89 Brighton Avenue

Expanded Project Notification Form

SUBMITTED TO
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

PROPONENT
Brighton Gardner Properties, LLC
c/o Eden Properties LLC
1385 Cambridge Street
Cambridge, MA 02139

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

IN ASSOCIATION WITH
Prellwitz Chilinski Associates
Goulston & Storrs
McPhail Associates
Graffito SP
Peter Lyons

June 26, 2015

Ref: 12878.00

Director Brian P. Golden
Boston Redevelopment Authority
One City Hall Square, 9th Floor
Boston, MA 02201

Re: "Expanded" Project Notification Form
89 Brighton Avenue, Allston Village

Dear Director Golden:

On behalf of Brighton Gardner Properties LLC (the "Proponent"), Vanasse Hangen Brustlin, Inc. (VHB) is pleased to submit the enclosed "expanded" Project Notification Form (PNF) for the transit-oriented redevelopment of 89-95 Brighton Avenue and 41 Gardner Street in Allston Village. The proposed project includes 138 residential units with approximately 7,100 square feet of new retail space on Brighton Ave, 69 parking spaces on the ground floor behind the retail space, covered bike storage for 142 bicycles, and an on-site bicycle repair station (the "Project"). The enclosed Project Notification Form (PNF) is being filed to initiate the Article 80B, Large Project Review process required by the Boston Zoning Code and Enabling Act.

The underutilized Project site consists of three (3) brownfield parcels totaling 0.78 acres (33,820 square feet), which are currently occupied by a multi-unit house, a three-story commercial building, and a single story vehicle rental facility with an associated open parking area. The site is bounded to the north by Gardner Street, to the west by Linden Street, to the south by Brighton Avenue, and to the east by several residential developments and multifamily homes.

Allston Village is a thriving neighborhood with vibrant nightlife, culturally rich businesses, fantastic dining opportunities, convenient walkability, and accessibility to public transportation. 89 Brighton will help realize the goals of the Boston 2030 Housing Plan by building new, moderately priced, transit-oriented housing in the heart of Allston Village with new neighborhood oriented retail space, and public realm improvements that will transform surface parking to a welcoming gateway.

The Project will enhance the pedestrian environment by widening the sidewalks along Brighton Avenue and Linden Street and by populating the ground floor with contextual and stable retail uses that will enrich this important street corner, signaling to long-time residents, visitors, and other business owners that it is an integral and valued block in the neighborhood.

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The enclosed "expanded" PNF presents details about the Project and provides an analysis of transportation/traffic, potential environmental impacts, infrastructure needs, and historic resources in order to inform state and city agencies and neighborhood residents about the Project, its potential impacts as well as the mitigation measures proposed to address those potential impacts. Based on a comprehensive approach to addressing potential impacts and mitigation similar to the level of information normally presented in a Draft Project Impact Report under Article 80B, it is the desire of the Proponent that the BRA, after reviewing public and agency comments as well as any further responses to comments made by the Proponent, will issue a Scoping Determination Waiving Further Review pursuant to the Article 80B process.

We look forward to working collaboratively with you and your staff, other city agencies, and members of the community to develop the best redevelopment plan for this location. We anticipate that the BRA will publish notice of the receipt of the PNF within five days, as required by Section 80A-2(3). Requests for copies of the PNF should be directed to me at 617-607-2973 or via e-mail at SLattrell@vhb.com.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

Seth Lattrell
Environmental Planner

Enclosure

cc: Noah Maslan, Principal, Eden Properties

Expanded Project Notification Form

89 Brighton Avenue

Boston,
Massachusetts

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

Proponent **Brighton Gardner Properties LLC**
c/o Eden Properties LLC
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In association with:
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Goulston & Storrs
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Peter Lyons

June 2015

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Project Description and General Information

Introduction

Brighton Gardner Properties LLC (the "Proponent) submits this "expanded" Project Notification Form (PNF) to the Boston Redevelopment Authority (the "BRA") to initiate the Article 80B, Large Project Review process, required by the Boston Zoning Code and Enabling Act, for the transit-oriented redevelopment of three (3) brownfield parcels located at 89-95 Brighton Avenue and 41 Gardner Street in Allston Village. The proposed project is anticipated to include 138 residential units with approximately 7,100 square feet of new retail space on Brighton Ave, 69 parking spaces on the ground floor behind the retail space, covered bike storage for 142 bicycles, and an on-site bicycle repair station (the "Project").

Allston Village is a thriving neighborhood with great access to public transportation, diverse and culturally vibrant businesses, and a renowned music scene. The Project will offer quality transit-oriented housing at moderate prices with the privacy and access to neighborhood amenities that residents desire. Furthering the goals of the Boston 2030 Housing Plan, the building offers professionally established neighborhood residents the opportunity to stay and put down roots, increasing neighborhood stability in Allston Village. 89 Brighton Avenue is oriented to this growing demographic of smaller households with low car ownership, predominately renters, who want to live in a vibrant, dynamic, and transit accessible neighborhood.

The Project will enhance the pedestrian environment by widening the sidewalks along Brighton Avenue and Linden Street and by populating the ground floor with contextual and stable retail uses that will enhance this important street corner, signaling to long-time residents, visitors, and other business owners that it is an integral and valued block in the neighborhood.

The following chapter provides an overview of the existing site conditions and describes the Project and its public benefits as well as identifies the anticipated required permits and approvals. This chapter also describes how the Project is consistent with applicable plans and policies.

Site Context and Existing Conditions

The site area consists of approximately .78 acres (33,820 square feet) comprised of three brownfield parcels located at 41 Gardner Street, 95 Brighton Ave, and 89 Brighton Ave (the "Project Site"). Refer to Figure 1.1 for a site locus map. The Site has frontage on Brighton Ave to the south, Linden Street to the west, and Gardner Street to the north. Refer to Figure 1.2 for a site aerial.

Figure 1.3 shows the existing conditions site plan of the Project Site and its immediate surroundings. The Project Site includes a variety of existing buildings including an existing multi-family house, a three-story commercial building and a single story truck rental facility with an associated open parking area.

The Project Site is currently well served by existing infrastructure and walkable access to neighborhood services as evidenced by its Walk Score of "93" – "A Walker's Paradise" as calculated by Walk Score, an industry expert on the walkability of neighborhoods. The Project Site is in close proximity to public transit, including the MBTA Green Line and multiple bus routes, providing convenient access to major job centers such as Downtown Boston, the Longwood Medical Area, and Kendall Square. In addition, some of Boston's largest employers are in proximity to the site such as, New Balance, St. Elizabeth's Hospital, Boston University, and Harvard University. Refer to Chapter 3, *Transportation and Parking* of this PNF for further details.

Project Description

The Project includes the demolition of three (3) buildings to clear the underutilized site for the construction of a single mixed-use structure with three to five floors of mixed income housing over at grade parking that is tucked behind new on-street retail. The site's current use as a car rental parking lot will make way for ground floor retail with ground floor facades to add liveliness to the sidewalk and energize the block creating a welcoming gateway into Allston Village. The Project endeavors to capitalize on its urban setting and encourage the use of alternative methods of transportation by providing a series of site amenities such as dry and secure bike storage and repair station, a loaner bike program, transit screens in the lobby displaying up to date schedules of local transportation services, and creating financial incentives for non-car owners. The goal of the Project's aggressive Transportation

Demand Management measures is to make it easy for residents not to own cars which will limit the impact of the project on surrounding roadways, and help Boston and Allston grow responsibly near existing infrastructure without the need to add vehicles.

Table 1-1 summarizes the proposed development program for the 138 unit project. In total, the project will include the construction of approximately 124,300 gross square feet including 117,200 square feet of residential space above 7,100 square feet of ground floor retail space. The development is designed to include 69 parking spaces on grade that are tucked behind the retail space. Majority of the parking spaces are to be covered, and can be accessed from Linden and Gardner Streets.

Table 1-1 Proposed Building Program

Unit Types	Number of Units	Gross Square Feet (GSF)
2 Bedrooms + den	05	5,380 sq.ft
2 Bedrooms	11	11,540 sq.ft
1 Bedroom + den	05	3,500 sq.ft
1 Bedroom	34	22,160 sq.ft
Studio	83	43,310 sq.ft
Retail	3 tenants shown	7,100 sq.ft

Project Schedule

Construction of the Project is anticipated to be completed in a single phase. Demolition is anticipated to begin in May, 2016 and the Project is anticipated to be fully constructed and operational by June, 2017.

Summary of Public Benefits

Project-related benefits include significant urban design, public realm, and community improvements. The following summarizes the Project-related public benefits.

Public Realm and Design

- The Project will improve overall safety at the Brighton Ave and Linden St intersection for pedestrians crossing, cyclists navigating, and cars passing through by removing approximately 80 feet of curb cuts currently serving Budget Rental Car, widening the sidewalks, improving the signalization, and moving the Bus stop across the intersection.

- The Project endeavors to prevent adding new cars to neighboring on-street parking, by providing parking below the building and encouraging alternative modes of transportation.

Transportation

- Project generated trips will have negligible impact to the study area intersections;
- Relocation of the outbound #57 bus stop to the far side of the intersection will improve bus operations and provide additional six (6) on-street parking spaces on Brighton Avenue;
- The curb cut on Brighton Avenue, currently utilized as a driveway into the Budget Rental Car lot will be closed to provide a continuoussidewalk and add additional on-street parking as discussed above;
- The Project will widen the sidewalk along Brighton Avenue by two feet and along Linden Avenue by approximately three feet to improve the pedestrian realm;
- The Project will encourage alternative modes of transportation through a comprehensive Transportation Demand Management (TDM) plan; and
- The Project will provide key bike accommodations including covered and secure bike storage, a bike repair station, accessible bike storage, and loaner bikes making it easy for residents to use bicycles as a preferred mode of transportation.
- It is anticipated that vehicle ownership for residents will be low based on the following demographic and vehicle ownership trends, transit oriented location, walkable access to services and amenities, and access to major job centers by transit.
    - 56% of households in transit rich neighborhoods in the City of Boston own zero (0) cars - 54% of Allston households own zero (0) cars[1]
    - Approximately half of Boston renter's own zero (0) cars and renters are 3.5 times less likely to own a car than a homeowner [2]
    - Boston household composition is small - Approximately 70% of all Boston households are 1 and 2 people with the majority of those being 1 person households. And over half of 1 person households don't own a car [2]
    - Half of Bostonians don't drive to work [2]

[1] Source: American Community Survey 2007-2011; BRA Research Division Analysis Finalized January 24, 2014, "Boston in Context: Neighborhoods"

[2] Source: American Community Survey, City of Boston 5 year average 2009-2013

Environmental/Sustainability

- Sustainability is integrated throughout the Project as it revitalizes an underutilized urban site, uses land efficiently by increasing density in proximity to public transportation and major regional employment centers such as Downtown Boston, Longwood Medical Area, and Kendall Square, and encourages pedestrian activity and lower vehicular use.
- A number of sustainable building and site elements will be incorporated into the design, construction, and operation of the Project.
- In accordance with Article 37 of the Boston Zoning Code relative to the City's Green Building policies and procedures, the Proponent intends to incorporate state-of-the-art sustainable features so that the Project could achieve "LEED Certifiable" status for mid-rise homes.
- Groundwater levels are not expected to be impacted/lowered as a result of the Project.
- Any on-site hazardous materials, including asbestos containing materials (ACM) that may be encountered during demolition of the existing on-site buildings will be handled in accordance with federal, state, and local regulations.
- The project will include new stormwater management systems to increase system capacity and improve water quality.
- The Project Site offers adequate space for on-site construction staging and parking. Temporary construction impacts will be properly managed to eliminate significant impacts on the surrounding community. To manage construction truck traffic, the Proponent will work with the BTD to develop a site-specific Construction Management Plan (CMP).
- The Proponent has conducted a preliminary evaluation of the Project's potential vulnerability to flooding in combination with projected sea level rise as well as extreme weather events. Utilizing current projections, in the year 2100, the site will still be 25 feet above the 100-year flood elevation for the Charles River.

Social and Economic

- The Project will help improve neighborhood residential stability by building housing that advances the Boston 2030 Housing Plan. In addition, 15% of the market rate apartments are proposed to be affordable to households who earn below 70% of the Area Median Income. Apartments at 89 Brighton will be a more affordable alternative than housing that requires owning a vehicle. Households that don't own vehicles can save approximately $250 per month in transportation costs by not owning a car. (The Center for Neighborhood Technology estimates the average annual household transportation cost in the City of Boston is $8,120. The annual transportation budget for a household that doesn't own a car is estimated to be approximately $3,000 per year)

- The Project will activate Brighton Ave. with ground floor neighborhood oriented retail.
- The Project will contribute to the economic health of the City through the creation of approximately 65 new jobs related to the ground floor retail and property management, and new annual local real estate tax revenue

Regulatory Context

This section describes how the Project is consistent with local (City of Boston) land use plans and policies.

Anticipated Permits and Approvals

Table 1-2 lists the anticipated permits and approvals from state and local governmental agencies, which are presently expected to be required for the Project, based on information currently available. It is possible that not all of these permits or actions will be required, or that additional permits or actions may be needed.

Table 1-2 Anticipated Project Permits and Approvals

Agency/Department	Permit/Approval/Action
Commonwealth of Massachusetts	
Massachusetts Department of Environmental Protection, Division of Air Quality Control	Demolition Notice
Massachusetts DEP	Notice of Asbestos Removal
City of Boston	
Boston Redevelopment Authority	Article 80B, Large Project Review
	Article 37 – Green Building review
	Certificate of Compliance
Boston Civic Design Commission	Design Review (if required)
Boston Zoning Board of Appeals	Zoning Relief
Boston Transportation Department	Transportation Access Plan Agreement - *required for vehicular and non-vehicular improvements/operations, such as bike parking, TDM, loading/service.*
	Construction Management Plan
Boston Water and Sewer Commission	Site Plan Review and Approval
	General Service Application
Boston Public Works	Design Review
Boston Lighting Department	Design Review
Public Improvement Commission	Review of streetscape improvements

Boston Landmarks Commission	Article 85 Demolition Delay
Boston Inspectional Services Department	Demolition Permit
	Building Permit
	Certificates of Occupancy
Boston Fire Department	Permits for demolition, construction, and fire alarm

Local Planning and Regulatory Controls

City of Boston Zoning

The proposed development site is comprised of three separate existing parcels along Brighton Avenue and Gardner Street. The parcels are located at 89/91 Brighton Ave, 41 Gardner Street and 95 Brighton Ave. Two of the three parcels are located in the Three-Family Residential Subdistrict 3F-4000. The third parcel at 95 Brighton Ave is located in the Neighborhood Business Subdistrict CC-1. The two tables below compare the proposed development in both districts.

Use, Bulk and Dimensional Requirements

Table 1-a1 Zoning Code Use, Bulk and Dimensional Regulations vs. Portion of Proposed Project in the Three-Family Residential Subdistrict 3F-4000

Use, Bulk and Dimensional Requirements	Allston	Project
Use	Multi family, restaurant, retail, office, and service uses prohibited	Multifamily restaurant, retail, office and/or service uses
Max. Floor Area Ratio	0.8	3.5
Max. Building Height (Feet)	35' | 3 stories	48'-69' | 4 to 6 stories
Front Yard Minimum Depth (Feet)	20'	0' and 5'
Side Yard Minimum Depth (Feet)	5' (10' to existing structure; 15' aggregate width)	Varies - 0' and 12'
Rear Yard Minimum Depth (Feet)	30'	20'
Minimum Open Space per unit	650 sq.ft	26.66 sq.ft
Minimum Lot Area per unit	4000 sq. ft. first 2 units; 2000 sq.ft each add'l	245 sq.ft

Table 1-a2 Zoning Code Use, Bulk and Dimensional Regulations vs. Portion of Proposed Project in the Neighborhood Business Subdistrict CC-1

Dimensional Requirements	Allston	Project
Use	Multi family conditional	Multifamily dwelling
Max. Floor Area Ratio	1.0	3.5
Max. Building Height (Feet)	35’	69’
Front Yard Minimum Depth (Feet)	none	Varies - 0’ and 5’
Side Yard Minimum Depth (Feet)	none	Varies - 0’ and 12’
Rear Yard Minimum Depth (Feet)	20’	None
Minimum Open Space per unit	50 sq.ft	26.66 sq.ft
Minimum Lot Area per unit	none	245 sq.ft

City of Boston Zoning Code Article 80 – Large Project Review

The Project exceeds the threshold of 50,000 square feet of development, which requires Large Project Review by the Boston Redevelopment Authority (BRA) pursuant to Article 80B, Large Project Review of the Code. The Proponent has commenced Large Project Review under Article 80 of the Code with the filing of a Letter of Intent with the BRA on April 13, 2015, that indicated the Proponent’s intent to file an “expanded” PNF in connection with the Project. A copy of this letter is provided in Appendix A.

This expanded-PNF aims to meet the City of Boston Article 80 Large Project Review and presents details about the Project and provides an analysis of transportation, environmental protection, infrastructure, and other components of the proposed Project, in order to inform city agencies and neighborhood residents about the Project, its potential impacts and mitigation proposed to address those potential impacts. Based on a comprehensive approach to address potential impacts similar to the level of information normally presented in a Draft Project Impact Report (DPIR), the Proponent requests that the BRA, after reviewing public and agency comments on this PNF and any further responses to comments made by the Proponent, issue a Scoping Determination Waiving Further Review pursuant to the Article 80B process.

Massachusetts Environmental Policy Act

The Project is not subject to environmental review by the Secretary of the Executive Office of Energy and Environmental Affairs, as the Project will not exceed any of the MEPA review thresholds set forth in 301 CMR 11.03.

Agency Coordination and Community Outreach

Over the last six months, the Project Team has been meeting with residents, neighborhood groups, community leaders, business owners, elected officials, City of Boston officials, and other stakeholders to seek input and feedback as they developed the redevelopment plan.

Feedback	Current Plan
Improve the overall pedestrian, bike, and vehicular safety of the intersection of Brighton and Linden.	✓ Removing approximately 60 feet of curb cut along Linden, which will limit vehicular access to and from the site further away from the intersection. Making it safer for bikes and pedestrians to navigate the intersection of Brighton and Linden. ✓ Removing a pedestrian only phase on Linden will improve vehicular flow and improve pedestrian safety.
Improve the pedestrian and retail experience. Increase sidewalk width of Brighton Avenue.	✓ The sidewalk along Brighton Avenue will be increased from 10′ to 12′ and along Linden from 7.5′ to 9′ by setting the proposed building back from the property line and meeting the City of Boston Complete Streets Guidelines.
Provide active retail spaces for smaller retailers along Brighton Avenue with planters, glass, street trees, and public bike parking.	✓ The 7,100sf Ground floor retail space is divisable for up to three (3) spaces and will include planters, varied street facades, street trees, and public bike parking.

Build proper bike storage and infrastructure that residents can access easily, ensure bikes are safe and protected from the weather, and a dedicated area to work on your bike.	✓ Safe & dry bike storage for 142 bikes ✓ Loaner bike program for visitors of building residents ✓ Bike repair station on-site
Decrease the number of studio units originally proposed and increase one bedroom units.	UNIT TYPE / ORIGINAL MIX / CURRENT MIX Studio: 96 / 83 1BR: 22 / 34 1BR + Den: 0 / 5 2BR: 20 / 11 2BR + Den: 0 / 5 TOTAL: 138 / 138
Provide the City of Boston Inclusionary Development Policy (IDP) affordable units on-site	✓ All IDP affordable units are proposed to be on-site

Development Team

Proponent

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Permitting Consultant

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617-367-1610

Legal Information

Legal Judgments or Actions Pending Concerning the Proposed Project

There are no legal judgments adverse to the proposed Project.

History of Tax Arrears on Property Owned in Boston by the Proponent

The Proponent does not have a history of tax arrears on property that it owns in the City of Boston

Site Control/Public Easements

The Proponent has purchased the parcels comprising the Project Site.

Source: MassGIS 2012 USGS digital quad

Figure 1.1

Locus Map

89 Brighton Avenue
Boston, MA

Figure 1.2

Site Aerial

89 Brighton Avenue
Boston, MA

Figure 1.3

Existing Conditions

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS

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Figure 1.4

Walkable Services

89 Brighton Avenue
Boston, MA

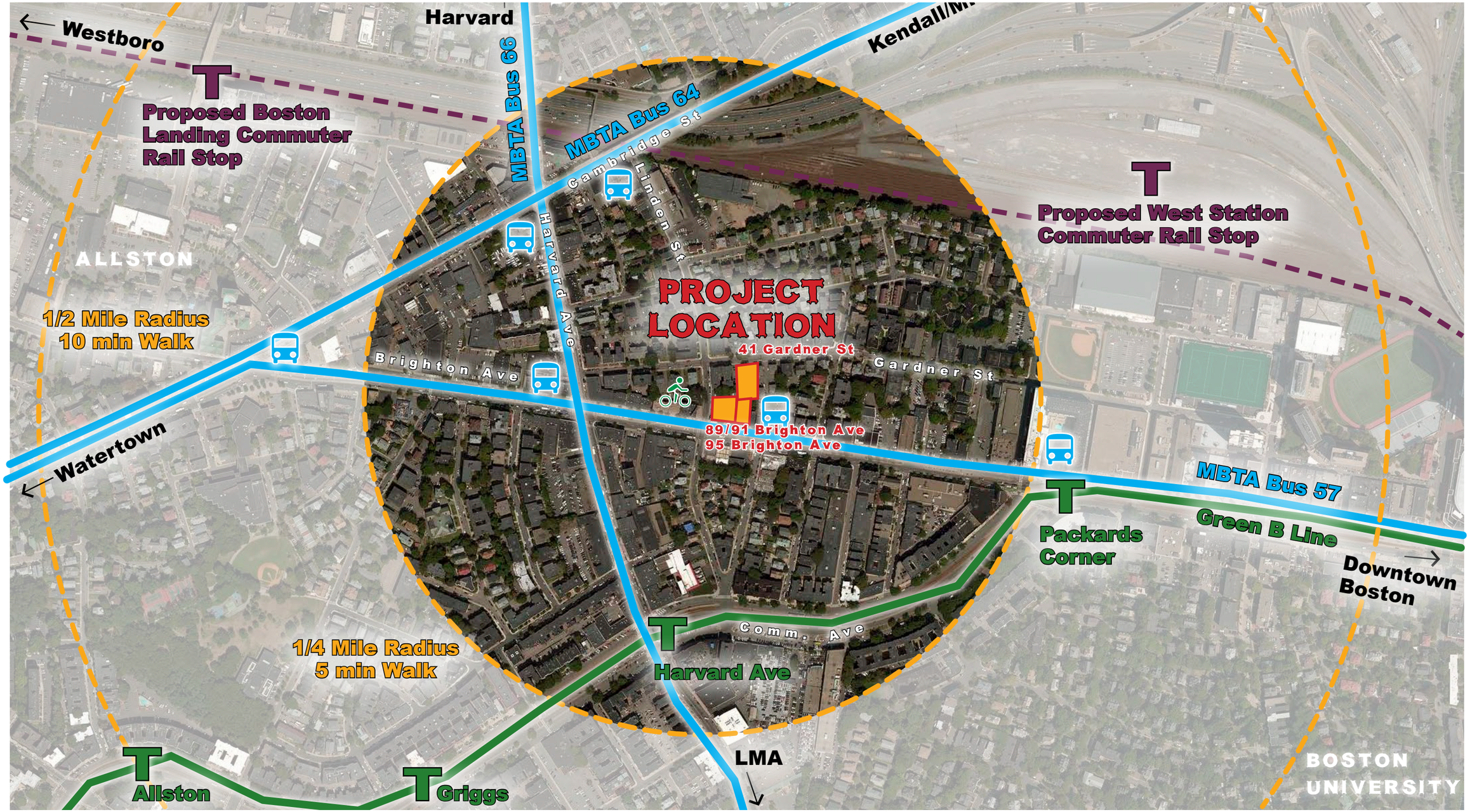

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Figure 1.5
Transportation Availability

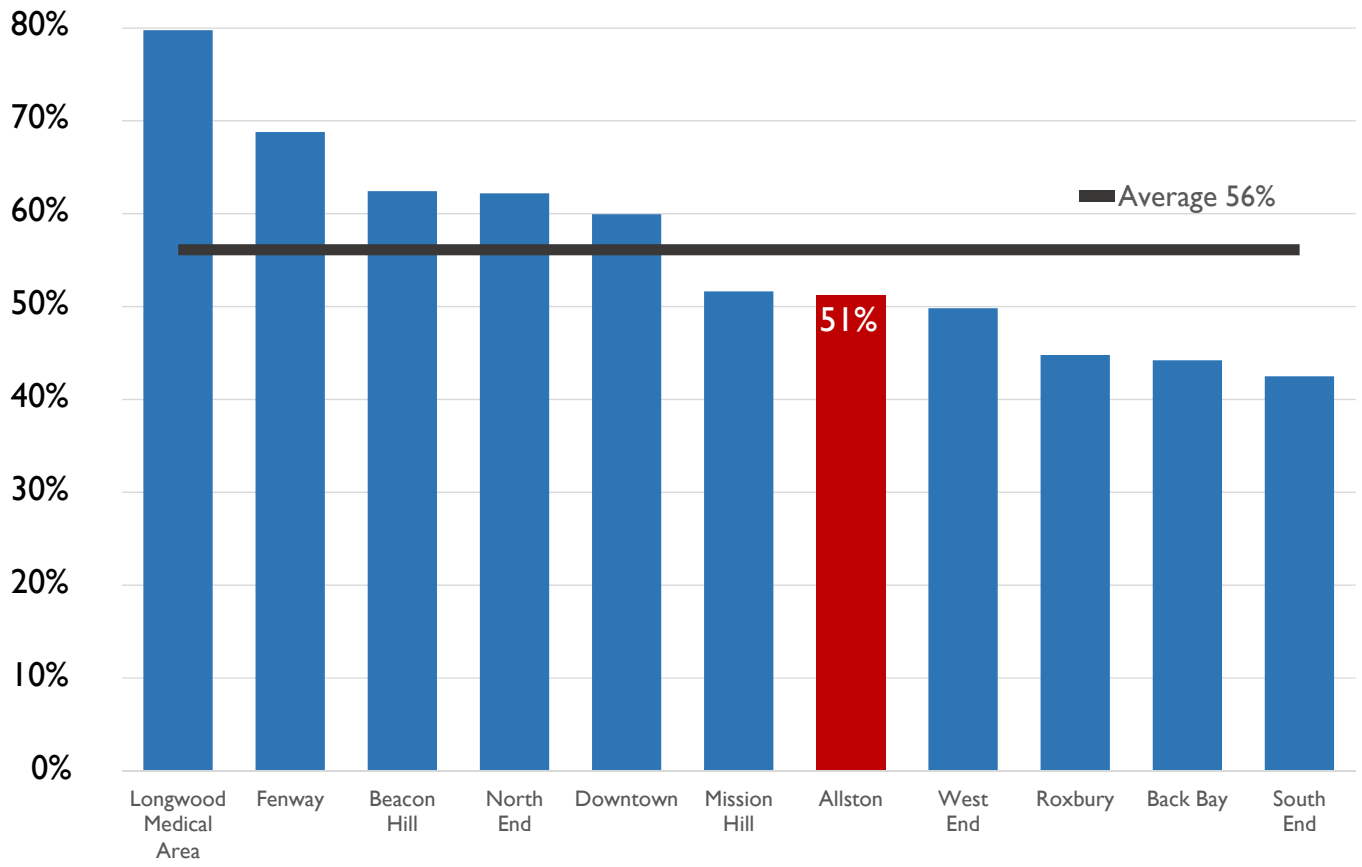
89 Brighton Avenue
Boston, MA

Source: Transit Screen

Figure 1.6

Transit Screen
Displayed at 89 Brighton Lobby for Residents and Passers-by
89 Brighton Avenue
Boston, MA

Zero Car Households: City of Boston Transit Rich Neighborhoods

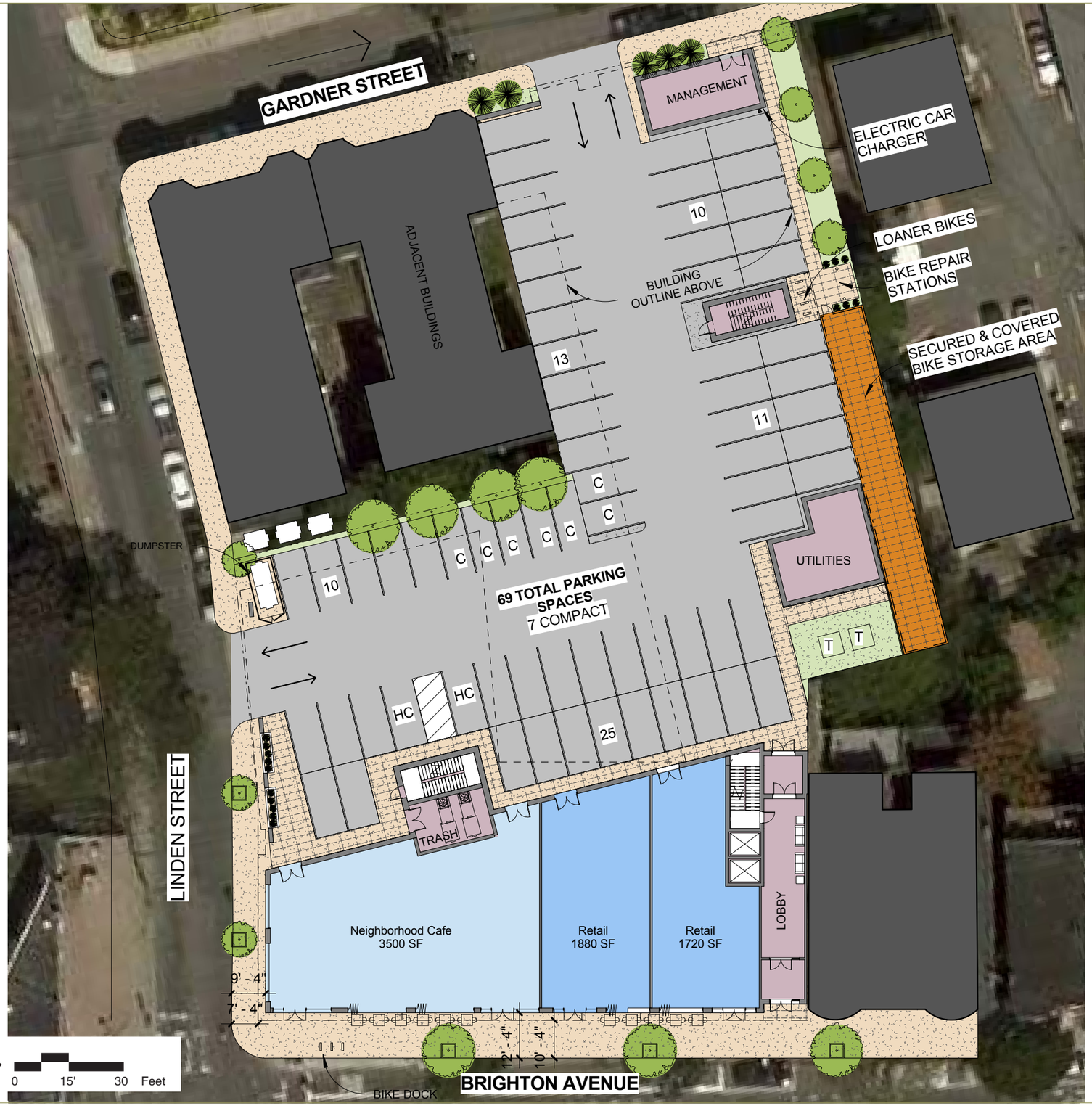


Source: BRA Research Division, "Boston in Context: Neighborhoods", American Community Survey Data 2007-2011"

Figure 1.7

Zero Car Households
City of Boston

89 Brighton Avenue
Boston, MA



PCA ARCHITECTURE PLANNING INTERIORS

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Figure 1.8

GROUND FLOOR PLAN

89 Brighton Avenue
Boston, MA

2

Urban Design

Introduction

The proposed development site is a collection of three individual parcels located in the Allston Village neighborhood of Boston. The parcels are located along three streets – Brighton Avenue, Linden Street and Gardner Street. Each of the three parcels currently have buildings with a variety of uses. There is a car and truck rental business at the intersection of Linden and Brighton Avenue, a recently vacated retail building along Brighton Avenue, and a multifamily housing building facing Gardner Street.

Neighborhood Context

The site is located in two separate zoning subdistricts with two parcels located in the multi family zone and one parcel located in the neighborhood business district. The majority of buildings in the neighborhood are older multi-family residential buildings ranging from four to six story apartment buildings along Linden Street, Gardner Street and Brighton Ave. There is a strong retail presence along Brighton Ave to the west of the proposed site.

The neighborhood context changes from a busy, vibrant commercial oriented feel along Brighton Avenue to a quieter residential scale along Gardner Street. The proposed project has multiple building heights, with a six story building facing Brighton Avenue, and stepping down to four stories along the existing Gardner Street residential context.

Planning Principles and Design Goals

- Maintain the existing street wall along Brighton, Linden and Gardner streets. Building of multiple scales higher along the major commercial boulevard stepping down to the scale of the residential neighbors.
- Replace the existing open parking lots with an active ground floor, and screen new proposed parking from public view.
- Incorporate ground level retail to create vibrant street activity along Brighton Avenue.
- Enhance the pedestrian experience along the existing streets and add opportunites for landscaping, seating and bicycle parking for the public along Brighton Avenue.
- Address the City of Boston complete street guidelines.
- Meet Stretch code compliance. Maintain a sustainable approach to the building envelope including energy efficient windows and wall construction, mechanical systems, daylighting, water efficiency and construction related management. Participate in utility rebate programs.
- Make it easy for residents to get around without a car by providing access to multiple forms of transportation and offer amenities to bicycle riders.

Design Concept and Development

The site for the proposed development is a total of 33,820 sq.ft with a primarily flat topography. The main program includes ground floor retail spaces facing Brighton Avenue and residential units above with a variety of unit mix ranging from studios to 2-bedroom apartments. The main residential entry lobby is located on Brighton Avenue. Parking for the residents is provided on grade behind the retail spaces screened from public view. The existing sidewalks along Brighton Avenue and Linden Street are 10 ft and 7 ft respectively. In order to provide a better pedestrian experience, the building footprint on the ground level has been set back from the property line to provide a 12ft sidewalk along Brighton Ave and a 9.5 ft sidewalk along Linden Street allowing for new tree pit installations. Retail spaces are proposed to have operable doors to allow for small café style tables and chairs along the building to animate the sidewalk experience. Ground floor architecture will be varied to create distinct retail spaces with consistant signage placement from awnings as well as blade signs.

The 10 foot 8 inch floor to floor heights on the residential floors with large format windows and modern finishes creating loft-like living spaces will add a new

alternative to this neighborhood that primarily includes older traditional three-family and larger multi unit housing.

The Project will be built utilizing an environmentally sensitive approach to maximize the green design elements and site location. Strategies will maximize energy efficiency, water conservation, minimize waste during construction, and ensure good indoor air quality.

Height and Massing

The proposed building along Brighton Avenue will be 5 stories of residential above ground floor retail approximately 69 feet in height. The building steps down to 5 stories on Linden Street and 4 stories along Gardner Street. The building incorporates multiple planes of the façade including ground floor retail with storefronts, creating 'bay-like' vertical elements. Material changes and a recessed top floor create a base, middle and top composition.

