144 Addison Street

East Boston, Massachusetts

Expanded Project Notification Form

January 19, 2018

submitted to the
Boston Planning & Development Agency

submitted by
Addison Street Partners, LLC

prepared by
Fort Point Associates, Inc.

in association with
Arrowstreet
Copley Wolff Design Group
Goulston & Storrs
Howard Stein Hudson
Nitsch Engineering
Sanborn Head & Associates, Inc.

Fort Point Associates, Inc.
Urban Planning Environmental Consulting Project Permitting

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

Chapter 1

PROJECT SUMMARY

CHAPTER 1: PROJECT SUMMARY

1.1 PROJECT IDENTIFICATION

Project Name: 144 Addison Street

Address/Location: 144 Addison Street, East Boston, MA 02128

Proponent: Addison Street Partners, LLC

Assessor's Parcel Number: 0100548100

1.2 PROJECT SITE

The proposed multi-family residential development located at 144 Addison Street in East Boston (the "Project") is located on an approximately 143,139 sf (3.3 acre) parcel entirely paved with asphalt and currently used for surface parking (the "Project Site"). There are no existing buildings on the Project Site.

The Project Site is bounded by the Brandywyne Village Apartments on the north, the former Maverick Mills building on the west, Addison Street on the south, and a private access road and Saratoga Street homes on the east. The adjacent neighborhood south of Orient Heights is characterized by a mix of land uses including commercial/industrial space and two to three-story multi-family residences and townhomes on small urban lots. The Massachusetts Bay Transportation Authority (MBTA) Orient Heights Blue Line station is located an approximately 10-minute walk northeast of the Project Site and the Wood Island Blue Line station is located an approximately 10-minute walk to the southeast. See Figure 1-1, Locus Map and Figure 1-2, Aerial View of Project Site and Surrounding Area.

1.2.1 SITE CONTROL

Bulgroup Colorado L.L.C. owns fee title to the Project Site. Addison Street Partners, LLC (the "Proponent"), an affiliate of Bulgroup Colorado L.L.C., anticipates acquiring the Project Site in 2018.

1.2.2 LEGAL INFORMATION

The Proponent is not aware of any legal judgments in effect or legal actions pending that are adverse to the Project. The Proponent is not in tax arrears on any property owned within the City of Boston.

1.2.3 EASEMENTS

Subject to completion of title and survey reviews for the Project Site, the Proponent is not aware of any public easements into, through, or surrounding the Project Site that would impair the advancement of the Project.

1.3 PROJECT SUMMARY

The Proponent proposes to redevelop the Project Site into an approximately 189,770 square foot (sf) gross floor area transit-oriented residential development, creating approximately 270 new housing units, approximately 179 parking spaces, and landscape and streetscape improvements.

The Project will improve the context of the Project Site by creating new residential uses on a parcel that is currently completely paved. The proposed design is composed of two buildings. The building fronting Addison Street (the "South Building") will provide three to five stories of residential units over structured parking spaces. The building on Project Site's north side (the "North Building"), accessible to the existing private driveway connection to McClellan Highway (the "McClellan Driveway") will provide five stories of residential units over structured parking spaces. The buildings will be connected by a residential amenity section in the center. The Project will provide pedestrian-oriented, accessible greenspace and streetscape enhancements includes upgraded sidewalks, street trees, and lighting.

The Project will incorporate multiple green building measures and will be Leadership in Energy and Environmental Design (LEED) certifiable as required by Article 37 of the City of Boston Zoning Code with a minimum goal of LEED Silver certifiable and the possibility of achieving LEED Gold. The full scope of sustainability strategies is discussed in more detail in Chapter 4, Sustainability. See Figure 1-3, Project Site Plan.

1.4 COMMUNITY PROCESS

The Proponent has been engaged in extensive community outreach throughout 2017, including formal community meetings and informal talks with abutters, community leaders, and City of Boston staff. The Proponent will continue to work with the Boston Planning & Development Agency (BPDA) and the neighborhood to gather feedback and develop a project that will benefit the neighborhood. The following list represents community meetings the Proponent held to describe the Project and gather neighborhood input.

