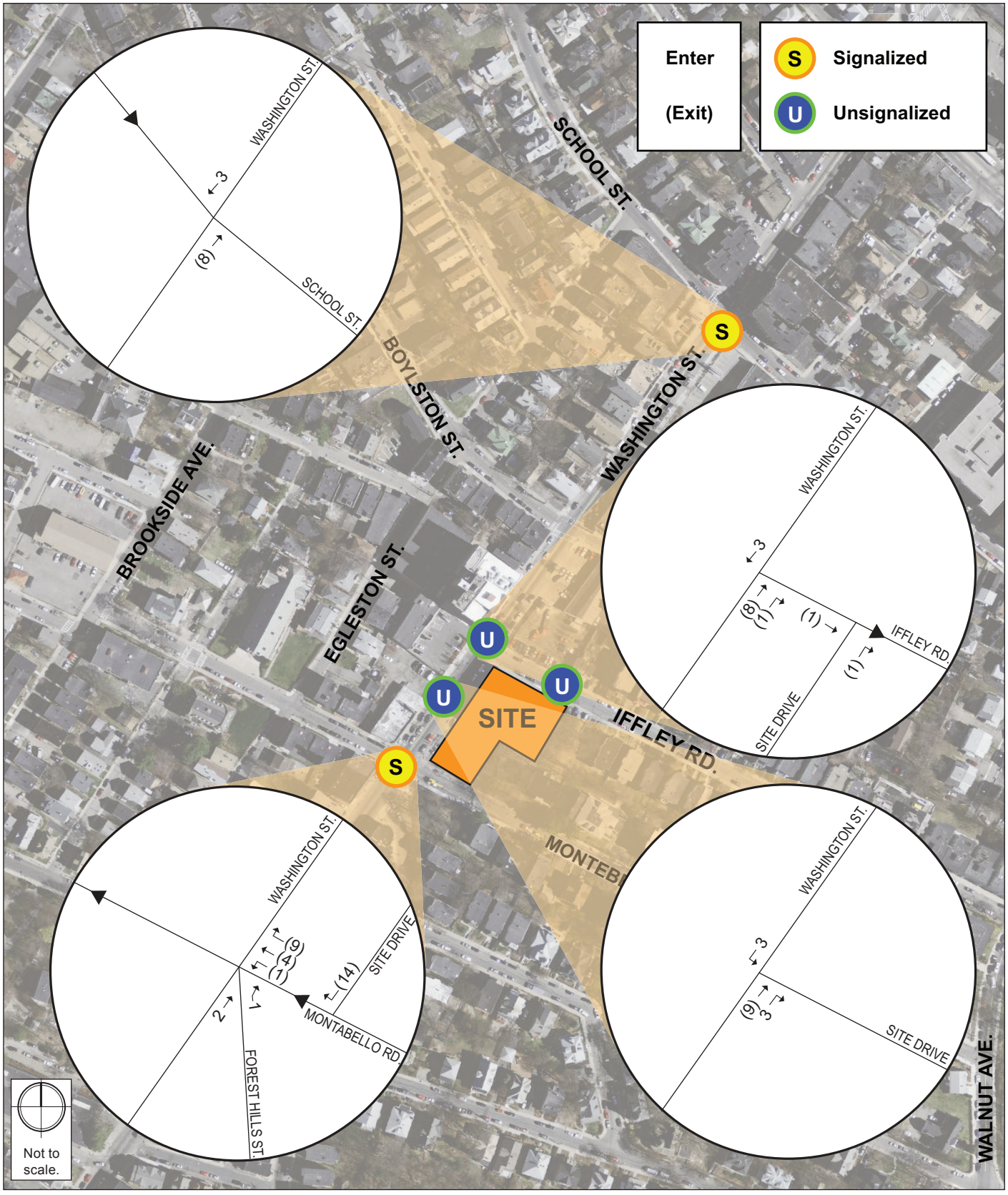


Figure 7-14.
Project-Generated Trips, a.m. Peak Hour

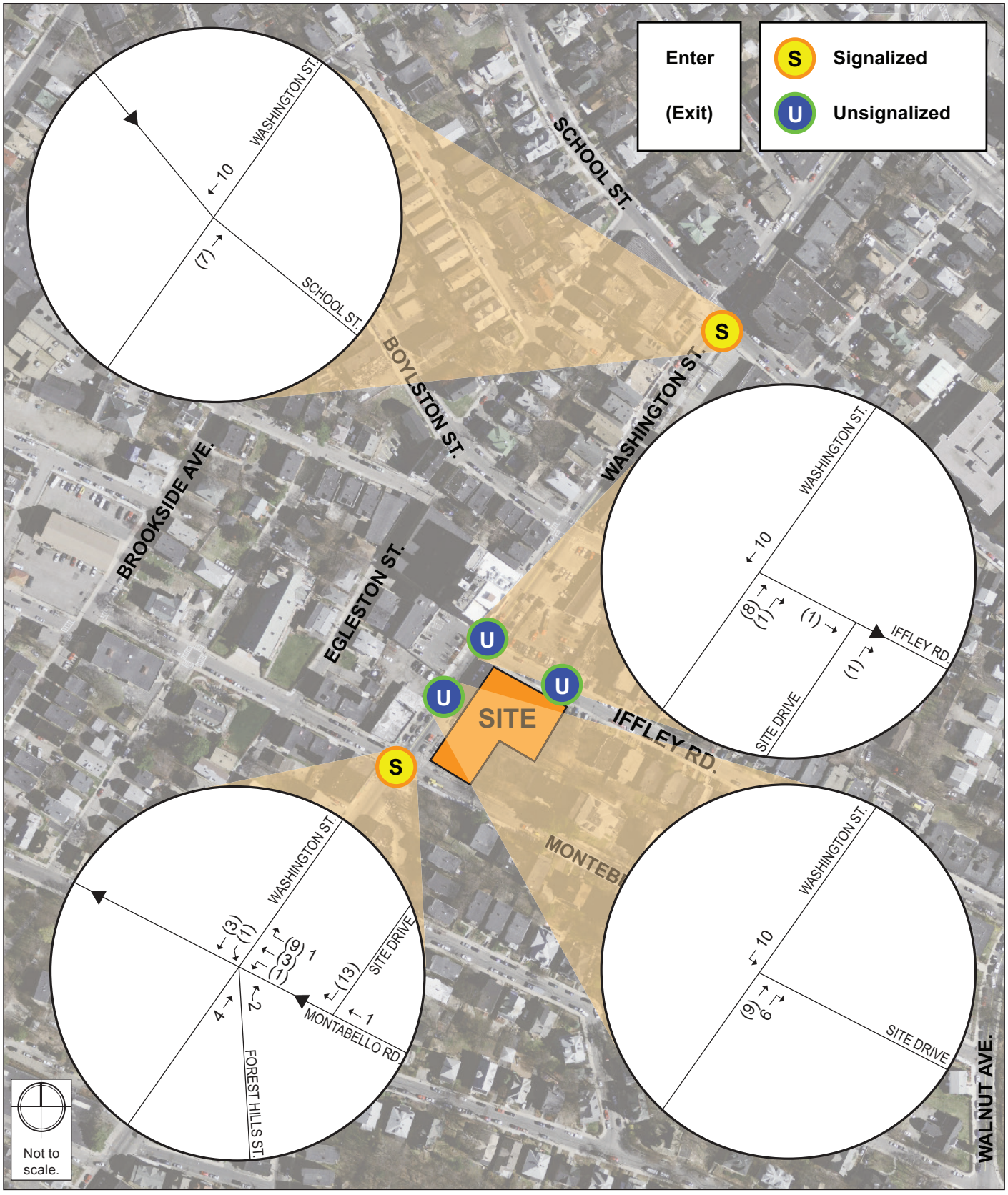


Figure 7-15.
Project-Generated Trips, p.m. Peak Hour

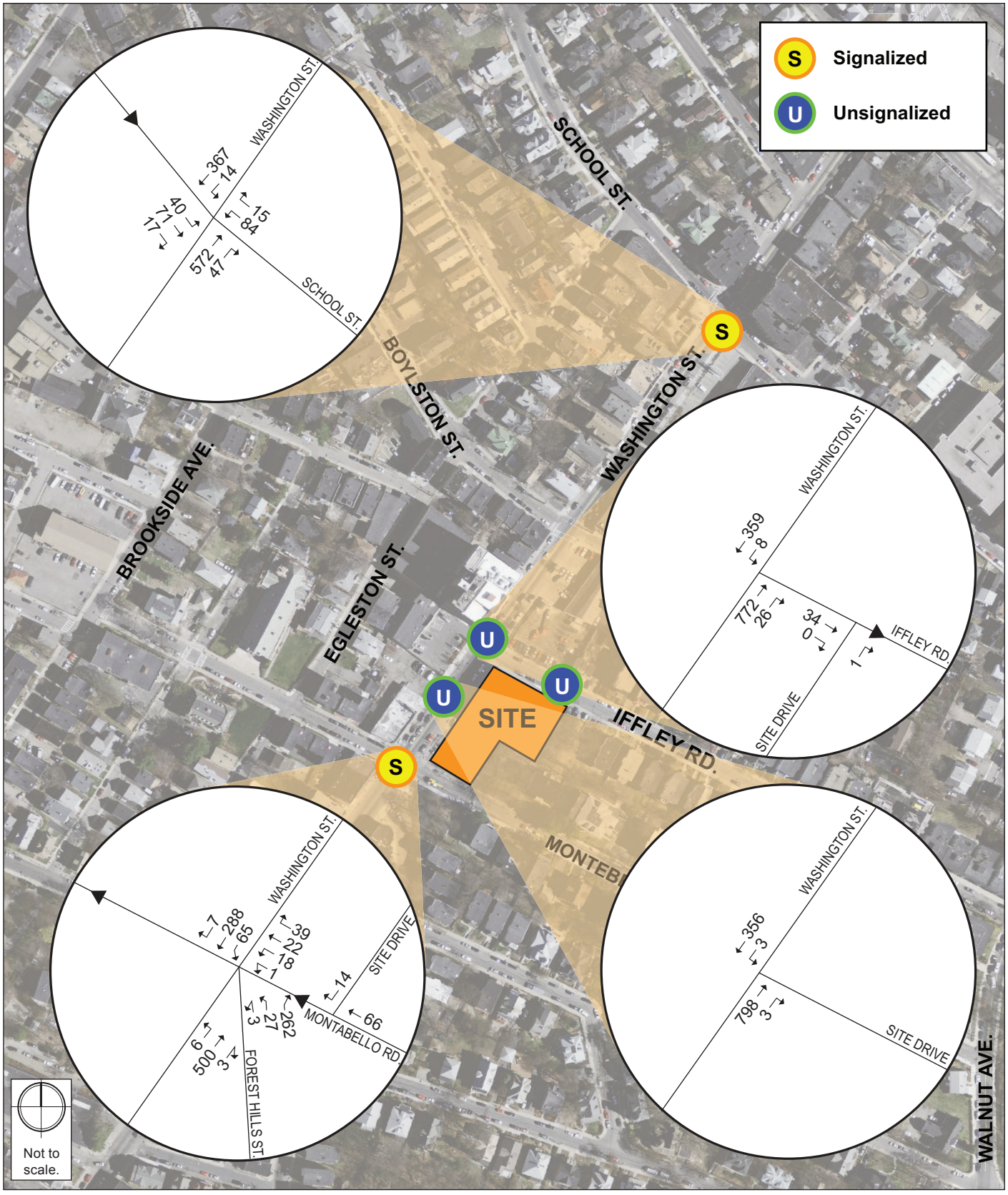


Figure 7-16.
Build Conditions (2019) Traffic Volumes, a.m. Peak Hour

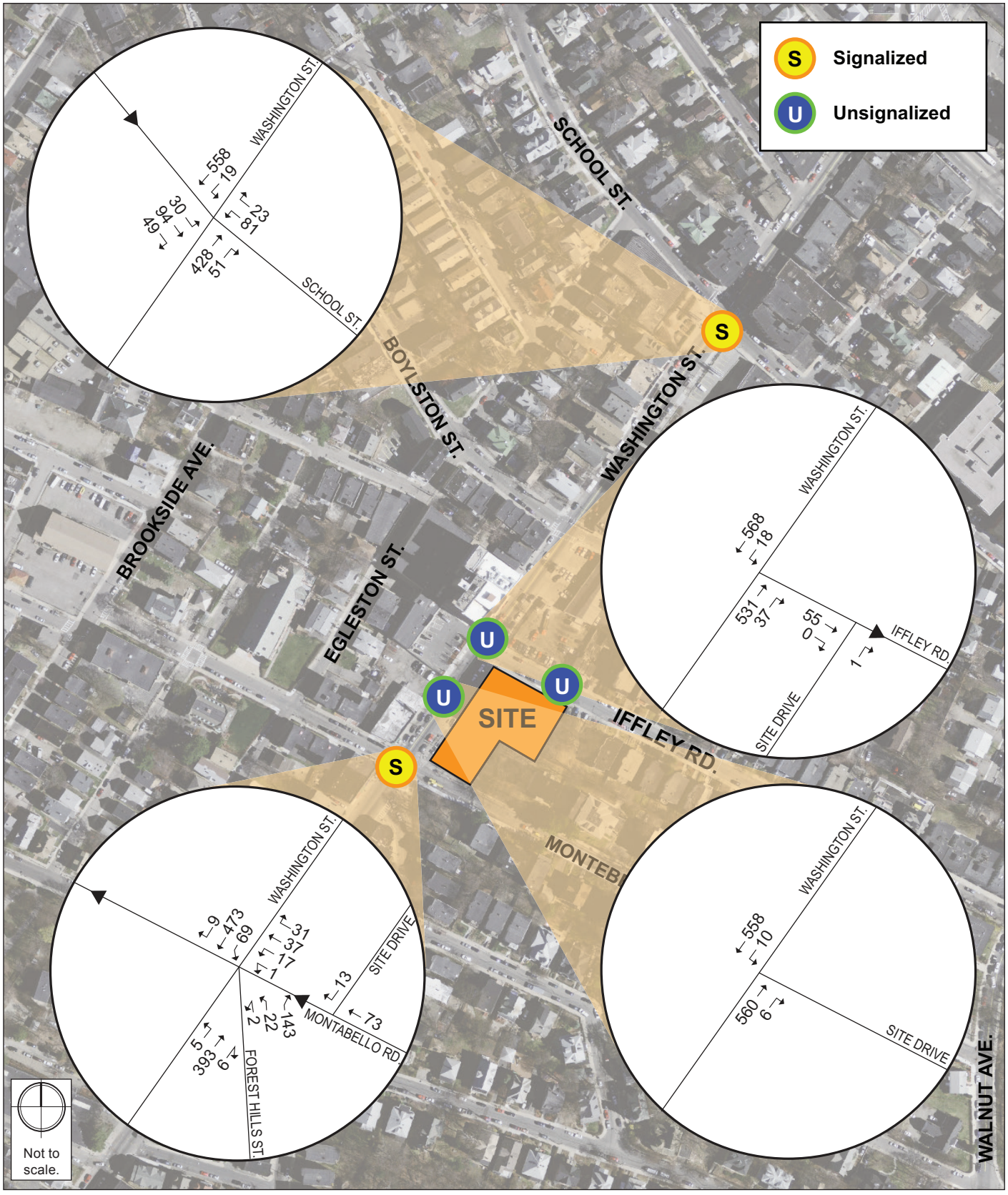


Figure 7-17.
Build Conditions (2019) Traffic Volumes, p.m. Peak Hour

Table 7-10: Build Conditions (2019) Level of Service Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**E**	**57.2**	**-**	**-**	**-**
Montebello WB left / thru / right	C	32.8	0.43	29	61
Washington NB left / thru / right	C	32.3	0.76	222	#547
Washington SB left / thru / right	D	37.4	0.79	170	#450
Forest Hills NWB left / right	F	>80.0	>1.00	~228	#395
Washington Street/School Street	**B**	**17.2**	**-**	**-**	**-**
School EB left / thru / right	C	23.1	0.53	41	75
School WB left / right	C	25.2	0.50	34	66
Washington NB thru / right	B	18.8	0.77	185	#403
Washington SB left /thru	A	9.9	0.47	84	154
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington NB thru/right	A	0.0	0.48	-	0
Washington SB left/thru	A	0.5	0.02	-	1
Washington Street/Site Driveway	-	-	-	-	-
Site Driveway WB left/right	D	26.7	0.08	-	7
Washington NB thru/right	A	0.0	0.51	-	0
Washington SB left/thru	A	0.2	0.01	-	0

= 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.
~ = Volume exceeds capacity; queue is theoretically infinite. Queue shown is maximum after 2 cycles.
Gray shading indicates a decrease from No-Build Conditions to LOS of E or F.

Table 7-11: Build Conditions (2019) Level of Service Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized Intersections					
Washington Street/Montebello Road/Forest Hills Street	**D**	**50.5**	**-**	**-**	**-**
Montebello WB left / thru / right	D	48.9	0.64	63	84
Washington NB left / thru / right	C	22.6	0.56	146	327
Washington SB left / thru / right	E	60.2	0.99	335	#680
Forest Hills NWB left / right	E	77.4	0.88	125	#221
Washington Street/School Street	**B**	**16.5**	**-**	**-**	**-**
School EB left / thru / right	C	21.6	0.56	41	92
School WB left / right	C	25.7	0.51	34	71
Washington NB thru / right	B	11.6	0.59	118	219
Washington SB left /thru	B	17.3	0.74	179	#362
Unsignalized Intersections					
Washington Street/Iffley Road	-	-	-	-	-
Washington NB thru/right	A	0.0	0.36	-	0
Washington SB left/thru	A	0.7	0.02	-	2
Washington Street/Site Driveway	-	-	-	-	-
Site Driveway WB left/right	C	18.4	0.05	-	4
Washington NB thru/right	A	0.0	0.36	-	0
Washington SB left/thru	A	0.3	0.01	-	1

= 95th percentile volume exceeds capacity; queue may be longer. Queue shown is maximum after 2 cycles.

The signalized intersection of **Washington Street/Montebello Road/Forest Hills Street** is expected to continue to operate at LOS E during the a.m. peak hour and LOS D during the p.m. peak hour under the 2019 Build conditions. Operations along each approach are generally expected to remain consistent with the existing operations.

The signalized intersection of **Washington Street/School Street** is expected to continue to operate at LOS B during both the a.m. and p.m. peak hours under the 2019 Build conditions.

The unsignalized intersection of **Washington Street/Iffley Road** is expected to continue to operate at LOS A during both the a.m. and p.m. peak hours under the 2019 Build conditions.

Based on this analysis, the study area intersections will continue to accommodate the expected levels of traffic under the 2019 Build conditions. The Project is not expected to have any significant impact on intersection operations in the study area.

Parking

This section presents the Project's parking supply and an evaluation of the Project's parking demand. The Project will provide a total of 36 parking spaces on the site. A total of 33 parking spaces will be provided for the apartment uses in an at-grade garage that is accessed off of Washington Street. Three additional spaces will be provided for the townhouses and will be accessed off of Iffley Road. The parking supply results in a parking ratio of 0.48 parking spaces per unit. Based on the nature of the Project, its proximity to nearby transit opportunities, and the potential for the location of a car-sharing service on the site, it is expected that this parking ratio will be adequate to accommodate the overall parking demand for the Project.

The Project site currently contains approximately 15 parking spaces that are used by the automobile service center. Based on field observations, the existing uses on the Project site also use on-street parking to accommodate overflow parking for the service station.

Public Transportation

As previously discussed, the Project is ideally situated to take advantage of nearby public transportation opportunities including the MBTA Orange Line and several MBTA bus routes. Based on the transit mode shares presented in **Table 7-8** the future transit trips associated with the Project were estimated and are summarized in **Table 7-12.**

Table 7-12: Project Transit Trips

Time Period	Direction	Transit Trips
Daily	In	95
	Out	95
	Total	190
a.m. Peak Hour	In	3
	Out	17
	Total	20
p.m. Peak Hour	In	19
	Out	6
	Total	25

As shown in **Table 7-12,** the Project is expected to generate a total of 190 transit trips per day, including 20 transit trips (3 alighting and 17 boarding) in the a.m. peak hour and 25 transit trips (19 alighting and 6 boarding) in the p.m. peak hour. These transit trips will primarily be accommodated by the MBTA Orange Line and the MBTA bus routes that travel along Washington Street and Columbus Avenue.

Pedestrians

The Project site is located along Washington Street in the Egleston Square area of Boston. This area of Boston is heavily developed and provides many destinations within a walking distance of the site. Based on the walk mode shares presented in **Table 7-7**, the future walk trips were estimated and are summarized in **Table 7-13.**

Table 7-13: Project Pedestrian and Bicycle Trips

Time Period	Direction	Walk/Bike Trips
Daily	In	77
	Out	77
	Total	154
a.m. Peak Hour	In	3
	Out	5
	Total	8
p.m. Peak Hour	In	7
	Out	7
	Total	14

Over the course of a day, the Project will generate an estimated 154 pedestrian/bicycle trips and an additional 190 transit trips that will require a walk to or from the site. This results in an additional 344 new pedestrian trips per day. Approximately 8 new walk/bike will occur during the a.m. peak hour and 14 new walk/bike trips will occur during the p.m. peak hour in addition to the transit trips that will also require a walk to/from the site. The pedestrian facilities surrounding the site have adequate capacity to accommodate the pedestrian trips generated by the Project.

Bicycle Accommodations

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure covered bicycle parking for residents and employees and short-term bicycle racks for visitors. The Project will provide covered and secure storage for 75 bicycles in the garage. Additional storage will be provided by outdoor bicycle racks accessible to visitors to the site in accordance with BTD guidelines.

There is also a nearby Hubway station located a quarter-mile north of the Project site at the intersection of Washington Street/Columbus Avenue in the heart of Egleston Square, providing residents, employees, and visitors with convenient bicycle opportunities.

Loading and Service Accommodations

Loading and service operations will occur on-site in the ground level of the parking garage. The Project will provide a dedicated loading/service area in the garage. All trash truck activity and residential move-in/move-out activity will also take place in the ground level of the parking garage.

Residential units primarily generate delivery trips related to small packages and prepared food. Delivery trip estimates were based on data provided in the Truck Trip Generation Rates by Land Use in the Central Artery/Tunnel Project Study Area report[7]. Deliveries to the Project site will be limited to SU-36 trucks and smaller delivery vehicles. Based on the CTPS report, residential uses generate approximately 0.01 light truck trips per 1,000 sf of gross floor area and retail uses generate approximately 0.1 light truck trips per 1,000 sf. The Project is expected to generate approximately one delivery trip per day for residential uses and one to two light truck trips per day for retail uses. These numbers do not include trash truck trips. The low number of anticipated deliveries will have minimal impact on the vehicular operations along Washington Street. All move-in/move-out activity can occur at the loading area on the Project site without impacting the public sidewalk, parking, or roadways.

7.4 Transportation Mitigation Measures

While the traffic impacts associated with the new Project generated trips are minimal, the Proponent will continue to work with the City of Boston to create a Project that efficiently serves vehicle trips, improves the pedestrian environment, and encourages transit and bicycle usage. As part of the Project, the Proponent will bring all abutting sidewalks and pedestrian ramps to the City of Boston standards in accordance with the Boston Complete Streets design guidelines. This will include the reconstruction and widening of the sidewalks where possible the installation of new, accessible ramps, improvements to street lighting where necessary, planting of street trees, and providing bicycle storage racks surrounding the site, where appropriate.

The Proponent is responsible for preparation of the Transportation Access Plan Agreement (TAPA), a formal legal agreement between the Proponent and the BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access and physical design, travel demand management measures, and any other responsibilities that are agreed to by both the Proponent and BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed. The transportation improvements to be undertaken as part of this Project will be defined and documented in the TAPA.

The Proponent will also produce a Construction Management Plan (CMP) for review and approval by BTD. The CMP will detail the schedule, staging, parking, delivery, and other associated impacts of the construction of the Project. See **Section 7.6** for additional information related to the CMP.

7.5 Transportation Demand Management

The Proponent is committed to implementing Transportation Demand Management (TDM) measures to minimize automobile usage and Project related traffic impacts. TDM will be facilitated by the nature of the Project (which does not generate significant peak hour trips) and its proximity to numerous public transit alternatives.

[7] *Truck Trip Generation Rates by Land Use in the Central Artery/Tunnel Project Study Area*; Central Transportation Planning Staff; September 1993.

On-site management will keep a supply of transit information (schedules, maps, and fare information) to be made available to the residents of the site. The Proponent will work with the City to develop a TDM program appropriate to the Project and consistent with its level of impact.

The Proponent is prepared to take advantage of good transit access in marketing the site to future residents by working with them to implement the following TDM measures to encourage the use of non-vehicular modes of travel.

The TDM measures for the Project may include but are not limited to the following:

- ***Orientation Packets:*** The Proponent will provide orientation packets to new residents and tenants containing information on available transportation choices, including transit routes/schedules and nearby vehicle sharing and bicycle sharing locations. On-site management will work with residents and tenants as they move in to help facilitate transportation for new arrivals.
- ***Bicycle Accommodation:*** The Proponent will provide bicycle storage in secure, sheltered areas for residents. Subject to necessary approvals, public use bicycle racks for visitors will be placed near building entrances.
- ***Electric Vehicle Charging:*** The Proponent will explore the feasibility of providing electric vehicle charging stations within the garage.
- ***Shared-car Services:*** the Proponent will explore the feasibility of providing a shared car service (e.g., ZipCar) on-site to help reduce the need for residents to own a vehicle.
- ***Transportation Coordinator:*** The Proponent will designate a transportation coordinator to oversee transportation issues including parking, service and loading, and deliveries and will work with residents as they move in to raise awareness of public transportation, bicycling, and walking opportunities.
- ***Project Web Site:*** The web site will include transportation-related information for residents, workers, and visitors.

The Proponent will work with BTD to determine an appropriate TDM program and will formalize this program in a Transportation Access Plan Agreement (TAPA) for the Project. See also **Appendix B** for the Proponent's **Parking Mitigation and Transit-Oriented Development Plan.**

7.6 Evaluation of Short-term Construction Impacts

Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan (CMP) to be filed with BTD in accordance with the City's transportation maintenance plan requirements. The CMP will also address the need for pedestrian detours, temporary parking for the project, lanes closures, and/or parking restrictions, if necessary, to accommodate a safe and secure work zone.

To minimize transportation impacts during the construction period, the following measures will be incorporated into the Construction Management Plan:

- Construction workers will be encouraged to use public transportation and/or carpool.
- A subsidy for MBTA passes will be considered for construction workers; and
- Secure spaces will be provided on-site for workers' supplies and tools so they do not have to be brought to the site each day.

The CMP will be executed with the City prior to commencement of construction and will document all committed measures.

8.0 COORDINATION WITH GOVERNMENTAL AGENCIES

8.1 Architectural Access Board Requirements

This Proposed Project will comply with the requirements of the Architectural Access Board. The Project will also be designed to comply with the Standards of the Americans with Disabilities Act.

8.2 Massachusetts Environmental Policy Act

Based on information currently available, development of the Proposed Project will not result in a state permit/state agency action that meets a review threshold that would require MEPA review by the MEPA Office of the Executive Office of Energy and Environmental Affairs.

8.3 Boston Civic Design Commission

The Proposed Project is below the 100,000 gross square feet of proposed floor area threshold requiring review by the Boston Civic Design Commission ("BCDC"), but the BDCDC has discretion to decide to review projects below this threshold.

9.0 PROJECT CERTIFICATION

This form has been circulated to the Boston Redevelopment Authority as required by Article 80 of the Boston Zoning Code.

3190 Washington Street LLC and
the Exchange Authority, LLC

Signature of Proponent

2/23/15
Date

Mitchell L. Fischman Consulting LLC

Signature of Preparer
Mitchell L. Fischman, AICP

02/23/15
Date

APPENDIX A – LETTER OF INTENT TO FILE PNF, DECEMBER 23, 2014

McDERMOTT, QUILTY & MILLER LLP
131 OLIVER STREET - 5TH FLOOR
BOSTON, MASSACHUSETTS 02110

TELEPHONE: 617-946-4600
FACSIMILE: 617-946-4624

December 23, 2014

VIA HAND DELIVERY

Mr. Brian Golden, Director
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201
Attn: Edward McGuire, Project Manager

RE: Letter of Intent to File Project Notification Form
Article 80 - Large Project Review
3200 Washington Street, Jamaica Plain

Dear Director Golden:

Our office represents 3190 Washington Street, LLC and the Exchange Authority, LLC (the "Proponent"), owner of the real property located at 3200 Washington Street, Jamaica Plain (the "Project Site"). The purpose of this letter is to notify the Boston Redevelopment Authority (the "BRA") of the Proponent's intent to file an Expanded Project Notification Form ("PNF") with the BRA pursuant to Article 80B, Large Project Review requirements of the Boston Zoning Code (the "Code").

The Proponent's project contemplates revitalizing an underutilized industrial property site in the Egleston Square section of the Jamaica Plain Neighborhood with a vibrant mixed-use, retail/residential development at three new building sections totaling approximately 97,107 gross square feet. The new development will include 76 residential units, 5,364 gross square feet of street level retail space, widened sidewalks and usable open space above a garage facility for a total of 36 on-site parking spaces (the "Proposed Project"). Two of the proposed new buildings will be situated along Washington Street, with street level retail space in each location, building lobby, enclosed bike storage and a structured parking facility for 33 vehicles under ample usable open space at the center of the site at the building's rear. The two new buildings along Washington Street will vary in height, from a six-story building with a mezzanine level at the corner of Washington and Iffley Streets to a five-story building with a stepped-back sixth level at Washington and Montebello Streets. Towards the rear of the site on Iffley

Street, a third building of three-stories will feature three (3) separate townhouse units with three (3) dedicated on-site parking spaces and ground level open space.

The Project Site is comprised of 32,412 square feet, with a vacant two-story structure (formerly containing Economy Plumbing and Heating Supply Company), and single-story automotive repair garage (E & J Auto Center) on Washington Street, as well as a single-level concrete garage with an unusually wide curb-cut opening along Iffley Street, which is utilized for multi-unit automobile storage and has been identified by certain local elected officials and community leaders as a so-called "problem property." These existing buildings will be demolished to enable the new project to be constructed. (See Figure 1. Project Locus).

Prior to submitting this Letter of Intent, the Project Proponent conducted extensive preliminary community outreach with its surrounding neighborhood interest groups, abutting and area residents, local business owners, local elected and appointed officials and other interest parties, including presentations before the Egleston Square Neighborhood Association, Egleston Square Main Streets, Parkside/Montebello Neighborhood group, Chilcott Place/Granada Park Residents Association, Jamaica Plain Neighborhood Council's Housing Committee and the Washington Street Business Group. As a result of the input received, the Project Proponent has made certain revisions to the original design, parking and overall scope of the Proposed Project. It has also entered into discussions about how it will meet, and potentially exceed, the City's Inclusionary Development Policy for the Proposed Project, by providing the required amount of affordable units on-site and also participating in the potential acquisition and renovation of an abutting and distressed six-unit residential property at 52 Montebello Street, which the City of Boston recently took by foreclosure and has been identified by local leaders as a so-called "problem property." In response to neighborhood input, and with the objective of converting this property into quality affordable housing, the Project Proponent has submitted a letter and expression of interest with initial plans and renderings to the City's Department of Neighborhood Development ("DND"). If successful, the Proponent will upgrade and improve 52 Montebello Road and transfer the improved property to an appropriate agency or organization to be managed as affordable housing.