Character and Exterior Materials

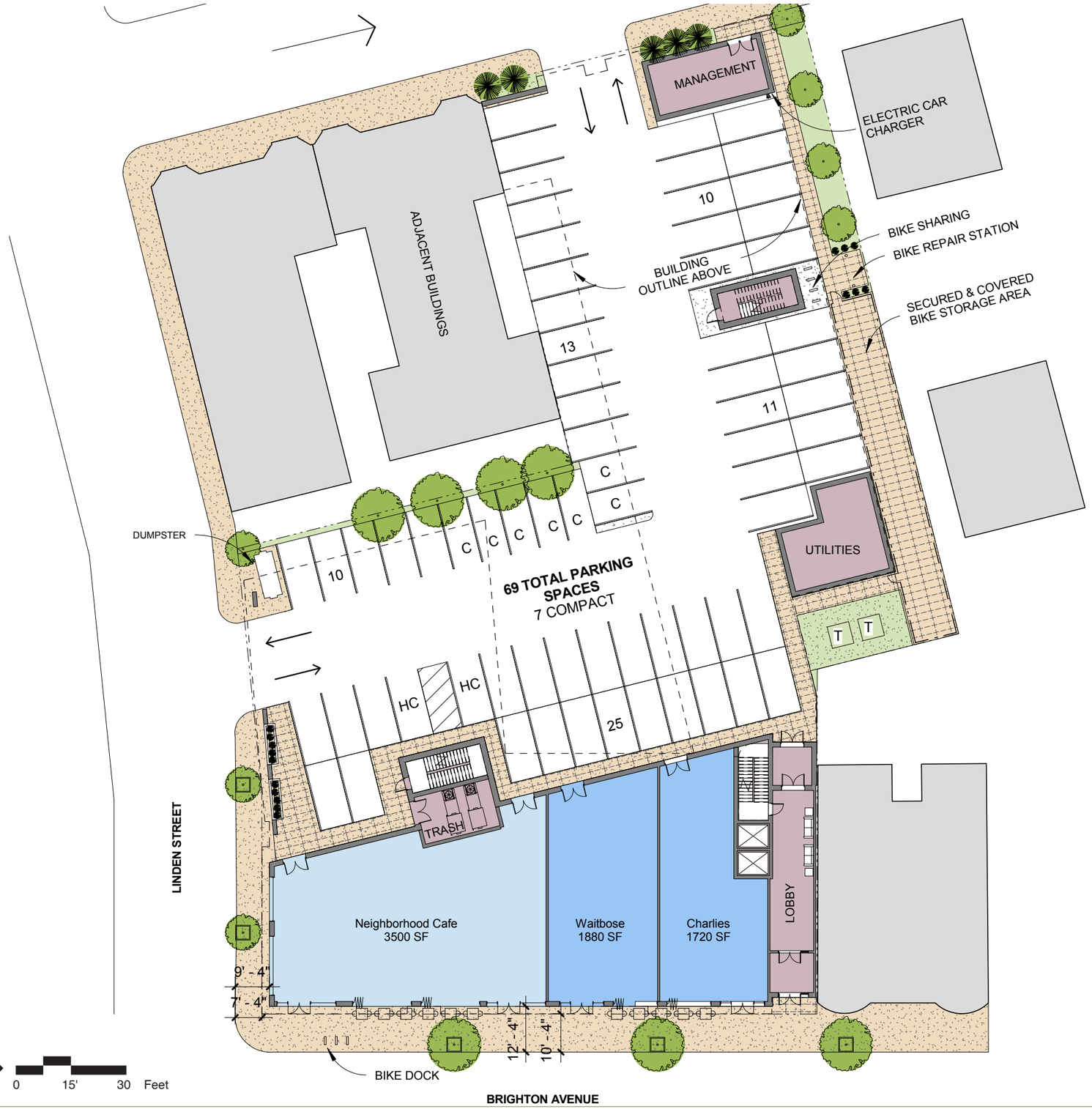
The basic approach employs a combination of very durable exterior materials including masonry,metal, fiber-cement and glass. Ground floor retail and residential entry lobbies have tall transparent glass storefronts. A flat roofed metal and glass entry canopy, planters, furnishings, storefronts and signage along the ground floor create a neighborhood oriented retail experience.

Public Realm

Streetlife will be enhanced by major public benefits such as wider sidewalks, street trees, street lights, landscaping, and street furniture for public seating options along the street. The sidewalk enhancements along with the removal of approximately 80 feet of existing curbcut, a signalization adjustment, and shifting the bus stop to across the intersection will also help relieve congestion at the busy intersection. This proposed project is focused on transit friendly, car-free options including bike docks on Brighton Avenue, zipcars and providing an easy-to-use transit screen in the entry lobby accessible to passers-by with real time information on their transportation options.

Open Space and Amenities

Additional amenities for the 138 unit residents include covered parking, secured and covered bike storage, a bike repair station, a loaner bike program for residents and visitors, rooftop fitness room,resident patio space, resident lounge, and electric charging stations. Pet showers will be centrally located on two floors. Retail on the ground floor will provide for the everyday needs of both the residents and their neighbors.

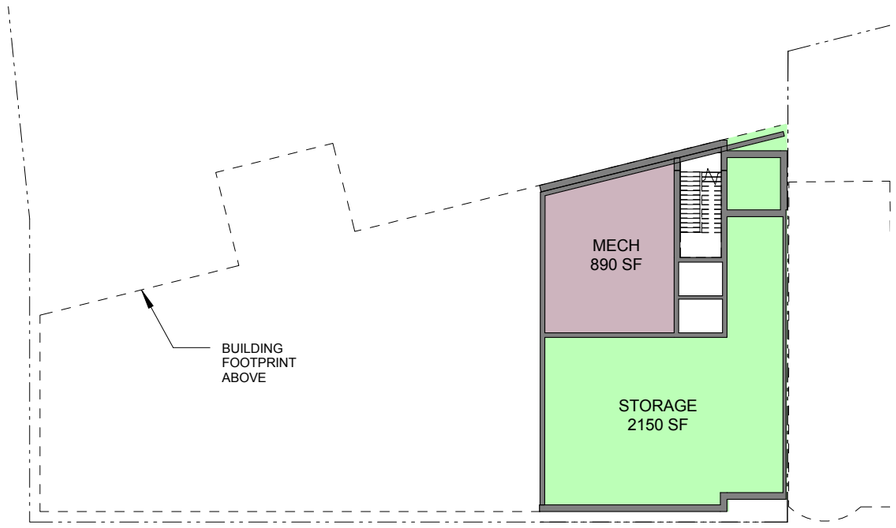


PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-1
GROUND FLOOR PLAN

89 Brighton Avenue
Boston, MA

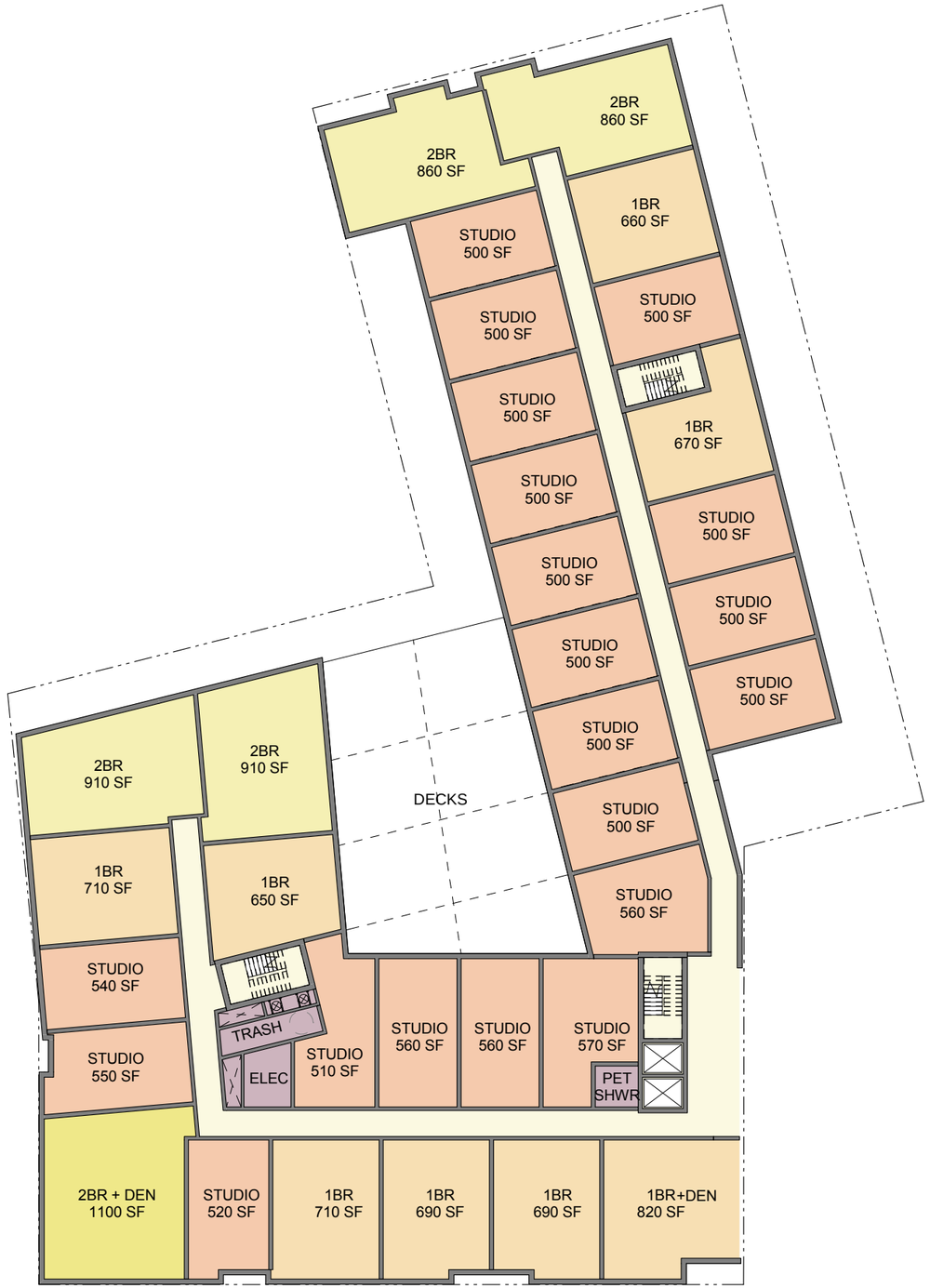


0 15' 30 Feet

PCA ARCHITECTURE PLANNING INTERIORS vhb

Figure 2-2
BASEMENT PLAN

89 Brighton Avenue
Boston, MA



0 15' 30 Feet

PCA ARCHITECTURE PLANNING INTERIORS

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Figure 2-3

SECOND - FOURTH FLOOR PLAN

89 Brighton Avenue
Boston, MA

0 15' 30 Feet

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-4

FIFTH FLOOR PLAN

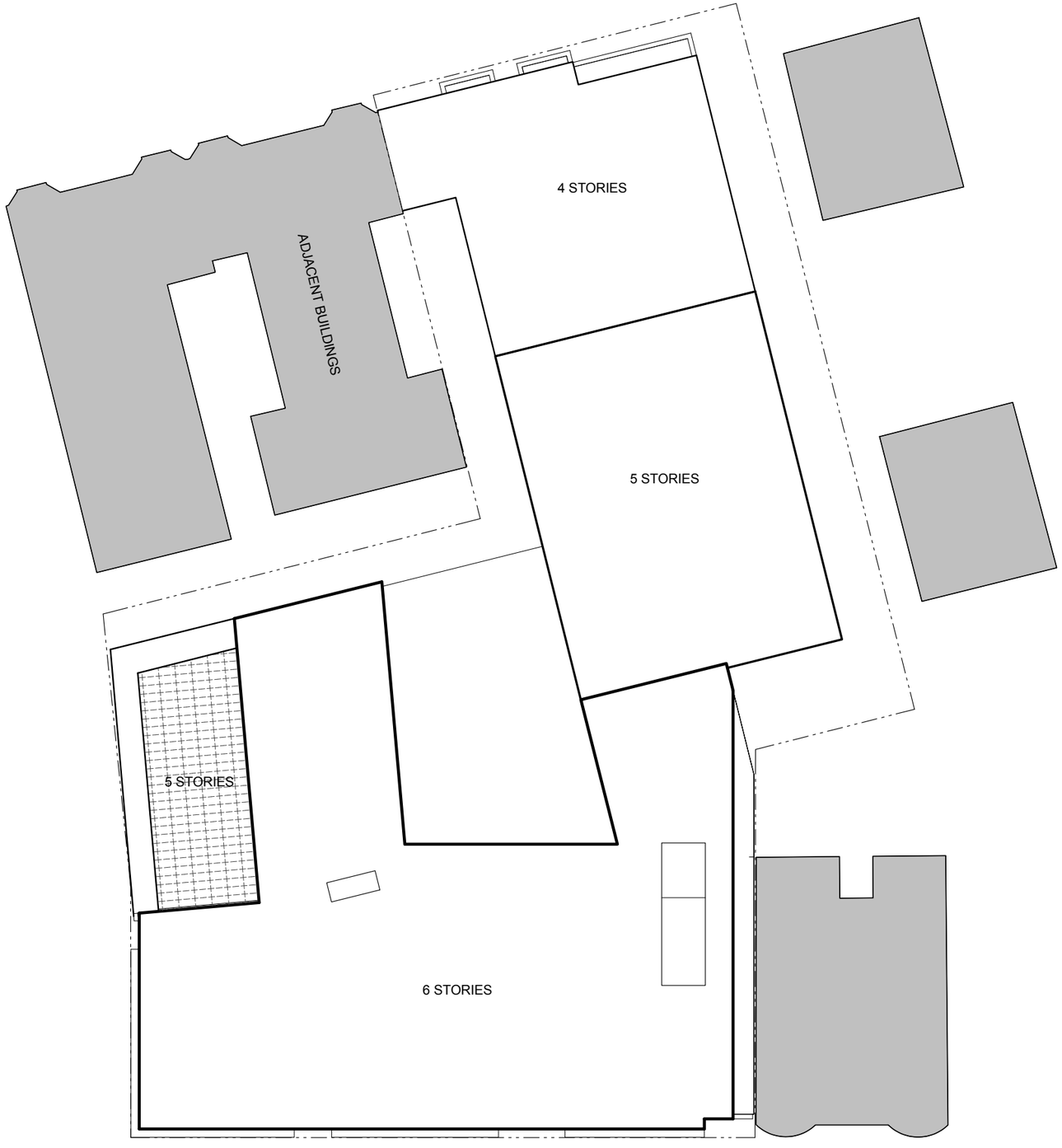
89 Brighton Avenue
Boston, MA

0 15' 30 Feet

PCA ARCHITECTURE PLANNING INTERIORS vhb

Figure 2-5
SIXTH FLOOR PLAN

89 Brighton Avenue
Boston, MA



0 15' 30 Feet

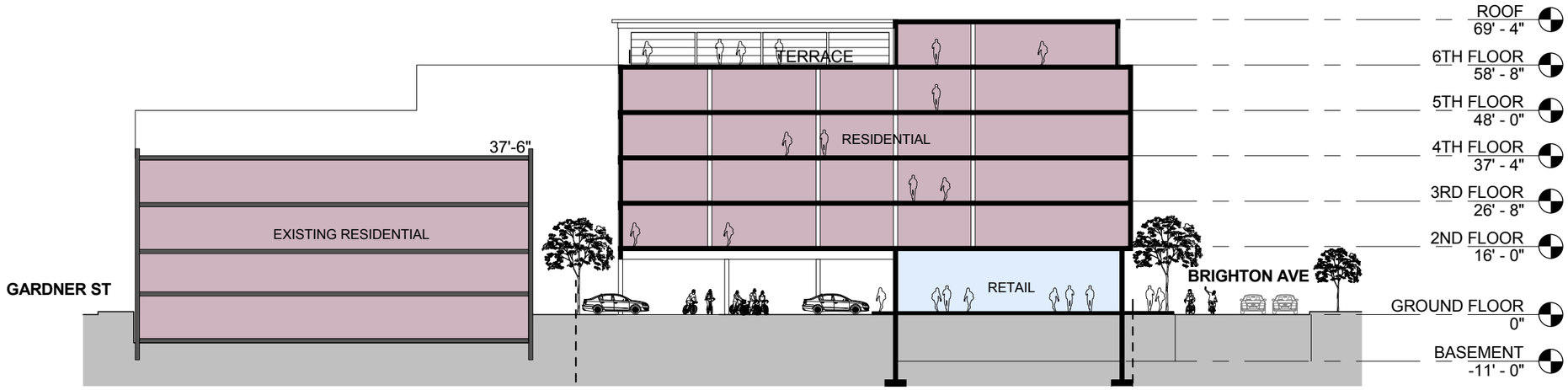
PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-6

ROOF PLAN

89 Brighton Avenue
Boston, MA



PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-7
BUILDING SECTION

0 15' 30 Feet

89 Brighton Avenue
Boston, MA

Brighton Ave Elevation

Linden Street Elevation

Gardner Street Elevation

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-8
ELEVATIONS

0 15' 30 Feet

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-9
BRIGHTON AVE LOOKING EAST

89 Brighton Avenue
Boston, MA

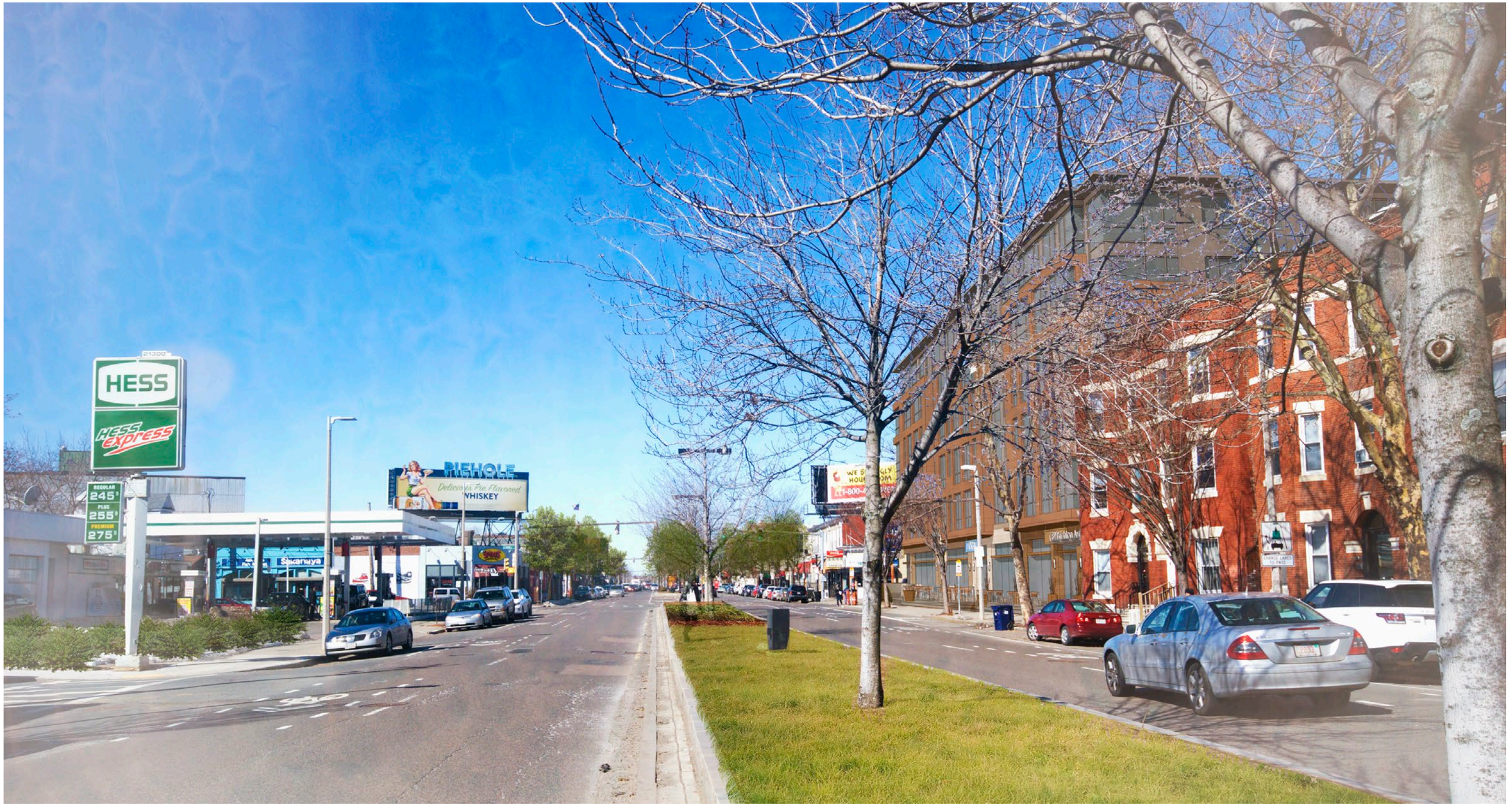
PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-10

AERIAL VIEW LOOKING SOUTH EAST

89 Brighton Avenue
Boston, MA



PCA ARCHITECTURE PLANNING INTERIORS vhb

Figure 2-11
BRIGHTON AVE LOOKING WEST

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS vhb

Figure 2-12
BRIGHTON AVE LOOKING WEST

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-13
GARDNER STREET LOOKING EAST

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-14
EXISTING AERIAL 2015 LOOKING NORTH

89 Brighton Avenue
Boston, MA

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 2-15
PROPOSED AERIAL 2017 LOOKING NORTH

89 Brighton Avenue
Boston, MA

3

Transportation and Parking

Introduction

This chapter provides a detailed and comprehensive evaluation of the existing and proposed transportation conditions, and identifies traffic impacts as a result of the Project. The analysis captures in detail the operational characteristics of the Project, and provides a basis for determining to what extent, if any, Project-related traffic is likely to affect the wider transportation network.

Summary of Findings

The Project is a transit-oriented development which relies on its urban setting to encourage new residents to utilize alternative modes of transportation. It is anticipated that vehicle ownership for residents will be low (0.5 vehicles per unit) and that the site amenities will further encourage residents to not own personal vehicles.

Overall the traffic generated by the Project will have a negligible impact to the study area intersections of Linden Street at Brighton Avenue and Linden Street at Gardner Street. A detailed level of service analysis was conducted for these intersections and is discussed later in the chapter.

The following are key findings and benefits related to transportation:

- Project generated trips will have negligible impact to the study area intersections;
- Relocation of the outbound #57 bus stop to the far side of the intersection will improve bus operations and provide additional six (6) on-street parking spaces on Brighton Avenue;
- The curb cut on Brighton Avenue, currently utilized as driveway into the Budget Rental Car lot will be closed to provide a seamless sidewalk and add additional on-street parking;

- The curb cut on Linden Street will be reduced in width to improve the pedestrian realm;
- The Project will widen the sidewalk along Brighton Avenue by two feet and along Linden Avenue by approximately three feet to improve the pedestrian realm;
- The Project will encourage alternative modes of transportation through a comprehensive Transportation Demand Management (TDM) plan;
- The Project will encourage lower vehicle auto ownership for its residents through an incentives program providing subsidized transportation options; and
- The Project will provide key bike accommodations including covered and secure bike storage, a bike repair station, accessible bike storage, and loaner bikes making it easy for residents to use bicycles as a preferred mode of transportation.

Project Overview

The Project is located along a lively commercial and residential block of Brighton Avenue in the Allston Village neighborhood of Boston. The Project is bordered by Gardner Street to the north, Brighton Avenue to the south and Linden Street to the west. Currently the site is home to a three-unit residential building, Budget Rental Car and the former International Bike Center Building. There are approximately 30 Budget rental car spaces, eight residential spaces and nine ZipCar space on site today. The site is bordered by large curb cuts on Brighton Avenue, Linden Street, and Gardner Street.

The Proponent proposes to redevelop the 0.78-acre site with a mixed-use, residential building with ground floor retail and provide approximately 69 parking spaces. For the purposes of the traffic analysis, the building is assumed to consist of 138 residential units and up to 7,100 gross square feet (GSF) of ground floor retail space.

A summary of the proposed uses for the Project are provided in Table 3-1.

Table 3-1 Project Development Program

Land Use	Size
Residential	138 units
Retail/Commercial Space	Up to 7,100 GSF
Parking	69 spaces

GSF Gross Square Feet

Study Methodology

The analysis presented in this Expanded Project Notification Form (PNF) provides a detailed description of the Project's transportation characteristics and evaluates any impacts to the transportation infrastructure. The transportation analysis presented in this chapter conforms to the Boston Transportation Department (BTD) Transportation Access Plans Guidelines.

The transportation analysis includes the projection of Project-related trips based on Institute of Transportation Engineers (ITE) trip generation rates and the application of local travel characteristics established through the *Access Boston 2000-2010* initiative. Synchro 8 software was used to facilitate the evaluation of traffic operations based on Highway Capacity Manual[1] (HCM) methodologies.

Traffic Study Area

Based on a review of traffic studies prepared for other nearby development projects and familiarity with the surrounding area, vehicular traffic associated with the Project should be widely dispersed throughout the nearby street network. Considering these and other factors, the following intersections, as shown in Figure 3.1, were included in the study area for the analysis:

- Linden Street at Brighton Avenue
- Linden Street at Gardner Street

Analysis Conditions

The transportation analysis considers the following primary analysis scenarios:

- **2015 Existing Conditions** – based on traffic data collection conducted within the study area in May 2015.
- **2020 No-Build Conditions** – Future conditions for a five-year time horizon as expected to occur if the Project was not constructed.
- **2020 Build Conditions** – Future conditions for a five-year time horizon assuming construction and full occupancy of the Project.

[1] Highway Capacity Manual; Transportation Research Board; Washington D.C.; 2000.

Existing Transportation Conditions

This section describes existing transportation conditions, including an overview of roadway conditions, transit, pedestrian and bicycle facilities, and general site conditions. A discussion of the existing on-street parking supply and utilization is also provided.

Roadways

The Project site is located on the block bordered by Gardner Street to the north, Chester Street to the east, Brighton Avenue to the south and Linden Street to the west.

Brighton Avenue, also known as Route 20, is a major arterial through the study area connecting to Commonwealth Avenue at Packards Corner east of the site, providing access to Route 2, Storrow Drive and downtown Boston. Brighton Avenue, to the west of the site, intersects with Cambridge Street at Union Square (Allston) and becomes North Beacon Street crossing the Charles River into Watertown. Brighton Avenue provides two hour parking along the majority of the corridor.

Linden Street connects to Cambridge Street to the north and Commonwealth Avenue to the south. South of Brighton Avenue Linden Street is one-way southbound and provides resident permit parking on both sides of the street. To the north of Brighton Avenue, Linden Street provides travel in both directions with resident permit parking on the east side of the street and no parking on the west side of the street. Linden Street is a desirable connection for vehicle accessing the Mass Turnpike via Cambridge Street.

Gardner Street runs from Harvard Avenue to the west to Babcock Street to the east. It is primarily a residential street with resident and some visitor parking on both sides of the street. At the intersection of Linden Street and Gardner Street, Gardner Street becomes one-way heading away from the intersection, in opposite directions.

Study Area Intersections

The study area consists of two study intersections shown previously in Figure 3.1 and are described below. Traffic operations and level of service (LOS) analysis are presented later in this chapter.

Linden Street at Brighton Avenue

Linden Street intersects Brighton Avenue at the southwest corner of the Project site. The intersection is signalized with Linden Street running north/south and Brighton

Avenue running east/west. The Linden Street southbound approach provides a general purpose lane with no on-street parking approaching the intersection. Linden Street south of Brighton Avenue is a one-way street northbound providing one general purpose lane at the intersection and 2-hour parking on the west side of the street at the intersection. The Brighton Avenue eastbound approach provides one exclusive left-turn lane, one through lane, and one through/right lane. The westbound approach provides one through lane and one shared through/right lane. Bus stops, with designated turnouts, are located at both approaches. Brighton Avenue offers bicycle priority shared lanes throughout the corridor, while no marked bike lanes are provided on Linden Street. All intersection approaches provide crosswalks.

Linden Street at Gardner Street

The intersection of Linden Street and Gardner Street is an unsignalized intersection at the northwest corner of the Project site. Linden Street runs north/south and Gardner Street runs east/west. Linden Street is free-flowing with one general purpose lane in each direction. On-street resident permit parking is allowed on the east side of the street while no parking is allowed on the west side. The Gardner Street westbound approach is one-way, providing travel away from the intersection. The eastbound approach is a one-way street heading towards Linden Street. Gardner Street provides on-street resident permit parking on both sides of the street at both approaches. No crosswalks or marked bike lanes are provided at the intersection.

Data Collection

To properly assess the traffic conditions of the surrounding street network, manual turning movement counts (TMCs) were collected at the two study area intersections. TMCs were collected on Thursday May 7, 2015 during a typical weekday morning peak period (7:00 AM – 9:00 AM) and evening peak period (4:00 PM – 6:00 PM) as well as on Saturday May 9, 2015 between (12:00 PM – 4:00 PM).

The TMCs were used to establish the study area network peak hour volumes for the 2015 Existing Condition analysis. The weekday morning peak hour was determined to be 8:00 AM to 9:00 AM, the weekday evening peak hour from 4:00 PM to 5:00 PM and the Saturday midday peak hour from 12:15 PM to 1:15 PM. Existing peak hour traffic volumes are show in Figure 3.2. The raw count data are included in Appendix B.

Seasonality of Count Data

No seasonal adjustments were applied to the TMCs collected in May 2015. The counts captured volumes during a time period when the surrounding colleges were still in session for the Spring 2015 semester.

Pedestrian Environment and Accessibility

The study area is pedestrian friendly with sidewalks provided along all surrounding roadways and crosswalks along all approaches at the intersection of Brighton Avenue and Linden Street. Brighton Avenue, provides active and vibrant storefronts and various unique dining and bar options inviting to visitors and residents of the area.

The study area has an active pedestrian zone as shown by Figure 3.3, 2015 Existing Conditions Pedestrian Volumes. These volumes were collected in conjunction with the TMCS of May 7, 2015 and May 9, 2015. During the weekday evening and Saturday midday peak hours there are high volumes of pedestrians traveling along the Brighton Avenue corridor. At the intersection of Linden Street and Brighton Avenue almost 100 people cross the southbound approach during the weekday evening peak hour and close to 200 people cross the approach during the Saturday midday peak hour. The high pedestrian volumes at the signalized intersection are accommodated with a push-button activated exclusive pedestrian phase. There are also a fair number of pedestrian crossing the Gardner Street approaches at the Linden Street/Gardner Street intersection during all peak hours.

Bicycles

Bicycle volumes, shown in Figure 3.4, at the study area intersections were collected simultaneously with the TMCs and pedestrian volume counts on May 7th and 9th, 2015.

Within the immediate study area there are few bicycle parking accommodations. No bicycle parking spaces are provided within the study area, some bikes were observed to be locked to various street signs and fences.

In 2013, Brighton Avenue bicycle accommodations underwent a major overhaul, when experimental "bicycle priority shared lanes" were installed from Packards Corner through the study area to Union Square. These priority shared lanes are now a permanent fixture along Brighton Avenue. No bicycle accommodations are provided along Linden Street or Gardner Street.

The closest Hubway Station is at Packards Corner on the north side of Brighton Avenue. This station is approximately a quarter-mile from the site and provides 19

docking stations. There are two other Hubway Stations within a half-mile of the site at Union Square and Commonwealth Avenue and Griggs Street, both are 15-dock stations.

Public Transportation

The Massachusetts Bay Transportation Authority (MBTA) currently provides local and Express Bus service and the Green Line – B Branch service within walking distance (1/2 mile) of the Project site. Figure 3.5 illustrates existing MBTA services and Table 3-2 provides a summary of the bus and rail services. A detailed description of each service is also provided.

Table 3-2 MBTA Services

Service	Origin / Destination	Peak-hour Frequency	Closest Stop (distance in miles)
Bus Route 51	Forest Hills / Cleveland Circle	Limited Service	Cambridge St & N Beacon St (0.45)
Bus Route 57	Watertown Yard / Kenmore Station	4 - 10 minutes	Brighton Ave & Linden St (0.06)
Bus Route 64	Oak Square / Kendall Station or University Park	15 – 30 minutes	Cambridge St & Linden St (0.30)
Bus Route 66	Harvard Square / Dudley Station	9 – 10 minutes	Brighton Ave & Harvard Ave (0.16)
Bus Route 501 (Express)	Brighton Center / Downtown Boston	6 – 12 minutes	Cambridge St & Linden St (0.30)
Bus Route 503 (Express)	Brighton Center / Copley Square	20 – 30 minutes	Cambridge St & Linden St (0.30)
Green Line – B Branch	Boston College / Park Street	7 minutes	Harvard Ave (0.27) Packards Corner (0.28)

Source: MBTA

Route #51 – Cleveland Circle – Forest Hills Station via Hancock Village – This route travels from Cleveland Circle to Forest Hills via local roadways to Putterham Circle and Roslindale Square. During specific times the route travels from Cleveland Circle to Union Square in Boston along Chestnut Hill Avenue and Cambridge Street. The Project site is approximately one half-mile away from the stop at Cambridge Street and North Beacon Street. The route only stops at this location during weekdays when traveling outbound at 7:15 AM and 7:25 AM and inbound at 3:15 PM.

Route #57 and 57A Watertown Yard (57) or Oak Square (57A) – Kenmore Station – This route connects Watertown Square to Kenmore Station via local roadways stopping at Newton Corner, Oak Square, Brighton Center, Union Square and Packards Corner where it then continues on Brighton Avenue to Kenmore Station. The route stops at the corner of the Project site at Brighton Avenue and Linden Street with 4 to 10 minute headways during the peak hours. Bus operations for weekday and Saturday service are from 4:30 AM to 1:20 AM and for Sunday service from 6:00 AM to 1:30 AM. Under the MBTA Late Night Service program Route 57 operates until 2:00 AM on Friday and Saturday nights with 20 minute headways.

Route #64 Oak Square – University Park, Cambridge or Kendall/MIT via North Beacon Street – This route connects Oak Square to University Park in Cambridge or Kendall/MIT Station via North Beacon Street, Cambridge Street, Magazine Street and Broadway. The closest stop to the Project site is approximately one-third mile at the end of Linden Street along Cambridge Avenue. The route provides weekday peak hour trips extending to the Kendall/MIT Station from 6:15 AM to 10:00 AM and 3:45 PM to 7:30 PM, with 15 to 30 minute headways. All other weekday, off-peak trips, start and end at University Park. Weekend service is provided from Oak Square to University Park every hour from 5:20 AM to 1:20 AM on Saturdays and 9:05 AM to 7:00 PM on Sundays.

Route #66 Harvard Square – Dudley Station via Allston & Brookline Village – This route connects Harvard Square in Cambridge to Dudley Station in Roxbury via Harvard Street and Tremont Street, with stops at Union Square, Harvard Avenue, Coolidge Corner, Brookline Village, Brigham Circle, and Roxbury Crossing. The closest stop to the Project site is at the intersection of Brighton Avenue and Harvard Avenue. During the weekday, Route 66 operates from 4:45 AM to 1:30 AM with 10 minutes or less headways during the peak hours. Over the weekend the bus operates from 4:40 AM to 1:30 AM on Saturdays and 5:50 AM to 1:30 AM on Sundays. Route 66 offers late night service on Friday and Saturday nights until 2:00 AM with the extension of the MBTA Late Night Service through 2016.

Express Route #501 Brighton Center – Downtown Boston – This route connects Brighton Center to Downtown Boston via the Mass Turnpike in Newton Corner. During the morning peak period, inbound service starts at Brighton Center and does not stop near the Project site, outbound service travels along Cambridge Street stopping at Cambridge Street and Linden Street about one-third mile from the Project site. During the evening peak period, inbound service periodically uses Cambridge Street to connect to Brighton Center, while the outbound service does not. Service is provided from 6:20 AM to 10:00 AM and during the evening peak period from 1:50 PM to 8:00 PM with headways every 6 to 12 minutes. No service is provided on the weekends.

Express Route #503 Brighton Center – Copley Square – This route connects Brighton Center to Copley Square via the Mass Turnpike. During the morning peak period only outbound service stops near the Project site at Cambridge Street and Linden Street with approximately 20 minute headways from 7:00 AM to 9:00 AM. During the evening peak period only inbound service stops near the Project site at Cambridge Street and Linden Street with service from 4:55 PM to 6:55 PM and 20 to 30 minute headways. No service is provided on the weekends.

Green Line – B Branch Boston College – Park Street – The B Branch of the Green Line travels from Park Street to Boston College with seven minute headways during the morning and evening peak periods. The line operates from 5:00 AM to 1:00 AM

on weekdays, 4:45 AM to 2:30 AM on Saturdays and 5:20 AM to 1:00 AM on Sundays. Under the MBTA Late Night Service program, the Green Line B Branch will continue running service on Fridays until 2:00 AM. The closest stops to the Project site are at Harvard Avenue and Packards Corner T stops, approximately a quarter-mile away. The Green Line B Branch connects to the Orange Line and the Red Line at Park Street and other Green Line branches at Kenmore and Copley Stations.

The Project site is easily accessible by a variety of public transit options that provide numerous connections to most other MBTA public transit services, allowing the site to be reached by bus and subway from many locations within the City of Boston and the surrounding suburbs.

Existing Parking

The site currently has approximately 47 total parking spaces. Budget Rental Car provides parking for over 30 rental vehicles. In addition there is parking for nine (9) ZipCars and approximately eight (8) residents at the back of site. In addition to the on-site parking there are a variety of on-street parking options available near the site including resident, visitor, commercial and metered parking. Figure 3.6 shows the current on-street parking regulations within a quarter-mile of the site.