- Abutters Meeting – August 10, 2017
- Harbor View Neighborhood Association – September 11, 2017
- Orient Heights Neighborhood Association – September 28, 2017

- Abutters Meeting – December 6, 2017

1.5 PUBLIC AND COMMUNITY BENEFITS

The Project includes a wide variety of public and community benefits, as outlined below:

- Creation of a new transit-oriented development by increasing residential density in proximity to the MBTA rail and bus services, shared cars, and by accommodating bicycle storage on-site;
- Replacement of a large impervious surface parking lot with a new, modern residential building featuring energy-efficient systems, new landscaping and permeable areas, improved stormwater treatment, and a reduction of the urban heat island effect;
- Support of the City's goals for a sustainable future through the development of energy-efficient and environmentally-friendly buildings that are expected to be certifiable as LEED Silver at a minimum with the possibility of reaching LEED Gold;
- Creation of new affordable housing units on-site and/or the contribution of funds to support the creation of affordable housing units off-site in compliance with the Inclusionary Development Policy (IDP);
- Contribution of approximately $352,053 to Boston Water and Sewer Commission for Infiltration/Inflow mitigation to be applied to the separation of combined sewer infrastructure in East Boston in order to reduce sewage overflow;
- Increase in property tax revenues to the City, expected to be approximately $682,360 annually; and
- Provision of approximately 300-400 full-time equivalent construction-related jobs, approximately 10 full-time equivalent permanent jobs, and stimulation of the local and regional economies.

1.6 SUMMARY OF ANTICIPATED PERMITS AND APPROVALS

The following table is a list of anticipated approvals for the Project.

Table 1-1: Anticipated Project Approvals

Agency	Approval
Local	
Boston Planning & Development Agency (BPDA)	• Article 80B Large Project Review • Article 80C Planned Development Area Development Plan • Certification of Compliance/Consistency with Article 80B and Article 80C
Boston Civic Design Commission	• Design Review Recommendation
Boston Zoning Commission	• Planned Development Area Development Plan
Boston Conservation Commission	• Order of Conditions
Boston Transportation Department	• Transportation Access Plan Agreement • Construction Management Plan
Boston Water and Sewer Commission	• Site Plan Approval • Water and Sewer Connection Permits
Boston Public Improvement Commission	• Specific Repairs (if required)
Inspectional Services Department	• Building Permit • Certificate of Occupancy
State	
Massachusetts Department of Environmental Protection	• Notification Prior to Construction or Demolition • Source Registration for Sewer Discharge
Federal	
Environmental Protection Agency	• National Pollutant Discharge Elimination System Permit
Federal Aviation Administration	• Determination of No Hazard to Air Navigation (if required for building or cranes)

