# Expanded Project Notification Form

Submitted Pursuant to Article 80 of the Boston Zoning Code

# 61-83 Braintree Street

November 20 ,2013

*Submitted to:*
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

*Submitted by:*
The Waypoint Companies

*Prepared by:*
*Sinclair Development Solutions*

*In Associations with:*
*Neshamkin French, Inc.*
*GOODDESIGN*
*Howard Stein Hudson*

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NESHAMKIN FRENCH ARCHITECTS, INC



GOODDESIGN.
ALWIN ABAD

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# 1 Project Summary

# Chapter 1

*Summary*

## 1.1 Development Team

The Proponent has enlisted a team of professional Boston-based planners, architects, and consultants to assist them with the development of the Proposed Project. The Project Team is listed below:

| | |
|---|---|
| **Project Name:** | 61-83 Braintree St |
| **Location:** | 61-83 Braintree Street<br>Allston Ma, 02134 |
| **Developer:** | Waypoint Companies<br>115 Newbury St.<br>Boston, Ma 02116<br>P.617.536.0800<br>**Ed Champy**<br>**Kieran McAllen** |
| **Architect:** | Neshamkin French Architects, Inc.<br>5 Monument Square<br>Charlestown, Ma 02129<br>P.617.242.7422<br>**Linda Neshamkin, AIA** |
| **Permitting:** | Sinclair Development Solutions<br>44 Birch Street, Suite 1<br>Lynn, MA. 09102<br>P.617.759.4349<br>**Rodney Sinclair** |
| **Transportation:** | Howard Stein Hudson<br>38 Chauncy Street<br>Boston, MA 02111<br>P.508.482.7080<br>**Joe San Clamente** |

| | |
|---|---|
| **Civil Engineering:** | Howard Stein Hudson<br>38 Chauncy Street<br>Boston, MA 02111<br>P.508.482.7080<br>**Richard Latini** |
| **Legal Counsel:** | Kara Law Offices<br>10 Post Office Square<br>Boston, MA. 02109<br>**Andrew Kara** |
| **Graphic Design:** | GOODDESIGN<br>44 Birch Street, Suite 2<br>Lynn, MA. 01902<br>P.781.558.7385<br>**Alwin Abad** |
| **Acoustical Engineer:** | Lightship Engineering, LLC<br>39 Industrial Park Road, Suite C<br>Plymouth, MA. 02360<br>**Brian LaPierre** |
| **Wind Consultants:** | Rowan Williams Davies & Irwin Inc.<br>650 Woodlawn Road<br>West Guelph Ontario, Canada<br>**Glenn Shuyler, M.A.Sc., P.Eng** |

## 1.2 Introduction

61-83 Braintree Street is a new and upcoming residential area for young professionals seeking to take the step from living with their peers to living on their own. With a great location in Allston close to downtown Boston there are always plenty of great things to do. Prices are always much more affordable than areas a little closer to the City. Location and affordable prices will make this new building appealing to those looking for a great option in a burgeoning community!

Allston has much to offer the young professional. With local bars, great restaurants, and easy access to Fenway, Back Bay, Copley, and Downtown there are few places like it in Boston. Just a subway ride away from Kenmore, you can eat a hot dog while cheering for the Boston Red Sox at Fenway Park. You can take a stroll along the Public Gardens, or do some shopping on our famous Newbury Street. The building has easy access to I-90, Memorial Drive, and Storrow Drive, also making it easy to access the highway and go to New Hampshire or New York City for the weekend.

The Waypoint Companies are proposing to bring Braintree Street back to life by bringing people to its streets after 6pm. With the area growing in population, Waypoint is aiming to accommodate young professionals who are transitioning from a place with their friends and classmates to a place of their own. Waypoint is also targeting young professionals and young couples who may or may not have children, but

are thinking about growing their families in the future. 61-83 Braintree will be their stepping stone to adulthood. Because this marketing approach is driving the project, the building will consist mainly of studio and one bedroom units with a only a few two and three beds available to small families.

Affordability is always a top concern for young people no matter where they are from or live. In a city growing in population and price, it's more and more important to keep prices low and affordable so as to provide maximum opportunity. We began this process talking with local realtors and sales agents and believe that we can offer a quality living experience at a price that is affordable and better than other options.

As a developer, Waypoint has developed hundreds of sites. They are a familiar company in the Boston area and maintain strong relationships with many contractors, suppliers, and local trades. They hire local and keep money circulating through the communities. They are experienced contractors and landlords. They employ young people and help to train them to become successful professionals. Their mission as a company has left its mark on this project. Waypoint envisions a place for young people to grow; professionally, artistically, and holistically. A home is where you rest and must be conducive to your frame of thought. 61-83 will bring life to an otherwise hard, back street, and isolated neighborhood.

## 1.3 Project Overview

This Project Notification Form (PNF) was written to describe in full The Waypoint Companies' proposal for 61-83 Braintree Street in Allston, MA. The project is located in a Light Industrial Zone, but the character of the surrounding community is much more diverse than the local zoning gives it credit for. The neighborhood has a mix of back door business, commercial tenancies, and residential nooks. The community's diversity is in large part the driving force behind this proposal. And the economics of the residents and workers allows for a successful rental project of this scale and design.

The proposal calls for the demolition of 2 existing buildings totaling approximately 30,000 square feet. The site has some environmental remediation that will take place on a small portion of the site. Once cleared an 80-unit rental project will take its place. The building will be approximately 93,000 square feet and will contain 2,550 square feet of commercial space and hold 67 parking spaces in an underground parking facility and 2 at-grade truck deck spaces.

## 1.4 Existing Conditions

### 1.4.1 Project Site

The project is located at 61-83 Braintree Street in the Allston neighborhood of Boston (see Map 1, and 2). The existing site contains 52,258 square feet, part of which is occupied by two existing buildings operated by Thompson Durkee, Co. The buildings are two stories in height and contain

approximately 30,000 square feet of warehouse and office space. Thompson Durkee, Co. has been in operation at the site for over 100 years.

### 1.4.2 Surrounding Community

Braintree Street is located in the Allston neighborhood of Boston, Massachusetts. The Allston neighborhood is effectively the northern most tip of the City of Boston. With Western Avenue and Interstate 90 serving as landmark borders, it rides across the top of Boston from East to West separating Boston from Cambridge, Watertown, and Waltham (see Figure 1.2, Google Map of Allston). Braintree Street abuts the interstate. As Interstates were built, the abutting streets usually turned into back streets that people forgot about. Industrial businesses began utilizing these undesirable streets because of their low costing rent.

But that is not the story of Allston and Brighton. Today these two communities are bustling with energy! Their character is rich with students, young professionals, schools, funky businesses, good food, bars and restaurants. Right at the corner of Cambridge and Brighton Ave you will find Taqueria El Carrizal, a Mexican restaurant with the most delicious tacos this side of the Charles. There's Treats on Washington, a café / bakery, right up Washington Street. There's new developments, like the New Balance Master Plan that is underway. 533 Cambridge Street, a 44 unit condo project built a few years ago, that is fully occupied and looks amazing! There's 119 Braintree Street, a commercial building rich with artistic businesses (see Figure 1.3, Community Context).

The immediate surrounding neighborhood has a rich mix of businesses, homes, and commercial buildings. Braintree Street moves from east to west and is parallel to the Massachusetts Interstate Highway 1-90. Moving north to south, Braintree Street has a number of streets that connect to it. Moving from left to right those connector streets are Everett Street, Blain Street, Hano Street, Penniman Road, Denby Road, Rugg Road, Wilton Street, finally coming to an end on Franklin Street (see Figure 1.4, Oblique View). Along Braintree Street the buildings vary in height from the one story ADI Global building on the corner of Wilton and Braintree Street to the seven story commercial building at 119 Braintree. Most of the buildings on Braintree Street are commercial in use while the side streets grow in their residential qualities. For years Braintree Street was a back road housing mostly industrial buildings and tenants. Today, it is a mix very much representative of the larger Allston community.

## 1.5 Proposed Project

### 1.5.1 Proposed Site Plan

Waypoint proposes to demolish the buildings currently occupying the Project Site. Both buildings will be demolished, the site will be cleared of its old soil and new soil will be brought in, and a 93,000 square foot residential building will be erected (see Figure 1, Proposed Site Plan). The building will cover approximately 75% of the total site allowing for landscaped green open space in the rear. The first floor of the building will be brought back 5 feet from the normal sidewalk line to allow for sidewalks that are larger and provide more room for pedestrian activity. This will also be supported by bringing the trees into the parking lane so to maintain a green environment, but allow for maximum pedestrian enjoyment of the sidewalk area. The rear of the building will also be landscaped. There will be a walking path, many trees for sitting under, and public art provided by local artists.

### 1.5.2 Proposed Building Program

The building will contain 80 residential rental units, 67 underground parking spaces, 2 truck deck parking spaces, and 1 commercial space for a total gross square footage of approximately 93,000 square feet. The proposed building program, unit count and locations are as follows:

| Table 1-1: Building Program | |
|---|---|
| | |
| Use #1 | Residential |
| Use #2 | Commercial |
| Use #3 | Parking |
| Use #4 | Deck |
| | |
| Total Lot Area | 30551 |
| Total Building Square Footage | 92292 |
| Total Lot Coverage% | 75% |
| Number of Stories | 5 |
| Height of stories | 14' & 10.5' |
| | |
| Number of Residential Units | 80 |
| Total SF of Residential Space | 73429 |
| Number of Commercial Units | 1 |
| Total SF of Commercial Space | 2550 |
| Total SF of Deck Space | 4894 |
| | |
| Total Parking Spaces | 67 |
| Total Interior Parking | 67 |
| Total Exterior Parking | 0 |

| Table: 1-2: Unit Location | | | | |
|---|---|---|---|---|
| **Level** | **1 Bed + Den** | **Studio** | **2 Bed** | **3 Bed** |
| 1 | 1 | 0 | 0 | 0 |
| 2 | 8 | 11 | 1 | 1 |
| 3 | 8 | 11 | 1 | 1 |
| 4 | 8 | 11 | 1 | 1 |
| 5 | 6 | 8 | 1 | 1 |
| Sub Total | 31 | 41 | 4 | 4 |
| **Total** | | **80** | | |

## 1.6 Public Benefits

According to the Greater Boston Association of Realtors the supply in the Allston-Brighton neighborhood of for-sale condominiums has dropped by more than 31% from the same time last year. This is not just a phenomenon found in Allston-Brighton, this is happening all around the country. The amount of inventory available to people in the City of Boston has forced many people to look for alternative housing, such as rentals. By putting 80 units onto the Boston market we will be supplying everyday people with quality housing at an affordable price.

Through compliance with the Mayor's Executive Policy for Affordable Housing and the Boston Redevelopment Authority's Inclusionary Development Policy, the Proposed Project will deed 11 units to low-income families from Boston. The rental units will be given to families making a range of incomes and the units will be mixed into the 4 stories of units found at the Project Site.
The Project Site currently houses 2 commercial buildings, which are in dilapidated states. The buildings will be demolished and the site will be environmentally cleaned. There is over $600,000 of soil that will be taken from the site and replaced.

The new building will be Platinum Certifiable under the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED) Standards. To reduce the "environmental footprint" of the Project, the proponent is committed to the ongoing integration of sustainable design throughout the Project's design, construction, operation and occupancy. A multi-disciplinary "green team" of consultants is working with the proponent to identify and evaluate opportunities for integrating sustainability into the Project at both the master plan and individual project level.

The Proposed Project also falls within the Guest Street Planning Study Area. Because of this location Waypoint is committed to furthering the design and dimensional requirements set forth in the Guest Street Planning Study. The specific ways in which this will benefit the community is by designing a pedestrian friendly environment on Braintree Street. Such design improvements will include the widening of Braintree Street along the Project Site to allow for better pedestrian circulation and potential commercial space engagement into the public realm. Waypoint also proposes to design the Braintree Streetscape in a way that beautifies the area and creates a connection to other Guest Street Planning Study buildings. This cohesive approach to streetscape design creates an environment that has thoughtful design, functional pedestrian and vehicular spaces, and an overall beautiful neighborhood.

The Proposed Project will benefit the City of Boston by doing the following:

1. Create affordable rental options for low-income Boston families;

2. Add jobs to the local economy;

3. Support the Arts community;

4. Build a state-of-the-art sustainable green building; and

5. Furthering the Guest Street Planning Study Design Guidelines.

### 1.6.1 Create Affordable Housing

In 2000, Mayor Menino made a promise to add 7,500 housing units to the City of Boston's supply over the next 3 years. His vision was named Leading the Way, and incorporated strategies from across all of the City's departments to ensure its success.

Leading the Way opened the doors for the creation of Mayor Menino's Executive Order for Affordable Housing, which gave the Boston Redevelopment Authority the ability to initiate its very own Inclusionary Development Policy. The Inclusionary Development Policy mandates that any development over 10 units must deed a certain percentage of the units as affordable units.

Deeding units as affordable allows for families who qualify under the income verification process and qualify for a loan to have an opportunity to rent a market rate unit for a price that's lower and more affordable than the normal market rent.

Waypoint will fulfill all requirements found under Mayor Menino's Executive Order on Affordable Housing dated May 16, 2006, by providing eleven 11 affordably priced rental units. The pricing of the units will be in accordance with the BRA's 2013 Income and rental limits chart. The units designated affordable under the policy will be rented within a range of prices as

determined by the policy. The price determination is a combination of the size of the unit, 1-3 bedrooms, and the size of the family to occupy the unit, 1-4 persons.

Out of 80 units Waypoint will deed 11 units affordable. As a practice, Waypoint will create a mix of unit types and affordability levels for the 11 units. The following chart communicates the affordability levels of the affordable units:

Table 1-3: Affordable Units

| Unit Type | Unit Count | Unit Size (sf) | Affordable % | Affordable Price |
|---|---|---|---|---|
| Studios | 41 | 529 | 120% | $1,755 |
| One Bed Plus Den | 31 | 803 | 110% | $1,878 |
| Two Bedrooms | 4 | 1413 | 100% | $1,950 |
| Three Bedrooms | 4 | 1040 | 90% | $1,974 |
| Commercial | 1 | 5900 | Market | TBD |

The designated units are held in a lottery, facilitated by the Fair Housing Commission. The units are marketed across the state, according to Fair Housing marketing by-laws, and the lottery is held in a designated place, at a designated time. All Boston residents will have an opportunity to apply for these units through the City of Boston's income certification processes.

### 1.6.2 Create Jobs

Waypoint is a community builder and as such will strive to exceed the requirements of the Boston Residency Jobs Policy, which determines the minimum number of minorities, women, and Boston residents on a job site at any one given time. The program is monitored by the Mayor's Office of Jobs and Community Service through their Compliance Department and prior to and through construction, there will be a designated area on the Project Site for the obtainment of applications so that Boston residents can have access to potential employment opportunities on the job site. Waypoint is committed to going above and beyond the marketing requirements for this program and will work diligently with community leaders to make sure all Boston residents have an opportunity for employment on this project.

### 1.6.3 Build a state-of-the-art LEED Silver New Construction Building

Our team is committed to incorporating environmentally sensitive, sustainable design elements into Braintree Street development. These elements will improve the quality of life for the residents of this project as well as the neighborhood, while helping to protect the global environment. Ultimately they will also reduce operating costs while increasing value for the project, improving its business viability.

We are committed to identifying opportunities presented by the redevelopment by setting proactive goals and ensuring an undertaking that is LEED Gold certifiable as a minimum and satisfies the requirements of the City of Boston Environment Department.

Through our development we will incorporate LEED Design Elements by way of the following categories:

1. Sustainable Sites;
2. Water Efficiency;
3. Energy and Atmosphere;
4. Materials and Resources;
5. Indoor Environmental Quality; and
6. Innovative and Design Process

#### 1.6.3.1 Sustainable Sites

The following credits are related to the Sustainable Site section of the LEED credit checklist. In this section we are proposing to earn a total of 10 credits towards our LEED certifiability:

1. Construction Activity (Prerequisite) There will be management plan developed in accordance with all the laws and codes to insure surrounding areas are safe and secure through the construction process.

2. Site Selection (Credit 1) The Project Site has had an existing building onsite for many years. The site is located in an urban area and does not violate any of the established criteria.

3. Community Connectivity (Credit 2) The Project Site is located in the Allston-Brighton neighborhood of Boston. It is located within 300 yards from a multitude of businesses and services. It is also located adjacent to a residential neighborhood, which is thickly settled with 3 and 3 family homes.

4. Alternative Transportation (Credits 4.1, 4.2, 4.3, 4.4) Public transportation access is provided. The project is in close proximity to a newly funded Commuter Rail Station. Secure bicycle storage facilities serving the occupants will be provided. Preferred parking spaces for car sharing services, such as Zipcar, will be provided. Bicycle storage for 80 bicycles will also be made available.

5. Stormwater Design (Credits 6.1, 6.2) The Project proposes to pursue a stormwater treatment program

6. Heat Island Effects (Credits 7.1, 7.2) More than fifty percent of parking is located inside the building.

### 1.6.3.2 Water Efficiency

The following credits are related to the Water Efficiency section of the LEED credit checklist. In this section we are proposing to earn a total of 4 credits towards our LEED certifiability:

1. Water Efficient Landscaping (Credits 1.1, 1.2) Strategies Utilization of captured rainwater and high-efficiency irrigation will be pursued to reduce potable water consumption by 50% over conventional means.

2. Water Use Reduction (Credits 3.1, 3.2) There will be low flow and low consumption plumbing fixtures used to further reduce waste usage by 20-30 % under the usual baseline.

### 1.6.3.3 Energy and Atmosphere

The following credits are related to the Energy and Atmosphere section of the LEED credit checklist. In this section we are proposing to earn a total of 4 credits towards our LEED certifiability:

1. Fundamental Commissioning (Prerequisite 1) Commissioning of the Mechanical and Electric building systems will be accomplished.

2. Minimum Energy Performance (Prerequisite 2) The energy code utilized for the Project will be the Massachusetts Building Code, Article 13, at a minimum, and ASHRAE Standard 90.1-2004, which is more stringent than the present Massachusetts Energy Code, may be used as an alternate.

3. Refrigerant Management (Prerequisite 3) Non-CFC-based refrigerants will be evaluated for the Project.

4. Optimize Energy Performance (Credit 1) We are pursuing strategies to bring the building's performance below the Energy Code minimum.

5. Enhanced Commissioning (Credit 3) An independent commissioning authority will be employed to perform on-board design reviews and re-commission the building systems after occupancy.

6. Enhanced Refrigerant Management (Credit 4) Air conditioning equipment refrigerant options will be evaluated to optimize the balance between ozone-depletion and global warming/greenhouse gas production effects.

7. Measurement and Verification (Credit 5) The appropriate use of measurement and verification equipment will be evaluated as building systems are selected. The Project is expected to perform on-going building management reviews of system operation, environmental conditions and indoor air quality, energy and water use, and the potential for improvements and innovations.

### 1.6.3.4 Materials and Resources

The following credits are related to the Materials and Resources section of the LEED credit checklist. In this section we are proposing to earn a total of 4 credits towards our LEED certifiability:

1. Storage and Collection of Recyclables (Prerequisite) Facilities are expected to be provided at each residential floor level for collection of recyclable materials.

2. Construction Waste Management (Credits 2.1) The Construction Manager will implement a waste management plan that will seek to divert at least 50% of construction and demolition waste material removed from the site from landfills through recycling and salvaging.

3. Recycled Content (Credits 4.1, 4.2) Project Specifications will include, track and encourage provision of materials with recycled content where practical.

4. Certified Wood (Credit 7) Project Specifications will include, track and encourage provision of these materials where practical.

### 1.6.3.5 Indoor Environmental Quality

The following credits are related to the Indoor Environmental section of the LEED credit checklist. In this section we are proposing to earn a total of 13 credits towards our LEED certifiability:

1. Minimum IAQ Performance (Prerequisite 1)

2. Environmental Tobacco Smoke Control (Prerequisite 2) The Proponent intends to designate the entire building as a non-smoking facility. In addition, positively pressurized corridors are being investigated to minimize environmental smoke from migrating between private and common areas.

3. Outdoor Air Delivery (CO2) Monitoring (Credit 1) A permanent carbon dioxide monitoring system will be investigated for use in common areas to provide feedback on ventilation system operation to ensure that the systems maintain design minimum requirements. In addition, each residential unit shall be equipped with carbon monoxide monitoring.

4. Construction IAQ Management Plan (Credits 3.1, 3.2) Management plans are expected to be implemented per the requirements of these credits.

5. Low-Emitting Materials (Credits 4.1, 4.2, 4.3, 4.4) Adhesives, sealants, paint, and carpet are expected to be specified with low VOC content limits as prescribed by the respective applicable standards. Composite wood products will be investigated further during design.

6. Indoor Chemical and Pollutant Source Control (Credit 5) A permanent entryway system is expected to be installed at the building entrance to prevent air contaminants from entering the building. Housekeeping and laundry areas are expected to be separated and exhausted to outside to comply with the requirements of this credit. Air handling units are expected to be provided with appropriate filtration to meet the credit.

7. Controllability of Systems (Credits 6.1, 6.2) Individual lighting and temperature controls are expected to meet the minimum requirements of these credits.

8. Thermal Comfort (Credit 7.1)

9. Daylight and Views (Credits 8.1, 8.2) Daylight exposure will be designed to ensure compliance with the requirements of the credit. Exterior views are expected to be maximized.

### 1.6.3.6 Innovation and Design Process

The following credits are related to the Innovation and Design Process section of the LEED credit checklist. In this section we are proposing to earn a total of 6 credits towards our LEED certifiability:

1. High Efficiency Traction Elevator (Credit 1.1) The proponent intends to provide a high efficiency elevator, Otis Gen Set or similar.

2. Green Housekeeping (Credit 1.2) The Proponent intends to engage in a green housekeeping policy wherein all cleaners used in common areas shall comply with the Green Seal standard GS-37.

3. Tenant Education and Guidelines (Credit 1.3) The Proponent intends to develop Green tenant guidelines, educational programs, and resources for residents within the building.

4. Chemical-free Water Treatment (Credit 1.4) The use of chemical-free water treatment for cooling towers and boilers shall be evaluated as design progresses.

5. Energy Star Appliances (Credit 1.5) The Project will seek to reduce overall non-regulated energy use by utilizing Energy Star appliances.

6. LEED Accredited Professional (Credit 2) Hilary Holmes, Howard Stein Hudson, is out LEED Accredited Professional staff member on the team.

## 1.6.4 Guest Street Planning Study

The Proposed Project began in concept with the Guest Street Planning Study. For long, Guest Street has been in close proximity to Allston's economic center. But the decline of the industrial manufacturing center of America has led to the underutilization of many parcels of land across Boston's industrial neighborhoods.

With a back door to the vibrant Harvard Avenue, Braintree Street has long been a non-factor in the growth and populization of Allston and it's Brighton neighbor. Through our Proposed Project, we will bring back the vitality of Braintree Street by bringing 24 hour a day residents, who will walk, shop, meet, relax, along the new Braintree Street, connected to its core and finally an extension of the energy that makes Allston, Allston.

We are connecting with the Guest Street Study in the following 4 ways:

1. Economics;

2. Transportation;

3. Urban Design; and

4. Density and Building Height

### 1.6.5 Support Local Artists

Allston has grown to be a Mecca for young artists from across the City of Boston. Its diverse demographics and eclectic community character have made it a place to be. Many Bostonians of all ages travel to Allston for its interesting shops, farmers markets, and diverse eating options. At 63 Braintree Street we would like to support local artists by brining art to our building by way of a supportive program as well as by making our building a piece of art. We plan on achieving this goal in a number of ways:

1. By creating an exciting and innovative design to showcase architecture as a form of art;

2. By identifying ways we can display local art in and around the building; and

3. By identifying local artists to serve as liaisons to the larger arts community.

The first thing we have done is looked for ways to make our building a piece of art. We are attempting to do this by looking for opportunities to design focal points in the building that will draw the eye and attention and serve as a piece of art that can be reflected on by those walking by or utilizing the building.

We also plan on identifying ways we can display local art and supporting local artists in their dream to become a professional artist. We will do this by working with local artists to identify ways they feel are the most effective strategies for bringing art to the building. These artists will serve as liaisons to the larger arts community and will aid our team in our efforts to create a fun, exciting, and supportive program centered on highlighting the arts.

We will market these opportunities by working with local non-profits, local community organizations, and new outlets to ensure we are getting the word out to as many people as possible so that everyone in the City of Boston has the chance to participate in our project.

## 1.7 Review and Approvals

### 1.7.1 Article 80 Review Process

This document is being submitted to the BRA as part of the Article 80B, Large Project Review process. A scoping session and a community meeting are expected to occur prior to the issuance of a Scoping Determination.