In order to understand the existing usage of the on-street parking surrounding the proposed site, an occupancy study was conducted during a typical weekday, Wednesday April 29, 2014 and a typical Saturday, May 2, 2015. These dates captured year-round business and resident activity as well as student activity as surrounding colleges were still in session. During the weekday occupancy study, three specific time periods captured the availability of resident, visitor and commercial parking in the area.

- **10:00 AM** captured on-street parking availability after the morning peak period;
- **3:00 PM** captured on-street parking availability before the evening peak period; and
- **8:00 PM** captured on-street parking availability after the evening peak periods and into the overnight hours.

The Saturday occupancy count was conducted at 1:00 PM in the middle of the Saturday peak period.

The results of the occupancy study, illustrated in Figures 3.7.a though 3.7.d, show that there is a variety of on-street parking available during all time periods of a typical weekday and Saturday. Resident parking availability on streets adjacent to the site, , as shown in Table 3-3, have a considerable number of spaces available throughout the day.

Table 3-3 On-Street Parking Utilization (Nearby Resident Spaces)

Location	Total Number of Spaces	Number of Spaces Available			
		April 29, 2015 10:00 AM	April 29, 2015 3:00 PM	April 29, 2015 8:00 PM	May 2, 2015 1:00 PM
Linden Street between Brighton Avenue and Gardner Street	5	4	2	3	5
Gardner Street between Linden Street and Chester Street (both side of the street)	46	27	30	19	19
Chester Street between Brighton and Ashford Street	52	21	24	6	12
Ashford Street between Linden Street and Pratt Street	24	13	12	9	1

Source: VHB, May 2015

Crash Analysis

Study area crash data was obtained from MassDOT records for the five year period from January 2008 through December 2012 (the most recent data available). Analysis of the crash data is summarized in Table 3-4 and includes the statewide average crash rates compared to the calculated crash rates for each study area intersection.

As shown in the table below, vehicular safety within the study area has greatly improved from 2008 to 2012. In 2008 a total of seven accidents were reported, approximately 64 percent of the reported accidents over the five year period. The majority of the accidents resulted in only property damage (8 of 11) while the rest of the accidents resulted in non-fatal injuries (3 of 11). One of the non-fatal accidents that was reported occurred in 2012 between a vehicle and a bicyclist at the intersection of Linden Street and Gardner Street. All reported accidents occurred under either dry (9 of 11) or wet (2 of 11) pavement conditions with a majority of them occurring during off peak hours.

The City of Boston, including the Allston area, is located within MassDOT District 6, which is comprised of several communities within the greater Boston area. The average intersection crash rate for District 6 signalized intersection is 0.76 crashes per million entering vehicles (MEV). The average for unsignalized intersection in District 6 is 0.58 crashes per MEV. District 6 has a slightly lower average than the Statewide Average of 0.80 crashes per MEV for signalized intersections and 0.60 crashes per MEV for unisignalized intersections.

Within the five year period, all intersections within the study area had lower crash rates that the district and statewide averages.

Table 3-4 Vehicular Crash Summary (2008-2012)

	Linden Street at:	
	Brighton Avenue	Gardner Street
Signalized?	Yes	No
MassDOT Average Crash Rate	0.76	0.58
MassDOT Calculated Crash Rate	0.24	0.12
Exceeds?	No	No
Year		
2008	6	1
2009	2	0
2010	1	0
2011	0	0
2012	0	1
Total	9	2
Collision Type		
Angle	1	2
Head-on	0	0
Rear-end	2	0
Rear-to-rear	0	0
Sideswipe, opposite direction	0	0
Sideswipe, same direction	3	0
Single Vehicle Crash	0	0
Unknown	1	0
Not Reported	2	0
Total	9	2
Severity		
Fatal Injury	0	0
Non-fatal Injury	2	1
Property Only	7	1
Not Reported	0	0
Unknown	0	0
Total	9	2
Time of day		
Weekday, 7:00 AM-9:00 AM	2	0
Weekday, 4:00 PM – 6:00 PM	0	0
Saturday, 11:00 AM – 2:00 PM	0	0
Weekday, other time	4	1
Weekend, other time	3	1
Total	9	2
Pavement Conditions		
Dry	7	2
Wet	2	0
Snow	0	0
Ice	0	0
Sand, mud, dirt, oil, gravel	0	0
Not Reported	0	0
Total	9	2
Non-Motorist (Ped/Bike)	0	1

Source: MassDOT crash data

Future Condition

To assess future transportation conditions, the analysis considered the following two future scenarios for a five-year time horizon (2020) from the time of the existing conditions described earlier:

- **2020 No-Build Condition** – assumes no changes to the Project site, but with background growth associated with other planned projects and general regional growth, along with any planned roadway/ infrastructure improvements; and
- **2020 Build Condition** – assuming the same background growth and any planned infrastructure improvements, but including the redevelopment of the Project site.

No-Build Condition

The 2020 No-Build Condition was developed to evaluate future transportation conditions in the traffic study without consideration of the Project. In accordance with BTD guidelines, this future analysis year represents a five-year horizon (2020) from existing conditions (2015). The No-Build conditions provides insight to future traffic conditions resulting from regional growth as well as traffic generated by specific projects that are expected to affect the local roadway network.

Background Growth

A background growth rate of one-half (1/2) percent per year was applied to the existing traffic volumes. The growth rate is consistent with recent traffic studies for other developments within the Allston/Brighton area as well as downtown Boston. In addition to the background growth rate, traffic projections and infrastructure changes for several specific projects were incorporated in the development of No-Build Conditions. These include the following development projects:

- **40 Malvern Street** is a proposed six-story residential building to include up to 48 rental units with 44 parking spaces.
- **1047 Commonwealth Avenue** is a proposed six-story residential building with ground floor retail and approximately 220 studio apartments. No parking is being built with the project.
- **450 Cambridge Street** is a proposed 40-unit rental building including 40 parking spaces.
- **Penniman of the Park** is a 32-unit condominium building with 17 covered parking spaces and 10 above grade spaces located on Penniman Road off of Cambridge Street in Allston.

- **61-83 Braintree Street** is a proposed mixed use building consisting of 80 residential units with approximately 6,000 SF of commercial space and 68 parking spaces.

One infrastructure project was identified as a relevant area improvement project that will have a positive impact in the area. The Allston I-90 Interchange Project will replace the existing viaduct and realign the highway for better vehicular flow. Although the project does not directly affect the study area roadways, the Allston interchange is a major connection point for local and Project traffic. Linden Street, adjacent to the Project site is a major connection for vehicles accessing I-90 via the Allston Interchange. Construction is scheduled to start in 2017.

Figure 3.8 present the 2020 No-Build Condition traffic volumes accounting for background growth and planned infrastructure changes for the weekday morning, weekday evening and Saturday midday peak hours.

Build Condition

The 2020 Build Condition includes construction of the Project, specifically the 138-unit residential building with 7,100 sf of ground floor retail. A 69 space surface parking garage, behind the retail and below the residential units will be constructed with the Project and available for residents of the building.

Site Access and Circulation

The Project will have two site driveways providing access to the parking lot, one along Linden Street and one on Gardner Street. Two way travel will be maintained at the site driveways and within the parking lot to provide maximum vehicular flow within the site. The existing curb cut on Brighton Avenue will be closed to allow for a seamless sidewalk. Figure 3.12 illustrates the proposed site plan for the Project.

As illustrated the bus stop, currently located adjacent to the Project site on Brighton Avenue, will be relocated to the far side of the intersection. This will improve bus operations for the #57 bus route by decreasing delays due to signal operations. It will also allow additional 2-hour parking to be added along Brighton Avenue.

Existing Land Use Generated Trips

The site is currently occupied by a three-unit residential building, a Budget Rental Car and the former International Bike Building, which is currently unoccupied. These land uses currently generate trips to the site as shown in Table 3-5. The Budget Rental Car and residential building trip generation is based on actual driveway counts

conducted during the TMCs in May 2015. The International Bike Building trips have been estimated using Institute of Transportation Engineers (ITE) trip generation rates.

Table 3-5 Existing Trip Generation (Fully Occupied Site)

Time Period/Direction	Residential and Budget[1]	Former International Bike Building[2]	Total Existing Trip Generation
Weekday Morning			
Enter	2	4	6
Exit	3	2	5
Total	5	6	11
Weekday Evening			
Enter	2	10	12
Exit	2	14	16
Total	4	24	28
Saturday Midday			
Enter	3	18	21
Exit	2	17	19
Total	5	35	40

Source: 1 – TMCs conducted in May 2015
2 – ITE Trip Generation Handbook LUC 820 – Shopping Center

The existing trips currently generated by the uses on-site today are taken into account when developing the Net-New Project Generated Trips and 2020 Build Condition volumes discussed in the next section.

Project Generated Trips

To assess the traffic impacts of the Project, trip estimates were based on standard rates from the ITE Trip Generation Handbook[2]. Trip generation for the proposed mixed-use building was estimated based on ITE Land Use Codes as shown in Table 3-6 below.

Table 3-6 Trip Generation Land Use Codes

Land Use	ITE Land Use Code (LUC)	Independent Variable
Residential	220 – Apartments	Dwelling Units
Retail/Commercial	820 – Shopping Center	Square Feet

Source: ITE Trip Generation Handbook

▼

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

Mode Share and Vehicle Occupancy Rates

To account for alternative modes of transportation, mode shares for the area, based on BTD guidelines, were applied to the unadjusted ITE trip results. Mode shares by land use are shown in Table 3-7 below.

Table 3-7 Mode Split by Land Use Category

Mode	Residential	Retail/Commercial
Daily		
Automobile	47%	55%
Public Transit	22%	13%
Walk/Bike/Other	31%	32%
AM/PM Peak		
Automobile	43%	56%
Public Transit	21%	16%
Walk/Bike/Other	36%	28%

Source: BTD Zone 17 Mode Split

Vehicle Occupancy Rates (VOR) were also applied to the ITE trip generation to convert the ITE estimated unadjusted vehicle trips to person trips. The VOR's were based on the 2009 National Household Travel Survey. For residential space 1.13 persons per vehicle was used and for retail/commercial a 1.78 persons per vehicle was used. After VOR is applied to the ITE unadjusted vehicle trips to produce person trips, these trips are split into modes based on the mode splits shown above in Table 3-7. VOR's are again applied to the vehicle trips to produce adjusted vehicle trips.

The Project Generated Trips, as show in Table 3-8 are the proposed Project trips estimated using the ITE Trip Generation Handbook.

Table 3-8 Total Project Trip Generation

Time Period / Direction	Public Transportation	Walk/Bike/Other	Vehicle Trips
Weekday Daily			
Enter	149	247	299
Exit	149	247	299
Total	298	494	598
Weekday Morning			
Enter	4	8	8
Exit	14	24	25
Total	18	32	33
Weekday Evening			
Enter	18	31	33
Exit	12	20	22
Total	30	51	55
Saturday Daily			
Enter	144	237	289
Exit	144	237	289
Total	288	474	578
Saturday Midday			
Enter	14	24	25
Exit	14	23	24
Total	28	47	49

Source: Trip Generation, 9th Edition, Institute of Transportation Engineers, Washington D.C. (2012).
Notes: Land Use Codes (LUC) 220 – Apartment and 820 – Shopping Center. The base trip generation estimates were subsequently categorized into transit, walk, bike or vehicular trips following BTD's guidelines for Zone 17.

The Project is estimated to generate approximately 598 daily weekday vehicle trips (299 entering, 299 exiting) and 578 daily Saturday vehicle trips (289 entering, 289 exiting) primarily due to the retail component when standard trip generation procedures are applied. However, the retail spaces is expected to be neighborhood-oriented retail and is expected to generate less vehicle traffic than a vehicle dependent retailer.

During a typical weekday the morning peak hour is expected to generate 33 vehicle trips (8 entering, 25 exiting) and during the evening peak hour the Project will generate 55 vehicle trips (33 entering, 22 exiting). On a typical Saturday midday peak, the Project will generate 49 vehicle trips (25 entering, 24 exiting).

With the Project's close proximity to public transit the Project will generate 298 transit trips (149 entering, 149 exiting) during a typical weekday. The morning peak will generate approximately 18 transit trips (4 entering, 14 exiting) and the evening peak hour will generate 30 transit trips (18 entering, 12 exiting). During a typical Saturday, the Project will generate 288 daily transit trips (144 entering, 144 exiting) and during the midday peak hour 28 transit trips (14 entering, 14 exiting) will be generated.

The location on the Project is ideal for walking and biking, as well as use of other modes of transportation besides vehicle and transit, as the mode splits indicate in Table 3-7. The Project will generated 494 daily walk/bike/other trips (247 entering, 247 exiting) during a typical weekday. During the morning peak hour the Project will generate 32 walk/bike/other trips (8 entering, 24 exiting) and during the evening peak hour 51 walk/bike/other trips (31 entering, 20 exiting). Over a typical Saturday the Project will generate 474 daily walk/bike/other trips (237 entering, 237 exiting) and 47 (24 entering, 23 exiting) of those trips will be generated during the midday peak hour.

Net-New Project Generated Vehicle Trips

As discussed above, the existing site, including the Budget Rental Car and the residential building, currently generates vehicle trips to the site. Credit for these existing trips, which are already traveling through the network, are accounted for by subtracting the existing trips from the Project generated trips. Table 3-9 shows the Net-New Project Generated Vehicle trips for the peak hours analyzed in the analysis.

Table 3-9 Net-New Project Generated Vehicle Trips

Time Period / Direction	Project Generated Trips	Existing Site Trips (Budget and Residential Building)	Net-New Vehicle Trips
Weekday			
Enter	8	-2	6
Exit	25	-3	22
Total	33	-5	28
Weekday			
Enter	33	-2	31
Exit	22	-2	20
Total	55	-4	51
Saturday			
Enter	25	-4	21
Exit	24	-2	22
Total	49	-6	43

The Project will be adding an additional 28 vehicle trips (6 entering, 22 exiting) to the network during the morning peak hour and 51 vehicle trips (31 entering, 20 exiting) during the evening peak hour. The Saturday midday peak will have an additional 43 vehicle trips (21 entering, 22 exiting) added to the network.

Automobile Trip Distribution

Trip distribution was based on BTD's guidelines for Area 17 (where Project site is located). These guidelines, based on 2000 census data, provide information on where area residents work and where area employees live. Using these data, Project vehicle trips can then be assigned to the roadway network. Trip distribution patterns were established separately for the residential and the retail/commercial uses. A summary of the regional trip distribution results is presented in Table 3-10 and shown graphically in Figure 3.9.

Table 3-10 Geographic Trip Distribution

Corridor	Residential	Retail/Commercial
Cambridge Street (to/from East)	66.0%	69.6%
Brighton Avenue (to/from East)	2.8%	1.7%
Harvard Avenue (to/from South)	23.4%	23.0%
Brighton Avenue (to/from West)	7.8%	5.7%
Total	100%	100%

Source: BTD Zone 17 Trip Distribution

Due to peak hour turning restrictions from Cambridge Street, different trip assignments were developed for the peak weekday and Saturday analyses. Local trip distribution for weekday and Saturday analysis are provided in Appendix B.

The net-new Project generated vehicle trips were added to the No-Build traffic networks using the local trip distribution patterns described above. The Project Generated Trips are shown in Figure 3.10 and the resulting 2020 Build Condition networks are shown in Figure 3.11 for the respective weekday morning, weekday evening and Saturday midday peak hours.

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

Parking

The proposed Project will include 69 parking spaces (0.5 spaces/unit) in a partially-covered parking lot behind the ground floor retail space. The parking will be accessed via a driveway on Linden Street and a driveway on Gardner Street. These spaces will be dedicated to residents of the building. ZipCar service will be maintained on site and three electric-car charging stations will be provided.

It is the goal of both the City and Project to not overbuild parking. As discussed previously, there is ample resident parking available adjacent to the site on Linden Street and Gardner Street throughout the day.

BTD, as outlined in their guidelines, recommends a maximum parking ratio of 0.75-1.25 spaces per residential unit. The Project proposes to have a ratio of 0.5 spaces per residential unit. The proposed parking ratio has been discussed with BTD and has been deemed appropriate for this location with appropriate transportation demand management measures in place. These measures will be discussed later in the chapter.

On-street parking within close proximity of the site will undergo minor changes in coordination with the development of the Project:

- Approximately two 2-hour parking spaces on Brighton Avenue will be relocated with the proposed relocation of the bus stop.
- Six 2-hour spaces will be gained, in front of the Project, by relocating the bus stop and the closure of the driveway along Brighton Avenue.
- Two resident on-street parking spaces on Linden Street will be replaced with a loading zone to accommodate building loading and service deliveries.

Loading

The proposed Project, as shown in Figure 3.12, will include an on-street loading zone on Linden Street. This loading zone will accommodate residential trash pickup, residential move-in/move-out accommodations, as well as delivery services to the residents and retail tenants.

A compactor, for the commercial tenants, will be located in the garage and will be accessible through the site driveways.

Construction Management

The Proponent will develop a detailed evaluation of potential short-term construction-related transportation impacts including construction vehicle traffic, parking supply and demand, and pedestrian access. Detailed Construction Management Plans (CMP) will be developed and submitted to the BTD for their approval. These plans will detail construction vehicle routing and staging.

Construction vehicles will be necessary to move construction materials to and from the Project site. Every effort will be made to reduce the noise, control fugitive dust, and minimize other disturbances associated with construction traffic. Truck staging and lay-down areas for the Project will be carefully planned. The need for street occupancy (lane closures) along roadways adjacent to the project site is not known at this time.

Contractors will be encouraged to devise access plans for their personnel that de-emphasize auto use (such as seeking off-site parking, provide transit subsidies, on-site lockers, etc. Construction workers will also be encouraged to use public transportation to access the Project site because no new parking will be provided for them.

During the construction period, pedestrian activity adjacent to the site may be impacted by sidewalk closures. A variety of measures will be considered and implemented to protect the safety of pedestrians. Temporary walkways, appropriate lighting, and new directional and informational signage to direct pedestrians around the construction site will be provided. After construction is complete, finished pedestrian sidewalks will be permanently reconstructed to meet ADA standards around the new building. Any damage as a result of construction vehicles or otherwise will be repaired per City standards.

Mitigation

Many mitigation measure are being proposed with this Project including an extensive Transportation Demand Management (TDM) program, improved pedestrian and bicycle accommodations, as well as potential signal timing improvements.

Transportation Demand Management (TDM) Measures

Consistent with the City's goals to reduce auto-dependency, the Project will include Transportation Demand Management (TDM) measures to encourage the use of alternative modes of transportation.

The Proponent is considering the following measures:

- The Proponent will join the local Allston Brighton Transportation Management Association (TMA) which includes, but not limited to:
    - Guaranteed Ride Home Program
    - Area-Wide Ridematching
    - Car-Sharing: Discounted ZipCar rates
    - Transportation Awareness Events
    - Transportation Information and Material
    - Construction and Transit Advisories
- The Proponent will designate a Transportation Coordinator to oversee parking and loading operations as well as promote the use of alternative transportation measures and carpooling.

- The Proponent will provide transit information such as maps and schedules to new residents and tenants in an orientation package and also provide this information in the residential lobby.
- The Proponent will provide residents (upon each new lease) certain transportation incentives based on car ownership. Table 3-11 outlines these incentives.

Table 3-11 Resident TDM Incentives

Incentive	Non-Car Owner	Car Owner
MBTA Transit Pass – First Month Free	✓	✓
Hubway 50% off 1 yr. Membership	✓	✓
ZipCar 1 yr. Membership	✓	×
ZipCar Credits	✓	×
Uber Credits	✓	×

- The Proponent will charge tenants market rates for parking.
- ZipCar service will remain on site to continue providing service to the community.
- Three spaces within the garage will provide electric car charging stations.
- There will be a 138 space covered and secure bicycle storage facility located within the garage and 10 public bicycle spaces provided on adjacent sidewalks.
- The Proponent will provide four (4) loaner bicycles for visitors of the residents.
- The Proponent will provide on-site pass sales to residents.
- The Proponent will encourage commercial tenants to provide:
    - On-site transit pass sales to employees; and
    - A 50% transit subsidy.

All TDM measures will be formalized in the Transportation Access Plan Agreement (TAPA) to be executed with BTD. With a limited number of employees, the building may not have the same levels of TDM opportunities as would be available with a larger employer. Regardless, employees who work on-site will be able to take advantage of the transportation guidance and programs coordinated in this area.

Pedestrian and Bicycles

The Project site is located in a vibrant community within Allston and provides accommodations to the ever increasing volumes of pedestrian and bicyclist that rely on this transportation infrastructure daily. The Project will continue to encourage the

use of these modes of transportation through aggressive TDM measures and public improvement projects which include:

- Providing residents with a covered and secure bicycle storage facility located in the parking lot. The facility will offer 138 bike parking spaces, providing every unit with one space.
- Providing 10 exterior bicycle parking space for retail and public use. Currently no bicycle parking is provided around the site.
- Widening the sidewalks adjacent to the Project site:
    - Brighton Avenue would increase by two feet for a total sidewalk width of twelve feet; and
    - Linden Street would increase by three feet for a total sidewalk width of approximately ten feet.

Signal Improvements

Currently, the intersection of Linden Street and Brighton Avenue has a push-button activated exclusive pedestrian phase which stops all traffic and provides a WALK phase for pedestrians on all legs of the intersection at the same time. This phase creates measurable delay for vehicles. It also creates delay for pedestrians by requiring them to wait for the WALK phase before crossing the street. Removal of the exclusive pedestrian phase at the intersection of Linden Street and Brighton Avenue would improve overall operations for both traffic and pedestrians.

The current volumes turning right onto Linden Street from Brighton Avenue exceed BTD guidelines that would allow concurrent pedestrian phasing; however, it was observed that pedestrians rarely wait for the exclusive pedestrian phase at this location. It is recommended that a Leading Pedestrian Interval (LPI) be introduced which would give pedestrians an initial WALK light to begin to cross the street before traffic is given a green light. Vehicles would then be required to yield to pedestrians on turns. By removing the exclusive pedestrian phase and implementing LPI the LOS operations at the intersection would improve while still providing adequate pedestrian accommodations.

Traffic Operations Analysis

Consistent with MassDOT and BTD guidelines, Synchro 8 software was used to model level of service (LOS) operations at the study area intersections. LOS is a qualitative measure of control delay at an intersection providing an index to the operational qualities of a roadway or intersection.

LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS D is considered acceptable. LOS E indicates vehicles experience significant delay while LOS F suggests unacceptable delay for the average vehicle. LOS thresholds differ for signalized and unsignalized intersections. Longer delays at signalized intersections than at unsignalized intersections are perceived as acceptable.

Table 3-12 below presents the level of service delay threshold criteria as defined in the 2000 Highway Capacity Manual (HCM).

Table 3-12 Level of Service Criteria

Level of Service	Unsignalized Intersection Control Delay (sec/veh)	Signalized Intersection Control Delay (sec/veh)
LOS A	0-10	≤ 10
LOS B	> 10-15	> 10-20
LOS C	> 15-25	> 20-35
LOS D	> 25-35	> 35-55
LOS E	> 35-50	> 55-80
LOS F	> 50	> 80

Source: 2000 HCM

Adjustments were made to the Synchro model to include characteristics of the study area such as heavy vehicles, bus operations, parking activity, and pedestrian crossings. The capacity analysis results are summarized in the following sections.

Signalized Capacity Analysis

The LOS results of the signalized capacity analyses are summarized in Tables 3-13.a through 3-13.c for the Existing, No-Build, and Build condition peak hours. Detailed Synchro results are presented in the Appendix B.

Table 3-13.a Signalized Intersection Level of Service (LOS) Summary - Morning Peak Hour

	2015 Existing Conditions					2020 No-Build Conditions					2020 Build Conditions				
				Vehicle Queues					Vehicle Queues					Vehicle Queues	
Location	v/c[1]	Delay[2]	LOS[3]	50th[4]	95th[5]	v/c	Delay	LOS	50th	95th	v/c	Delay	LOS	50th	95th
Linden Street at Brighton Avenue	0.57	27.0	C	-	-	0.60	27.6	C	-	-	0.60	27.7	C	-	-
Brighton Ave EB Left/U-Turn	0.14	17.3	B	15	45	0.21	19.2	B	22	60	0.25	20.0	B	26	69
Brighton Ave EB Thru	0.39	19.1	B	125	202	0.41	19.8	B	134	214	0.41	19.8	B	134	214
Brighton Ave WB U-Turn/Thru/Right	0.57	22.4	C	178	#319	0.61	23.7	C	194	#351	0.61	23.7	C	193	#350
Linden St NB Left/Thru/Right	0.82	41.0	D	259	303	0.82	41.1	D	265	310	0.82	41.1	D	266	310
Linden St SB Left/Right	0.57	31.7	C	50	109	0.59	32.3	C	54	116	0.62	33.4	C	59	123

Table 3-13.b Signalized Intersection Level of Service (LOS) Summary - Evening Peak Hour

	2015 Existing Conditions					2020 No-Build Conditions					2020 Build Conditions				
				Vehicle Queues					Vehicle Queues					Vehicle Queues	
Location	v/c[1]	Delay[2]	LOS[3]	50th[4]	95th[5]	v/c	Delay	LOS	50th	95th	v/c	Delay	LOS	50th	95th
Linden Street at Brighton Avenue	0.81	39.6	D	-	-	0.85	46.2	D	-	-	0.86	48.7	D	-	-
Brighton Ave EB Left/U-Turn	0.35	25.5	C	25	69	0.57	39.8	D	40	#119	0.86	77.3	E	~76	#190
Brighton Ave EB Thru	0.36	19.5	B	132	180	0.40	20.7	C	143	193	0.40	20.7	C	143	193
Brighton Ave WB U-Turn/Thru/Right	0.89	37.2	D	~412	#542	0.97	51.4	D	~456	#587	0.97	51.4	D	~456	#587
Linden St NB Left/Thru/Right	0.59	33.4	C	182	273	0.59	32.5	C	187	279	0.59	32.5	C	187	279
Linden St SB Left/Right	0.99	>80.0	F	162	#339	0.99	>80.0	F	172	#354	>1.0	>80.0	F	~183	#365

Table 3-13.c Signalized Intersection Level of Service (LOS) Summary – Saturday Midday Peak Hour

	2015 Existing Conditions					2020 No-Build Conditions					2020 Build Conditions				
				Vehicle Queues					Vehicle Queues					Vehicle Queues	
Location	v/c[1]	Delay[2]	LOS[3]	50th[4]	95th[5]	v/c	Delay	LOS	50th	95th	v/c	Delay	LOS	50th	95th
Linden Street at Brighton Avenue	0.93	48.6	D	-	-	0.99	58.2	E	-	-	1.00	60.5	E	-	-
Brighton Ave EB Left/U-Turn	0.66	38.4	D	32	#134	0.77	52.0	D	37	#149	0.84	53.5	E	42	#164
Brighton Ave EB Thru	0.36	17.0	B	64	165	0.38	17.2	B	66	171	0.38	17.2	B	66	171
Brighton Ave WB U-Turn/Thru/Right	0.94	42.3	D	175	#474	>1.0	56.0	E	195	#510	>1.0	56.0	E	195	#510
Linden St NB Left/Thru/Right	0.74	31.3	C	208	289	0.76	32.4	C	216	299	0.76	32.4	C	216	299
Linden St SB Left/Right	>1.0	>80.0	F	~169	#328	>1.0	>80.0	F	~181	#343	>1.0	>80.0	F	~190	#353

1 volume to capacity ratio
2 delay in seconds
3 level of service
4 50th percentile queue
5 95th percentile queue
~ Volume exceeds capacity, queue is theoretically infinite.
# 95th percentile volume exceeds capacity, queue may be longer.
m Volume for 95th percentile queue is metered by upstream signal.

The results of the LOS analysis indicate that the signalized intersection of Linden Street and Brighton Avenue operates at an acceptable LOS D or better under existing conditions.

During the morning peak hour the intersection operates at an LOS C for all conditions. The northbound approach has the largest delays due heavy volumes and short allocated green time. The overall delay increases by 0.6 seconds with the addition of background growth under No-Build Conditions. The addition of Project

trips slightly increases the overall delay by 0.1 seconds and continues to operate at an LOS C.

The intersection operates at an acceptable LOS D for all analyzed conditions during the evening peak hour. The Linden Street southbound approach operates at an LOS F during all conditions due to a high volume of left-turning vehicles. With the addition of background growth the overall delay increases by 6.6 seconds. The Project, with the addition of 32 net-new Project trips added to the Brighton Avenue eastbound left movement increases the approach from LOS D to LOS E. The overall intersection continues to operate at an LOS D during the Build Condition, with only a slight increase in overall delay by 2.5 seconds.

The Saturday midday peak hour operates at an LOS D under Existing Conditions and degrades to an LOS E under No-Build Conditions. Linden Street southbound approach operates at LOS F under all conditions due to the high volumes turning left onto Brighton Avenue. With the addition of the Project trips the overall intersection continue to operate at LOS E and only increases in overall delay by 2.3 seconds.

Overall the intersection of Brighton Avenue and Linden Street operates at an acceptable LOS D or better under Existing Conditions and with the addition of the Project trips, the changes to the future traffic operations will be negligible.

Unsignalized Capacity Analysis

The capacity analysis results for the unsignalized study area intersection of Linden Street and Gardner Street is summarized in Table 3-14. Detailed Synchro results are presented in the Appendix B.

Table 3-14 Unsignalized Intersection Level of Service (LOS) Summary

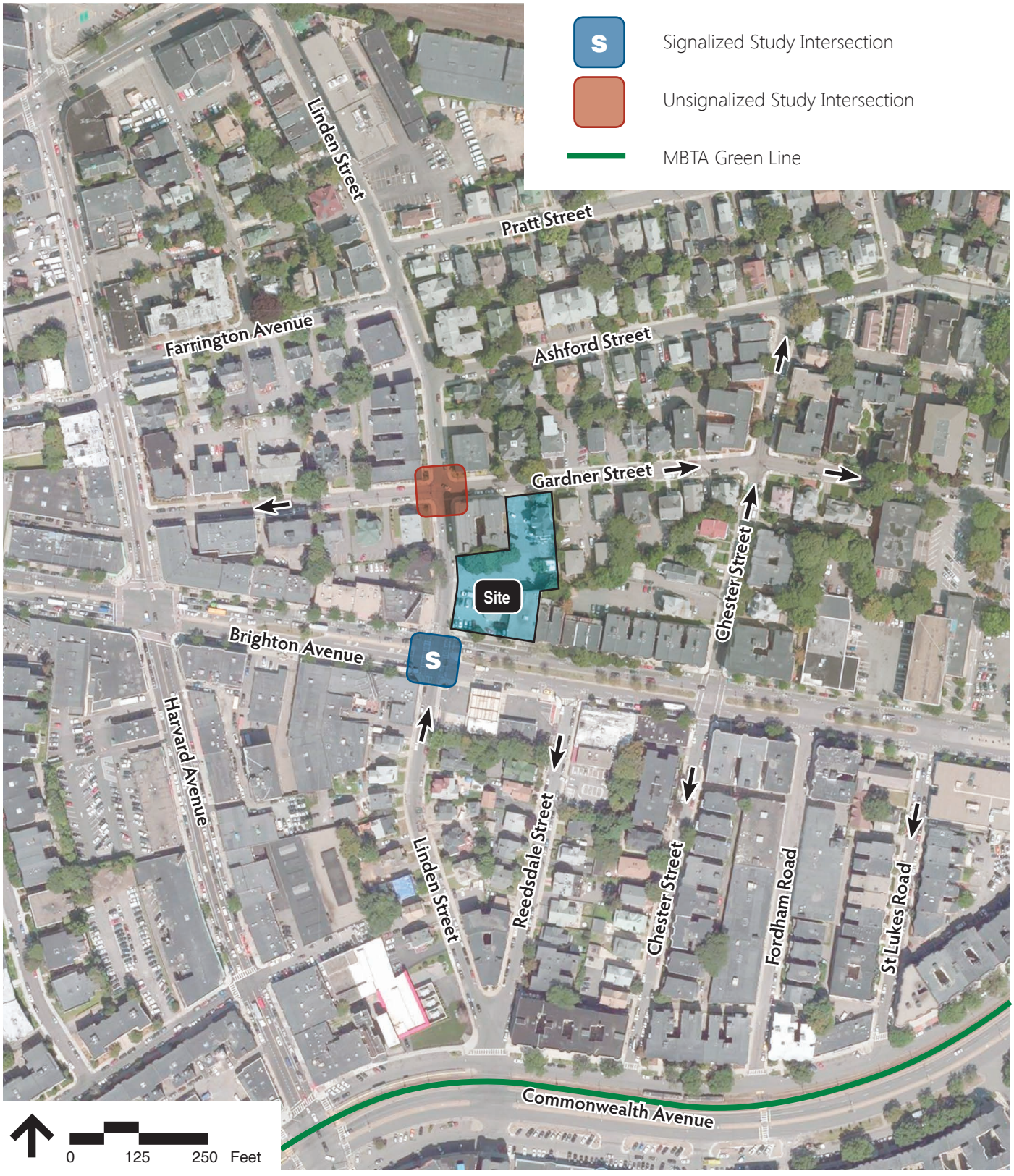
			2015 Existing Conditions				2022 No-Build Conditions				2022 Build Conditions			
Location	Critical Side Street Movement	Peak Period	v/c[1]	Del[2]	LOS[3]	95th Queue[4]	v/c	Del	LOS	95th Queue	v/c	Del	LOS	95th Queue
Linden Street at Gardner Street	Linden Street SB Left	Weekday AM	0.08	3.8	A	7	0.09	3.9	A	7	0.09	4.0	A	7
		Weekday PM	0.05	1.8	A	4	0.05	1.9	A	4	0.05	1.9	A	4
		Saturday Midday	0.07	2.2	A	5	0.09	2.7	A	7	0.10	3.0	A	8
Linden Street at Site Driveway	Site Driveway WB	Weekday AM	-	-	-	-	-	-	-	-	0.13	15.5	C	11
		Weekday PM	-	-	-	-	-	-	-	-	0.19	20.4	C	18
		Saturday Midday	-	-	-	-	-	-	-	-	0.37	27.5	D	40
Gardner Street at Site Driveway	Site Driveway NB	Weekday AM	-	-	-	-	-	-	-	-	0.00	9.1	A	0
		Weekday PM	-	-	-	-	-	-	-	-	0.00	8.9	A	0
		Saturday Midday	-	-	-	-	-	-	-	-	0.00	9.3	A	0

1 volume to capacity ratio
2 delay
3 level of service
4 95th percentile queue
- not analyzed under condition

The intersection of Linden Street and Gardner Street operates at LOS A for all peak hours under all analyzed conditions. The slight delays are due to vehicles waiting for gaps in oncoming traffic to turn left onto Gardner Street.

The Project driveway on Linden Street operates at LOS C for the weekday morning and evening peak hour and LOS D for the Saturday midday peak. The delays experienced at the driveway is due to residents wanting to turn left onto Linden Street.

The Project driveway along Gardner Street operates at LOS A for all peak hour Build Conditions.