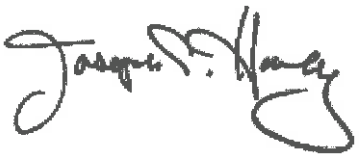
The Proposed Project will exceed the 50,000 square foot total build-out size requirement for a project in a Boston neighborhood and, therefore, require preparation of filing(s) under the Large Project Review regulations, pursuant to Article 80 of the Code. The Expanded PNF filing is expected to address many issues normally presented in a Draft

Project Impact Report ("DPIR") including a transportation analysis, and air and noise, shadow, infrastructure, historic resources, and other environmental evaluations that will help explain potential project impacts from the proposed uses, and any needed mitigation measures to reduce these impacts.

The Project Site is located in the Local Industrial Sub-District of the Jamaica Plain Neighborhood Zoning District, Article 55, which does not allow multifamily dwellings pursuant to terms of the Zoning Code. In addition, the floor area ratio and height exceed the zoning limitations, and there are other dimensional and parking requirements that are not able to be met by the Proposed Project under the existing zoning regulations. The Inspectional Services Department issued zoning refusal notifications on December 8, 2014, and the Proponent is in the process of preparing and filing its appeals for relief from the Zoning Board of Appeal.

Thank you for your time and attention on this Proposed Project, and our team looks forward to working with you towards a successful outcome. Please contact me at your convenience if you have any questions for the Proponent regarding the Proposed Project.

Very truly yours,



Joseph P. Hanley, Esq.

Attachment: Figure 1. Project Locus

cc: Edward McGuire, BRA Project Manager
Erico Lopez, BRA Director of Development Review and Policy
District 6 City Councilor Matt O'Malley
Jullieanne Doherty, Mayor's Office of Neighborhood Services
State Senator Chang-Diaz
State Representative Malia
Justin Iantosco and Daniel Mangiacotti, Project Proponents
Mitchell Fischman, MLF Consulting LLC

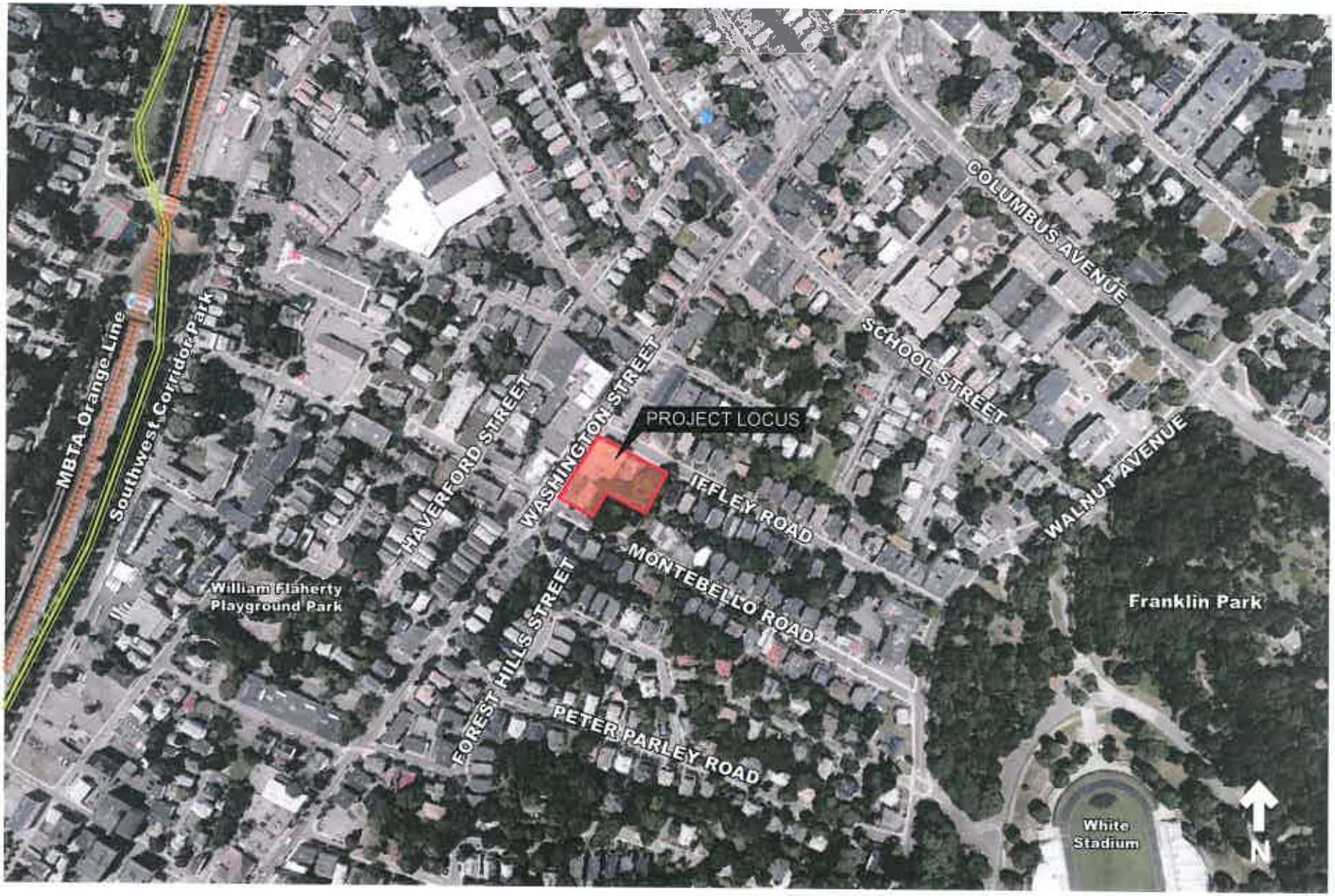


Figure 1
Project Locus - 3200 Washington Street

MLF CONSULTING LLC

APPENDIX B – PARKING MITIGATION AND TRANSIT-ORIENTED DEVELOPMENT PLAN

MEMORANDUM

TO: **Egleston Square Neighborhood Association, Egleston Square Main Streets, Boston Redevelopment Authority, Community Leaders and Zoning Board of Appeal**
FROM: **Joseph P. Hanley, Esq.**
Nicholas J. Zozula, Esq.
DATE: **January 14, 2015**
RE: **3200 Washington Street, Boston, MA 02130**

Parking Mitigation and Transit-Oriented Development Plan
Proposed New Apartments at 3200 Washington Street

The purpose of this memorandum is to summarize the various mitigating measures which will help alleviate potential impacts relating to the off-street parking allotment provided for the proposed redevelopment of 3200 Washington Street in the Egleston Square area of Boston's Jamaica Plain neighborhood (the "Premises"). By way of background, the owner/developer seeks to improve an under-utilized and blighted property site at the Premises by demolishing two existing buildings, combining lots and erecting two new mixed-use buildings, including a six (6) story building (with 7th level mezzanine) and a five (5) story building (with stepped-back 6th level) for a total of 73 combined new residential units, ground level retail spaces in each building and 33 on-site parking spaces. The Premises will also include construction of an additional new residential building of three (3) stories with three (3) new separate townhouse units and three (3) dedicated on-site parking spaces with ground level open space. In sum, the proposed development project will include 76 new residential units and 36 on-site parking spaces (the "Project"). Therefore, the proposed Project will upgrade the subject property with improved residential structures, consistent with the City of Boston's policy goals and objectives for transit-oriented residential living in very close vicinity to public transportation, vehicle and bicycle sharing and other forms of alternative transportation.

The proposed new Project, including its on-site parking program, will be examined and determined through the BRA's Article 80 Large Project Review process, in accordance with the provisions of Article 80. To specifically address potential parking impacts associated with the proposed Project, the owner/developer has comprised a plan to redevelop the Premises with certain transit-oriented and environmentally-friendly principals to attract tenants who choose not

to own motor vehicles and thus will not contribute to the neighborhood's parking issues. These transit-oriented development measures and provisions are consistent with current market dynamics for the appropriate mix of onsite parking and transit-oriented living at this particular location. In this regard, the owner/developer will promote and develop the Premises as an ideal location for individuals to rely on alternative modes of transportation, including certain public transportation, vehicle sharing, and bicycling options defined and outlined herein.

Central to this plan is the unique location of the Premises, which is in the immediate vicinity of several alternative modes of transportation that provide fast and effective access to numerous points in and outside the City of Boston. The Project has been planned as a transient oriented development and will encourage alternate modes of transportation. The Project is located within less than a 10 minute walk to 2 Orange Line stations and along a continuous bus line, allowing residents to be connected the a transit network that reaches beyond the Boston Metro area. The Project will also provide ample facilities to store bicycles inside and outside. It is also in close proximity to Hubway, the bicycle sharing program that is located in Egleston Square. Finally, it is also within a few minutes' walk to a number of Zipcar locations.

In particular, the Premises is located only 0.4 miles walk from the MBTA's *Stony Brook Station*, only 0.5 miles from the MBTA's *Green Street Station* and 0.75 miles from the MBTA's *Jackson Square Station*, all located on the MBTA Orange Line and within a 10 minute walk. Additionally, the Premises is located approximately 1.0 mile from the *MBTA Commuter Rail Station located at Forest Hills Station*. Numerous bus routes, including the #42 bus route, which stops right on the corner of Washington Street and Montebello Road, and the 22, 29 and 44 bus routes, provide access to Downtown Boston (see attached Urban Mobility Map). Moreover, *there are over ten (10) Zip Car pick-up/return sites located within a one mile walk of the Premises. This includes the Washington Street/Woodside and 10 Merriam Street locations less than a quarter mile walk, as well as the Boylston Congregational Church location which currently contains eight (8) zip cars for rental*. Finally, there are Hubway Bicycle Sharing Stations located at the Stony Brook MBTA Station and further down Washington Street near Columbus Avenue both only a few blocks away from the Premises (see attached Urban Mobility Map). Thus, the Premises

represents an ideal location for the growing number of City residents who choose not to own personal motor vehicles, and the owner/developer will actively promote the residential units to such individuals who will take advantage of these alternative means of transportation.

In this regard, the owner/developer will implement the following programs to further mitigate the potential impact from the lack of on-site parking associated with the proposed Project:

1. **Transit Oriented Development with MBTA "Charlie Card" for Tenants:** As noted above and shown on the attached MBTA Map, the Premises is within walking distance of the MBTA's Bus and Orange Line Subway services, as well as the Commuter Rail. To promote use of public transportation and reduce the need for tenants to own motor vehicles, the owner/developer proposes to provide a Thirty-Five Dollar ($35.00) per lease/unit MBTA Charlie Card beginning subsidy for each of its tenants. This subsidy will be included in advertisements and through brokers for the residential units and written into each lease agreement that tenants of the Premises will be encouraged to take advantage of the ample public transportation in the area, with the previously mentioned subsidy as an extra motivator.

2. **Promote Car Sharing Initiative with Tenants:** Zip Car is a car sharing program which provides various membership types catered to the specific needs of individuals and businesses. Though membership fees and benefits vary, all membership types include gas, insurance and up to 180 miles per day, as well as the freedom to use the vehicle for any desired time period. The one mile area surrounding the Premises currently has approximately ten (10) Zip Car pick-up/return locations with over 25 vehicles. As shown on the attached Urban Mobility Map, the Washington Street/Woodside and 10 Merriam Street are located less than a quarter mile walk from the Premises. These particular sites have three (3) vehicles specifically assigned to parking spots in a surface lot with the nearby Boylston Congregational Church containing another eight (8) vehicles. To promote use of the Zip Car program and further reduce the need for tenants to own motor vehicles, the owner/developer proposes to pay the first year local Zip Car annual membership fee for each of its tenants, one Zip Car subsidy per unit, for all units when

applied for by tenants. This subsidy will be included in advertisements for the residential units and through brokers. It will also be written into the lease agreement as an option for each unit based on the foregoing.

3. **Encourage Bicycle Usage through the City of Boston Hubway Bicycle Sharing Program:** The City of Boston has worked to establish cycling as a mainstream activity and proven form of alternative transportation, by creating safe and inviting cycling conditions for all residents and visitors and innovative bicycle sharing programs such as the City of Boston Hubway Bicycle Sharing Program (www.thehubway.com). Hubway is a bike sharing system providing more than 1,100 bikes at 130 stations throughout Boston, Brookline, Cambridge and Somerville. Each Hubway station is solar-powered. Members can choose between an Annual Membership, Monthly Membership, 3-day Pass or 24-hour pass. Hubway users can avoid incurring usage fees by returning their bikes to *any* Hubway station within 30 minutes. Plans are under way to continue to fill and expand the system in the metro Boston area. There are Hubway Bicycle Sharing Stations located at the Stony Brook MBTA Station only 0.4 miles away from the Premises and further down Washington Street near Columbus Avenue also only a few blocks away from the Premises (see attached Urban Mobility Map). To promote the use of the Hubway Bicycle Sharing Program, and further reduce the need for tenants to own motor vehicles, the owner/developer will provide information/pamphlets to tenants on the Hubway program and will encourage its use to all tenants.

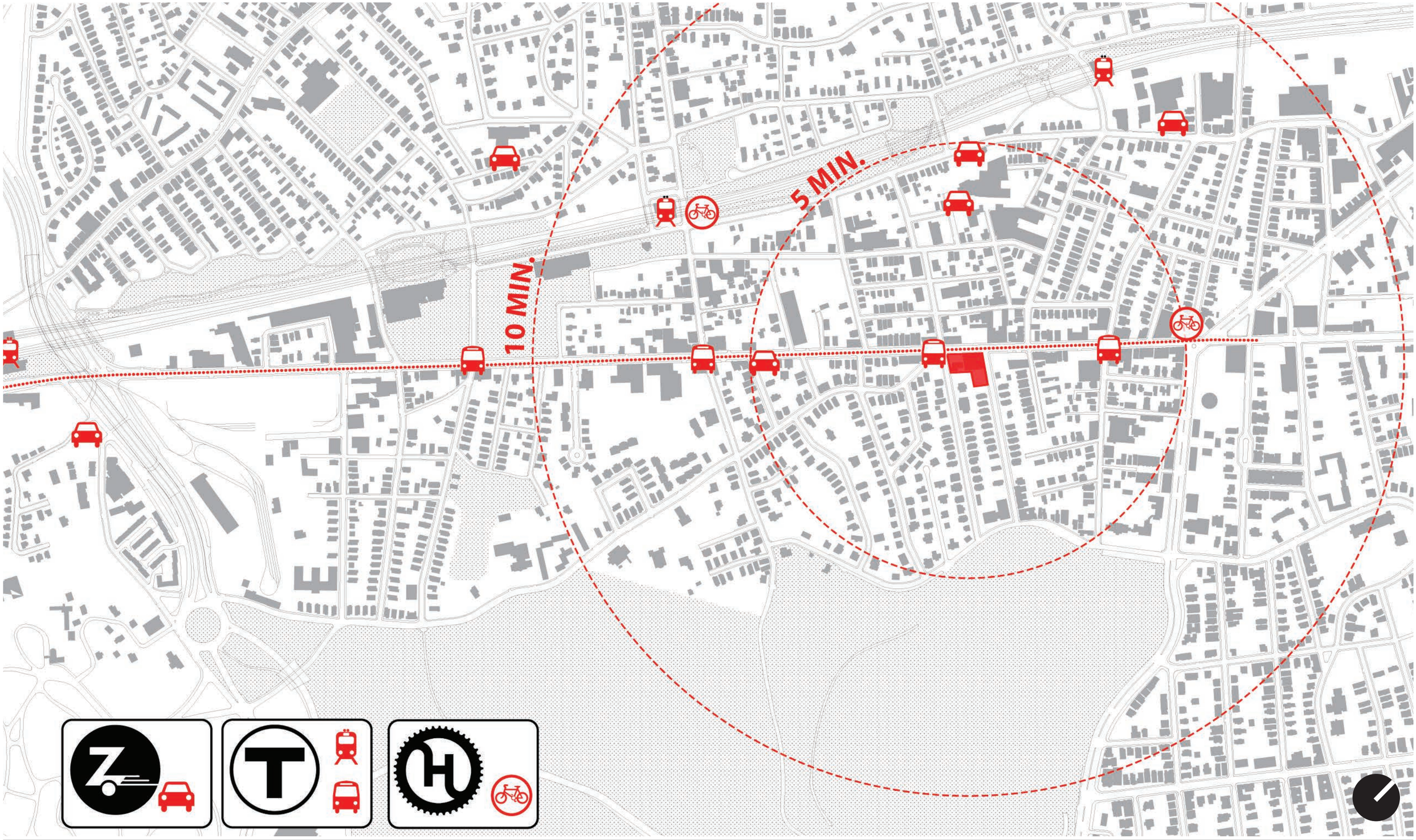
Additional transportation demand management ("TDM") measures for the Project may include but are not limited to the following:

- **Orientation Packets:** The owner/developer will provide orientation packets to new residents and tenants containing information on available transportation choices, including transit routes/schedules and nearby vehicle sharing and bicycle sharing locations. On-site management will work with residents and tenants as they move in to help facilitate transportation for new arrivals.

- **Bicycle Accommodation:** The owner/developer will provide bicycle storage in secure, sheltered areas for residents. Subject to necessary approvals, public use bicycle racks for visitors will be placed near building entrances.
- **Electric Vehicle Charging:** The owner/developer will explore the feasibility of providing electric vehicle charging stations within the garage.
- **Shared-car Services:** The owner/developer will explore the feasibility of providing a shared car service (e.g., Zip Car) located specifically on-site to help reduce the need for residents to own a vehicle.
- **Transportation Coordinator:** The owner/developer will designate a transportation coordinator to oversee transportation issues including parking, service and loading, and deliveries and will work with residents as they move in to raise awareness of public transportation, bicycling, and walking opportunities.
- **Project Web Site:** The web site will include transportation-related information for residents, workers, and visitors.

Conclusion

In summary, the owner/developer's plan will serve three significant functions by alleviating concerns relating to the insufficient parking at the Premises, promoting environmentally friendly principals, and adhering to Boston's transit-oriented development model. We strongly believe that the ideal location of the Premises and growing number of Boston residents who choose not to own personal motor vehicles will make this plan a success. The Project will help promote the development of Egleston Square as a lively transit-oriented area of housing and restaurant/retail space while also establishing a significant gateway to the Egleston Square Neighborhood.



RODE

Urban Mobility

3190 WASHINGTON ST
JULY 23, 2014

APPENDIX C – ZONING BOARD OF APPEAL FILINGS

This form must be completed and signed by the owner-of-record, their attorney and/or authorized agent. If form is not signed by property owner, please attach a signed letter of authorization designating the authorized agent.

Appeal Must Be Typed

APPEAL
under Boston Zoning Code

BOA442889

Thomas M. Menino
Mayor

Boston, Massachusetts January 15, 2015

To the Board of Appeal in the Inspectional Services Department of the City of Boston:

The undersigned, being the Authorized Agent
The Owner(s) or authorized agent

of the lot at 11 (number) Iffley Road (street) 11 (ward) Jamaica Plain - LI (district)

hereby appeal(s) under St. 1956, c. 665, s. 8, to the Board of Appeal in the Inspectional Services Department of the City of Boston the action taken by the Inspectional Services Commissioner as outlined in the attached refusal letter.

DESCRIBE IN DETAIL THE REASON(S) FOR THIS APPEAL

This appeal seeks permission to combine with lots located at 3204 and 3190 Washington Street, construct new residential building of three (3) stories with three (3) new separate residential townhouse units and three (3) dedicated on-site parking spaces with ground level open space, as per plans.

STATE REASONS FOR THIS PROPOSAL

Allowance of the within appeal will allow the Appellant to reasonably redevelop the combined properties with much-needed residential units, ground level retail spaces, and improvements in open space, landscaping and design, in a manner consistent with the character of the Jamaica Plain neighborhood. This appeal is also related to, but separate from, the companion zoning appeal for 3198-3204 Washington Street, which is part of the Appellant's overall development.

PROVIDE REASONS WHY BOARD SHOULD GRANT RELIEF

Appellant submits that the Board should grant the requested relief, as the proposed project will not adversely affect the neighborhood, but rather allow for the revitalization of this under-utilized site with a vibrant mixed-use development that better conforms with the Jamaica Plain neighborhood.

COMMENTS

For these and other reasons more precisely enumerated at the public hearing before the Board, the Appellant respectfully requests the allowance of the within appeal.

3190 Washington Street, LLC
OWNER Exchange Authority, LLC Joseph P Hanley

AUTHORIZED AGENT Joseph P. Hanley, Esq.

ADDRESS 131 Oliver Street, 5th Floor
Boston, MA 02110

TELEPHONE (617) 946-4600
FAX (617) 946-4624

Boston Inspectional Services Department
Planning and Zoning Division

1010 Massachusetts Avenue Boston, MA 02118 Telephone: (617) 635-5300

Martin J. Walsh
Mayor

ZONING CODE REFUSAL

Gary P. Moccia
Inspector of Buildings

KEVIN DEABLER
535 ALBANY STREET
5C
BOSTON, MA 02118

December 08, 2014

Location:	11 IFFLEY RD JAMAICA PLAIN, MA 02130
Ward:	11
Zoning District:	Jamaica Plain
Zoning Subdistrict:	LI
Appl. # :	ERT429208
Date Filed:	November 21, 2014
Purpose:	Combine lots at 3204 and 3190 Washington St and 11 Iffley to create a new lot of 32,419sf. Demolish existing two-story building and rear garage at 3190 Washington Street and single-story building at 3204 Washington Street; Construct new 3 residential units and on-site parking for 3 vehicles, as per plans. This is one of two buildings on the same lot.

YOUR APPLICATION REQUIRES RELIEF FROM THE BOARD OF APPEAL AS SAME WOULD BE IN VIOLATION OF THE BOSTON ZONING CODE, TO WIT: CHAPTER 665, ACTS OF 1956 AS AMENDED:

Violation	Violation Description	Violation Comments
Article 55 Section 19	Use Regs in Local Industrial	Multifamily dwelling (Forbadden)
Article 55 Section 20	Dimensional regs in LI	Floor Area Ratio excessive
Article 55 Section 20	Dimensional regs in LI	Height excessive
Notes		IBC review pending Article 80 Large Project Review required

THIS DECISION MAY BE APPEALED TO THE BOARD OF APPEAL WITHIN FORTY-FIVE (45) DAYS PURSUANT TO CHAPTER 665 OF THE ACTS OF 1956, AS AMENDED. APPLICATIONS NOT APPEALED WITHIN THAT TIME PERIOD WILL BE DEEMED ABANDONED. IF YOU HAVE INQUIRIES REGARDING THE NEIGHBORHOOD PROCESS AND PUBLIC PARTICIPATION, PLEASE CONTACT THE MAYOR'S OFFICE OF NEIGHBORHOOD SERVICES AT 617-635-3485.

Luis Santana
(617)961-3286
for the Commissioner

Refusal of a permit may be appealed to the Board of Appeal within 45 days. Chapter 802, Acts of 1972, and Chapter 656, Acts of 1956, Section 19.

City of Boston
Inspectional Services
617-635-5300

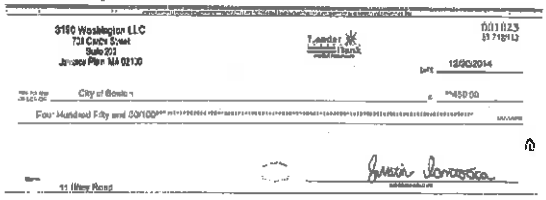
Date: 1/16/2015 3:27 PM
Cashier: 081373 **Batch:** 18087
Office: ISD **Tran #:** 62

Receipt #: 00841734

Comments:

71043	B0A442289	$450.00
	Payment Total:	$450.00
	Transaction Total:	$450.00
	Check Tendered :	$450.00

Checks presented:



Thank you for your payment.
Have a Nice Day!

www.cityofboston.gov/isd/

This form must be completed and signed by the owner-of-record, their attorney and/or authorized agent. If form is not signed by property owner, please attach a signed letter of authorization designating the authorized agent.

Appeal Must Be Typed

APPEAL BOA442292

under Boston Zoning Code

Thomas M. Menino
Mayor

Boston, Massachusetts. January 15, 2015

To the Board of Appeal in the Inspectional Services Department of the City of Boston:

The undersigned, being the Authorized Agent
The Owner(s) or authorized agent

of the lot at 3198-3204 (number) Washington Street (street) 11 (ward) Jamaica Plain - LI (district)

hereby appeal(s) under St. 1956, c. 665, s. 8, to the Board of Appeal in the Inspectional Services Department of the City of Boston the action taken by the Inspectional Services Commissioner as outlined in the attached refusal letter.

DESCRIBE IN DETAIL THE REASON(S) FOR THIS APPEAL

This appeal seeks permission to demolish two existing buildings, combine lots and erect two new mixed-use buildings, including a six (6) story building (with 7th level mezzanine) and a five (5) story building (with stepped-back 6th level) for a total of 73 combined new residential units, ground level retail spaces in each building and 33 on-site parking spaces, as per plans.

STATE REASONS FOR THIS PROPOSAL

Allowance of the within appeal will allow the Appellant to reasonably redevelop the combined properties with much-needed residential units, ground level retail spaces, and improvements in open space, landscaping and design, in a manner consistent with the character of the Jamaica Plain neighborhood. This appeal is also related to, but separate from, the companion zoning appeal for 11 Iffley Road, which is part of the Appellant's overall development.

PROVIDE REASONS WHY BOARD SHOULD GRANT RELIEF

Appellant submits that the Board should grant the requested relief, as the proposed project will not adversely affect the neighborhood, but rather allow for the revitalization of this under-utilized site with a vibrant mixed-use development that better conforms with the Jamaica Plain neighborhood.

COMMENTS

For these and other reasons more precisely enumerated at the public hearing before the Board, the Appellant respectfully requests the allowance of the within appeal.

3190 Washington Street, LLC

OWNER Exchange Authority, LLC Joseph P. Hanley (NR)

AUTHORIZED AGENT Joseph P. Hanley, Esq.

ADDRESS 131 Oliver Street, 5th Floor
Boston, MA 02110

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Boston Inspectional Services Department
Planning and Zoning Division
1010 Massachusetts Avenue Boston, MA 02118 Telephone: (617) 635-5300

Martin J. Walsh
Mayor

Gary P. Moccia
Inspector of Buildings

ZONING CODE REFUSAL

KEVIN DEABLER
535 ALBANY STREET
5C
BOSTON, MA 02118

January 13, 2015

Location:	3198-3204 WASHINGTON ST JAMAICA PLAIN MA 02130
Ward:	11
Zoning District:	Jamaica Plain
Zoning Subdistrict:	LI
Appl. # :	**ERT428889**
Date Filed:	November 20, 2014
Purpose:	Combine lots at 3204 and 3190 Washington St and 11 Iffley to create a new lot of 32,419sf. (see Alt 429182,alt429185, alt429187) Demolish existing two-story building and rear garage at 3190 Washington Street and single-story building at 3204 Washington Street on a separate demolition permit; Construct new 73 residential units, ground level retail space and on-site parking for 33 vehicles, as per plans. This is one of two buildings on the same lot.

YOUR APPLICATION REQUIRES RELIEF FROM THE BOARD OF APPEAL AS SAME WOULD BE IN VIOLATION OF THE BOSTON ZONING CODE TO WIT: CHAPTER 665, ACTS OF 1956 AS AMENDED:

Violation	Violation Description	Violation Comments
Article 55 Section 19	Use Regs in Local Industrial	Multifamily dwelling (Forbidden)
Article 55 Section 20	Dimensional regs in LI	Floor Area Ratio excessive
Article 55 Section 20	Dimensional regs in LI	Height excessive
Notes		IBC review pending Article 80 Large Project Review required

THIS DECISION MAY BE APPEALED TO THE BOARD OF APPEAL WITHIN FORTY-FIVE (45) DAYS PURSUANT TO CHAPTER 665 OF THE ACTS OF 1956, AS AMENDED. APPLICATIONS NOT APPEALED WITHIN THAT TIME PERIOD WILL BE DEEMED ABANDONED. IF YOU HAVE INQUIRIES REGARDING THE NEIGHBORHOOD PROCESS AND PUBLIC PARTICIPATION, PLEASE CONTACT THE MAYOR'S OFFICE OF NEIGHBORHOOD SERVICES AT 617-635-3485.

Luis Santana
(617)961-3286
for the Commissioner

Refusal of a permit may be appealed to the Board of Appeal within 45 days. Chapter 802, Acts of 1972, and Chapter 656, Acts of 1956, Section 19.