This project will be assigned an Impact Advisory Group (IAG), which will be made up of members of the community who are invested in their community and want to weigh in on the impacts of development in their community. The IAG members will be liaisons to their community serving as a credible intermediary between the developers and the community they are impacting.

### 1.7.2 Boston Civic Design Commission

The Project will not exceed 100,000 square feet as is the primary threshold of the Commission, but as stated in Section 28 of the Code, any project that falls within a Design District, is subject to the Commission's review. The Proposed Project is also 93,000 square feet and as such still has a significant impact on the public realm and as such will be reviewed by the Commission.

### 1.7.3 Summary of Required Permits and Approvals

The project expects to secure many local permits and approvals prior to commencement of construction. The following is a list of these anticipated permits and approvals:

Table 1-4: Anticipated Permits, Reviews and Approvals

| Agency Name | Permit, Review or Approval |
|---|---|
| **FEDERAL** | |
| United States Environmental Protection Agency | National Pollution Discharge Elimination System |
| **STATE** | |
| Executive Office of Environmental Affairs (MEPA Unit) | Secretary's Certificate |
| Massachusetts Historical Commission | State Register Review |
| Department of Environmental Protection, Division of Water Pollution Control | Sewer Connection and Extension Permit |
| Massachusetts Water Resources Authority | Sewer Use Discharge Permit |
| **LOCAL** | |
| Boston Redevelopment Authority | Article 80 Large Project Review; |
| Boston Civic Design Commission | Approval of Schematic Design |
| Boston Transportation Department | Transportation Access Plan Agreement; |
| Boston Inspectional Services Department | Building and Occupancy Permits |
| Boston Water and Sewer Commission | Sewer Extension/ Connection Permit; |
| Boston Committee on Licenses | Parking Garage License; |
| Public Works Department/Public Improvement Commission | Curb Cut Permits; Street Discontinuances and Acceptances; Specific Repairs |
| Boston Parks Commission | Approval of construction within 100 feet of a park |

## 1.8 Consistency with Zoning

### 1.8.1 Zoning Districts

As shown on Figure 3, Allston-Brighton Neighborhood Zoning Cod - Map 7, the Project Site is located within the Allston-Brighton Neighborhood District, governed by Article 51 of Boston Zoning Code and is also located in the Local Industrial Sub District (see Figure 1.6, Map 7, Allston Brighton).

### 1.8.2 Permitted Uses

The Proposed Project calls for the creation of multi-family residential use as well as commercial use on the first floor. The Proposed Project also calls for underground parking use for the 69 parking spaces projected to be on site.

### 1.8.3 Dimensional Requirements

As per Figure 4, Article 51, Table F, the Proposed Project will either comply with or request a variance from the City of Boston Zoning Board of Appeal for the following dimensional requirements: Minimum Lot Size, Minimum Lot Area, Minimum Lot Width, Maximum Floor Area Ratio, Maximum Building Height, Usable Open Space Per Dwelling Unit, Minimum Front Yard, Minimum Side Yard, and Minimum Rear Yard.

### 1.8.4 Floor Area Ratio

The Maximum Floor Area Ratio allowed by the LI Sub District in Article 51 is 1.00. The Proposed Project is a residential project, of which the residential use is normally not allowed in an Industrial sub district. For the Proposed Project Waypoint is proposing a FAR of 2.98 and will be seeking a variance from the Zoning Board of Appeal.

### 1.8.5 Maximum Building Height

The Maximum Building Height allowed by the LI Sub District in Article 51 is 35 feet. The Proposed Project calls for 5 stories of residential living space and as such is proposing a building height of 57 feet. Waypoint will be requesting a variance from the Zoning Board of Appeal.

### 1.8.6 Dimensional Requirements: Not Applicable

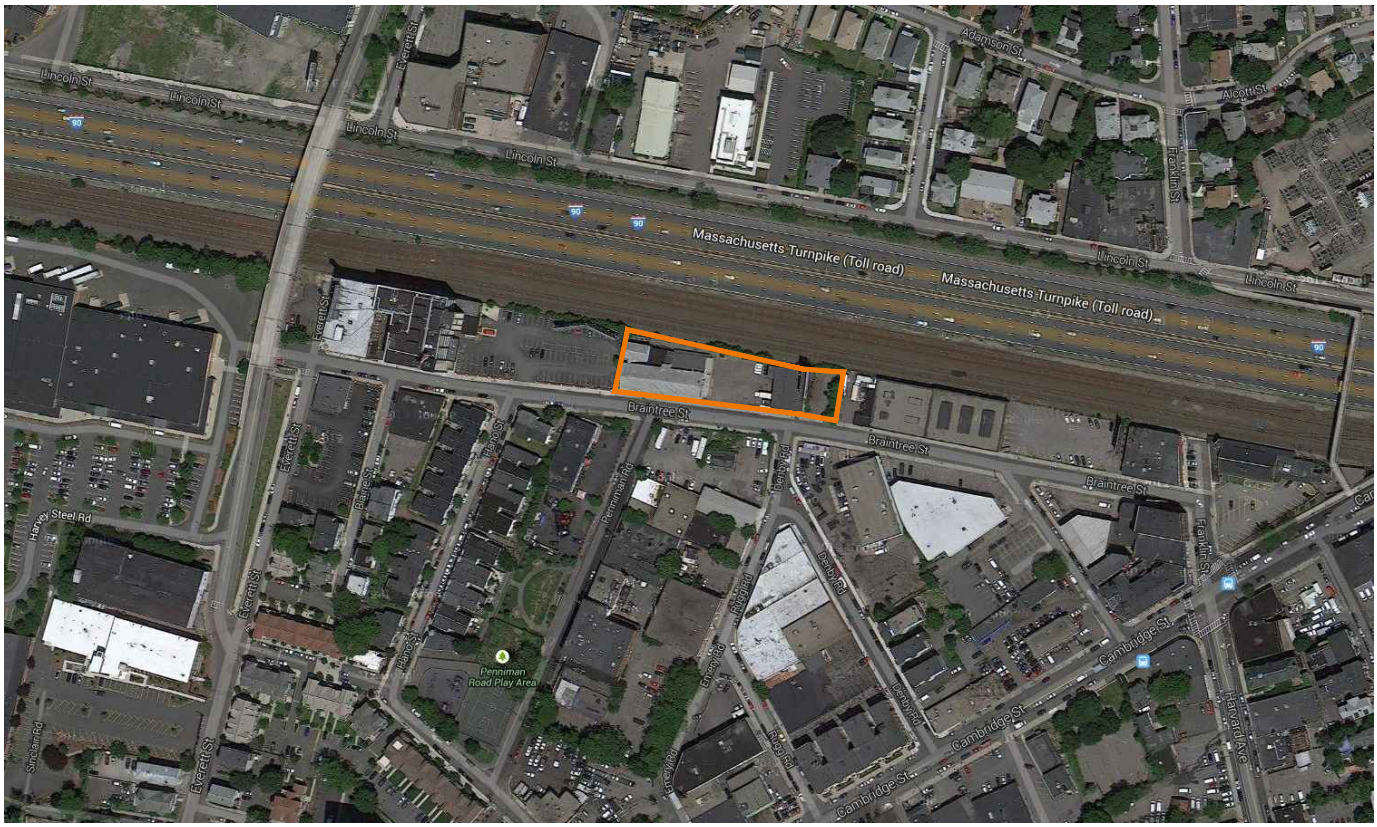
The following dimensional requirements are not applicable in a Light Industrial Sub District: Minimum Lot Size, Minimum Lot Area, Minimum Lot Width, Usable Open Space Per Dwelling Unit, Minimum Front Yard, Minimum Side Yard, and Minimum Rear Yard.

### 1.8.7 Off-Street Parking and Loading

In the Allston  Brighton neighborhood Zoning Code, specifically Article 51-56, off-street parking and loading requirements for projects are subject to Article 80B Large Project Review and are determined through the course of the Article 80B Large Project Review process. The Proposed Project's parking and loading facilities will also be subject to review through the Article 80B process and are further described in Section 3.2.2 of this PNF. In summary, a total of 69 underground parking spaces are proposed for the development. Loading activities will be accommodated in designated facilities on the Project Site.

Figure 1.1, Locus Aerial Map

Figure 1.2, Google Map of Allston




SATELLITE PHOTO

Neshamkin French Architects, Inc.

Figure 1.3, Community Context

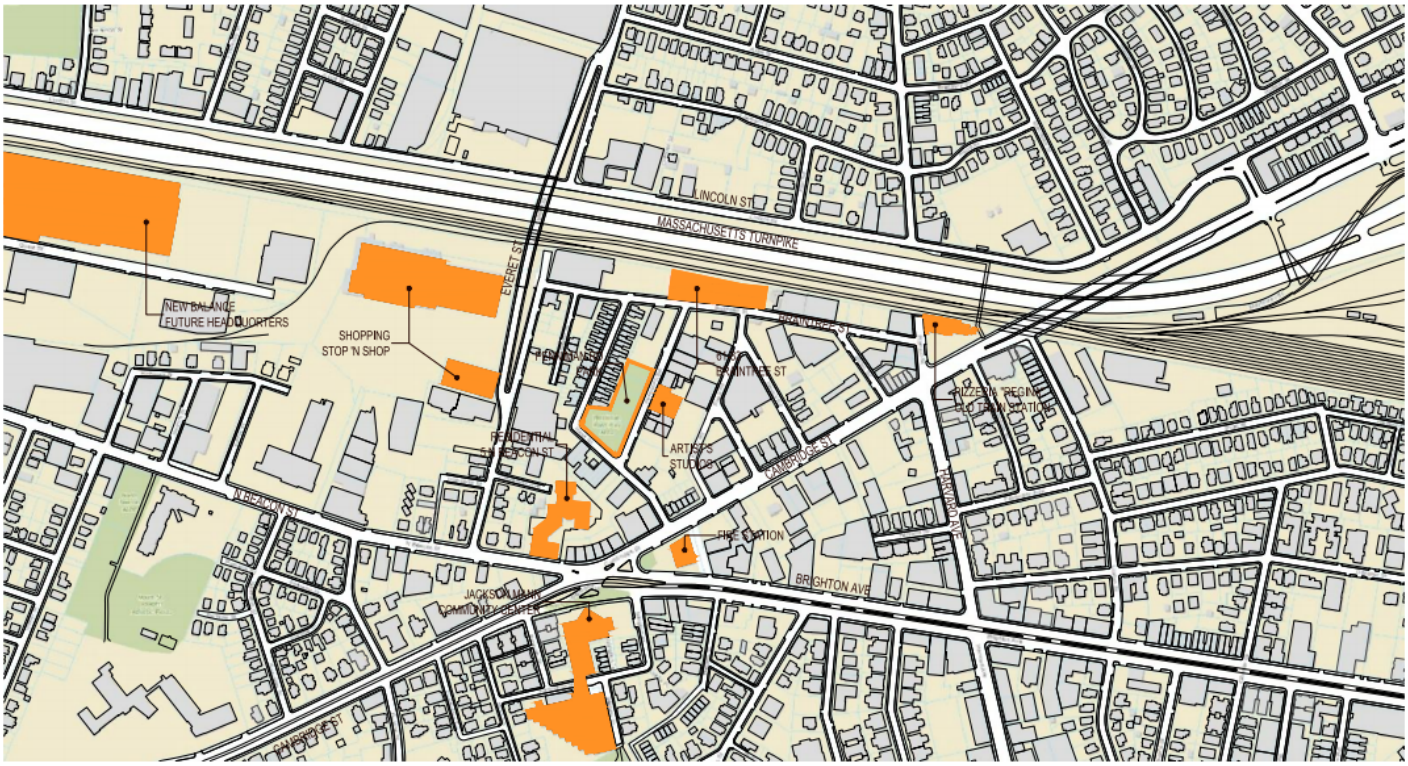


Figure 1.4, Oblique View

Figure 1.5, Proposed Site Plan

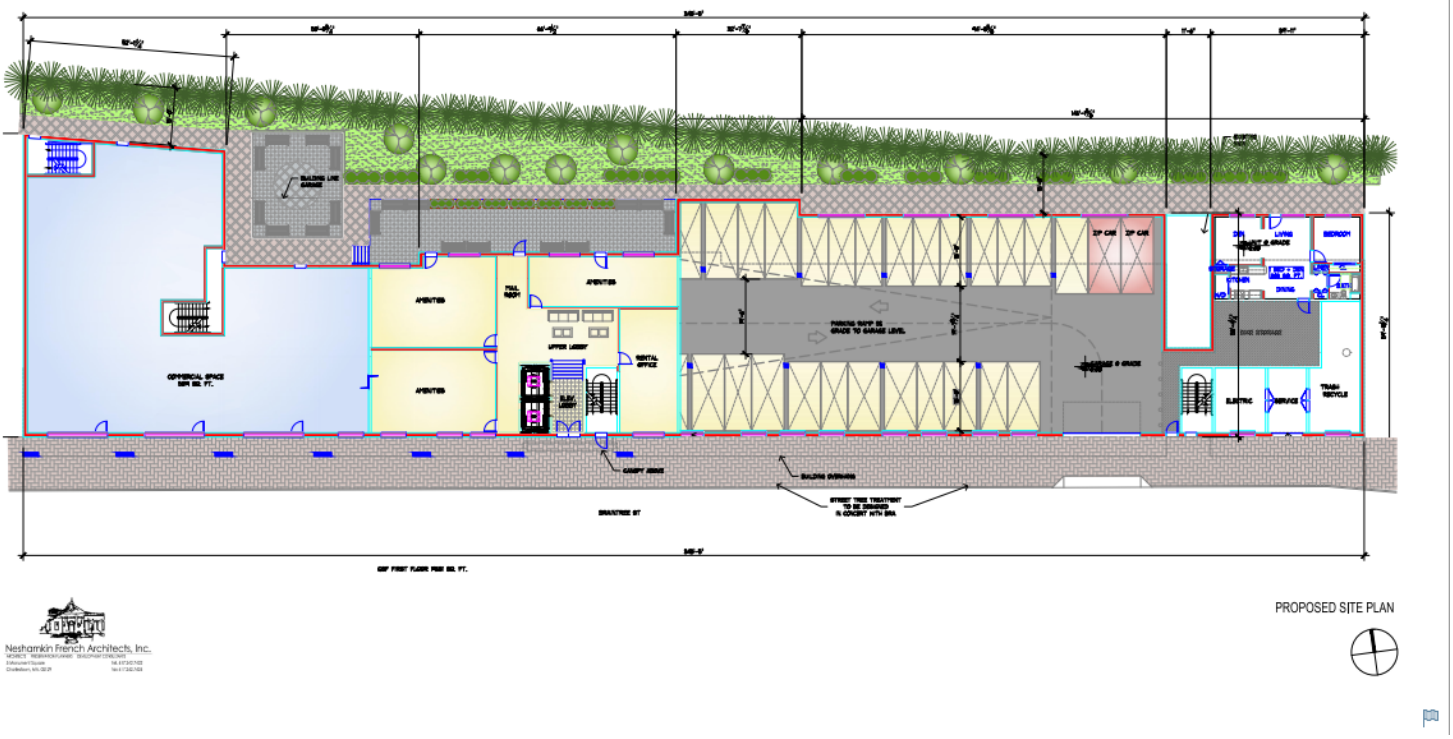


Figure 1.6, Table F, Article 51

TABLE F

Allston-Brighton Neighborhood District

Local Industrial Subdistricts
Dimensional Regulations(1)

| | North Beacon Street | Goodenough Street | Linden Street | Braintree Street | Guest Street | Newton Street | Holton Street | Ashford Street |
|---|---|---|---|---|---|---|---|---|
| Maximum Floor Area Ratio | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 | 1.0 | 1.0 |
| Maximum Building Height | 35 | 35 | 35 | 35 | 45 | 35 | 35 | 35 |
| Minimum Lot Size | none | none | none | none | none | none | none | none |
| Minimum Lot Area Per Dwelling Unit | none | none | none | none | none | none | none | none |
| Minimum Usable Open Space (Square Feet per Dwelling Unit) | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Minimum Lot Width | none | none | none | none | none | none | none | none |
| Minimum Lot Frontage | none | none | none | none | none | none | none | none |
| Minimum Front Yard | none(2) | none(2) | none(2) | none(2) | 5 | none(2) | none(2) | none(2) |
| Minimum Side Yard | none | none | none | none | none | none | none | none |
| Minimum Rear Yard | 20 | 20 | 20 | 20 | 12 | 20 | 20 | 20 |

*ARTICLE 51 - ALLSTON-BRIGHTON NEIGHBORHOOD DISTRICT - TABLE F* 85

Figure 1.7, Map 7, Article 51

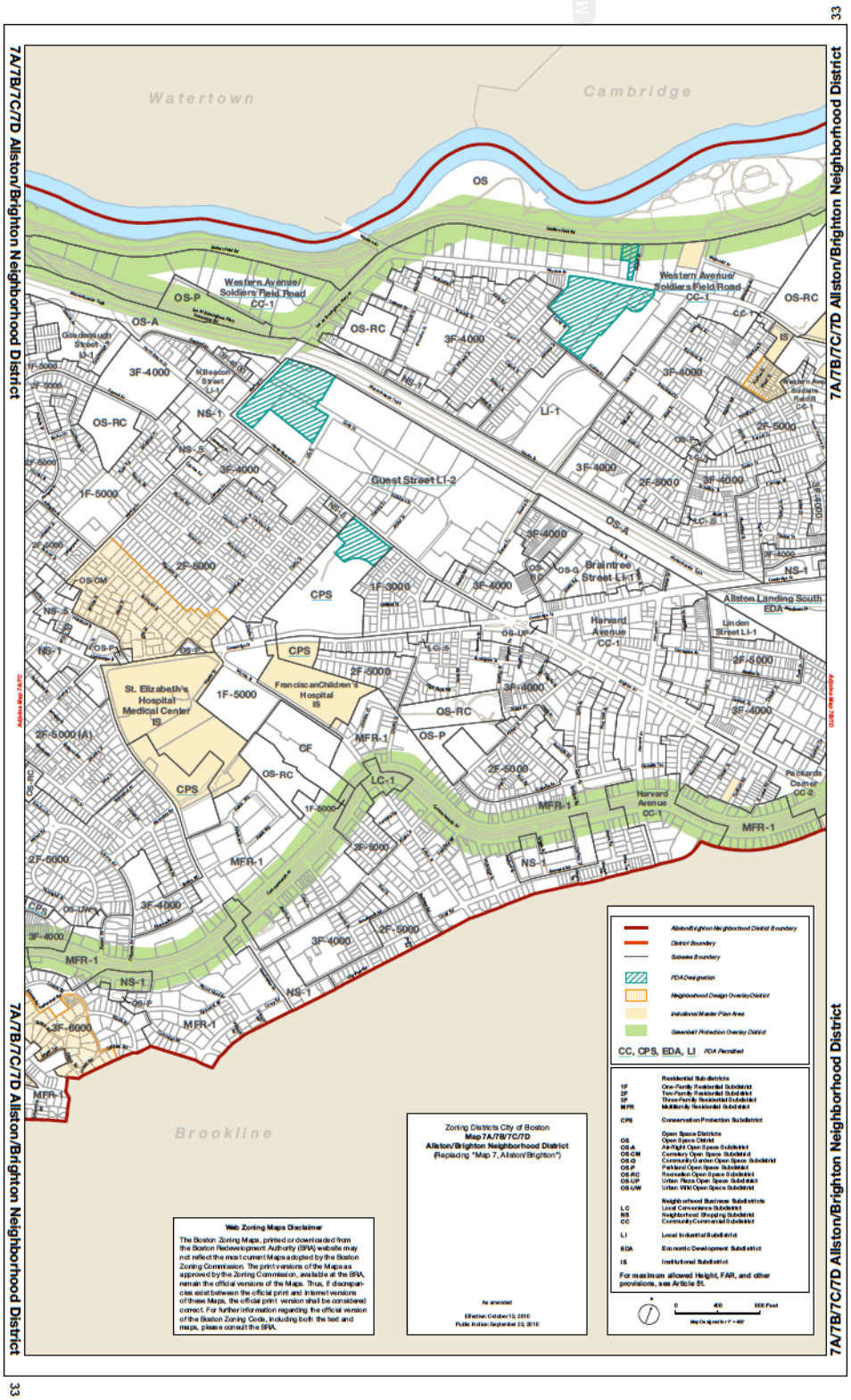


Figure 1.8, Table J, Article 51-56, Off-Street Parking and Loading Requirements

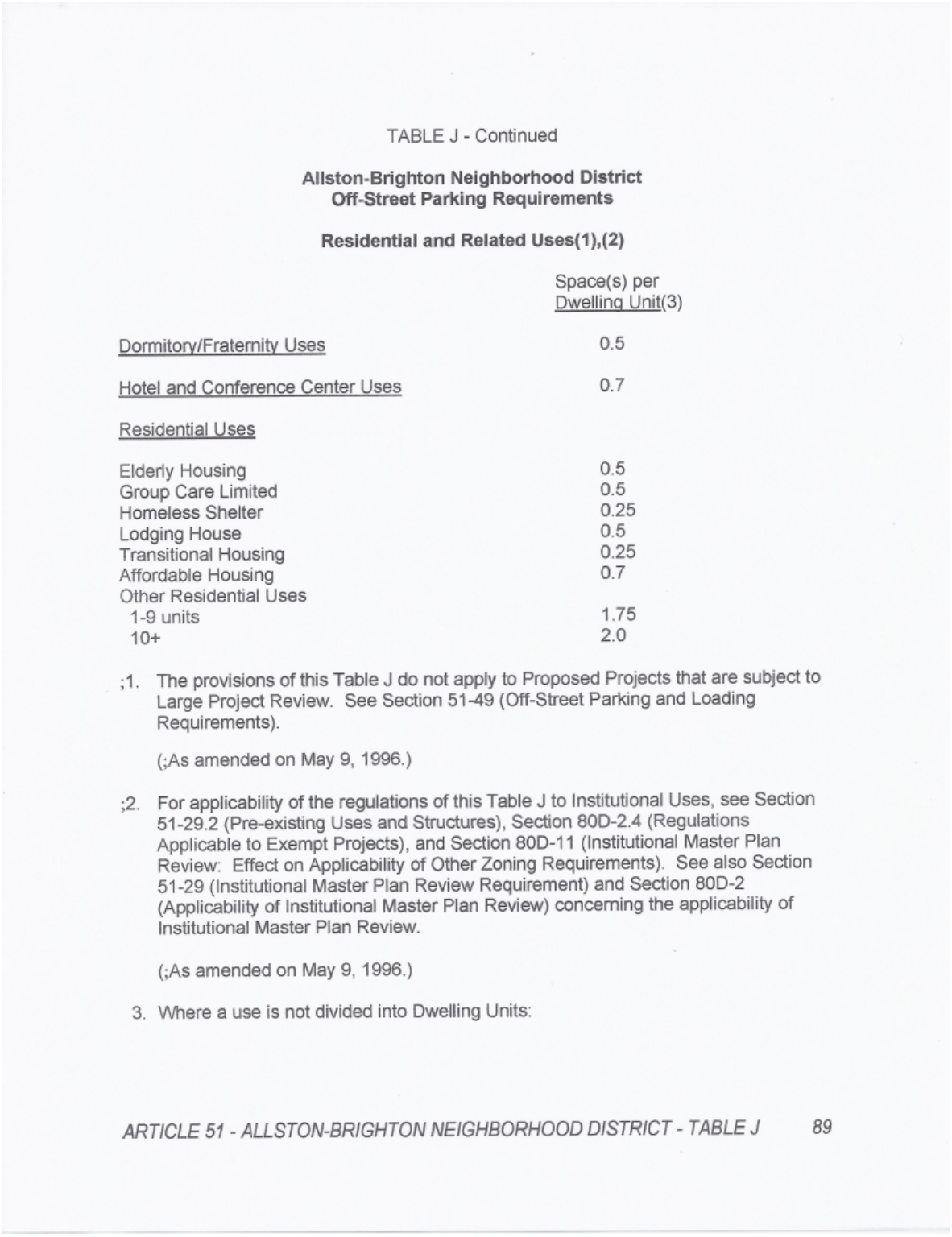


TABLE J - Continued

**Allston-Brighton Neighborhood District**
**Off-Street Parking Requirements**

**Residential and Related Uses(1),(2)**

| | Space(s) per Dwelling Unit(3) |
|---|---|
| Dormitory/Fraternity Uses | 0.5 |
| Hotel and Conference Center Uses | 0.7 |
| Residential Uses | |
| Elderly Housing | 0.5 |
| Group Care Limited | 0.5 |
| Homeless Shelter | 0.25 |
| Lodging House | 0.5 |
| Transitional Housing | 0.25 |
| Affordable Housing | 0.7 |
| Other Residential Uses | |
| 1-9 units | 1.75 |
| 10+ | 2.0 |

;1. The provisions of this Table J do not apply to Proposed Projects that are subject to Large Project Review. See Section 51-49 (Off-Street Parking and Loading Requirements).