Source: Arcmap Online Bing Aerial

Figure 3.1
Study Area

89 Brighton Avenue
Boston, MA

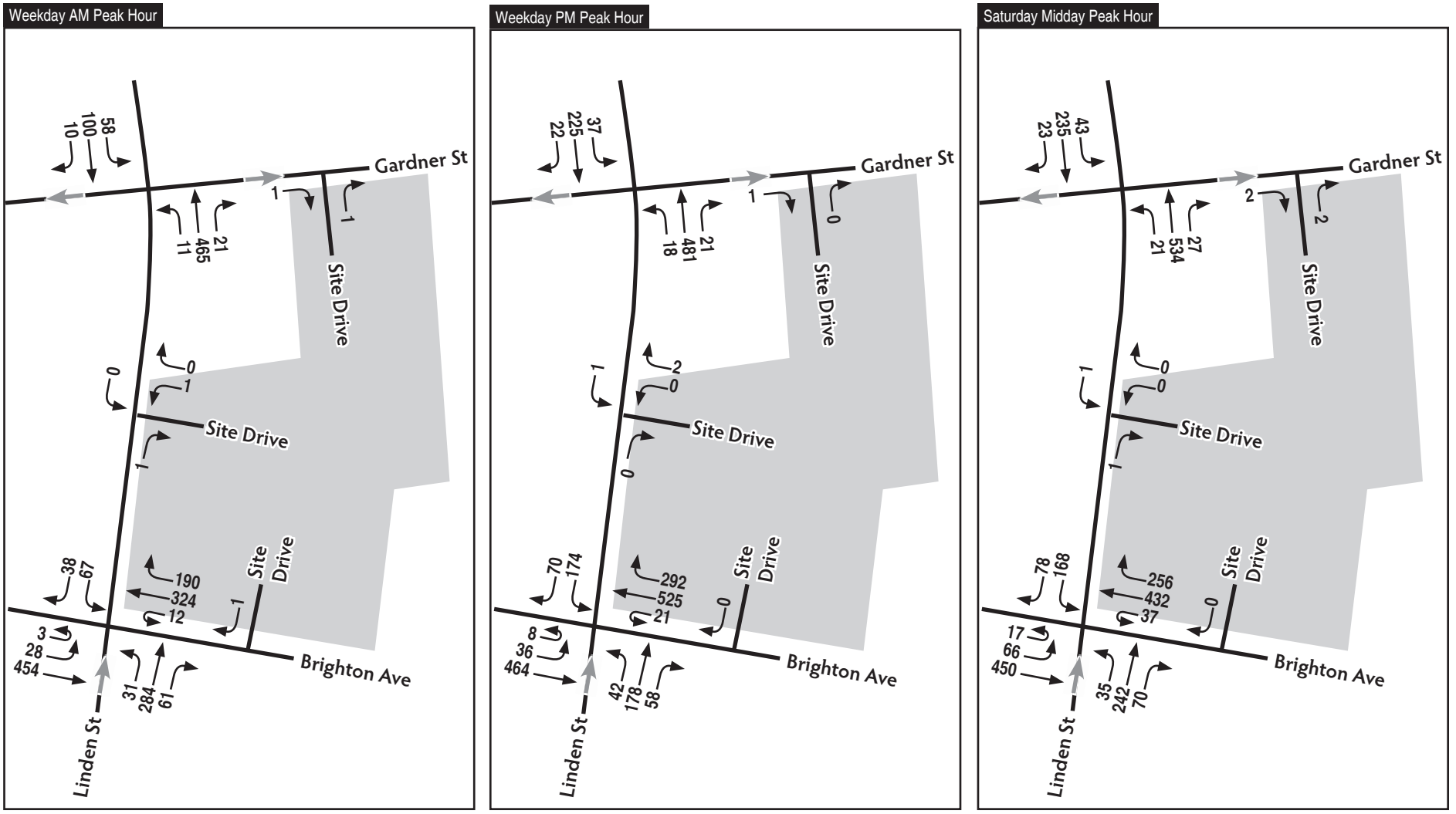


Figure 3.2
Existing Conditions Traffic Volumes

89 Brighton Avenue
Boston, MA

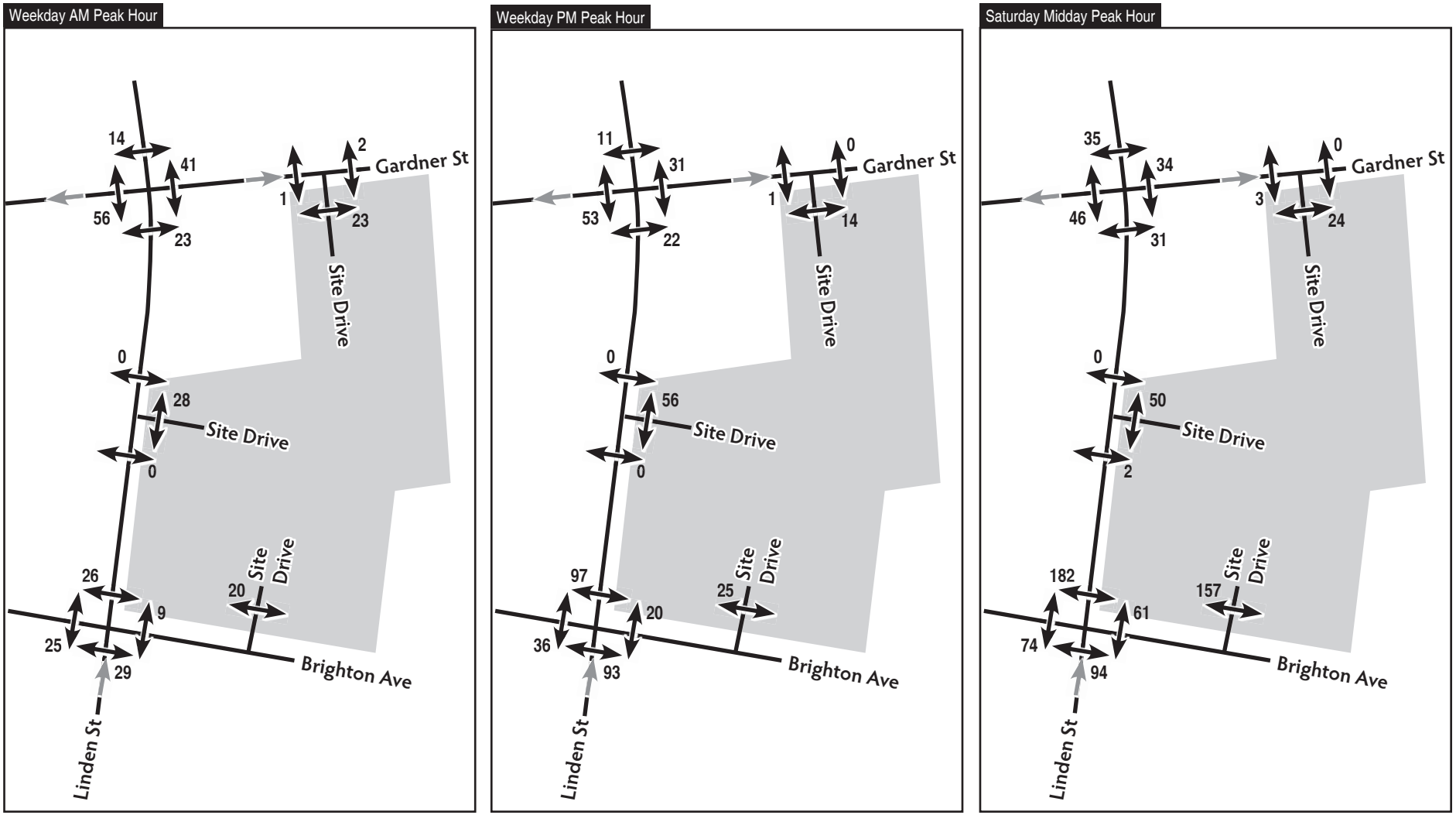


Figure 3.3

Existing Conditions Pedestrian Volumes

89 Brighton Avenue
Boston, MA

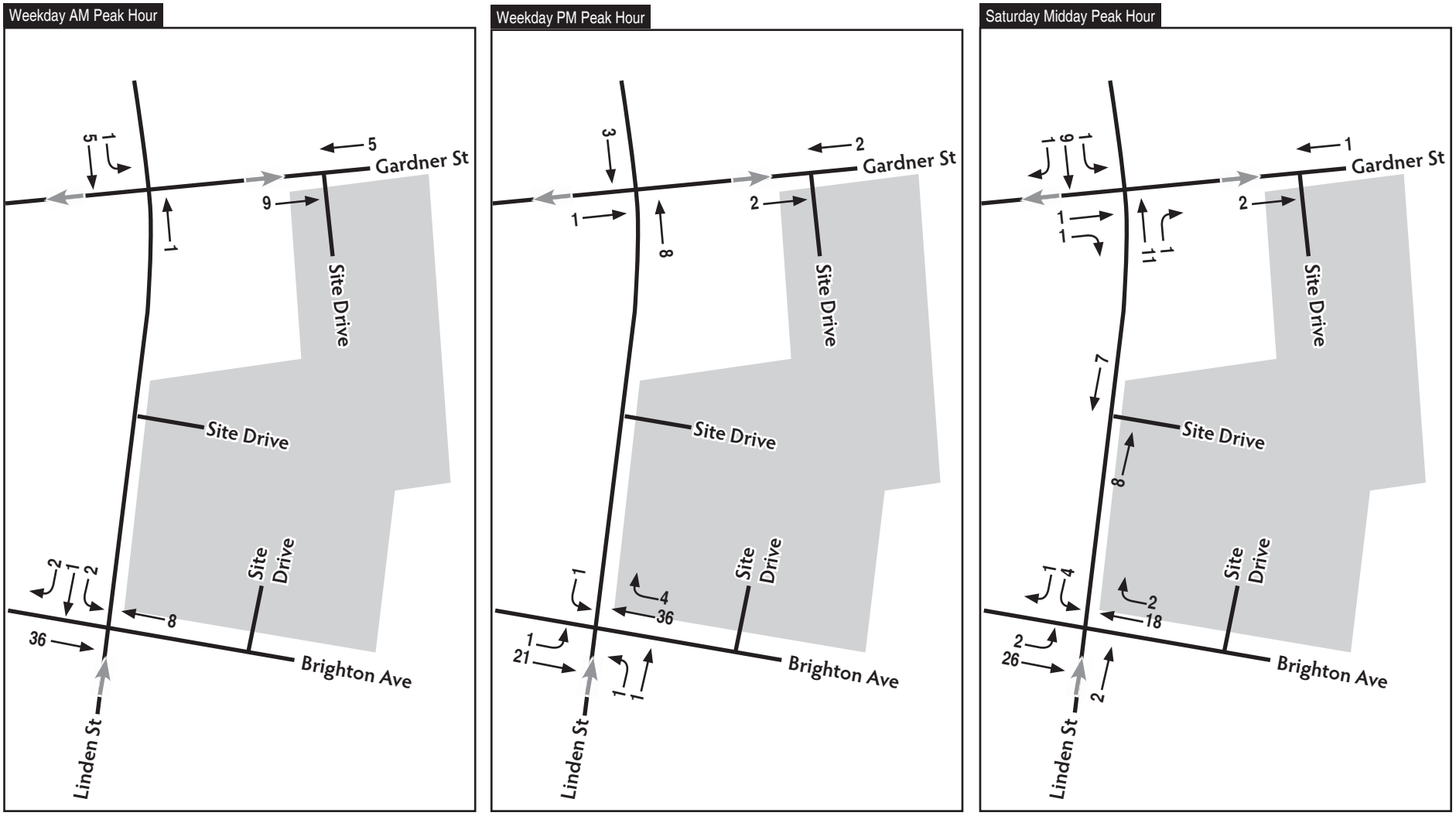
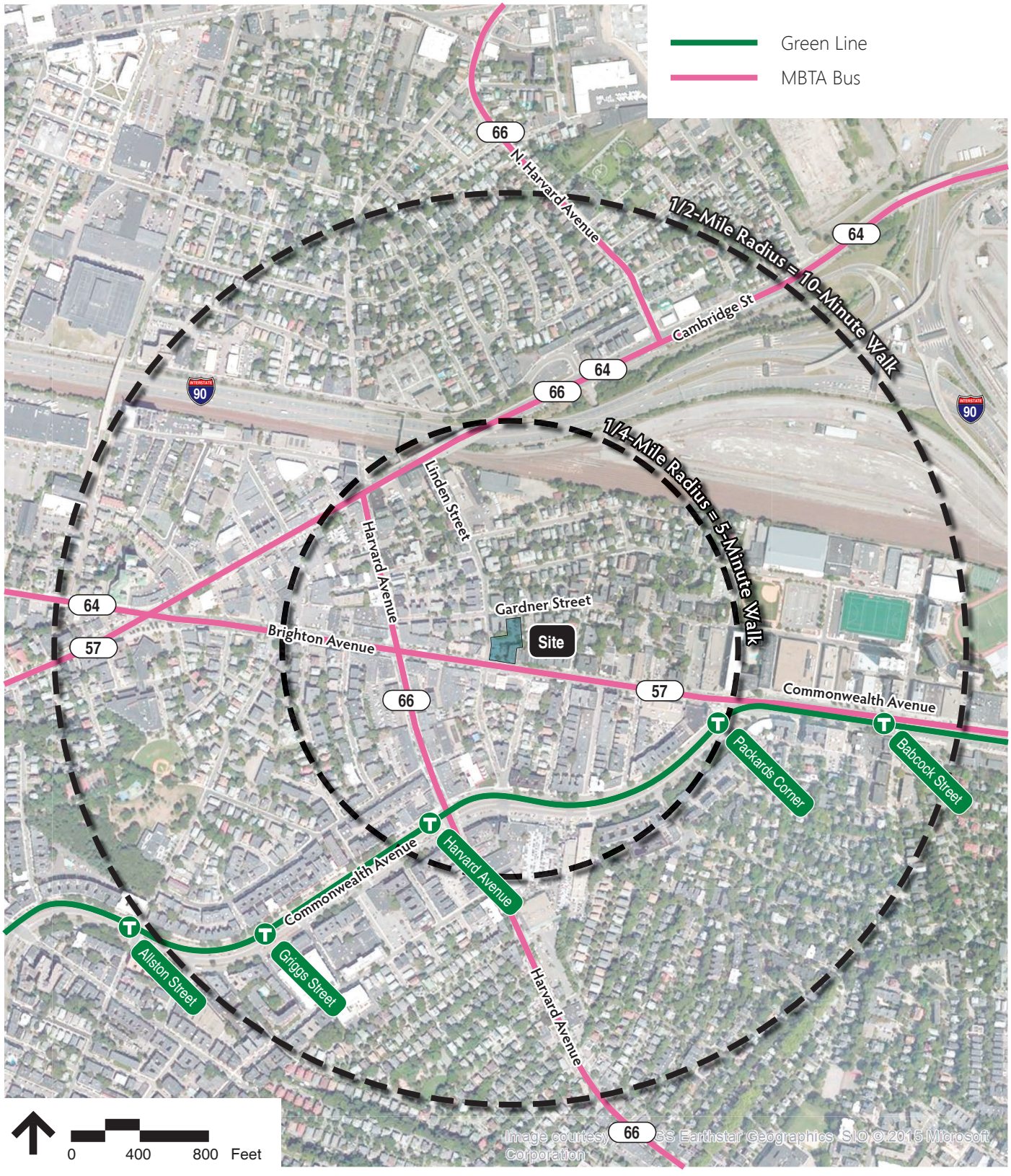


Figure 3.4
Existing Conditions Bicycle Volumes

89 Brighton Avenue
Boston, MA



Source: MBTA

Figure 3.5
Transit Map

89 Brighton Avenue
Boston, MA

- Allston Brighton Resident Permit Parking Only
- No Parking
- Metered Parking
- 2-Hour Parking 8 am-6 pm
- Loading 8 am-6 pm
- Bus Stop
- Valet Parking 5 pm-1 am Thur, Fri, Sat
- Visitor Parking 2-Hour Limit 8 am-6 pm M-F
- Allston Brighton Parking 2-Hour Limit M-F 8 am-6 pm except Resident sticker
- 1-Hour Parking
- Unmarked
- Handicapped

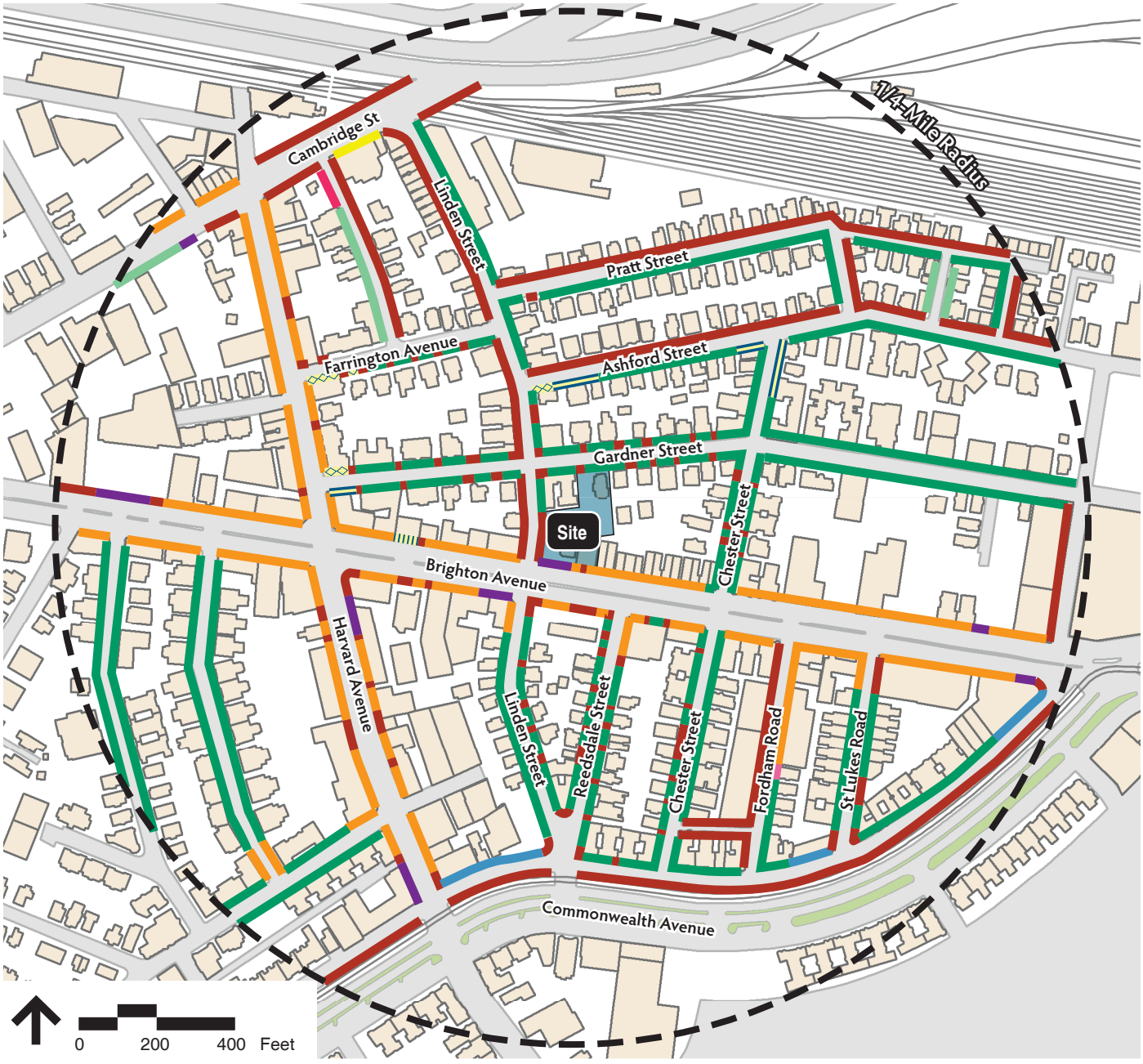


Figure 3.6

Parking Regulations

89 Brighton Avenue
Boston, MA

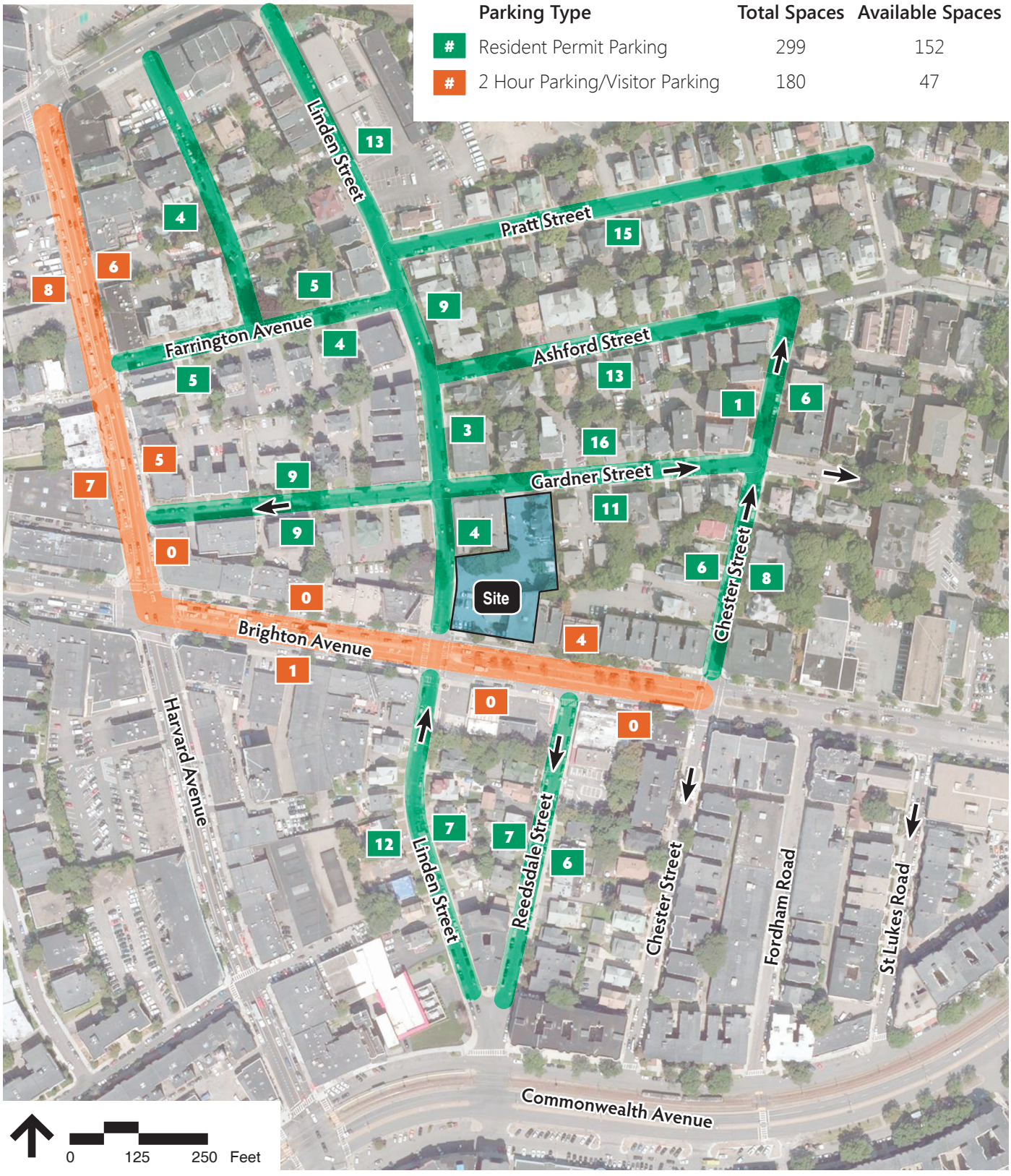


Figure 3.7a

Parking Utilization - Available Spaces
Wednesday, April 29, 2015 - 10 AM

89 Brighton Avenue
Boston, MA

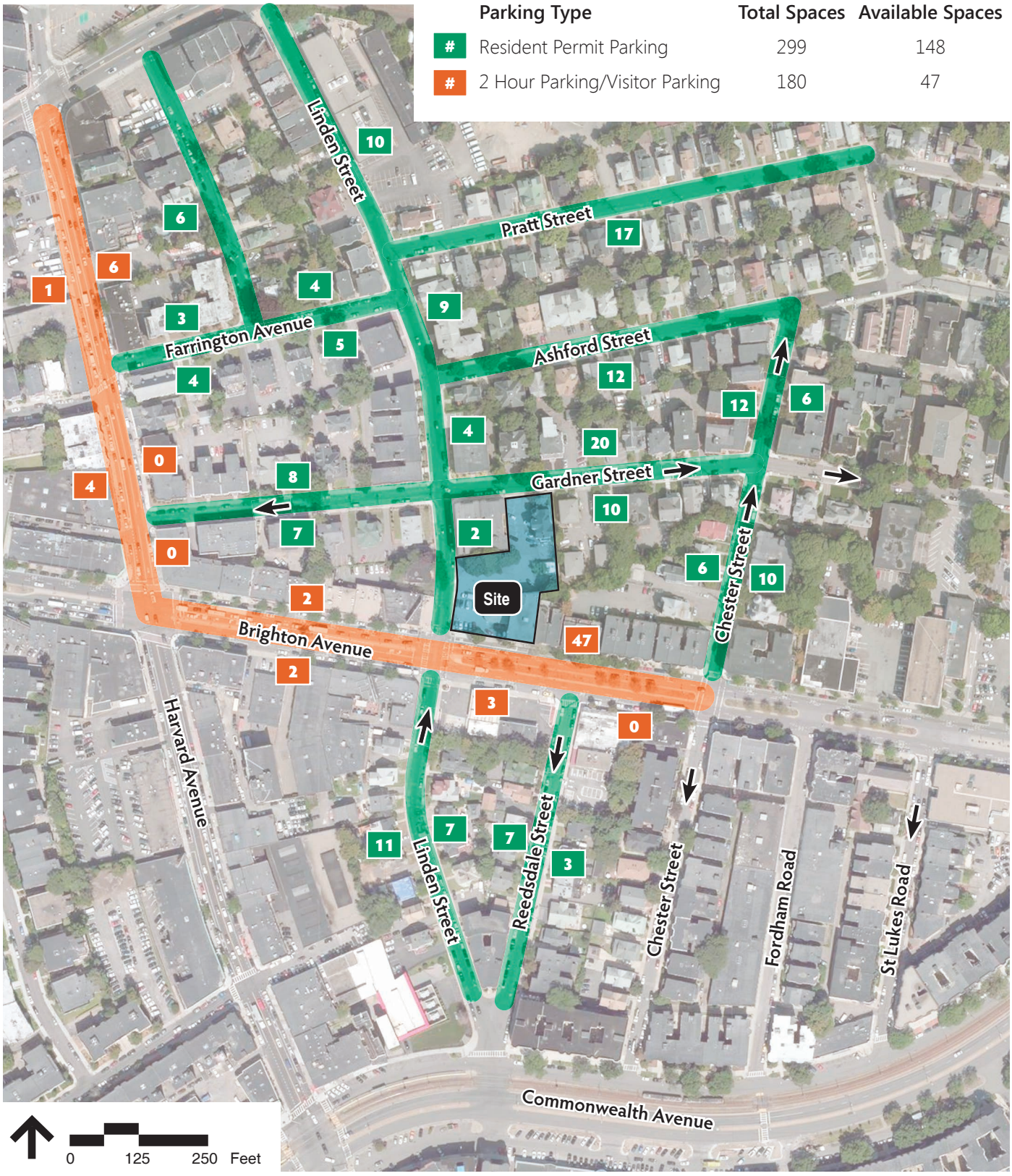
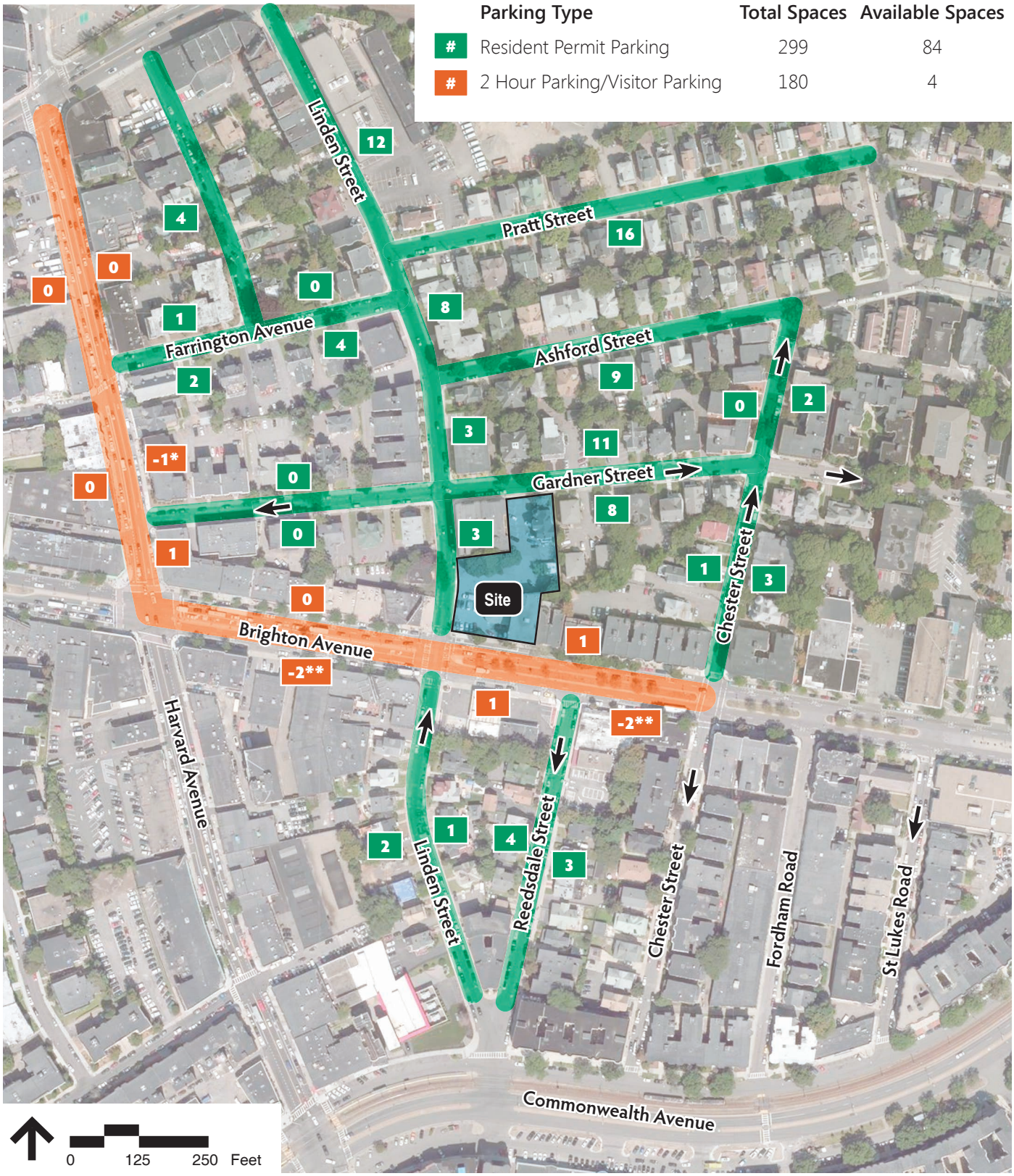


Figure 3.7b

Parking Utilization - Available Spaces
Wednesday, April 29, 2015 - 3 PM

89 Brighton Avenue
Boston, MA



* Parking in No Parking Zone

** Double Parked

Figure 3.7c

Parking Utilization - Available Spaces
Wednesday, April 29, 2015 - 8 PM

89 Brighton Avenue
Boston, MA

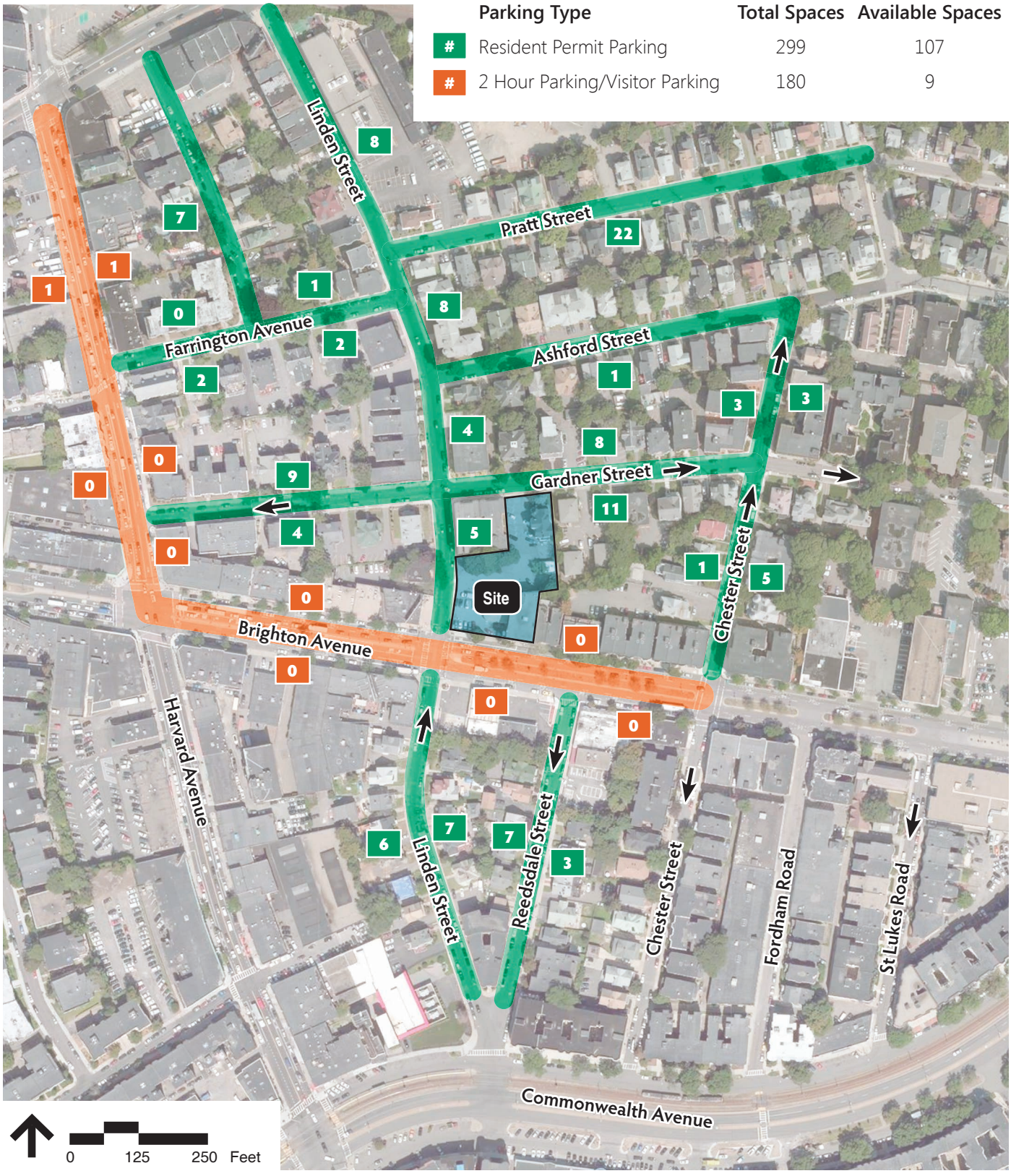


Figure 3.7d

Parking Utilization - Available Spaces
Saturday, May 2, 2015 - 1 PM

89 Brighton Avenue
Boston, MA

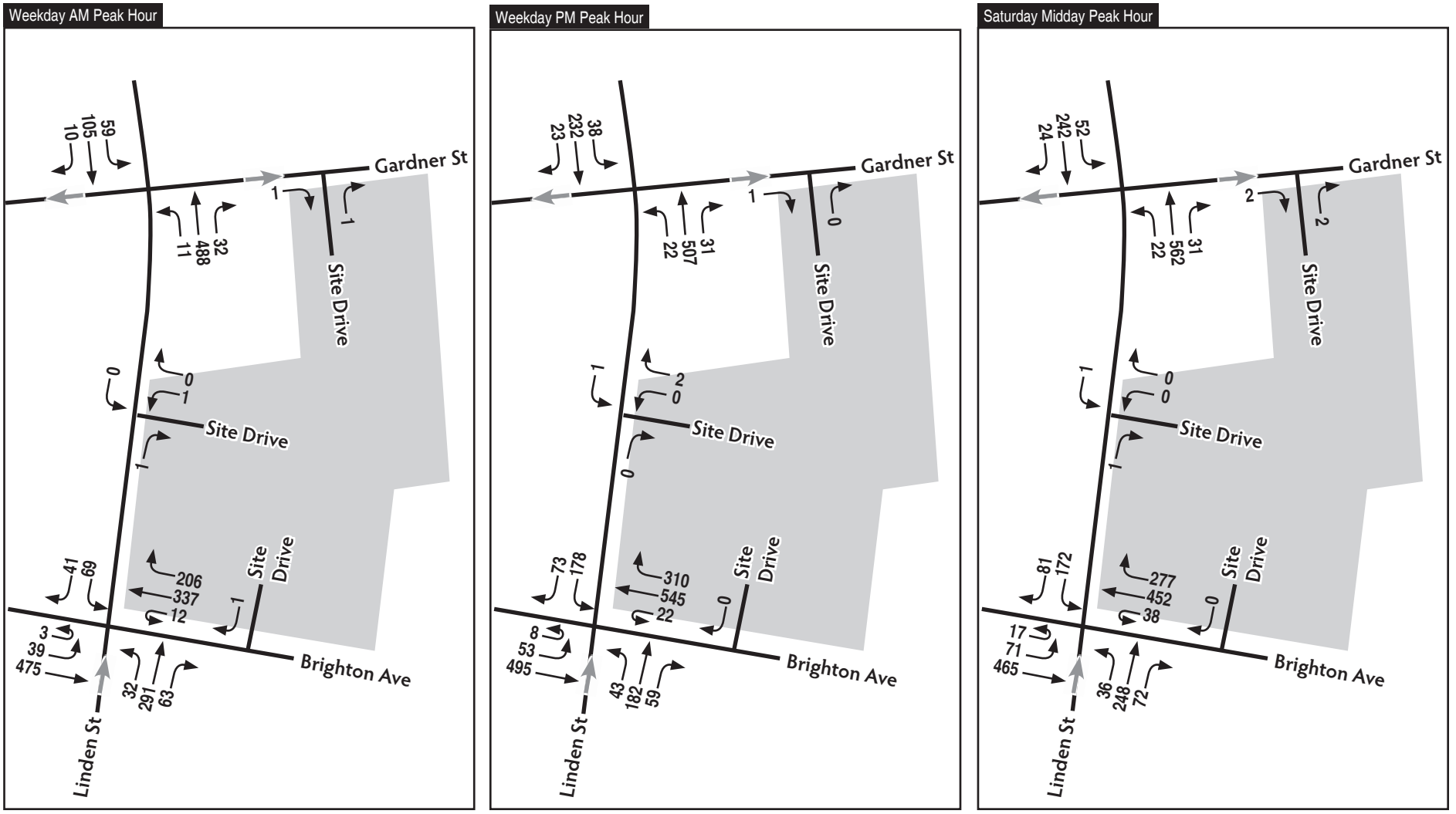
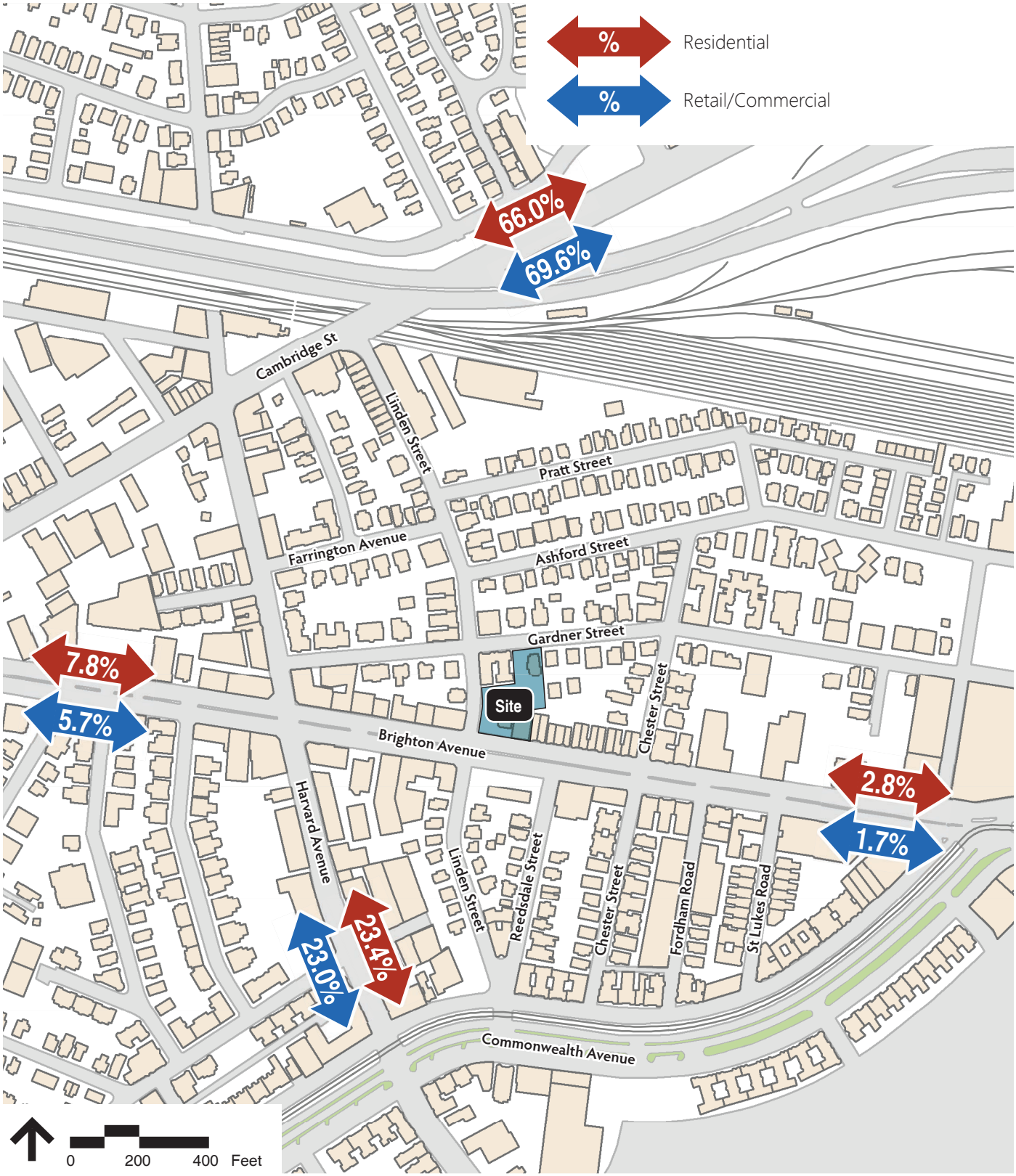