City of Boston
Inspectional Services
617-635-5300

Date: 1/16/2015 3:28 PM
Cashier: 081373 **Batch:** 18087
Office: ISD **Tran #:** 63

Receipt #: 00841736

Comments:

71043	B0A442292	$450.00
	Payment Total:	$450.00
	Transaction Total:	$450.00
	Check Tendered :	$450.00

Checks presented:

3190 Washington LLC
709 Comlc Street
Suite 302
Jamaica Plain, MA 02130

001022

DATE 12/30/2014

City of Boston $ **450.00

Four Hundred Fifty and 00/100**

3190-3204 Washington Street

Thank you for your payment.
Have a Nice Day!

www.cityofboston.gov/isd/

APPENDIX D – AIR QUALITY APPENDIX

APPENDIX D
AIR QUALITY APPENDIX

3190 WASHINGTON STREET
PROJECT NOTIFICATION FORM

Pages	Contents
2	MOVES2010b Output for Garage Analysis
3	Garage Emissions Analysis Calculations - AM and PM Peak Hour
4 - 6	AERMOD Model Output

MOVES2010b 2014 and 2019 CO Emission Rates (grams/hour)

Zone ID	Road Type ID	Queue Link Length (Miles)	Queue Link Volumn (Vehicles/Hr)	Queue Link Avg Speed (Miles/Hr)	Pollutant	Queue Emission Factor (Grams/Hr)
250250	1	0	33	0	CO	0.503890991
250250	1	0	30	0	CO	0.519320011

```
INDOOR GARAGE ANALYSIS PROGRAM

  PROJECT:  3190 WASHINGTON STREET PARKING GARAGE PEAK AM HOUR - YEAR: 2019


 TOTAL EXIT VOLUME:            21 VEH/HOUR

                 CO RATE:     0.51 GRAMS CO/HR

  VENT CFM:                  16,500 CFM


  TOTAL CO EMISSIONS =   0.18 GRAMS/MIN  =  0.003 GRAMS/SEC
  TOTAL VENTILATION  =     467 CU. M/MIN


      PEAK 1-HOUR CO CONCENTRATION FROM VEHICLES:   0.33 PPM

*******************************************************************************

PROJECT:  3190 WASHINGTON STREET PARKING GARAGE PEAK PM HOUR - YEAR: 2019

  TOTAL EXIT VOLUME:            10 VEH/HOUR

                 CO RATE:     0.51 GRAMS CO/HR


  VENT CFM:                  16,500 CFM


  TOTAL CO EMISSIONS =   0.085 GRAMS/MIN  =  0.0014 GRAMS/SEC
  TOTAL VENTILATION  =     567 CU. M/MIN


      PEAK 1-HOUR CO CONCENTRATION FROM VEHICLES:  0.16 PPM
```

```
 **MODELOPTs:   NonDFAULT CONC      FLAT      FLGPOL    NOCHKD    SCREEN

                                        ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =      4398.0 ;  Urban Roughness Length =  1.000 m

 **Model Allows User-Specified Options:
         1. Stack-tip Downwash.
         2. Model Assumes Receptors on FLAT Terrain.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay.
         6. Urban Roughness Length of 1.0 Meter Used.

 **Other Options Specified:
         NOCHKD   - Suppresses checking of date sequence in meteorology files
         SCREEN   - Use screening option
 which forces calculation of centerline values

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  OTHER

 **Model Calculates  1 Short Term Average(s) of:   1-HR

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     403 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date: 14134

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =     5.00 ;  Decay Coef. =    0.000     ;  Rot. Angle =
0.0
                  Emission Units = GRAMS/SEC                              ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.6 MB of RAM.

 **Input Runstream File:          CO_5yrs_OTHER.DTA
 **Output Print File:             CO_5yrs_OTHER.LST

 **File for Summary of Results:   W:\Apps\aermod\3904\CO_5yrs_OTHER.SUM
```



```
 **MODELOPTs:   NonDFAULT CONC      FLAT      FLGPOL    NOCHKD    SCREEN

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                           (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
```

```
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1   1 1 1 1 1 1

              NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


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

                                                  1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION  14134 ***   *** 3190 Washington Street  Project                                        ***
10/30/14
 *** AERMET - VERSION 14134  ***   *** Screening 1-hour CO Concentrations                                    ***
13:46:37
                                                                                                                PAGE
3
 **MODELOPTs:   NonDFAULT CONC      FLAT      FLGPOL    NOCHKD    SCREEN

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

   Surface file:   Urban.sfc                                                                  Met Version: 14134
   Profile file:   Urban.PFL
   Surface format: FREE
   Profile format: FREE
   Surface station no.:    11111                 Upper air station no.:    22222
                 Name: UNKNOWN                                 Name: UNKNOWN
                 Year:   2010                                  Year:   2010

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


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

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION  14134 ***   *** 3190 Washington Street  Project                                        ***
10/30/14
 *** AERMET - VERSION 14134  ***   *** Screening 1-hour CO Concentrations                                    ***
13:46:37
                                                                                                                PAGE
4
 **MODELOPTs:   NonDFAULT CONC      FLAT      FLGPOL    NOCHKD    SCREEN

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


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

                                                 DATE
NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - -

ALL      HIGH   1ST HIGH VALUE IS       5.70139  ON 10062502: AT (  326880.34,  4686584.52,     5.00,     5.00,   10.90)
DC
         HIGH   2ND HIGH VALUE IS       5.70139  ON 10062602: AT (  326880.34,  4686584.52,     5.00,     5.00,   10.90)
DC
```

```
 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** 3190 Washington Street  Project                                  ***
10/30/14
 *** AERMET - VERSION 14134  ***   *** Screening 1-hour CO Concentrations                               ***
13:46:37
                                                                                                        PAGE
5
 **MODELOPTs:   NonDFAULT CONC      FLAT      FLGPOL    NOCHKD    SCREEN

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

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

 A Total of            0 Fatal Error Message(s)
 A Total of            2 Warning Message(s)
 A Total of            0 Informational Message(s)

 A Total of        18504 Hours Were Processed

 A Total of            0 Calm Hours Identified

 A Total of            0 Missing Hours Identified (  0.00 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***
```

APPENDIX E – NOISE APPENDIX

APPENDIX E
NOISE APPENDIX

3190 WASHINGTON STREET
PROJECT NOTIFICATION FORM

Page **Contents**

2 Figure 1: Sound Monitoring and Receptor Locations
3 Cadna Noise Modeling Results

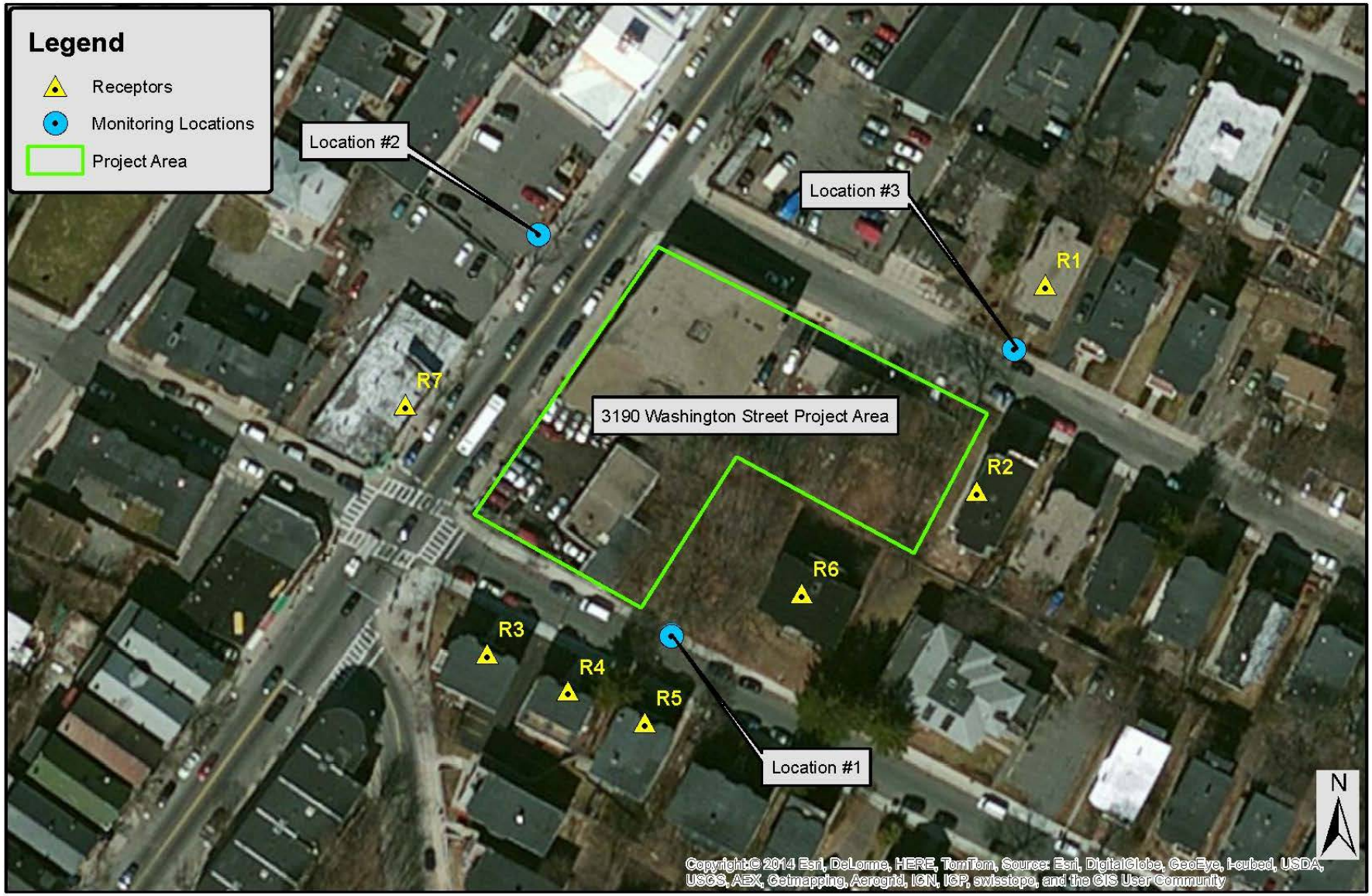

Figure 1
Sound Monitoring and Modeling Receptor Locations
3190 Washington Street Acoustic Study
Jamaica Plain, MA

TECH environmental
FOCUSED KNOWLEDGE. REAL SOLUTIONS.

Cadna Noise Modeling Results

Receptor Name	Receptor ID	Broadband	*Octave Band Levels*									Coordinates		
		Level	*31*	*63*	*125*	*250*	*500*	*1000*	*2000*	*4000*	*8000*	X	Y	Z
		(dBA)	*(dB)*	*(dB)*	*(dB)*	*(dB)*	*(dB)*	*(dB)*	*(dB)*	*(dB)*	*(dB)*	(m)	(m)	(m)
20 Iffley Road	3rd_Floor	29.8	28.9	31.2	29.2	21.5	26.8	27.3	19.3	12.8	10.7	232962.3	895891.8	35.3
21 Iffley Road	3rd_Floor	34	31.4	34.4	33.6	26.2	31.5	31.1	23.5	17.4	16.9	232954.3	895865.3	38.2
41 Montebello Road	3rd_Floor	19.6	28.9	29.8	25.6	15.6	18.3	15.5	6.7	< 5	< 5	232860.8	895830.5	31.8
43 & 45 Montebello Road	3rd_Floor	21.4	28.1	29.1	25.5	16	19.4	17.9	10.2	< 5	< 5	232874.4	895823.3	33.4
47 Montebello Road	3rd_Floor	25.5	27.9	29.7	27.3	18.9	23.5	22.6	13.7	5.8	< 5	232887.9	895817.2	35.0
60 Montebello Road	3rd_Floor	32.3	31.3	33.8	31.8	24.4	30.1	29.4	21.6	15	12.8	232918.9	895838.7	37.1
3195 Washington Street	1st_Floor_Commercial	28.4	28.9	31	28.7	20.5	25.6	25.6	18.6	12.4	10.5	232844.7	895879.0	19.3

Cadna Noise Modeling Input

Name	M.	ID	Result. PWL	Lw / Li	Coordinates		
			Day	Type	X	Y	Z
			(dBA)		(m)	(m)	(m)
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232913.94	895892.2	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232911.69	895893.3	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232909.24	895894.8	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232908.32	895892.8	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232907.59	895891.1	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232906.79	895889.4	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232909.18	895888.3	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232909.97	895889.9	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232910.96	895891.6	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232913.35	895890.9	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232912.55	895889.2	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232911.82	895887.7	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232906.07	895893	45.52
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232884.63	895871.6	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232883.9	895870.4	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232883.27	895869.2	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232882.37	895868.1	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232881.53	895866.7	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232884.47	895867.1	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232883.84	895865.9	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232880.48	895865.7	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232882.69	895864.5	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232876.18	895866	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232878.49	895864.8	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232880.59	895863.7	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232882.58	895862.7	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232878.7	895863	45.3
Mitsubishi Rooftop Unit		10_Ton	67.8	Lw	232937.77	895865.5	36.72

APPENDIX F – TRANSPORTATION APPENDIX

TRAFFIC COUNTS

TRANSPORTATION TECHNICAL APPENDIX

- TRAFFIC COUNTS
- TRIP GENERATION CALCULATIONS
- INTERSECTION CAPACITY ANALYSIS WORKSHEETS

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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 : 144032 A
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
07:00 AM	2	74	15	0	0	8	5	3	0	0	0	57	6	1	0	0	0	113	0	0	0	0	0	0	0	284
07:15 AM	2	68	18	0	0	6	5	4	0	0	0	63	7	0	0	1	0	120	3	0	0	0	0	0	0	297
07:30 AM	2	72	18	0	0	5	4	3	0	0	0	67	6	0	0	0	0	121	2	0	0	0	0	0	0	300
07:45 AM	1	60	11	0	0	10	7	3	0	0	0	61	7	2	0	2	0	120	1	0	0	0	0	0	0	285
Total	7	274	62	0	0	29	21	13	0	0	0	248	26	3	0	3	0	474	6	0	0	0	0	0	0	1166
08:00 AM	1	72	12	0	0	5	15	2	0	0	0	42	6	1	0	1	0	110	4	0	0	0	0	0	0	271
08:15 AM	1	77	10	0	0	8	13	2	0	0	0	52	14	2	0	1	0	96	2	0	0	0	0	0	0	278
08:30 AM	0	65	10	0	0	3	9	4	0	0	0	45	17	0	0	0	0	103	0	0	0	0	0	0	0	256
08:45 AM	0	69	10	0	0	14	3	3	1	0	0	47	12	3	0	0	0	110	4	0	0	0	0	0	0	276
Total	2	283	42	0	0	30	40	11	1	0	0	186	49	6	0	2	0	419	10	0	0	0	0	0	0	1081
Grand Total	9	557	104	0	0	59	61	24	1	0	0	434	75	9	0	5	0	893	16	0	0	0	0	0	0	2247
Apprch %	1.3	83.1	15.5	0	0	40.7	42.1	16.6	0.7	0	0	83.8	14.5	1.7	0	0.5	0	97.7	1.8	0	0	0	0	0	0	
Total %	0.4	24.8	4.6	0	0	2.6	2.7	1.1	0	0	0	19.3	3.3	0.4	0	0.2	0	39.7	0.7	0	0	0	0	0	0	
Cars	8	493	100	0	0	57	60	24	1	0	0	424	74	9	0	4	0	803	16	0	0	0	0	0	0	2073
% Cars	88.9	88.5	96.2	0	0	96.6	98.4	100	100	0	0	97.7	98.7	100	0	80	0	89.9	100	0	0	0	0	0	0	92.3
Heavy Vehicles	1	64	4	0	0	2	1	0	0	0	0	10	1	0	0	1	0	90	0	0	0	0	0	0	0	174
% Heavy Vehicles	11.1	11.5	3.8	0	0	3.4	1.6	0	0	0	0	2.3	1.3	0	0	20	0	10.1	0	0	0	0	0	0	0	7.7

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	2	74	15	0	0	91	8	5	3	0	0	16	0	57	6	1	0	64	0	0	113	0	0	113	0	0	0	0	0	0	284
07:15 AM	2	68	18	0	0	88	6	5	4	0	0	15	0	63	7	0	0	70	1	0	120	3	0	124	0	0	0	0	0	0	297
07:30 AM	2	72	18	0	0	92	5	4	3	0	0	12	0	67	6	0	0	73	0	0	121	2	0	123	0	0	0	0	0	0	300
07:45 AM	1	60	11	0	0	72	10	7	3	0	0	20	0	61	7	2	0	70	2	0	120	1	0	123	0	0	0	0	0	0	285
Total Volume	7	274	62	0	0	343	29	21	13	0	0	63	0	248	26	3	0	277	3	0	474	6	0	483	0	0	0	0	0	0	1166
% App. Total	2	79.9	18.1	0	0		46	33.3	20.6	0	0		0	89.5	9.4	1.1	0		0.6	0	98.1	1.2	0		0	0	0	0	0		
PHF	.875	.926	.861	.000	.000	.932	.725	.750	.813	.000	.000	.788	.000	.925	.929	.375	.000	.949	.375	.000	.979	.500	.000	.974	.000	.000	.000	.000	.000	.000	.972
Cars	7	245	59	0	0	311	29	21	13	0	0	63	0	242	26	3	0	271	2	0	424	6	0	432	0	0	0	0	0	0	1077
% Cars	100	89.4	95.2	0	0	90.7	100	100	100	0	0	100	0	97.6	100	100	0	97.8	66.7	0	89.5	100	0	89.4	0	0	0	0	0	0	92.4
Heavy Vehicles	0	29	3	0	0	32	0	0	0	0	0	0	0	6	0	0	0	6	1	0	50	0	0	51	0	0	0	0	0	0	89
% Heavy Vehicles	0	10.6	4.8	0	0	9.3	0	0	0	0	0	0	0	2.4	0	0	0	2.2	33.3	0	10.5	0	0	10.6	0	0	0	0	0	0	7.6

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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 : 144032 A
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

Groups Printed- Cars

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
07:00 AM	2	66	13	0	0	8	5	3	0	0	0	57	6	1	0	0	0	100	0	0	0	0	0	0	0	261
07:15 AM	2	62	18	0	0	6	5	4	0	0	0	61	7	0	0	1	0	112	3	0	0	0	0	0	0	281
07:30 AM	2	61	17	0	0	5	4	3	0	0	0	64	6	0	0	0	0	109	2	0	0	0	0	0	0	273
07:45 AM	1	56	11	0	0	10	7	3	0	0	0	60	7	2	0	1	0	103	1	0	0	0	0	0	0	262
Total	7	245	59	0	0	29	21	13	0	0	0	242	26	3	0	2	0	424	6	0	0	0	0	0	0	1077
08:00 AM	0	69	11	0	0	5	15	2	0	0	0	42	6	1	0	1	0	99	4	0	0	0	0	0	0	255
08:15 AM	1	70	10	0	0	6	13	2	0	0	0	51	13	2	0	1	0	87	2	0	0	0	0	0	0	258
08:30 AM	0	56	10	0	0	3	8	4	0	0	0	42	17	0	0	0	0	94	0	0	0	0	0	0	0	234
08:45 AM	0	53	10	0	0	14	3	3	1	0	0	47	12	3	0	0	0	99	4	0	0	0	0	0	0	249
Total	1	248	41	0	0	28	39	11	1	0	0	182	48	6	0	2	0	379	10	0	0	0	0	0	0	996
Grand Total	8	493	100	0	0	57	60	24	1	0	0	424	74	9	0	4	0	803	16	0	0	0	0	0	0	2073
Apprch %	1.3	82	16.6	0	0	40.1	42.3	16.9	0.7	0	0	83.6	14.6	1.8	0	0.5	0	97.6	1.9	0	0	0	0	0	0	
Total %	0.4	23.8	4.8	0	0	2.7	2.9	1.2	0	0	0	20.5	3.6	0.4	0	0.2	0	38.7	0.8	0	0	0	0	0	0	

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	2	66	13	0	0	81	8	5	3	0	0	16	0	57	6	1	0	64	0	0	100	0	0	100	0	0	0	0	0	0	261
07:15 AM	2	62	18	0	0	82	6	5	4	0	0	15	0	61	7	0	0	68	1	0	112	3	0	116	0	0	0	0	0	0	281
07:30 AM	2	61	17	0	0	80	5	4	3	0	0	12	0	64	6	0	0	70	0	0	109	2	0	111	0	0	0	0	0	0	273
07:45 AM	1	56	11	0	0	68	10	7	3	0	0	20	0	60	7	2	0	69	1	0	103	1	0	105	0	0	0	0	0	0	262
Total Volume	7	245	59	0	0	311	29	21	13	0	0	63	0	242	26	3	0	271	2	0	424	6	0	432	0	0	0	0	0	0	1077
% App. Total	2.3	78.8	19	0	0		46	33.3	20.6	0	0		0	89.3	9.6	1.1	0		0.5	0	98.1	1.4	0		0	0	0	0	0		
PHF	.875	.928	.819	.000	.000	.948	.725	.750	.813	.000	.000	.788	.000	.945	.929	.375	.000	.968	.500	.000	.946	.500	.000	.931	.000	.000	.000	.000	.000	.000	.958

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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Groups Printed- Heavy Vehicles

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	8	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	23
07:15 AM	0	6	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	8	0	0	0	0	0	0	0	16
07:30 AM	0	11	1	0	0	0	0	0	0	0	0	3	0	0	0	0	0	12	0	0	0	0	0	0	0	27
07:45 AM	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	17	0	0	0	0	0	0	0	23
Total	0	29	3	0	0	0	0	0	0	0	0	6	0	0	0	1	0	50	0	0	0	0	0	0	0	89
08:00 AM	1	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	16
08:15 AM	0	7	0	0	0	2	0	0	0	0	0	1	1	0	0	0	0	9	0	0	0	0	0	0	0	20
08:30 AM	0	9	0	0	0	0	1	0	0	0	0	3	0	0	0	0	0	9	0	0	0	0	0	0	0	22
08:45 AM	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	27
Total	1	35	1	0	0	2	1	0	0	0	0	4	1	0	0	0	0	40	0	0	0	0	0	0	0	85
Grand Total	1	64	4	0	0	2	1	0	0	0	0	10	1	0	0	1	0	90	0	0	0	0	0	0	0	174
Apprch %	1.4	92.8	5.8	0	0	66.7	33.3	0	0	0	0	90.9	9.1	0	0	1.1	0	98.9	0	0	0	0	0	0	0	
Total %	0.6	36.8	2.3	0	0	1.1	0.6	0	0	0	0	5.7	0.6	0	0	0.6	0	51.7	0	0	0	0	0	0	0	

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	0	8	2	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	23
07:15 AM	0	6	0	0	0	6	0	0	0	0	0	0	0	2	0	0	0	2	0	0	8	0	0	8	0	0	0	0	0	0	16
07:30 AM	0	11	1	0	0	12	0	0	0	0	0	0	0	3	0	0	0	3	0	0	12	0	0	12	0	0	0	0	0	0	27
07:45 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	1	0	0	0	1	1	0	17	0	0	18	0	0	0	0	0	0	23
Total Volume	0	29	3	0	0	32	0	0	0	0	0	0	0	6	0	0	0	6	1	0	50	0	0	51	0	0	0	0	0	0	89
% App. Total	0	90.6	9.4	0	0		0	0	0	0	0		0	100	0	0	0		2	0	98	0	0		0	0	0	0	0		
PHF	.000	.659	.375	.000	.000	.667	.000	.000	.000	.000	.000	.000	.000	.500	.000	.000	.000	.500	.250	.000	.735	.000	.000	.708	.000	.000	.000	.000	.000	.000	.824

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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File Name : 144032 A
Site Code : 2014092.
Start Date : 9/9/2014
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Groups Printed- Peds and Bikes

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	Peds EB	Peds WB	Right	Thru	Left	Hard Left	Peds SB	Peds NB	Hard Right	Bear Right	Bear Left	Hard Left	Peds SWB	Peds NEB	Hard Right	Right	Thru	Left	Peds WB	Peds EB	Right	Bear Right	Thru	Left	Peds NB	Peds SB	Int. Total
07:00 AM	0	2	0	0	0	3	0	0	0	0	0	1	0	0	0	0	2	4	0	0	1	0	1	0	0	0	0	0	4	2	20
07:15 AM	0	1	0	0	0	2	0	1	0	0	1	2	0	0	1	0	1	2	0	0	0	0	1	1	0	0	0	0	1	1	15
07:30 AM	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	6
07:45 AM	0	0	0	0	0	2	0	0	0	0	3	6	0	1	1	0	1	3	0	0	3	0	0	0	0	0	0	0	1	3	24
Total	0	3	0	0	0	9	0	1	0	0	4	10	0	1	2	0	4	9	0	0	4	0	2	2	0	0	0	0	7	7	65
08:00 AM	0	1	0	0	0	0	0	2	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
08:15 AM	0	0	0	0	2	1	0	0	0	0	2	2	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	1	14
08:30 AM	0	1	0	0	0	0	0	2	0	0	2	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	11
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	0	3	0	0	1	0	0	0	0	1	0	0	2	2	13
Total	0	2	0	0	2	1	0	4	0	0	10	14	0	2	0	0	0	3	0	0	3	0	0	1	0	1	0	0	4	4	51
Grand Total	0	5	0	0	2	10	0	5	0	0	14	24	0	3	2	0	4	12	0	0	7	0	2	3	0	1	0	0	11	11	116
Apprch %	0	29.4	0	0	11.8	58.8	0	11.6	0	0	32.6	55.8	0	14.3	9.5	0	19	57.1	0	0	58.3	0	16.7	25	0	4.3	0	0	47.8	47.8	
Total %	0	4.3	0	0	1.7	8.6	0	4.3	0	0	12.1	20.7	0	2.6	1.7	0	3.4	10.3	0	0	6	0	1.7	2.6	0	0.9	0	0	9.5	9.5	

	Washington Street From North							Montebello Road From East							Forest Hills Street From Southeast							Washington Street From South							Montebello Road From West							
Start Time	Right	Thru	Bear Left	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Hard Left	Peds SB	Peds NB	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds SWB	Peds NEB	App. Total	Hard Right	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Bear Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																																				
Peak Hour for Entire Intersection Begins at 07:00 AM																																				
07:00 AM	0	2	0	0	0	3	5	0	0	0	0	0	1	1	0	0	0	0	2	4	6	0	0	1	0	1	0	2	0	0	0	0	4	2	6	20
07:15 AM	0	1	0	0	0	2	3	0	1	0	0	1	2	4	0	0	1	0	1	2	4	0	0	0	0	1	1	2	0	0	0	0	1	1	2	15
07:30 AM	0	0	0	0	0	2	2	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	2	6
07:45 AM	0	0	0	0	0	2	2	0	0	0	0	3	6	9	0	1	1	0	1	3	6	0	0	3	0	0	0	3	0	0	0	0	1	3	4	24
Total Volume	0	3	0	0	0	9	12	0	1	0	0	4	10	15	0	1	2	0	4	9	16	0	0	4	0	2	2	8	0	0	0	0	7	7	14	65
% App. Total		25				75		0	6.7	0	0	26.7	66.7		0	6.2	12.5		25	56.2				50	0	25	25		0	0	0	0	50	50		
PHF	.000	.375	.000	.000	.000	.750	.600	.000	.250	.000	.000	.333	.417	.417	.000	.250	.500	.000	.500	.563	.667	.000	.000	.333	.000	.500	.500	.667	.000	.000	.000	.000	.438	.583	.583	.677

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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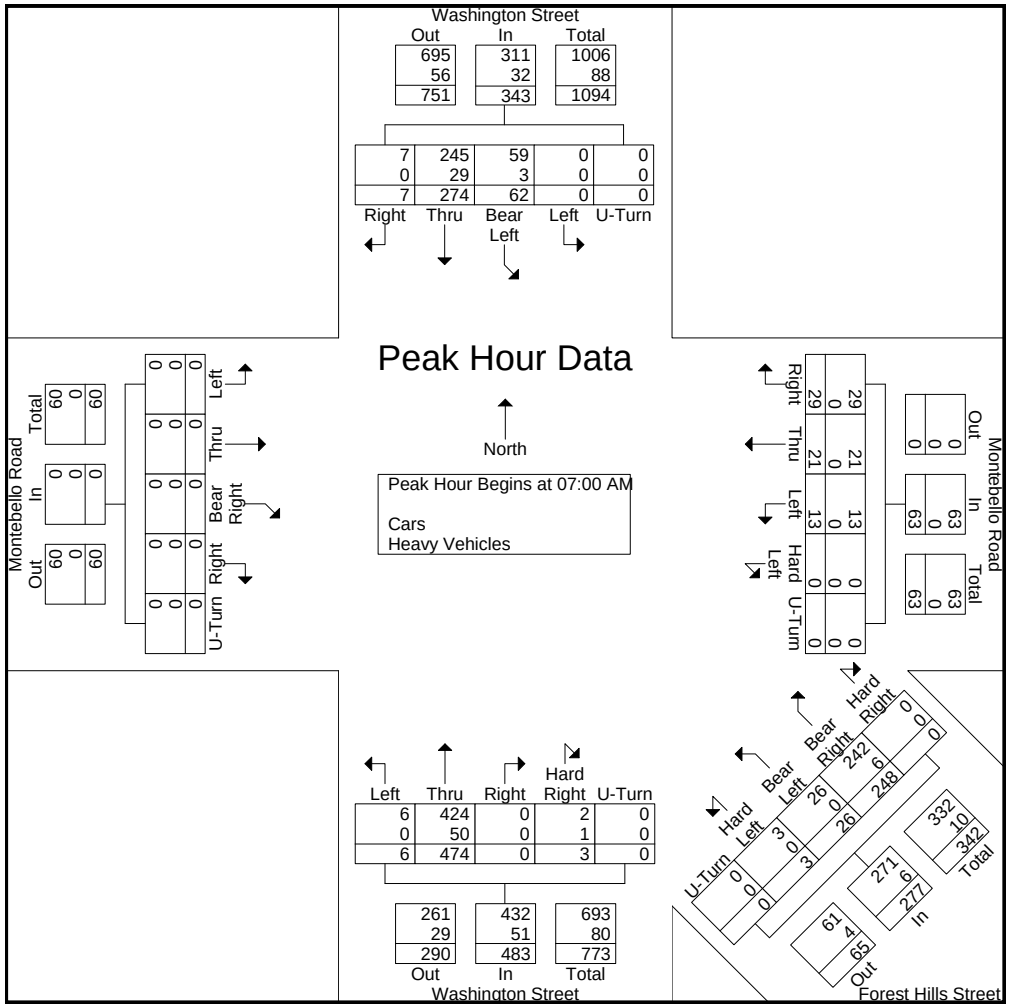
	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	2	74	15	0	0	91	8	5	3	0	0	16	0	57	6	1	0	64	0	0	113	0	0	113	0	0	0	0	0	0	284
07:15 AM	2	68	18	0	0	88	6	5	4	0	0	15	0	63	7	0	0	70	1	0	120	3	0	124	0	0	0	0	0	0	297
07:30 AM	2	72	18	0	0	92	5	4	3	0	0	12	0	67	6	0	0	73	0	0	121	2	0	123	0	0	0	0	0	0	300
07:45 AM	1	60	11	0	0	72	10	7	3	0	0	20	0	61	7	2	0	70	2	0	120	1	0	123	0	0	0	0	0	0	285
Total Volume	7	274	62	0	0	343	29	21	13	0	0	63	0	248	26	3	0	277	3	0	474	6	0	483	0	0	0	0	0	0	1166
% App. Total	2	79.9	18.1	0	0		46	33.3	20.6	0	0		0	89.5	9.4	1.1	0		0.6	0	98.1	1.2	0		0	0	0	0	0		
PHF	.875	.926	.861	.000	.000	.932	.725	.750	.813	.000	.000	.788	.000	.925	.929	.375	.000	.949	.375	.000	.979	.500	.000	.974	.000	.000	.000	.000	.000	.000	.972
Cars	7	245	59	0	0	311	29	21	13	0	0	63	0	242	26	3	0	271	2	0	424	6	0	432	0	0	0	0	0	0	1077
% Cars	100	89.4	95.2	0	0	90.7	100	100	100	0	0	100	0	97.6	100	100	0	97.8	66.7	0	89.5	100	0	89.4	0	0	0	0	0	0	92.4
Heavy Vehicles	0	29	3	0	0	32	0	0	0	0	0	0	0	6	0	0	0	6	1	0	50	0	0	51	0	0	0	0	0	0	89
% Heavy Vehicles	0	10.6	4.8	0	0	9.3	0	0	0	0	0	0	0	2.4	0	0	0	2.2	33.3	0	10.5	0	0	10.6	0	0	0	0	0	0	7.6



N/S/SE: Washington St/ Forest Hills St
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City, State: Jamaica Plain, MA
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File Name : 144032 AA
Site Code : 2014092.
Start Date : 9/9/2014
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Groups Printed- Cars - Heavy Vehicles

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	106	13	0	0	7	6	3	1	0	0	24	5	0	0	2	0	94	2	0	0	0	0	0	0	264
04:15 PM	1	103	17	0	0	6	2	2	0	0	0	41	6	1	0	2	0	89	0	0	0	0	0	0	0	270
04:30 PM	0	116	20	0	0	9	10	4	0	0	0	32	6	0	1	1	0	96	0	0	0	0	0	0	0	295
04:45 PM	2	135	15	0	0	3	11	3	0	0	0	25	4	0	0	2	0	93	2	0	0	0	0	0	0	295
Total	4	460	65	0	0	25	29	12	1	0	0	122	21	1	1	7	0	372	4	0	0	0	0	0	0	1124
05:00 PM	6	96	14	0	0	10	12	7	1	0	0	37	5	1	0	1	0	93	3	0	0	0	0	0	0	286
05:15 PM	2	88	21	0	0	7	9	2	0	0	0	37	4	1	0	0	0	89	5	0	0	0	0	0	0	265
05:30 PM	3	77	11	0	0	9	7	2	1	0	0	29	5	0	0	2	0	84	3	0	0	0	0	0	0	233
05:45 PM	1	99	22	0	0	5	8	5	1	0	0	25	1	1	0	1	0	83	2	0	0	0	0	0	0	254
Total	12	360	68	0	0	31	36	16	3	0	0	128	15	3	0	4	0	349	13	0	0	0	0	0	0	1038
Grand Total	16	820	133	0	0	56	65	28	4	0	0	250	36	4	1	11	0	721	17	0	0	0	0	0	0	2162
Apprch %	1.7	84.6	13.7	0	0	36.6	42.5	18.3	2.6	0	0	85.9	12.4	1.4	0.3	1.5	0	96.3	2.3	0	0	0	0	0	0	
Total %	0.7	37.9	6.2	0	0	2.6	3	1.3	0.2	0	0	11.6	1.7	0.2	0	0.5	0	33.3	0.8	0	0	0	0	0	0	
Cars	14	770	129	0	0	55	65	26	3	0	0	242	34	4	0	11	0	671	17	0	0	0	0	0	0	2041
% Cars	87.5	93.9	97	0	0	98.2	100	92.9	75	0	0	96.8	94.4	100	0	100	0	93.1	100	0	0	0	0	0	0	94.4
Heavy Vehicles	2	50	4	0	0	1	0	2	1	0	0	8	2	0	1	0	0	50	0	0	0	0	0	0	0	121
% Heavy Vehicles	12.5	6.1	3	0	0	1.8	0	7.1	25	0	0	3.2	5.6	0	100	0	0	6.9	0	0	0	0	0	0	0	5.6