(;As amended on May 9, 1996.)

;2. For applicability of the regulations of this Table J to Institutional Uses, see Section 51-29.2 (Pre-existing Uses and Structures), Section 80D-2.4 (Regulations Applicable to Exempt Projects), and Section 80D-11 (Institutional Master Plan Review: Effect on Applicability of Other Zoning Requirements). See also Section 51-29 (Institutional Master Plan Review Requirement) and Section 80D-2 (Applicability of Institutional Master Plan Review) concerning the applicability of Institutional Master Plan Review.

(;As amended on May 9, 1996.)

3. Where a use is not divided into Dwelling Units:

*ARTICLE 51 - ALLSTON-BRIGHTON NEIGHBORHOOD DISTRICT - TABLE J* *89*

Figure 1.9, BRA Income/Sale Limit Chart

## BRA Inclusionary Development Policy
## 2013 Income Limits, Maximum Affordable Sales Prices, & Maximum Affordable Rents

### Income Limits

| Household Size | 50% AMI | 60% AMI | 65% AMI | 70% AMI | 75% AMI | 80% AMI | 90% AMI | 100% AMI | 110% AMI | 120% AMI |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | $33,050 | $39,650 | $42,950 | $46,250 | $49,550 | $52,850 | $59,450 | $66,100 | $72,700 | $79,300 |
| 2 | $37,750 | $45,300 | $49,100 | $52,850 | $56,650 | $60,400 | $67,950 | $75,500 | $83,050 | $90,600 |
| 3 | $42,500 | $51,000 | $55,200 | $59,450 | $63,700 | $67,950 | $76,450 | $84,950 | $93,450 | $101,950 |
| 4 | $47,200 | $56,650 | $61,350 | $66,100 | $70,800 | $75,500 | $84,950 | $94,400 | $103,850 | $113,300 |
| 5 | $51,000 | $61,150 | $66,250 | $71,350 | $76,450 | $81,550 | $91,750 | $101,950 | $112,150 | $122,350 |
| 6 | $54,750 | $65,700 | $71,200 | $76,650 | $82,150 | $87,600 | $98,550 | $109,500 | $120,450 | $131,400 |
| 7 | $58,550 | $70,250 | $76,100 | $81,950 | $87,800 | $93,650 | $105,350 | $117,050 | $128,750 | $140,450 |
| 8 | $62,300 | $74,750 | $81,000 | $87,250 | $93,450 | $99,700 | $112,150 | $124,600 | $137,050 | $149,550 |

### Maximum Affordable Sales Price

| Bedrooms | 50% AMI | 60% AMI | 65% AMI | 70% AMI | 75% AMI | 80% AMI | 90% AMI | 100% AMI | 110% AMI | 120% AMI |
|---|---|---|---|---|---|---|---|---|---|---|
| Studio | $70,500 | $91,600 | $102,000 | $112,600 | $123,200 | $133,600 | $154,700 | $175,700 | $196,700 | $217,600 |
| 1 | $88,100 | $112,600 | $124,800 | $137,100 | $149,300 | $161,600 | $186,100 | $210,800 | $235,300 | $259,800 |
| 2 | $105,500 | $133,600 | $147,700 | $161,600 | $175,700 | $189,600 | $217,600 | $245,700 | $273,700 | $301,700 |
| 3 | $123,200 | $154,700 | $170,300 | $186,100 | $201,900 | $217,600 | $249,200 | $280,700 | $312,300 | $343,900 |
| 4 | $140,600 | $175,700 | $193,100 | $210,800 | $228,200 | $245,700 | $280,700 | $315,800 | $350,900 | $386,000 |

### Maximum Affordable Rents

| Bedrooms | 50% AMI | 60% AMI | 65% AMI | 70% AMI | 75% AMI | 80% AMI | 90% AMI | 100% AMI | 110% AMI | 120% AMI |
|---|---|---|---|---|---|---|---|---|---|---|
| Studio | $731 | $878 | $950 | $1,024 | $1,097 | $1,170 | $1,317 | $1,463 | $1,609 | $1,755 |
| 1 | $853 | $1,024 | $1,109 | $1,194 | $1,280 | $1,365 | $1,535 | $1,707 | $1,878 | $2,048 |
| 2 | $975 | $1,170 | $1,268 | $1,365 | $1,463 | $1,560 | $1,755 | $1,950 | $2,145 | $2,340 |
| 3 | $1,097 | $1,317 | $1,426 | $1,535 | $1,645 | $1,755 | $1,974 | $2,194 | $2,414 | $2,633 |
| 4 | $1,219 | $1,463 | $1,584 | $1,707 | $1,829 | $1,950 | $2,194 | $2,438 | $2,682 | $2,926 |

# 2 Urban Design Overview

# Chapter 2

*Urban Design*

## 2.0 Urban Design Overview

61-83 Braintree Street will be a lynch pin in the revitalization of Braintree Street and its surrounding area as it moves from an older industrial neighborhood to a vibrant residential and mixed use area. As envisioned in the Boston Redevelopment Authority's Guest Street Area Planning Study, Braintree Street is anticipated to present the immediate potential for development. The specific site proposed for our building, 61 83 Braintree Street is currently occupied by two buildings serving as offices and supply warehouse for the Thompson Durkee Plumbing Supply Company, and a billboard structure lying perpendicular to the Turnpike. The billboard is owned separately from the rest of the site and its ownership plans for its continuance. The existing buildings are two stories in height and run parallel to the railroad tracks (MBTA operated) and the Massachusetts Turnpike. With the company relocating and the site available for development there is the opportunity for the realization of a new multi-family community. This community will offer an environment that provides not just well designed, sensitive living units, but one that provides services and amenities to its tenants, covered parking, open space, green open spaces, light and views and access to neighborhood amenities and transportation. In turn 61-83 Braintree will be an active participant in the Allston social contract, contributing to the life of the street, offering shelter for passersby along its covered colonnade, greening the streetscape, contributing to the visual dialogue with its environs, providing local business space, offering opportunities for exhibit for local artists and expressing its Allston presence/identity to the traveler along the Turnpike.

The Guest Street Planning Study highlights the opportunities presented by the district. A product of the Advisory Group and the BRA, it explicates how certain steps can reintegrate the Guest Street area into the fabric of the surrounding community, support and encourage a growing mixed use neighborhood, strengthen transportation links and foster the district as a creative live/work center. To celebrate these progressive goals, the Design Theme of 61-83 Braintree is that of an environmentally responsible "green building, allowing for a residential mix for renters, both in unit size and rents, providing the opportunity for innovative use of common and commercial space in the building, situated on a street proposed to be a strengthened link from Guest Street/New Balance to Cambridge Street and respectful in massing and form of its relationship to local blocks and view corridors, as well as to the array of building forms along the Turnpike.

To this end, the Design Team has made a firm commitment to incorporate environmentally sensitive, sustainable design elements into 61-83 Braintree. These elements will improve the quality of life for the residents as well as the neighborhood, while helping to protect the global environment. Ultimately these elements will also reduce operating costs while increasing value for the project, and improving its economic viability. The new design incorporates many LEED inspired features such as the expansion of green space at both the ground and roof levels and the introduction of permeable surface areas at the ground plain to lessen the heat island effects of the site.

The new design will reinvigorate its environs by creating a modern building form that will relate to nearby new architecture while being compatible with older structures. The new site design will transform the existing, blank industrial site into a vibrant building with scalar, planar and color/material variation, indentation along the sidewalk level providing a covered walkway that expands the useable sidewalk and visual punctuation at the street facade allowing opportunities for local artists via the introduction of glazed exhibit windows. In terms of visual impact, site utilization and function the design will humanize this part of Braintree Street by removing an industrial use and attendant on site truck parking, and by accommodating resident parking enclosed underground. Additionally, by creating a building form along Braintree Street and "wrapping" that building around the major billboard on the site we are able to remove the looming presence of the billboard on the Braintree Street neighborhood, while maintaining and enhancing the Billboard view along the Turnpike side. To create a sense of identity and place for the residents and the neighborhood the building organizes itself with a rhythm of projecting vertical bays, counterpointed by a horizontal break in color/material/cornice line above the 3rd floor level and a solid tower form with canopied entrance connecting the colonnaded walkway. A large roof deck serves to create additional useable open space on a site where previously none existed.

The building design, in keeping with some of its visual antecedents is both linear and planar, comfortable with its city and industrial references, while evoking a mix of natural and machined materials. Its plan is organized around three major access points: The residential entrance near mid block, commercial entrance/s anchoring the Western end of the façade and the vehicular entrance near the Eastern end of the facade. The glass elements of the 1st story façade are designed to engage the street with the activity and energy of the building. The landmark elevator/ stair tower helps locate the building along this stretch of Braintree Street offering the opportunity for art while formally locating the building along the Pike as well.

## 2.1 Height, Massing and Façade Treatment

The proposed height and massing of the building are fitting for the expressed goals for this part of Braintree Street, with height and FAR falling within the range recommended in the Guest Street Planning Study. At 5 stories the proposed building will be shorter than the adjacent 7 story tall 119 Braintree studio and office building and appropriate as a modulation of nearby industrial and residential structures. Its height and massing will effectively mask the view of the billboard structure from the immediate Braintree environs, while at the same time providing enough presence along the pike and from across the pike to be identifiable as an expression of the new innovative, forward looking and welcoming mixed use neighborhood. The height is not detrimental to surrounding activities. The building's orientation, facing southwest on Braintree Street, helps to minimize it shadow impact on surrounding buildings.

The building facade design is modern in nature while offering generous glazed areas at living and bedroom spaces. The building humanizes the environment with the inclusion of common roof deck areas facing back toward Lincoln Street, the Pike and the City from roofs at both the top and 4th levels,

Juliet balconies at unit living rooms and gardens and common deck/patio areas at the ground level. The choice of wood composite cladding and metal panels is an appropriate choice for the proposed structure and in keeping with the overall design philosophy of the mixed use building. The materials reinforce the choices made at other new development in the vicinity and the Guest Street Area Planning Study.

A featured design element is the asymmetrically placed elevator/stair tower providing a glazed counterpoint and an opportunity for the inclusion of artwork. We offer this tower location as an available backdrop for a bas-relief or screen sculpture and an opportunity to metaphorically connect the life of the building to the lively force of the local art community. The street plane offers another backdrop for energy, activity and artwork by offering a series of glazed display windows available for a rotation of artist's exhibits. There are opportunities for views through the building to the courtyard and green spaces planned beyond. These opportunities are planned to occur both at the building lobby and at the adjacent commercial spaces, which are expected to be available for local retail/ service uses.

## 2.2 Site Planning

The existing site is bounded by both the Rail Lines of the MBTA and the Mass Turnpike on the North, Braintree Street on the South, a renovated 7 story studio and office building, 119 Braintree St, to the West and low industrial buildings to the East. Braintree Street terminates at Cambridge Street approximately two blocks to the East and links to Everett St and the Everett Street Bridge to the West. As part of the Guest St Study it is expected that Braintree Street will play a role as a connector between the Guest St corridor and the New Balance area to the West and the major neighborhood thoroughfare of Cambridge Street/Allston Village to the East. While the site is currently zoned Industrial, a number of side streets come into Braintree Street, in a pattern of increasingly residential use, as well as including a park/playground at Penniman Road. 61-83 Braintree Street will find itself within easy walking distance of the nearby supermarket and shopping center to the West, the Jackson Mann Community Center and K through 8 School across Cambridge Street to the South and a number of local restaurants, retail and service stores in Allston Village. The site is accessible to the current bus line stops and to both local roads and the Pike entrance at the Allston/Brighton Tolls connecting Allston, Brighton, other Boston neighborhoods, Cambridge, adjacent communities and beyond. In the Guest Street Area Planning Study there are proposals for two new T Stops: near New Balance to the West and near Cambridge Street to the East. Parking for 61-83 will be provided under the building as well as bicycle parking meeting the City's required 1: 1 ratio. Zip car spaces and a charging station will be included. The pedestrian entrance to the building will be at grade, as will the commercial space entrances. Egresses from the building to Braintree Street will be provided from both the lobby and from egress stairs and commercial spaces. Access to the rear patio and garden area will be provided from both tenant common spaces and from commercial spaces with the opportunity for control/ oversight and protection of the use of these spaces.

The vehicular entrance to the East on Braintree Street is designed to facilitate building services, including trash and maintenance as well as vehicular entrance and exit.
The truck loading entrance to the west on Braintree Street will facilitate multiple needs. Specifically, it will allow for the loading and unloading for tenants move-in and move-out, as well as the commercial spaces, maintenance needs, and rental and management office space needs.

When viewed from above, the overall site plan will clearly express a "green" philosophy with the inclusion of common roof decks, and green areas at the ground plane, reclaiming space at both ground and roof planes to increase valuable usable open space and improve the general quality of the environment. This environmental enhancement will be further reinforced by the removal of the currently paved open parking areas of the present plumbing supply use and subsuming tenant parking under the building.

The site plan approach is intended to work with the goals of the Guest Street Area Planning Study in a number of ways: The accomplishment of a widened sidewalk is proposed by the creation of a 1st story colonnade along the building face with an additional canopied indentation at the Tower entrance. Because of the narrowness of the site front to back the plan does not propose to pull the entire building façade back to create this wider sidewalk area, but instead continues the face at the upper residential floors at the front lot line. The enhancement of the sidewalk environment for the pedestrian is further reinforced by endorsing the street tree planting plan proposed by the Guest Street Area Study, in which the trees are proposed to be placed in tree islands beyond the sidewalk curb, placed in the parallel parking zone. As illustrated in the Planning Study, this frees up pedestrian walking width at the sidewalk providing greater room for the tree canopy before intersecting with building facades and creates a neighborhood residential scale on the street.

Figure 2.1, Guest Street Planning Study


Figure 2.2, Guest Street Planning Study

Figure 2.3, Guest Street Planning Study

Figure 2.4, Guest Street Planning Study


**POTENTIAL DEVELOPMENT**

Following GSF ranges only intended to convey range of possibility of what 1.5 to 2 million GSF of development could accommodate, and are not absolute minimums nor maximums nor a development program but meant to better understand abstract gross square footages into more familiar land uses and units

| | NEAR TERM | LONG TERM | FULL BUILD OUT |
|---|---|---|---|
| COMMERCIAL/OFFICE | 210,000 – 280,000 GSF | 600,000 – 800,000 GSF | 810,000 – 1,080,000 GSF |
| RESIDENTIAL/HOTEL | 220 – 330 UNITS | 800 – 1,200 UNITS | 1,020 – 1,530 UNITS |
| RETAIL | 70,000 – 90,000 GSF | 200,000 – 250,000 GSF | 270,000 – 340,000 GSF |
| OPEN SPACE/ RECREATIONAL | 70,000 – 100,000 GSF | 200,000 – 230,000 GSF | 270,000 – 330,000 GSF |

Figure 2.5, Guest Street Planning Study

Figure 2.6, Massing Study

Figure 2.7, Massing Study

Figure 2.8, Massing Study

Figure 2.9, Street Level Perspective

Figure 2.10, Proposed Site Plan

Figure 2.11, Longitudinal Perspective

Figure 2.12, Front Elevation Perspective

Figure 2.13, Front Entrance Perspective 1

Figure 2.14, Front Entrance Perspective 2

Figure 2.15, Streetscape Perspective

Figure 2.16, Context Rendering 1

Figure 2.17, Context Rendering 2

Figure 2.18, Rear Elevation Perspective

Figure 2.19, Roof Deck Perspective

Figure 2.20, Context Rendering 3

# 3 Transportation

# Chapter 3

*Transportation*

## 3.1 Introduction

Howard/Stein-Hudson Associates, Inc. (HSH) has conducted an evaluation of the transportation impacts of a proposed mixed-use development containing residential and retail uses to be located at 61-83 Braintree Street in Allston (the "Project" and/or the "Site"). This transportation study adheres to the Boston Transportation Department (BTD) *Transportation Access Plan Guidelines* and Article 80 development review process. This study includes an evaluation of existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian activity.

### 3.1.1 Project Description

The Project Site is located at 61-83 Braintree Street in Allston, as shown in **Figure 2.1.** The Site is bounded by commercial uses to the east and west, MBTA commuter rail tracks to the north, and Braintree Street to the south. The existing Project Site consists of a commercial warehouse and distribution buildings and is accessed from three curb cuts along Braintree Street. The proposed Project consists of demolishing the existing commercial warehouse and distribution buildings and constructing a five-story mixed-use development containing 80 residential units and approximately 2,550 square feet (sf) of ground floor retail space. Approximately 67 parking spaces will be provided in a below-grade garage on the Project Site, including two Zipcar spaces. The garage will be accessed from a single driveway located along Braintree Street, opposite Rugg Road. Secure storage for 80 bicycles will also be provided on the Project Site. Loading and service will be accommodated by a single dock accessed from Braintree Street located at the western edge of the Site, with trash and recycling pick-up occurring curbside along Braintree Street at the eastern edge of the Site.

### 3.1.2 Study Area

The study area is generally bounded by Braintree Street to the north, Penniman Road to the west, Cambridge Street to the south, and Harvard Avenue/Franklin Street to the east. The study area consists of the following four intersections, also shown on **Figure 2-1**:

- Cambridge Street/Harvard Avenue/ Franklin Street;
- Cambridge Street/Denby Road;

- Braintree Street/Penniman Road; and

- Braintree Street/Rugg Road.

### 3.1.3 Study Methodology

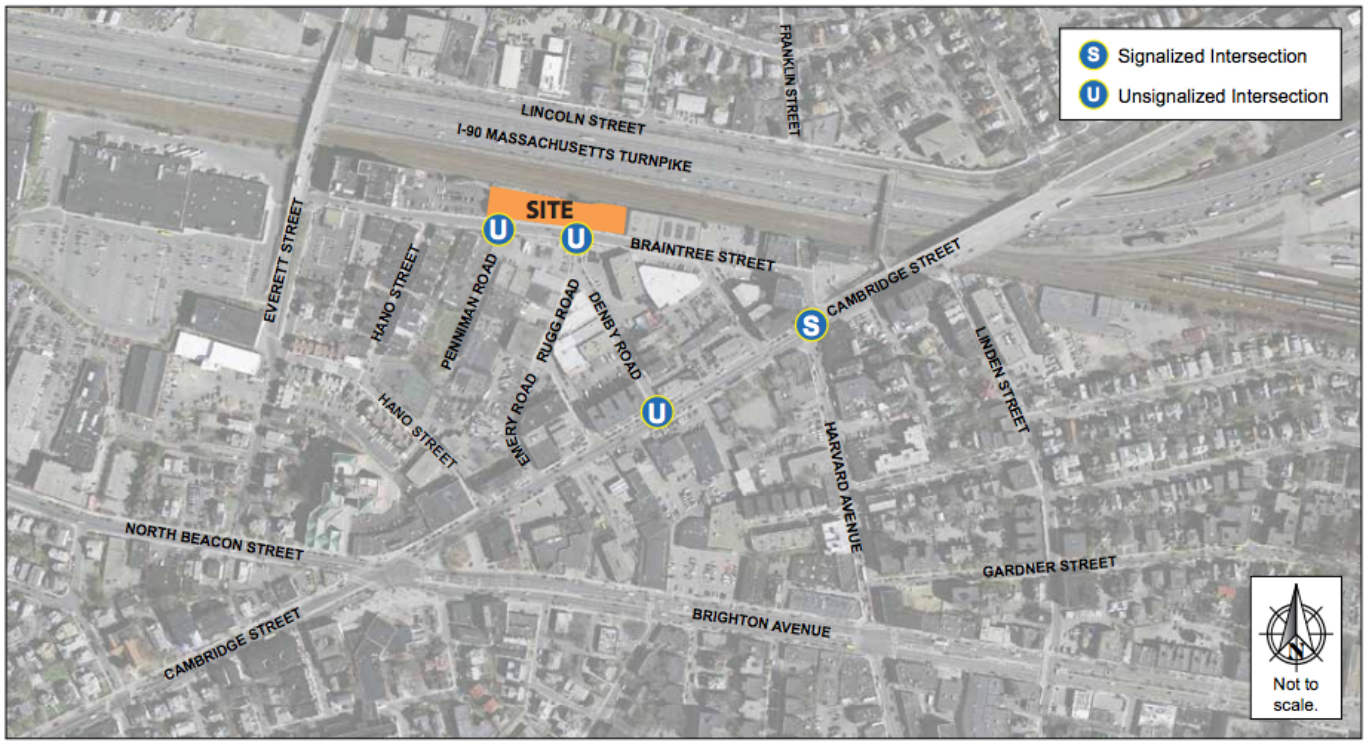
This transportation study and supporting analyses were conducted in accordance with BTD guidelines and is described below.
The Existing Conditions analysis includes an inventory of the existing (2013) transportation conditions such as traffic characteristics, parking and curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. Existing counts for vehicles, bicycles, and pedestrians were collected in September 2013 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 2018, based on a five-year horizon from the existing year (2013). Expected roadway, parking, transit, pedestrian, bicycle accommodation, and loading capabilities and deficiencies are identified. This section includes the following scenarios:

- The 2018 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 2018 Build Conditions scenario includes Project-generated traffic volume estimates added to the traffic volumes developed as part of the 2018 No-Build conditions scenario.

The final part of the transportation study identifies measures to mitigate Project-related impacts and to address any traffic, pedestrian, bicycle, transit, 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.

Figure 3.1, Study Area Intersections




Howard/Stein-Hudson Associates, Inc.

## 3.2 Existing Conditions

### 3.2.1 Existing Roadway Conditions

The study area includes the following roadways, which are categorized according to the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning functional classifications:

#### Cambridge Street

- Is south of the Project Site.
- Is classified as an urban principal arterial.

- Runs in an east-west direction between the Charles River to the east and Washington Street to the west.
- Is a two-way roadway with parking on both sides and consists of a single travel lane in each direction in the vicinity of the study area.

- Sidewalks are provided along both sides of the roadway.

### Harvard Avenue

- Is southeast of the Project Site.

- Is classified as an urban principal arterial.

- Runs in a north-south direction between Cambridge Street to the north and Washington Street to the south.

- Is a two-way roadway with parking along both sides and consists of a single travel lane in each direction in the vicinity of the study area.

- Sidewalks are provided along both sides of Harvard Avenue.

### Franklin Street

- Is east of the Project Site.

- Is classified as a local roadway.

- Runs in a north-south direction between Braintree Street to the north and Cambridge Street to the south.

- Is a two-way roadway with two-hour parking along the west side of the roadway.

- Sidewalks are provided along both sides of Franklin Street.

### Denby Road

- Is south of the Project Site.

- Is classified as a local road.

- Runs in a north-south direction between Rugg Road to the north and Cambridge Street to the south.
- Is an unmarked two-way roadway with parking on the east side.
- Sidewalks are provided along both sides of the roadway.

### Braintree Street

- Is located to the south of the Project Site.
- Is classified as a local road.
- Runs in an east-west direction between Harvard Avenue to the east and Everett Street to the west.
- Is a two-way roadway with some parking the south side and consists of a single travel lane in each direction.
- Sidewalks are provided along both sides of the roadway.

### Rugg Road

- Is located to the south and across the street of the Project Site.
- Is classified as a local road.
- Runs in a north-south direction between Braintree Street to the north and Cambridge Street to the south.
- Is an unmarked two-way roadway with parking on both sides.
- Sidewalks are provided along both sides of the roadway.

### Penniman Road

- Is west of the Project Site.
- Is classified as a local road.
- Runs in a north-south direction between Braintree Street to the north and Hano Street to the south.

- Is an unmarked two-way roadway with parking on the east side.
- Sidewalks are provided along both sides of the roadway.

### 3.2.2 Existing Intersection Conditions

Existing conditions at each of the study area intersections are described below.

#### Cambridge Street/Harvard Avenue/Franklin Street

- Is a four-legged, signalized intersection under BTD jurisdiction.
- The Cambridge Street eastbound approach consists of a single lane that is wide enough to accommodate two lanes of traffic.
- The Cambridge Street westbound approach consists of an exclusive left-turn lane, a through lane, and an exclusive right-turn lane.
- The Harvard Avenue northbound approach consists of a shared left-turn/through lane and a right-turn lane.
- The Franklin Street southbound approach consists of a single travel lane.
- Crosswalks with handicap-accessible ramps are provided across all legs of the intersection.
- Parking is provided along the Harvard Avenue and Franklin Street approaches to the intersection.
- An MBTA bus stop is located at the intersection along the Cambridge Street eastbound approach.