Figure 3.8

No-Build Conditions Traffic Volumes

89 Brighton Avenue
Boston, MA



Source: BTD Guidelines

Figure 3.9

Regional Trip Distribution

89 Brighton Avenue
Boston, MA

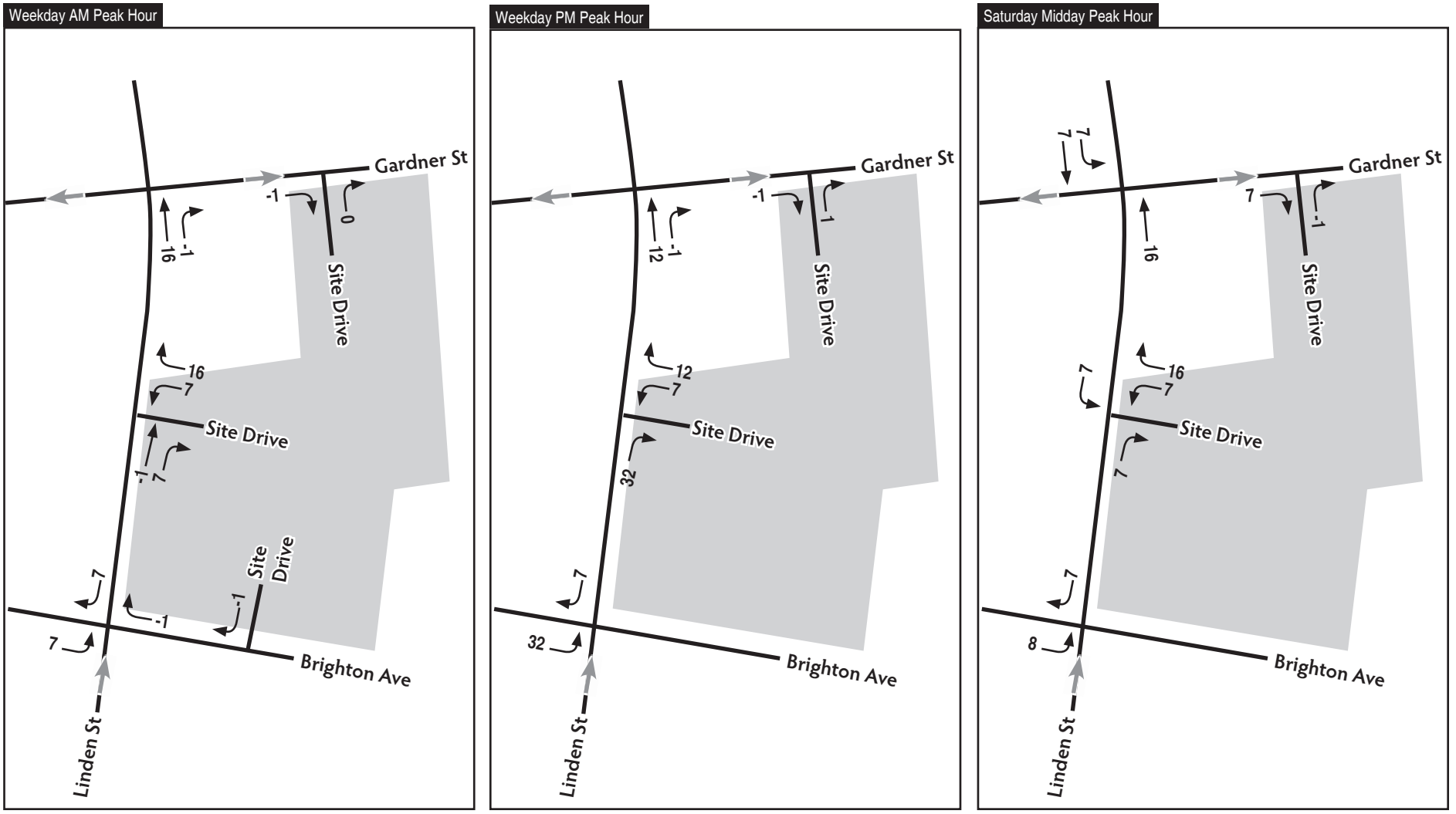


Figure 3.10

Net New Project Generated Trips

89 Brighton Avenue
Boston, MA

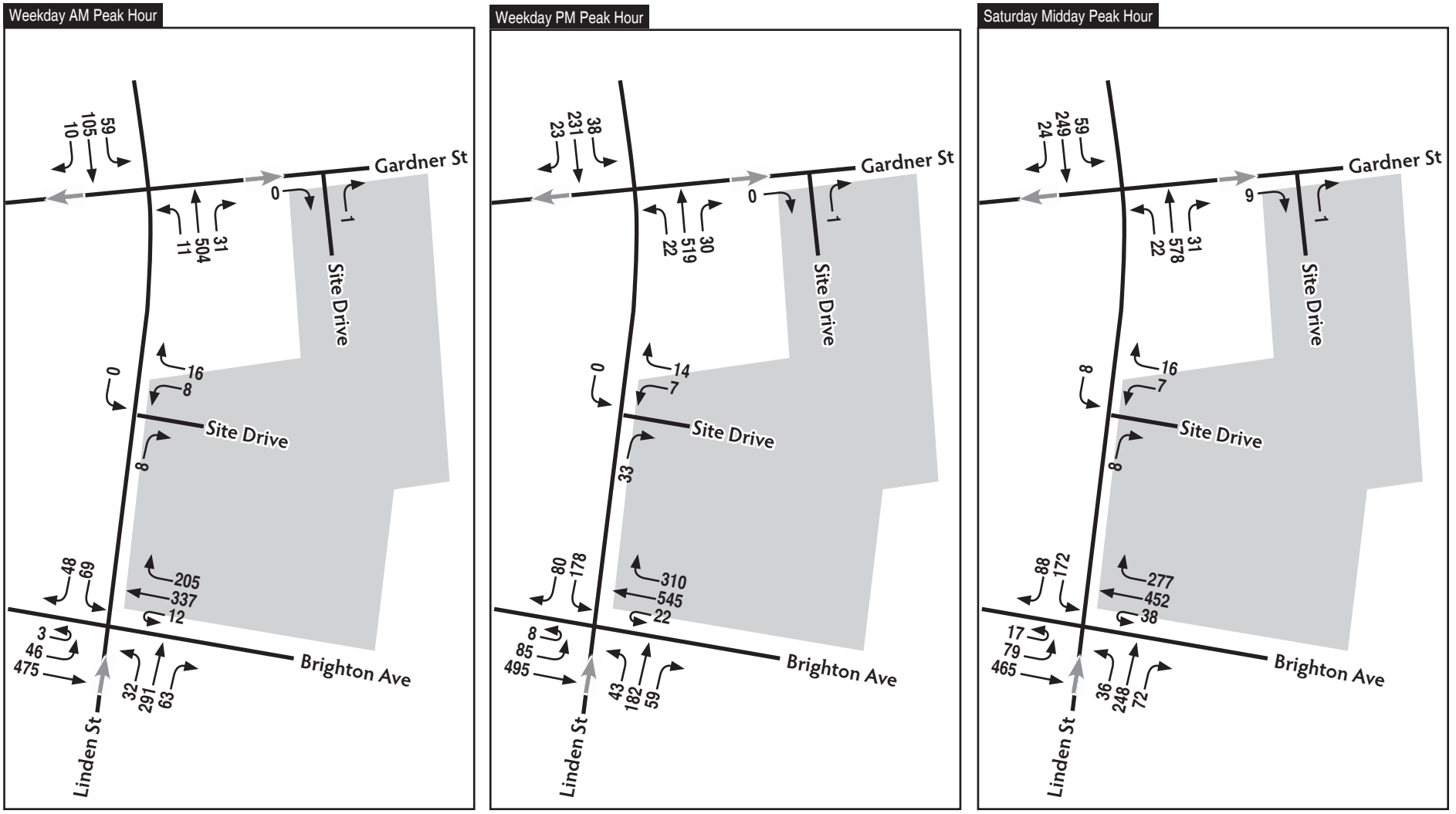


Figure 3.11
Build Conditions Traffic Volumes

89 Brighton Avenue
Boston, MA

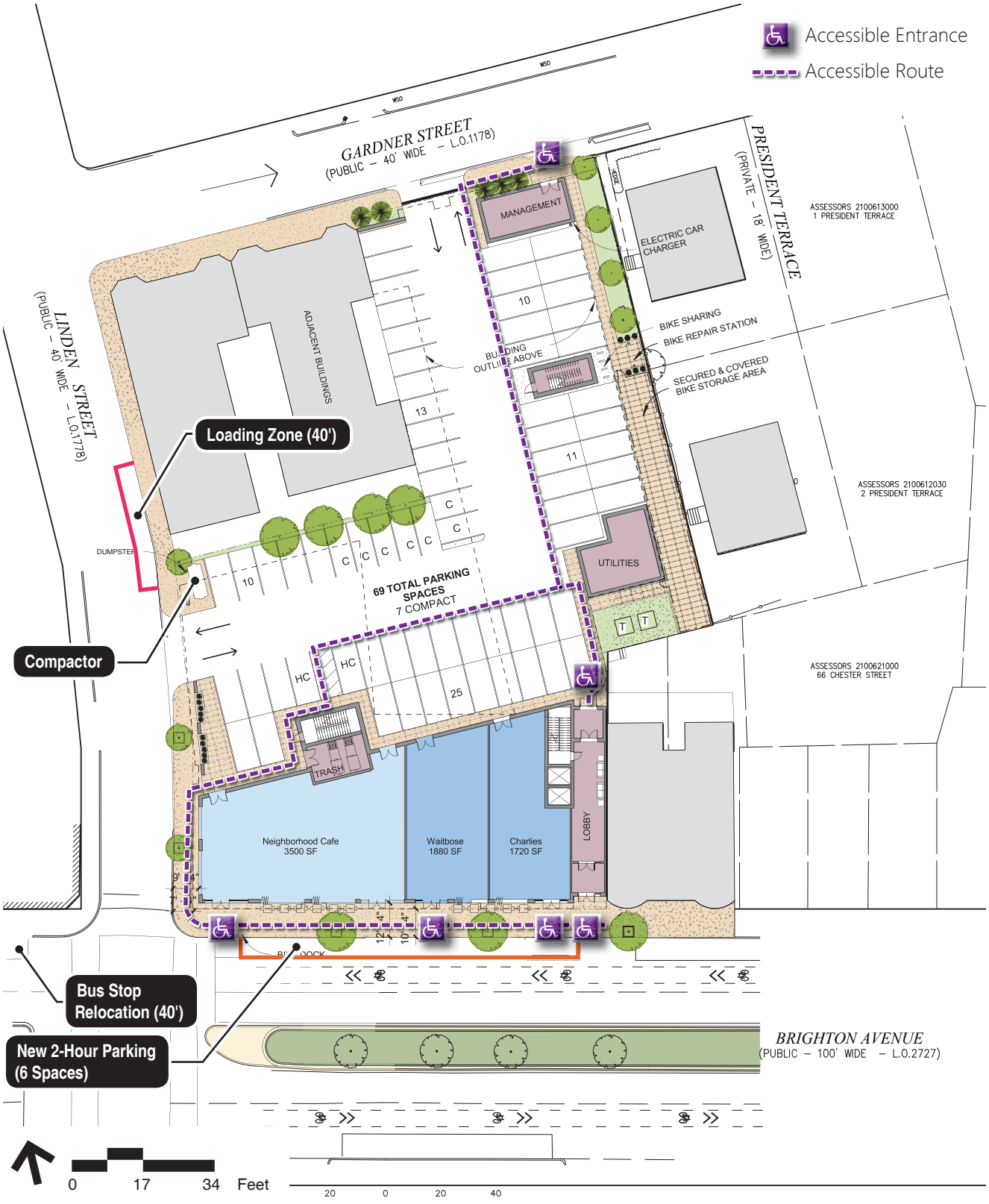


Figure 3.12

Proposed Site Plan and Accessibility

89 Brighton Avenue
Boston, MA

4

Environmental Protection

Introduction

This chapter presents information on the existing environmental conditions in the vicinity of the Project Site and the potential changes that may occur as a result of the Project. The goal of the Project is to better utilize the Project Site and to compliment/ build upon the urban fabric of the neighborhood while avoiding or minimizing potential adverse environmental impacts to the project area.

As discussed in more detail below, any Project-related impacts will be mitigated by the substantial community benefits the Project will bring to the neighborhood, including new housing that will help realize the goals of the City's *Boston 2030* Housing Plan, expand housing options for existing and new residents in Allston Village, opportunities for small business owners, improved multi-modal traffic safety, and a transformed streetscape on the site along Brighton and Linden with active shops, planters, wider sidewalks, and new street trees. As demonstrated in the following sections, the project approach has identified impacts that have be avoided, minimized and/or mitigated through design and or management while addressing local, state, and federal design requirements. Temporary construction-period impacts will be managed to minimize disruption to the surrounding neighborhood.

In accordance with Article 80 of the Boston Zoning Code, this expanded PNF considers the potential for the project impacts in the following Large Project Review categories:

- Shadow
- Daylight
- Solar Glare
- Noise
- Water Quality
- Solid and Hazardous Waste
- Construction
- Post-Construction Rodent Control
- Green Building/Sustainable Design

- Air Quality
- Flood Hazard
- Groundwater
- Geotechnical
- Climate Change Preparedness and Resiliency

Key Findings and Benefits

Key findings related to environmental protection include:

- New shadows will be limited to roads and parking areas, and will not significantly impact any public green space, historic buildings, or sidewalks along Brighton Ave.
- Skydome obstruction from the center of Brighton Ave will increase (from 3.0 percent to 57.4 percent), which is to be expected when replacing low-rise buildings with a taller 6-story building.
- The Project will conform to the 1990 Clean Air Act Amendments (CAAA) and the State Implementation Plan (SIP).
- The Project will be designed to comply with City of Boston noise regulations.
- Subsurface conditions generally consist of successive deposits of fill, organics, glacial outwash, and/or marine clay soils.
- The site is in compliance with the Massachusetts Contingency Plan (MCP).
- Construction impacts are temporary in nature and are typically related to air (dust), noise, and runoff.
- The Project Site is not located within the limits of the effective, nor the preliminary updated, FEMA-designated 100-year or 500-year flood zone.

Key benefits related to environmental protection include:

- Sustainability is integrated throughout the Project as it revitalizes an underutilized urban site, uses land efficiently by increasing density in proximity to public transportation and a major regional employment center that is Downtown Boston, encourages pedestrian activity.
- A number of sustainable building and site elements will be incorporated into the design, construction, and operation of the Project.
- In accordance with Article 37 of the Boston Zoning Code relative to the City's Green Building policies and procedures, the Proponent intends to incorporate state-of-the-art sustainable features so that the Project could achieve "LEED Certifiable" status for mid-rise homes.
- Groundwater levels are not expected to be impacted/lowered as a result of the Project.

- Any on-site hazardous materials, including asbestos containing materials (ACM) that may be encountered during demolition of the existing on-site buildings will be handled in accordance with federal, state, and local regulations.
- The Project Site offers adequate space for on-site construction staging. Temporary construction impacts will be properly managed to eliminate significant impacts on the surrounding community. To manage construction truck traffic, the Proponent will work with the BTD to develop a site-specific Construction Management Plan (CMP).
- The Proponent has conducted a preliminary evaluation of the Project's potential vulnerability to flooding in combination with projected sea level rise as well as extreme weather events. Utilizing current projections, in the year 2100, the site will still be 25 feet above the 100-year flood elevation for the Charles River.

Shadow

This section describes the anticipated changes to shadows in the project area as a result of the Project.

Summary of Key Findings

As is to be expected when increasing building massing from multiple buildings that reach up to three-stories to a single six-story structure, the Project will result in a moderate increase in new shadow impacts within the surrounding area. New impacts, however, will be limited to roads, sidewalks, and parking areas and will not significantly impact any public green space, or historic buildings. The project may create new shadow impacts prior to 9 AM around June 21st, however given that this scenario is limited to a short period during the summer, no substantial impact is anticipated.

The presence of these new shadows is consistent with the urban environment and planning objectives of the neighborhood, and when combined with the Proponent's proposed enhancements, are not likely to discourage the use of sidewalks or public areas in the vicinity of the Project Site.

Regulatory Context

The Proponent has completed a shadow study as part of this expanded PNF to ascertain the potential new shadow impacts resulting from the Project. The shadow impact study has been conducted in accordance with Section 80B-2 of the City of

Boston Zoning Code with particular emphasis on sidewalks, public plazas, and other public open spaces as well as nearby buildings of historical importance.

Methodology

The following shadow study has been prepared using methodologies consistent with accepted practices for such studies completed under Article 80 review. The analysis provides a comparison of the No-Build and Build Conditions. This is accomplished by using a three-dimensional model of the project area using data provided by the BRA, updated to include nearby foreseeable projects. The analysis is based on the BRA's 3D massing model for the Allston neighborhood. The study was completed using standard sun altitude and azimuth data for each study date estimated to occur at latitude and longitude 42°21'11.2"N, 71°07'46.9"W. Times were adjusted for daylight savings time as appropriate. The conditions were compared for the spring and fall equinoxes, and the summer and winter solstices at 9:00 AM, 12:00 Noon and 3:00 PM. Additional shadows were estimated for summer solstice and the equinoxes at 6:00 PM.

Potential Effects

The following section describes the estimated shadows under the Build and No-Build Conditions.

March 21

March 21 is the spring equinox on which Boston experiences roughly equal length day and night. Figure 4.1a illustrates the Project-related net new shadow for this condition. On March 21 at 9:00 AM, the Project casts new shadow west across a portion of Linden Street, and north over a portion of Gardner Street. At 12 PM the sun moves higher and to the south, and the Project no longer casts a shadow on Linden Street. By 3:00 PM, the Project casts new shadow east across residential buildings and surface parking area, and northeast across a portion of Linden Street.

June 21

June 21 is the summer solstice with the longest day of the year and the smallest shadows expected. Figure 4.1b illustrates the Project-related net new shadow for this condition. At 9:00 AM, the Project casts minor new shadow along a portion of Linden Street. At 12:00 PM, the sun is very high in the sky and, therefore, very limited amounts of new shadow falls northwest of the Project. By 3:00 PM, the Project-related new shadow shifts east falling along residential buildings and surface parking. By

6:00 PM, new shadow fall across Brighton Ave including the sidewalk on the opposite side of the street.

September 21

September 21 is the fall equinox where Boston again experiences roughly equal length days and nights. Figure 4.1c illustrates the Project-related net new shadow for this condition. In comparison to the spring equinox, the fall equinox shadows are somewhat shorter in the morning and somewhat longer in the afternoon at comparable times of the day.

At 9:00 AM, the sun is located in the southeast. As during the spring equinox, the Project-related new shadow casts its shadow across Linden Street, and a portion of Gardner Street. By 12:00 PM, the sun moves higher and to the south so that the Project no longer casts a shadow on Linden Street. By 3:00 PM, the Project-related new shadow moves east shading a portion of Linden Street, but the majority of shadow falls to the east across residential area and surface parking. By 6:00 PM, the Project-related new shadow casts long shadows across the residential area and surface parking to the east to Chester Street.

December 21

December 21 is the winter solstice and the shortest day of the year. Boston experiences long shadows throughout the day in most locations. Figure 4.1d illustrates the Project-related net new shadow for this condition. At 9:00 AM, the sun is low in the southeast sky resulting in shadows to the northwest. Under this condition, the Project casts new shadow across Linden Street. By 12:00 PM, the Project-related new shadow casts almost due north over Gardner Street. At 3:00 PM, the sun is located in the southwest and low in the sky shading resulting in minimal new shadow impact as the adjacent public spaces area already nearly fully shaded.

Daylight

The following section describes the anticipated effect on daylight coverage at the Project Site as a result of the Project. An analysis of the percentage of skydome obstructed under the Build and No-Build conditions is a requirement of the Article 80 Large Project Review as part of the Environmental Protection component (Section 80B-2(c) of the City of Boston Zoning Code). The daylight analysis was prepared using the BRA's Daylight Analysis Program (BRADA) and has been completed in

accordance with the requirements of Article 80 of the City of Boston Zoning Code. The results of the analysis are presented in Figure 4.2 a-c

Methodology

The Project was analyzed using the BRADA and by comparing the Existing/No-Build Condition and Build Condition. This section provides a description of the methodology used for the analysis.

BRADA Software

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

The model inputs used for the study presented in this PNF were taken from a combination of the BRA City model, an existing conditions survey prepared by VHB, Inc., and schematic design plans prepared by PCA Architects. As described above, the BRADA software considers the relative reflectivity of building facades when calculating perceived daylight obstruction. Highly reflective materials are thought to reduce the perceived skydome obstruction when compared to non-reflective materials. For the purposes of this daylight analysis, the building facades are considered non-reflective, resulting in a conservative estimate of daylight obstruction.

Viewpoints

The following viewpoints were used for this daylight analysis:

- **Brighton Ave** – This viewpoint is located on the centerline of Brighton Ave centered on the southern façade of the proposed building.
- **Linden Street** – This viewpoint is located on the centerline of Linden Street centered on the western façade of the proposed building.
- **Gardner Street** – This viewpoint is located on the centerline of Gardner Street centered on the northern façade of the proposed building.

Daylight Existing/No-Build Conditions

Under the Existing/No-Build Condition, the majority of the skydome (approximately 89 to 97 percent) is visible from the selected viewpoints due to the set-back, low-rise nature of the existing building. Figure 4.2 a-c illustrates the skydome obstruction under the Existing/No-Build scenarios for Albany Street.

Daylight Build Conditions

The Project-related daylight impacts for the viewpoints are presented in Figure 4.2. Under the Proposed Conditions, the viewpoints along the three roadways are expected to experience an increase in skydome obstruction due to the increased height and massing of the new building. Skydome obstruction impacts are as follows:

- **Brighton Ave** – Increase from 3 percent to 57.4 percent skydome obstruction
- **Linden Street** – Increase from 3.8 percent to 74.7 percent skydome obstruction
- **Gardner Street** – Increase from 10.8 percent to 41.6 percent skydome obstruction

This effect is to be expected when replacing low-rise individual buildings with a single taller building. This change is well within the expected level of view obstruction when considered in the realm of the City's planning objectives for this portion of the Brighton Ave corridor. The desired density and massing of the Project necessitates obstructing a portion of the views at the Site.

Solar Glare

The impacts of solar glare on neighbors and adjacent roadways are not anticipated due to the proposed building design. The design does not include large areas of reflective glass or other materials that would result in solar impacts .

Air Quality

The 1990 Clean Air Act Amendments (CAAA) resulted in states being categorized as attainment and non-attainment areas, based upon the severity of their air quality problems. The proposed Project is located in an area that has been designated as a Carbon Monoxide Maintenance area. The U.S. Environmental Protection Agency (EPA) has established the NAAQS for carbon monoxide to protect the public health. The Commonwealth of Massachusetts has adopted the same standards as those set by the EPA, and HUD applies these NAAQS when evaluating impacts.

The predominant source of air pollution anticipated from the proposed Project is emissions from Project-related motor vehicle traffic, which directly emit carbon monoxide. Article 80 may require an evaluation of impacts on air quality from any significant stationary or mobile sources associated with the proposed Project. The Proponent is prepared to address this requirement if necessary with a microscale analysis in accordance with the protocol/modeling procedures typically required by the BRA to determine conformance with the National Ambient Air Quality Standards (NAAQS), however given the limited motor vehicle trip generation, it is anticipated that the project will have limited impact. Through the implementation of transportation demand management as discussed in Chapter 3, impacts will be minimized to the extent feasible.

Water Quality

The Project will include stormwater best management practices, which will improve the water quality and reduce the quantity of stormwater runoff compared to the existing condition. The Project will comply with both the 2008 DEP Stormwater Management Policy and Standards and local requirements from the Boston Water and Sewer Commission (BWSC). The implementation of stormwater management practices will reduce the rate and quantity of stormwater entering the BWSC system and Boston Harbor, via the Charles River. Proprietary systems will be used to reduce the pollutant loading of the stormwater entering the proposed stormwater infrastructure from impervious areas. Refer to the 'Drainage/Stormwater Management' section of Chapter 5, *Infrastructure* for more information.

Stormwater Management Measures

The Project will be designed in accordance with City and MassDEP stormwater standards. The Proponent will explore feasibility to utilize several stormwater quantity and quality control measures as part of meeting the required stormwater mitigation requirements. These control measures may include but are not limited to the following:

- Subsurface infiltration systems
- Proprietary treatment devices
- Bioretention landscaped areas and streetscape design with permeable pavement areas
- Deep sump, hooded catch basins

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

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

The Proponent will incorporate subsurface infiltration systems, proprietary treatment devices, and deep sump, hooded catch basins as stormwater control measures. It is the Proponent's intention to treat runoff through the options listed above prior to discharge into the public storm drain system.

Standard #2: *Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.*

Compliance: The proposed Project will be designed to comply with this Standard. The Project is also required to comply with this stormwater standard by the BWSC. On-site infiltration systems will be designed to achieve these results for the Project.

Standard #3: *Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.*

Compliance: The Project will incorporate the required subsurface infiltration subsystems to promote groundwater recharge to the maximum extent practicable given the in-situ soils.

Standard #4: *For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when: Suitable nonstructural practices for source control and pollution prevention are implemented; Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and Stormwater management BMPs are maintained as designed.*

Compliance: The proposed designs will include BMPs intended to remove 80% of TSS as required by this standard, as well as the BWSC site design process. This will be accomplished by using deep sump, hooded catch basin, proprietary treatment devices, and infiltration systems.

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

Compliance: The majority of the site will be occupied by buildings and pavements which are not associated with higher potential pollutant loads. The Project is expected to produce similar pollutant loads to the existing conditions, which will be mitigated as the Project removes 80 percent of TSS.

Standard #6: *Stormwater discharge to critical areas must utilize certain stormwater management BMPs approved for critical areas. Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold-water fisheries and recharge areas for public water supplies.*

Compliance: The proposed Project does not discharge to a critical area.

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

Compliance: The Project is considered a redevelopment project. The proposed Project will comply with the Stormwater Management Standards to the extent practicable and is anticipated to improve upon existing conditions.

Standard #8: *Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.*

Compliance: Sedimentation and erosion controls will be incorporated as part of the design of the Project and be employed during construction. Erosion and sediment control plans will be submitted to the BWSC and the contractor will be required to implement the measures.

Standard 9: *A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.*

Compliance: An O&M Plan will be developed during the design of this Project

Standard 10: *All illicit discharges to the stormwater management system are prohibited.*

Compliance: There are no currently known illicit discharges. All proposed discharges will be reviewed by the BWSC to ensure consistency with this standard.

Flood Hazard

The Proponent has considered the Project's vulnerability to flooding from construction and operational standpoints. The Project Site is not located within the limits of the effective FEMA-designated 100-year or 500-year flood zones from the Charles River. The entirety of the project site is greater than 3,000 feet from the 100-year and 500-year flood plains as shown on FEMA map number 25025C0057G, effective date September 25, 2009. The 100-year flood elevation in the nearest section of the Charles River is +4 NAVD which is equivalent to +10.45 feet Boston City Base (BCB). The site is approximately 30 feet higher in elevation than the floodplain. Although an updated set of preliminary FEMA maps have been for parts of coastal Suffolk County, the site area is not located within an updated map unit. The Proponent held a meeting with the BWSC on April 23, 2015 to discuss the Project. There was no indication that the site would be susceptible to inland flooding from surcharged infrastructure. Refer to section 'Climate Change Preparedness and Resiliency' below for an assessment of the Project Site in terms of flooding in combination with projected sea level rise.

Noise

This section presents a qualitative noise evaluation of the Proposed Project. The noise evaluation discusses sound levels under future conditions based upon mechanical equipment, motor vehicle traffic, building operations, and emergency/back-up generators.

Noise Impact Criteria

The City of Boston and the DEP have developed noise impact criteria that establish noise thresholds deemed to result in adverse impacts.

The City of Boston has established regulations evaluating sound levels from proposed developments. These regulations establish maximum allowable sound levels based upon the land use of the proposed development. If the proposed development is located in a residential/industrial zoning district, the maximum noise level affecting residential uses shall not exceed the Residential-Industrial Noise Standard. The Residential-Industrial land use noise standard is 65 dBA for Daytime conditions (7:00 a.m. to 6:00 p.m.) and 55 dBA for Nighttime conditions (6:00 p.m. to 7:00 a.m.). The Business land use noise standard is 65 dBA for both Daytime and Nighttime conditions. These criteria are applicable to building facility noise sources, such as mechanical equipment, and do not apply to operation of any motor vehicle on any public way.

DEP has established a policy (DEP Policy 90-001) for implementing its noise regulations (310 CMR 7.10). This policy states that a source of sound will be considered in violation of the Department's noise regulation under the following conditions:

- If the source increases the broad band sound level by more than 10 dBA above ambient (normally defined as L90 or the noise level exceeded 90 percent of the time during the hours of noise source operations), or
- If the source produces a "pure tone" condition.

Project Impacts

The Proposed Project will be designed to adhere to state and local noise ordinances. The primary noise sources will likely be the mechanical and HVAC equipment necessary to maintain environmental controls during normal building operation. The design of the building and location of equipment will ensure that the sound levels generated by the Proposed Project meet both the City of Boston and DEP noise criteria and will have no adverse impact on the surrounding area. The following summarizes and evaluates each noise source and its potential sound level contribution to the surrounding area.

Mechanical Equipment

The Project will include some rooftop mechanical equipment. To the extent feasible, equipment will be located to take advantage of the buildings varied height and geometry which create a noise barrier blocking the rooftop mechanical noise from adjacent neighbors.

Building Operations

The building operations include separate residential and commercial trash disposal and waste handling. Residential trash will be stored within the trash room and put on the sidewalk on Linden Street for pickup. Commercial trash will be stored within a dumpster near Linden Street entrance.

Conclusion

The Proposed Project will comply with the City of Boston and DEP noise criteria because it will not generate sound levels that:

- Exceed the applicable land use criteria, or
- Significantly increase sound levels over existing levels, or
- Generate "pure tone" conditions because of the characteristics of traffic noise are varied.

Solid and Hazardous Wastes

Environmental due diligence investigations have been performed at the properties that form the 89-95 Brighton Avenue site. The site is currently in compliance with the Massachusetts Contingency Plan (MCP). Subsurface explorations have identified the presence of contaminants at the site in soil at concentrations exceeding applicable MCP Reportable Concentrations (primarily petroleum hydrocarbons), which will be addressed pursuant to the MCP. Until the project begins construction, the MCP response actions for the properties are being conducted separately. Based on site explorations, the proponent has developed an approach to managing the identified materials during the construction phase, which involves the proper documentation, handling, and removal of the materials to maintain site compliance with the MCP. At the site, the excavation to construct the new foundations is anticipated to be the primary remedial response action that is likely to result in a Permanent Solution and that is likely to bring MCP closure to the site as a whole without the need for an Activity and Use Limitation.

The project proponent will retain a Licensed Site Professional (LSP) to manage the environmental aspects of the project, including proper management and/or disposal of contaminated soil encountered during construction. The LSP will also prepare required MCP regulatory compliance submittals.

The environmental due diligence efforts for this property are being performed by McPhail Associates, LLC on behalf of the project proponent. As part of McPhail's due diligence work, subsurface exploration programs were implemented to assess soil and

groundwater quality at the property. The program included the advancement of soil borings, installation of monitoring wells, and collection of soil and groundwater samples. Results of the subsurface explorations completed at this property identified the presence of certain compounds at concentrations exceeding applicable MCP RCS-1 Reportable Concentrations.

Evidence of petroleum contamination was detected on the 89 Brighton Avenue/41 Gardner Street property. The Massachusetts Department of Environmental Protection (DEP) was notified on May 15, 2015 and assigned Release Tracking Number (RTN) 3-32887 to the site. Furthermore, evidence of a petroleum release to soil was also detected at the 95 Brighton Avenue property. The project proponent will notify the DEP within the required 120-day reporting period, that is before July 21, 2015 and remedial response actions will be performed in accordance with the provisions of the MCP.