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:15 PM																															
04:15 PM	1	103	17	0	0	121	6	2	2	0	0	10	0	41	6	1	0	48	2	0	89	0	0	91	0	0	0	0	0	0	270
04:30 PM	0	116	20	0	0	136	9	10	4	0	0	23	0	32	6	0	1	39	1	0	96	0	0	97	0	0	0	0	0	0	295
04:45 PM	2	135	15	0	0	152	3	11	3	0	0	17	0	25	4	0	0	29	2	0	93	2	0	97	0	0	0	0	0	0	295
05:00 PM	6	96	14	0	0	116	10	12	7	1	0	30	0	37	5	1	0	43	1	0	93	3	0	97	0	0	0	0	0	0	286
Total Volume	9	450	66	0	0	525	28	35	16	1	0	80	0	135	21	2	1	159	6	0	371	5	0	382	0	0	0	0	0	0	1146
% App. Total	1.7	85.7	12.6	0	0		35	43.8	20	1.2	0		0	84.9	13.2	1.3	0.6		1.6	0	97.1	1.3	0		0	0	0	0	0		
PHF	.375	.833	.825	.000	.000	.863	.700	.729	.571	.250	.000	.667	.000	.823	.875	.500	.250	.828	.750	.000	.966	.417	.000	.985	.000	.000	.000	.000	.000	.000	.971
Cars	7	423	64	0	0	494	28	35	14	1	0	78	0	131	19	2	0	152	6	0	343	5	0	354	0	0	0	0	0	0	1078
% Cars	77.8	94.0	97.0	0	0	94.1	100	100	87.5	100	0	97.5	0	97.0	90.5	100	0	95.6	100	0	92.5	100	0	92.7	0	0	0	0	0	0	94.1
Heavy Vehicles	2	27	2	0	0	31	0	0	2	0	0	2	0	4	2	0	1	7	0	0	28	0	0	28	0	0	0	0	0	0	68
% Heavy Vehicles	22.2	6.0	3.0	0	0	5.9	0	0	12.5	0	0	2.5	0	3.0	9.5	0	100	4.4	0	0	7.5	0	0	7.3	0	0	0	0	0	0	5.9

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
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Groups Printed- Cars

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	97	13	0	0	6	6	3	0	0	0	23	5	0	0	2	0	86	2	0	0	0	0	0	0	244
04:15 PM	1	97	17	0	0	6	2	1	0	0	0	39	6	1	0	2	0	80	0	0	0	0	0	0	0	252
04:30 PM	0	113	18	0	0	9	10	4	0	0	0	31	5	0	0	1	0	86	0	0	0	0	0	0	0	277
04:45 PM	1	126	15	0	0	3	11	2	0	0	0	25	4	0	0	2	0	88	2	0	0	0	0	0	0	279
Total	3	433	63	0	0	24	29	10	0	0	0	118	20	1	0	7	0	340	4	0	0	0	0	0	0	1052
05:00 PM	5	87	14	0	0	10	12	7	1	0	0	36	4	1	0	1	0	89	3	0	0	0	0	0	0	270
05:15 PM	2	85	20	0	0	7	9	2	0	0	0	35	4	1	0	0	0	87	5	0	0	0	0	0	0	257
05:30 PM	3	71	10	0	0	9	7	2	1	0	0	29	5	0	0	2	0	78	3	0	0	0	0	0	0	220
05:45 PM	1	94	22	0	0	5	8	5	1	0	0	24	1	1	0	1	0	77	2	0	0	0	0	0	0	242
Total	11	337	66	0	0	31	36	16	3	0	0	124	14	3	0	4	0	331	13	0	0	0	0	0	0	989
Grand Total	14	770	129	0	0	55	65	26	3	0	0	242	34	4	0	11	0	671	17	0	0	0	0	0	0	2041
Apprch %	1.5	84.3	14.1	0	0	36.9	43.6	17.4	2	0	0	86.4	12.1	1.4	0	1.6	0	96	2.4	0	0	0	0	0	0	
Total %	0.7	37.7	6.3	0	0	2.7	3.2	1.3	0.1	0	0	11.9	1.7	0.2	0	0.5	0	32.9	0.8	0	0	0	0	0	0	

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:30 PM																															
04:30 PM	0	113	18	0	0	131	9	10	4	0	0	23	0	31	5	0	0	36	1	0	86	0	0	87	0	0	0	0	0	0	277
04:45 PM	1	126	15	0	0	142	3	11	2	0	0	16	0	25	4	0	0	29	2	0	88	2	0	92	0	0	0	0	0	0	279
05:00 PM	5	87	14	0	0	106	10	12	7	1	0	30	0	36	4	1	0	41	1	0	89	3	0	93	0	0	0	0	0	0	270
05:15 PM	2	85	20	0	0	107	7	9	2	0	0	18	0	35	4	1	0	40	0	0	87	5	0	92	0	0	0	0	0	0	257
Total Volume	8	411	67	0	0	486	29	42	15	1	0	87	0	127	17	2	0	146	4	0	350	10	0	364	0	0	0	0	0	0	1083
% App. Total	1.6	84.6	13.8	0	0		33.3	48.3	17.2	1.1	0		0	87	11.6	1.4	0		1.1	0	96.2	2.7	0		0	0	0	0	0		
PHF	.400	.815	.838	.000	.000	.856	.725	.875	.536	.250	.000	.725	.000	.882	.850	.500	.000	.890	.500	.000	.983	.500	.000	.978	.000	.000	.000	.000	.000	.000	.970

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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File Name : 144032 AA
Site Code : 2014092.
Start Date : 9/9/2014
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Groups Printed- Heavy Vehicles

	Washington Street From North					Montebello Road From East					Forest Hills Street From Southeast					Washington Street From South					Montebello Road From West					
Start Time	Right	Thru	Bear Left	Left	U-Turn	Right	Thru	Left	Hard Left	U-Turn	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	Hard Right	Right	Thru	Left	U-Turn	Right	Bear Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	9	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	8	0	0	0	0	0	0	0	20
04:15 PM	0	6	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	9	0	0	0	0	0	0	0	18
04:30 PM	0	3	2	0	0	0	0	0	0	0	0	1	1	0	1	0	0	10	0	0	0	0	0	0	0	18
04:45 PM	1	9	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	16
Total	1	27	2	0	0	1	0	2	1	0	0	4	1	0	1	0	0	32	0	0	0	0	0	0	0	72
05:00 PM	1	9	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	4	0	0	0	0	0	0	0	16
05:15 PM	0	3	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	8
05:30 PM	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	13
05:45 PM	0	5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	6	0	0	0	0	0	0	0	12
Total	1	23	2	0	0	0	0	0	0	0	0	4	1	0	0	0	0	18	0	0	0	0	0	0	0	49
Grand Total	2	50	4	0	0	1	0	2	1	0	0	8	2	0	1	0	0	50	0	0	0	0	0	0	0	121
Apprch %	3.6	89.3	7.1	0	0	25	0	50	25	0	0	72.7	18.2	0	9.1	0	0	100	0	0	0	0	0	0	0	
Total %	1.7	41.3	3.3	0	0	0.8	0	1.7	0.8	0	0	6.6	1.7	0	0.8	0	0	41.3	0	0	0	0	0	0	0	

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:00 PM																															
04:00 PM	0	9	0	0	0	9	1	0	0	1	0	2	0	1	0	0	0	1	0	0	8	0	0	8	0	0	0	0	0	0	20
04:15 PM	0	6	0	0	0	6	0	0	1	0	0	1	0	2	0	0	0	2	0	0	9	0	0	9	0	0	0	0	0	0	18
04:30 PM	0	3	2	0	0	5	0	0	0	0	0	0	0	1	1	0	1	3	0	0	10	0	0	10	0	0	0	0	0	0	18
04:45 PM	1	9	0	0	0	10	0	0	1	0	0	1	0	0	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	16
Total Volume	1	27	2	0	0	30	1	0	2	1	0	4	0	4	1	0	1	6	0	0	32	0	0	32	0	0	0	0	0	0	72
% App. Total	3.3	90	6.7	0	0		25	0	50	25	0		0	66.7	16.7	0	16.7		0	0	100	0	0		0	0	0	0	0		
PHF	.250	.750	.250	.000	.000	.750	.250	.000	.500	.250	.000	.500	.000	.500	.250	.000	.250	.500	.000	.000	.800	.000	.000	.800	.000	.000	.000	.000	.000	.000	.900

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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Site Code : 2014092.
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Page No : 1

Groups Printed- Peds and Bikes

	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	Peds EB	Peds WB	Right	Thru	Left	Hard Left	Peds SB	Peds NB	Hard Right	Bear Right	Bear Left	Hard Left	Peds SWB	Peds NEB	Hard Right	Right	Thru	Left	Peds WB	Peds EB	Right	Bear Right	Thru	Left	Peds NB	Peds SB	Int. Total
04:00 PM	0	2	0	0	1	0	0	0	0	0	6	5	0	0	0	0	5	2	0	0	1	0	2	1	0	0	0	0	5	7	37
04:15 PM	0	1	0	0	1	0	0	0	0	0	1	5	0	0	0	0	0	3	0	0	1	0	1	0	0	0	0	0	3	12	28
04:30 PM	0	0	0	0	3	2	0	0	0	0	1	4	0	0	0	0	1	2	0	0	0	0	2	2	0	0	0	0	8	4	29
04:45 PM	0	1	0	0	2	2	0	0	0	0	2	5	0	0	0	0	1	5	0	0	0	0	0	2	0	0	0	0	7	7	34
Total	0	4	0	0	7	4	0	0	0	0	10	19	0	0	0	0	7	12	0	0	2	0	5	5	0	0	0	0	23	30	128
05:00 PM	0	0	0	0	4	1	0	0	0	0	9	1	0	1	0	0	9	3	0	0	0	0	0	3	0	0	0	0	10	7	48
05:15 PM	0	2	0	0	0	0	0	2	0	0	0	0	0	1	0	0	1	2	0	0	3	0	0	1	0	0	0	0	6	7	25
05:30 PM	0	2	0	0	4	3	0	0	0	0	9	3	0	0	0	0	5	2	0	0	1	0	4	4	0	0	0	0	8	7	52
05:45 PM	0	2	0	0	5	4	0	0	0	0	12	0	0	0	1	0	10	1	0	1	0	0	0	0	0	0	0	0	8	5	49
Total	0	6	0	0	13	8	0	2	0	0	30	4	0	2	1	0	25	8	0	1	4	0	4	8	0	0	0	0	32	26	174
Grand Total	0	10	0	0	20	12	0	2	0	0	40	23	0	2	1	0	32	20	0	1	6	0	9	13	0	0	0	0	55	56	302
Apprch %	0	23.8	0	0	47.6	28.6	0	3.1	0	0	61.5	35.4	0	3.6	1.8	0	58.2	36.4	0	3.4	20.7	0	31	44.8	0	0	0	0	49.5	50.5	
Total %	0	3.3	0	0	6.6	4	0	0.7	0	0	13.2	7.6	0	0.7	0.3	0	10.6	6.6	0	0.3	2	0	3	4.3	0	0	0	0	18.2	18.5	

	Washington Street From North							Montebello Road From East							Forest Hills Street From Southeast							Washington Street From South							Montebello Road From West							
Start Time	Right	Thru	Bear Left	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Hard Left	Peds SB	Peds NB	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds SWB	Peds NEB	App. Total	Hard Right	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Bear Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																																				
Peak Hour for Entire Intersection Begins at 05:00 PM																																				
05:00 PM	0	0	0	0	4	1	5	0	0	0	0	9	1	10	0	1	0	0	9	3	13	0	0	0	0	0	3	3	0	0	0	0	10	7	17	48
05:15 PM																																				
05:30 PM	0	2	0	0	4	3	9	0	0	0	0	9	3	12	0	0	0	0	5	2	7	0	0	1	0	4	4	9	0	0	0	0	8	7	15	52
05:45 PM	0	2	0	0	5	4	11	0	0	0	0	12	0	12	0	0	1	0	10	1	12	0	1	0	0	0	0	1	0	0	0	0	8	5	13	49
Total Volume					13							30	4	36	0	2	1	0	25	8	36	0	1	4	0	4	8	17	0	0	0	0	32	26	58	174
% App. Total		22.2			48.1	29.6		0	5.6	0	0	83.3	11.1		0	5.6	2.8		69.4	22.2			5.9	23.5	0	23.5	47.1		0	0	0	0	55.2	44.8		
PHF	.000	.750	.000	.000	.650	.500	.614	.000	.250	.000	.000	.625	.333	.750	.000	.500	.250	.000	.625	.667	.692	.000	.250	.333	.000	.250	.500	.472	.000	.000	.000	.000	.800	.929	.853	.837

N/S/SE: Washington St/ Forest Hills St
E/W: Montebello Road
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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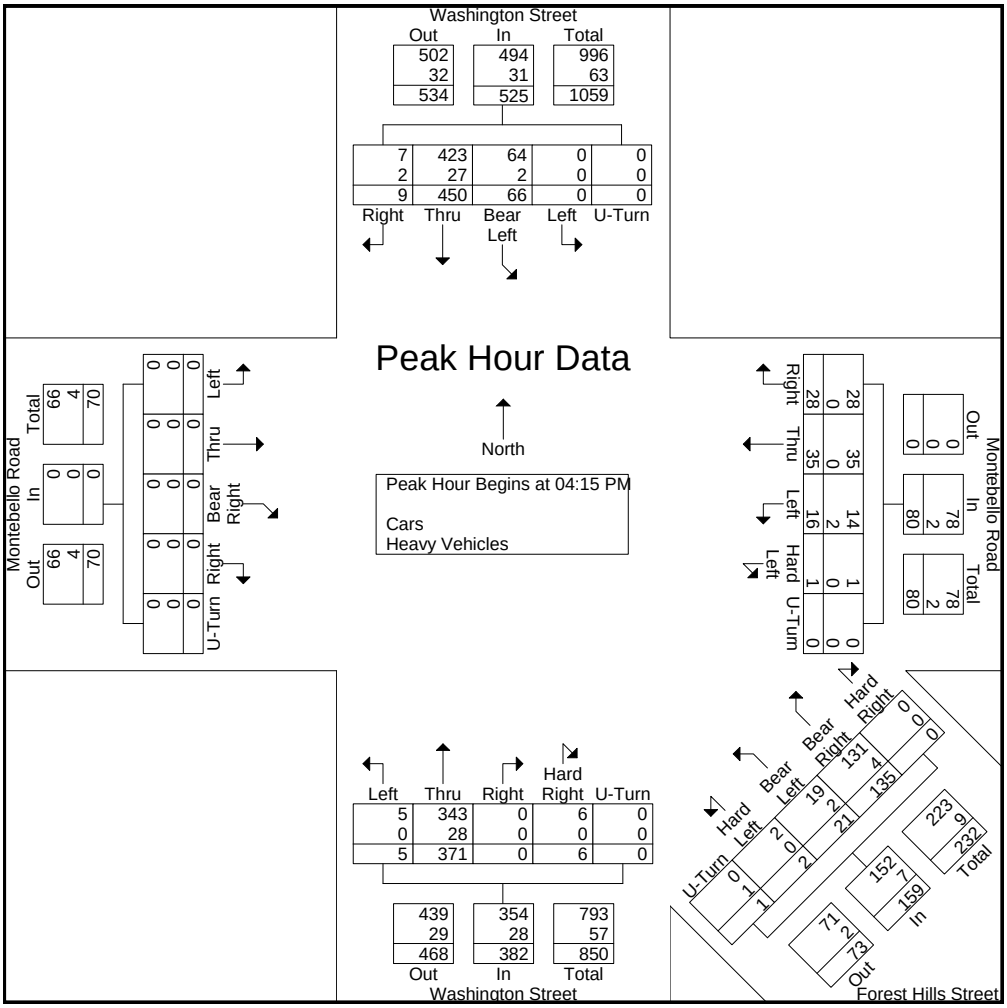
	Washington Street From North						Montebello Road From East						Forest Hills Street From Southeast						Washington Street From South						Montebello Road From West						
Start Time	Right	Thru	Bear Left	Left	U-Turn	App. Total	Right	Thru	Left	Hard Left	U-Turn	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	App. Total	Hard Right	Right	Thru	Left	U-Turn	App. Total	Right	Bear Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:15 PM																															
04:15 PM	1	103	17	0	0	121	6	2	2	0	0	10	0	41	6	1	0	48	2	0	89	0	0	91	0	0	0	0	0	0	270
04:30 PM	0	116	20	0	0	136	9	10	4	0	0	23	0	32	6	0	1	39	1	0	96	0	0	97	0	0	0	0	0	0	295
04:45 PM	2	135	15	0	0	152	3	11	3	0	0	17	0	25	4	0	0	29	2	0	93	2	0	97	0	0	0	0	0	0	295
05:00 PM	6	96	14	0	0	116	10	12	7	1	0	30	0	37	5	1	0	43	1	0	93	3	0	97	0	0	0	0	0	0	286
Total Volume	9	450	66	0	0	525	28	35	16	1	0	80	0	135	21	2	1	159	6	0	371	5	0	382	0	0	0	0	0	0	1146
% App. Total	1.7	85.7	12.6	0	0		35	43.8	20	1.2	0		0	84.9	13.2	1.3	0.6		1.6	0	97.1	1.3	0		0	0	0	0	0		
PHF	.375	.833	.825	.000	.000	.863	.700	.729	.571	.250	.000	.667	.000	.823	.875	.500	.250	.828	.750	.000	.966	.417	.000	.985	.000	.000	.000	.000	.000	.000	.971
Cars	7	423	64	0	0	494	28	35	14	1	0	78	0	131	19	2	0	152	6	0	343	5	0	354	0	0	0	0	0	0	1078
% Cars	77.8	94.0	97.0	0	0	94.1	100	100	87.5	100	0	97.5	0	97.0	90.5	100	0	95.6	100	0	92.5	100	0	92.7	0	0	0	0	0	0	94.1
Heavy Vehicles	2	27	2	0	0	31	0	0	2	0	0	2	0	4	2	0	1	7	0	0	28	0	0	28	0	0	0	0	0	0	68
% Heavy Vehicles	22.2	6.0	3.0	0	0	5.9	0	0	12.5	0	0	2.5	0	3.0	9.5	0	100	4.4	0	0	7.5	0	0	7.3	0	0	0	0	0	0	5.9



N/S: Washington Street
E/W: School Street
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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Groups Printed- Cars - Heavy Vehicles

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	97	2	0	4	0	16	0	1	165	0	0	2	6	4	0	297
07:15 AM	0	82	3	0	0	0	8	0	4	164	0	0	3	10	4	0	278
07:30 AM	0	91	1	0	1	0	11	0	8	150	0	0	4	15	4	0	285
07:45 AM	0	76	0	0	7	0	20	0	9	148	0	0	3	14	7	0	284
Total	0	346	6	0	12	0	55	0	22	627	0	0	12	45	19	0	1144
08:00 AM	0	91	4	0	0	0	26	0	15	117	0	0	6	20	12	0	291
08:15 AM	0	88	8	0	6	0	23	0	13	122	0	0	3	19	15	0	297
08:30 AM	0	83	7	0	6	0	17	0	10	127	0	0	4	18	10	0	282
08:45 AM	0	79	2	0	8	0	14	0	8	139	0	0	5	12	7	0	274
Total	0	341	21	0	20	0	80	0	46	505	0	0	18	69	44	0	1144
Grand Total	0	687	27	0	32	0	135	0	68	1132	0	0	30	114	63	0	2288
Apprch %	0	96.2	3.8	0	19.2	0	80.8	0	5.7	94.3	0	0	14.5	55.1	30.4	0	
Total %	0	30	1.2	0	1.4	0	5.9	0	3	49.5	0	0	1.3	5	2.8	0	
Cars	0	622	19	0	31	0	129	0	63	1046	0	0	28	110	61	0	2109
% Cars	0	90.5	70.4	0	96.9	0	95.6	0	92.6	92.4	0	0	93.3	96.5	96.8	0	92.2
Heavy Vehicles	0	65	8	0	1	0	6	0	5	86	0	0	2	4	2	0	179
% Heavy Vehicles	0	9.5	29.6	0	3.1	0	4.4	0	7.4	7.6	0	0	6.7	3.5	3.2	0	7.8

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	91	1	0	92	1	0	11	0	12	8	150	0	0	158	4	15	4	0	23	285
07:45 AM	0	76	0	0	76	7	0	20	0	27	9	148	0	0	157	3	14	7	0	24	284
08:00 AM	0	91	4	0	95	0	0	26	0	26	15	117	0	0	132	6	20	12	0	38	291
08:15 AM	0	88	8	0	96	6	0	23	0	29	13	122	0	0	135	3	19	15	0	37	297
Total Volume	0	346	13	0	359	14	0	80	0	94	45	537	0	0	582	16	68	38	0	122	1157
% App. Total	0	96.4	3.6	0		14.9	0	85.1	0		7.7	92.3	0	0		13.1	55.7	31.1	0		
PHF	.000	.951	.406	.000	.935	.500	.000	.769	.000	.810	.750	.895	.000	.000	.921	.667	.850	.633	.000	.803	.974
Cars	0	318	8	0	326	13	0	77	0	90	40	495	0	0	535	16	67	36	0	119	1070
% Cars	0	91.9	61.5	0	90.8	92.9	0	96.3	0	95.7	88.9	92.2	0	0	91.9	100	98.5	94.7	0	97.5	92.5
Heavy Vehicles	0	28	5	0	33	1	0	3	0	4	5	42	0	0	47	0	1	2	0	3	87
% Heavy Vehicles	0	8.1	38.5	0	9.2	7.1	0	3.8	0	4.3	11.1	7.8	0	0	8.1	0	1.5	5.3	0	2.5	7.5

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E/W: School Street
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

File Name : 144032 B
Site Code : 2014092.
Start Date : 9/9/2014
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Groups Printed- Cars

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	87	2	0	4	0	15	0	1	154	0	0	1	6	4	0	274
07:15 AM	0	77	3	0	0	0	8	0	4	152	0	0	3	10	4	0	261
07:30 AM	0	81	1	0	0	0	11	0	7	142	0	0	4	15	4	0	265
07:45 AM	0	73	0	0	7	0	19	0	9	128	0	0	3	14	7	0	260
Total	0	318	6	0	11	0	53	0	21	576	0	0	11	45	19	0	1060
08:00 AM	0	82	3	0	0	0	24	0	14	112	0	0	6	19	10	0	270
08:15 AM	0	82	4	0	6	0	23	0	10	113	0	0	3	19	15	0	275
08:30 AM	0	71	4	0	6	0	17	0	10	115	0	0	4	15	10	0	252
08:45 AM	0	69	2	0	8	0	12	0	8	130	0	0	4	12	7	0	252
Total	0	304	13	0	20	0	76	0	42	470	0	0	17	65	42	0	1049
Grand Total	0	622	19	0	31	0	129	0	63	1046	0	0	28	110	61	0	2109
Apprch %	0	97	3	0	19.4	0	80.6	0	5.7	94.3	0	0	14.1	55.3	30.7	0	
Total %	0	29.5	0.9	0	1.5	0	6.1	0	3	49.6	0	0	1.3	5.2	2.9	0	

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	81	1	0	82	0	0	11	0	11	7	142	0	0	149	4	15	4	0	23	265
07:45 AM	0	73	0	0	73	7	0	19	0	26	9	128	0	0	137	3	14	7	0	24	260
08:00 AM	0	82	3	0	85	0	0	24	0	24	14	112	0	0	126	6	19	10	0	35	270
08:15 AM	0	82	4	0	86	6	0	23	0	29	10	113	0	0	123	3	19	15	0	37	275
Total Volume	0	318	8	0	326	13	0	77	0	90	40	495	0	0	535	16	67	36	0	119	1070
% App. Total	0	97.5	2.5	0		14.4	0	85.6	0		7.5	92.5	0	0		13.4	56.3	30.3	0		
PHF	.000	.970	.500	.000	.948	.464	.000	.802	.000	.776	.714	.871	.000	.000	.898	.667	.882	.600	.000	.804	.973

PRECISION
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N/S: Washington Street
E/W: School Street
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

File Name : 144032 B
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

Groups Printed- Heavy Vehicles

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	10	0	0	0	0	1	0	0	11	0	0	1	0	0	0	23
07:15 AM	0	5	0	0	0	0	0	0	0	12	0	0	0	0	0	0	17
07:30 AM	0	10	0	0	1	0	0	0	1	8	0	0	0	0	0	0	20
07:45 AM	0	3	0	0	0	0	1	0	0	20	0	0	0	0	0	0	24
Total	0	28	0	0	1	0	2	0	1	51	0	0	1	0	0	0	84
08:00 AM	0	9	1	0	0	0	2	0	1	5	0	0	0	1	2	0	21
08:15 AM	0	6	4	0	0	0	0	0	3	9	0	0	0	0	0	0	22
08:30 AM	0	12	3	0	0	0	0	0	0	12	0	0	0	3	0	0	30
08:45 AM	0	10	0	0	0	0	2	0	0	9	0	0	1	0	0	0	22
Total	0	37	8	0	0	0	4	0	4	35	0	0	1	4	2	0	95
Grand Total	0	65	8	0	1	0	6	0	5	86	0	0	2	4	2	0	179
Apprch %	0	89	11	0	14.3	0	85.7	0	5.5	94.5	0	0	25	50	25	0	
Total %	0	36.3	4.5	0	0.6	0	3.4	0	2.8	48	0	0	1.1	2.2	1.1	0	

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	3	0	0	3	0	0	1	0	1	0	20	0	0	20	0	0	0	0	0	24
08:00 AM	0	9	1	0	10	0	0	2	0	2	1	5	0	0	6	0	1	2	0	3	21
08:15 AM	0	6	4	0	10	0	0	0	0	0	3	9	0	0	12	0	0	0	0	0	22
08:30 AM	0	12	3	0	15	0	0	0	0	0	0	12	0	0	12	0	3	0	0	3	30
Total Volume	0	30	8	0	38	0	0	3	0	3	4	46	0	0	50	0	4	2	0	6	97
% App. Total	0	78.9	21.1	0		0	0	100	0		8	92	0	0		0	66.7	33.3	0		
PHF	.000	.625	.500	.000	.633	.000	.000	.375	.000	.375	.333	.575	.000	.000	.625	.000	.333	.250	.000	.500	.808

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Site Code : 2014092.
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Page No : 1

Groups Printed- Peds and Bikes

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
07:00 AM	0	2	0	3	1	0	0	0	0	2	0	2	0	1	1	0	1	0	1	2	16
07:15 AM	0	0	0	2	2	0	0	2	2	2	0	2	0	2	3	1	0	0	0	4	22
07:30 AM	0	1	0	2	4	0	0	0	5	5	0	2	0	5	5	0	0	0	4	2	35
07:45 AM	0	0	0	0	1	0	0	1	6	4	0	3	0	8	3	1	0	0	1	1	29
Total	0	3	0	7	8	0	0	3	13	13	0	9	0	16	12	2	1	0	6	9	102
08:00 AM	0	1	0	5	2	0	0	0	5	3	0	2	0	10	1	0	0	1	3	1	34
08:15 AM	0	0	0	2	5	0	1	1	7	2	0	2	0	8	0	0	0	0	3	0	31
08:30 AM	0	2	0	1	3	0	0	1	4	3	0	1	0	6	2	0	2	1	4	7	37
08:45 AM	0	0	0	2	8	1	0	0	4	1	0	3	0	8	0	0	1	0	6	9	43
Total	0	3	0	10	18	1	1	2	20	9	0	8	0	32	3	0	3	2	16	17	145
Grand Total	0	6	0	17	26	1	1	5	33	22	0	17	0	48	15	2	4	2	22	26	247
Apprch %	0	12.2	0	34.7	53.1	1.6	1.6	8.1	53.2	35.5	0	21.2	0	60	18.8	3.6	7.1	3.6	39.3	46.4	
Total %	0	2.4	0	6.9	10.5	0.4	0.4	2	13.4	8.9	0	6.9	0	19.4	6.1	0.8	1.6	0.8	8.9	10.5	

	Washington Street From North						School Street From East						Washington Street From South						School Street From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 08:00 AM																									
08:00 AM	0	1	0	5	2	8	0	0	0	5	3	8	0	2	0	10	1	13	0	0	1	3	1	5	34
08:15 AM	0	0	0	2	5	7	0	1	1	7	2	11	0	2	0	8	0	10	0	0	0	3	0	3	31
08:30 AM	0	2	0	1	3	6	0	0	1	4	3	8	0	1	0	6	2	9	0	2	1	4	7	14	37
08:45 AM	0	0	0	2	8	10	1	0	0	4	1	6	0	3	0	8	0	11	0	1	0	6	9	16	43
Total Volume	0	3	0	10	18	31	1	1	2	20	9	33	0	8	0	32	3	43	0	3	2	16	17	38	145
% App. Total	0	9.7	0	32.3	58.1		3	3	6.1	60.6	27.3		0	18.6	0	74.4	7		0	7.9	5.3	42.1	44.7		
PHF	.000	.375	.000	.500	.563	.775	.250	.250	.500	.714	.750	.750	.000	.667	.000	.800	.375	.827	.000	.375	.500	.667	.472	.594	.843