#### Cambridge Street/Denby Road

- Is a three-legged, unsignalized intersection under BTD jurisdiction.
- The Cambridge Street eastbound and westbound approaches consists a single travel lanes with parking along both sides.

- The Denby Road southbound approach consists of a single lane under STOP control, with no pavement markings provided.

- Parking is provided along the northbound side of Denby Road.

- Crosswalks are not provided at the intersection. However, handicap-accessible ramps are provided at the Denby Road approach.

### Braintree Street/Rugg Road

- Is a three-legged, unsignalized T-intersection under BTD jurisdiction.

- The Braintree Street eastbound and westbound approaches consist of single travel lanes, with no pavement markings provided.

- The Rugg Road northbound approach consists of a single travel lane under STOP control, with no pavement markings provided.

- Crosswalks are not provided at the intersection. However, handicap-accessible ramps are provided at the Rugg Road approach.

### Braintree Street/Penniman Road

- Is a three-legged, unsignalized T-intersection under BTD jurisdiciton.

- The Braintree Street eastbound and westbound approaches consist of single travel lanes, with no pavement markings provided.

- The Penniman Road northbound approach consists of a single travel lane under STOP control, with no pavement markings provided.

- Crosswalks and handicap-accessible ramps are not provided at the intersection.

## 3.2.3 Existing Traffic Conditions

Traffic movement data was collected at the study area intersections in September 2013. Manual turning movement counts (TMCs) and vehicle classification counts were conducted during the weekday a.m. and p.m. peak periods (7:00-9:00 a.m. and 4:00-6:00 p.m., respectively) for the following four intersections:

- Cambridge Street/Harvard Avenue/Franklin Street;

- Cambridge Street/Denby Road;
- Braintree Street/Rugg Road; and
- Braintree Street/Penniman Road.

The vehicle classification counts included car, truck, pedestrian, and bicycle movements. Based on the TMCs, the peak hours of vehicular traffic throughout the study area are 8:00-9:00 a.m. and 5:00-6:00 p.m. The detailed traffic counts are provided in the Appendix.

#### 3.2.3.1 Seasonal Adjustment

In order to account for seasonal variation in traffic volumes throughout the year, data provided by the Massachusetts Department of Transportation (MassDOT) were reviewed. Typically, nearby continuous traffic count stations are used to determine monthly fluctuations in traffic volumes. The most recent (2011) MassDOT Weekday Seasonal Factors were used to determine the need for seasonal adjustments to the September 2013 TMCs. The 2011 seasonal adjustment factor for September for roadways similar to the study area is 0.93, which indicates that average month traffic volumes are approximately 93 percent of typical September traffic volumes. To provide a conservative analysis, the September counts were not adjusted to reflect average month conditions. The 2013 Existing weekday a.m. and p.m. peak hour traffic volumes are shown in **Figure 3.2** and **Figure 3.3**, respectively.

Figure 3.2, Existing Conditions (2013) Turning Movement Volumes, a.m. Peak Hour (8:00 9:00 a.m.)

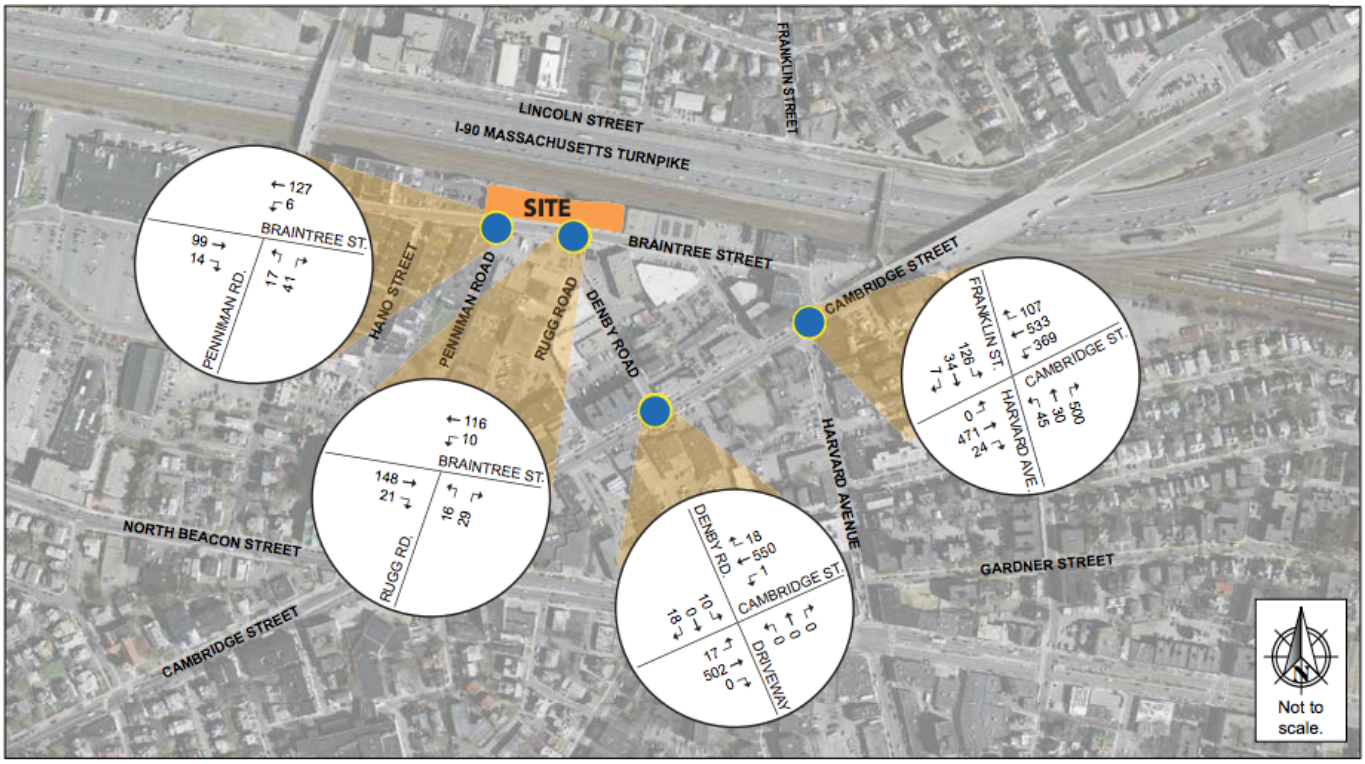



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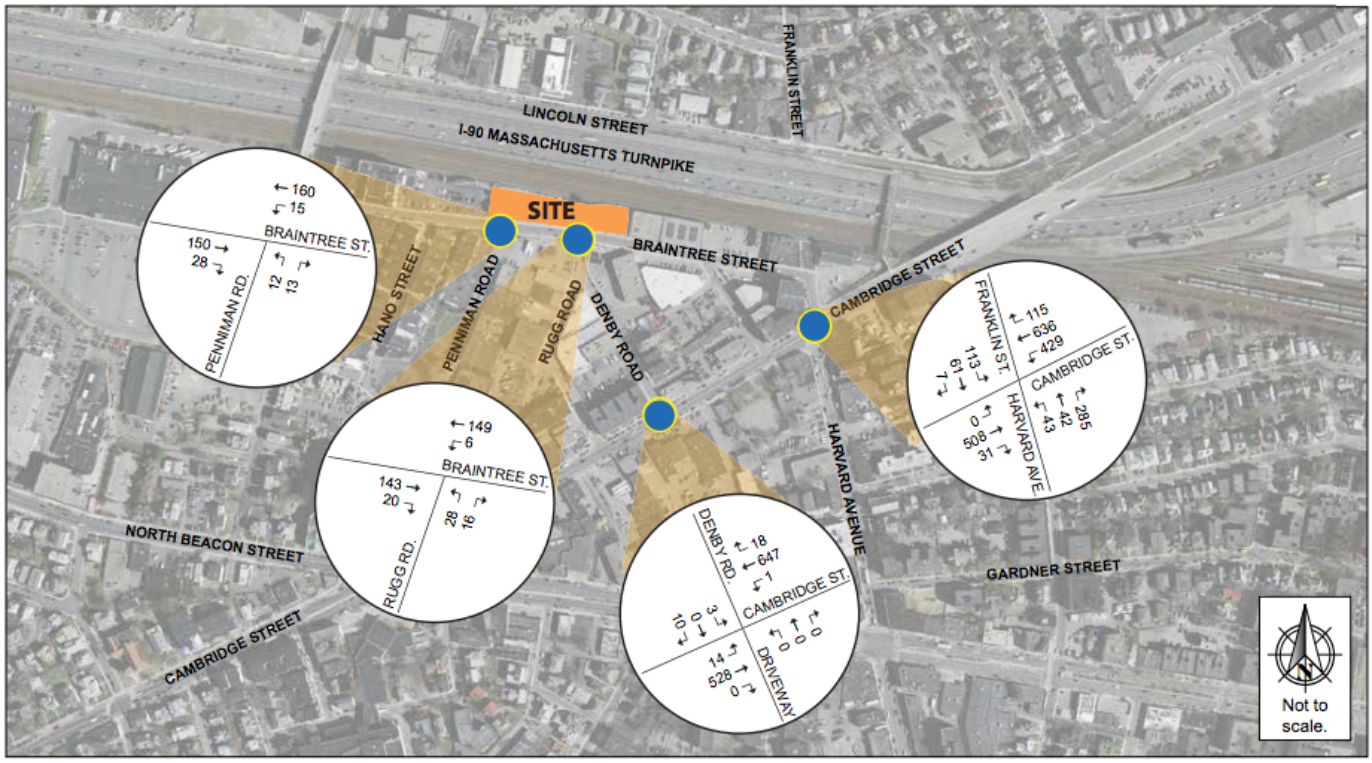
Figure 3.3, Existing Conditions (2013) Turning Movement Volumes, p.m. Peak Hour (5:00 6:00 p.m.)

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### 3.2.4 Existing Traffic Operations

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay experienced by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 6) 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). Field observations were performed by HSH to collect intersection geometry such as number of turning lanes, lane length, and lane width that were then incorporated into the operations analysis.

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. **Table 3-1** displays the intersection level of service criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst (unacceptable) condition, with significant traffic delay. LOS D or better is typically considered acceptable in an

urban area. However, LOS E or F is often typical for a stop controlled minor street that intersects a major roadway.

Table 3-1: Level of Service Criteria

| **Level of Service** | **Average Stopped Delay (sec./veh.)** | |
|---|---|---|
| | **Signalized Intersections** | **Unsignalized Intersections** |
| 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 |
| *Source: 2000 Highway Capacity Manual, Transportation Research Board.* | | |

In addition to delay and LOS, the operational capacity and vehicular queues are calculated and used to further quantify traffic operations at intersections. The following describes these other calculated measures.

The volume-to-capacity (v/c) ratio is a measure of congestion at an intersection approach. A v/c ratio below one indicates that the intersection approach has adequate capacity to process the arriving traffic volumes over the course of an hour. A v/c ratio of one or greater indicates that the traffic volume on the intersection approach exceeds capacity.

The 50$^{th}$ percentile queue length, measured in feet, represents the maximum queue length during a cycle of the traffic signal with typical (or median) entering traffic volumes.

The 95$^{th}$ percentile queue length, measured in feet, represents the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line during 5 percent of all signal cycles. The 95th percentile queue will not be seen during each cycle. The queue would be this long only 5 percent of the time and would typically not occur during off-peak hours. Since volumes fluctuate throughout the hour, the 95$^{th}$ percentile queue represents what can be considered a "worst case" scenario. Queues at the intersection are generally below the 95$^{th}$ percentile queue throughout the course of the peak hour. It is also unlikely that the 95$^{th}$ percentile queues for each approach to the intersection will occur simultaneously.

**Table 3-2** and **Table 3-3** present the 2013 Existing conditions operational analysis for the study area intersections during the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the Appendix.

Table 3-2: 2013 Existing Conditions Level of Service, a.m. peak hour

| Intersection | LOS | Delay (Seconds) | V/C Ratio | 50th Percentile Queue Length (ft.) | 95th Percentile Queue Length (ft.) |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **E** | **79.9** | | | |
| Cambridge Street EB left/thru \| thru/right | D | 45.4 | 0.82 | ~264 | #288 |
| Cambridge Street WB left | D | 40.4 | 0.86 | 217 | #365 |
| Cambridge Street WB thru | B | 17.8 | 0.60 | 261 | 397 |
| Cambridge Street WB right | B | 11.5 | 0.19 | 47 | 66 |
| Harvard Avenue NB left/thru | E | 58.9 | 0.67 | 73 | 97 |
| Harvard Avenue NB right | F | >80.0 | >1.00 | ~534 | #552 |
| Franklin Street SB left/thru/right | F | >80.0 | >1.00 | ~185 | #240 |
| **Unsignalized Intersections** | | | | | |
| **Cambridge Street/Denby Road** | | | | | |
| Cambridge Street EB left/thru/right | A | 1.0 | 0.04 | | 3 |
| Cambridge Street WB left/thru/right | A | 0.1 | 0.00 | | 0 |
| Driveway NB left/thru/right | | | | | |
| Denby Road SB left/thru/right | D | 31.3 | 0.21 | | 19 |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.12 | | 0 |
| Braintree Street WB left/thru | A | 1.0 | 0.01 | | 1 |
| Rugg Road NB left/right | B | 10.7 | 0.08 | | 7 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.08 | | 0 |
| Braintree Street WB left/thru | A | 0.6 | 0.01 | | 1 |
| Penniman Road NB left/right | B | 10.2 | 0.13 | | 11 |

~ = 50th percentile volume exceeds capacity.
# = 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after 2 cycles.
Grey shading indicates LOS E or LOS F.

Table 3-3 2013 Existing Conditions Level of Service, p.m. peak hour

| Intersection | LOS | Delay (Seconds) | V/C Ratio | 50th Percentile Queue Length (ft.) | 95th Percentile Queue Length (ft.) |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **E** | **58.8** | | | |
| Cambridge Street EB left/thru \| thru/right | D | 41.6 | 0.76 | ~237 | #320 |
| Cambridge Street WB left | D | 42.4 | 0.88 | 235 | #435 |
| Cambridge Street WB thru | B | 18.1 | 0.63 | 307 | 456 |
| Cambridge Street WB right | B | 11.6 | 0.20 | 48 | 72 |
| Harvard Avenue NB left/thru | E | 58.0 | 0.65 | 71 | 107 |
| Harvard Avenue NB right | C | 25.6 | 0.59 | 138 | 216 |
| Franklin Street SB left/thru/right | F | >80.0 | >1.00 | ~203 | #266 |
| **Unsignalized Intersections** | | | | | |
| **Cambridge Street/Denby Road** | | | | | |
| Cambridge Street EB left/thru/right | A | 1.3 | 0.05 | | 4 |
| Cambridge Street WB left/thru/right | A | 0.1 | 0.00 | | 0 |
| Driveway NB left/thru/right | | | | | |
| Denby Road SB left/thru/right | E | 46.8 | 0.25 | | 23 |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.12 | | 0 |
| Braintree Street WB left/thru | A | 0.4 | 0.01 | | 0 |
| Rugg Road NB left/right | B | 11.1 | 0.08 | | 7 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.15 | | 0 |
| Braintree Street WB left/thru | A | 1.0 | 0.02 | | 1 |
| Penniman Road NB left/right | B | 11.1 | 0.06 | | 5 |

# = 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after 2 cycles.
m = Volume for the 95th percentile queue is metered by the upstream signal.
Grey shading indicated unacceptable level of service.

As shown in **Table 3-2**, the signalized intersection of Cambridge Street/Harvard Avenue/ Franklin Street currently operates at LOS E during the a.m. peak hour, with the Harvard Avenue and Franklin Street approaches operating at LOS E and LOS F. The analysis also indicates that moderate queuing occurs along the Cambridge Street and Harvard Avenue approaches to the intersection during the a.m. peak hour. The movements at the unsignalized intersections within the study area were shown to operate well under capacity and at LOS D or better during the a.m. peak hour, with minimal queuing.

As shown in **Table** 3-3, the signalized intersection of Cambridge Street/Harvard Avenue/ Franklin Street currently operates at LOS E during the p.m. peak hour, with the Harvard Avenue and Franklin Street approaches operating at LOS E and LOS F. The analysis also indicates that moderate queuing occurs along Cambridge Street during the p.m. peak hour. The movements at the unsignalized intersections within the study area were shown to operate well under capacity and at LOS E or better during the p.m. peak hour, with minimal queuing.

### 3.2.5 Existing Parking and Curb Usage

On-street parking in the study area generally consists of unrestricted and two-hour parking spaces, with some areas where parking is prohibited. Along Braintree Street, parking is not allowed along the northerly side and is generally unrestricted (allowed) along the southerly side. The on-street parking regulations are shown in **Figure** 3.4.

### 3.2.6 Existing Public Transportation

The Project Site is served by several MBTA bus routes. MBTA bus routes 64 and 66 run along Cambridge Street and MBTA bus routes 57 and 66 run along Brighton Avenue and Harvard Avenue, south of the study area. Several bus stops are located within walking distance of the Project Site along Cambridge Street and Harvard Avenue. The B Line branch of the MBTA Green Line light-rail system also has a stop at the intersection of Commonwealth Avenue and Harvard Avenue, approximately a half-mile or a ten minute walk from the Project Site. The MBTA public transportation services are shown in **Figure** 3.5 and summarized in **Table** 3-4

Table 3-4 MBTA Transit Service in the Study Area

| **Transit Service** | **Description** | **Peak-hour Headway (in minutes)** [1] |
|---|---|---|
| **Local Bus Routes** | | |
| 57 | Watertown Yard Kenmore Sta. via Newton Corner and Brighton Center | ~10 |
| 64 | Oak Square University Park, Cambridge via North Beacon Street | ~10-20 |
| 66 | Harvard Square Dudley Station via Allston and Brookline Village | ~8-9 |

1 Headway is the scheduled time between trains or buses, as applicable. Source: MBTA.com, September 2013.

Figure 3.4, On-street Parking in the Study Area

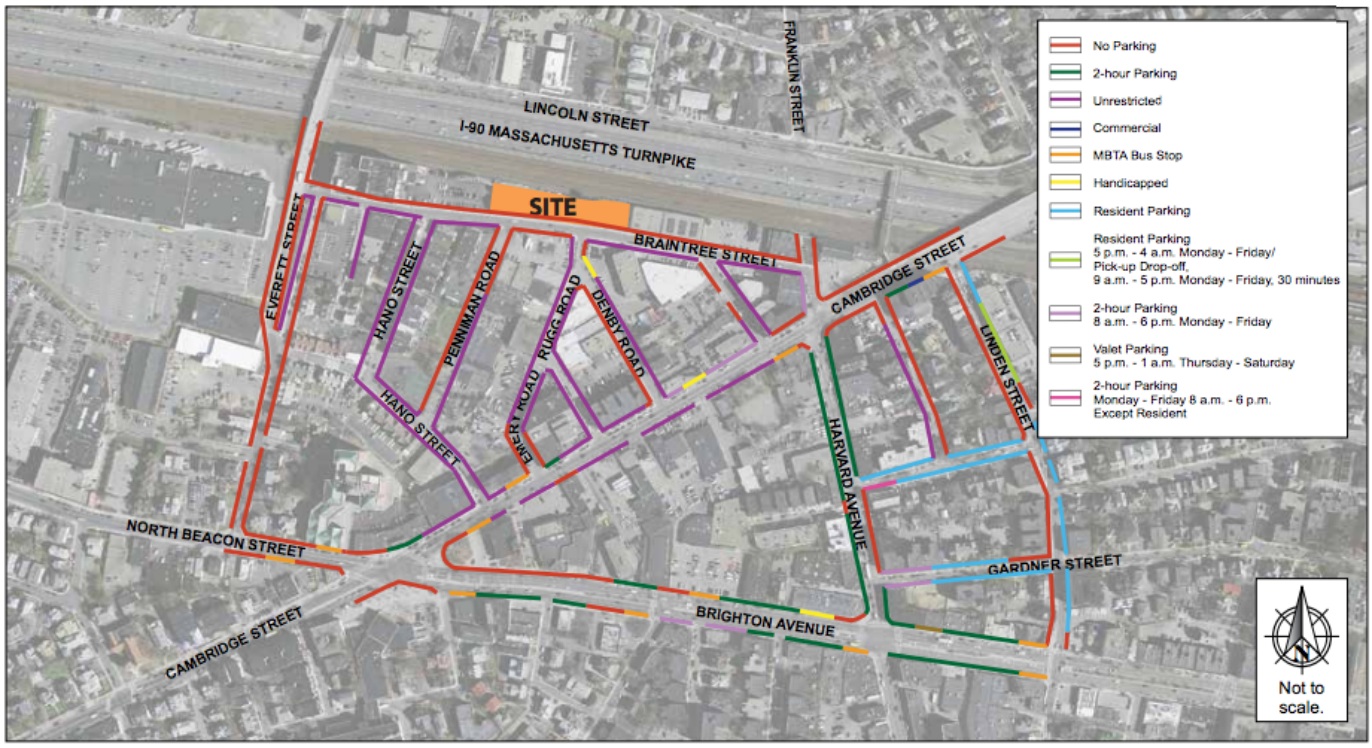


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Figure 3.5, Public Transportation in the Study Area


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### 3.2.7 Existing Pedestrian Conditions

The Project is located along Braintree Street, which primarily serves industrial and commercial uses. The intersecting side streets of Franklin Street, Rugg Road, Penniman Road, and Hano Street provide pedestrian connections to Cambridge Street and Allston Village. The sidewalks in the study area are generally in good condition and supply more than adequate capacity. Pedestrian counts were conducted concurrent with the vehicular TMCs and are presented in **Figure 3.6** for the a.m. and p.m. peak hours. As shown in **Figure 3.6**, pedestrian volumes are heaviest along Cambridge Street and Harvard Avenue, although overall pedestrian volumes are low.

### 3.2.8 Existing Bicycle Facilities

In recent years, bicycle use has increased dramatically throughout the City of Boston. The following roadways within the study area are designated bicycle routes on the City of Boston's "Bike Routes of Boston" map:

- **Harvard Avenue** is designated as an advanced route suitable for riders with on-road experience. An exclusive bicycle lane is provided in the southbound direction and sharrows are provided in the northbound direction along Harvard Avenue.

- **Cambridge Street** is designated as an advanced route suitable for riders with on-road experience. Bicycle pavement markings are not provided along Cambridge Street.

- **Franklin Street** is designated as a beginner route suitable for riders with limited on-road experience.

- **Braintree Street** is designated as a beginner route suitable for riders with limited on-road experience.

Bicycle counts were conducted concurrent with the vehicular TMCs and are presented in **Figure 3.7** for the a.m. and p.m. peak hours. As shown in **Figure 3.7**, bicycle volumes are generally light around the adjacent Project Site, with the heaviest volumes along Cambridge Street.

Hubway is a bicycle sharing system in the Boston area, which was launched in 2011 and consists of over 100 stations and 1,000 bicycles. As shown in **Figure 3.8**, there is one Hubway station with 10 available docks in close proximity to the Project Site at Union Square (the intersection of Brighton Avenue/Cambridge Street/North Beacon Street).