1.6.1 MEPA REVIEW

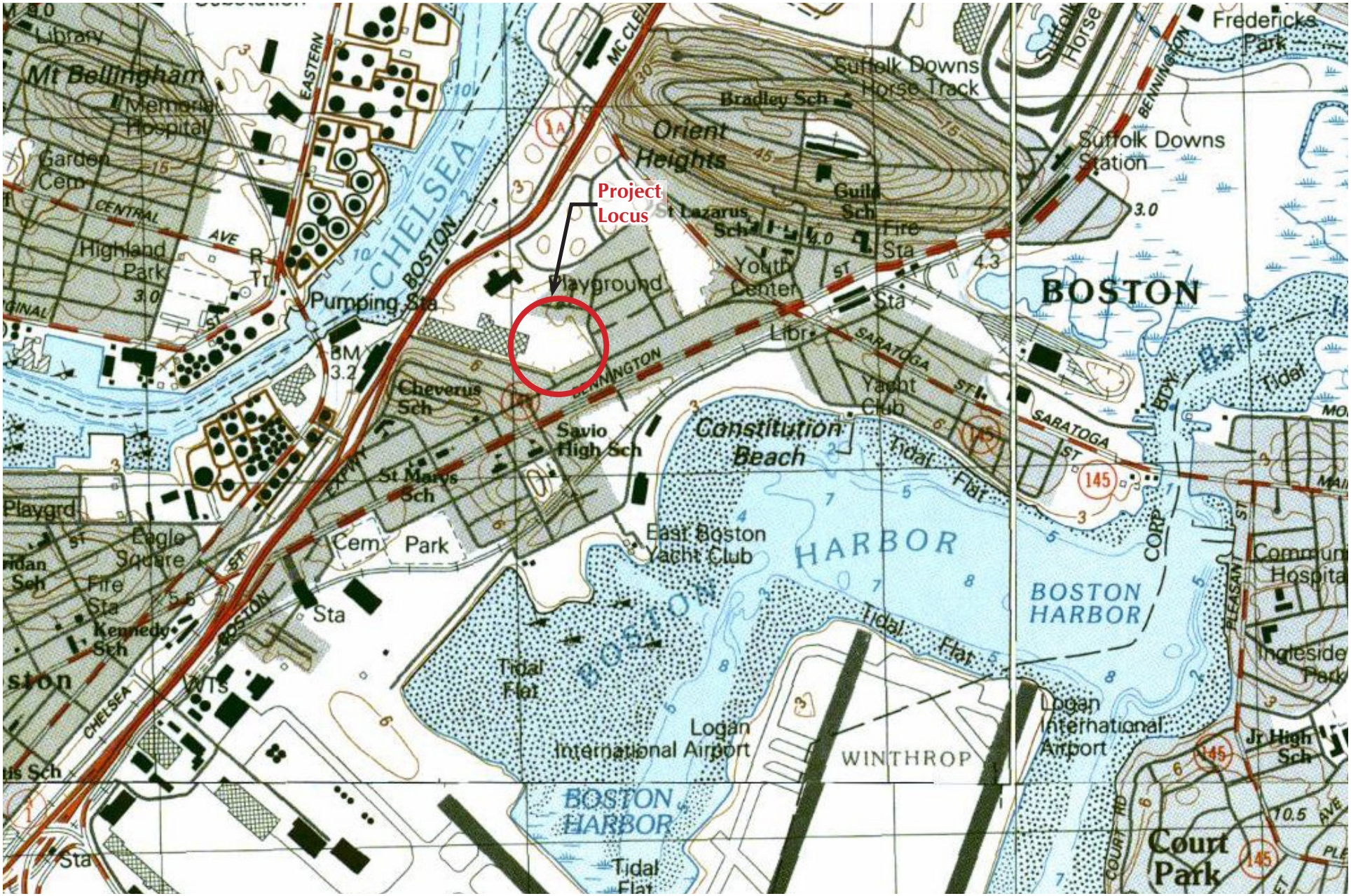
The Project is not anticipated to meet applicable MEPA thresholds and accordingly the Project would not be subject to MEPA jurisdiction.

1.7 PROJECT TEAM

Proponent	Addison Street Partners, LLC c/o Bulgroup Colorado L.L.C. 224 12th Avenue New York, NY 10001 Contact: Andrew Dulac adulac@wfboston.com 646-879-3572
Development Manager	Gate Residential Properties, LLC 265 Franklin Street, 6th Floor Boston, MA 02110 Contact: Damian Szary das@gateresidential.com 617-904-7111
Architect	Arrowstreet 10 Post Office Square, Suite 700N Boston, MA 0210910 Contact: David Bois bois@arrowstreet.com 617-666-7015 Amy Korte korte@arrowstreet.com 617-666-7026
Landscape Architect	Copley Wolff Design Group 10 Post Office Square, Suite 1315 Boston, MA 02109 Contact: John Copley jcopley@copley-wolff.com 617-654-9000

Legal	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 Contact: Matthew Kiefer mkiefer@goulstonstorrs.com 617-574-7597 David Linhart dlinhart@goulstonstorrs.com 617-574-4049
Planning and Permitting	Fort Point Associates, Inc. 31 State Street, 3rd Floor Boston, MA 02109 Contact: Robert Ricchi rricchi@fpa-inc.com 617-357-7044 x209
Transportation	Howard Stein Hudson 11 Beacon Street, Suite 1010 Boston, MA 02108 Contact: Brian Beisel bbeisel@hshassoc.com 617-348-3357
Civil Engineering	Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108 Contact: Chris Hodney chodney@nitscheng.com 857-206-8673 Gary Pease gpease@nitscheng.com 617-338-0063

Geotechnical	Sanborn Head & Associates, Inc. 239 Causeway Street, Suite 105 Boston, MA 02114 Contact: Stan Sadkowski ssadkowski@sanbornhead.com 857-327-9731