N/S: Washington Street
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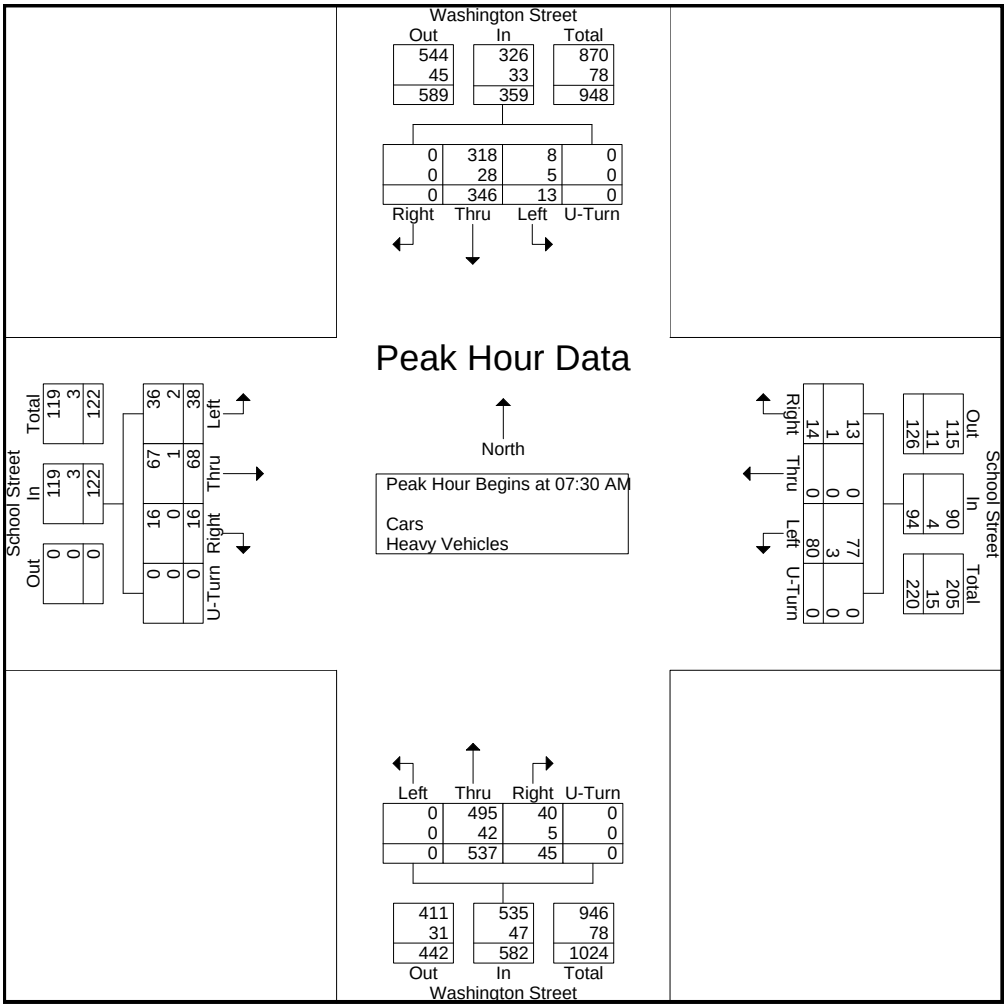
File Name : 144032 B
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	91	1	0	92	1	0	11	0	12	8	150	0	0	158	4	15	4	0	23	285
07:45 AM	0	76	0	0	76	7	0	20	0	27	9	148	0	0	157	3	14	7	0	24	284
08:00 AM	0	91	4	0	95	0	0	26	0	26	15	117	0	0	132	6	20	12	0	38	291
08:15 AM	0	88	8	0	96	6	0	23	0	29	13	122	0	0	135	3	19	15	0	37	297
Total Volume	0	346	13	0	359	14	0	80	0	94	45	537	0	0	582	16	68	38	0	122	1157
% App. Total	0	96.4	3.6	0		14.9	0	85.1	0		7.7	92.3	0	0		13.1	55.7	31.1	0		
PHF	.000	.951	.406	.000	.935	.500	.000	.769	.000	.810	.750	.895	.000	.000	.921	.667	.850	.633	.000	.803	.974
Cars	0	318	8	0	326	13	0	77	0	90	40	495	0	0	535	16	67	36	0	119	1070
% Cars	0	91.9	61.5	0	90.8	92.9	0	96.3	0	95.7	88.9	92.2	0	0	91.9	100	98.5	94.7	0	97.5	92.5
Heavy Vehicles	0	28	5	0	33	1	0	3	0	4	5	42	0	0	47	0	1	2	0	3	87
% Heavy Vehicles	0	8.1	38.5	0	9.2	7.1	0	3.8	0	4.3	11.1	7.8	0	0	8.1	0	1.5	5.3	0	2.5	7.5



N/S: Washington Street
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City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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File Name : 144032 BB
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	127	13	0	4	0	8	0	11	96	0	0	4	22	10	0	295
04:15 PM	0	122	6	0	10	0	19	0	15	100	0	0	10	25	8	0	315
04:30 PM	0	133	4	0	3	0	21	0	13	103	0	0	14	22	8	0	321
04:45 PM	0	151	4	0	3	0	20	0	9	91	0	0	16	23	5	0	322
Total	0	533	27	0	20	0	68	0	48	390	0	0	44	92	31	0	1253
05:00 PM	0	117	4	0	6	0	17	0	12	113	0	0	7	19	8	0	303
05:15 PM	0	113	3	0	6	0	17	0	20	87	0	0	11	24	6	0	287
05:30 PM	0	112	7	0	9	0	10	0	14	101	0	0	16	22	7	0	298
05:45 PM	0	113	5	0	9	0	17	0	14	87	0	0	8	19	9	0	281
Total	0	455	19	0	30	0	61	0	60	388	0	0	42	84	30	0	1169
Grand Total	0	988	46	0	50	0	129	0	108	778	0	0	86	176	61	0	2422
Apprch %	0	95.6	4.4	0	27.9	0	72.1	0	12.2	87.8	0	0	26.6	54.5	18.9	0	
Total %	0	40.8	1.9	0	2.1	0	5.3	0	4.5	32.1	0	0	3.6	7.3	2.5	0	
Cars	0	940	44	0	48	0	123	0	101	734	0	0	83	172	56	0	2301
% Cars	0	95.1	95.7	0	96	0	95.3	0	93.5	94.3	0	0	96.5	97.7	91.8	0	95
Heavy Vehicles	0	48	2	0	2	0	6	0	7	44	0	0	3	4	5	0	121
% Heavy Vehicles	0	4.9	4.3	0	4	0	4.7	0	6.5	5.7	0	0	3.5	2.3	8.2	0	5

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	122	6	0	128	10	0	19	0	29	15	100	0	0	115	10	25	8	0	43	315
04:30 PM	0	133	4	0	137	3	0	21	0	24	13	103	0	0	116	14	22	8	0	44	321
04:45 PM	0	151	4	0	155	3	0	20	0	23	9	91	0	0	100	16	23	5	0	44	322
05:00 PM	0	117	4	0	121	6	0	17	0	23	12	113	0	0	125	7	19	8	0	34	303
Total Volume	0	523	18	0	541	22	0	77	0	99	49	407	0	0	456	47	89	29	0	165	1261
% App. Total	0	96.7	3.3	0		22.2	0	77.8	0		10.7	89.3	0	0		28.5	53.9	17.6	0		
PHF	.000	.866	.750	.000	.873	.550	.000	.917	.000	.853	.817	.900	.000	.000	.912	.734	.890	.906	.000	.938	.979
Cars	0	495	18	0	513	21	0	72	0	93	48	381	0	0	429	47	87	26	0	160	1195
% Cars	0	94.6	100	0	94.8	95.5	0	93.5	0	93.9	98.0	93.6	0	0	94.1	100	97.8	89.7	0	97.0	94.8
Heavy Vehicles	0	28	0	0	28	1	0	5	0	6	1	26	0	0	27	0	2	3	0	5	66
% Heavy Vehicles	0	5.4	0	0	5.2	4.5	0	6.5	0	6.1	2.0	6.4	0	0	5.9	0	2.2	10.3	0	3.0	5.2

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Client: Howard Stein-Hudson/ S. Casey

File Name : 144032 BB
Site Code : 2014092.
Start Date : 9/9/2014

Groups Printed- Cars

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	119	12	0	4	0	7	0	9	88	0	0	4	21	8	0	272
04:15 PM	0	116	6	0	9	0	17	0	14	92	0	0	10	25	7	0	296
04:30 PM	0	128	4	0	3	0	20	0	13	92	0	0	14	21	7	0	302
04:45 PM	0	145	4	0	3	0	19	0	9	87	0	0	16	22	5	0	310
Total	0	508	26	0	19	0	63	0	45	359	0	0	44	89	27	0	1180
05:00 PM	0	106	4	0	6	0	16	0	12	110	0	0	7	19	7	0	287
05:15 PM	0	109	3	0	5	0	17	0	18	84	0	0	11	24	6	0	277
05:30 PM	0	108	6	0	9	0	10	0	14	96	0	0	14	22	7	0	286
05:45 PM	0	109	5	0	9	0	17	0	12	85	0	0	7	18	9	0	271
Total	0	432	18	0	29	0	60	0	56	375	0	0	39	83	29	0	1121
Grand Total	0	940	44	0	48	0	123	0	101	734	0	0	83	172	56	0	2301
Apprch %	0	95.5	4.5	0	28.1	0	71.9	0	12.1	87.9	0	0	26.7	55.3	18	0	
Total %	0	40.9	1.9	0	2.1	0	5.3	0	4.4	31.9	0	0	3.6	7.5	2.4	0	

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	116	6	0	122	9	0	17	0	26	14	92	0	0	106	10	25	7	0	42	296
04:30 PM	0	128	4	0	132	3	0	20	0	23	13	92	0	0	105	14	21	7	0	42	302
04:45 PM	0	145	4	0	149	3	0	19	0	22	9	87	0	0	96	16	22	5	0	43	310
05:00 PM	0	106	4	0	110	6	0	16	0	22	12	110	0	0	122	7	19	7	0	33	287
Total Volume	0	495	18	0	513	21	0	72	0	93	48	381	0	0	429	47	87	26	0	160	1195
% App. Total	0	96.5	3.5	0		22.6	0	77.4	0		11.2	88.8	0	0		29.4	54.4	16.2	0		
PHF	.000	.853	.750	.000	.861	.583	.000	.900	.000	.894	.857	.866	.000	.000	.879	.734	.870	.929	.000	.930	.964

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Groups Printed- Heavy Vehicles

	Washington Street From North				School Street From East				Washington Street From South				School Street From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	8	1	0	0	0	1	0	2	8	0	0	0	1	2	0	23
04:15 PM	0	6	0	0	1	0	2	0	1	8	0	0	0	0	1	0	19
04:30 PM	0	5	0	0	0	0	1	0	0	11	0	0	0	1	1	0	19
04:45 PM	0	6	0	0	0	0	1	0	0	4	0	0	0	1	0	0	12
Total	0	25	1	0	1	0	5	0	3	31	0	0	0	3	4	0	73
05:00 PM	0	11	0	0	0	0	1	0	0	3	0	0	0	0	1	0	16
05:15 PM	0	4	0	0	1	0	0	0	2	3	0	0	0	0	0	0	10
05:30 PM	0	4	1	0	0	0	0	0	0	5	0	0	2	0	0	0	12
05:45 PM	0	4	0	0	0	0	0	0	2	2	0	0	1	1	0	0	10
Total	0	23	1	0	1	0	1	0	4	13	0	0	3	1	1	0	48
Grand Total	0	48	2	0	2	0	6	0	7	44	0	0	3	4	5	0	121
Apprch %	0	96	4	0	25	0	75	0	13.7	86.3	0	0	25	33.3	41.7	0	
Total %	0	39.7	1.7	0	1.7	0	5	0	5.8	36.4	0	0	2.5	3.3	4.1	0	

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	8	1	0	9	0	0	1	0	1	2	8	0	0	10	0	1	2	0	3	23
04:15 PM	0	6	0	0	6	1	0	2	0	3	1	8	0	0	9	0	0	1	0	1	19
04:30 PM	0	5	0	0	5	0	0	1	0	1	0	11	0	0	11	0	1	1	0	2	19
04:45 PM	0	6	0	0	6	0	0	1	0	1	0	4	0	0	4	0	1	0	0	1	12
Total Volume	0	25	1	0	26	1	0	5	0	6	3	31	0	0	34	0	3	4	0	7	73
% App. Total	0	96.2	3.8	0		16.7	0	83.3	0		8.8	91.2	0	0		0	42.9	57.1	0		
PHF	.000	.781	.250	.000	.722	.250	.000	.625	.000	.500	.375	.705	.000	.000	.773	.000	.750	.500	.000	.583	.793

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E/W: School Street
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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 : 144032 BB
Site Code : 2014092.
Start Date : 9/9/2014
Page No : 1

Groups Printed- Peds and Bikes

	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
04:00 PM	0	2	0	6	5	0	0	0	10	12	0	1	0	2	11	0	1	1	4	4	59
04:15 PM	0	0	0	10	11	0	0	1	4	11	0	1	0	5	6	0	1	1	10	5	66
04:30 PM	0	0	0	3	5	0	0	0	4	3	0	0	0	4	2	0	0	0	10	5	36
04:45 PM	0	1	0	6	2	0	0	1	13	6	0	0	0	3	3	0	1	0	12	2	50
Total	0	3	0	25	23	0	0	2	31	32	0	2	0	14	22	0	3	2	36	16	211
05:00 PM	0	2	0	9	2	0	0	0	9	6	0	1	0	4	3	0	1	0	9	2	48
05:15 PM	0	1	0	9	10	1	0	1	7	9	2	2	0	4	3	0	1	0	10	7	67
05:30 PM	0	3	0	11	10	0	1	0	8	2	0	0	0	3	2	0	0	0	9	9	58
05:45 PM	0	2	0	3	4	0	0	0	12	6	0	0	0	4	3	0	0	0	8	4	46
Total	0	8	0	32	26	1	1	1	36	23	2	3	0	15	11	0	2	0	36	22	219
Grand Total	0	11	0	57	49	1	1	3	67	55	2	5	0	29	33	0	5	2	72	38	430
Apprch %	0	9.4	0	48.7	41.9	0.8	0.8	2.4	52.8	43.3	2.9	7.2	0	42	47.8	0	4.3	1.7	61.5	32.5	
Total %	0	2.6	0	13.3	11.4	0.2	0.2	0.7	15.6	12.8	0.5	1.2	0	6.7	7.7	0	1.2	0.5	16.7	8.8	

	Washington Street From North						School Street From East						Washington Street From South						School Street From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 04:45 PM																									
04:45 PM	0	1	0	6	2	9	0	0	1	13	6	20	0	0	0	3	3	6	0	1	0	12	2	15	50
05:00 PM	0	2	0	9	2	13	0	0	0	9	6	15	0	1	0	4	3	8	0	1	0	9	2	12	48
05:15 PM	0	1	0	9	10	20	1	0	1	7	9	18	2	2	0	4	3	11	0	1	0	10	7	18	67
05:30 PM	0	3	0	11	10	24	0	1	0	8	2	11	0	0	0	3	2	5	0	0	0	9	9	18	58
Total Volume	0	7	0	35	24	66	1	1	2	37	23	64	2	3	0	14	11	30	0	3	0	40	20	63	223
% App. Total	0	10.6	0	53	36.4		1.6	1.6	3.1	57.8	35.9		6.7	10	0	46.7	36.7		0	4.8	0	63.5	31.7		
PHF	.000	.583	.000	.795	.600	.688	.250	.250	.500	.712	.639	.800	.250	.375	.000	.875	.917	.682	.000	.750	.000	.833	.556	.875	.832

N/S: Washington Street
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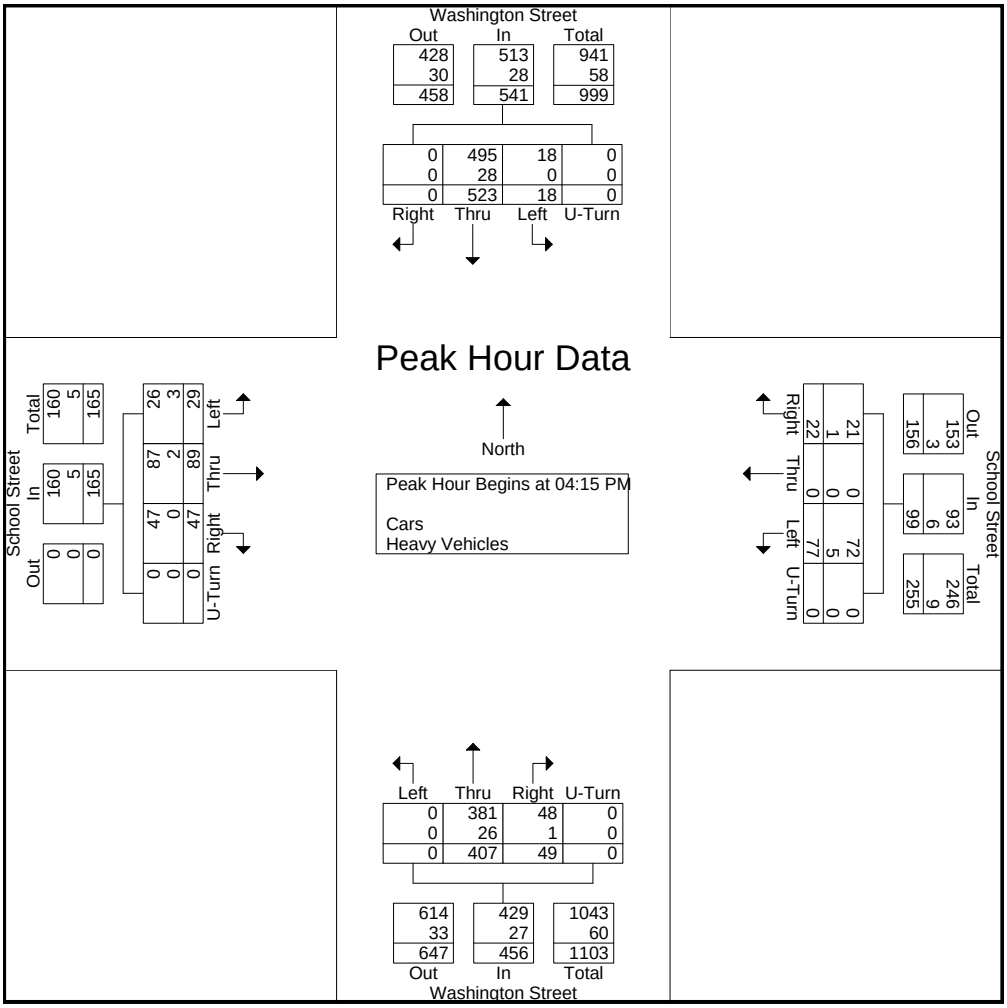
	Washington Street From North					School Street From East					Washington Street From South					School Street From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	122	6	0	128	10	0	19	0	29	15	100	0	0	115	10	25	8	0	43	315
04:30 PM	0	133	4	0	137	3	0	21	0	24	13	103	0	0	116	14	22	8	0	44	321
04:45 PM	0	151	4	0	155	3	0	20	0	23	9	91	0	0	100	16	23	5	0	44	322
05:00 PM	0	117	4	0	121	6	0	17	0	23	12	113	0	0	125	7	19	8	0	34	303
Total Volume	0	523	18	0	541	22	0	77	0	99	49	407	0	0	456	47	89	29	0	165	1261
% App. Total	0	96.7	3.3	0		22.2	0	77.8	0		10.7	89.3	0	0		28.5	53.9	17.6	0		
PHF	.000	.866	.750	.000	.873	.550	.000	.917	.000	.853	.817	.900	.000	.000	.912	.734	.890	.906	.000	.938	.979
Cars	0	495	18	0	513	21	0	72	0	93	48	381	0	0	429	47	87	26	0	160	1195
% Cars	0	94.6	100	0	94.8	95.5	0	93.5	0	93.9	98.0	93.6	0	0	94.1	100	97.8	89.7	0	97.0	94.8
Heavy Vehicles	0	28	0	0	28	1	0	5	0	6	1	26	0	0	27	0	2	3	0	5	66
% Heavy Vehicles	0	5.4	0	0	5.2	4.5	0	6.5	0	6.1	2.0	6.4	0	0	5.9	0	2.2	10.3	0	3.0	5.2



N/S: Washington Street
E/W: Iffley Road/ Storage Driveway
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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File Name : 144032 C
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Page No : 1

Groups Printed- Cars - Heavy Vehicles

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	88	4	0	0	0	0	0	6	170	0	0	0	0	0	0	268
07:15 AM	0	87	1	0	0	0	0	0	5	185	0	0	0	0	0	0	278
07:30 AM	0	91	2	0	0	0	0	0	5	185	2	0	0	0	1	0	286
07:45 AM	0	73	1	0	0	0	0	0	8	187	0	0	0	0	0	0	269
Total	0	339	8	0	0	0	0	0	24	727	2	0	0	0	1	0	1101
08:00 AM	0	87	2	0	0	0	0	0	5	142	0	0	0	0	0	0	236
08:15 AM	0	87	5	0	0	0	0	0	8	147	0	0	0	0	0	0	247
08:30 AM	0	80	3	0	0	0	0	0	11	139	0	0	0	0	0	0	233
08:45 AM	1	83	1	0	0	0	0	0	9	156	0	0	1	0	0	0	251
Total	1	337	11	0	0	0	0	0	33	584	0	0	1	0	0	0	967
Grand Total	1	676	19	0	0	0	0	0	57	1311	2	0	1	0	1	0	2068
Apprch %	0.1	97.1	2.7	0	0	0	0	0	4.2	95.7	0.1	0	50	0	50	0	
Total %	0	32.7	0.9	0	0	0	0	0	2.8	63.4	0.1	0	0	0	0	0	
Cars	1	610	18	0	0	0	0	0	53	1212	1	0	0	0	1	0	1896
% Cars	100	90.2	94.7	0	0	0	0	0	93	92.4	50	0	0	0	100	0	91.7
Heavy Vehicles	0	66	1	0	0	0	0	0	4	99	1	0	1	0	0	0	172
% Heavy Vehicles	0	9.8	5.3	0	0	0	0	0	7	7.6	50	0	100	0	0	0	8.3

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	88	4	0	92	0	0	0	0	0	6	170	0	0	176	0	0	0	0	0	268
07:15 AM	0	87	1	0	88	0	0	0	0	0	5	185	0	0	190	0	0	0	0	0	278
07:30 AM	0	91	2	0	93	0	0	0	0	0	5	185	2	0	192	0	0	1	0	1	286
07:45 AM	0	73	1	0	74	0	0	0	0	0	8	187	0	0	195	0	0	0	0	0	269
Total Volume	0	339	8	0	347	0	0	0	0	0	24	727	2	0	753	0	0	1	0	1	1101
% App. Total	0	97.7	2.3	0		0	0	0	0		3.2	96.5	0.3	0		0	0	100	0		
PHF	.000	.931	.500	.000	.933	.000	.000	.000	.000	.000	.750	.972	.250	.000	.965	.000	.000	.250	.000	.250	.962
Cars	0	307	7	0	314	0	0	0	0	0	23	670	1	0	694	0	0	1	0	1	1009
% Cars	0	90.6	87.5	0	90.5	0	0	0	0	0	95.8	92.2	50.0	0	92.2	0	0	100	0	100	91.6
Heavy Vehicles	0	32	1	0	33	0	0	0	0	0	1	57	1	0	59	0	0	0	0	0	92
% Heavy Vehicles	0	9.4	12.5	0	9.5	0	0	0	0	0	4.2	7.8	50.0	0	7.8	0	0	0	0	0	8.4

N/S: Washington Street
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Groups Printed- Cars

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	77	4	0	0	0	0	0	5	158	0	0	0	0	0	0	244
07:15 AM	0	82	1	0	0	0	0	0	5	172	0	0	0	0	0	0	260
07:30 AM	0	79	1	0	0	0	0	0	5	172	1	0	0	0	1	0	259
07:45 AM	0	69	1	0	0	0	0	0	8	168	0	0	0	0	0	0	246
Total	0	307	7	0	0	0	0	0	23	670	1	0	0	0	1	0	1009
08:00 AM	0	82	2	0	0	0	0	0	3	134	0	0	0	0	0	0	221
08:15 AM	0	80	5	0	0	0	0	0	8	134	0	0	0	0	0	0	227
08:30 AM	0	71	3	0	0	0	0	0	10	129	0	0	0	0	0	0	213
08:45 AM	1	70	1	0	0	0	0	0	9	145	0	0	0	0	0	0	226
Total	1	303	11	0	0	0	0	0	30	542	0	0	0	0	0	0	887
Grand Total	1	610	18	0	0	0	0	0	53	1212	1	0	0	0	1	0	1896
Apprch %	0.2	97	2.9	0	0	0	0	0	4.2	95.7	0.1	0	0	0	100	0	
Total %	0.1	32.2	0.9	0	0	0	0	0	2.8	63.9	0.1	0	0	0	0.1	0	

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	77	4	0	81	0	0	0	0	0	5	158	0	0	163	0	0	0	0	0	244
07:15 AM	0	82	1	0	83	0	0	0	0	0	5	172	0	0	177	0	0	0	0	0	260
07:30 AM	0	79	1	0	80	0	0	0	0	0	5	172	1	0	178	0	0	1	0	1	259
07:45 AM	0	69	1	0	70	0	0	0	0	0	8	168	0	0	176	0	0	0	0	0	246
Total Volume	0	307	7	0	314	0	0	0	0	0	23	670	1	0	694	0	0	1	0	1	1009
% App. Total	0	97.8	2.2	0		0	0	0	0		3.3	96.5	0.1	0		0	0	100	0		
PHF	.000	.936	.438	.000	.946	.000	.000	.000	.000	.000	.719	.974	.250	.000	.975	.000	.000	.250	.000	.250	.970

PRECISION
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Groups Printed- Heavy Vehicles

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
07:00 AM	0	11	0	0	0	0	0	0	1	12	0	0	0	0	0	0	24
07:15 AM	0	5	0	0	0	0	0	0	0	13	0	0	0	0	0	0	18
07:30 AM	0	12	1	0	0	0	0	0	0	13	1	0	0	0	0	0	27
07:45 AM	0	4	0	0	0	0	0	0	0	19	0	0	0	0	0	0	23
Total	0	32	1	0	0	0	0	0	1	57	1	0	0	0	0	0	92
08:00 AM	0	5	0	0	0	0	0	0	2	8	0	0	0	0	0	0	15
08:15 AM	0	7	0	0	0	0	0	0	0	13	0	0	0	0	0	0	20
08:30 AM	0	9	0	0	0	0	0	0	1	10	0	0	0	0	0	0	20
08:45 AM	0	13	0	0	0	0	0	0	0	11	0	0	1	0	0	0	25
Total	0	34	0	0	0	0	0	0	3	42	0	0	1	0	0	0	80
Grand Total	0	66	1	0	0	0	0	0	4	99	1	0	1	0	0	0	172
Apprch %	0	98.5	1.5	0	0	0	0	0	3.8	95.2	1	0	100	0	0	0	
Total %	0	38.4	0.6	0	0	0	0	0	2.3	57.6	0.6	0	0.6	0	0	0	

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	11	0	0	11	0	0	0	0	0	1	12	0	0	13	0	0	0	0	0	24
07:15 AM	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	18
07:30 AM	0	12	1	0	13	0	0	0	0	0	0	13	1	0	14	0	0	0	0	0	27
07:45 AM	0	4	0	0	4	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	23
Total Volume	0	32	1	0	33	0	0	0	0	0	1	57	1	0	59	0	0	0	0	0	92
% App. Total	0	97	3	0		0	0	0	0		1.7	96.6	1.7	0		0	0	0	0		
PHF	.000	.667	.250	.000	.635	.000	.000	.000	.000	.000	.250	.750	.250	.000	.776	.000	.000	.000	.000	.000	.852

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Groups Printed- Peds and Bikes

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
07:00 AM	0	2	0	0	1	2	0	0	0	1	0	1	0	0	0	0	0	0	1	5	13
07:15 AM	0	1	0	0	3	0	0	0	2	3	0	1	0	0	0	0	0	0	1	1	12
07:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	1	5
07:45 AM	0	0	0	0	1	2	0	0	1	3	0	4	0	0	0	0	0	0	7	4	22
Total	0	3	0	0	5	5	0	0	3	8	0	6	0	0	0	0	0	0	11	11	52
08:00 AM	0	0	0	0	1	0	0	0	5	5	0	0	0	1	0	0	0	0	0	1	13
08:15 AM	0	1	0	0	0	0	0	0	2	6	0	5	0	0	1	0	0	0	2	2	19
08:30 AM	0	1	0	0	1	0	0	0	3	5	0	1	0	1	0	0	0	0	1	3	16
08:45 AM	0	0	0	0	0	0	0	0	1	3	0	1	0	0	0	0	0	0	5	1	11
Total	0	2	0	0	2	0	0	0	11	19	0	7	0	2	1	0	0	0	8	7	59
Grand Total	0	5	0	0	7	5	0	0	14	27	0	13	0	2	1	0	0	0	19	18	111
Apprch %	0	41.7	0	0	58.3	10.9	0	0	30.4	58.7	0	81.2	0	12.5	6.2	0	0	0	51.4	48.6	
Total %	0	4.5	0	0	6.3	4.5	0	0	12.6	24.3	0	11.7	0	1.8	0.9	0	0	0	17.1	16.2	

	Washington Street From North						Iffley Road From East						Washington Street From South						Storage Driveway From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 07:45 AM																									
07:45 AM	0	0	0	0	1	1	2	0	0	1	3	6	0	4	0	0	0	4	0	0	0	7	4	11	22
08:00 AM	0	0	0	0	1	1	0	0	0	5	5	10	0	0	0	1	0	1	0	0	0	0	1	1	13
08:15 AM	0	1	0	0	0	1	0	0	0	2	6	8	0	5	0	0	1	6	0	0	0	2	2	4	19
08:30 AM	0	1	0	0	1	2	0	0	0	3	5	8	0	1	0	1	0	2	0	0	0	1	3	4	16
Total Volume	0	2	0	0	3	5	2	0	0	11	19	32	0	10	0	2	1	13	0	0	0	10	10	20	70
% App. Total	0	40	0	0	60		6.2	0	0	34.4	59.4		0	76.9	0	15.4	7.7		0	0	0	50	50		
PHF	.000	.500	.000	.000	.750	.625	.250	.000	.000	.550	.792	.800	.000	.500	.000	.500	.250	.542	.000	.000	.000	.357	.625	.455	.795

N/S: Washington Street
E/W: Iffley Road/ Storage Driveway
City, State: Jamaica Plain, MA
Client: Howard Stein-Hudson/ S. Casey

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 : 144032 C
Site Code : 2014092.
Start Date : 9/9/2014
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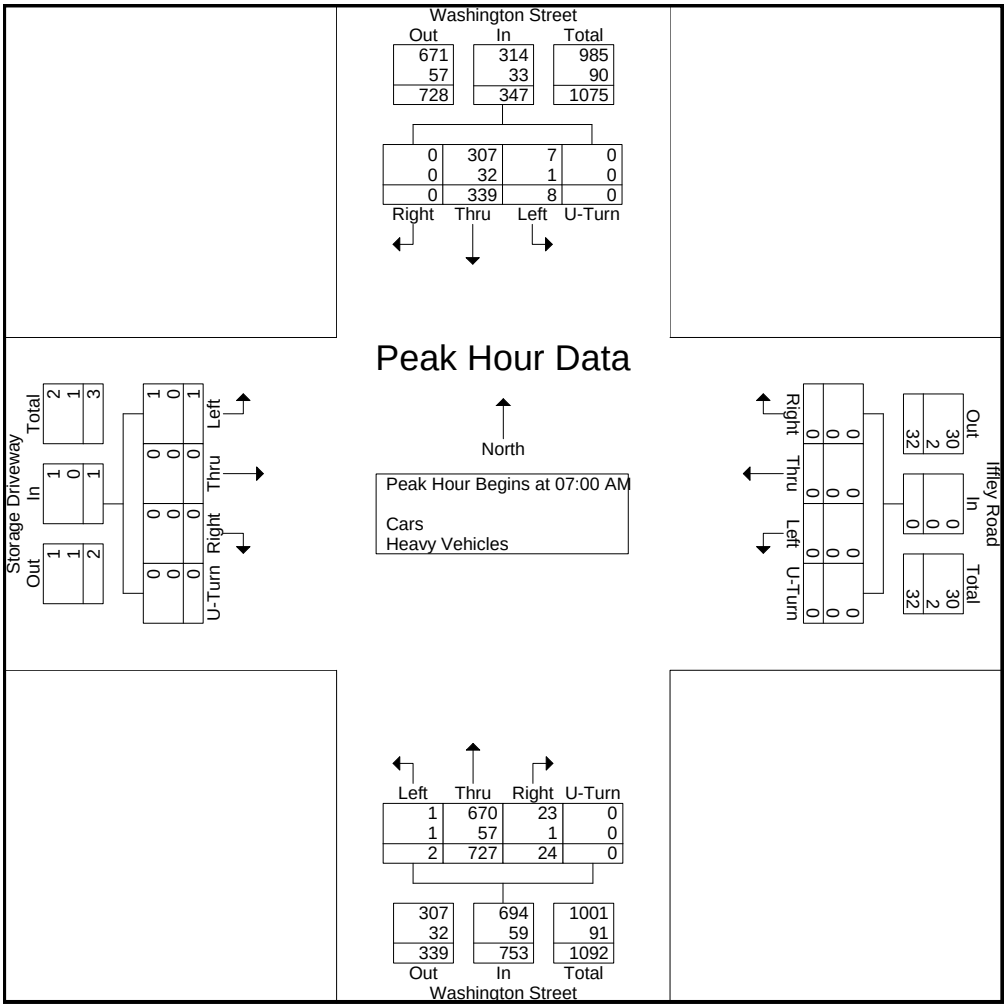
	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	88	4	0	92	0	0	0	0	0	6	170	0	0	176	0	0	0	0	0	268
07:15 AM	0	87	1	0	88	0	0	0	0	0	5	185	0	0	190	0	0	0	0	0	278
07:30 AM	0	91	2	0	93	0	0	0	0	0	5	185	2	0	192	0	0	1	0	1	286
07:45 AM	0	73	1	0	74	0	0	0	0	0	8	187	0	0	195	0	0	0	0	0	269
Total Volume	0	339	8	0	347	0	0	0	0	0	24	727	2	0	753	0	0	1	0	1	1101
% App. Total	0	97.7	2.3	0		0	0	0	0		3.2	96.5	0.3	0		0	0	100	0		
PHF	.000	.931	.500	.000	.933	.000	.000	.000	.000	.000	.750	.972	.250	.000	.965	.000	.000	.250	.000	.250	.962
Cars	0	307	7	0	314	0	0	0	0	0	23	670	1	0	694	0	0	1	0	1	1009
% Cars	0	90.6	87.5	0	90.5	0	0	0	0	0	95.8	92.2	50.0	0	92.2	0	0	100	0	100	91.6
Heavy Vehicles	0	32	1	0	33	0	0	0	0	0	1	57	1	0	59	0	0	0	0	0	92
% Heavy Vehicles	0	9.4	12.5	0	9.5	0	0	0	0	0	4.2	7.8	50.0	0	7.8	0	0	0	0	0	8.4