Figure 3.6, Existing Conditions (2013) Pedestrian Volumes, a.m. and p.m. Peak Hours

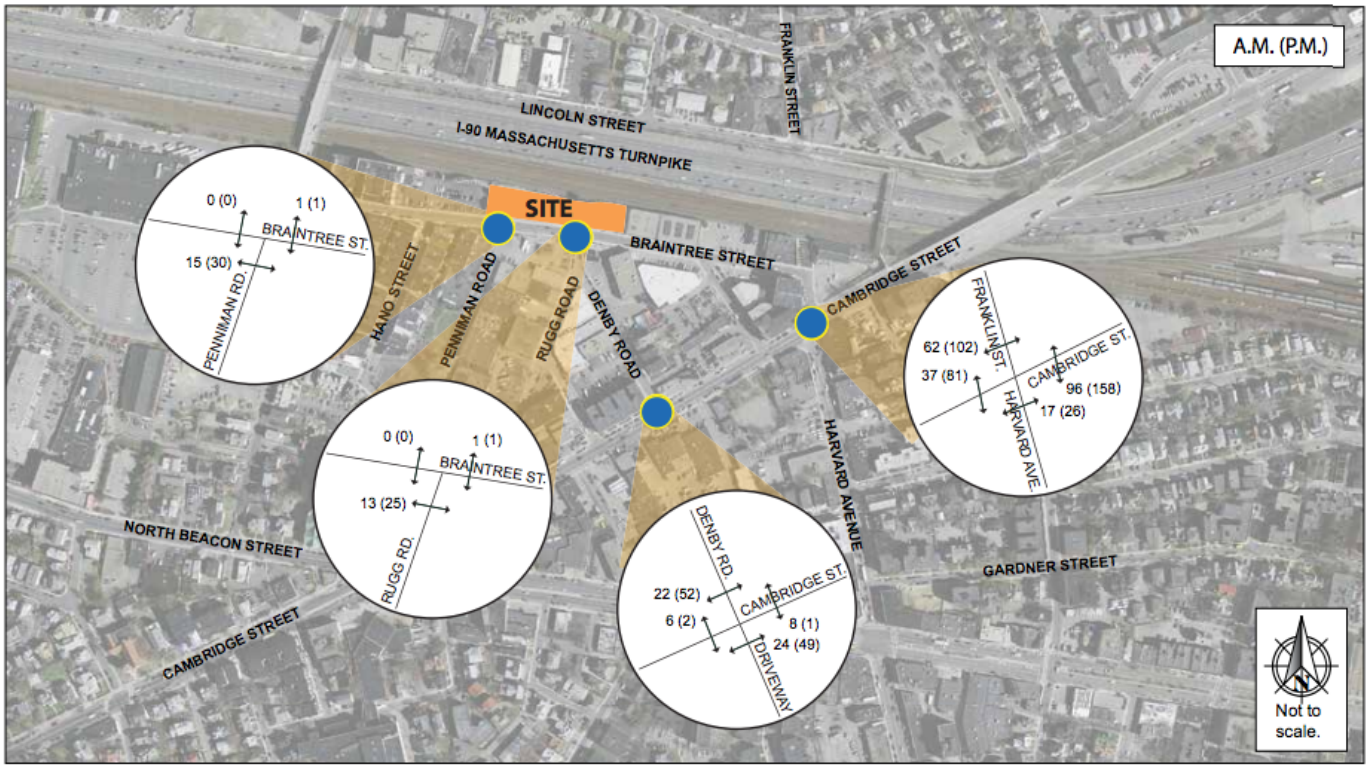


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Figure 3.7, Existing Conditions (2013) Bicycle Volumes, a.m. and p.m. Peak Hours


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### 3.2.9 Car Sharing Services

Car sharing, predominantly served by Zipcar in the Boston area, provides easy access to short term vehicular transportation. Vehicles are rented on an hourly or daily, and all vehicle costs (gas, maintenance, insurance, and parking) included in the rental fee. Vehicles are checked out for a specific time period and returned to their designated location.

There are five car sharing locations within a quarter-mile (5-10 minute walk) from the Project Site:

- 40 Harvard Avenue/Model Hardware (2 vehicles)
    - 541 Cambridge Street (2 vehicles)
    - 26 Allston Street (2 vehicles)
    - 20 Radcliffe Road (2 vehicles)

- 35 Gardner Street/Linden Street (3 vehicles)

The nearby Zipcar locations are shown in **Figure 3.8.** Under (2018) Build Conditions, two Zipcar spaces will be added to the Project Site in the proposed below-grade parking garage.

Figure 3.8, Hubway and Car Sharing Locations


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## 3.3 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, 2018 was selected as the horizon year for the future conditions analyses.

This section presents a description of the 2018 future conditions scenarios and includes an evaluation of the transportation facilities under the No-Build and Build conditions.

### 3.3.1 No Build Conditions

The No-Build Conditions reflect a future scenario that incorporates any anticipated traffic volume changes independent of the Project and any planned infrastructure improvements that will affect travel patterns throughout the study area. Infrastructure improvements include roadway, public transportation, pedestrian and bicycle improvements. Traffic volume changes are based on two factors: an annual growth rate and growth associated with specific developments near the project.

#### 3.3.1.1 Background Traffic Growth

The methodology used to account for future traffic growth, independent of the Project, consists of two parts. The first part of the 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 nearby projects and to account for any additional unforeseen traffic growth, a half-percent per year annual traffic growth rate was used to develop the future conditions traffic volumes.

The second part of the 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 and traffic volumes associated with these projects were specifically accounted for in the future conditions scenarios.

- **New Brighton Landing** This development includes the construction of 250,000 sf new world headquarters for New Balance, a 350,000 sf sports complex, a 140,000 sf boutique hotel, three office buildings totaling 650,000 sf and 65,000 sf of mixed-use retail and residential space. This project is located northwest of the Project Site along Guest Street. The Proponent of New Brighton Landing is also committed to several mitigation measures that will affect the study area. The mitigation within the study area is described in the next section. This project has been approved by the Boston Redevelopment Authority (BRA).

- **37 North Beacon Street** This development includes the construction of a new 5-story building with approximately 44 residential units. This project is west of the Project Site along North Beacon Street and has been approved by the BRA.

The following projects are also in the vicinity of the Project Site, but are only expected to add minimal traffic to the study area intersections. Traffic volumes for these projects were assumed to be accounted for in the general background growth rate.

- **Skating Club of Boston** This development includes the demolition of the existing vacant structure and the construction of a new 153,000 sf state-of-the-art 3-rink

skating facility. This project is northwest of the Project site along Everett Street. A letter of intent has been filed with the BRA for this project.

- **Penniman on the Park** This development includes the construction of 32 condominium units with 27 parking spaces in an adjacent lot. This project is west of the Project Site along Penniman Road and has been approved by the BRA.

The half-percent per year annual growth rate was applied to the 2013 Existing Conditions traffic volumes, then the traffic volumes associated with the background development projects listed above were added to develop the 2018 No-Build conditions traffic volumes. The 2018 No-Build a.m. and p.m. peak hour traffic volumes are shown on **Figure 3.9** and **Figure 3.10**, respectively.

### 3.3.1.2 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 improvements were identified:

The proponent of the New Brighton Landing project proposes to extend Guest Street to Everett Street via a signalized intersection just west of the Project Site. The Guest Street extension will relieve North Beacon Street and Cambridge Street of traffic traveling between Cambridge Street near the MassPike Exit 18 interchange and the New Brighton Landing area, Market Street, and other areas of Brighton. Braintree Street will serve as the roadway to accommodate this additional traffic. In order to accommodate this additional traffic along Braintree Street, both Denby Road and Franklin Street will become one-way. Denby Road will be one-way in the southbound direction and Franklin Street will be one-way in the northbound direction. The intersection of Cambridge Street/Denby Road will be signalized and coordinated with the adjacent intersections. Parking along both sides of Cambridge Street will be eliminated between Denby Road and Harvard Avenue/Franklin Street. The Cambridge Street westbound approach to Harvard Avenue/Franklin Street will be restriped to provide an exclusive left-turn lane, a through lane, and a shared through/right-turn lane. These improvements have been incorporated into the traffic analyses for the future conditions scenarios.

Figure 3.9, No-Build Conditions (2018) Turning Movement Volumes, a.m. Peak Hour

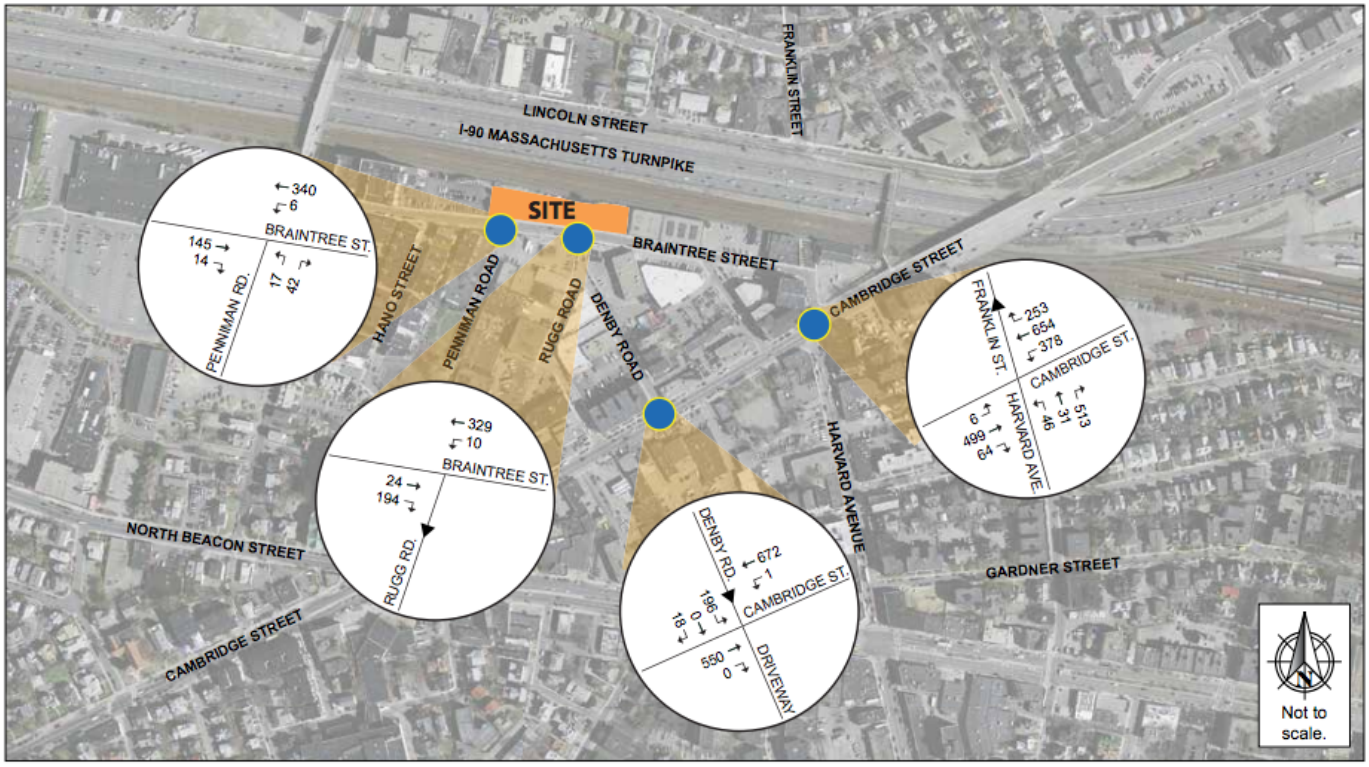


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Figure 3.10, No-Build Conditions (2018) Turning Movement Volumes, p.m. Peak Hour


Howard/Stein-Hudson Associates, Inc.

### 3.3.1.3 No Build Conditions Traffic Operations

The 2018 No-Build conditions scenario analysis uses the same methodology as the 2013 Existing Conditions scenario traffic operations analysis. **Table 3-5** and **Table 3-6** present the 2018 No-Build Conditions operations analysis for the a.m. and p.m. peak hours, respectively. As previously mentioned, the 2018 No-Build conditions scenario incorporates the mitigation proposed as part of the New Brighton Landing project. The shaded cells in the tables indicate a decrease in LOS between the 2013 Existing Conditions and the 2018 No-Build Conditions. The detailed analysis sheets are provided in the Appendix.

Table 3-5: No-Build Conditions (2018), Capacity Analysis Summary, a.m. Peak Hour

| Intersection | LOS | Delay (Seconds) | V/C Ratio | 50th Percentile Queue Length (ft) | 95th Percentile Queue Length (ft) |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **D** | **47.6** | | | |
| Cambridge Street EB left/thru \| thru/right | E | 58.5 | 0.96 | ~276 | #392 |
| Cambridge Street WB left | E | 68.3 | 1.00 | ~239 | #429 |
| Cambridge Street WB thru l thru/right | B | 17.8 | 0.60 | 249 | 328 |
| Harvard Avenue NB left/thru | D | 38.9 | 0.30 | 47 | 92 |
| Harvard Avenue NB right | E | 73.6 | 1.02 | ~364 | #585 |
| **Cambridge Street/Denby Road** | **A** | **9.5** | | | |
| Cambridge Street EB thru | A | 4.4 | 0.43 | 87 | 161 |
| Cambridge Street WB thru l thru | A | 1.0 | 0.27 | 7 | 14 |
| Denby Road SB left l left/right | D | 48.9 | 0.66 | 70 | 106 |
| **Unsignalized Intersections** | | | | | |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.14 | | 0 |
| Braintree Street WB left/thru | A | 0.3 | 0.01 | | 1 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.10 | | 0 |
| Braintree Street WB left/thru | A | 0.2 | 0.00 | | 0 |
| Penniman Road NB left/right | B | 10.7 | 0.09 | | 8 |

Table 3-6: No-Build Conditions (2018), Capacity Analysis Summary, p.m. Peak Hour

| Intersection | LOS | Delay (Seconds) | V/C Ratio | 50th Percentile Queue Length (ft) | 95th Percentile Queue Length (ft) |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **C** | **24.6** | | | |
| Cambridge Street EB left/thru \| thru/right | C | 23.7 | 0.80 | 260 | #571 |
| Cambridge Street WB left | D | 50.6 | 0.91 | 236 | #486 |
| Cambridge Street WB thru l thru/right | A | 4.1 | 0.36 | 62 | 200 |
| Harvard Avenue NB left/thru | E | 65.0 | 0.61 | 65 | 120 |
| Harvard Avenue NB right | D | 39.2 | 0.67 | 174 | 264 |
| **Cambridge Street/Denby Road** | **B** | **14.8** | | | |
| Cambridge Street EB thru | A | 6.6 | 0.55 | 169 | 298 |
| Cambridge Street WB thru l thru | A | 3.7 | 0.28 | 58 | 106 |
| Denby Road SB left l left/right | D | 54.7 | 0.76 | 131 | 175 |
| **Unsignalized Intersections** | | | | | |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.24 | | 0 |
| Braintree Street WB left/thru | A | 0.3 | 0.01 | | 0 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.25 | | 0 |
| Braintree Street WB left/thru | A | 0.6 | 0.01 | | 1 |
| Penniman Road NB left/right | B | 13.1 | 0.06 | | 5 |

As shown in **Table 3-5**, the signalized intersection of Cambridge Street/Harvard Avenue/Franklin Street is expected to operate at an overall LOS D during the a.m. peak hour under the 2018 No-Build conditions. The intersection will continue to experience moderate queuing along Cambridge Street and Harvard Avenue. This intersection will be upgraded as part of the New Brighton Landing mitigation. The intersection of Cambridge Street/Denby Road will be signalized as part of the New Brighton Landing mitigation and is expected to operate at an overall LOS A during the a.m. peak hour under 2018 No-Build conditions. All movements at the unsignalized intersections in the study area are expected to operate at LOS B or better, with minimal queuing during the a.m. peak hour under the 2018 No-Build conditions. As shown in **Table 3-6**, the signalized intersection of Cambridge Street/Harvard Avenue/Franklin Street is expected to operate at an overall LOS C and the intersection of Cambridge Street/Denby Road is expected to operate at an overall LOS B during the p.m. peak hour under 2018 No-Build conditions. All movements at the unsignalized intersections in the study area are expected to operate at LOS B or better, with minimal queuing during the p.m. peak hour under the 2018 No-Build conditions.

### 3.3.2 Build Conditions

As previously summarized, the Project will consist of 80 residential units and approximately 2,550 sf of retail space. A total of 67 parking spaces will be provided in a below ground parking garage accessed off of Braintree Street, opposite Rugg Road, for the residents. No additional parking will be provided for the commercial uses on the Site. Secure storage for approximately 80 bicycles will also be provided on Site. The 2018 Build conditions reflect a future scenario that adds anticipated Project-generated trips to the 2018 No-Build conditions traffic volumes.

#### 3.3.2.1 Site Access and Circulation

As previously shown in the Project Site plan in **Figure 1.1**, vehicular access will be provided by single driveway located along Braintree Street, opposite Rugg Road. The three curb cuts will be consolidated into two as part of the Project. Parking will be provided in an underground garage and will provide 67 spaces for the residential uses on the Site.

A loading dock will be provided on-site and will accommodate all loading and service activities including trash, recycling, deliveries, and residential move-in/move-out. The loading dock will be located at the western edge of the Site near the intersection of Braintree Street/Penniman Road. Vehicles will back into the loading dock from Braintree Street. Trash and recycling pick-up will occur curbside along Braintree Street at the eastern edge of the Site.

Pedestrian access to the residences will be provided by two entrances off of Braintree Street. The primary entrance will be located near the center of the Site, west of Rugg Road, with doors opening to the residential lobby of the building and to the stairwell and elevators providing access to the garage and the upper levels. Secondary access will be provided near the eastern portion of the Site, just west of the driveway to the garage. Pedestrian access to the retail space will be provided along Braintree Street.

#### 3.3.2.2 Trip Generation Methodology

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

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*[1] 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:

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

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

**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 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.

### 3.3.2.3 Mode Share

The BTD publishes vehicle, transit, and walking/bicycling mode split rates for different areas of Boston. The Project Site is located within BTD's designated Area 17. The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[2]. The BTD's travel mode share data for Area 17 are shown in **Table 3-7**

Table 3-7: Travel Mode Shares

| Land Use | Direction | Walk/ Bicycle Share | Transit Share | Auto Share | Local Vehicle Occupancy Rate |
|---|---|---|---|---|---|
| **Daily** | | | | | |
| Apartment | In | 31% | 22% | 47% | 1.13 |
| | Out | 31% | 22% | 47% | 1.13 |
| Retail | In | 32% | 13% | 55% | 1.78 |
| | Out | 32% | 13% | 55% | 1.78 |
| **a.m. Peak Hour** | | | | | |
| Apartment | In | 33% | 30% | 37% | 1.13 |
| | Out | 36% | 21% | 43% | 1.13 |
| Retail | In | 28% | 16% | 56% | 1.78 |
| | Out | 37% | 19% | 44% | 1.78 |
| **p.m. Peak Hour** | | | | | |
| Apartment | In | 36% | 21% | 43% | 1.13 |
| | Out | 33% | 30% | 37% | 1.13 |
| Retail | In | 37% | 19% | 44% | 1.78 |
| | Out | 28% | 16% | 56% | 1.78 |

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

### 3.3.2.4 Trip Generation

The mode share percentages shown in Table 3-7 were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates. The existing uses on the Project Site currently generate minimal traffic volumes and were not accounted for in the trip generation estimates. The trip generation for this project is based on a previous iteration of the Site plan, which included 80 apartment units and 5,000 sf of retail space. The retail trip generation for the 2,550 sf of space, as presented in this PNF, will be slightly lower than what is shown in the following table. The corresponding transportation analysis presented in this chapter is slightly more conservative than what will be expected by the smaller retail program. The trip generation for the Project by mode is shown in **Table 3-8**. The detailed trip generation information is provided in the Appendix.

Table 3-8: Project Trip Generation

| **Land Use** | | **Walk/Bicycle Trips** | **Transit Trips** | **Vehicle Trips** |
|---|---|---|---|---|
| **Daily** | | | | |
| Apartments<br>80 units | In<br>Out | 93<br>93 | 66<br>66 | 125<br>125 |
| Retail<br>5,000 sf * | In<br>Out | 61<br>61 | 25<br>25 | 59<br>59 |
| Total | In<br>Out | 154<br>154 | 91<br>91 | 184<br>184 |
| **a.m. Peak Hour** | | | | |
| Apartments<br>80 units | In<br>Out | 3<br>13 | 3<br>8 | 3<br>14 |
| Retail<br>5,000 sf * | In<br>Out | 1<br>1 | 1<br>1 | 2<br>1 |
| Total | In<br>Out | 4<br>14 | 4<br>9 | 5<br>15 |
| **p.m. Peak Hour** | | | | |
| Apartments<br>80 units | In<br>Out | 13<br>6 | 7<br>6 | 13<br>6 |
| Retail<br>5,000 sf * | In<br>Out | 6<br>5 | 3<br>3 | 4<br>6 |
| Total | In<br>Out | 19<br>11 | 10<br>9 | 17<br>12 |

* Retail trip generation was based on 5,000 sf, not the 2,550 sf presented in the current Site Plan presented in this PNF. The analysis presented is slightly more conservative than what will be expected by the smaller retail program. However, the retail trips are minimal during the peak hours and the results of the traffic operations analysis will remain valid.

### 3.3.2.5 Vehicle Trip Generation

To develop the overall trip generation characteristics of the Project, the adjusted vehicular trips associated with the Project were estimated. The Project-generated new vehicle trips are summarized in **Table 3-9**, with the detailed trip generation information provided in the Appendix.

Table 3-9: Project Vehicle Trip Generation

| Time Period | Direction | Apartment [1] | Retail [2] | Total |
|---|---|---|---|---|
| **Daily** | In | 125 | 59 | 184 |
| | Out | 125 | 59 | 184 |
| | **Total** | **250** | **118** | **368** |
| **a.m. Peak Hour** | In | 3 | 2 | 5 |
| | Out | 14 | 1 | 15 |
| | **Total** | **17** | **3** | **20** |
| **p.m. Peak Hour** | In | 13 | 4 | 17 |
| | Out | 6 | 6 | 12 |
| | **Total** | **19** | **10** | **29** |

1 Based on ITE LUC 220 Apartments for 80 units.
2 Based on ITE LUC 820 Shopping Center for 5,000 sf.

As shown in **Table 3-9**, the Project is expected to generate approximately 368 new daily vehicle trips (184 entering and 184 exiting), with 20 new vehicle trips (5 entering and 15 exiting) during the a.m. peak hour and 29 new vehicle trips (17 entering and 12 exiting) during the p.m. peak hour.

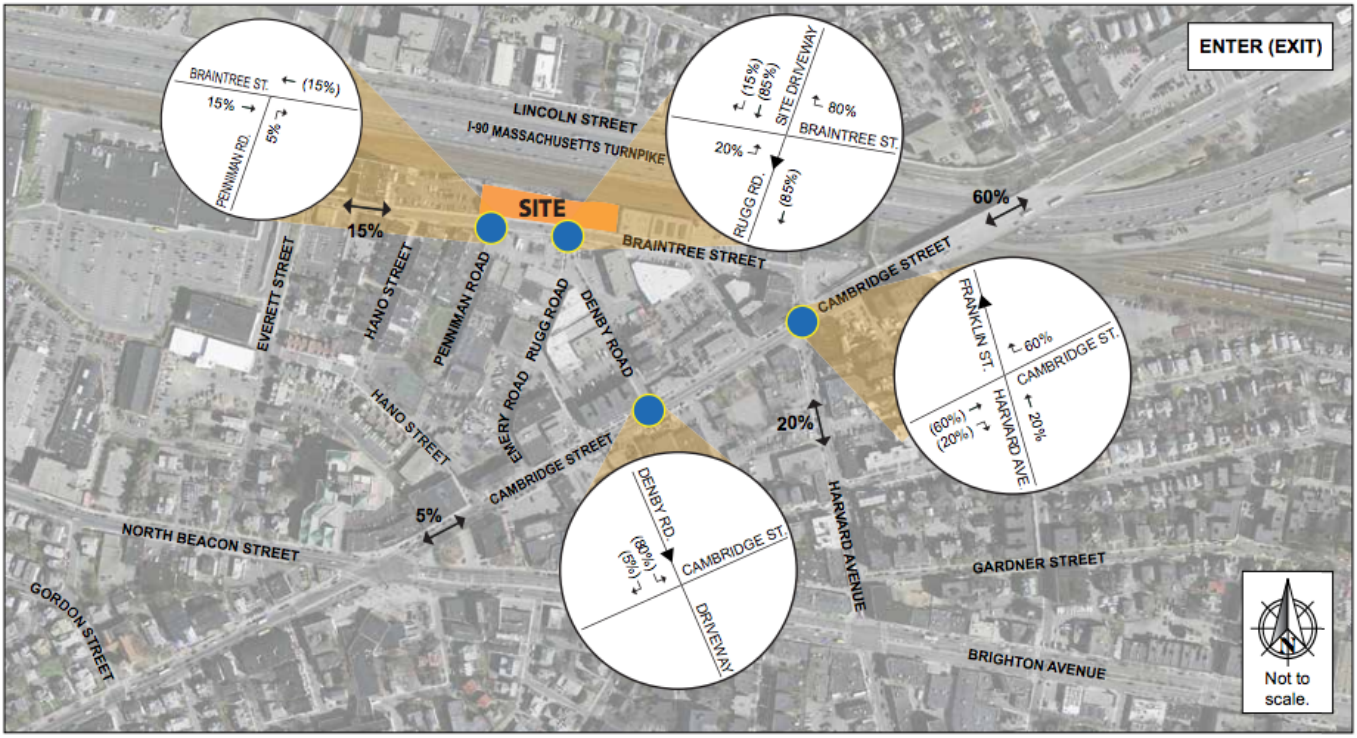
### 3.3.2.6 Trip Distribution

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 17 and trip distribution patterns presented in traffic studies for nearby projects. The trip distribution patterns for the Project are illustrated in **Figure 3.11** for the entering and exiting trips.