Excess excavated soil that may be generated during construction will be managed in accordance with DEP policy and the MCP. Furthermore, excavation and management of petroleum-contaminated soil during construction will be completed under a Release Abatement Measure (RAM) Plan in conjunction with the foundation excavation for the new building. Upon completion of the RAM, a RAM Completion Report and a Permanent Solution Statement (PSS) will be prepared and submitted to the DEP indicating that a Permanent Solution has been achieved and that a Condition of No Significant Risk exists at the site.

Groundwater

The project site is not located within the Groundwater Conservation Overlay District (GCOD) as outlined in Article 32 of the City of Boston Zoning Code. The proposed building is not planned to contain any occupied below-grade space. Therefore, construction of the proposed development is not expected to have adverse short or long-term impact on groundwater conditions.

Geotechnical

Based on the results of subsurface explorations completed at the site, existing ground surface is generally underlain by successive deposits of fill, organics, glacial outwash, and/or marine clay soils. Groundwater levels monitored in the observation wells were observed at approximate depths of about 6 to 13.3 feet below ground surface, corresponding to levels ranging from about Elevation +35.4 to about Elevation +30.3.

Specifically, a fill deposit of about 2 to 8 feet in thickness was encountered underlying the existing asphalt or landscaped surfaces across the approximate northern two-thirds of the site, increasing to thicknesses of 14.5 to 18 feet on the southern-third of the site, adjacent to Brighton Avenue. An organic deposit was encountered underlying the fill deposit on the southern-third of the site at approximate depths of 14 to 18 feet below the existing ground surface, extending to the surface of the glacial outwash deposit at depths of about 18.5 to 27 feet, where encountered. Underlying the fill and/or organic deposits, a glacial outwash deposit was generally encountered at approximate depths of 2 to 8 feet across the northern two-thirds of the site, increasing significantly in depth to 13 to 27 feet below the existing ground surface on the southern third of the site. Lastly, a marine clay deposit was encountered underlying the fill and/or glacial outwash deposits, where penetrated, at approximate depths of 8 to 19.5 feet below the existing ground surface.

In consideration of the variable subsurface conditions that are documented across the project site, namely the greater thickness of the existing fill and the presence of the organic deposit on the southern-third of the site, two (2) types of foundation systems are recommended for the proposed structure: spread footing foundations bearing on the natural, inorganic glacial outwash and/or marine clay deposits for the northern two-thirds of the site, and either wood piles or spread footing foundations bearing on rammed aggregate pier (RAP) improved soil for the approximate southern-third of the site. RAPs are a ground improvement technique that involves the horizontal displacement of existing soil and the subsequent creation of a column of compacted aggregate stone to reinforce uncontrolled soils. The compaction densifies the aggregate and increases the lateral stress in the soil matrix beneath the proposed building so that conventional foundation support consisting of spread footings can be used.

Ground vibrations will be produced as a result of the wood pile or RAP installation procedures. Based on our experience, impacts from these vibrations are not anticipated to result in structural damage to existing, adjacent structures. Vibration monitoring with seismographs will be performed during the wood pile or RAP installation activities.

Construction

Construction impacts are temporary in nature and are typically related to air (dust), noise, and runoff. The following sections describe the potential temporary impacts due to construction activities and proposed mitigation measures to reduce these impacts. Construction of the Project will be completed in a single phase. Demolition is anticipated to begin in May 2016 followed by construction of the building and site improvements in June 2016. The Project is anticipated to be fully constructed and in operation by June 2017.

Site Preparation and Construction Staging

The Proponent will continue to work and coordinate with the utility companies to assure compliance and integrity of the Project. A plan to control construction-related impacts including erosion, sedimentation, and other pollutant sources during construction and any land disturbance activities shall be developed and implemented, however no dewatering is anticipated.

Construction Air Quality

Retrofitted diesel construction vehicles, or vehicles that use alternate fuels, will be used. The Project will implement an outdoor construction management plan that includes provisions for wheel washing, site vacuuming, and truck covers. The Commonwealth of Massachusetts anti-idling law will be enforced during the construction phase of the Project with the installation of on-site anti-idling signage.

The Project will comply with the requirements of the Clean Construction Equipment Initiative aimed at reducing air emissions from diesel-powered construction equipment. Oxidation catalysts and catalyzed particulate filters will be utilized on all construction vehicles and equipment to reduce air quality degradation caused by emissions from heavy-duty, diesel-powered construction equipment. All pre-2007 diesel construction vehicles working on the Project will be retrofitted using retrofit technologies approved by the United States Environmental Protection Agency (EPA). Additionally, ultra-low-sulfur diesel (ULSD) fuel (15 parts per million) will be used for all off-road diesel equipment.

Construction Noise

The construction activity associated with the Project may temporarily increase nearby sound levels due to the use of heavy machinery. Heavy machinery is expected to be used intermittently throughout the Project's construction phases, typically during daytime periods. The construction phases that will generate the highest sound levels include the demolition of existing buildings, site excavation and grading, and construction of the foundations for the proposed buildings. The City of Boston Regulations for the Control of Noise considers construction sound levels to be an impact to residential land uses if the L_{10} is in excess of 75 dB(A) or the Lmax is in excess of 86 dB(A). A construction management program will be developed with the City of Boston to ensure that the City of Boston noise regulation related to construction noise is met.

The Project is subject to construction-hour restrictions and the residential sound limits established under the Regulations for the Control of Noise in the City of Boston. Residential and commercial neighbors will be provided with contact names and

telephone numbers for comments/complaints regarding these and other construction-related issues.

Construction Traffic and Parking

Construction workers and construction trucks will be properly managed to minimize significant impacts on traffic conditions on surrounding streets during construction. The Project Site offers adequate space for on-site construction staging and parking. The Proponent will work with the BTD to develop a site-specific Construction Management Plan (CMP).

The following elements are typically addressed in the CMP:

- Designation of truck routes for deliveries
- Protection of pedestrian walkways
- Location and sizing of staging areas for on-site storage of construction materials
- Definition of worker parking parameters and measures to maximize related use of public transportation
- Identification of truck waiting areas
- Police officer traffic management
- Construction graphics program
- Interim traffic operation improvements
- Definition of street and sidewalk occupancies
- Definition of work hours

Construction Trip Generation and Worker Parking

The number of workers required during the construction will vary daily.. 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. Workers will be required to take public transport or park in area lots. The Proponent will work to reduce construction employee vehicle trips through TDM measures, such as:

- Provide secure, on-site storage so that workers do not have to transport tools and equipment each day;
- Post transit schedules in prominent area; and/or
- Hire local workers.

Construction Truck Routes and Volumes

The construction work is not anticipated to generate a high volume during peak hours. Police details may be assigned to all active gate locations to ensure that vehicles are not impacting traffic operations as necessary.

Construction Hazardous Materials and Solid Waste

All solid waste generated 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 and up to 95% of construction and demolition waste material removed from the site from landfills through recycling and salvaging.

Rodent Control During Construction

The City of Boston has declared that the infestation of rodents in the city as 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.

Public Safety During Construction

The entire perimeter of the construction site limits 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.

Post-Construction Rodent Control

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 Project. In addition, no open top dumpsters will be allowed as an additional precaution to deter infestation.

Sustainable Design/Green Building

This section provides an overview of the sustainable design elements proposed as part of the Project at this time of preliminary design to demonstrate that the Project will meet the requirements of Article 37 of the Boston Zoning Code relative to the City's Green Building policies and procedures (i.e., "LEED certifiable").

The design team for the Project includes several LEED Accredited Professionals (AP), including David Snell and Nidhi John. The Proponent and project design team has and will continue to evaluate and incorporate sustainable design and energy conservation as the design process continues.

Regulatory Context

Massachusetts Stretch Energy Code

As part of the Green Communities Act of 2008, Massachusetts developed an optional building code that gives cities and towns the ability to choose stronger energy performance in buildings than the state building code (the "Stretch Energy Code"). Codified by the Board of Building Regulations and Standards as 780 CMR Appendix 115.AA of the 8th edition Massachusetts Building Code, the Stretch Energy Code is an appendix to the Massachusetts building code, based on further amendments to the International Energy Conservation Code (IECC). The Stretch Energy Code increases the energy efficiency code requirements for new construction and major residential renovations or additions in municipalities that adopt it. The Stretch Energy Code applies to both residential and commercial buildings and, specifically, for new commercial buildings over 5,000 square feet in size, including multi-family residential buildings over three (3) stories.

In 2010, the City of Boston was designated a Green Community under the Green Communities Designation and Grant Program—an initiative of the Massachusetts Department of Energy Resources. In order to be designated a Green Community and,

therefore, eligible for grant money available annually, communities are required to meet five rigorous qualification criteria one of which includes minimizing life-cycle costs, such as adopt and implement the Stretch Energy Code. The goal of the grant program is for a municipality to use grant money to assist residents, businesses, and the municipality departments/facilities reduce energy use or install renewable energy systems. For the City of Boston, the Stretch Energy Code was adopted and became mandatory on July 1, 2011.

The current Stretch Energy Code requires projects to achieve at minimum a 20 percent energy efficiency compared to the state's energy code (the "Base Energy Code") by either meeting the performance standard of 20 percent better than ASHRAE 90.1-2007, or using a prescriptive energy code. On July 1, 2014, the IECC2009 and ASHRAE 90.1-2007 ceased to be a code option for non-Stretch Energy Code communities, and the IECC 2012 and ASHRAE standard 90.1-2010 became the new/updated state-wide Base Energy Code. It is expected that an updated Stretch Energy Code, if/when enacted, will require additional energy reductions beyond these standards and that Green Communities, such as Boston will automatically adopt any updates to the Stretch Energy Code (unless they vote to change their bylaw to no longer be a stretch code community). At the time of this PNF filing, the updated Stretch Energy Code requirements remain unknown.

Article 37 – Green Buildings of the Boston Zoning Code

Through Article 37 – Green Buildings, the City of Boston encourages buildings to decrease energy and water use and cost, improve the efficiency and useful life of building systems and infrastructure, and reduce the burdens imposed by buildings on city services, the environment, and public health. The stated purposes of the article is as follows:

> *"The purposes of this article are to ensure that major building projects are planned, designed, constructed, and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston."*

Any project that is subject to Article 80B, Large Project Review is also subject to the requirements of Article 37, which includes demonstrating that a project would meet the minimum requirements to achieve a LEED Certified level (all LEED Pre-requisites and achieve at least 40 points) without registering the project with the USGBC, or "LEED certifiable."

An interdisciplinary committee called the Boston Interagency Green Building Committee advises the BRA on a proposed project's compliance with the provisions of the article. The Committee consists of at least one representative of city agencies,

including the BRA, BED, BTD, the Inspectional Services Department and the Mayor's Office.

Approach to Sustainability/Compliance with Article 37

The project team, intends to implement sustainable design and construction principles and practices for the project, which include implementing the requirements of Article 37 of the Boston Zoning Code relative to the City's Green Building policies and procedures. The Proponent intends to take the appropriate measures to achieve a "LEED certifiable" building. The preliminary LEED Scorecard presented as Appendix C is tracking 69 'yes' points for a Certified rating and 2 'maybe' points. The 'maybe' points represent credits that will continue to be evaluated as design progresses.

Innovation in Design Process (ID)

The project includes public benefits and amenities such as the transit screen and electric charging stations, and resident amenities including bicycle storage and bike repair stations. In addition, the Proponent has developed a comprehensive Multi-Modal Financial Incentive Program for non-car owners. The team is committed to engaging in a design charrette. The team will engage in a full integrated design process from schematic to construction documents with the various disciplines ranging from architecture, mechanical, landscape, civil with a professional credentialed with respect to LEED for homes.

Local Linkages (LL)

The project is a dense urban infill development located in the heart of Allston village on brownfield land within walking distance to various MBTA green line services, commuter rail lines and bus lines. The transit options offer various methods of accessing Boston city as well as other western suburbs. The project is also within walking distance of numerous commercial and retail amenities including grocery stores, pharmacies, restaurants and cafes. The nature of this project's location and pedestrian friendly lifestyle and reduced automobile dependence will result in a number of points under this category.

Sustainable Sites (SS)

The Project is in a walkable neighborhood with services close by and a Walk Score of "93". In addition, the site is close to local public transportation with commuter rail and numerous bus lines and green-line stops nearby, encouraging minimal vehicle use. There is an inherent project efficiency in site development because it will connect

to an existing utility infrastructure. In addition, a display screen installed in the residential lobby will show available transit options for building residents and could potentially be available to pedestrians passing by.

The Project will encourage public transportation and pedestrian activity. The use of cars at this site is expected to be minimized due the proximity and availability of public transportation and local retail and services that encourages pedestrian trips. Other transportation related characteristics include:

- zip-car parking on site
- bicycle parking spaces for residents and visitors
- electric vehicle chargers will be included on site to encourage use of emission-free electric vehicles
- a financial incentive program for non-car owners to use the MBTA, zip-car, Uber, and Hubway

The storm water system will be designed to incorporate Stormwater Best Management Practices and other measures to minimize runoff and improve water Quality.

Water Efficiency (WE)

Energy Star appliances, lighting and low-flow fixtures will be integrated into residential units. Landscaping will primarily be drought tolerant, perennial native plantings.

Energy and Atmosphere (EA)

The Project will seek to save energy across systems with energy efficient equipment and appropriate insulation. Individually controlled, cost-saving, energy efficient heating and air conditioning systems, high efficiency lighting with occupancy sensors will be incorporated where suitable. The goal is to improve energy performance in the "optimize Energy Performance' credit. Additional credits may be gained with careful selection of refrigerant and efficient hot water distribution and pipe insulation.

Materials and Resources (MR)

Environmentally friendly products and low VOC paints will be specified, including those with recycled content, and regionally made. A construction waste reduction section in the specification will instruct the contractor to the amount of construction waste reallocated from disposal to recycled use. We expect to achieve innovation credit for the enhanced recycling of construction waste.

The project will also contribute to material conservation by utilizing panelized construction methods which will minimize the amount of waste due to framing on-site.

Indoor Environmental Quality (IEQ)

We aim to score points towards implementing ETS control, avoiding hvac in the open parking area, controlling contaminants during and after construction, enhancing indoor air quality, providing good air filtering and enhanced compartmentalization of units. A high indoor air quality will be maintained in the building through a ventilation system that will continuously exhaust stale air and provide fresh supply air directly to units. Air handling units will be equipped with MERV 8 filters to manage particulates, and contaminant control will be addressed by the use of walk-off mats at the building entries. The goal is to combine baseline ventilation strategies with thoughtful design measures.

Awareness and Education (AE)

The Proponent is committed to building and maintaining in a thoughtful and sustainable manner throughout occupancy. This will be achieved through comprehensive training of the building manager and maintenance staff to ensure protocols and procedures are managed throughout the life of the building.

Climate Change Preparedness and Resiliency

This section discusses the approach to preparing for anticipated changes in climate, in accordance with Appendix 7 of Article 80 of the Code. The required Climate Change Resiliency and Preparedness Checklist has been completed for the project and is provided in Appendix C of this PNF.

Addressing Sea Level Rise

The Proponent has evaluated the Project Site in terms of flooding in combination with projected sea level rise, as outlined in the *Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning* prepared by the Massachusetts Office of Coastal Zone Management (CZM). The FEMA Flood Insurance Rate Map (FIRM) map number 25025C0057G indicates the 100-year flood elevation for the nearest section of the Charles River is +10.45 feet BCB. The Project site elevation is approximately +43 feet BCB. Although the site is over 30 feet above the floodplain, the

Proponent followed through on evaluating the flooding scenarios with climate change.

A "bathtub model" approach was used to determine what the extreme flood event elevations would be to overtop the Charles, under certain sea level rise scenarios, to compare elevations to the building and critical infrastructure. The CZM report indicated that sea level rise could potentially reach 0.81 feet, 1.91 feet, 4.20 feet, and 6.83 feet in the Boston area by the year 2100 under a range of emission scenarios established by the Intergovernmental Panel on Climate Change in their fourth comprehensive report. These levels of sea level rise correspond to the following 100-year flood elevations in the Fort Point Channel:

- Lowest Scenario – Elevation +11.26 feet BCB
- Intermediate Low Scenario – Elevation +12.36 feet BCB
- Intermediate High Scenario – Elevation +14.65 feet BCB
- Highest Scenario – Elevation +17.28 feet BCB

Evaluating the current maximum expected sea level rise for the year 2100 indicates that during a 100 year flood event, the Charles River nearest to the Project site will remain approximately 25 feet below the Project site elevation. Therefore, the Proponent does not believe the Project is prone to any type of flooding from sea level rise.

Site Design Measures

The Project's stormwater management system will be designed with significant capacity to capture and infiltrate a large portion of on-site runoff from the Project Site and building roof areas. In the current condition, the site is almost entirely impervious. By introducing a stormwater management system, the site in the post-development condition will exhibit more natural runoff patterns in terms of rate, volume, and water quality as compared to the pre-development condition. The infiltration system will be designed in accordance with Boston Water and Sewer Commission requirements, and will be used to evaluate the practicality of meeting the criteria of LEED Sustainable Sites credits 6.1 (Stormwater Design – Quantity Control) and 6.2 (Stormwater Design – Quality Control). The stormwater management infrastructure is discussed in more detail in Chapter 5, *Infrastructure*.

Building Resiliency

The proposed site is located 25ft above the 100 year floodplain. The first floor of the building includes 7,100 sq ft of retail, residential entrance lobby and open parking on grade. There are no dwelling units on the first floor; residential floors are raised

starting on the second floor. The first floor is constructed of structural steel and concrete with durable masonry units as exterior façade materials.

Addressing Extreme Weather Conditions

As a result of climate change, the Northeast is expected to experience more frequent and intense storms. The IPCC has also predicted that in Massachusetts the number of days with temperatures greater than 90°F will increase from 5 to 20 days. To prepare for this, the Project will minimize the heat island effect by installing site landscaping, utilize light-colored paving materials on the pedestrian-oriented hardscape, and a reflective rooftop membrane to absorb less heat.

To minimize the Project's susceptibility to drought, the landscape design is anticipated to incorporate regionally appropriate robust native and adaptive vegetation that will require minimal irrigation. The Project will also incorporate low-flow fixtures to conserve potable water.

To minimize the Project's impact on climate change, the Project's energy performance is anticipated to be 20 percent efficient at minimum, in compliance with the current Stretch Energy Code, which will help reduce GHG emissions associated with building energy sources that contribute to global warming.

9 AM

12 PM

3 PM

MARCH 21ST

- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING SHADOWS
- NEW SHADOWS

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 4.1a

SOLAR ANALYSIS

89 Brighton Avenue
Boston, MA

9 AM

12 PM

3 PM

6 PM

JUNE 21ST

- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING SHADOWS
- NEW SHADOWS

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 4.1b
SOLAR ANALYSIS

89 Brighton Avenue
Boston, MA

9 AM

12 PM

3 PM

6 PM

SEPTEMBER 21ST

- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING SHADOWS
- NEW SHADOWS

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 4.1c
SOLAR ANALYSIS

89 Brighton Avenue
Boston, MA

9 AM

12 PM

3 PM

DECEMBER 21ST

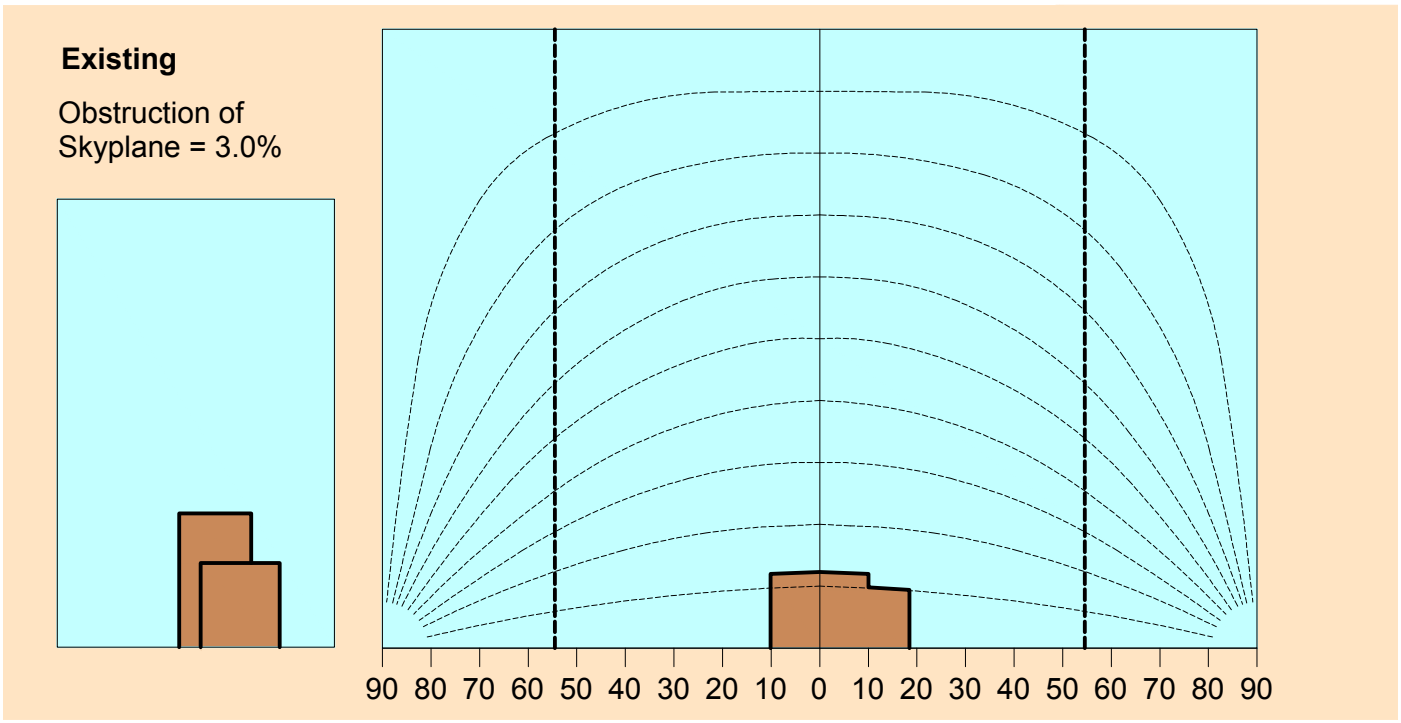
- EXISTING BUILDINGS
- PROPOSED BUILDINGS
- EXISTING SHADOWS
- NEW SHADOWS

PCA ARCHITECTURE PLANNING INTERIORS

vhb

Figure 4.1d
SOLAR ANALYSIS

89 Brighton Avenue
Boston, MA



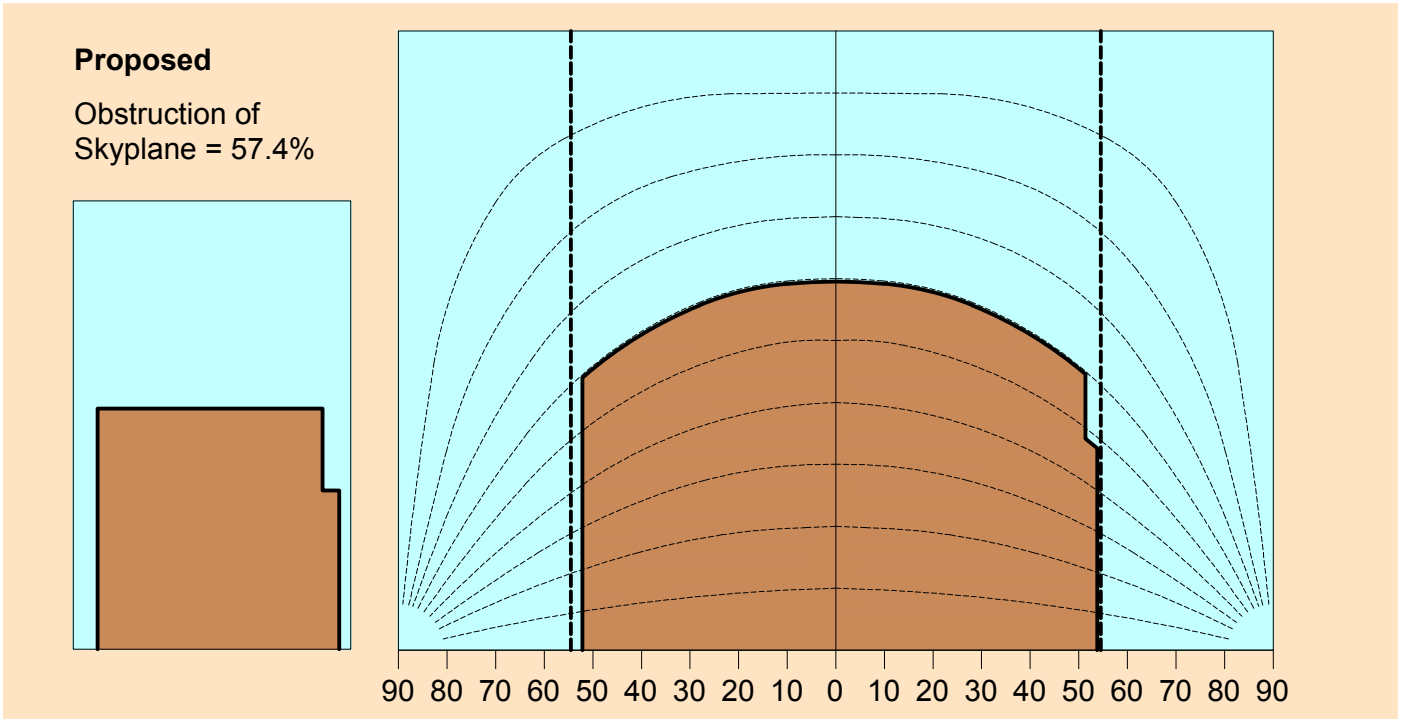


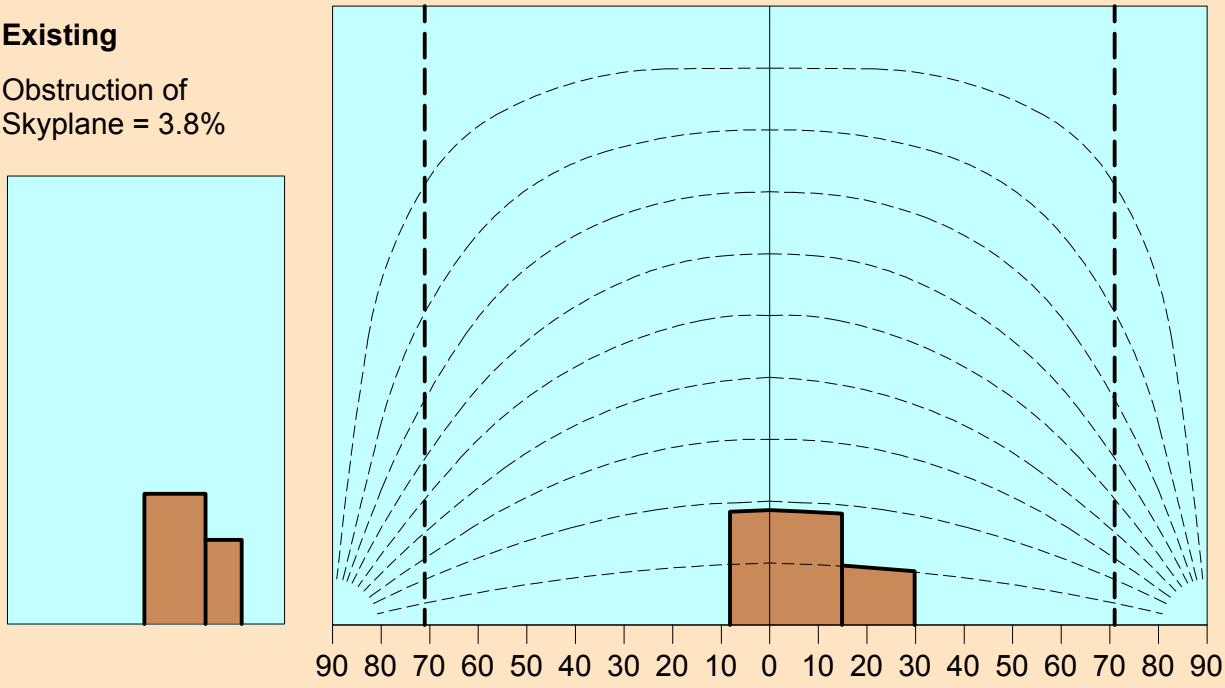
Figure 4.2a

Daylighting Analysis
Center of Brighton Avenue

89 Brighton Avenue
Boston, MA

Existing

Obstruction of
Skyplane = 3.8%



Proposed

Obstruction of
Skyplane = 74.7%

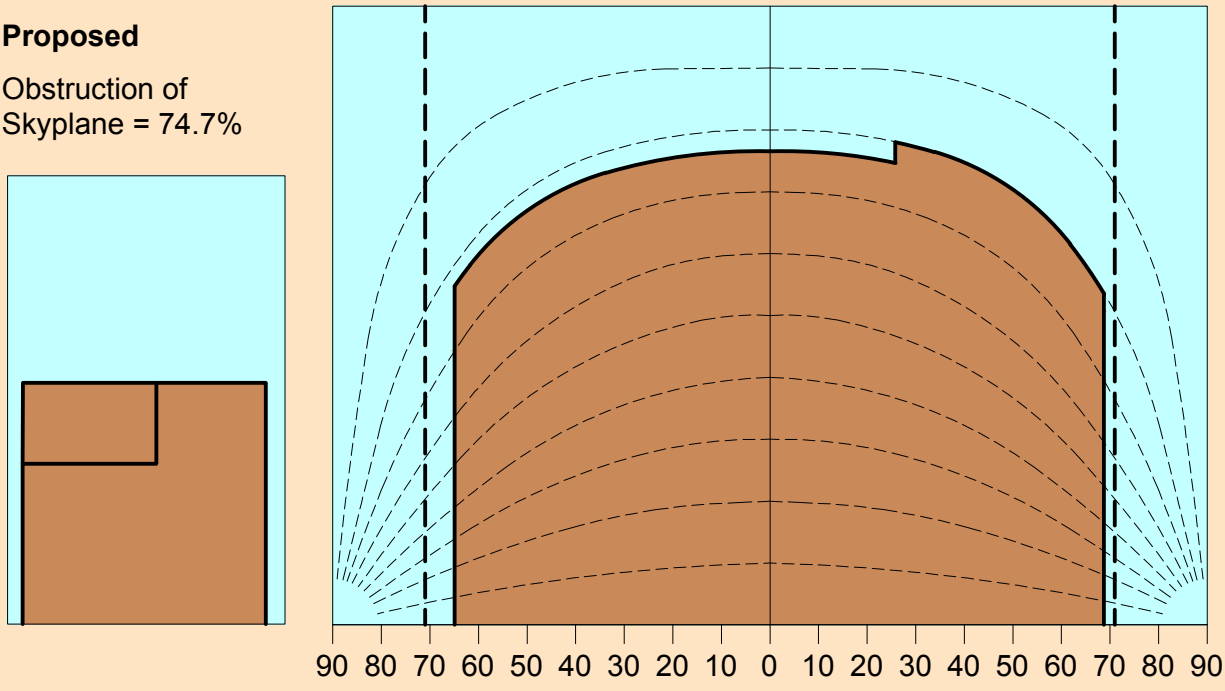


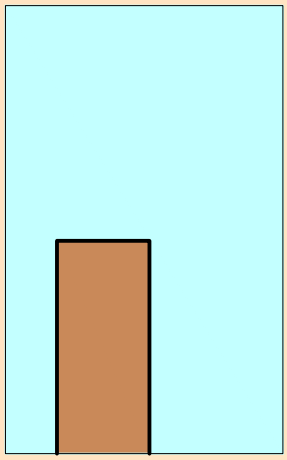
Figure 4.2b

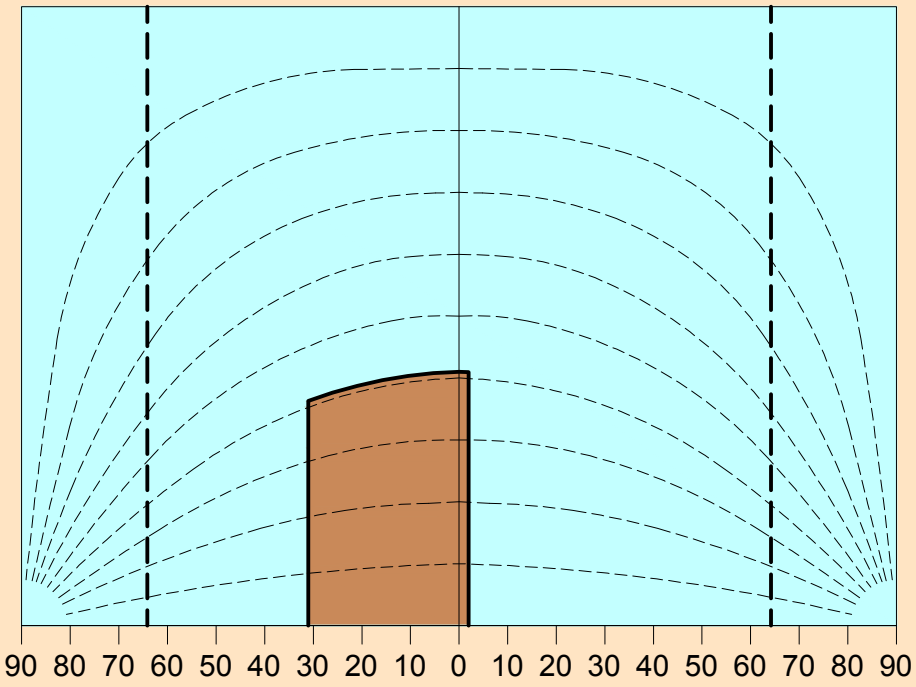
Daylighting Analysis
Center of Linden Street

89 Brighton Avenue
Boston, MA

Existing

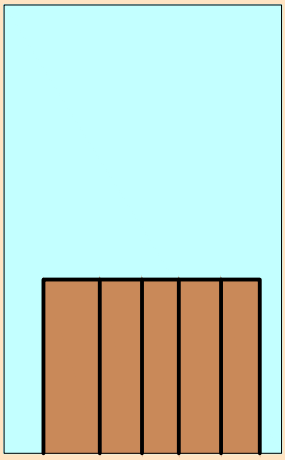
Obstruction of
Skyplane = 10.8%





Proposed

Obstruction of
Skyplane = 41.6%



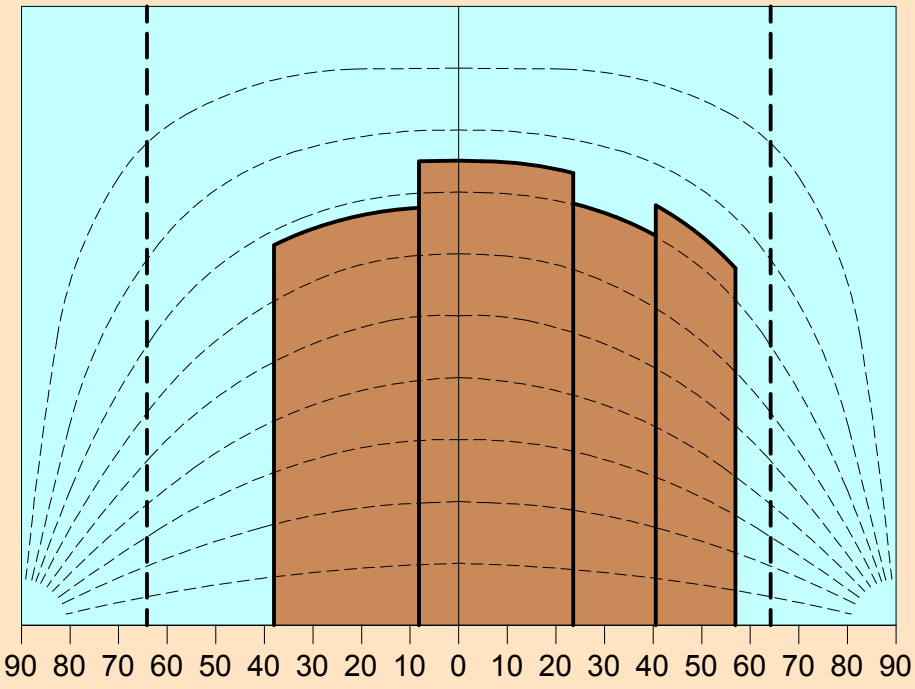


Figure 4.2c

Daylighting Analysis
Center of Gardner Street

89 Brighton Avenue
Boston, MA

5

Infrastructure

Introduction

This chapter describes the existing infrastructure systems surrounding the Project Site, and discusses the capacity required by the Project and potential utility impacts. The following utilities are evaluated: wastewater, water, stormwater management, natural gas, electricity, and telecommunications. Chapter 5, *Environmental Protection* discusses energy conservation measures being considered as part of the Project.