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Groups Printed- Cars - Heavy Vehicles

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	122	3	0	0	0	0	0	10	114	1	0	0	1	1	0	253
04:15 PM	1	121	5	0	0	0	0	0	5	133	0	0	0	0	0	0	265
04:30 PM	0	141	4	0	0	0	0	0	11	122	1	0	0	0	0	0	279
04:45 PM	1	152	4	0	0	0	0	0	8	114	1	0	0	0	0	0	280
Total	3	536	16	0	0	0	0	0	34	483	3	0	0	1	1	0	1077
05:00 PM	0	119	4	0	0	0	0	0	11	135	1	0	0	0	0	0	270
05:15 PM	0	112	4	0	0	0	0	0	11	122	0	0	0	0	0	0	249
05:30 PM	0	95	7	0	0	0	0	0	5	122	0	0	0	0	0	0	229
05:45 PM	0	117	7	0	0	0	0	0	5	101	0	0	0	0	0	0	230
Total	0	443	22	0	0	0	0	0	32	480	1	0	0	0	0	0	978
Grand Total	3	979	38	0	0	0	0	0	66	963	4	0	0	1	1	0	2055
Apprch %	0.3	96	3.7	0	0	0	0	0	6.4	93.2	0.4	0	0	50	50	0	
Total %	0.1	47.6	1.8	0	0	0	0	0	3.2	46.9	0.2	0	0	0	0	0	
Cars	3	926	37	0	0	0	0	0	64	907	4	0	0	1	0	0	1942
% Cars	100	94.6	97.4	0	0	0	0	0	97	94.2	100	0	0	100	0	0	94.5
Heavy Vehicles	0	53	1	0	0	0	0	0	2	56	0	0	0	0	1	0	113
% Heavy Vehicles	0	5.4	2.6	0	0	0	0	0	3	5.8	0	0	0	0	100	0	5.5

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	1	121	5	0	127	0	0	0	0	0	5	133	0	0	138	0	0	0	0	0	265
04:30 PM	0	141	4	0	145	0	0	0	0	0	11	122	1	0	134	0	0	0	0	0	279
04:45 PM	1	152	4	0	157	0	0	0	0	0	8	114	1	0	123	0	0	0	0	0	280
05:00 PM	0	119	4	0	123	0	0	0	0	0	11	135	1	0	147	0	0	0	0	0	270
Total Volume	2	533	17	0	552	0	0	0	0	0	35	504	3	0	542	0	0	0	0	0	1094
% App. Total	0.4	96.6	3.1	0		0	0	0	0		6.5	93	0.6	0		0	0	0	0		
PHF	.500	.877	.850	.000	.879	.000	.000	.000	.000	.000	.795	.933	.750	.000	.922	.000	.000	.000	.000	.000	.977
Cars	2	506	17	0	525	0	0	0	0	0	34	473	3	0	510	0	0	0	0	0	1035
% Cars	100	94.9	100	0	95.1	0	0	0	0	0	97.1	93.8	100	0	94.1	0	0	0	0	0	94.6
Heavy Vehicles	0	27	0	0	27	0	0	0	0	0	1	31	0	0	32	0	0	0	0	0	59
% Heavy Vehicles	0	5.1	0	0	4.9	0	0	0	0	0	2.9	6.2	0	0	5.9	0	0	0	0	0	5.4

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Groups Printed- Cars

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	1	113	3	0	0	0	0	0	9	106	1	0	0	1	0	0	234
04:15 PM	1	116	5	0	0	0	0	0	5	122	0	0	0	0	0	0	249
04:30 PM	0	137	4	0	0	0	0	0	11	111	1	0	0	0	0	0	264
04:45 PM	1	144	4	0	0	0	0	0	7	110	1	0	0	0	0	0	267
Total	3	510	16	0	0	0	0	0	32	449	3	0	0	1	0	0	1014
05:00 PM	0	109	4	0	0	0	0	0	11	130	1	0	0	0	0	0	255
05:15 PM	0	105	4	0	0	0	0	0	11	117	0	0	0	0	0	0	237
05:30 PM	0	89	7	0	0	0	0	0	5	116	0	0	0	0	0	0	217
05:45 PM	0	113	6	0	0	0	0	0	5	95	0	0	0	0	0	0	219
Total	0	416	21	0	0	0	0	0	32	458	1	0	0	0	0	0	928
Grand Total	3	926	37	0	0	0	0	0	64	907	4	0	0	1	0	0	1942
Apprch %	0.3	95.9	3.8	0	0	0	0	0	6.6	93	0.4	0	0	100	0	0	
Total %	0.2	47.7	1.9	0	0	0	0	0	3.3	46.7	0.2	0	0	0.1	0	0	

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	1	116	5	0	122	0	0	0	0	0	5	122	0	0	127	0	0	0	0	0	249
04:30 PM	0	137	4	0	141	0	0	0	0	0	11	111	1	0	123	0	0	0	0	0	264
04:45 PM	1	144	4	0	149	0	0	0	0	0	7	110	1	0	118	0	0	0	0	0	267
05:00 PM	0	109	4	0	113	0	0	0	0	0	11	130	1	0	142	0	0	0	0	0	255
Total Volume	2	506	17	0	525	0	0	0	0	0	34	473	3	0	510	0	0	0	0	0	1035
% App. Total	0.4	96.4	3.2	0		0	0	0	0		6.7	92.7	0.6	0		0	0	0	0		
PHF	.500	.878	.850	.000	.881	.000	.000	.000	.000	.000	.773	.910	.750	.000	.898	.000	.000	.000	.000	.000	.969

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Groups Printed- Heavy Vehicles

	Washington Street From North				Iffley Road From East				Washington Street From South				Storage Driveway From West				
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Int. Total
04:00 PM	0	9	0	0	0	0	0	0	1	8	0	0	0	0	1	0	19
04:15 PM	0	5	0	0	0	0	0	0	0	11	0	0	0	0	0	0	16
04:30 PM	0	4	0	0	0	0	0	0	0	11	0	0	0	0	0	0	15
04:45 PM	0	8	0	0	0	0	0	0	1	4	0	0	0	0	0	0	13
Total	0	26	0	0	0	0	0	0	2	34	0	0	0	0	1	0	63
05:00 PM	0	10	0	0	0	0	0	0	0	5	0	0	0	0	0	0	15
05:15 PM	0	7	0	0	0	0	0	0	0	5	0	0	0	0	0	0	12
05:30 PM	0	6	0	0	0	0	0	0	0	6	0	0	0	0	0	0	12
05:45 PM	0	4	1	0	0	0	0	0	0	6	0	0	0	0	0	0	11
Total	0	27	1	0	0	0	0	0	0	22	0	0	0	0	0	0	50
Grand Total	0	53	1	0	0	0	0	0	2	56	0	0	0	0	1	0	113
Apprch %	0	98.1	1.9	0	0	0	0	0	3.4	96.6	0	0	0	0	100	0	
Total %	0	46.9	0.9	0	0	0	0	0	1.8	49.6	0	0	0	0	0.9	0	

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	9	0	0	9	0	0	0	0	0	1	8	0	0	9	0	0	1	0	1	19
04:15 PM	0	5	0	0	5	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	16
04:30 PM	0	4	0	0	4	0	0	0	0	0	0	11	0	0	11	0	0	0	0	0	15
04:45 PM	0	8	0	0	8	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	13
Total Volume	0	26	0	0	26	0	0	0	0	0	2	34	0	0	36	0	0	1	0	1	63
% App. Total	0	100	0	0		0	0	0	0		5.6	94.4	0	0		0	0	100	0		
PHF	.000	.722	.000	.000	.722	.000	.000	.000	.000	.000	.500	.773	.000	.000	.818	.000	.000	.250	.000	.250	.829

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Groups Printed- Peds and Bikes

	Washington Street From North					Iffley Road From East					Washington Street From South					Storage Driveway From West					
Start Time	Right	Thru	Left	Peds EB	Peds WB	Right	Thru	Left	Peds SB	Peds NB	Right	Thru	Left	Peds WB	Peds EB	Right	Thru	Left	Peds NB	Peds SB	Int. Total
04:00 PM	0	2	0	0	1	0	0	0	4	4	0	1	0	0	0	0	0	0	2	3	17
04:15 PM	0	1	0	0	0	0	0	0	0	4	0	1	0	0	0	0	0	0	1	10	17
04:30 PM	0	0	0	1	1	0	0	0	2	4	0	0	0	0	0	0	0	0	4	3	15
04:45 PM	0	1	0	0	0	0	0	0	8	6	0	0	0	0	0	0	0	0	4	6	25
Total	0	4	0	1	2	0	0	0	14	18	0	2	0	0	0	0	0	0	11	22	74
05:00 PM	0	1	1	0	2	0	0	0	10	9	0	1	0	0	1	0	0	0	4	2	31
05:15 PM	0	2	0	1	1	0	0	0	1	4	0	3	0	0	0	0	0	0	3	1	16
05:30 PM	0	3	0	2	0	0	0	0	9	3	0	1	0	0	0	0	0	0	5	4	27
05:45 PM	0	2	0	0	1	0	0	0	14	2	0	0	0	3	0	0	0	0	6	5	33
Total	0	8	1	3	4	0	0	0	34	18	0	5	0	3	1	0	0	0	18	12	107
Grand Total	0	12	1	4	6	0	0	0	48	36	0	7	0	3	1	0	0	0	29	34	181
Apprch %	0	52.2	4.3	17.4	26.1	0	0	0	57.1	42.9	0	63.6	0	27.3	9.1	0	0	0	46	54	
Total %	0	6.6	0.6	2.2	3.3	0	0	0	26.5	19.9	0	3.9	0	1.7	0.6	0	0	0	16	18.8	

	Washington Street From North						Iffley Road From East						Washington Street From South						Storage Driveway From West						
Start Time	Right	Thru	Left	Peds EB	Peds WB	App. Total	Right	Thru	Left	Peds SB	Peds NB	App. Total	Right	Thru	Left	Peds WB	Peds EB	App. Total	Right	Thru	Left	Peds NB	Peds SB	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																									
Peak Hour for Entire Intersection Begins at 05:00 PM																									
05:00 PM	0	1	1	0	2	4	0	0	0	10	9	19	0	1	0	0	1	2	0	0	0	4	2	6	31
05:15 PM	0	2	0	1	1	4	0	0	0	1	4	5	0	3	0	0	0	3	0	0	0	3	1	4	16
05:30 PM	0	3	0	2	0	5	0	0	0	9	3	12	0	1	0	0	0	1	0	0	0	5	4	9	27
05:45 PM	0	2	0	0	1	3	0	0	0	14	2	16	0	0	0	3	0	3	0	0	0	6	5	11	33
Total Volume	0	8	1	3	4	16	0	0	0	34	18	52	0	5	0	3	1	9	0	0	0	18	12	30	107
% App. Total	0	50	6.2	18.8	25		0	0	0	65.4	34.6		0	55.6	0	33.3	11.1		0	0	0	60	40		
PHF	.000	.667	.250	.375	.500	.800	.000	.000	.000	.607	.500	.684	.000	.417	.000	.250	.250	.750	.000	.000	.000	.750	.600	.682	.811

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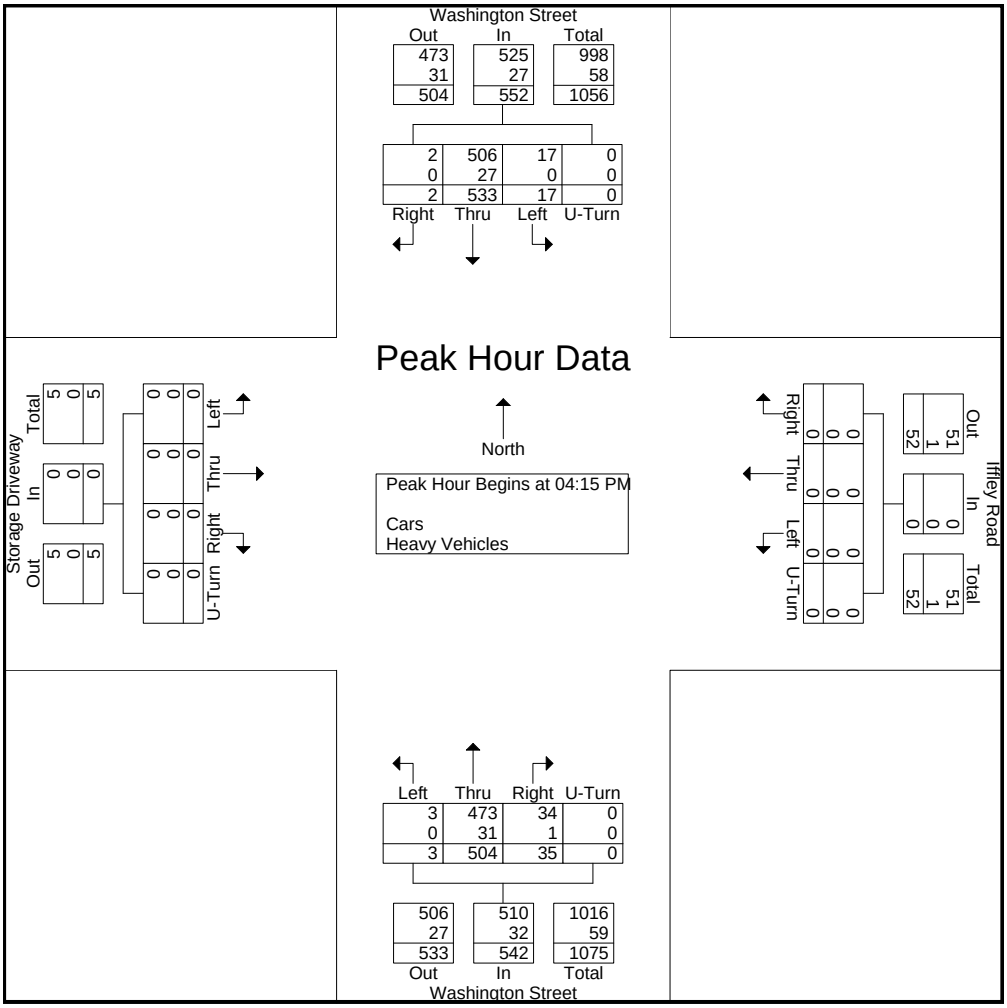
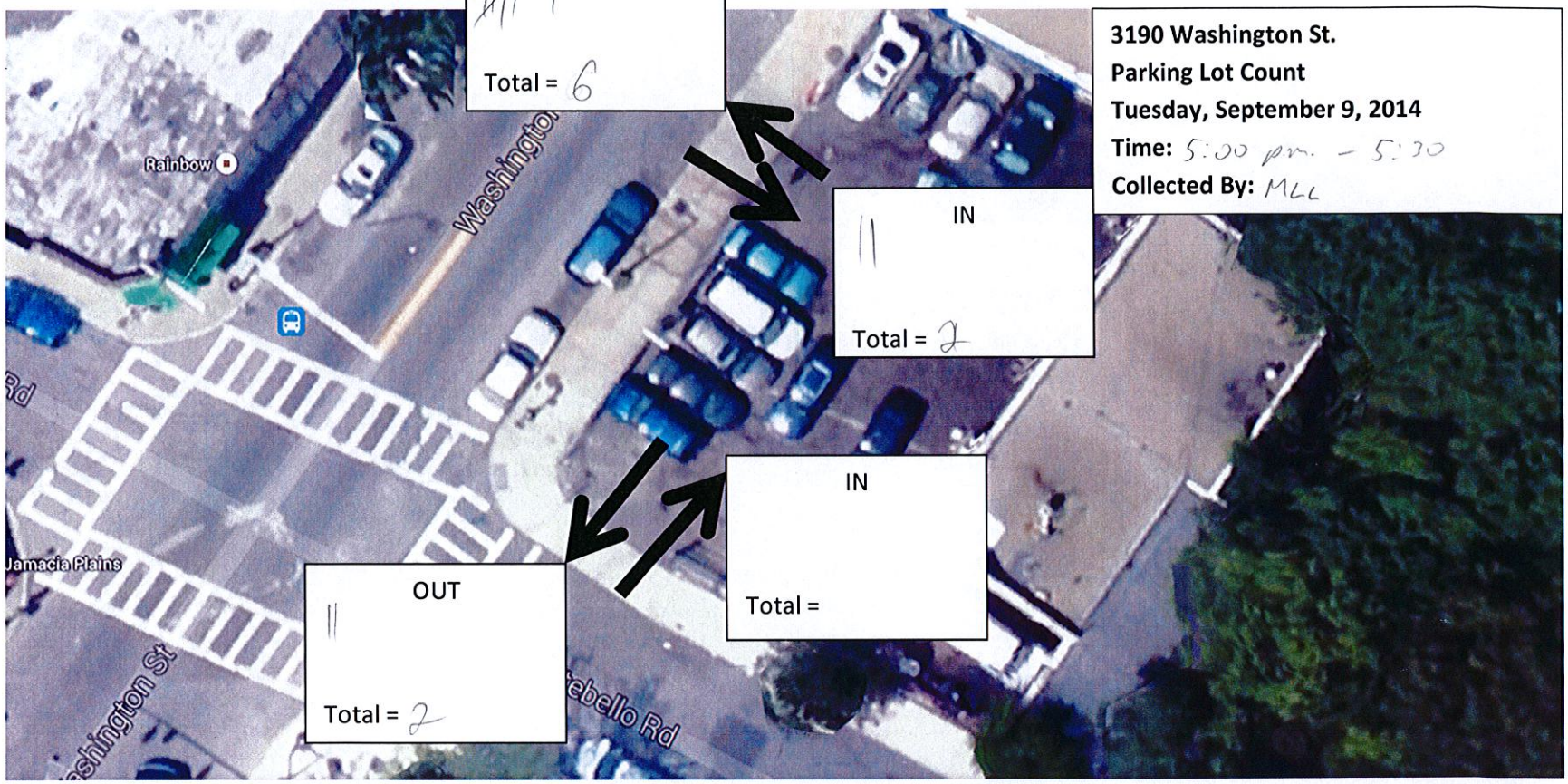
04:15 PM	1	121	5	0	127	0	0	0	0	0	5	133	0	0	138	0	0	0	0	0	265
04:30 PM	0	141	4	0	145	0	0	0	0	0	11	122	1	0	134	0	0	0	0	0	279
04:45 PM	1	152	4	0	157	0	0	0	0	0	8	114	1	0	123	0	0	0	0	0	280
05:00 PM	0	119	4	0	123	0	0	0	0	0	11	135	1	0	147	0	0	0	0	0	270
Total Volume	2	533	17	0	552	0	0	0	0	0	35	504	3	0	542	0	0	0	0	0	1094
% App. Total	0.4	96.6	3.1	0		0	0	0	0		6.5	93	0.6	0		0	0	0	0		
PHF	.500	.877	.850	.000	.879	.000	.000	.000	.000	.000	.795	.933	.750	.000	.922	.000	.000	.000	.000	.000	.977
Cars	2	506	17	0	525	0	0	0	0	0	34	473	3	0	510	0	0	0	0	0	1035
% Cars	100	94.9	100	0	95.1	0	0	0	0	0	97.1	93.8	100	0	94.1	0	0	0	0	0	94.6
Heavy Vehicles	0	27	0	0	27	0	0	0	0	0	1	31	0	0	32	0	0	0	0	0	59
% Heavy Vehicles	0	5.1	0	0	4.9	0	0	0	0	0	2.9	6.2	0	0	5.9	0	0	0	0	0	5.4



41 18 19 25



Combined Driveway Count	
IN	OUT
2	8

Cars in lot @ 5:30
13

* 5:16 vehicle parallel parked

TRIP GENERATION CALCULATIONS

3190 Washington Street
Trip Generation Assessment

HOWARD/STEIN-HUDSON ASSOCIATES
3-Nov-14

			Vehicular Trip Generation					Conversion to Person Trips		Mode Share Split						Vehicular Trips		
Land Use	**Size**	**Category**	**Unadjusted Vehicle Trips**	**Internal trips**	**Pass-by %**	**Pass-By Trips**	**Less capture trips**	**Assumed national vehicle occupancy rate[1]**	**Converted to New Person trips**	**Transit Share[2]**	**Transit Trips**	**Walk/Bike/ Other Share[2]**	**Walk/ Bike/ Other Trips**	**Vehicle Share[2]**	**Total Vehicle Person Trips**	**Assumed local auto occupancy rate for autos[3]**	**Total Adjusted Auto Trips**	**Total Adjusted Auto Trips (Pass-By)**
Daily																		
Apartment	72	Total[4]	478	0			478	1.13	**540**		**136**		**76**		**330**	1.13	**292**	
	Units	In	239		0%	0	239	1.13	**270**	25%	**68**	14%	**38**	61%	**165**	1.13	**146**	
		Out	239		0%	0	239	1.13	**270**	25%	**68**	14%	**38**	61%	**165**	1.13	**146**	
Townhouse	3	Total[5]	18	0			18	1.13	**20**		**6**		**2**		**12**	1.13	**10**	
	Units	In	9		0%	0	9	1.13	**10**	25%	**3**	14%	**1**	61%	**6**	1.13	**5**	
		Out	9		0%	0	9	1.13	**10**	25%	**3**	14%	**1**	61%	**6**	1.13	**5**	
Retail/Commercial	6	Total[6]	256	0			192	1.78	**342**		**52**		**82**		**208**	1.78	**116**	
	KSF	In	128		25%	32	96	1.78	**171**	15%	**26**	24%	**41**	61%	**104**	1.78	**58**	
		Out	128		25%	32	96	1.78	**171**	15%	**26**	24%	**41**	61%	**104**	1.78	**58**	
AM Peak Hour																		
Apartment	72	Total[4]	36	0			36	1.13	**41**		**17**		**5**		**19**	1.13	**17**	
	Units	In	7		0%	0	7	1.13	**8**	26%	**2**	18%	**1**	56%	**4**	1.13	**4**	
		Out	29		0%	0	29	1.13	**33**	44%	**15**	12%	**4**	44%	**15**	1.13	**13**	
Townhouse	3	Total[5]	2	0			2	1.13	**2**		**1**		**0**		**1**	1.13	**1**	
	Units	In	0		0%	0	0	1.13	**0**	26%	**0**	18%	**0**	56%	**0**	1.13	**0**	
		Out	2		0%	0	2	1.13	**2**	44%	**1**	12%	**0**	44%	**1**	1.13	**1**	
Retail/Commercial	6	Total[6]	6	0			5	1.78	**8**		**2**		**3**		**4**	1.78	**3**	
	KSF	In	4		25%	1	3	1.78	**5**	15%	**1**	31%	**2**	54%	**3**	1.78	**2**	
		Out	2		25%	1	2	1.78	**3**	28%	**1**	24%	**1**	48%	**1**	1.78	**1**	
PM Peak Hour																		
Apartment	72	Total[4]	44	0			44	1.13	**50**		**19**		**7**		**25**	1.13	**22**	
	Units	In	29		0%	0	29	1.13	**33**	44%	**15**	12%	**4**	44%	**15**	1.13	**13**	
		Out	15		0%	0	15	1.13	**17**	26%	**4**	18%	**3**	56%	**10**	1.13	**9**	
Townhouse	3	Total[5]	2	0			2	1.13	**2**		**0**		**0**		**1**	1.13	**1**	
	Units	In	1		0%	0	1	1.13	**1**	44%	**0**	12%	**0**	44%	**0**	1.13	**0**	
		Out	1		0%	0	1	1.13	**1**	26%	**0**	18%	**0**	56%	**1**	1.13	**1**	
Retail/Commercial	6	Total[6]	22	0			17	1.78	**30**		**6**		**9**		**15**	1.78	**8**	
	KSF	In	11		25%	3	8	1.78	**15**	28%	**4**	24%	**4**	48%	**7**	1.78	**4**	
		Out	11		25%	3	8	1.78	**15**	15%	**2**	31%	**5**	54%	**8**	1.78	**4**	

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Mode shares based on peak-hour BTD Data for Area 6.
3. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates.
4. ITE Trip Generation Rate, 9th Edition, LUC 220 (Apartment), Average Rate
5. ITE Trip Generation Rate, 9th Edition, LUC 230 (Residential Condominium/Townhouse), Average Rate
6. ITE Trip Generation Rate, 9th Edition, LUC 820 (Shopping Center), Average Rate

INTERSECTION CAPACITY ANALYSIS WORKSHEETS

Lane Group	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
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	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	1414	0	0	1396	0	0	1386	0	0	1294	0	
Flt Permitted		0.990			0.995			0.749			0.995		
Satd. Flow (perm)	0	1414	0	0	1390	0	0	1048	0	0	1294	0	
Right Turn on Red			Yes			No			No				
Satd. Flow (RTOR)		36											
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		609			350			290			263		
Travel Time (s)		13.8			8.0			6.6			6.0		
Volume (vph)	13	21	29	6	474	3	62	274	7	3	26	248	
Confl. Bikes (#/hr)			1			4						2	
Peak Hour Factor	0.79	0.79	0.79	0.97	0.97	0.97	0.93	0.93	0.93	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	10%	33%	5%	11%	0%	0%	0%	2%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	16	27	37	6	489	3	67	295	8	3	27	261	
Lane Group Flow (vph)	0	80	0	0	498	0	0	370	0	0	291	0	
Turn Type	Split			Perm			Perm			Split			
Protected Phases	3	3			1			1		4	4		2
Permitted Phases				1			1						
Detector Phases	3	3		1	1		1	1		4	4		
Minimum Initial (s)	10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	18.0	18.0	0.0	42.0	42.0	0.0	42.0	42.0	0.0	25.0	25.0	0.0	15.0
Total Split (%)	18.0%	18.0%	0.0%	42.0%	42.0%	0.0%	42.0%	42.0%	0.0%	25.0%	25.0%	0.0%	15%
Maximum Green (s)	13.0	13.0		35.0	35.0		35.0	35.0		19.0	19.0		12.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag	Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode	Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													5.0
Pedestrian Calls (#/hr)													20
Act Effct Green (s)		11.5			49.5			49.5			21.0		
Actuated g/C Ratio		0.12			0.50			0.50			0.21		
v/c Ratio		0.41			0.72			0.71			1.07		
Control Delay		31.5			30.1			32.1			113.8		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		31.5			30.1			32.1			113.8		
LOS		C			C			C			F		
Approach Delay		31.5			30.1			32.1			113.8		
Approach LOS		C			C			C			F		
Queue Length 50th (ft)		26			205			151			~207		
Queue Length 95th (ft)		58			#504			#403			#370		
Internal Link Dist (ft)		529			270			210			183		
Turn Bay Length (ft)													
Base Capacity (vph)		229			688			519			272		
Starvation Cap Reductn		0			0			0			0		
Spillback Cap Reductn		0			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.35			0.72			0.71			1.07		

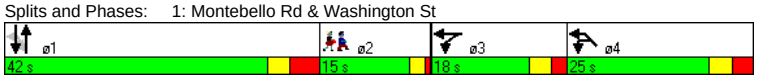
Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.07
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 89.1% ICU Level of Service E
Analysis Period (min) 15

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

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

Splits and Phases: 1: Montebello Rd & Washington St

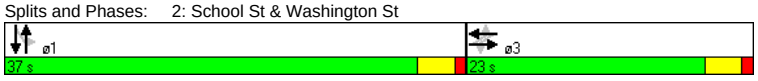


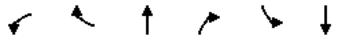
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1339	0	0	1374	0	0	1397	0	0	1407	0
Flt Permitted		0.891			0.741						0.977	
Satd. Flow (perm)	0	1201	0	0	1019	0	0	1397	0	0	1377	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		13						11				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	38	68	16	80	0	14	0	537	45	13	346	0
Confl. Peds. (#/hr)	21		40	40		21	15		39	39		15
Confl. Bikes (#/hr)						1			9			2
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	0%	4%	0%	7%	0%	8%	11%	39%	8%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	48	85	20	99	0	17	0	584	49	14	368	0
Lane Group Flow (vph)	0	153	0	0	116	0	0	633	0	0	382	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	50	50		50	50			60		60	60	
Act Effct Green (s)		14.7			14.7			37.3			37.3	
Actuated g/C Ratio		0.24			0.24			0.62			0.62	
v/c Ratio		0.50			0.46			0.73			0.45	
Control Delay		22.4			24.0			16.6			9.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		22.4			24.0			16.6			9.4	
LOS		C			C			B			A	
Approach Delay		22.4			24.0			16.6			9.4	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)		39			32			165			77	
Queue Length 95th (ft)		72			62			#368			141	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		389			323			872			856	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.36			0.73			0.45	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 5 (8%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 55.7% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St





Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	727	24	8	339
Peak Hour Factor	0.25	0.25	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	0	0	749	25	9	365
Pedestrians	11					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.73	0.73			0.73	
vC, conflicting volume	1155	773			785	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1211	690			707	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			99	
cM capacity (veh/h)	147	329			618	

Direction, Lane #	NB 1	SB 1
Volume Total	774	373
Volume Left	0	9
Volume Right	25	0
cSH	1700	618
Volume to Capacity	0.46	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.4
Lane LOS		A
Approach Delay (s)	0.0	0.4
Approach LOS		