The Project-generated vehicle trips were assigned to the study area roadway network based on the trip distribution patterns shown in **Figure 3.11** and are shown in **Figure 3.12** and **Figure 3.13** for the a.m. and p.m. peak hours, respectively. The Project-generated trips were added to the 2018 No-Build conditions traffic volumes to develop

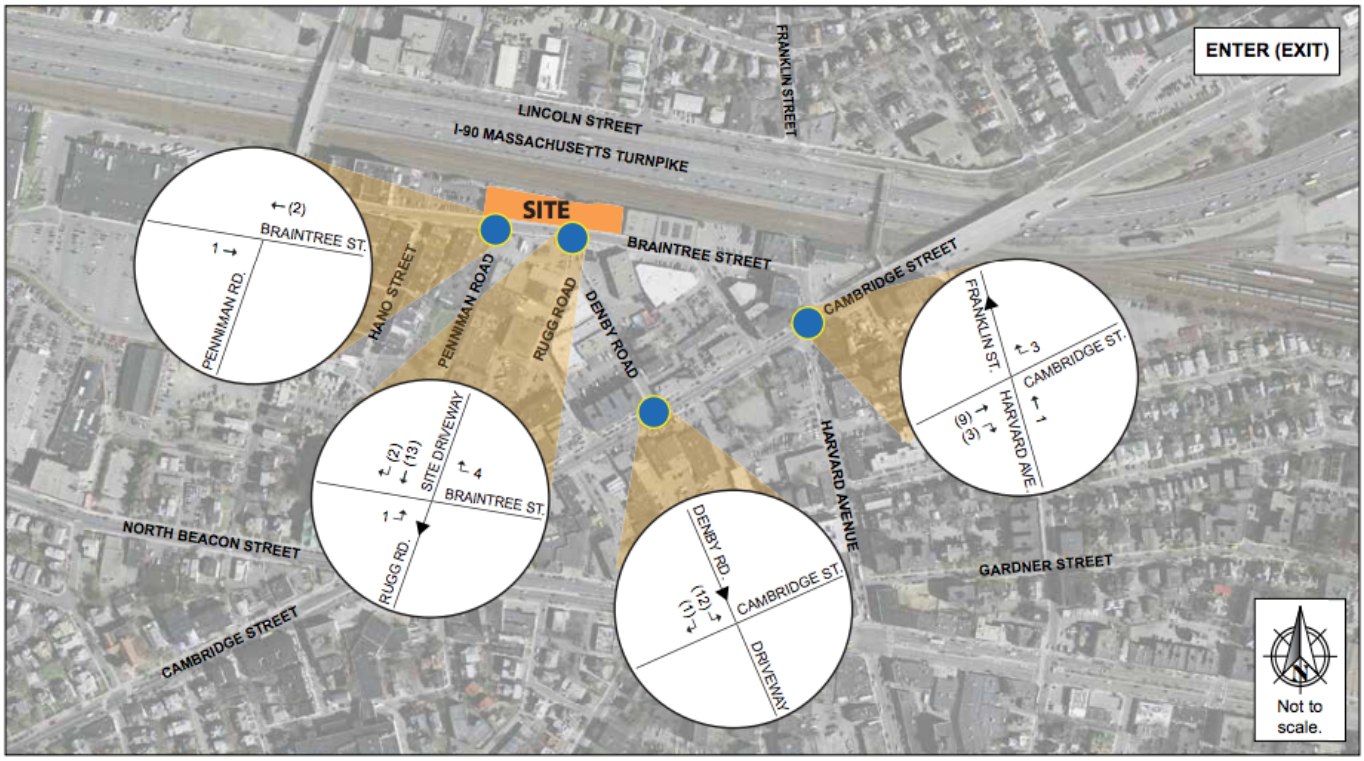
the 2018 Build conditions peak hour traffic volume networks and are shown in **Figure 3.14** and **Figure 3.15** for the a.m. and p.m. peak hours, respectively.

Figure 3.11, Trip Distribution



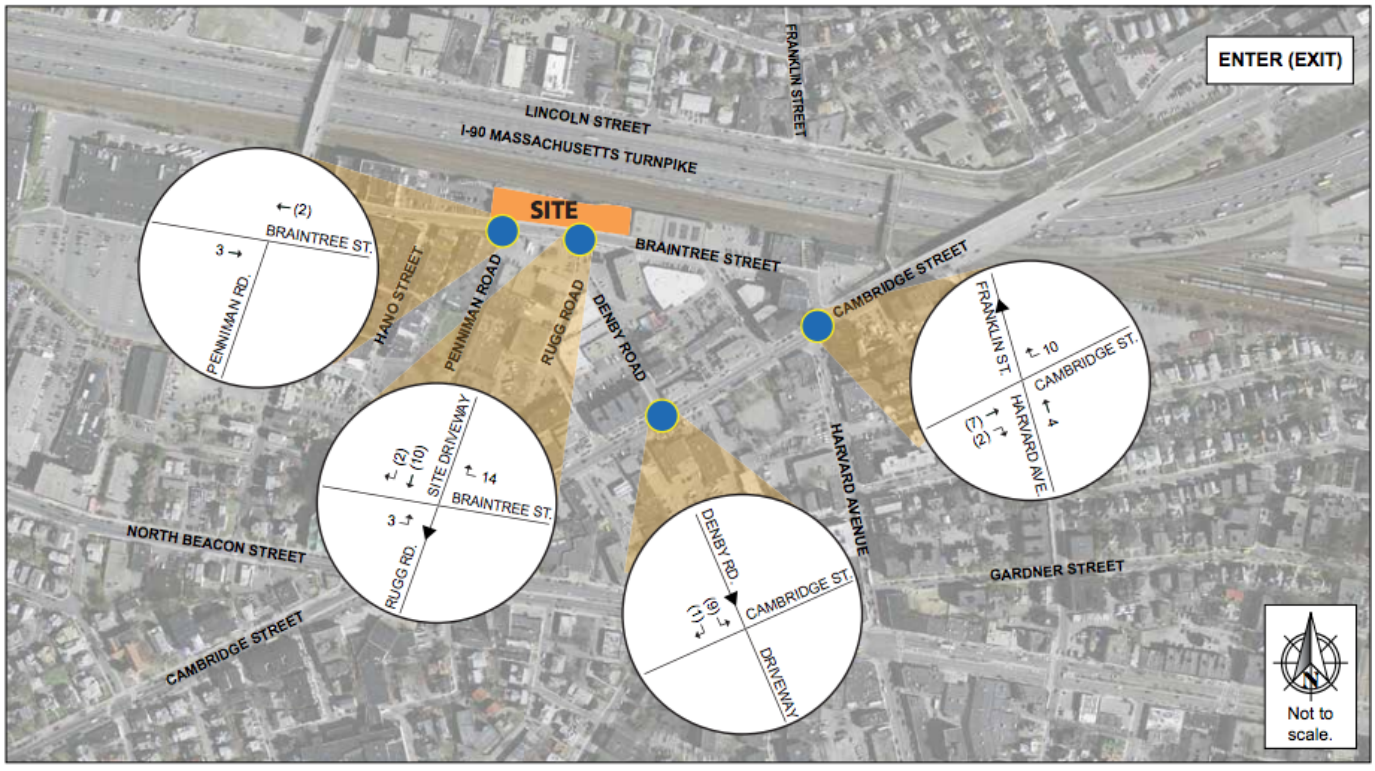

Howard/Stein-Hudson Associates, Inc.

3.12, Project Generated Trips, a.m. Peak Hour



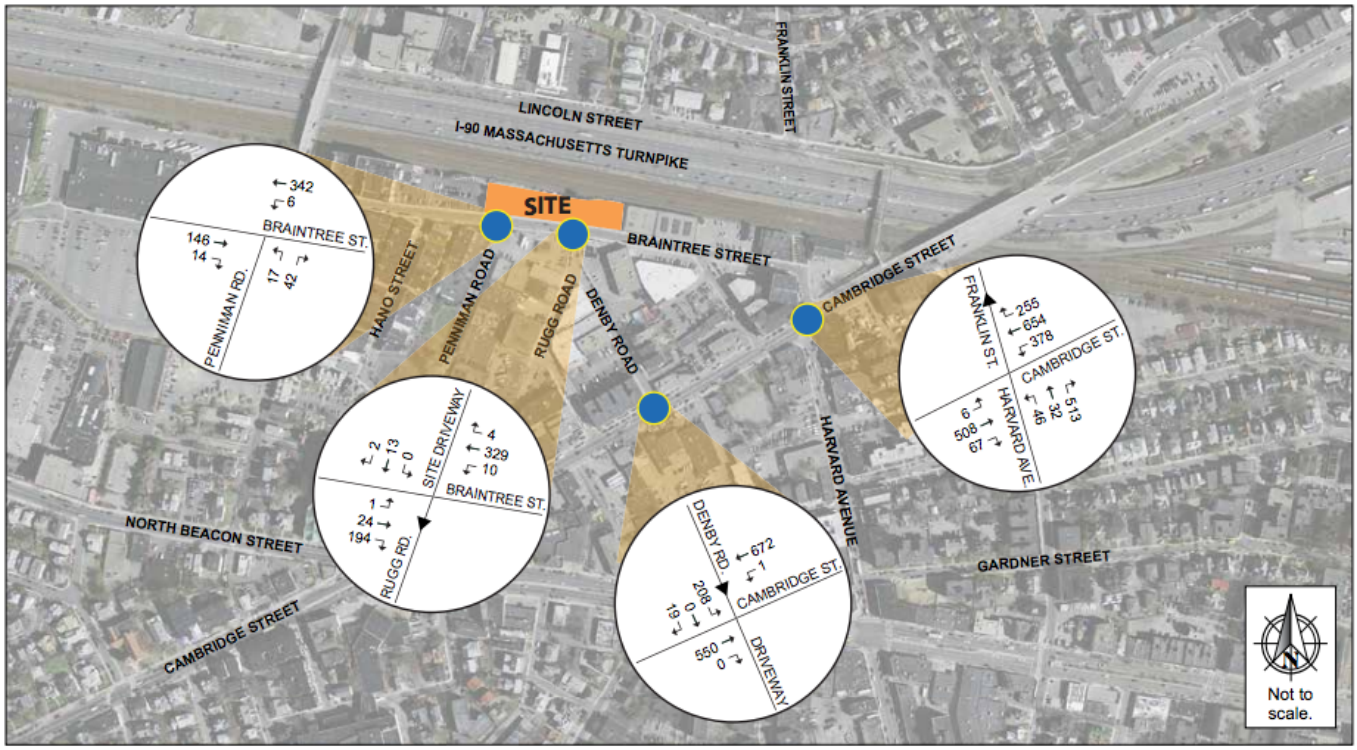

Howard/Stein-Hudson Associates, Inc.

Figure 3.13, Project Generated Trips, p.m. Peak Hour




Howard/Stein-Hudson Associates, Inc.

Figure 3.14, Build Conditions (2018) Turning Movement Volumes, a.m. Peak Hour




Howard/Stein-Hudson Associates, Inc.

Figure 3.15, Build Conditions (2018) Turning Movement Volumes, p.m. Peak Hour


Howard/Stein-Hudson Associates, Inc.

### 3.3.2.7 Build Conditions Traffic Operations

The 2018 Build conditions scenario analyses use the same methodology as the 2013 Existing and 2018 No-Build Conditions scenario traffic operations analyses. The results of the 2018 Build Condition traffic analysis at study area intersections are presented in **Table 3-9** and **Table 3-10** for the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the Appendix.

Table 3-10: Build Conditions (2018), Capacity Analysis Summary, a.m. Peak Hour

| **Intersection** | **LOS** | **Delay (seconds)** | **V/C Ratio** | **50th Percentile Queue Length (ft)** | **95th Percentile Queue Length (ft)** |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **D** | **49.1** | | | |
| Cambridge Street EB left/thru \| thru/right | E | 62.5 | 0.98 | ~286 | #401 |
| Cambridge Street WB left | E | 71.9 | 1.01 | ~244 | #433 |
| Cambridge Street WB thru l thru/right | B | 17.8 | 0.60 | 250 | 329 |
| Harvard Avenue NB left/thru | D | 39.0 | 0.30 | 47 | 93 |
| Harvard Avenue NB right | E | 73.6 | 1.02 | ~364 | #585 |
| **Cambridge Street/Denby Road** | **B** | **10.0** | | | |
| Cambridge Street EB thru | A | 4.5 | 0.43 | 90 | 167 |
| Cambridge Street WB thru l thru | A | 1.1 | 0.27 | 7 | 17 |
| Denby Road SB left l left/right | D | 49.2 | 0.68 | 74 | 111 |
| **Unsignalized Intersections** | | | | | |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB left/thru/right | A | 0.0 | 0.00 | | 0 |
| Braintree Street WB left/thru/right | A | 0.3 | 0.01 | | 1 |
| Site Driveway SB left/thru/right | B | 13.9 | 0.04 | | 3 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.10 | | A |
| Braintree Street WB left/thru | A | 0.2 | 0.00 | | A |
| Penniman Road NB left/right | B | 10.7 | 0.09 | | B |

~ = 50th percentile volume exceeds capacity.

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

Grey shading indicates that LOS has decreased from No-Build Conditions.

Table 3-11 Build Conditions (2018), Capacity Analysis Summary, p.m. Peak Hour

| Intersection | LOS | Delay (seconds) | V/C Ratio | 50th Percentile Queue Length (ft) | 95th Percentile Queue Length (ft) |
|---|---|---|---|---|---|
| **Signalized Intersections** | | | | | |
| **Cambridge Street/Harvard Avenue/ Franklin Street** | **C** | **25.6** | | | |
| Cambridge Street EB left/thru \| thru/right | C | 26.0 | 0.85 | 264 | #581 |
| Cambridge Street WB left | D | 52.1 | 0.92 | 236 | #486 |
| Cambridge Street WB thru l thru/right | A | 4.4 | 0.38 | 64 | 203 |
| Harvard Avenue NB left/thru | E | 66.2 | 0.63 | 68 | 125 |
| Harvard Avenue NB right | D | 37.1 | 0.64 | 174 | 264 |
| **Cambridge Street/Denby Road** | **B** | **15.2** | | | |
| Cambridge Street EB thru | A | 6.7 | 0.56 | 172 | 304 |
| Cambridge Street WB thru l thru | A | 3.8 | 0.28 | 59 | 111 |
| Denby Road SB left l left/right | D | 54.8 | 0.77 | 135 | 179 |
| **Unsignalized Intersections** | | | | | |
| **Braintree Street/Rugg Road** | | | | | |
| Braintree Street EB left/thru/right | A | 0.1 | 0.00 | | 0 |
| Braintree Street WB left/thru/right | A | 0.3 | 0.01 | | 0 |
| Site Driveway SB left/thru/right | B | 14.3 | 0.03 | | 3 |
| **Braintree Street/Penniman Road** | | | | | |
| Braintree Street EB thru/right | A | 0.0 | 0.25 | | 0 |
| Braintree Street WB left/thru | A | 0.6 | 0.01 | | 1 |
| Penniman Road NB left/right | B | 13.1 | 0.06 | | 5 |

~ = 50th percentile volume exceeds capacity.

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

As shown in Table 3-9, the signalized intersections will continue to operate at LOS D or better during the a.m. peak hour under the 2018 Build conditions. The unsignalized intersections will continue to operate at LOS B or better, with minimal delay and queuing during the a.m. peak hour under the 2018 Build conditions.

As shown in Table 3-10, the signalized intersections will continue to operate at LOS C or better during the p.m. peak hour under the 2018 Build conditions. The unsignalized intersections will continue to operate at LOS B or better, with minimal delay and queuing during the p.m. peak hour under the 2018 Build conditions.

Based on the analysis presented in Table 3-9 and Table 3-10, the Project is expected to have minimal impact at the study area intersections. The existing roadway infrastructure, with the proposed improvements to be implemented by the proponent of the New Brighton Landing project will accommodate the Project-generated traffic volumes. No additional roadway capacity improvements are required.

### 3.3.2.8 Parking

The Project will provide 67 parking spaces for the residential uses on Site in an underground parking garage, including two Zipcar spaces and three handicap spaces. The parking ratio of 0.84 is in line with the recommended district based parking goals set forth by BTD for developments in Allston/Brighton near a transit station that suggest a maximum ratio of 0.75 to 1.25 parking spaces per unit. Access to the garage will be provided by way of a driveway located along Braintree Street, opposite Rugg Road. On-site parking will not be provided for the commercial uses on the Project Site. Parking for the commercial uses will occur on the surrounding roadway network, if at all.

### 3.3.2.9 Public Transportation

Based on the transit mode shares presented earlier, the future transit trips associated with the Project were estimated and are summarized in **Table 3-11**.

Table 3-12: Project Transit Trips

| Time Period | Direction | Apartment | Retail | Total |
|---|---|---|---|---|
| **Daily** | In | 66 | 25 | 91 |
| | Out | 66 | 25 | 91 |
| | **Total** | **132** | **50** | **182** |
| **a.m. Peak Hour** | In | 3 | 1 | 4 |
| | Out | 8 | 1 | 9 |
| | **Total** | **11** | **2** | **13** |
| **p.m. Peak Hour** | In | 7 | 3 | 10 |
| | Out | 6 | 3 | 9 |
| | **Total** | **13** | **6** | **19** |

As shown in **Table 3-11**, the Project will generate an estimated 182 new transit trips on a daily basis (91 alighting and 91 boarding). Approximately 13 new transit trips (4 alighting and 9 boarding) will occur during the a.m. peak hour and 19 new trips (10 alighting and 9 boarding) will occur during the p.m. peak hour.

The transit trips will be accommodated by the existing public transportation facilities that serve the Project study area. It is expected that the MBTA bus routes 57, 64, and 66 and the B Line branch of the MBTA Green Line light-rail system will primarily serve the residents of the Site.

### 3.3.2.10 Pedestrians

Based on the walk mode shares presented earlier, the future walk trips were estimated and are summarized in **Table 3-12**.

Table 3-13: Project Pedestrian Trips

| Time Period | Direction | Apartments | Retail | Total |
|---|---|---|---|---|
| **Daily** | In | 93 | 61 | 154 |
| | Out | 93 | 61 | 154 |
| | **Total** | **186** | **122** | **308** |
| **a.m. Peak Hour** | In | 3 | 1 | 4 |
| | Out | 13 | 1 | 14 |
| | **Total** | **16** | **2** | **18** |
| **p.m. Peak Hour** | In | 13 | 6 | 19 |
| | Out | 6 | 5 | 11 |
| | **Total** | **19** | **11** | **30** |

Over the course of a day, the Project will generate an estimated 308 new pedestrian trips and an additional 182 new transit trips that will require a walk to or from the Site. This results in an additional 490 new pedestrian trips per day. Approximately 18 new pedestrian trips will occur during the a.m. peak hour and 30 new pedestrian trips will occur during the p.m. peak hour in addition to the new transit trips that will also require a walk to or from the Site. The pedestrian facilities surrounding the Site will have adequate capacity to accommodate the pedestrian trips generated by the Project.

### 3.3.2.11 Bicycle Accommodations

BTD has established guidelines requiring projects subject to Article 80 review to provide secure covered bicycle parking for residents and employees and short-term bicycle racks for visitors. The Project will provide approximately 80 covered and secure bicycle storage spaces in the parking garage. Additional storage will be provided by outdoor bicycle racks accessible to visitors to the Site in accordance with BTD guidelines.
All bicycle racks, signs, and parking areas will conform to BTD guidelines and will be located in safe, secure locations. The Proponent will work with BTD to identify the most appropriate quantity and location for bicycle racks on the Project Site as part of the Transportation Access Plan Agreement (TAPA) process.

### 3.3.2.12 Build Conditions Loading and Service Activity

Loading and service operations will occur at a loading dock on the Project Site. The loading dock will be located at the western edge of the Site and will be sized to accommodate a single SU-36 vehicle. Residential move-in/move-out will occur at the loading dock and will be coordinated through the property manager. Trash and recycling pick-up will occur curbside along Braintree Street at the eastern edge of the Project Site. A summary of anticipated loading/service activity by land use is presented in **Table 3-13**; the sources of the assumptions are presented below. 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[3]. Deliveries to the Project Site will be mostly limited to SU-36 trucks and smaller delivery vehicles.

**Residential**. Residential units primarily generate delivery trips related to small packages and prepared food. Based on the CTPS report, residential uses generate approximately 0.01 light truck trips per 1,000 sf of gross floor area and 0.001 medium/heavy truck trips per 1,000 sf of gross floor area.

**Retail.** Retail depend on more frequent deliveries from smaller trucks. Based on the CTPS report, retail uses generate approximately 0.15 light truck trips per 1,000 sf of floor area and 0.15 medium/heavy truck trips per 1,000 sf of gross floor area.

Table 3-14 Delivery Activity by Land Use

| Land Use | Number of Deliveries | General Delivery Times |
|---|---|---|
| **Retail** | 2 | 10% before 7:00 a.m.<br>70% between 7:00 a.m. and 1:00 p.m.<br>20% after 1:00 p.m. |
| **Residential** | 1 | |
| **Total** | 3 | |

The Project is expected to generate approximately 3 deliveries per day. It is anticipated that the majority of these deliveries will occur between 7:00 a.m. and 1:00 p.m. These numbers do not include trash truck trips. The low number of anticipated deliveries will have minimal impact on the vehicular operations along Braintree Street.

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

## 3.4 Transportation Mitigation Measures

While the traffic impacts associated with the new 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 use. As part of the Project, the Proponent will bring all abutting sidewalks to the City of Boston standards in accordance with the Boston Complete Streets design guidelines. This will include the reconstruction of the sidewalk along the Braintree Street frontage, the planting of trees, and providing bicycle storage racks around 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 the BTD. Because the TAPA must incorporate the results of the technical analysis, it must be executed after these other processes have been completed. The Proponent will work closely with BTD to determine the level of transportation mitigation that will be necessary to accommodate the Project. Any 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.

## 3.5 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.
On-site management will keep a supply of transit information (schedules, maps, and fare information) to be made available to the residents and patrons 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 demand management 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 Zipcar 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, in accordance with the City of Boston bicycle guidelines. Secure bicycle storage will also be

made available to employees to encourage bicycling as an alternative mode of transportation. Subject to necessary approvals, public use bicycle racks for visitors will be placed near building entrances.

- **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.

- **ZipCar**: The Proponent will explore the feasibility of providing two new Zipcar spaces to be located in the underground parking garage.

- **Electric Charging Stations:** The Proponent will provide a total of two electric charging stations on the Site.

## 3.6 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, lane 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 considered for the CMP:

- Construction workers will be encouraged to use public transportation and/or carpool;

- A subsidy for MBTA passes will be considered for full-time employees; 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.

# 4 Environmental

# Chapter 4

*Environmental*

## 4.0 Environmental Impact and Mitigation

This chapter describes the various components of our Environmental review. In our review we focused on the potential environmental impact our project poses and ways in which we propose to manage those impacts. The areas of concern we focused on were as follows:

- Wind
- Noise
- Construction Management
- Shadow

## 4.1 Wind

Rowan Williams Davies & Irwin Inc. (RWDI) has reviewed the potential pedestrian wind conditions around the proposed 61-83 Braintree Street development in Allston, MA. This letter summarizes our findings, based on the current design drawings and our past experience of wind-tunnel testing for buildings in the Boston area.

Figure 4.1, Aerial photo of the existing site and surroundings (Courtesy of Google Earth™)


### 4.1.1 Site Information

The proposed development will be located on the north side of Braintree Street running roughly from Penniman Road to Denby Road. It is backed on the north side by the Massachusetts Turnpike, as shown in Figure 1. Currently, low industrial/commercial buildings occupy the site, which is surrounded by low rise industrial/commercial buildings, open parking lots, and the Massachusetts Turnpike. To the north, across the turnpike, the buildings are of similar height. The site is relatively flat.

According to the drawings received by RWDI, the proposed development consists of 2 floors of parking, amenity and commercial space, and 4 residential floors reaching 66 feet above local grade. The footprint of the building is roughly 51 feet wide by 346 feet long aligned along Braintree Street. A longitudinal section through the building is shown in Figure 2. Figure 3 is a site plan.