The Project will connect to existing city and utility company systems in the adjacent public streets. Based on conversations with the appropriate utilities and available utility drawings, it is expected that the increase in demand associated with the development and operation of the Project will not be difficult to accommodate with existing infrastructure. As design progresses, all required engineering analyses will be conducted and the final design will adhere to all applicable protocols and design standards ensuring that the proposed building is properly supported by and properly uses city infrastructure. Detailed design of the Project's utility systems will proceed in conjunction with the design of the building and interior mechanical systems.

The systems discussed herein include those owned or managed by the Boston Water and Sewer Commission (BWSC) and private utility companies. There will be close coordination among these entities and with the project engineers and architects during the construction process for the Project. Appendix G includes a large-scale site plan that shows the existing infrastructure at the Project Site.

Summary of Key Findings

The key impact assessment findings related to infrastructure systems include:

- The existing city and utility infrastructure systems are expected to be adequately sized to accept the demand associated with the development and operation of the Project.
- On-site drainage generally flows towards Charles River Basin via BWSC-owned and maintained drainage infrastructure in Brighton Avenue, adjacent to the Project Site.
- The Project Site is currently serviced by the BWSC for domestic and fire protection water and sanitary sewage conveyance.
- Based upon sewage generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f, the Project is estimated to generate approximately 14,974 gallons per day (net new) of sanitary sewage and will require approximately 16,471 gallons of water per day (net new).

The key Project-related mitigation and/or benefits associated with the infrastructure systems include:

- Construction of the Project will incorporate on-site stormwater management and treatment systems that will improve water quality, reduce runoff volume, and control peak rates of runoff in comparison to existing conditions.
- The Project will not result in the introduction of any increased peak flows, pollutants, or sediments that would potentially impact the local BWSC stormwater drainage system.
- Appropriate low-flow and low-consumption plumbing fixtures will be installed in all units to achieve a reduction in water usage of over 20 percent over the baseline in order to comply with Article 37 of the Boston Zoning Code.

Regulatory Framework

The following discusses the regulatory framework of utility connection reviews and standards. All connections will be designed and constructed in accordance with city, state and federal standards. A complete list of the state and local permits anticipated associated with Project-related infrastructure is included in Chapter 2, *General Information and Regulatory Context*. For the Project:

- BWSC approval will be required for all water, sewer and stormwater systems.
- The Boston Fire Department will review the Project with respect to fire protection measures such as siamese connections, hydrants, and standpipes.

- Design of the site access, hydrant locations, and energy systems (gas and electric) will also be coordinated with the respective system owners.
- Where new utility connections are needed and existing connections are to be capped, the excavation will be authorized by the Boston Public Works Department (BPWD) through the street opening permit process, as required.
- Additional information on the regulatory framework for each utility system is included in subsequent sections of this chapter.

All improvements and connections to BWSC infrastructure will be reviewed by BWSC as part of the BWSC site plan review process. This process includes a comprehensive design review of the proposed service connections, assessment of system demands and capacity, and establishment of service accounts. As design progresses, updated information on the proposed utility connections will be provided to the BRA upon request.

Drainage/Stormwater Management

Since the Project Site is currently predominantly impervious, the Project will not produce significant changes in either the pattern of, or rate of, stormwater runoff. Stormwater management controls will be established in compliance with the BWSC standards. The Project will not result in the introduction of any increased peak flows, pollutants, or sediments that would potentially impact the receiving waters of the local BWSC stormwater drainage system.

Existing Drainage Conditions

On-site drainage generally flows towards Charles River Basin, as shown on BWSC maps. The existing site catch basins are collected by infrastructure on site and overflow to Brighton Avenue. Brighton Avenue contains BWSC-owned and maintained drainage infrastructure adjacent to the Project Site. Roadway runoff is piped from the Project Site by the BWSC along Brighton Avenue. There is an existing 10-inch and 33-inch drain in Brighton Avenue. These BWSC drains ultimately discharge to Storm Drain Outfall #035 in the Lower Charles River Basin. Refer to Appendix G for the existing drainage facilities serving the Project Site.

Proposed Drainage Conditions

Construction of the Project will incorporate on-site stormwater management and treatment systems that will improve water quality, reduce runoff volume, and control peak rates of runoff in comparison to existing conditions. The current design

anticipates converting most of the area of existing surface parking to building with covered parking on-grade. A stormwater infiltration system will be designed to accommodate a volume of 1-inch of stormwater over the site impervious area. Although the Project site is not within the Boston Groundwater Conservation Overlay District (GCOD) making it exempt from Article 32, 1-inch of infiltration capacity is a general requirement of the BWSC and a minimum criteria of LEED Sustainable Sites credits 6.1 and 6.2, which may be required to meet Article 37 of the Boston Zoning Code. Runoff peak rates and runoff volume will be reduced for the 2-, 10-, and 25-year design storms for the post-development condition as compared to the pre-development condition, as required by the BWSC. All stormwater runoff from surface impervious areas will be treated by infrastructure such as deep sump, hooded catch basins, subsurface infiltration basins, and proprietary treatment devices to reduce the Total Suspended Solids (TSS) concentrations by at least 80%. This is a requirement by the BWSC for all new developments in an effort to reduce Phosphorus loadings in the lower Charles River as mandated by its Total Maximum Daily Load (TMDL) under the Clean Water Act. Stormwater measures will be designed in accordance with DEP's Massachusetts Stormwater Management Handbook.

Sanitary Sewage

Existing Sewer System

The BWSC owns and maintains the sanitary sewer lines in the vicinity of the Project Site. BWSC record drawings show there is a 30x36-inch sewer in Brighton Avenue and a 12-inch sewer in Gardner Street. Existing site uses generate approximately 2,211 gallons per day of wastewater.

Proposed Sewage Flow and Connection

For the purposes of estimating the sewage flow rates, the overall gross square footage (including mechanical space) is assumed instead of the FAR square footage in order to present a conservative analysis. Generation rates from the Massachusetts State Environmental Code (Title 5) were used. Table 6-1 summarizes the existing and proposed sewer generation rates.

Table 5-1 Existing and Future Sewer Generation

Program Type	Units	Generation Rate	Sewer Generation (GPD)
Existing			
41 Gardner			
Residential	10 Bedrooms	110 GPD/Bed	1100
89 Brighton			
Retail	8,950 SF	50 GPD/KSF	224
Office	8,950 SF	75 GPD/KSF	671
95 Brighton			
Retail	500 SF	50 GPD/KSF	25
Office	2,544 SF	75 GPD/KSF	191
Total			**2,211**
Proposed			
Residential	153 Bedrooms	110 GPD/Bed	16,830
Retail	7,100 SF	50 GPD/KSF	355
Total			**17,185**
Net Change			**14,974**

Note: Based on DEP Title 5 flow calculation factors.

These calculations anticipate a mix of residential and dry retail use. Changes to the proposed mix may vary sanitary flow. Final flows will be confirmed as the project design moves forward. At this stage of the design, options for potential sewer connections are being evaluated and will be coordinated with the BWSC.

In addition to the sanitary sewer flow, wastewater will also be generated from the parking lot. The majority of the Project parking will be covered. The drainage for this type of parking is required to be drained into a gas trap which generates effluent which is required to be sent to the sanitary sewer system.

Proposed Sanitary Sewer Mitigation

The BWSC requires fiscal reparations for the cost of abatement of Infiltration and Inflow (I/I) caused by the additional sewer flow generated by any project generating over 15,000 gallons of net new wastewater per day as determined by Title V regulations. The current fee rate for net new I/I is $2.42 per gallon per day multiplied by a ratio of 4:1. This Project is expected to generate 14,974 gallons per day of wastewater relative to the existing condition. Therefore, the I/I mitigation fee shall not be required for this project.

Domestic Water and Fire Protection

Existing Water Supply System

The BWSC owns and maintains the water mains in the vicinity of the Project Site. BWSC record drawings show the streets surrounding the Site are serviced by southern low service pipes. These pipes include an 8" ductile iron ("DI") pipe installed in 1989 in Brighton Avenue, 10" pit-cast iron ("PCI") pipe installed in 1913 in Linden Street, and a 10" pit-cast iron ("PCI") pipe installed in 1917 in Gardener Street. The latter two pipes have been relined by BWSC in 2006. Should these water services be insufficient for the Project, a 16" southern low on the south side of Brighton Avenue may be utilized. The Project does not intend on using this main in an effort to minimize traffic disruption on Brighton Avenue. The existing water infrastructure provides a high level of service to the area. Additionally, currently three fire hydrants are in close proximity to the Project Site.

Proposed Water Supply Demand and Connection

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon standard sewage generation rates outlined in the DEP Sewer Connection and Extension Regulations, 310 CMR 15.203.f, the Project will require approximately 16,471 gallons of water per day (net new). However, appropriate low-flow and low-consumption plumbing fixtures will be installed in all residential units to achieve a reduction in water usage of approximately 20 percent over the baseline in order to comply with Article 37 of the Boston Zoning Code, as discussed in Chapter 5, *Environmental Protection*. The Proponent will continue to consider and evaluate methods to conserve water as building design evolves.

New water connections will be designed in accordance with BWSC design standards and requirements. Water services to the new building will be metered in accordance with BWSC's Site Plan Requirements and Site Review Process. The review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and Siamese connections conform to BWSC and Boston Fire Department (BFD) requirements. The Proponent will provide for the connection of the meter to the BWSC's automatic meter reading system. Fire protection connections on the Project Site will also need approval of the BFD. The Proponent will request record hydrant flow test information from the BWSC to aid in the preliminary water design. In addition, the Proponent will request new hydrant flow tests on the main to which the Proponent intends on connecting.

Utilities

Natural Gas Service

The estimated natural gas demand for the Project is approximately 30,622 cubic feet per hour. The Proponent will coordinate with National Grid (local gas provider) to determine whether their infrastructure can meet the demand estimated for this Project, and the best means of obtaining a system connection. As the building energy system design is developed, the Proponent will work with the gas company to ensure adequate capacity is available to serve the Project. There are 2 mains in each street adjacent to the site ranging in size from 6" to 36". Therefore, the Proponent does not expect there to be a capacity issue for the Project in the vicinity.

Electrical Service

The estimated electricity demand for the Project is approximately 1,300 kVA. Eversource owns and operates the electric facilities in the vicinity of the Project Site. The existing Eversource transformers and existing conduit on-site are being relocated as part of the Project. These relocations are being coordinated with Eversource, and the Proponent will confirm with Eversource that this Project can be supported by their local infrastructure, which include new transformer to be sized sufficient to support the project consumption.

Telecommunications

There are several telecommunications conduits and overhead wires in the vicinity of the Project Site. The Proponent will coordinate with the resident telecommunications company to determine whether their infrastructure can be used to service this Project, and the best means of obtaining a system connection.

Protection of Utilities

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

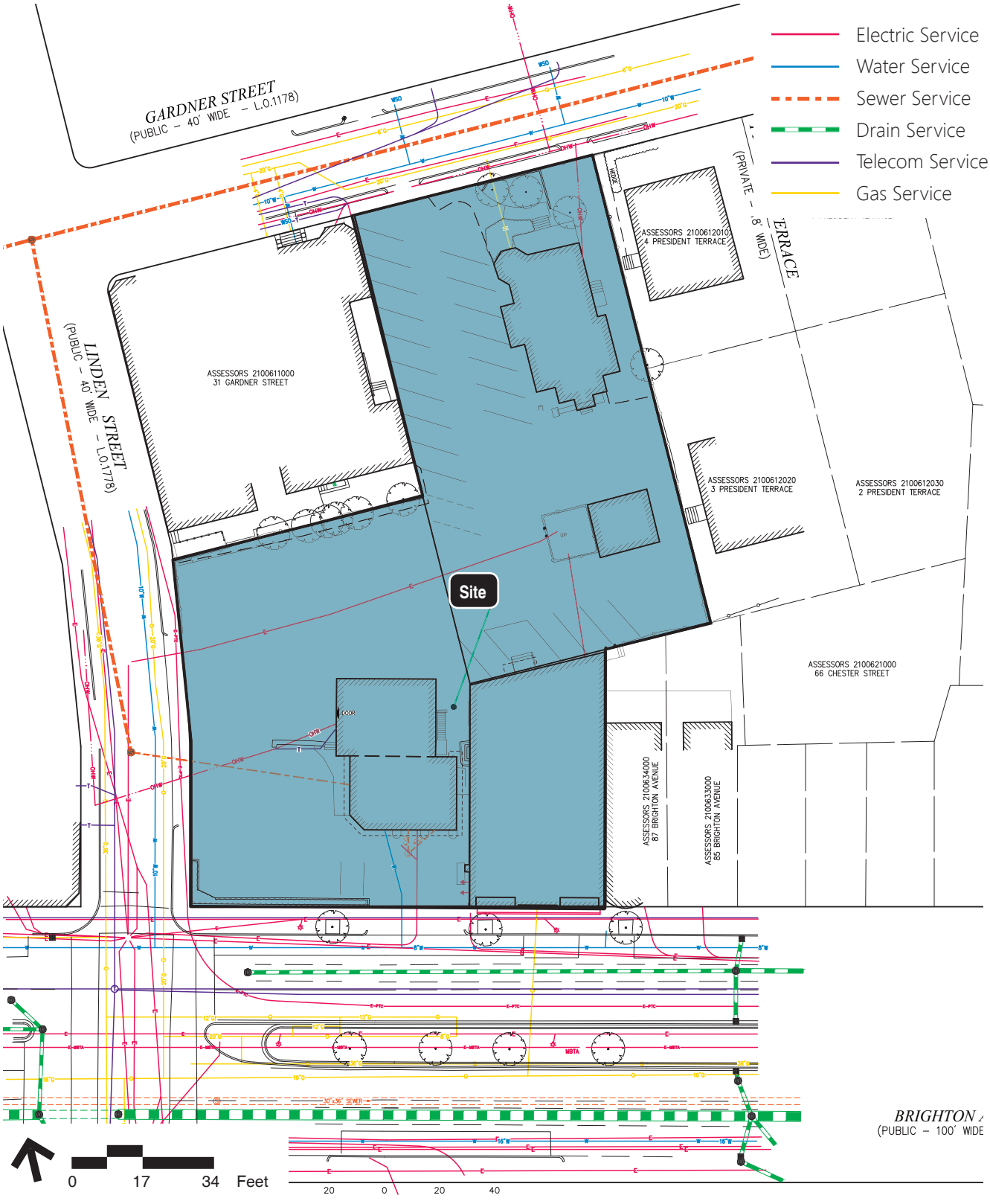


Figure 5.1

Existing Utilities

89 Brighton Avenue
Boston, MA

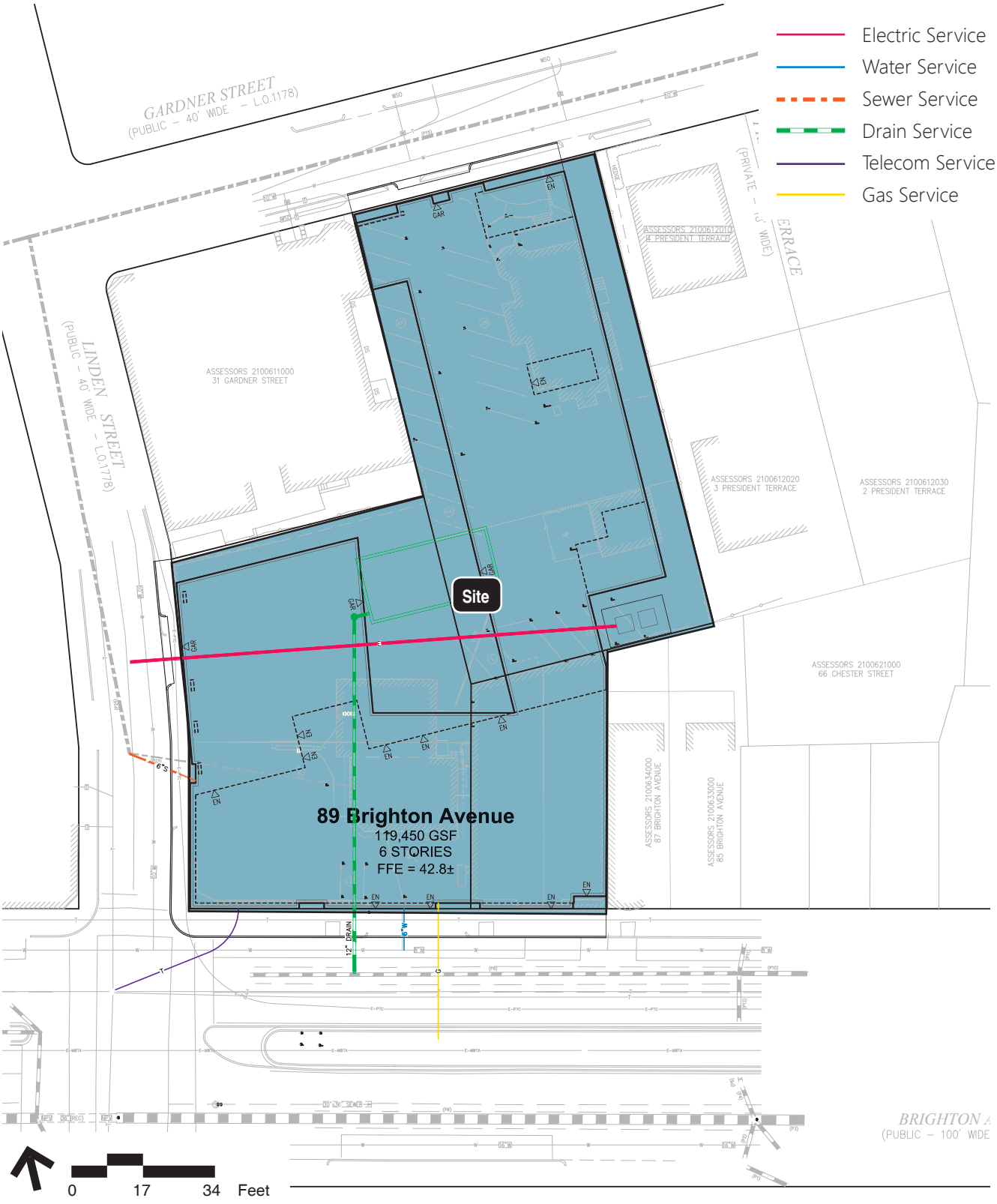


Figure 5.2

Proposed Utilities

89 Brighton Avenue
Boston, MA

6

Historic Resources

Introduction

This chapter identifies properties that are either in the Inventory of Historic and Archaeological Assets of the Commonwealth or listed in the National or State Registers of Historic Places that are within the Project Site or are within close proximity. This chapter also describes any effects to these properties and proposed mitigation, if required, and Project-related benefits.

A search of the Massachusetts Historical Commission's (MHC) Massachusetts Cultural Resource Information System (MACRIS) database and mapping tool was completed to identify previously recorded above-ground and archaeological resources located on or within a one-quarter mile radius of the Project Site. Figure 6.1 shows the location and proximity of these properties to the Project Site, which are summarized in Table 6-1.

This section also provides information about the existing on-site buildings - the Budget Truck Rental building at 95 Brighton Avenue; the International Bicycle Center building at 89-91 Brighton Avenue; and the house and garage at 41 Gardner Street – which are all proposed for removal. Because all four buildings are over 50 years old, they are subject to Article 85 Demolition Delay review by the Boston Landmarks Commission. An Article 85 Application to the Boston Landmarks Commission will be submitted in the near future.

Key Findings and Benefits

The key findings and benefits related to historic and cultural resources include:

- The Project Site contains four existing buildings: a c. 1890 Queen Anne style house at 41 Gardner Street with a 1919 two-bay garage; a former filling and service station at 95 Brighton Avenue constructed in 1934; and a three-story c. 1930

building at 89-91 Brighton Avenue used for a school, retail showroom, and light manufacturing.

- The residential building will improve local residential stability, and will continue to reinforce the urban fabric of the Brighton Avenue corridor and the Allston neighborhood.
- There are several properties within a 400-foot radius that are in the Inventory of Historic and Archaeological Assets of the Commonwealth. These properties includes the National and State Register-listed Harvard Avenue Historic District, which extends east on Brighton Avenue to Linden Street.
- The house at 41 Gardner Street has been inventoried as part of the Gardner Street area (BOS.LC). It has an MHC inventory number of BOS.8178 but has not been documented on an individual inventory form. Alterations include replacement siding, trim, and windows.
- The former service station at 95 Brighton Avenue was heavily altered in the 1970s and 1980s, when its use changed to vehicle rental. These alterations include replacement cladding and windows, and the construction of a two-story rear addition.
- The building at 89-91 Brighton Avenue has experienced major façade changes, and only a few original windows are extant on the side and rear elevations.
- The proposed project provides a solid corner to the block and intersection and strengthens a pattern of residential development with ground floor retail.

Historic Context

The Project Site is in the Packard's Corner area of Allston. Brighton Avenue is a busy transportation corridor between downtown Boston and western suburbs such as Newton and Watertown, and although the street was laid out by the 19th century, most of the current development was constructed between the mid 19th century and the early 20th century. In the Packard's Corner area, Brighton Avenue consists of a combination of retail and office buildings, interspersed with clusters of rowhouses and brick apartment blocks. During the early 20th century, Packard's Corner was part of the concentrated development of automobile-related businesses along Commonwealth Avenue in Allston and Brighton, some of which extended along Brighton Avenue in this area as well.

Although much of the older development remains intact, there is more recent infill commercial development at many of the cross streets with Brighton Avenue. On the side streets, such as Gardner Street, residential development is more prevalent. Atlas and Sanborn maps show that a few larger 19th century estates began to be subdivided for homes for people in the upper middle class around 1880, resulting in a series of

two- to three-story single and double homes on moderately-sized suburban lots, in styles such as Shingle, Queen Anne, or Colonial Revival. As the 20th century progressed, some of these houses were removed and infilled with brick apartment buildings. This later pattern can be seen on Gardner Street, surrounding the Project Site.

On-Site Buildings

There are four existing buildings on the Project Site: 41 Gardner Street (house and garage), 95 Brighton Avenue, and 89-91 Brighton Avenue. All of the buildings are typical examples of the period in which they were constructed, and most have been altered.

41 Gardner Street (BOS.8178)

The 2 ½-story Queen Anne style house at 41 Gardner Street was constructed c. 1890. The house has an asymmetrical footprint resting on a stone foundation, featuring a corner tower, projecting bays, oriel windows, and a full-length one-story front porch (Photos 1-3). The compound roof has large gabled dormers on each elevation, and is covered by asphalt shingles. The siding, trim, and windows are modern vinyl replacements, although the façade retains carved wood panels on porch pediment roof and in the center of the second story. Originally constructed as a single-family home, the building became a dormitory for the U.S. Diesel School on Brighton Avenue in the 1930s. Later, it became a fraternity and boarding house, and most recently has been used as a multiple-family rental property. The house has been inventoried as part of area BOS.LC, but is not recorded on an individual inventory form.

The one-story, flat-roofed concrete block garage at the rear of the property was constructed in 1919. It is two bays wide with wood garage doors, and does not appear altered, though it is currently unused and is partially covered by vegetation (Photo 4).

95 Brighton Avenue

The one-story concrete block building at 95 Brighton Avenue was constructed in 1934 as a filling and service station, replacing an earlier single-family home. The building has a concrete foundation in a generally rectangular footprint, with a hipped roof and an angled corner entrance (Photos 5-6). The large, fixed storefront windows and textured concrete cladding likely date to the 1970s, when the building became a vehicle rental office. A large, two-story rear concrete block addition was constructed

in the 1980s, which shares the original building's exterior materials and has paired vinyl casement windows.

89-91 Brighton Avenue

This three-story brick and concrete building was designed by Boston architect Samuel S. Levy and constructed c. 1930 (Photos 7-8). The façade of the building is stuccoed, with a molded cast stone cornice styled as a balustrade. The first story on the façade is fully glazed, and the large, storefront windows are surrounded by black granite panels. Large, three-part windows on the second and third stories are connected vertically by continuous metal frames, with colored spandrels between each story. Original multiple-paned windows are extant on the north side of the west elevation; however, most of the exposed window openings on the side elevations have been infilled with brick and concrete, and the rear elevation contains modern sliding metal sash windows. The building was originally constructed as the U.S. Diesel School, one of several automobile-based local businesses, which used the house at 41 Gardner Avenue as a dormitory during the 1930s. In the 1940s, the Lawrence, MA-based Richard Clothing Manufacturing Company used the building as a showroom and factory, and in the 1960s a research and development firm working on optical and laser devices for the armed services occupied the building. Building permits from 1960 and 1961 indicate that the façade was rebuilt at this time, which is when the vertically-connected windows and spandrels were introduced. In the 1990s, the International Bicycle Center began using the building for a retail and service center, which is when the current storefront and steel lettering spelling its name across the façade was added.

Historic Resources

There are several properties that are in the Inventory of Historic and Archaeological Assets of the Commonwealth and the National and State Registers of Historic Places located in the vicinity of the Project Site. A radius of approximately 400 feet from the Project Site was established to assess the potential effects of the Project. The extent of the radius was verified in the field, which indicated that the limits of visibility of the proposed Project would generally be limited to Brighton Avenue and Gardner Street between Harvard Avenue and Chester Street, with possible limited visibility from Linden Street, Rosedale Street, and Chester Street.

There is one National Register-listed district and four inventoried areas located in the radius, each with several individually recorded buildings that are within the radius. These are listed in Table 6-1 and summarized below.

Table 6-1 Massachusetts Historical Commission Inventoried and Listed Properties

District/Area Name	Location	MHC Inventory No.	Listed in State Register
Harvard Avenue Historic District	Harvard Avenue and side streets	BOS.KN/ NR # 00000415	Y
Packard's Corner	Brighton Avenue, Commonwealth Avenue, and side streets	BOS.KO	N
4-98 Gardner Street	Gardner Street, between Harvard Avenue and Malvern Street	BOS.LC	N
5-69 Ashford Street	Ashford Street, east of Linden Street	BOS.KS	N
76-91 Linden Street	Linden Street, south of Brighton Avenue	BOS.LI	N

Note: Properties listed are within approximately 400 feet of the Project Site. Refer to Figure 6.1 for the location of these properties.

Harvard Avenue Historic District (NR #00000415/ BOS.KN)

This historic district extends along Harvard Avenue between Commonwealth Avenue on the south and the railroad tracks and Massachusetts Turnpike on the north, and includes several buildings on the side streets. The district was developed nearly entirely between 1905 and 1920, representing a distinct pattern of World War I-era development of vernacular apartment blocks and small-scale commercial storefronts, facilitated by the expansion of rail transportation. There are two major commercial nodes in the district, at the intersections of Harvard Avenue with Cambridge Street and Brighton Avenue, where the district extends east to Linden Street (Photos 16-20). These nodes include the 1902 one-story commercial block opposite the Project Site on Linden Street, and the 1925 Auto Exchange Building on the southwest corner of the Linden Street intersection with Brighton Avenue. The district was listed in the National Register in 2000, under Criteria A and C, for its association with significant events or period and for its distinctive collection of architecture.

Packard's Corner (BOS.KO)

Packard's Corner consists of the triangular-shaped pattern of streets formed by the intersections of Commonwealth Avenue, Brighton Avenue, and Linden Street (Photos 24-28). The Packard name was originally associated with a stable and riding school. It was retained for the Packard Motor Car Company, which built its prominent, angled extant headquarters at the corner of Brighton Avenue and Commonwealth Avenue. The growth of Packard's Corner was part of a larger pattern of automobile-related development along Commonwealth Avenue. Other development consists mainly of

blonde brick apartment houses of the early 20th century, decorated with cast stone details in the Classical Revival, Renaissance Revival, and Georgian Revival styles. The boundary of this area extends to the property adjacent to the Project Site to the east, which are the c. 1900 rowhouses at 85 and 87 Brighton Avenue.

4-98 Gardner Street (BOS.LC)

Gardner Street consists of a mixture of residential development, including large single-family homes on small to mid-size lots, and four and five-story brick apartment buildings (Photos 9-13). The architectural styles largely reflect the late 19th and early 20th century development of the area, with Stick, Queen Anne, Shingle, and Colonial Revival details present. Later 20th century apartment development has consisted of infill of different scale and density, and several of the older houses exhibit replacement siding and windows. This area includes the house and garage at 41 Gardner Street, part of the Project Site, and the west end of the area overlaps the Harvard Avenue Historic District, with a small number of shared buildings (Photos 12-13).

5-69 Ashford Street (BOS.LC)

Ashford Street runs parallel to Gardner Street (BOS.LC) to the north, and exhibits a similar development pattern of late 19th and early 20th century suburban residential housing. However, this area is largely void of later apartment block infill construction, and retains a more cohesive streetscape of houses with consistent size and setback (Photo 14).

76-91 Linden Street (BOS.LI)

This concentration of large dwellings south of Brighton Avenue consists of late 19th century houses, extant behind more modern commercial development along Brighton Avenue (Photos 21-22). They are primarily 2 ½-stories in height, with fairly elaborate Queen Anne, Shingle, and Colonial Revival style features. Several of the houses have been altered with modern siding and windows, though original materials such as patterned shingles and scroll brackets are evident.

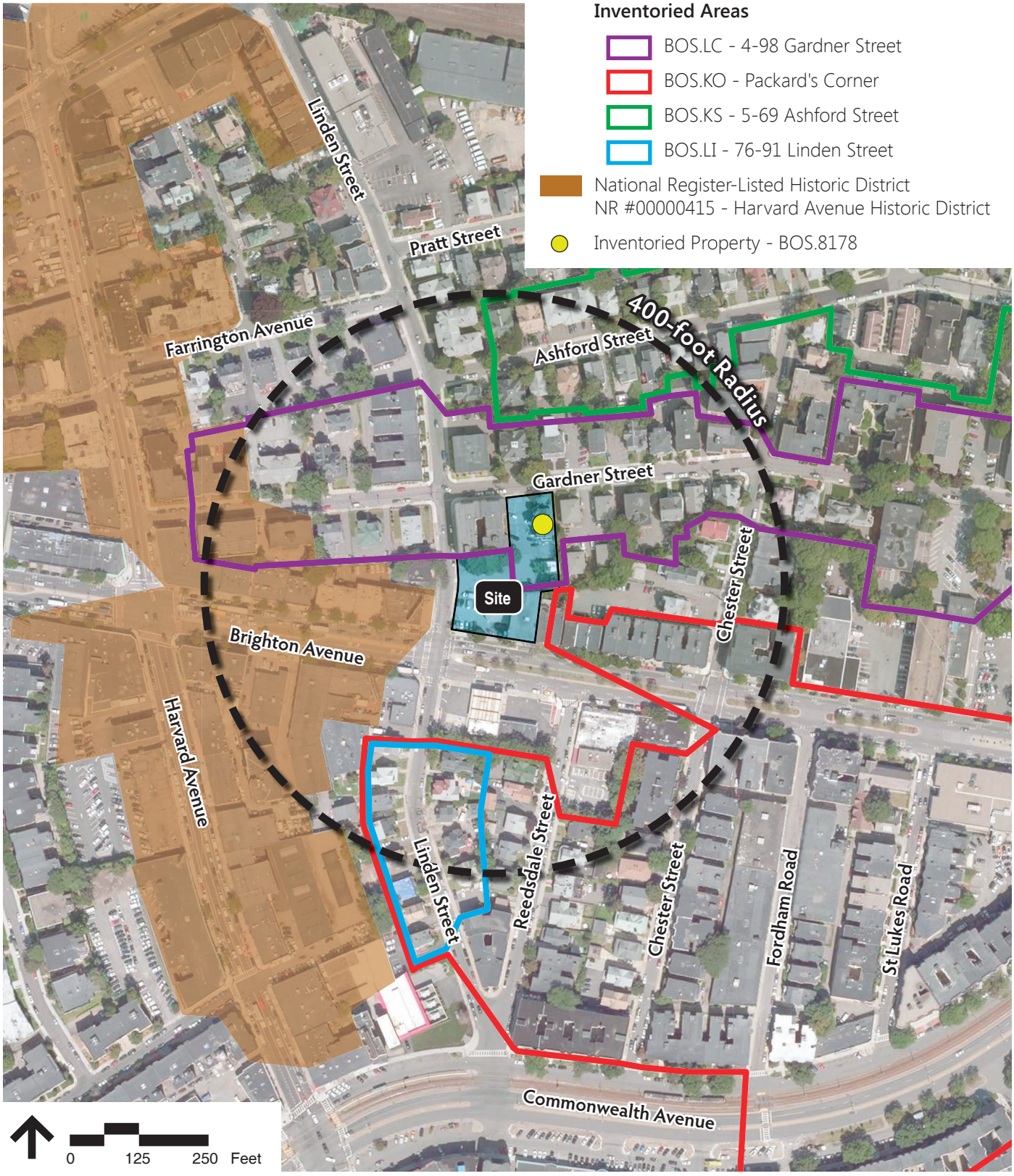
Existing Archaeological Resources

Review of MHC records did not reveal any known archaeological resources on the Project Site or in the immediate vicinity. Given the extensive and dense urban development that has occurred in the project area over many years, it is unlikely that

the Project Site would yield any significant archaeological resources. Thus, there is little potential for the disturbance of significant archaeological resources.

Project Impacts to Historic Resources

The three buildings located on the Project Site all exhibit later alterations that affect the buildings' integrity. Although the c. 1890 house at 41 Gardner Street retains its Queen Anne style form, nearly all of the exterior materials and window sash are modern replacements. The building at 95 Brighton Avenue, originally constructed as a modest example of a service and filling station, was nearly entirely renovated in the 1970s, resulting in new cladding, windows, and a large rear addition. The building at 89-91 Brighton Avenue was originally built for manufacturing, but much of the façade dates to the 1960s when the building use changed to research and development. The building's storefront accompanied another change in use to a bicycle repair facility in the early 1990s.