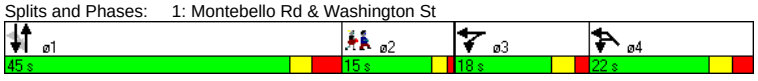
Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
Lane Configurations														
Ideal Flow (vphpl)	1900	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	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	0	1413	0	0	1423	0	0	1442	0	0	1300	0	
Flt Permitted			0.990			0.993			0.866			0.993		
Satd. Flow (perm)	0	0	1413	0	0	1415	0	0	1256	0	0	1300	0	
Right Turn on Red				Yes			No			No				
Satd. Flow (RTOR)			23											
Link Speed (mph)			30			30			30			30		
Link Distance (ft)			609			350			290			263		
Travel Time (s)			13.8			8.0			6.6			6.0		
Volume (vph)	1	16	35	28	5	371	6	68	450	9	2	21	135	
Confl. Bikes (#/hr)							1							
Peak Hour Factor	0.67	0.67	0.67	0.67	0.99	0.99	0.99	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	0%	13%	0%	0%	0%	8%	0%	3%	6%	22%	0%	10%	3%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	1	24	52	42	5	375	6	79	523	10	2	25	163	
Lane Group Flow (vph)	0	0	119	0	0	386	0	0	612	0	0	190	0	
Turn Type		Split			Perm			Perm			Split			
Protected Phases		3	3			1			1		4	4		2
Permitted Phases					1			1						
Detector Phases		3	3		1	1		1	1		4	4		
Minimum Initial (s)		10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)		15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	0.0	18.0	18.0	0.0	45.0	45.0	0.0	45.0	45.0	0.0	22.0	22.0	0.0	15.0
Total Split (%)	0.0%	18.0%	18.0%	0.0%	45.0%	45.0%	0.0%	45.0%	45.0%	0.0%	22.0%	22.0%	0.0%	15%
Maximum Green (s)		13.0	13.0		38.0	38.0		38.0	38.0		16.0	16.0		12.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)		2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag		Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode		Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)														7.0
Flash Dont Walk (s)														5.0
Pedestrian Calls (#/hr)														20
Act Effct Green (s)			12.4			52.4			52.4			17.2		
Actuated g/C Ratio			0.12			0.52			0.52			0.17		
v/c Ratio			0.61			0.52			0.93			0.85		
Control Delay			46.8			21.6			48.1			72.3		
Queue Delay			0.0			0.0			0.0			0.0		
Total Delay			46.8			21.6			48.1			72.3		
LOS			D			C			D			E		
Approach Delay			46.8			21.6			48.1			72.3		
Approach LOS			D			C			D			E		
Queue Length 50th (ft)			59			133			299			117		
Queue Length 95th (ft)			79			304			#638			#205		
Internal Link Dist (ft)			529			270			210			183		
Turn Bay Length (ft)														
Base Capacity (vph)			218			741			658			234		
Starvation Cap Reductn			0			0			0			0		
Spillback Cap Reductn			0			0			0			0		
Storage Cap Reductn			0			0			0			0		
Reduced v/c Ratio			0.55			0.52			0.93			0.81		

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 43.7 Intersection LOS: D
Intersection Capacity Utilization 85.8% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Montebello Rd & Washington St

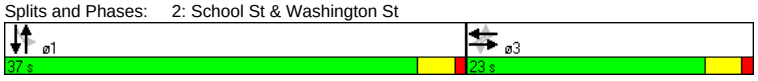


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1306	0	0	1321	0	0	1416	0	0	1465	0
Flt Permitted		0.942			0.748						0.980	
Satd. Flow (perm)	0	1227	0	0	999	0	0	1416	0	0	1437	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		35						16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	29	89	47	77	0	22	0	407	49	18	523	0
Confl. Peds. (#/hr)	48		30	30		48	55		56	56		55
Confl. Bikes (#/hr)			2			1			3			3
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.91	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	10%	2%	0%	7%	0%	5%	0%	6%	2%	0%	5%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	31	95	50	91	0	26	0	447	54	21	601	0
Lane Group Flow (vph)	0	176	0	0	117	0	0	501	0	0	622	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	60	60		60	60			60		60	60	
Act Effct Green (s)		14.7			14.7			37.3			37.3	
Actuated g/C Ratio		0.24			0.24			0.62			0.62	
v/c Ratio		0.54			0.48			0.56			0.70	
Control Delay		20.8			24.7			11.0			15.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		20.8			24.7			11.0			15.3	
LOS		C			C			B			B	
Approach Delay		20.8			24.7			11.0			15.3	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		39			32			109			161	
Queue Length 95th (ft)		88			67			201			#301	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		412			316			887			894	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.37			0.56			0.70	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.70
Intersection Signal Delay: 15.2 Intersection LOS: B
Intersection Capacity Utilization 75.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	504	25	17	533
Peak Hour Factor	0.25	0.25	0.92	0.92	0.88	0.88
Hourly flow rate (vph)	0	0	548	27	19	606
Pedestrians	43					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.90	0.84			0.84	
vC, conflicting volume	1249	604			618	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1084	529			545	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	212	465			869	

Direction, Lane #	NB 1	SB 1
Volume Total	575	625
Volume Left	0	19
Volume Right	27	0
cSH	1700	869
Volume to Capacity	0.34	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.6
Lane LOS		A
Approach Delay (s)	0.0	0.6
Approach LOS		

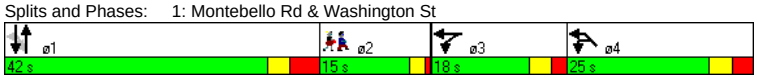
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
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	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	1415	0	0	1396	0	0	1386	0	0	1294	0	
Flt Permitted		0.989			0.995			0.727			0.995		
Satd. Flow (perm)	0	1415	0	0	1390	0	0	1017	0	0	1294	0	
Right Turn on Red			Yes			No			No				
Satd. Flow (RTOR)		35											
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		609			350			290			263		
Travel Time (s)		13.8			8.0			6.6			6.0		
Volume (vph)	14	22	30	6	498	3	65	288	7	3	27	261	
Confl. Bikes (#/hr)			1			4						2	
Peak Hour Factor	0.79	0.79	0.79	0.97	0.97	0.97	0.93	0.93	0.93	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	10%	33%	5%	11%	0%	0%	0%	2%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	18	28	38	6	513	3	70	310	8	3	28	275	
Lane Group Flow (vph)	0	84	0	0	522	0	0	388	0	0	306	0	
Turn Type	Split			Perm			Perm			Split			
Protected Phases	3	3			1			1		4	4		2
Permitted Phases				1			1						
Detector Phases	3	3		1	1		1	1		4	4		
Minimum Initial (s)	10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)	15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	18.0	18.0	0.0	42.0	42.0	0.0	42.0	42.0	0.0	25.0	25.0	0.0	15.0
Total Split (%)	18.0%	18.0%	0.0%	42.0%	42.0%	0.0%	42.0%	42.0%	0.0%	25.0%	25.0%	0.0%	15%
Maximum Green (s)	13.0	13.0		35.0	35.0		35.0	35.0		19.0	19.0		12.0
Yellow Time (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag	Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode	Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)													7.0
Flash Dont Walk (s)													5.0
Pedestrian Calls (#/hr)													20
Act Effct Green (s)		11.6			49.4			49.4			21.0		
Actuated g/C Ratio		0.12			0.49			0.49			0.21		
v/c Ratio		0.43			0.76			0.77			1.12		
Control Delay		32.8			32.2			36.2			130.6		
Queue Delay		0.0			0.0			0.0			0.0		
Total Delay		32.8			32.2			36.2			130.6		
LOS		C			C			D			F		
Approach Delay		32.8			32.2			36.2			130.6		
Approach LOS		C			C			D			F		
Queue Length 50th (ft)		29			221			166			~227		
Queue Length 95th (ft)		61			#545			#441			#394		
Internal Link Dist (ft)		529			270			210			183		
Turn Bay Length (ft)													
Base Capacity (vph)		228			687			503			272		
Starvation Cap Reductn		0			0			0			0		
Spillback Cap Reductn		0			0			0			0		
Storage Cap Reductn		0			0			0			0		
Reduced v/c Ratio		0.37			0.76			0.77			1.13		

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 56.6 Intersection LOS: E
Intersection Capacity Utilization 92.4% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Montebello Rd & Washington St

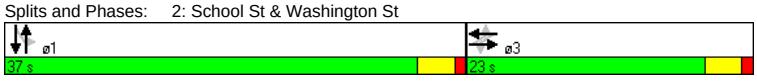


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1339	0	0	1372	0	0	1397	0	0	1407	0
Flt Permitted		0.888			0.730						0.975	
Satd. Flow (perm)	0	1197	0	0	1003	0	0	1397	0	0	1374	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		13						11				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	40	71	17	84	0	15	0	564	47	14	364	0
Confl. Peds. (#/hr)	21		40	40		21	15		39	39		15
Confl. Bikes (#/hr)						1			9			2
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	0%	4%	0%	7%	0%	8%	11%	39%	8%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	50	89	21	104	0	19	0	613	51	15	387	0
Lane Group Flow (vph)	0	160	0	0	123	0	0	664	0	0	402	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	50	50		50	50			60		60	60	
Act Effct Green (s)		14.8			14.8			37.2			37.2	
Actuated g/C Ratio		0.25			0.25			0.62			0.62	
v/c Ratio		0.53			0.50			0.76			0.47	
Control Delay		23.1			25.2			18.3			9.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.1			25.2			18.3			9.8	
LOS		C			C			B			A	
Approach Delay		23.1			25.2			18.3			9.8	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)		41			34			181			83	
Queue Length 95th (ft)		75			66			#395			151	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		388			318			871			853	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.39			0.76			0.47	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 5 (8%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	764	25	8	356
Peak Hour Factor	0.25	0.25	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	0	0	788	26	9	383
Pedestrians	11					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.71	0.71			0.71	
vC, conflicting volume	1212	812			824	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1298	734			753	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			99	
cM capacity (veh/h)	126	300			575	

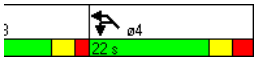
Direction, Lane #	NB 1	SB 1
Volume Total	813	391
Volume Left	0	9
Volume Right	26	0
cSH	1700	575
Volume to Capacity	0.48	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.5
Lane LOS		A
Approach Delay (s)	0.0	0.5
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
Lane Configurations														
Ideal Flow (vphpl)	1900	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	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	0	1415	0	0	1423	0	0	1442	0	0	1302	0	
Flt Permitted			0.990			0.993			0.859			0.993		
Satd. Flow (perm)	0	0	1415	0	0	1415	0	0	1246	0	0	1302	0	
Right Turn on Red				Yes			No			No				
Satd. Flow (RTOR)			22											
Link Speed (mph)			30			30			30			30		
Link Distance (ft)			609			350			290			263		
Travel Time (s)			13.8			8.0			6.6			6.0		
Volume (vph)	1	17	37	29	5	390	6	69	473	9	2	22	142	
Confl. Bikes (#/hr)							1							
Peak Hour Factor	0.67	0.67	0.67	0.67	0.99	0.99	0.99	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	0%	13%	0%	0%	0%	8%	0%	3%	6%	22%	0%	10%	3%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	1	25	55	43	5	394	6	80	550	10	2	27	171	
Lane Group Flow (vph)	0	0	124	0	0	405	0	0	640	0	0	200	0	
Turn Type		Split			Perm			Perm			Split			
Protected Phases		3	3			1			1		4	4		2
Permitted Phases					1			1						
Detector Phases		3	3		1	1		1	1		4	4		
Minimum Initial (s)		10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)		15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	0.0	18.0	18.0	0.0	45.0	45.0	0.0	45.0	45.0	0.0	22.0	22.0	0.0	15.0
Total Split (%)	0.0%	18.0%	18.0%	0.0%	45.0%	45.0%	0.0%	45.0%	45.0%	0.0%	22.0%	22.0%	0.0%	15%
Maximum Green (s)		13.0	13.0		38.0	38.0		38.0	38.0		16.0	16.0		12.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)		2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag		Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode		Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)														7.0
Flash Dont Walk (s)														5.0
Pedestrian Calls (#/hr)														20
Act Effct Green (s)			12.5			52.0			52.0			17.5		
Actuated g/C Ratio			0.12			0.52			0.52			0.18		
v/c Ratio			0.63			0.55			0.99			0.88		
Control Delay			48.9			22.4			59.7			77.0		
Queue Delay			0.0			0.0			0.0			0.0		
Total Delay			48.9			22.4			59.7			77.0		
LOS			D			C			E			E		
Approach Delay			48.9			22.4			59.7			77.0		
Approach LOS			D			C			E			E		
Queue Length 50th (ft)			62			144			334			125		
Queue Length 95th (ft)			83			326			#680			#220		
Internal Link Dist (ft)			529			270			210			183		
Turn Bay Length (ft)														
Base Capacity (vph)			217			736			648			234		
Starvation Cap Reductn			0			0			0			0		
Spillback Cap Reductn			0			0			0			0		
Storage Cap Reductn			0			0			0			0		
Reduced v/c Ratio			0.57			0.55			0.99			0.85		

Intersection Summary			
Area Type:	CBD		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 3 (3%), Referenced to phase 1:NBSB, Start of Green			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay: 50.2		Intersection LOS: D	
Intersection Capacity Utilization 88.9%		ICU Level of Service E	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Montebello Rd & Washington St



Lane Group	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 (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1306	0	0	1321	0	0	1417	0	0	1465	0
Flt Permitted		0.942			0.735						0.979	
Satd. Flow (perm)	0	1228	0	0	982	0	0	1417	0	0	1435	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		35						16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	30	94	49	81	0	23	0	428	51	19	550	0
Confl. Peds. (#/hr)	48		30	30		48	55		56	56		55
Confl. Bikes (#/hr)			2			1			3			3
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.91	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	10%	2%	0%	7%	0%	5%	0%	6%	2%	0%	5%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	32	100	52	95	0	27	0	470	56	22	632	0
Lane Group Flow (vph)	0	184	0	0	122	0	0	526	0	0	654	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	60	60		60	60			60		60	60	
Act Effct Green (s)		14.7			14.7			37.3			37.3	
Actuated g/C Ratio		0.24			0.24			0.62			0.62	
v/c Ratio		0.56			0.51			0.59			0.73	
Control Delay		21.6			25.7			11.6			17.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.6			25.7			11.6			17.0	
LOS		C			C			B			B	
Approach Delay		21.6			25.7			11.6			17.0	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		41			34			117			176	
Queue Length 95th (ft)		92			71			218			#357	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		413			311			887			891	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.39			0.59			0.73	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.73
Intersection Signal Delay: 16.4 Intersection LOS: B
Intersection Capacity Utilization 78.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	530	37	18	560
Peak Hour Factor	0.25	0.25	0.92	0.92	0.88	0.88
Hourly flow rate (vph)	0	0	576	40	20	636
Pedestrians	43					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.90	0.82			0.82	
vC, conflicting volume	1316	639			659	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1110	562			587	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	204	437			823	

Direction, Lane #	NB 1	SB 1
Volume Total	616	657
Volume Left	0	20
Volume Right	40	0
cSH	1700	823
Volume to Capacity	0.36	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.7
Lane LOS		A
Approach Delay (s)	0.0	0.7
Approach LOS		

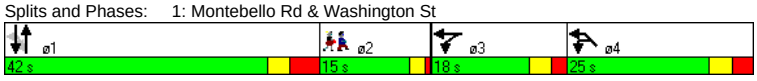
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
Lane Configurations														
Ideal Flow (vphpl)	1900	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	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	0	1406	0	0	1396	0	0	1386	0	0	1294	0	
Flt Permitted			0.988			0.995			0.725			0.995		
Satd. Flow (perm)	0	0	1406	0	0	1390	0	0	1014	0	0	1294	0	
Right Turn on Red				Yes			No			No				
Satd. Flow (RTOR)			39											
Link Speed (mph)			30			30			30			30		
Link Distance (ft)			118			350			204			263		
Travel Time (s)			2.7			8.0			4.6			6.0		
Volume (vph)	1	18	22	39	6	500	3	65	288	7	3	27	262	
Confl. Bikes (#/hr)				1			4						2	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.97	0.97	0.97	0.93	0.93	0.93	0.95	0.95	0.95	
Heavy Vehicles (%)	0%	0%	0%	0%	0%	10%	33%	5%	11%	0%	0%	0%	2%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	1	23	28	49	6	515	3	70	310	8	3	28	276	
Lane Group Flow (vph)	0	0	101	0	0	524	0	0	388	0	0	307	0	
Turn Type		Split			Perm			Perm			Split			
Protected Phases		3	3			1			1		4	4		2
Permitted Phases					1			1						
Detector Phases		3	3		1	1		1	1		4	4		
Minimum Initial (s)		10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)		15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	0.0	18.0	18.0	0.0	42.0	42.0	0.0	42.0	42.0	0.0	25.0	25.0	0.0	15.0
Total Split (%)	0.0%	18.0%	18.0%	0.0%	42.0%	42.0%	0.0%	42.0%	42.0%	0.0%	25.0%	25.0%	0.0%	15%
Maximum Green (s)		13.0	13.0		35.0	35.0		35.0	35.0		19.0	19.0		12.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)		2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag		Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode		Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)														7.0
Flash Dont Walk (s)														5.0
Pedestrian Calls (#/hr)														20
Act Effct Green (s)			11.8			49.2			49.2			21.0		
Actuated g/C Ratio			0.12			0.49			0.49			0.21		
v/c Ratio			0.51			0.77			0.78			1.13		
Control Delay			35.3			32.8			37.0			131.8		
Queue Delay			0.0			0.0			0.0			0.0		
Total Delay			35.3			32.8			37.0			131.8		
LOS			D			C			D			F		
Approach Delay			35.3			32.8			37.0			131.8		
Approach LOS			D			C			D			F		
Queue Length 50th (ft)			37			222			166			~228		
Queue Length 95th (ft)			73			#548			#442			#395		
Internal Link Dist (ft)			38			270			124			183		
Turn Bay Length (ft)														
Base Capacity (vph)			230			683			499			272		
Starvation Cap Reductn			0			0			0			0		
Spillback Cap Reductn			0			0			0			0		
Storage Cap Reductn			0			0			0			0		
Reduced v/c Ratio			0.44			0.77			0.78			1.13		

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 57.3 Intersection LOS: E
Intersection Capacity Utilization 92.6% ICU Level of Service F
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Montebello Rd & Washington St

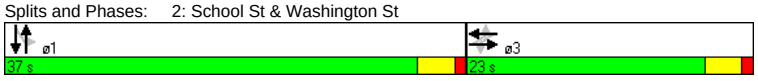


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1339	0	0	1372	0	0	1397	0	0	1407	0
Flt Permitted		0.888			0.730						0.975	
Satd. Flow (perm)	0	1197	0	0	1003	0	0	1397	0	0	1374	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		13						11				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	40	71	17	84	0	15	0	572	47	14	367	0
Confl. Peds. (#/hr)	21		40	40		21	15		39	39		15
Confl. Bikes (#/hr)						1			9			2
Peak Hour Factor	0.80	0.80	0.80	0.81	0.81	0.81	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	5%	2%	0%	4%	0%	7%	0%	8%	11%	39%	8%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	50	89	21	104	0	19	0	622	51	15	390	0
Lane Group Flow (vph)	0	160	0	0	123	0	0	673	0	0	405	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	50	50		50	50			60		60	60	
Act Effct Green (s)		14.8			14.8			37.2			37.2	
Actuated g/C Ratio		0.25			0.25			0.62			0.62	
v/c Ratio		0.53			0.50			0.77			0.47	
Control Delay		23.1			25.2			18.9			9.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		23.1			25.2			18.9			9.9	
LOS		C			C			B			A	
Approach Delay		23.1			25.2			18.9			9.9	
Approach LOS		C			C			B			A	
Queue Length 50th (ft)		41			34			186			84	
Queue Length 95th (ft)		75			66			#404			154	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		388			318			871			853	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.41			0.39			0.77			0.47	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 5 (8%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 17.3 Intersection LOS: B
Intersection Capacity Utilization 58.0% ICU Level of Service B
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	772	26	8	359
Peak Hour Factor	0.25	0.25	0.97	0.97	0.93	0.93
Hourly flow rate (vph)	0	0	796	27	9	386
Pedestrians	11					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.71	0.71			0.71	
vC, conflicting volume	1224	820			834	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314	748			767	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	100	100			98	
cM capacity (veh/h)	124	296			570	

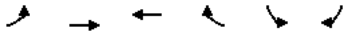
Direction, Lane #	NB 1	SB 1
Volume Total	823	395
Volume Left	0	9
Volume Right	27	0
cSH	1700	570
Volume to Capacity	0.48	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.5
Lane LOS		A
Approach Delay (s)	0.0	0.5
Approach LOS		

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		50.3%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	798	3	3	356
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	867	3	3	387
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			204			780
pX, platoon unblocked	0.70	0.70			0.70	
vC, conflicting volume	1262	869			871	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1375	813			815	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	111	265			568	

Direction, Lane #	NB 1	SB 1
Volume Total	871	390
Volume Left	0	3
Volume Right	3	0
cSH	1700	568
Volume to Capacity	0.51	0.01
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.2
Lane LOS		A
Approach Delay (s)	0.0	0.2
Approach LOS		

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	66	0	0	14
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	72	0	0	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		118				
pX, platoon unblocked						
vC, conflicting volume	72				72	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72				72	72
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	98
cM capacity (veh/h)	1528				932	991

Direction, Lane #	WB 1	SB 1
Volume Total	72	15
Volume Left	0	0
Volume Right	0	15
cSH	1700	991
Volume to Capacity	0.04	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	8.7
Lane LOS		A
Approach Delay (s)	0.0	8.7
Approach LOS		A

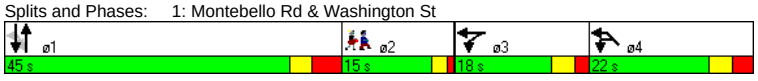
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	13.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	WBL2	WBL	WBT	WBR	NBL	NBT	NBR2	SBL	SBT	SBR	NWL2	NWL	NWR	ø2
Lane Configurations														
Ideal Flow (vphpl)	1900	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	4.0	4.0	4.0	4.0	4.0	
Leading Detector (ft)	50	50	50		50	50		50	50		50	50		
Trailing Detector (ft)	0	0	0		0	0		0	0		0	0		
Turning Speed (mph)	15	15		9	15		9	15		9	15	15	9	
Satd. Flow (prot)	0	0	1413	0	0	1423	0	0	1442	0	0	1300	0	
Flt Permitted			0.990			0.993			0.858			0.993		
Satd. Flow (perm)	0	0	1413	0	0	1415	0	0	1245	0	0	1300	0	
Right Turn on Red				Yes			No			No				
Satd. Flow (RTOR)			24											
Link Speed (mph)			30			30			30			30		
Link Distance (ft)			118			350			204			263		
Travel Time (s)			2.7			8.0			4.6			6.0		
Volume (vph)	1	17	37	31	5	393	6	69	473	9	2	22	143	
Confl. Bikes (#/hr)							1							
Peak Hour Factor	0.67	0.67	0.67	0.67	0.99	0.99	0.99	0.86	0.86	0.86	0.83	0.83	0.83	
Heavy Vehicles (%)	0%	13%	0%	0%	0%	8%	0%	3%	6%	22%	0%	10%	3%	
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	1	25	55	46	5	397	6	80	550	10	2	27	172	
Lane Group Flow (vph)	0	0	127	0	0	408	0	0	640	0	0	201	0	
Turn Type		Split			Perm			Perm			Split			
Protected Phases		3	3			1			1		4	4		2
Permitted Phases					1			1						
Detector Phases		3	3		1	1		1	1		4	4		
Minimum Initial (s)		10.0	10.0		8.0	8.0		8.0	8.0		5.0	5.0		7.0
Minimum Split (s)		15.0	15.0		15.0	15.0		15.0	15.0		11.0	11.0		15.0
Total Split (s)	0.0	18.0	18.0	0.0	45.0	45.0	0.0	45.0	45.0	0.0	22.0	22.0	0.0	15.0
Total Split (%)	0.0%	18.0%	18.0%	0.0%	45.0%	45.0%	0.0%	45.0%	45.0%	0.0%	22.0%	22.0%	0.0%	15%
Maximum Green (s)		13.0	13.0		38.0	38.0		38.0	38.0		16.0	16.0		12.0
Yellow Time (s)		3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)		2.0	2.0		4.0	4.0		4.0	4.0		3.0	3.0		1.0
Lead/Lag		Lead	Lead		Lead	Lead		Lead	Lead		Lag	Lag		Lag
Lead-Lag Optimize?		Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)		2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		3.0
Recall Mode		Min	Min		C-Max	C-Max		C-Max	C-Max		Min	Min		None
Walk Time (s)														7.0
Flash Dont Walk (s)														5.0
Pedestrian Calls (#/hr)														20
Act Effct Green (s)			12.5			52.0			52.0			17.5		
Actuated g/C Ratio			0.12			0.52			0.52			0.18		
v/c Ratio			0.64			0.56			0.99			0.88		
Control Delay			48.8			22.6			60.2			77.4		
Queue Delay			0.0			0.0			0.0			0.0		
Total Delay			48.8			22.6			60.2			77.4		
LOS			D			C			E			E		
Approach Delay			48.8			22.6			60.2			77.4		
Approach LOS			D			C			E			E		
Queue Length 50th (ft)			63			146			335			125		
Queue Length 95th (ft)			83			327			#680			#221		
Internal Link Dist (ft)			38			270			124			183		
Turn Bay Length (ft)														
Base Capacity (vph)			218			735			647			234		
Starvation Cap Reductn			0			0			0			0		
Spillback Cap Reductn			0			0			0			0		
Storage Cap Reductn			0			0			0			0		
Reduced v/c Ratio			0.58			0.56			0.99			0.86		

Intersection Summary

Area Type: CBD
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 3 (3%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 50.5 Intersection LOS: D
Intersection Capacity Utilization 89.2% ICU Level of Service E
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Montebello Rd & Washington St

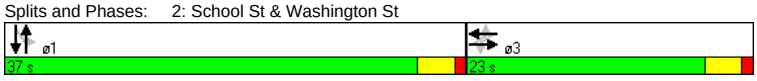


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	12	12	12	12	12	12	12	12	12
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Leading Detector (ft)	50	50		50	50			50		50	50	
Trailing Detector (ft)	0	0		0	0			0		0	0	
Turning Speed (mph)	15		9	15		9	15		9	15		9
Satd. Flow (prot)	0	1306	0	0	1321	0	0	1417	0	0	1465	0
Flt Permitted		0.942			0.735						0.979	
Satd. Flow (perm)	0	1228	0	0	982	0	0	1417	0	0	1435	0
Right Turn on Red			Yes			No			Yes			Yes
Satd. Flow (RTOR)		35						16				
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		296			369			694			254	
Travel Time (s)		6.7			8.4			15.8			5.8	
Volume (vph)	30	94	49	81	0	23	0	428	51	19	558	0
Confl. Peds. (#/hr)	48		30	30		48	55		56	56		55
Confl. Bikes (#/hr)			2			1			3			3
Peak Hour Factor	0.94	0.94	0.94	0.85	0.85	0.85	0.91	0.91	0.91	0.87	0.87	0.87
Heavy Vehicles (%)	10%	2%	0%	7%	0%	5%	0%	6%	2%	0%	5%	0%
Parking (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Adj. Flow (vph)	32	100	52	95	0	27	0	470	56	22	641	0
Lane Group Flow (vph)	0	184	0	0	122	0	0	526	0	0	663	0
Turn Type	Perm			Perm						Perm		
Protected Phases		3			3			1			1	
Permitted Phases	3			3						1		
Detector Phases	3	3		3	3			1		1	1	
Minimum Initial (s)	8.0	8.0		8.0	8.0			8.0		8.0	8.0	
Minimum Split (s)	23.0	23.0		23.0	23.0			19.0		19.0	19.0	
Total Split (s)	23.0	23.0	0.0	23.0	23.0	0.0	0.0	37.0	0.0	37.0	37.0	0.0
Total Split (%)	38.3%	38.3%	0.0%	38.3%	38.3%	0.0%	0.0%	61.7%	0.0%	61.7%	61.7%	0.0%
Maximum Green (s)	19.0	19.0		19.0	19.0			33.0		33.0	33.0	
Yellow Time (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0		1.0	1.0			1.0		1.0	1.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0			2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min			C-Max		C-Max	C-Max	
Walk Time (s)	7.0	7.0		7.0	7.0			7.0		7.0	7.0	
Flash Dont Walk (s)	12.0	12.0		12.0	12.0			8.0		8.0	8.0	
Pedestrian Calls (#/hr)	60	60		60	60			60		60	60	
Act Effct Green (s)		14.7			14.7			37.3			37.3	
Actuated g/C Ratio		0.24			0.24			0.62			0.62	
v/c Ratio		0.56			0.51			0.59			0.74	
Control Delay		21.6			25.7			11.6			17.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		21.6			25.7			11.6			17.4	
LOS		C			C			B			B	
Approach Delay		21.6			25.7			11.6			17.4	
Approach LOS		C			C			B			B	
Queue Length 50th (ft)		41			34			117			180	
Queue Length 95th (ft)		92			71			218			#364	
Internal Link Dist (ft)		216			289			614			174	
Turn Bay Length (ft)												
Base Capacity (vph)		413			311			887			891	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.45			0.39			0.59			0.74	

Intersection Summary

Area Type: CBD
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 59 (98%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 16.6 Intersection LOS: B
Intersection Capacity Utilization 79.3% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: School St & Washington St



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	531	37	18	568
Peak Hour Factor	0.25	0.25	0.92	0.92	0.88	0.88
Hourly flow rate (vph)	0	0	577	40	20	645
Pedestrians	43					
Lane Width (ft)	0.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			290			694
pX, platoon unblocked	0.90	0.82			0.82	
vC, conflicting volume	1327	640			660	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1103	563			588	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			98	
cM capacity (veh/h)	207	436			821	

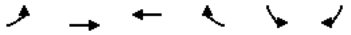
Direction, Lane #	NB 1	SB 1
Volume Total	617	666
Volume Left	0	20
Volume Right	40	0
cSH	1700	821
Volume to Capacity	0.36	0.02
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	0.7
Lane LOS		A
Approach Delay (s)	0.0	0.7
Approach LOS		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	52.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	0	0	560	6	10	558
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	609	7	11	607
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)			204			780
pX, platoon unblocked	0.85	0.82			0.82	
vC, conflicting volume	1240	612			615	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1177	525			529	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	100			99	
cM capacity (veh/h)	176	451			848	

Direction, Lane #	NB 1	SB 1
Volume Total	615	617
Volume Left	0	11
Volume Right	7	0
cSH	1700	848
Volume to Capacity	0.36	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.3
Lane LOS		A
Approach Delay (s)	0.0	0.3
Approach LOS		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	0	0	73	0	0	13
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	0	79	0	0	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)		118				
pX, platoon unblocked						
vC, conflicting volume	79				79	79
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	79				79	79
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	99
cM capacity (veh/h)	1519				923	981

Direction, Lane #	WB 1	SB 1
Volume Total	79	14
Volume Left	0	0
Volume Right	0	14
cSH	1700	981
Volume to Capacity	0.05	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	8.7
Lane LOS		A
Approach Delay (s)	0.0	8.7
Approach LOS		A

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	13.8%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX G – RESPONSE TO CLIMATE CHANGE RESILIENCY AND ADAPTABILITY QUESTIONNAIRE

Climate Change Preparedness and Resiliency Checklist for New Construction

In November 2013, in conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the Boston Redevelopment Authority adopted policy for all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding project resiliency, preparedness, and to mitigate any identified adverse impacts that might arise under future climate conditions.

For more information about the City of Boston's climate policies and practices, and the 2011 update of the climate action plan, *A Climate of Progress*, please see the City's climate action web pages at http://www.cityofboston.gov/climate

In advance we thank you for your time and assistance in advancing best practices in Boston.