Figure 4.2, Longitudinal Section

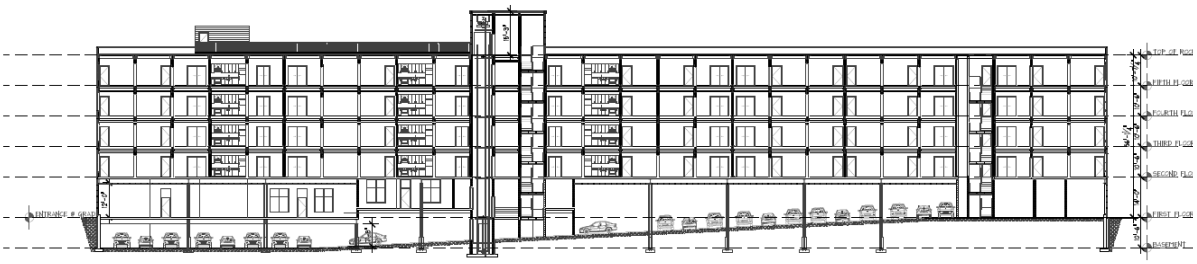
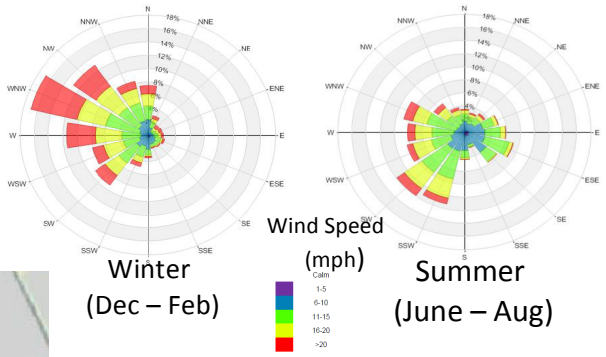


Figure 4.3, Site Plan


Figure 4.4, Winter and Summer Wind Roses




An analysis of the long-term wind data in the Boston area, shown in Figure 4, indicates that, on an annual basis, the most common wind directions are those between southwest and northwest. Winds from the east and east-southeast are also relatively common. Typically, winds are stronger in the winter and spring than those in the summer and fall.

### 4.1.2 Pedestrian Wind Assessment

In order to provide an opinion on the overall wind conditions expected around the proposed development, RWDI reviewed meteorological data for the area, drawings of the proposed development, aerial and "street view" photographs of the surroundings, and past wind tunnel projects with similar exposures in the Boston area. This data, in conjunction with our past experience in the area and our engineering judgment, allows us to summarize the expected wind conditions as follows:

1. The building is roughly two floors taller than surrounding buildings, but at five floors above grade, will not deflect a significant amount of wind down to street level. As a result, wind conditions on sidewalks along adjacent streets will be similar to those that currently exist at neighboring buildings.

2. A site with similar exposure and of similar height was wind tunnel tested recently. We expect this site to experience similar conditions and therefore be suitable for standing or walking throughout the year.

3. The entrance midway along the building is sheltered by the proposed building from the prevailing northwest and northeast winds. It is also protected by a canopy which will afford a small amount of wind protection. In order to mitigate west and southwest winds, we will reverse the door swing to become an out-swinging door. For one, it allows for an easier engagement of the door, and secondly, we will be designing the door to be compliant with the Massachusetts State Building Code. A more protected entrance pulled farther beneath the building may be beneficial or planters and/or screens may be considered on both sides of the entrance area.

4. The first floor has an overhang that is about 3 feet in width and spans the length of the entire building. This will provide some additional wind protection and rain protection in that area.

5. The proposed outdoor decks at the ground level and on the fourth floor will be sheltered by the proposed building from the southwesterly winds and suitable wind conditions are expected during the summer, when these areas will typically be in use. The deck on the roof top is more exposed and localized wind control measures, such as landscaping, screens and tall glazing parapets, may be considered to create a more comfortable wind environment for passive pedestrian use.

6. Further development along Braintree Street is likely to improve pedestrian conditions by forming a more complete barrier to predominant northwest winds.

### 4.1.3 Conclusion

The proposed condominium development will not cause a significant wind impact on the surrounding areas when compared to the existing conditions. Based on our past wind tunnel tests of buildings and locations with similar exposures, suitable wind conditions are predicted at sidewalks, building entrances, and driveways throughout the year. For the entrance on the south face of the building, the planned canopy will be a positive wind mitigation feature and may benefit from an increase in size. Recessing the entrance would be a positive improvement or landscaping and screens can be considered on both sides of the main entrance. Suitable wind conditions are predicted on the outdoor decks at the ground level and on the fourth floor during the summer, when these areas will typically be in use. Additional wind control measures, such as

landscaping, wind screens and tall glazing parapets, may be considered for the deck on the roof top to create a more comfortable wind environment for passive pedestrian use.

## 4.2 Noise

The proposed apartment building project site at 61-83 Braintree Street is located immediately adjacent to high-speed commuter and freight train tracks, and in the near-vicinity of Interstate Highway I-90 (Mass Pike). The project design/development team has requested a pre-construction evaluation of rail/highway traffic noise that would be transmitted through the exterior building façade into the residential apartments that will overlook the train tracks and highway. The purpose of the acoustical evaluation and recommendations summarized herein is to achieve compliance with:

- U.S. Department of Housing and Development (HUD) guidelines for environmental sound levels transmitted into residential dwellings.

- As explained further below in this report, for the 61-83 Braintree Street project, compliance with the HUD criteria for environmental sound levels is optional, yet recommended by this office. The scope of acoustical review services authorized by the project developer is limited to the evaluation of exterior-to-interior sound transmission with respect to the HUD criteria.

### 4.2.1 Executive Summary

Cavanaugh Tocci Associates has measured environmental sound levels at the project site, and has reviewed architectural drawings that have been developed as of this letter date. On the basis of our measurements, review of the design development drawings, acoustical calculations and evaluations, we have concluded the following:

- Exterior sound levels incident upon the future north, east and west facades of the building (facades that fully or partially overlook the railroad tracks and highway) exceed the HUD criteria exterior sound levels guideline by significant margins.

- Exterior sound levels incident upon the future south façade of the building (overlooking Braintree Street) comply with the HUD exterior sound levels criteria guideline.

- The calculated noise reduction performance of the insulated exterior wall construction that is shown and detailed on the project architectural drawings is sufficient to achieve compliance with the HUD guideline for exterior noise transmitted indoors.

- The exterior façade windows and sliding-glass doors that are shown on the architectural drawings would require acoustical upgrade at the northeast and west facades to achieve compliance with the HUD guideline for exterior noise transmitted indoors.

- Most window manufacturers publish sound isolation ratings (or can provide the ratings upon request) for windows and sliding doors. The two most prevalent window acoustical ratings used in the United States are the *sound transmission class* (STC) rating and the *outdoor / indoor transmission class* (OITC) rating.

- We have calculated that, to achieve compliance with the HUD guideline for exterior noise transmitted indoors, the windows and sliding glass doors on the north facade of the building must achieve sound isolation performance of STC 35 or higher and/or achieve OITC 30 or higher (we recommend this level of performance on the east and west facades also, although technically the sound isolation requirements are slightly lower on the east and west facades).

- The amount of noise reduction (through the exterior windows of the building north, east and west facades) that would be required to comply with the HUD design goal for exterior sound transmitted indoors, is in the upper end of, or exceeds, the range of noise reduction that is typical for most residential-market windows.

- We have determined that standard 1-inch insulated glass (IG) with non-laminated glass (¼" glass ½" air space ¼" glass) would provide noise reduction sufficient to achieve compliance with the HUD guideline for exterior noise transmitted into residential apartments. Windows glazed with 1" IG are more commonly found in commercial applications with pivoting sashes, but may be found for residential hung-sash configurations in smaller sizes. Many commercial windows and many residential sliding glass doors are available glazed with 1" IG.

### 4.2.2 Environmental Sound Levels Criteria (HUD Guidelines)

The project building is located immediately adjacent to the MBTA Commuter and CRX rail line, and Interstate Highway I-90 (Mass Pike). Trains and highway traffic are the chief sources of noise on the site. The exterior facades of the proposed apartments will include glass patio doors, awning type windows, and fixed-sash windows. A principal concern for the building envelope design is the mitigation of environmental sound transmitted through the sliding glass doors and windows. To the best of our knowledge, there are no agency requirements regarding environmental noise impact upon this project site. However, HUD has developed noise assessment guidelines for environmental noise impact upon housing sites for which they are providing.

We understand that HUD is not involved in the 61-83 Braintree Street project. However, we understand that "secondary mortgage market" lending institutions may require that projects conform to the HUD project site noise assessment guidelines as a condition for financing. As the current project developer may seek mortgage funding in the near future, or if units are to be sold in the future as condominiums, conformance to HUD site guidelines might be required.

Therefore, we have evaluated environmental noise at the project site, using the HUD guidelines, and suggest that the project owner and design team consider achieving compliance with the HUD acoustical criteria.

Appendix A attached to this letter contains pertinent pages extracted from the HUD publication titled *The Noise Guidebook* (the extract contains pages 12-14 of a document comprised of over 100pages). Briefly, the HUD criteria to evaluate environmental noise levels at housing project sites are expressed in terms of the Day Night Sound Level (alternatively identified as DNL or Ldn). The DNL is a 24-hour average of sound level with a 10-decibel upward "adjustment" or "penalty" for noise occurring at night (10 PM through 7 AM) to account for increased sensitivity to noise at night. As shown in Appendix A, the HUD environmental noise criteria for housing sites include the following:

- The interior design goal is to achieve DNL of 45 dB produced by exterior sound transmitted through the building envelope to the interior of residential apartments (extract, page 12).

- An exterior DNL of 65 dB or lower at the project site is categorized as "acceptable" (extract, pages 12 and 13).

- It is assumed that "standard" building construction (with windows closed) is expected to provide 20 decibels (DNL) of exterior-to-interior noise reduction (extract, page 14).

- If a housing project site includes large outdoor spaces with seating areas and playgrounds, etc. where people would be expected to congregate, and if exterior sound levels at the project site exceed a DNL of 65 dB, then exterior sound barriers (walls or earthen berms) are preferred by HUD to provide reduction of sound levels for exterior spaces (which under certain circumstances, could also result in lower sound levels at the building façade and thereby lower sound levels transmitted into interior spaces). For the 61-83 Braintree Street project site, there are no outdoor areas planned. Barriers to screen the building from rail and traffic noise would need to be unfeasibly tall. Hence, the principal HUD recommendation to control environmental noise transmitted indoors is to improve exterior-to-interior noise reduction through the building facade, beyond the 20 decibel "standard" construction (extract, page 14)

It is inferred from the HUD criteria that for every decibel that exterior DNL exceeds 65 dB, an additional DNL decibel of noise reduction beyond the 20 decibel "standard" noise reduction should be provided in the exterior building envelope. Typically this is principally provided with acoustically-upgraded windows together with "central" air-conditioning systems (not through to control environmental noise transmitted indoors is to improve exterior-to-interior noise reduction through the building facade, beyond the 20 decibel "standard" construction (extract, page 14) It is inferred from the HUD criteria that for every decibel that exterior DNL exceeds 65 dB, an additional DNL decibel of noise reduction beyond the 20 decibel "standard" noise reduction should be provided in the exterior building envelope. Typically this is principally

provided with acoustically-upgraded windows together with "central" air-conditioning systems (not through window or through-wall air conditioners) to assure comfortable acoustical and thermal interior environments with closed windows. For example, if the exterior acoustical environment at a building façade would be determined to be DNL 75, then a total of at least 30 DNL decibels of noise reduction through the building façade would be required to achieve a resulting interior environment of DNL 45 or lower (75-30=45). For the 61-83 Braintree Street project, it is important to "match" the sound isolation performance of the exterior wall-window assembly to the sound spectrum (frequency characteristics) of diesel locomotives.

### 4.2.3 Measured Environmental Sound Levels at 61-83 Braintree Street Project Site

The existing acoustical environment (as of October 2013) has been quantified by installing sound monitors at the project site. Appendix B contains graphs and a summary table that present pertinent sound monitoring data collected for this evaluation report.

For our evaluation of building site sound levels in accordance with the HUD guidelines, we have calculated/estimated future DNL values for the exteriors of all four future building facades (following building construction and occupancy), as follows:

- North facade (directly overlooking RR tracks and I-90) DNL 78
- East façade (partially overlooking RR tracks and I-90) DNL 74 *
- South façade (overlooking Braintree Street) DNL 63
- West façade (partially overlooking RR tracks and I-90) DNL 74 *

*The listed DNL 74 values for the narrow ends of the 61-83 Braintree Street building are estimated based on interpolation from the monitoring data, together with adjustments for various sound shielding and reflection characteristics associated with the future finished 61-83 Braintree Street building facades and the side elevation facades of the two existing buildings that are located on either side of the 61-83 Braintree Street building. In order to achieve the HUD interior design goal of DNL 45 at the "worst-case" building façade overlooking the railroad tracks, at least **33 decibels of exterior-to-interior rail/highway noise reduction would be required** (78-33=45). In order to achieve the HUD interior design goal on the narrow east and west façades of the building **29 decibels of exterior-to-interior rail/highway noise reduction would be required** (74-29=45). During the Value Engineering phase of the building design process, it is possible that the project developer may consider one glazing configuration for the west, north and east facades of the building, and a different glazing configuration for the south facade of the building. It is typically more difficult to provide adequate sound isolation for diesel locomotive noise than for other transportation noise sources.

We request an opportunity to briefly review any alternative glazing configuration(s) that may be selected, to ensure that the noise reduction performance of the glazing across the sound spectrum would result in an interior DNL of 45 for exterior sound transmitted through the building façade to interior spaces.

### 4.2.4 61-83 Braintree Street Apartment Exterior Façade Design Acoustical Review

Appendix C includes an architectural drawing showing the building exterior façade and exterior wall construction details, and includes technical data used in our acoustical evaluation of the building facade. We have reviewed the façade drawing and conferred with the architect to identify the ratio of window area to wall area, reviewed and acoustically evaluated the wall construction section detail, and evaluated various glazing configuration alternatives including standard residential, acoustically-upgraded residential, and store-front commercial window glazing configurations.

It is important to note that the sound spectrum characteristics of rail noise and truck/automobile noise differ, and that the overall sound isolation performance of the composite wall/window//sliding-door facade also differs for different noise spectra.

Architects and window manufacturers are generally familiar with the sound isolation descriptor *sound transmission class*, abbreviated and most often presented as STC. A lesser-known descriptor for building façade sound isolation evaluations is the *outdoor-indoor transmission class*, abbreviated and most often presented as OITC.

It is technically incorrect to simply subtract a window/wall STC rating or window/wall OITC rating from an exterior DNL rating to derive an interior DNL. For this project analysis, we have used third-octave frequency band sound source data for diesel locomotive train pass bys and third-octave frequency band sound transmission loss data for window glazing and for the insulated wall portions of the exterior façade.

As previously noted in this letter, the measured exterior DNL at the building façade overlooking the railroad tracks and highway is DNL 78. Based on our technical evaluation contained in Appendix C we conclude the following:

- With standard residential insulating windows (1/2" IG, non-laminated) rated at STC 24, the interior sound level would be DNL 53, which exceeds the HUD design goal of DNL 45.

- With upgraded residential insulated windows (5/8" IG, laminated) rated STC 28, the interior sound level would be DNL 50, which exceeds the HUD design goal of DNL 45.

- With standard commercial window glazing (1" IG, non-laminated), rated at STC 35, the interior sound level would be DNL 45, which marginally achieves the HUD design goal of DNL 45.

- For other window glazing alternatives that the project developer/design team may consider, we have determined that the minimum sound isolation ratings for the windows and sliding glass doors should be STC 35 and/or OITC 30.

With STC 35 and/or OITC 30 windows and sliding glass doors installed along the building east, north and west facades, the expected future interior DNLs associated with exterior sound transmitted indoors throughout the 61-83 Braintree Street building will comply with the HUD guidelines.

## 4.3 Construction Management

Construction is a necessary part of all development projects. Because it engages a number of elements of the world we live in, it is necessary to create a plan to manage those elements. One positive thing about construction is that it is temporary. But it still requires that we do it in a smart way and with as little negative impact to the community as possible. Through our project, we have a plan to manage the following construction related elements:

1. Site Preparation and Construction Staging
2. Construction Noise
3. Construction Air Quality
4. Construction Truck Routes and Volumes
5. Construction Trip Generation and Worker Parking
6. Construction Traffic and Parking
7. Public Safety During Construction
8. Rodent Control During Construction
9. Odor Control During Construction
10. Construction Hazardous Materials and Solid Waste

## 4.3.1 Site Preparation and Construction Staging

Waypoint has created a site preparation plan that includes managing various site related issues that deal with any potential land disturbance factors such as site erosion, water discharges, and air pollutants.

## 4.3.2 Construction Air Quality

Air quality is a major factor in all construction jobs. Through construction, there are many ways in which harmful emissions can be sent into the immediate and surrounding communities. Waypoint is dedicated to do all that they can to prevent these emissions from being created in the first place. Their approach is to create systems of management around the following areas:

1. Fuel Usage

2. Vehicular retrofitting

3. Site cleanliness

First, Waypoint is committed to using the greenest fuel in the form of ultra low sulfur diesel ("ULSD") fuel on all off-road equipment. Secondly, Waypoint has retrofitted all vehicles and equipment to reduce the harmful effects of traditional diesel equipment. All vehicles will be fitted with oxidation catalysts and catalyzed particulate filters. Lastly, all vehicles will be washed at the end of each day, covered, and the site will be vacuumed thoroughly.

## 4.3.3 Construction Noise

Construction noise has a major negative impact on the immediate area it is located in. Early morning and late evening noise take place when people are either sleeping or eating. Waypoint understands these dynamics and are committed to developing a management plan within the City of Boston guidelines that articulate the following:

1. Construction phasing

2. Vehicular noise compliance

3. Day-to-day onsite management

It is first important to create a detailed construction schedule that clearly articulates the various parts of the construction process as they relate to time. This type of plan gives local residents and city officials a way to anticipate noise volumes based on particular parts of the construction cycle.

Demolition, and foundation construction are two phases that generate a high noise volume and through a schedule residents will be aware and can anticipate the activity.

Waypoint will comply will the City of Boston's Air Pollution Control Commission's Regulations for the Control of Noise in the City of Boston as it pertains with all vehicles being operated for the purpose of construction.

Waypoint also will make available an onsite staff member responsible for the day-to-day communication between the development team and the residents of the Allston community.

## 4.3.4 Construction Traffic and Parking

Recognizing that how construction workers get to and from work along with where they park is a major concern of local residents, Waypoint will enter into a Construction Management Plan ("CMP") that describes in detail ways in which employees travel and parking will be managed during the construction process.

## 4.3.5 Construction Trip Generation and Worker Parking

The number of workers required during the construction will vary with an estimated average daily workforce of 7 employees during the peak of construction. Because the workforce will arrive and depart prior to peak commuter traffic periods, these trips are not expected to have a large impact on the area's transportation system. Construction workers will arrive at the job site either via public transportation or by personal vehicles. While some parking will be available for construction workers at the Project Site, the Proponent will work to reduce construction employee vehicle trips through TDM measures, such as:

1. Provide secure, on-site storage so that workers do not have to transport tools and equipment each day;

2. Offer subsidies and pre-tax payroll deduction for transit pass purchase;

3. Provide a ride-matching service;

4. Post transit schedules in prominent area; and/or

5. Hire local workers.

## 4.3.6 Construction Truck Routes and Volumes

The Project Site is located in a fairly thickly settled residential / industrial area. During the morning hours there will be a mix of residential commuters, business employees, and trucks passing through the immediate area. All construction vehicles will be entering the Project Site from the Harvard Street intersection and leaving the same way. This route allows for the best maneuvering of vehicles and will cause the lease amount of impact on the traffic flow. Waypoint will enter into a CMP that will describe the routes construction workers will be encouraged to take on their way to and from work as well as construction vehicles entering the Project Site for business. An onsite staff person will be designated to manage the in and out flow of construction vehicles so to minimize the impact on the surrounding streets.

## 4.3.7 Construction Hazardous Materials and Solid Waste

Asbestos containing materials (ACM) have been identified in the building at the Site during past hazardous material surveys. The ACM will be abated by a properly licensed contractor prior to building demolition activities. If contaminated soils are identified during construction, they will be handled in accordance with applicable regulations. In the event that subsurface contamination exceeding MCP reporting thresholds is encountered, DEP will be notified and the contamination managed in accordance with the MCP. Solid waste generated from the demolition of the existing building will be reduced by the reuse of the basement level and part of the first floor slab. All solid waste generated will be sorted on the Site. Some materials will be reused on the Project Site, while others will be recycled off-site or disposed of in accordance with federal, state, and city regulations. The Construction Manager will implement a waste management plan that will seek to divert at least 75 percent of construction and demolition waste material removed from the site from landfills through recycling and salvaging. This credit is expected to be achievable, and may be pursued aggressively in an opportunity to gain an exemplary performance credit of 95 percent construction waste recycling.

## 4.3.8 Odor Control During Construction

Initial geotechnical investigations indicate the presence of organics within the project site. Organic soils have the potential to create odors that may impact the area surrounding the project. If these soils are encountered, the Proponent will undertake appropriate mitigation measures to control the odor associated with their removal, such as:

1. Removal and replacement of organic materials to provide sufficient bearing for new foundations and utilities

2. Cut and cover utility trenches whenever possible

3. Protection of open trench sideslopes with plastic sheathing to encapsulate odors

4. Treatment of odors with environmentally sensitive products such as sodium bi-carbonate and activated

5. Carbon to reduce odors

### 4.3.9 Rodent Control During Construction

The City has declared that the infestation of rodents in the City is a serious problem. In order to control this infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code, Chapter 211, 105 CMR 410.550 and the State Building Code, Section 108.6. Policy Number 87-4 (City of Boston) established that preparation of a program for the extermination of rodents shall be required for issuance of permits for demolition, excavation, foundation, and basement rehabilitation. The Proponent will prepare and adhere to a rodent control program prior to demolition and on a regular basis throughout the duration of construction.

### 4.3.10 Public Safety During Construction

The entire perimeter of the construction site will be protected with a 6-foot high temporary chain link construction fence. Vehicular gates will be provided for construction traffic on perimeter roads to allow safe entrance and exiting for construction vehicles and personnel. Additionally, signage will be posted on fencing and construction trailers to alert all personnel to the safety requirements. Larger deliveries of construction materials may require the use of police details to assist in managing vehicular and pedestrian traffic. Coordination with the Boston Police Department will be essential in providing safe travel routes for pedestrians during peak construction periods.

### 4.3.11 Rodent Control Post-Construction

Trash and solid waste removal will be handled by the building maintenance staff. The Proponent will maintain a service contract with a professional pest control firm to address rodent/pest control during the operational phase of the redevelopment. In addition, no open top dumpsters will be allowed as an additional precaution to deter infestation.

## 4.4 Shadow Analysis

Neshamkin French Architects, Inc. has prepared a shadow study indicating the potential impacts of 61-83 Braintree Street as shown on Figures 4.4, 4.5, and 4.6. This study illustrates the existing shadow

conditions and the proposed project's shadows. These studies are taken on September 22, June 22, March 22 and December 22nd, for each of these dates at 9 AM, Noon and 3 PM.

As the study reveals, the proposed building height of our South West facing building will have virtually no impact on the adjacent sidewalks and public ways throughout the year, and minimal morning shadow impact on the parking lot of the western abutting property at 119 Braintree Street. There is some shadow impact cast to the side yard of the abutting industrial building to the east. The longest shadow impact is on December 22nd when shadows are cast to the North over the MBTA railroad line and the Mass Turnpike. The study for this date shows a small shadow incursion appearing at 3 PM upon a very few residential yards across the Pike along Lincoln Street., this condition being upon the longest shadow day and time for a limited duration period.