Source: Arcmap Online Bing Aerial

Figure 6.1

Inventoried and Listed Properties within a 400-foot Radius of the Project Site

89 Brighton Avenue
Boston, MA

Source: Arcmap Online Bing Aerial

Figure 6.2

Site Photos Key

89 Brighton Avenue
Boston, MA

Photo 1
41 Gardner Street, north façade and west elevation.
Photographer facing SE

Photo 2
41 Gardner Street, north façade and east elevation.
Photographer facing SW

Photo 3
41 Gardner Street, west and south elevations. Photographer facing NE

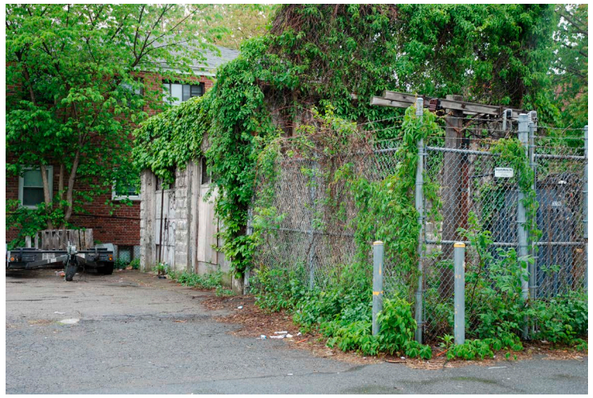


Photo 4
41 Gardner Street garage, north façade and west elevation.
Photographer facing SE

Photo 5
95 Brighton Avenue, south façade.
Photographer facing N

Photo 6
95 Brighton Avenue, rear addition. North elevation of 89-91 Brighton Avenue in background. Photographer facing SE

Photo 7
89-91 Brighton Avenue, south façade.
Photographer facing NW

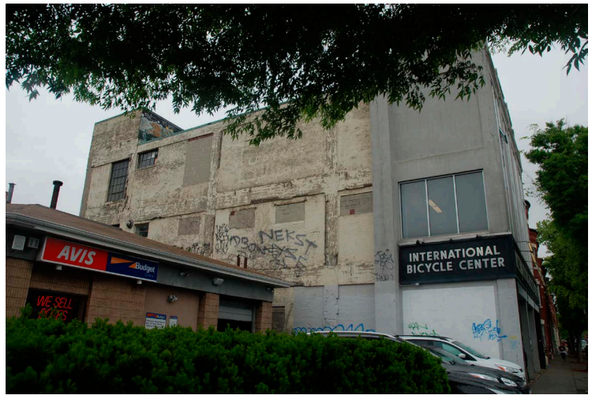


Photo 8
89-91 Brighton Avenue, west elevation.
Photographer facing NE

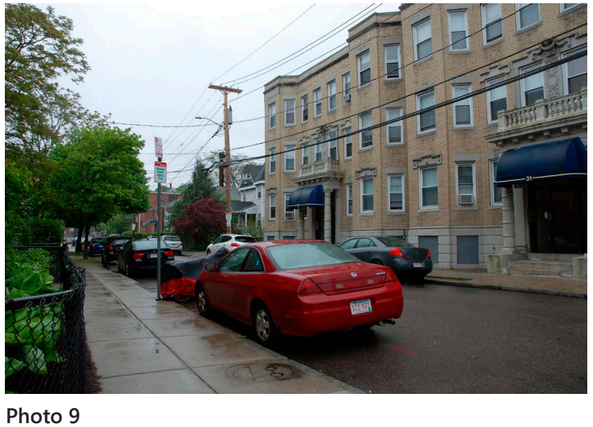


Photo 9
View along Gardner Street from intersection with Linden Street (BOS.LC). 41 Gardner Street in center. Photographer facing E

Photo 10
View along Gardner Street from intersection with Chester Street (BOS.LC). Photographer facing W

Figure 6.3a

Site Photos
May, 2015

89 Brighton Avenue
Boston, MA

Photo 11
View of intersection of Gardner Street and Linden Street (BOS. LC). Photographer facing W

Photo 12
View of Gardner Street west of Linden Street (BOS.LC), Harvard Avenue Historic District in background). Photographer facing W

Photo 13
View toward Project Site from Gardner Street (BOS. LC), near boundary of Harvard Avenue Historic District. Photographer facing E

Photo 14
View of Ashford Street from Linden Street (BOS.KS). Photographer facing E

Photo 15
View of Project Site on Brighton Avenue from intersection of Linden Street. Photographer facing NE

Photo 16
View of Brighton Avenue west of Linden Street (Harvard Avenue Historic District). Photographer facing W

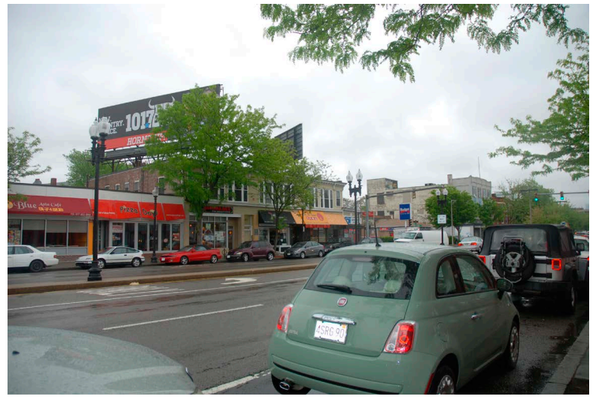


Photo 17
View toward Project Site from Harvard Avenue Historic District on Brighton Avenue, west of Linden Street. Photographer facing E

Photo 18
View of intersection of Brighton Avenue and Harvard Avenue, in Harvard Avenue Historic District. Photographer facing W

Figure 6.3b

Site Photos
May, 2015

89 Brighton Avenue
Boston, MA

Photo 19
View along Harvard Avenue, in Harvard Avenue Historic District. Photographer facing N

Photo 20
View toward Project Site from intersection of Brighton Avenue and Harvard Avenue, in Brighton Avenue Historic District. Photographer facing E

Photo 21
View along Linden Street near Brighton Avenue (BOS.LI). Photographer facing SW

Photo 22
View toward Project Site from Linden Street (BOS.LI). Photographer facing NE

Photo 23
View along Brighton Avenue from Linden Street, Project Site on left. Photographer facing E

Photo 24
View along Brighton Avenue east of Project Site (BOS.KO). Photographer facing E

Photo 25
View toward Project Site from Brighton Avenue (BOS. KO). Photographer facing NW

Photo 26
View along Reedsdale Street from Brighton Avenue (BOS.KO). Photographer facing S

Photo 27
View toward Project Site from Reedsdale Street (BOS.KO). Photographer facing NW

Photo 28
View toward Project Site from intersection of Chester Street and Brighton Avenue (BOS.KO). Photographer facing W

Figure 6.3c
Site Photos
May, 2015

89 Brighton Avenue
Boston, MA

7

Project Certification

This expanded PNF has been submitted to the Boston Redevelopment Authority, as required by Article 80 of the Zoning Code, on the June 26, 2015.

Proponent
Brighton Gardner Properties, LLC

Mike Samuels
Manager

Preparer
Vanasse Hangen Brustlin, Inc.

Seth Lattrell
Environmental Planner

Appendix A
Letter of Inent

goulston&storrs
counsellors at law
Peter L. Tamm
ptamm@goulstonstorrs.com
(617) 574-7891 (tel)

April 13, 2015

VIA HAND DELIVERY

Mr. Brian Golden, Director
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Re: Letter of Intent to File Project Notification Form – Article 80 Large Project Review
89-95 Brighton Avenue, Allston Village

Dear Director Golden:

On behalf of Brighton Gardner Properties LLC, we are pleased to submit this Letter of Intent prior to filing a Project Notification Form for the redevelopment of a site consisting of three brownfield parcels totaling 33,820 square feet located at 89-95 Brighton Avenue and 41 Gardner Street in Allston Village, pursuant to Article 80 of the Boston Zoning Code.

Completion of this redevelopment project will transform this underutilized site into a vibrant mixed-use, mixed-income, transit-oriented development. The project will also further the goals of the *Boston 2030* Housing Plan by creating new housing for Boston's middle class workforce. The proposed project is anticipated to include up to 138 residential apartments, approximately 8,000 square feet of new retail space on Brighton Avenue, 68 parking spaces on the ground floor tucked behind the retail space, covered bike storage for 138 bicycles, and an on-site bicycle repair station.

The overall site is comprised of land in the 3F-4,000 and CC-1 Subdistricts of the Allston/Brighton Neighborhood District. Accordingly, we expect that relief will be necessary from varying zoning requirements in order to provide the consistency necessary to facilitate the construction of this mixed-use redevelopment project. Additionally, the project will require Large Project Review and will also be subject to Article 85 to proceed with the demolition of the existing structures on the site.

My client anticipates filing an Expanded Project Notification Form within the next two months and we will coordinate with BRA staff throughout the pre-submission planning stage. We look forward to working with the community, the BRA, and interested stakeholders throughout the process.

In the interim, if you have any questions pertaining to the proposed project, please do not hesitate to contract me. Thank you.

Sincerely,

BRIGHTON GARDNER PROPERTIES LLC
By their attorneys,
GOULSTON & STORRS

By: _____
Peter L. Tamm

cc: Phil Cohen- BRA
Erico Lopez – BRA
Michael Samuels – Eden Properties
Noah Maslan – Eden Properties
File

Appendix B
Transportation Supporting Documentation

Note: The following transportation supporting documentation is provided electronically on the enclosed CD-ROM. Hard copies are available upon request.

- Traffic Volume Count Data
- Local Trip Distribution
- Vehicle Crash Data Worksheets
- Intersection Capacity Analyses
  - 2015 Existing Conditions
  - 2020 No Build Conditions
  - 2020 Build Conditions

Appendix C
BRA Checklists

- Accessibility Checklist
- Climate Change Preparedness and Resiliency Checklist
- LEED Checklist

Accessibility Checklist

(to be added to the BRA Development Review Guidelines)

In 2009, a nine-member Advisory Board was appointed to the Commission for Persons with Disabilities in an effort to reduce architectural, procedural, attitudinal, and communication barriers affecting persons with disabilities in the City of Boston. These efforts were instituted to work toward creating universal access in the built environment.

In line with these priorities, the Accessibility Checklist aims to support the inclusion of people with disabilities. In order to complete the Checklist, you must provide specific detail, including descriptions, diagrams and data, of the universal access elements that will ensure all individuals have an equal experience that includes full participation in the built environment throughout the proposed buildings and open space.

In conformance with this directive, all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding the following:

- improvements for pedestrian and vehicular circulation and access;
- encourage new buildings and public spaces to be designed to enhance and preserve Boston's system of parks, squares, walkways, and active shopping streets;
- ensure that persons with disabilities have full access to buildings open to the public;
- afford such persons the educational, employment, and recreational opportunities available to all citizens; and
- preserve and increase the supply of living space accessible to persons with disabilities.

We would like to thank you in advance for your time and effort in advancing best practices and progressive approaches to expand accessibility throughout Boston's built environment.

Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
    a. http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
    a. http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Boston Complete Street Guidelines
    a. http://bostoncompletestreets.org/
4. City of Boston Mayors Commission for Persons with Disabilities Advisory Board
    a. http://www.cityofboston.gov/Disability
5. City of Boston – Public Works Sidewalk Reconstruction Policy
    a. http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
6. Massachusetts Office On Disability Accessible Parking Requirements
    a. www.mass.gov/anf/docs/mod/hp-parking-regulations-mod.doc
7. MBTA Fixed Route Accessible Transit Stations
    a. http://www.mbta.com/about_the_mbta/accessibility/

Article 80 | ACCESSIBILTY CHECKLIST

Project Information

Project Name:	**89 Brighton Ave**
Project Address Primary:	**89-95 Brighton Ave, Allston, MA 02134**
Project Address Additional:	**N/A**
Project Contact (name / Title / Company / email / phone):	**Noah Maslan / Principal / Eden Properties** **Noah@Eden-Properties.com / 617-594-1160**

Team Description

Owner / Developer:	**Brighton Gardner Properties LLC**
Architect:	**Prellwitz Chilinski Associates, Inc.**
Engineer (building systems):	**Wozny/Barbar & Associates, Inc.**
Sustainability / LEED:	**Prellwitz Chilinski Associates, Inc.**
Permitting:	**VHB, Inc.**
Construction Management:	**N/A**

Project Permitting and Phase

At what phase is the project – at time of this questionnaire?

PNF / Expanded PNF Submitted	Draft / Final Project Impact Report Submitted	BRA Board Approved
BRA Design Approved	Under Construction	Construction just completed:

Building Classification and Description

What are the principal Building Uses - select all appropriate uses?

Residential – One to Three Unit	**Residential - Multi-unit, Four +**	Institutional	Education
Commercial	Office	**Retail**	Assembly
Laboratory / Medical	Manufacturing / Industrial	Mercantile	Storage, Utility and Other

First Floor Uses (List): ***Retail, residential entrance lobby and management office, parking***

What is the Construction Type – select most appropriate type?

Wood Frame	Masonry	**Steel Frame**	Concrete

Describe the building?

Site Area:	***33,820 SF***	Building Area:	***124, 300 SF***
Building Height:	***48' to 69'-4"***	Number of Stories:	***4 to 6 Flrs.***
First Floor Elevation:	***42.8 BCB***	Are there below grade spaces:	***Yes*** / *No*

Assessment of Existing Infrastructure for Accessibility:

This section explores the proximity to accessible transit lines and proximate institutions such as, but not limited to hospitals, elderly and disabled housing, and general neighborhood information. The proponent should identify how the area surrounding the development is accessible for people with mobility impairments and should analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.

Provide a description of the development neighborhood and identifying characteristics.	**The project site is located on three parcels accessed from Brighton Avenue, Linden Street and Gardner Street with a primarily flat topography. The neighborhood has a majority of older stock of multi-family residential buildings. The buildings in the immediate area range from five and six story apartment buildings along Linden Street, Gardner Street and Brighton Ave. The existing sidewalks along Brighton Avenue and Linden Street are 10 ft and 7 ft wide respectively. In order to provide a better pedestrian experience, the building footprint on the ground level has been set back from the property line to provide a 12ft sidewalk along Brighton Ave and a 9.5 ft sidewalk along Linden Street**

	allowing for new tree pit installations and wider walkways. Ground floor retail spaces are proposed to have operable doors
List the surrounding ADA compliant MBTA transit lines and the proximity to the development site: Commuter rail, subway, bus, etc.	MBTA bus routes 57, 64 and 66, and green B line stops at Harvard Ave are within a quarter mile radius of the proposed site. The MBTA bus stop for route 57 is at the corner of the proposed site. In addition, two of the Worcester line Commuter rail stops – the new Boston Landing stop and proposed West station stops are within a half mile radius of the site.
List the surrounding institutions: hospitals, public housing and elderly and disabled housing developments, educational facilities, etc.	The Project Site is in close proximity to public transit, including the MBTA Green Line and multiple bus routes, providing convenient access to major job centers such as Downtown Boston, the Longwood Medical Area, and Kendall Square. In addition, some of Boston's largest employers are in proximity to the site such as, New Balance, St. Elizabeth's Hospital, Boston University, and Harvard University. Refer to Chapter 3, Transportation and Parking of this PNF for further details.
Is the proposed development on a priority accessible route to a key public use facility? List the surrounding: government buildings, libraries, community centers and recreational facilities and other related facilities.	No

Surrounding Site Conditions – Existing:

This section identifies the current condition of the sidewalks and pedestrian ramps around the development site.

Are there sidewalks and pedestrian ramps existing at the development site?	Yes
If yes above, list the existing sidewalk and pedestrian ramp materials and physical condition at the development site.	The existing sidewalks on all three streets are concrete and in various physical conditions. The sidewalk along Brighton Ave is 10 ft wide with tree pits. The 7 ft sidewalk along Linden street has cracks and a large curb cut for the current truck rental use. The cross slope at intersection of Brighton and linden street does not appear to be flush with the road. There is a protruding traffic light mounted at the same intersection.
Are the sidewalks and pedestrian ramps existing-to-remain? If yes, have the sidewalks and pedestrian ramps been verified as compliant?	No

If yes, please provide surveyors report.	
Is the development site within a historic district? If yes, please identify.	No

Surrounding Site Conditions – Proposed

This section identifies the proposed condition of the walkways and pedestrian ramps in and around the development site. The width of the sidewalk contributes to the degree of comfort and enjoyment of walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Typically, a five foot wide Pedestrian Zone supports two people walking side by side or two wheelchairs passing each other. An eight foot wide Pedestrian Zone allows two pairs of people to comfortable pass each other, and a ten foot or wider Pedestrian Zone can support high volumes of pedestrians.

Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? See: www.bostoncompletestreets.org	Yes
If yes above, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, Boulevard.	Neighborhood Main, Connector, Residential
What is the total width of the proposed sidewalk? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone.	Brighton Avenue: Total:10', Frontage:3.5, Pedestrian: 5', Furnishing: 1.5' Linden Street: Total: 9.33', Frontage:3.33', Pedestrian: 5', Furnishing: 1' Gardner Street: Total:8', Frontage:1', Pedestrian: 4', Furnishing: 3'
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	Frontage: Concrete on Private, Pedestrian: Concrete on both Private and Public, Furnishing: Concrete on Public
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the City of Boston Public Improvement Commission?	Yes - The City will require a 5' width pedestrian sidewalk to be located on the public right-of-way. If the 5' width sidewalk cannot be provided entirely within the public right-of-way, the project can include the sidewalk within the private property. The owner shall grant the City a pedestrian easement over the portion of the sidewalk that is within the private property. This will ensure the City has continue right to maintain a public sidewalk for public pedestrian access. The

	pedestrian easement granting process can be permitted through the Public Improvement Commission process.
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way?	**Yes**
If yes above, what are the proposed dimensions of the sidewalk café or furnishings and what will the right-of-way clearance be?	**3 ft of sidewalk café and 9 ft of right of way clearance**

Proposed Accessible Parking:

See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability Handicap Parking Regulations.

What is the total number of parking spaces provided at the development site parking lot or garage?	**A total of 69 on-grade parking spaces will be provided with two designated accessible parking spaces near the residential entrance.**
What is the total number of accessible spaces provided at the development site?	**Same as above**
Will any on street accessible parking spaces be required? **If yes,** has the proponent contacted the Commission for Persons with Disabilities and City of Boston Transportation Department regarding this need?	**No**
Where is accessible visitor parking located?	**The two designated accessible parking spaces will be located near the residential entrance with elevators.**
Has a drop-off area been identified? **If yes,** will it be accessible?	**No**

Include a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations. Please include route distances.	**All ground floor retail spaces and the residential lobby will be accessible from the adjacent sidewalks and the rear parking lot.**

Circulation and Accessible Routes:

The primary objective in designing smooth and continuous paths of travel is to accommodate persons of all abilities that allow for universal access to entryways, common spaces and the visit-ability* of neighbors.

**Visit-ability – Neighbors ability to access and visit with neighbors without architectural barrier limitations*

Provide a diagram of the accessible route connections through the site.	**PNF Figure 3.12 shows the proposed access and circulation through the Project Site.**
Describe accessibility at each entryway: Flush Condition, Stairs, Ramp Elevator.	**All entryways are accessible via flush condition from street level.**
Are the accessible entrance and the standard entrance integrated?	**Yes**
If no above, what is the reason?	
Will there be a roof deck or outdoor courtyard space? If yes, include diagram of the accessible route.	**Yes. Resident amenity spaces are located on the 6th floor accessible by two elevators, and some units have patios. All outdoor patios and decks will be flush with the interior floors.**
Has an accessible routes way-finding and signage package been developed? If yes, please describe.	**No**

Accessible Units: (If applicable)

Article 80 | ACCESSIBILTY CHECKLIST

In order to facilitate access to housing opportunities this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing choice.

What is the total number of proposed units for the development?	**138 units**
How many units are for sale; how many are for rent? What is the market value vs. affordable breakdown?	**All units are for rent.**
How many accessible units are being proposed?	**7 units at 5% (two Studios, two 1 bedrooms, two 2-bedrooms, one 2 bedroom plus den)**
Please provide plan and diagram of the accessible units.	**Specific locations of accessible units are to be confirmed**
How many accessible units will also be affordable? If none, please describe reason.	**13%**
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs at entry or step to balcony. **If yes,** please provide reason.	**No**
Has the proponent reviewed or presented the proposed plan to the City of Boston Mayor's Commission for Persons with Disabilities Advisory Board?	**Not yet**
Did the Advisory Board vote to support this project? **If no,** what recommendations did the Advisory Board give to make this project more accessible?	**See above**

Thank you for completing the Accessibility Checklist!
For questions or comments about this checklist or accessibility practices, please contact:

kathryn.quigley@boston.gov | Mayors Commission for Persons with Disabilities

Climate Change Preparedness and Resiliency Checklist for New Construction

In November 2013, in conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the Boston Redevelopment Authority adopted policy for all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding project resiliency, preparedness, and to mitigate any identified adverse impacts that might arise under future climate conditions.

For more information about the City of Boston's climate policies and practices, and the 2011 update of the climate action plan, *A Climate of Progress*, please see the City's climate action web pages at http://www.cityofboston.gov/climate

In advance we thank you for your time and assistance in advancing best practices in Boston.

Climate Change Analysis and Information Sources:

1. Northeast Climate Impacts Assessment (www.climatechoices.org/ne/)
2. USGCRP 2009 (http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/)
3. Army Corps of Engineers guidance on sea level rise (http://planning.usace.army.mil/toolbox/library/ECs/EC11652212Nov2011.pdf)
4. Proceeding of the National Academy of Science, "Global sea level rise linked to global temperature", Vermeer and Rahmstorf, 2009 (http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf)
5. "Hotspot of accelerated sea-level rise on the Atlantic coast of North America", Asbury H. Sallenger Jr*, Kara S. Doran and Peter A. Howd, 2012 (http://www.bostonredevelopmentauthority.org/planning/Hotspot of Accelerated Sea-level Rise 2012.pdf)
6. "Building Resilience in Boston": Best Practices for Climate Change Adaptation and Resilience for Existing Buildings, Linnean Solutions, The Built Environment Coalition, The Resilient Design Institute, 2103 (http://www.greenribboncommission.org/downloads/Building_Resilience_in_Boston_SML.pdf)

Checklist

Please respond to all of the checklist questions to the fullest extent possible. For projects that respond "Yes" to any of the D.1 – Sea-Level Rise and Storms, Location Description and Classification questions, please respond to all of the remaining Section D questions.

Checklist responses are due at the time of initial project filing or Notice of Project Change and final filings just prior seeking Final BRA Approval. A PDF of your response to the Checklist should be submitted to the Boston Redevelopment Authority via your project manager.

Please Note: When initiating a new project, please visit the BRA web site for the most current Climate Change Preparedness & Resiliency Checklist.

A.1 - Project Information

Project Name:	**89 Brighton Ave**
Project Address Primary:	**89-95 Brighton Ave, Allston, MA 02134**
Project Address Additional:	**N/A**
Project Contact (name / Title / Company / email / phone):	**Noah Maslan / Principal / Eden Properties** **Noah@Eden-Properties.com / 617-594-1160**

A.2 - Team Description

Owner / Developer:	**Brighton Gardner Properties LLC**
Architect:	**Prellwitz Chilinski Associates, Inc.**
Engineer (building systems):	**Wozny/Barbar & Associates, Inc.**
Sustainability / LEED:	**Prellwitz Chilinski Associates, Inc.**
Permitting:	**VHB, Inc.**
Construction Management:	**N/A**
Climate Change Expert:	**N/A**

A.3 - Project Permitting and Phase

At what phase is the project – most recent completed submission at the time of this response?

PNF / Expanded PNF Submission	Draft / Final Project Impact Report Submission	BRA Board Approved	Notice of Project Change
Planned Development Area	BRA Final Design Approved	Under Construction	Construction just completed:

A.4 - Building Classification and Description

List the principal Building Uses:	**Residential**
List the First Floor Uses:	**Retail, Residential Lobby**

What is the principal Construction Type – select most appropriate type?

Wood Frame	Masonry	**Steel Frame**	Concrete

Describe the building?

Site Area:	*33,820 SF*	Building Area:	*124,300 SF*
Building Height:	*48 ft to 69 Ft.*	Number of Stories:	*4 to 6 Flrs.*
First Floor Elevation (reference Boston City Base):	*42.8 BCB.*	Are there below grade spaces/levels, if yes how many:	*Partial, 1 existing approx. 4,000 sf basement to be reused*

A.5 - Green Building

Which LEED Rating System(s) and version has or will your project use (by area for multiple rating systems)?

Select by Primary Use:	New Construction	Core & Shell	Healthcare	Schools
	Retail	**Homes Midrise**	Homes	Other
Select LEED Outcome:	**Certified**	Silver	Gold	Platinum

Will the project be USGBC Registered and / or USGBC Certified?

Registered:	*Yes / **No***	Certified:	*Yes / **No***

A.6 - Building Energy

What are the base and peak operating energy loads for the building?

Electric:	***1,300 (kW)***	Heating:	***4.8 (MMBtu/hr)***
What is the planned building Energy Use Intensity:	***0.012 (kW/SF)***	Cooling:	***240(Tons/hr)***

What are the peak energy demands of your critical systems in the event of a service interruption?

Electric:	*TBD (kW)*	Heating:	*TBD (MMBtu/hr)*
		Cooling:	*TBD (Tons/hr)*

What is nature and source of your back-up / emergency generators? ***No emergency generators are proposed as part of this project.***

Electrical Generation:	*(kW)*		Fuel Source:	
System Type and Number of Units:	Combustion Engine	Gas Turbine	Combine Heat and Power	*(Units)*

B - Extreme Weather and Heat Events

Climate change will result in more extreme weather events including higher year round average temperatures, higher peak temperatures, and more periods of extended peak temperatures. The section explores how a project responds to higher temperatures and heat waves.

B.1 - Analysis

What is the full expected life of the project?

Select most appropriate:	10 Years	25 Years	50 Years	**75 Years**

What is the full expected operational life of key building systems (e.g. heating, cooling, ventilation)?

Select most appropriate:	10 Years	**25 Years**	50 Years	75 Years

What time span of future Climate Conditions was considered?

Select most appropriate:	10 Years	25 Years	**50 Years**	75 Years

Analysis Conditions - What range of temperatures will be used for project planning – Low/High?

8.1 / 90.6 Deg

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

95 Deg.	*5 Days*	*2 Events / yr.*

What Drought characteristics will be used for project planning – Duration and Frequency?

5 Days	*2 Events / yr.*

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

41.51 Inches / yr.	*4.9 Inches*	*127 Events / yr.*

What Extreme Wind Storm Event characteristics will be used for project planning – Peak Wind Speed, Duration of Storm Event, and Frequency of Events per year?

Peak Wind	*Hours*	*Events / yr.*

B.2 - Mitigation Strategies

What will be the overall energy performance, based on use, of the project and how will performance be determined?

Building energy use below code:	≥20%	**In accordance with the current Stretch Energy Code (ASHRAE 90.1-2007, Appendix G).**
How is performance determined:	**A building energy model will be conducted as design advances and as required for a future Building Permit.**	

What specific measures will the project employ to reduce building energy consumption?

Select all appropriate:	**High performance building envelop**	**High performance lighting & controls**	**Building day lighting**	**EnergyStar equip. / appliances**
	High performance HVAC equipment	**Energy recovery ventilation**	No active cooling	No active heating
Describe any added measures:				

What are the insulation (R) values for building envelop elements?

Roof:	*R = **39***	Walls / Curtain Wall Assembly:	***R = Walls = R-21 CW U-Value=0.31 SF U-Value=0.32 (System Performance)***
Foundation:	*R = **10***	Basement / Slab:	*R =**NA***
Windows:	*U =**0.24***	Doors:	*U =**0.37***

What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure?

On-site clean energy / CHP system(s)	Building-wide power dimming	Thermal energy storage systems	Ground source heat pump

	On-site Solar PV	On-site Solar Thermal	Wind power	None
Describe any added measures:	**Participate in the Energy Start Program, install LED Lighting**			

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems? **No**

Select all appropriate:	Connected to local distributed electrical	Building will be Smart Grid ready	Connected to distributed steam, hot, chilled water	Distributed thermal energy ready

Will the building remain operable without utility power for an extended period?

	*Yes / **No***	If yes, for how long:	*Days*
If Yes, is building "Islandable?			
If Yes, describe strategies:			

Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure:

Select all appropriate:	**Solar oriented – longer south walls**	Prevailing winds oriented	External shading devices	Tuned glazing,
	Building cool zones	**Operable windows**	**Natural ventilation**	Building shading
	Potable water for drinking / food preparation	Potable water for sinks / sanitary systems	Waste water storage capacity	**High Performance Building Envelop**
Describe any added measures:				

What measures will the project employ to reduce urban heat-island effect?

Select all appropriate:	High reflective paving materials	Shade trees & shrubs	**High reflective roof materials**	Vegetated roofs
Describe other strategies:				

What measures will the project employ to accommodate rain events and more rain fall?

Select all appropriate:	On-site retention systems & ponds	**Infiltration galleries & areas**	vegetated water capture systems	Vegetated roofs
Describe other strategies:				

What measures will the project employ to accommodate extreme storm events and high winds?

Select all appropriate:	Hardened building structure & elements	**Buried utilities & hardened infrastructure**	Hazard removal & protective landscapes	Soft & permeable surfaces (water infiltration)
Describe other strategies:				

C - Sea-Level Rise and Storms

Rising Sea-Levels and more frequent Extreme Storms increase the probability of coastal and river flooding and enlarging the extent of the 100 Year Flood Plain. This section explores if a project is or might be subject to Sea-Level Rise and Storm impacts.

C.1 - Location Description and Classification:

Do you believe the building to susceptible to flooding now or during the full expected life of the building?

	*Yes / **No***

Describe site conditions?

Site Elevation – Low/High Points:	*Boston City Base Elev. **41/43** (Ft.)*
Building Proximity to Water:	***3,250** Ft.*

Is the site or building located in any of the following?

Coastal Zone:	*Yes / **No***	Velocity Zone:	*Yes / **No***
Flood Zone:	*Yes / **No***	Area Prone to Flooding:	*Yes / **No***

Will the 2013 Preliminary FEMA Flood Insurance Rate Maps or future floodplain delineation updates due to Climate Change result in a change of the classification of the site or building location?

2013 FEMA Prelim. FIRMs:	*Yes / **No***	Future floodplain delineation updates:	*Yes / **No***

What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding?

***3,250** Ft.*

If you answered YES to any of the above Location Description and Classification questions, please complete the following questions.** **Otherwise you have completed the questionnaire; thank you!

C - Sea-Level Rise and Storms

This section explores how a project responds to Sea-Level Rise and / or increase in storm frequency or severity.

C.2 - Analysis

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

Sea Level Rise:	*Ft.*	Frequency of storms:	*per year*

C.3 - Building Flood Proofing

Describe any strategies to limit storm and flood damage and to maintain functionality during an extended periods of disruption.

What will be the Building Flood Proof Elevation and First Floor Elevation:

Flood Proof Elevation:	*Boston City Base Elev.(Ft.)*	First Floor Elevation:	*Boston City Base Elev. (Ft.)*

Will the project employ temporary measures to prevent building flooding (e.g. barricades, flood gates):

	Yes / No	If Yes, to what elevation	*Boston City Base Elev. (Ft.)*
If Yes, describe:			

What measures will be taken to ensure the integrity of critical building systems during a flood or severe storm event:

Systems located above 1st Floor.	Water tight utility conduits	Waste water back flow prevention	Storm water back flow prevention

Were the differing effects of fresh water and salt water flooding considered:

Yes / No

Will the project site / building(s) be accessible during periods of inundation or limited access to transportation:

Yes / No	If yes, to what height above 100 Year Floodplain:	*Boston City Base Elev. (Ft.)*

Will the project employ hard and / or soft landscape elements as velocity barriers to reduce wind or wave impacts?

Yes / No

If Yes, describe:

Will the building remain occupiable without utility power during an extended period of inundation:

Yes / No	If Yes, for how long:	*days*

Describe any additional strategies to addressing sea level rise and or sever storm impacts:

C.4 - Building Resilience and Adaptability

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Will the building be able to withstand severe storm impacts and endure temporary inundation?

Select appropriate:				
	Yes / No	Hardened / Resilient Ground Floor Construction	Temporary shutters and or barricades	Resilient site design, materials and construction

Can the site and building be reasonably modified to increase Building Flood Proof Elevation?

Select appropriate:				
	Yes / No	Surrounding site elevation can be raised	Building ground floor can be raised	Construction been engineered
Describe additional strategies:				

Has the building been planned and designed to accommodate future resiliency enhancements?

Select appropriate:				
	Yes / No	Solar PV	Solar Thermal	Clean Energy / CHP System(s)
		Potable water storage	Wastewater storage	Back up energy systems & fuel
Describe any specific or additional strategies:				

Thank you for completing the Boston Climate Change Resilience and Preparedness Checklist!

For questions or comments about this checklist or Climate Change Resiliency and Preparedness best practices, please contact: John.Dalzell.BRA@cityofboston.gov

LEED for Homes Mid-rise Simplified Project Checklist

for Homes

Builder Name:	Brighton Gardner Properties LLC, Eden Properties
Project Team Leader (if different):	
Home Address (Street/City/State):	89 Brighton Avenue, Boston, MA 02134

Project Description:

Building type: ***Mid-rise multi-family*** # of stories: varies - 4 to 6

# of units: 138 Avg. Home Size Adjustment: ***0***

Adjusted Certification Thresholds

Certified: ***45.0*** Gold: ***75.0***

Silver: ***60.0*** Platinum: ***90.0***

68 points

Project Point Total

Prelim: ***0 + 0 maybe pts*** **Final:** ***0***

Certification Level

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

Final Credit Category Total Points

ID: 0 ***SS: 0*** ***EA: 0*** ***EQ: 0***

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

Min. Point Thresholds Not Met for Prelim. OR Final Rating

date last updated :

last updated by :

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

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

					Max Pts	Project Points Preliminary Y/Pts	Maybe	No	Final Y/Pts	
Water Efficiency (WE)			(Minimum of 3 WE Points Required)	*OR*	Max					
1. Water Reuse		1	Water Reuse for MID-RISE		5	0	0		0	
2. Irrigation System		2.1	High Efficiency Irrigation System for MID-RISE	**WE 2.2**	2	0	0		0	8
		2.2	Reduce Overall Irrigation Demand by at Least 45% for MID-RISE		2	0	0		0	
3. Indoor Water Use		3.1	High-Efficiency Fixtures and Fittings		3	0	0		0	
		3.2	Very High Efficiency Fixtures and Fittings		6	0	0		0	
		3.3	Water Efficient Appliances for MID-RISE		2	0	0		0	
			Sub-Total for WE Category:		***15***	0	0		0	
Energy and Atmosphere (EA)			(Minimum of 0 EA Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts	
1. Optimize Energy Performance		1.1	Minimum Energy Performance for MID-RISE		Prereq					
		1.2	Testing and Verification for MID-RISE		Prereq					
		1.3	Optimize Energy Performance for MID-RISE		34 20	0	0		0	
7. Water Heating		7.1	Efficient Hot Water Distribution		2	0	0		0	21
		7.2	Pipe Insulation		1	0	0		0	
11. Residential Refrigerant Management		11.1	Refrigerant Charge Test		Prereq					
		11.2	Appropriate HVAC Refrigerants		1	0	0		0	
			Sub-Total for EA Category:		***38***	0	0		0	
Materials and Resources (MR)			(Minimum of 2 MR Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts	
1. Material-Efficient Framing		1.1	Framing Order Waste Factor Limit		Prereq					
		1.2	Detailed Framing Documents	**MR 1.5**	1	0	0		0	
		1.3	Detailed Cut List and Lumber Order	**MR 1.5**	1	0	0		0	
		1.4	Framing Efficiencies	**MR 1.5**	3	0	0		0	
		1.5	Off-site Fabrication		4	0	0		0	6
2. Environmentally Preferable Products		2.1	FSC Certified Tropical Wood		Prereq					
		2.2	Environmentally Preferable Products		8	0	0		0	
3. Waste Management		3.1	Construction Waste Management Planning		Prereq					
		3.2	Construction Waste Reduction		3 2	0	0		0	
			Sub-Total for MR Category:		***16***	0	0		0	
Indoor Environmental Quality (EQ)			(Minimum of 6 EQ Points Required)	*OR*	Max	Y/Pts	Maybe	No	Y/Pts	
2. Combustion Venting		2	Basic Combustion Venting Measures		Prereq					
3. Moisture Control		3	Moisture Load Control		1	0	0 1		0	
4. Outdoor Air Ventilation		4.1	Basic Outdoor Air Ventilation for MID-RISE		Prereq					
		4.2	Enhanced Outdoor Air Ventilation for MID-RISE		2	0	0		0	
		4.3	Third-Party Performance Testing for MID-RISE		1	0	0		0	
5. Local Exhaust		5.1	Basic Local Exhaust		Prerequisite					
		5.2	Enhanced Local Exhaust		1	0	0		0	
		5.3	Third-Party Performance Testing		1	0	0		0	
6. Distribution of Space Heating and Cooling		6.1	Room-by-Room Load Calculations		Prereq					
		6.2	Return Air Flow / Room by Room Controls		1	0	0 1		0	6 +2 maybe
		6.3	Third-Party Performance Test / Multiple Zones		2	0	0		0	
7. Air Filtering		7.1	Good Filters		Prereq					
		7.2	Better Filters	**EQ 7.3**	1	0	0		0	
		7.3	Best Filters		2	0	0		0	
8. Contaminant Control		8.1	Indoor Contaminant Control during Construction		1	0	0		0	
		8.2	Indoor Contaminant Control for MID-RISE		2	0	0		0	
		8.3	Preoccupancy Flush		1	0	0		0	
9. Radon Protection		9.1	Radon-Resistant Construction in High-Risk Areas		Prereq					
		9.2	Radon-Resistant Construction in Moderate-Risk Areas		1	0	0		0	
10. Garage Pollutant Protection		10.1	No HVAC in Garage for MID-RISE		Prereq					
		10.2	Minimize Pollutants from Garage for MID-RISE	**EQ 10.3**	2	0	0		0	
		10.3	Detached Garage or No Garage for MID-RISE		3	0	0		0	
11. ETS Control		11	Environnmental Tobacco Smoke Reduction for MID-RISE		1	0	0		0	
12. Compartmentalization of Units		12.1	Compartmentalization of Units		Prereq					
		12.2	Enhanced Compartmentalization of Units		1	0	0		0	
			Sub-Total for EQ Category:		***21***	0	0		0	
Awareness and Education (AE)			(Minimum of 0 AE Points Required)		Max	Y/Pts	Maybe	No	Y/Pts	
1. Education of the Homeowner or Tenant		1.1	Basic Operations Training		Prereq					
		1.2	Enhanced Training		1	0	0		0	
		1.3	Public Awareness		1	0	0		0	1
2. Education of Building Manager		2	Education of Building Manager		1	0	0		0	
			Sub-Total for AE Category:		***3***	0	0		0	

68 total