Climate Change Analysis and Information Sources:

1. Northeast Climate Impacts Assessment (www.climatechoices.org/ne/)
2. USGCRP 2009 (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/)
3. Army Corps of Engineers guidance on sea level rise (http://planning.usace.army.mil/toolbox/library/ECs/EC11652212Nov2011.pdf)
4. Proceeding of the National Academy of Science, "Global sea level rise linked to global temperature", Vermeer and Rahmstorf, 2009 (http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf)
5. "Hotspot of accelerated sea-level rise on the Atlantic coast of North America", Asbury H. Sallenger Jr*, Kara S. Doran and Peter A. Howd, 2012 (http://www.bostonredevelopmentauthority.org/planning/Hotspot of Accelerated Sea-level Rise 2012.pdf)
6. "Building Resilience in Boston": Best Practices for Climate Change Adaptation and Resilience for Existing Buildings, Linnean Solutions, The Built Environment Coalition, The Resilient Design Institute, 2103 (http://www.greenribboncommission.org/downloads/Building_Resilience_in_Boston_SML.pdf)

Checklist

Please respond to all of the checklist questions to the fullest extent possible. For projects that respond "Yes" to any of the D.1 – Sea-Level Rise and Storms, Location Description and Classification questions, please respond to all of the remaining Section D questions.

Checklist responses are due at the time of initial project filing or Notice of Project Change and final filings just prior seeking Final BRA Approval. A PDF of your response to the Checklist should be submitted to the Boston Redevelopment Authority via your project manager.

Please Note: When initiating a new project, please visit the BRA web site for the most current Climate Change Preparedness & Resiliency Checklist.

A.1 - Project Information

Project Name:	3200 Washington Street
Project Address Primary:	3200 Washington Street, Jamaica Plain, MA 02130
Project Address Additional:	
Project Contact (name / Title / Company / email / phone):	Justin Iantosca / 3190 Washington Street LLC / 709 Centre Street, Jamaica Plain, 02130

A.2 - Team Description

Owner / Developer:	3190 Washington Street LLC
Architect:	RODE Architects
Engineer (building systems):	Engineered Systems, Inc / Vincent A. Dilorio, Inc
Sustainability / LEED:	Price Sustainability
Permitting:	MLF Consulting LLC
Construction Management:	
Climate Change Expert:	

A.3 - Project Permitting and Phase

At what phase is the project – most recent completed submission at the time of this response?

PNF / Expanded PNF Submission	Draft / Final Project Impact Report Submission	BRA Board Approved	Notice of Project Change
Planned Development Area	BRA Final Design Approved	Under Construction	Construction just completed:

A.4 - Building Classification and Description

List the principal Building Uses:	Residential
List the First Floor Uses:	*Parking/ commercial*

What is the principal Construction Type – select most appropriate type?

Wood Frame	Masonry	Steel Frame	Concrete

Describe the building?

Site Area:	*32, 412 SF*	Building Area:	*99,834SF*
Building Height:	*74'-11".*	Number of Stories:	*3-6 Flrs.*
First Floor Elevation (reference Boston City Base):	*70'-8".*	Are there below grade spaces/levels, if yes how many:	***No***

A.5 - Green Building

Which LEED Rating System(s) and version has or will your project use (by area for multiple rating systems)?

Select by Primary Use:	New Construction	Core & Shell	Healthcare	Schools
	Retail	Homes Midrise	Homes	Other
Select LEED Outcome:	Certified	Silver	Gold	Platinum

Will the project be USGBC Registered and / or USGBC Certified?

Registered:	*No*	Certified:	*No*

A.6 - Building Energy

The Proponent does not have a MEP on the team as of this date. We will follow up with an update as soon as possible.

What are the base and peak operating energy loads for the building?

Electric:	*(kW)*	Heating:	*(MMBtu/hr)*
What is the planned building Energy Use Intensity:	*(kbut/SF or kWh/SF)*	Cooling:	*(Tons/hr)*

What are the peak energy demands of your critical systems in the event of a service interruption?

Electric:	*(kW)*	Heating:	*(MMBtu/hr)*
		Cooling:	*(Tons/hr)*

What is nature and source of your back-up / emergency generators?

Electrical Generation:	*(kW)*		Fuel Source:	
System Type and Number of Units:	Combustion Engine	Gas Turbine	Combine Heat and Power	*(Units)*

B - Extreme Weather and Heat Events

Climate change will result in more extreme weather events including higher year round average temperatures, higher peak temperatures, and more periods of extended peak temperatures. The section explores how a project responds to higher temperatures and heat waves.

B.1 - Analysis

What is the full expected life of the project?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years

What is the full expected operational life of key building systems (e.g. heating, cooling, ventilation)?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years

What time span of future Climate Conditions was considered?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years

Analysis Conditions - What range of temperatures will be used for project planning – Low/High?

9/88 Deg.

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

88 Deg.	*3 Days*	*2 Events / yr.*

What Drought characteristics will be used for project planning – Duration and Frequency?

60 Days	*1 Event / yr.*

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

43.8 Inches / yr.	*3.26/4.90/8.84 inches*	*2 yr/10 yr/100 yr frequency.*

What Extreme Wind Storm Event characteristics will be used for project planning – Peak Wind Speed, Duration of Storm Event, and Frequency of Events per year?

105 mph Peak Wind	*Hours*	*Events / yr.*

B.2 - Mitigation Strategies

What will be the overall energy performance, based on use, of the project and how will performance be determined?

Building energy use below code:	*20%*
How is performance determined:	ASHRAE 90.1 – 2007 Energy Use Simulation

What specific measures will the project employ to reduce building energy consumption?

Select all appropriate:	High performance building envelop	High performance lighting & controls	Building day lighting	EnergyStar equip. / appliances
	High performance HVAC equipment	Energy recovery ventilation	No active cooling	No active heating
Describe any added measures:				

What are the insulation (R) values for building envelop elements?

Roof:	*R = 38*	Walls / Curtain Wall Assembly:	*R = 20*
Foundation:	*R = 10*	Basement / Slab:	*R =10*
Windows:	*U = 0.35*	Doors:	*U = 0.35*

What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure?

On-site clean energy / CHP system(s)	Building-wide power dimming	Thermal energy storage systems	Ground source heat pump
On-site Solar PV	On-site Solar Thermal	Wind power	None
Describe any added measures:			

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems?

Select all appropriate:	Connected to local distributed electrical	Building will be Smart Grid ready	Connected to distributed steam, hot, chilled water	Distributed thermal energy ready

Will the building remain operable without utility power for an extended period?

	*Yes / **No***	If yes, for how long:	*Days*
If Yes, is building "Islandable?			
If Yes, describe strategies:			

Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure:

Select all appropriate:	Solar oriented – longer south walls	Prevailing winds oriented	**External shading devices**	Tuned glazing,
	Building cool zones	**Operable windows**	Natural ventilation	Building shading
	Potable water for drinking / food preparation	Potable water for sinks / sanitary systems	Waste water storage capacity	**High Performance Building Envelop**
Describe any added measures:				

What measures will the project employ to reduce urban heat-island effect?

Select all appropriate:	High reflective paving materials	**Shade trees & shrubs**	**High reflective roof materials**	**Vegetated roofs**
Describe other strategies:				

What measures will the project employ to accommodate rain events and more rain fall?

Select all appropriate:	On-site retention systems & ponds	**Infiltration systems**	**vegetated water capture systems**	**Vegetated roofs**
Describe other strategies:				

What measures will the project employ to accommodate extreme storm events and high winds?

Select all appropriate:	Hardened building structure & elements	Buried utilities & hardened infrastructure	Hazard removal & protective landscapes	**Soft & permeable surfaces (water infiltration)**
Describe other strategies:				

C - Sea-Level Rise and Storms

Rising Sea-Levels and more frequent Extreme Storms increase the probability of coastal and river flooding and enlarging the extent of the 100 Year Flood Plain. This section explores if a project is or might be subject to Sea-Level Rise and Storm impacts.

C.1 - Location Description and Classification:

Do you believe the building to susceptible to flooding now or during the full expected life of the building?

No

Describe site conditions?

Site Elevation – Low/High Points:	*Boston City Base Elev.68Ft low Elev.106Ft high*
Building Proximity to Water:	*15,000 Ft. Approx.*

Is the site or building located in any of the following?

Coastal Zone:	*No*	Velocity Zone:	*No*
Flood Zone:	*No*	Area Prone to Flooding:	*No*

Will the 2013 Preliminary FEMA Flood Insurance Rate Maps or future floodplain delineation updates due to Climate Change result in a change of the classification of the site or building location?

2013 FEMA Prelim. FIRMs:	*No*	Future floodplain delineation updates:	*No*

What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding?

15,000 Ft Approx.

If you answered YES to any of the above Location Description and Classification questions, please complete the following questions. ***Otherwise you have completed the questionnaire; thank you!***

C - Sea-Level Rise and Storms

This section explores how a project responds to Sea-Level Rise and / or increase in storm frequency or severity.

C.2 - Analysis

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

Sea Level Rise:	*Ft.*	Frequency of storms:	*per year*

C.3 - Building Flood Proofing

Describe any strategies to limit storm and flood damage and to maintain functionality during an extended periods of disruption.

What will be the Building Flood Proof Elevation and First Floor Elevation:

Flood Proof Elevation:	*Boston City Base Elev.(Ft.)*	First Floor Elevation:	*Boston City Base Elev. (Ft.)*

Will the project employ temporary measures to prevent building flooding (e.g. barricades, flood gates):

	Yes / No	If Yes, to what elevation	*Boston City Base Elev. (Ft.)*
If Yes, describe:			

What measures will be taken to ensure the integrity of critical building systems during a flood or severe storm event:

Systems located above 1st Floor.	Water tight utility conduits	Waste water back flow prevention	Storm water back flow prevention

Were the differing effects of fresh water and salt water flooding considered:

Yes / No

Will the project site / building(s) be accessible during periods of inundation or limited access to transportation:

Yes / No	If yes, to what height above 100 Year Floodplain:	*Boston City Base Elev. (Ft.)*

Will the project employ hard and / or soft landscape elements as velocity barriers to reduce wind or wave impacts?

Yes / No

If Yes, describe:

Will the building remain occupiable without utility power during an extended period of inundation:

Yes / No	If Yes, for how long:	*days*

Describe any additional strategies to addressing sea level rise and or sever storm impacts:

C.4 - Building Resilience and Adaptability

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Will the building be able to withstand severe storm impacts and endure temporary inundation?

Select appropriate:	*Yes/no*	Hardened / Resilient Ground Floor Construction	Temporary shutters and or barricades	Resilient site design, materials and construction

Can the site and building be reasonably modified to increase Building Flood Proof Elevation?

Select appropriate:	*Yes/no*	Surrounding site elevation can be raised	Building ground floor can be raised	Construction been engineered
Describe additional strategies:				

Has the building been planned and designed to accommodate future resiliency enhancements?

Select appropriate:	*Yes/no*	Solar PV	Solar Thermal	Clean Energy / CHP System(s)
		Potable water storage	Wastewater storage	Back up energy systems & fuel
Describe any specific or additional strategies:				

Thank you for completing the Boston Climate Change Resilience and Preparedness Checklist!

For questions or comments about this checklist or Climate Change Resiliency and Preparedness best practices, please contact: John.Dalzell.BRA@cityofboston.gov

APPENDIX H – RESPONSE TO CITY OF BOSTON ACCESSIBILITY GUIDELINES

Accessibility Checklist

(to be added to the BRA Development Review Guidelines)

In 2009, a nine-member Advisory Board was appointed to the Commission for Persons with Disabilities in an effort to reduce architectural, procedural, attitudinal, and communication barriers affecting persons with disabilities in the City of Boston. These efforts were instituted to work toward creating universal access in the built environment.

In line with these priorities, the Accessibility Checklist aims to support the inclusion of people with disabilities. In order to complete the Checklist, you must provide specific detail, including descriptions, diagrams and data, of the universal access elements that will ensure all individuals have an equal experience that includes full participation in the built environment throughout the proposed buildings and open space.

In conformance with this directive, all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding the following:

- improvements for pedestrian and vehicular circulation and access;
- encourage new buildings and public spaces to be designed to enhance and preserve Boston's system of parks, squares, walkways, and active shopping streets;
- ensure that persons with disabilities have full access to buildings open to the public;
- afford such persons the educational, employment, and recreational opportunities available to all citizens; and
- preserve and increase the supply of living space accessible to persons with disabilities.

We would like to thank you in advance for your time and effort in advancing best practices and progressive approaches to expand accessibility throughout Boston's built environment.

Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
    a. http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
    a. http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Boston Complete Street Guidelines
    a. http://bostoncompletestreets.org/
4. City of Boston Mayors Commission for Persons with Disabilities Advisory Board
    a. http://www.cityofboston.gov/Disability
5. City of Boston – Public Works Sidewalk Reconstruction Policy
    a. http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
6. Massachusetts Office On Disability Accessible Parking Requirements
    a. www.mass.gov/anf/docs/mod/hp-parking-regulations-mod.doc
7. MBTA Fixed Route Accessible Transit Stations
    a. http://www.mbta.com/about_the_mbta/accessibility/

Project Information

Project Name:	3200 Washington Street
Project Address Primary:	3190 Washington Street, Jamaica Plain, MA
Project Address Additional:	
Project Contact (name / Title / Company / email / phone):	Justin Iantosca / 3190 Washington Street LLC / 709 Centre Street, Jamaica Plain, 02130

Team Description

Owner / Developer:	3190 Washington Street LLC
Architect:	RODE Architects
Engineer (building systems):	Vincent A. Dilorio Engineers & ES Engineers
Sustainability / LEED:	Price Sustainability
Permitting:	MLF Consulting LLC
Construction Management:	n/a

Project Permitting and Phase

At what phase is the project – at time of this questionnaire?

☑ PNF / Expanded PNF Submitted	Draft / Final Project Impact Report Submitted	BRA Board Approved
BRA Design Approved	Under Construction	Construction just completed:

Building Classification and Description

What are the principal Building Uses - select all appropriate uses?

	Residential – One to Three Unit	☑ Residential - Multi-unit, Four +	Institutional	Education
	Commercial	Office	☑Retail	Assembly
	Laboratory / Medical	Manufacturing / Industrial	Mercantile	Storage, Utility and Other
First Floor Uses (List)	*Amenity Space, Accessory Retail Space*			

What is the Construction Type – select most appropriate type?

	☑ Wood Frame	Masonry	Steel Frame	Concrete

Describe the building?

Site Area:	32,412 SF	Building Area:	Approx. 100,000 GSF
Building Height:	55'-5"/ 65'-0" / 74'-11"	Number of Stories:	5 / 6 /6 plus Mezzanine
First Floor Elevation:	Varying, 71'-68' +/- across the site. *Final Elevation to be determined during Construction Drawing phase*	Are there below grade spaces:	*Yes /* ☑*No*

Assessment of Existing Infrastructure for Accessibility:

This section explores the proximity to accessible transit lines and proximate institutions such as, but not limited to hospitals, elderly and disabled housing, and general neighborhood information. The proponent should identify how the area surrounding the development is accessible for people with mobility impairments and should analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.

Provide a description of the development neighborhood and identifying characteristics.	3200 Washington Street is located in the Egleston Square section of Jamaica Plain, a culturally and socio-economically diverse neighborhood in Boston. 3200 Washington Street is bounded on one direction by Iffley Road and Montebello and the other by residences and Washington Street. The site is L shaped with approximately 200 feet on Washington street 200 feet on iffley and 175 feet on Montebello Road. The existing sidewalk along Washington Street is in good condition and has a depth that ranges from 10 feet to 14 feet. Currently there are no trees, benches or bicycle ranks on Washington Street in front of the project. Both Montebello and Iffley road slope steeply towards Franking Park. The urban context is comprised of multifamily structures of two and three families between Washington Street and Franklin Park with larger structures at both ends of Montebello and Iffley roads that act as bookends for the block. The scale of buildings varies From Washington Street towards the south-west corridor, ranging from houses to industrial buildings. Along Washington Street from the site towards Egleston Square the buildings are primarily commercial, with large buildings in footprint and height. Towards Forest Hills the buildings are mostly multifamily residential of different types for a number of block and commercial uses reappear around Green Street. Notably, across from the site is a seven to eight story brick building formerly used as a brewery that is currently used for storage
List the surrounding ADA compliant MBTA transit lines and the proximity to the development site: Commuter rail, subway, bus, etc.	Forest Hills MBTA Station (0.25 miles away – one block away along Hyde Park Avenue) • Orange Line Subway. Stony Brook Station 0.4 miles and Green Street Station 0.4 miles away. • Bus 42
List the surrounding institutions: hospitals, public housing and elderly and disabled housing developments, educational facilities, etc.	**Affordable/Public Housing:** Bromley Park, South Street, Heath Street, Woodbourne Apartments, Farnsworth House and others **School:** Manning Elementary, Match Community Day Charter Public School, Curley K-8 School, Boston Teachers Union School, Hennigan School and others. **Public Library:** Boston Public Library (Jamaica Plain Branch) **Community Center:** Curtis Hall Community Center, Hennigan Community Center **Police:** Boston Police District E-13 **Fire:** Engine 28 Fire Station **Hospitals:** Faulkner Hospital, Arbor Hospital, Lemuel Shattuck Hospital, Southern Jamaica Plain Health Center, Brookside Community Health Center, VA Boston Hospital, Ambulance 5 and 13, Paramedic 5

Is the proposed development on a priority accessible route to a key public use facility? List the surrounding: government buildings, libraries, community centers and recreational facilities and other related facilities.	**Recreation:** Franklin Park is located at end of Montebello and Iffley Road **Community Center:** YMCA Community Center at Egleston Square is two block away from the site. **Transit:** Site is located (0.4 miles) to Stoney Brook station connecting the site to major Boston public facilities.

Surrounding Site Conditions – Existing:

This section identifies the current condition of the sidewalks and pedestrian ramps around the development site.

Are there sidewalks and pedestrian ramps existing at the development site?	Yes
If yes above, list the existing sidewalk and pedestrian ramp materials and physical condition at the development site.	The existing sidewalk material is concrete with granite curbing. The physical condition of the existing concrete sidewalk and pedestrian ramps is good.
Are the sidewalks and pedestrian ramps existing-to-remain? If yes, have the sidewalks and pedestrian ramps been verified as compliant? If yes, please provide surveyors report.	Yes, sidewalks and pedestrian ramps to remain. No, the existing sidewalks and pedestrian ramps have not been verified as being in compliance at this time but will be verified during the project design.
Is the development site within a historic district? If yes, please identify.	The development team is not aware of the project site being located within an historic district.

Surrounding Site Conditions – Proposed

This section identifies the proposed condition of the walkways and pedestrian ramps in and around the development site. The width of the sidewalk contributes to the degree of comfort and enjoyment of walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Typically, a five foot wide Pedestrian Zone supports two people walking side by side or two wheelchairs passing each other. An eight foot wide Pedestrian Zone allows two pairs of people to comfortable pass each other, and a ten foot or wider Pedestrian Zone can support high volumes of pedestrians.

Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? See: www.bostoncompletestreets.org	Yes (pending confirmation of existing cross slopes and clearances).
If yes above, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, Boulevard.	Neighborhood Connector on Washington Street and Residential on Iffley and Montebello Road.
What is the total width of the proposed sidewalk? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone.	Washington Street: Frontage Zone - varies from 3'-4" to 15'-7"; Pedestrian Zone – 5'-6"; Greenspace/Furnishing Zone – 5'-0" for a total with of approximately 14' to 26'. Iffley Street: 6'-6". Montebello Road: varies from 6' to 8'-6".
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	Washington Street: Frontage – permeable unit pavers alternating with landscaped beds. The Frontage zone will be entirely on private property; Pedestrian – poured in place scored concrete pavement. The Pedestrian zone will encroach 6" onto private property but will otherwise be entirely within the right of way; Greenspace/Furnishing - poured in place scored concrete pavement alternating with trees planted in landscaped beds. Iffley Street: (All zones) poured in place scored concrete pavement. Montebello Road: (All zones) poured in place scored concrete pavement. Both are within the right of way.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the City of Boston Public Improvement Commission?	*N/A*
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way?	There are locations for potential outdoor seating but they are not within the pedestrian right-of-way. Other furnishings such as light poles and bicycle racks are in the greenspace/furnishings zone in the right of way.
If yes above, what are the proposed dimensions of the sidewalk café or furnishings and what will the right-of-way clearance be?	The seating area will be 7' wide and will be completely on private property. Furnishings in the greenspace/furnishings zone will not exceed 5'-0" in width. A 5'-6" unobstructed pedestrian zone will be maintained.

Proposed Accessible Parking:

See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability Handicap Parking Regulations.

What is the total number of parking spaces provided at the development site parking lot or garage?	36 spaces
What is the total number of accessible spaces provided at the development site?	2 spaces
Will any on street accessible parking spaces be required? If yes, has the proponent contacted the Commission for Persons with Disabilities and City of Boston Transportation Department regarding this need?	1 on street accessible space can be accommodated pending coordination with City departments
Where is accessible visitor parking located?	1 on street accessible space can be accommodated pending coordination with City departments. This will also function as the accessible visitor parking
Has a drop-off area been identified? If yes, will it be accessible?	No drop-off area.
Include a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations. Please include route distances.	See attached drawings **A1**

Circulation and Accessible Routes:

The primary objective in designing smooth and continuous paths of travel is to accommodate persons of all abilities that allow for universal access to entryways, common spaces and the visit-ability* of neighbors.

**Visit-ability – Neighbors ability to access and visit with neighbors without architectural barrier limitations*

Provide a diagram of the accessible	See drawings **A1 & A2**

route connections through the site.	
Describe accessibility at each entryway: Flush Condition, Stairs, Ramp Elevator.	Main entry from Washington Street will be a Flush Condition.
Are the accessible entrance and the standard entrance integrated?	Yes
If no above, what is the reason?	-
Will there be a roof deck or outdoor courtyard space? If yes, include diagram of the accessible route.	Plaza and roof deck will be accessible. See Attached **A2 & A6**
Has an accessible routes way-finding and signage package been developed? If yes, please describe.	Not yet but all future way finding signage will be developed to meet Building Code and Accessibility Board Requirements

Accessible Units: (If applicable)

In order to facilitate access to housing opportunities this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing choice.

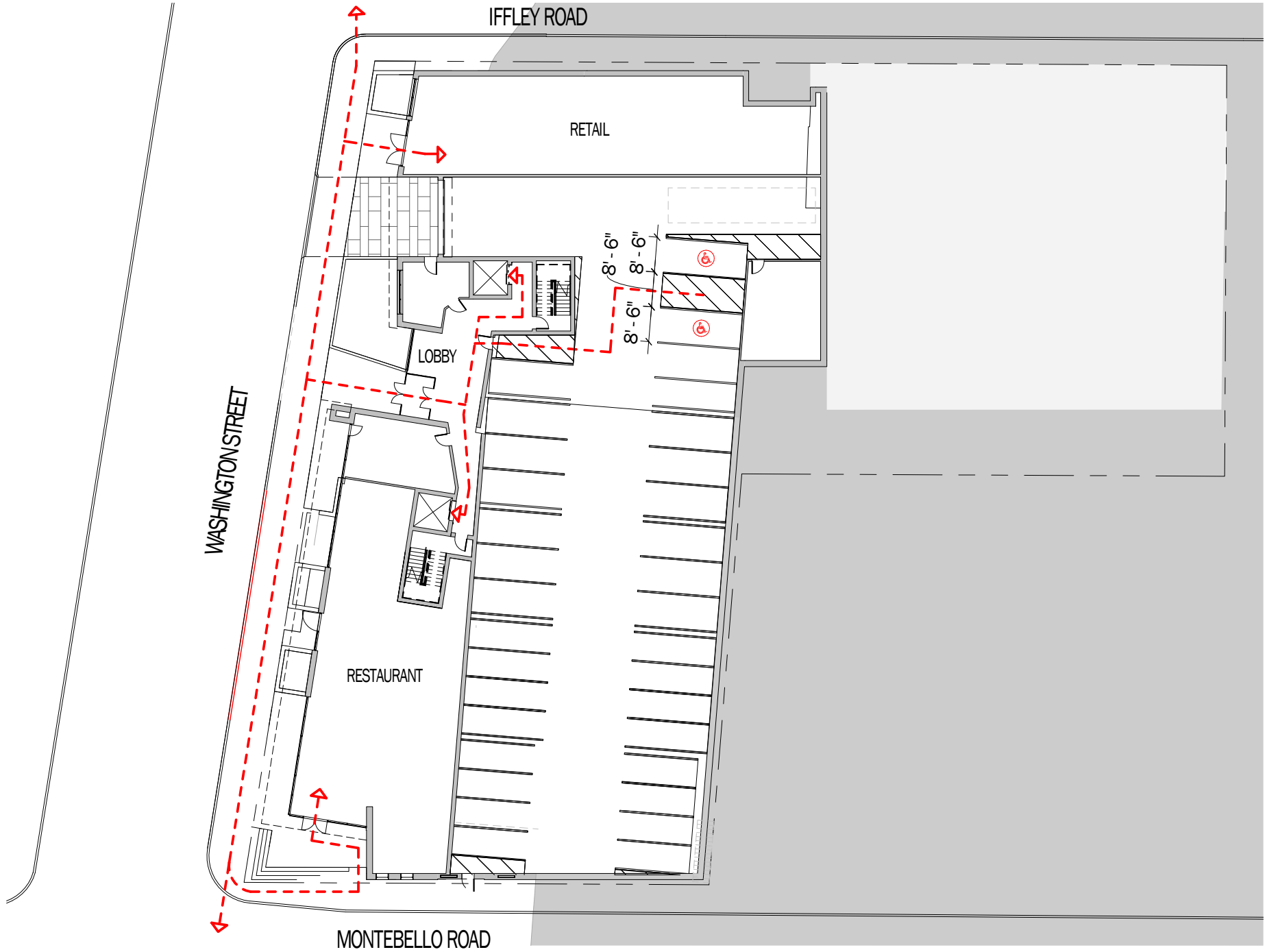
What is the total number of proposed units for the development?	76 units
How many units are for sale; how many are for rent? What is the market value vs. affordable breakdown?	73 rental apartment units 3 units for sale
How many accessible units are being proposed?	4 Accessible units
Please provide plan and diagram of the accessible units.	See attached drawing, **A1-A6**
How many accessible units will also be affordable? If none, please describe reason.	It will be a mix of affordable and market rate units. Final combination to be determined.

Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs at entry or step to balcony. **If yes,** please provide reason.	No
Has the proponent reviewed or presented the proposed plan to the City of Boston Mayor's Commission for Persons with Disabilities Advisory Board?	No
Did the Advisory Board vote to support this project? **If no,** what recommendations did the Advisory Board give to make this project more accessible?	Decision Pending

Thank you for completing the Accessibility Checklist!

For questions or comments about this checklist or accessibility practices, please contact:

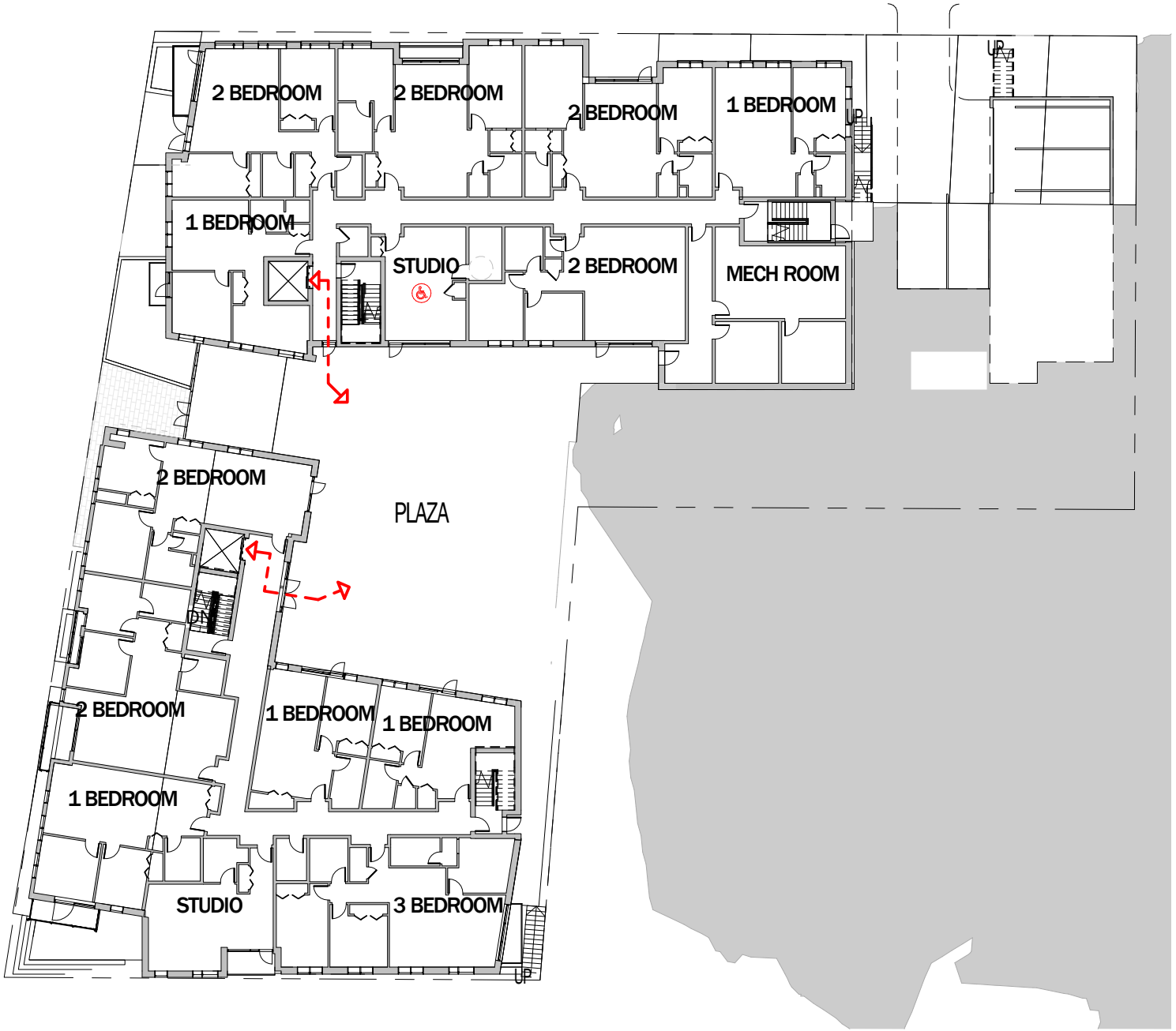
kathryn.quigley@boston.gov | Mayors Commission for Persons with Disabilities



RODE Architects

1ST FLOOR PLAN

A 1



RODE Architects

2ND FLOOR PLAN

A2


2 BEDROOM
993 SF
2 BEDROOM
1099 SF
2 BEDROOM
1075 SF
1 BEDROOM
775 SF
UP
UP
3 BEDROOM
1183 SF
13' - 0"
2 BEDROOM
851 SF
STUDIO
525 SF
2 BEDROOM
953 SF
3 BEDROOM
1208 SF
2 BEDROOM
1044 SF
2 BEDROOM
1122 SF
STUDIO
450 SF
2 BEDROOM
903 SF
1 BEDROOM
888 SF
STUDIO
555 SF
3 BEDROOM
1259 SF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2 BEDROOM
2 BEDROOM
1 BEDROOM
1 BEDROOM
9' - 6"
2 BEDROOM
STUDIO
2 BEDROOM
3 BEDROOM
ROOF DECK
STUDIO
2 BEDROOM
2 BEDROOM
3 BEDROOM

RODE
Architects Inc.

McDermott, Quilty & Miller LLP

MLF
CONSULTING LLC