Figure 4.5, Shadow Analysis, 9am

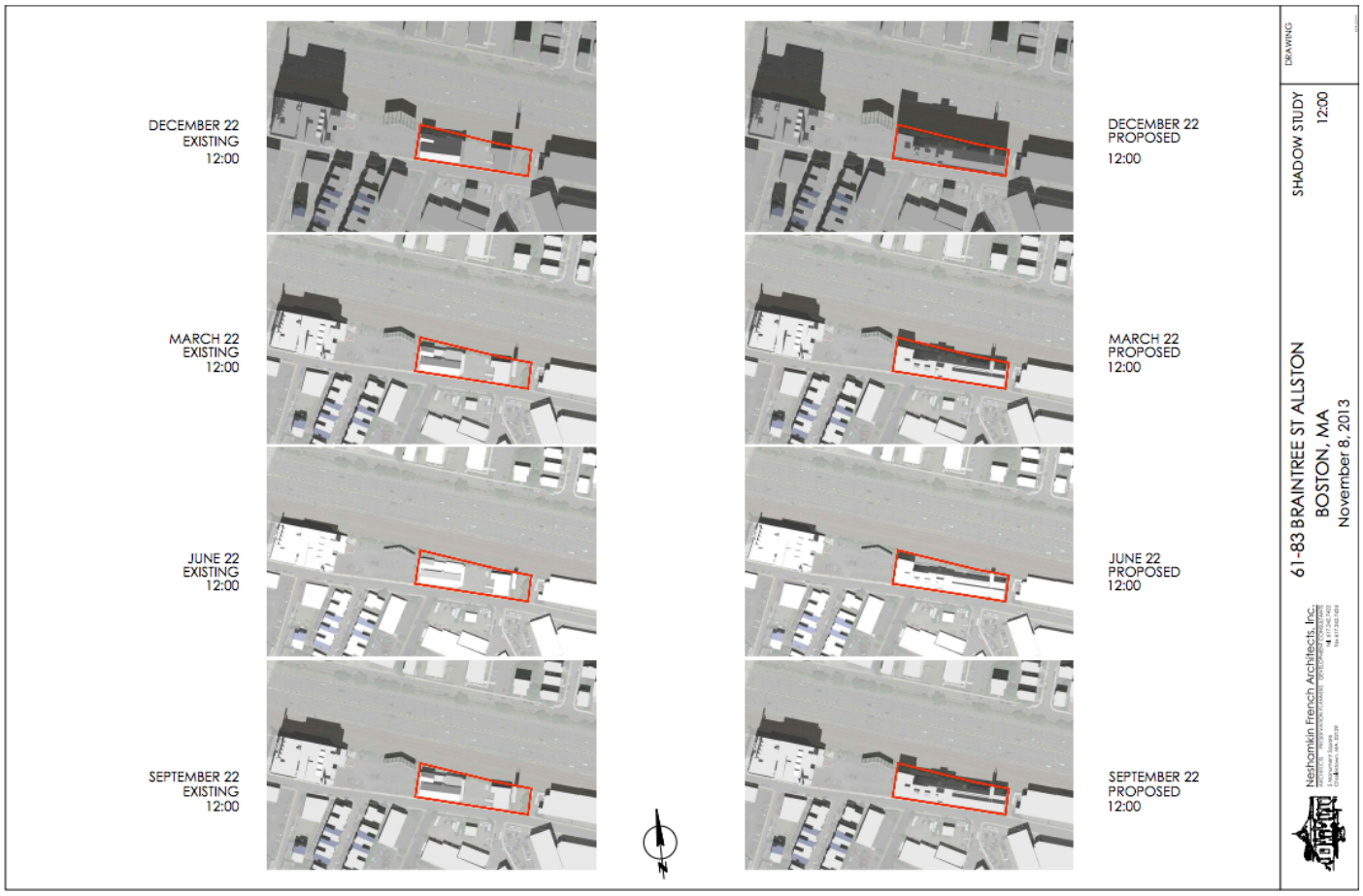


Figure 4.6, Shadow Analysis, 12pm

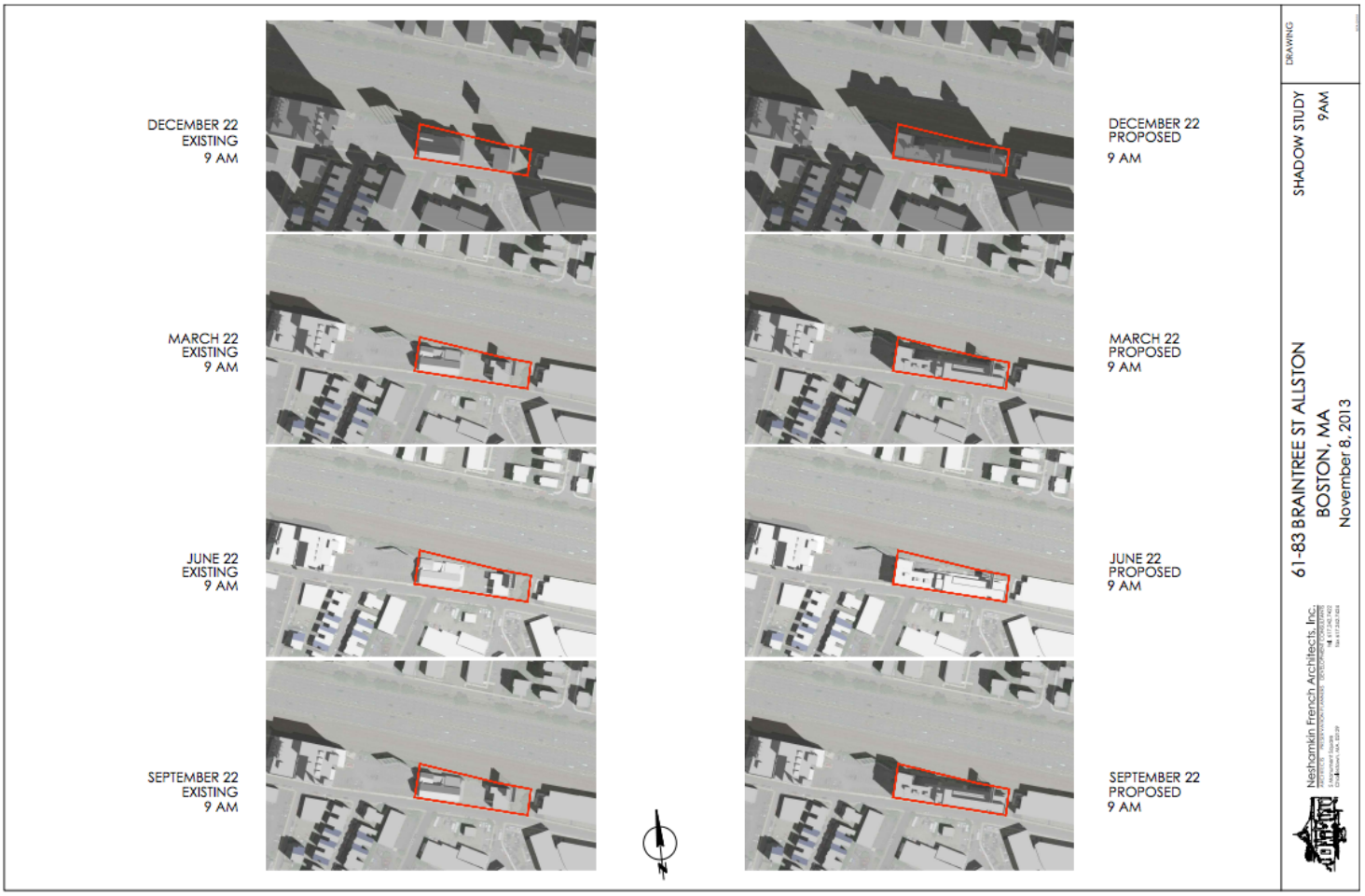
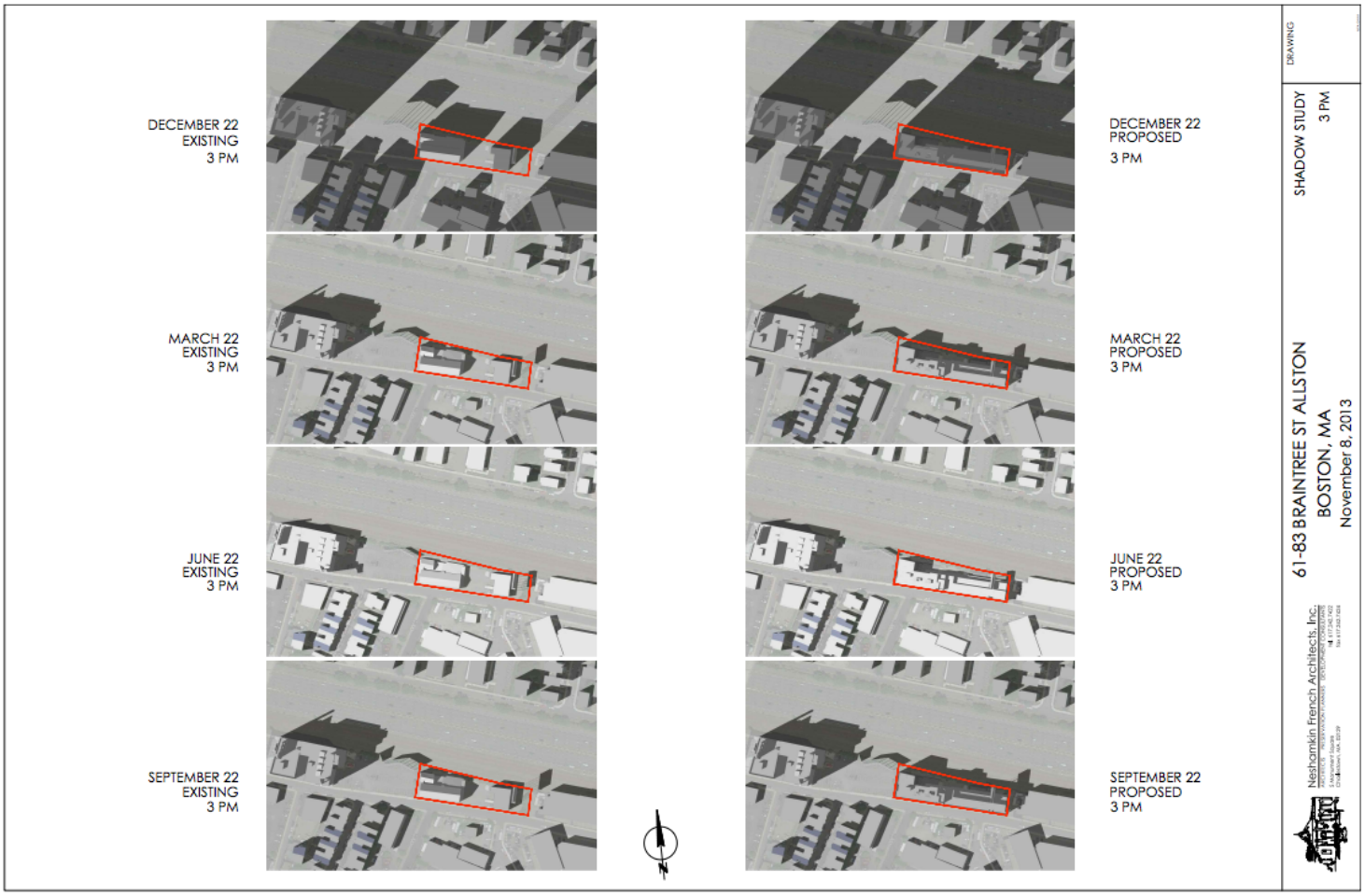


Figure 4.7, Shadow Analysis, 3pm



# 5 INFRASTRUCTURE

# Chapter 5

*Infrastructure*

## 5.1 Introduction

The existing infrastructure surrounding the site 61-83 Braintree Street in Allston appears of adequate capacity to service the needs of the Project. The following sections describe the existing sewer, water, drainage, electric, gas, steam, and communications systems surrounding the site and explain how these systems will service the development. The analysis also discusses any anticipated project related impacts on the utilities and identifies mitigation measures to address these potential impacts.

The Project is moving into the Design Development phase where a detailed infrastructure analysis will be performed. 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 Sewer Commission (BWSC) Site Plan and General Service Application is required for the proposed new water, sanitary sewer, and storm drain connections. A Drainage Discharge Permit Application will be submitted to the BWSC for any required construction dewatering.

## 5.2 Wastewater

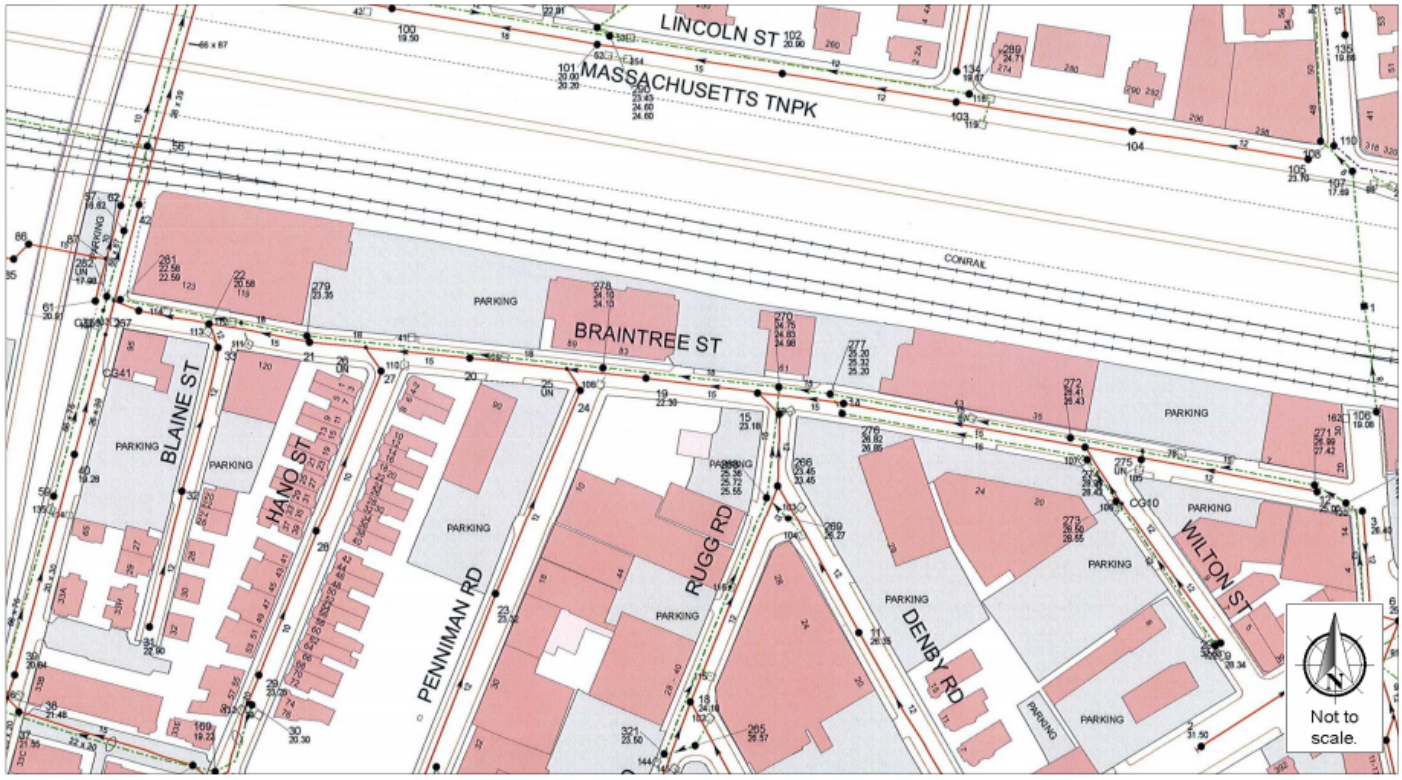
### 5.2.1 Existing Sewer System

*The Boston Water and Sewer Commission ("BWSC") owns and maintains the sanitary sewer system adjacent to the Project site (See Figure 5.1, BWSC Sewer System). BWSC record drawings indicate an existing 15-inch sanitary sewer line runs westerly along Braintree Street. A record plan indicates the buildings at 61 and 83 Braintree Street have existing sanitary sewer service connections to this sewer pipe.*

### 5.2.2 Project Generated Sanitary Sewer Flow

The existing Project Site consists of a commercial warehouse and distribution buildings along Braintree Street. The proposed Project consists of demolishing the existing commercial warehouse and distribution buildings and constructing a five-story mixed-use development containing 80 residential units, approximately 2,550 square feet (sf) of ground floor retail space, and below-grade parking garage. The Project will generate an estimated 10,248 gallons per day (gpd) based on design sewer flows provided in 310 CMR 15.000-The State Environmental Code, Title 5 and the proposed building program as summarized in Table 6-1.

Figure 5.1, BWSC Sewer System




Howard/Stein-Hudson Associates, Inc.

Table 5-1: Projected Sanitary Sewer Flows

| Use | Quantity | Unit Flow Rate | Estimated Maximum Daily Flow (gpd) |
|---|---|---|---|
| Residential Units | 92 bedrooms | 110 gpd/bedroom | 10,120 gpd |
| Retail Space | 2,550 sf | 50 gpd/1,000 sf | 128 gpd |
| **Total** | | | **10,248 gpd** |

### 5.2.3 Sanitary Sewer Connection

The proposed building's sanitary services will tie into the 15-inch sanitary sewer main in Braintree Street. It is anticipated that the building will have one 6-inch sanitary service.

The Proponent will submit a General Service Application and Site Plan for BWSC review and approval as the project progresses. Based on the proposed estimated sanitary flow, a MassDEP Compliance Certification will not be required.

### 5.2.4 Effluent Quality

The Project is not expected to generate industrial wastes. Flows from the floor drains in the parking structure will be treated through an oil and grease separator before discharging to the municipal system.

### 5.2.5 Sanitary Sewer Mitigation

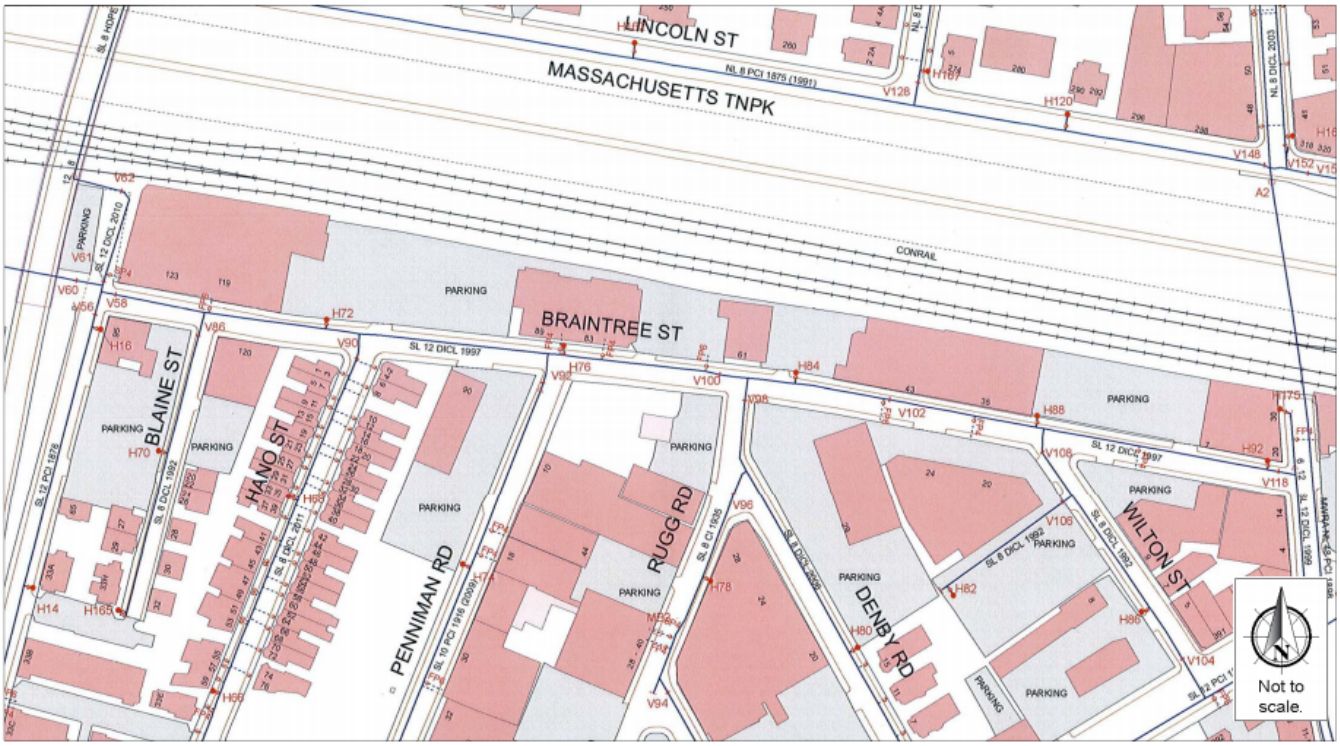
To help conserve water and reduce the amount of wastewater generated by the Project, the Proponent will investigate the use of water conservation devices such as use water-efficient plumbing fixtures, low-flow lavatory faucets, and low-flow showerheads in compliance with all pertinent Code requirements.

## 5.3 Water System

### 5.3.1 Existing Water Service

The water distribution system near the Project site is owned and maintained by BWSC (see Figure 5.2, BWSC Water System). BWSC record drawings indicate there is one existing 12-inch ductile iron cement-lined (DICL) water main in Braintree Street. The existing water main is part of the Southern Low service network and was installed in 1997.

Figure 5.2, BWSC Water System




Howard/Stein-Hudson Associates, Inc.

According to BWSC records, the existing building at 83 Braintree Street has two existing domestic water services, a 1-inch service and a 2-inch service, and two 4-inch fire protection services. The existing building at 61 Braintree Street has an existing 6-inch fire protection service. These services are connected to the 12-inch water main in Braintree Street.

There are two fire hydrants near the project site. One is located in front of the 83 Braintree Street building. The other is located just east of the 61 Braintree Street building. It appears that these hydrants will provide sufficient coverage for the Project. The Proponent will confirm this with BWSC and the Boston Fire Department (BFD) during the detailed design phase.

### 5.3.2 Anticipated Water Consumption

The Project's water demand estimate for domestic services is based on the project's estimated sewage generation, plus a factor to account for consumption, system losses, and other usages to estimate an average water demand. The total estimated water demand is 11,300 gpd. The water for the Project will be supplied by BWSC. More detailed water use and meter sizing calculations will be submitted to BWSC as part of the Site Plan approval process.

### 5.3.3 Proposed Water Service

A new domestic water service line and a dedicated fire protection line for the Project are expected to tie into the existing 12-inch water main with a tapping sleeve and valve. New water services will be installed in accordance with the latest local, state, and federal codes and standards. Backflow preventers will be installed as required. New meters will be of a type approved by BWSC and tied into the BWSC's Automatic Meter Reading (AMR) system. Compliance with the standards for the domestic water system service connection will be reviewed as part of BWSC's Site Plan Review Process. This review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and siamese connections that conform to BWSC and Boston Fire Department requirements.

### 5.3.4 Water Supply Conservation and Mitigation Measures

The Proponent is investigating the use of low consumption plumbing fixtures. It is expected water-efficient plumbing fixtures, low-flow lavatory faucets, and low-flow showerheads will be used.

## 5.4 Storm Drainage System

### 5.4.1 Existing Storm Drainage System

According to record drawings, BWSC owns and maintains an 18-inch storm drain in Braintree Street.

The existing Project site consists of commercial warehouse and distribution buildings and paved parking and loading areas. Rooftop runoff from the 83 Braintree Street building is collected by gutters and downspouts on the north and south side of the building. The downspouts on the south side discharge runoff to a narrow strip of grass along Braintree Street, which is then conveyed to the street catch basins. The downspouts on the north side of the building discharge to a paved area. There is no existing on-site drain system for the paved areas, and runoff drains overland to catch basins in Braintree Street. BWSC records indicate the 61 Braintree Street building has an existing 6-inch storm drain connection to the storm drain in the street. All runoff from the Project Site ultimately drain to the 18-inch storm drain in Braintree Street.

### 5.4.2. Proposed Storm Drainage System

The Project will improve the quality and quantity of stormwater runoff being discharged to BWSC's Storm Drain system through the installation of an on-site infiltration system.

BWSC Site Plan requirements state the first one-inch of rainfall, times the impervious area on site, must be infiltrated prior to discharge to a storm drain or combined sewer. The on-site infiltration system will fulfill this requirement. Runoff from first one inch of rainfall will be infiltrated into the ground. The infiltration system will have an overflow structure allowing larger storm events to bypass the system.

The storm drain system will be designed in accordance with BWSC's design standards and requirements. A Site Plan will be submitted for BWSC approval and a General Service Application will be completed prior to any off-site drain work. Erosion and sediment controls will be used during construction to protect adjacent properties and the municipal storm drain system. An operation and maintenance plan will be developed to support the long-term functionality of the proposed stormwater management system.

## 5.5 Electric Service

NSTAR owns and maintains the electrical transmission system located in Braintree Street. The actual size and location of the building services will be coordinated with NSTAR during the detailed design phase.

The Proponent will investigate energy conservation measures, including high efficiency lighting.

## 5.6 Telecommunication System

Comcast and RCN currently offer telephone, cable, and high-speed internet services in the area. Verizon currently offers telephone and high-speed internet service in the area.

## 5.7 Natural Gas System

National Grid owns and maintains a gas main in Braintree Street. The Project is expected to use natural gas for heating and domestic hot water. The actual size and location the building services will be coordinated with National Grid during the detailed design phase.

## 5.8 Steam Systems

There are no steam systems near the Project site.

## 5.9 Utility Protection during Construction

The Contractor will notify utility companies and call "Dig Safe" prior to excavation. During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The Construction 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 Construction Contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility. In addition, in the event a utility cannot be

maintained in service during switch over to a temporary or permanent system, the Construction Contractor will be required to coordinate the shutdown with the utility owners and project abutters to minimize impacts and inconveniences.


44 Birch Street Lynn, Massachusetts 01902 (617) 759-4349

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