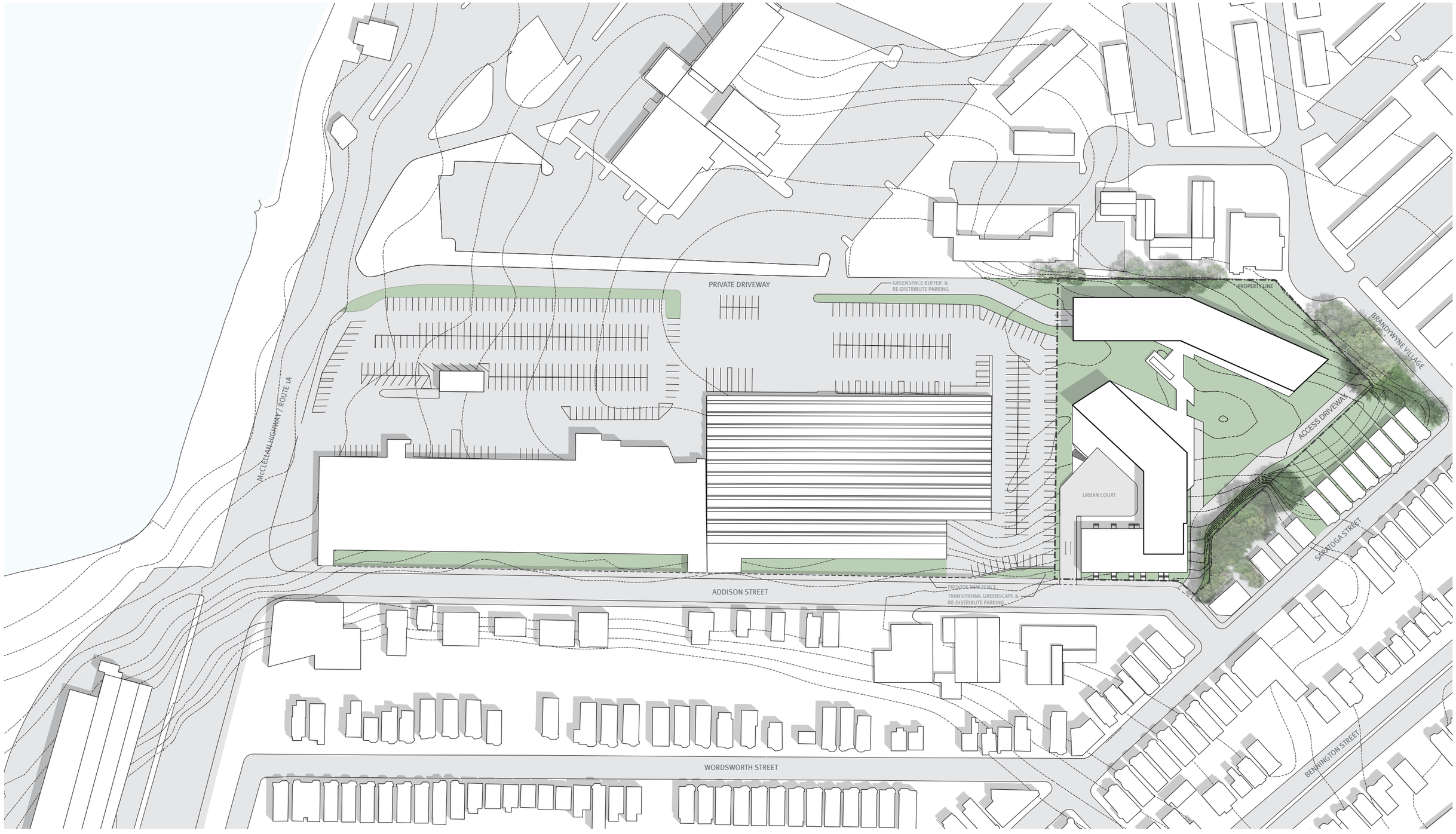


East Boston, Massachusetts

Figure 1-1
Locus Map
Source: USGS; Fort Point Associates, Inc., 2017

East Boston, Massachusetts

Figure 1-2
Aerial View of Project Site and Surrounding Area
Source: Google Earth; Fort Point Associates, Inc., 2017



East Boston, Massachusetts

Figure 1-3
Project Site Plan
Source: Arrowstreet, 2017

Chapter 2

PROJECT DESCRIPTION

CHAPTER 2: PROJECT DESCRIPTION

2.1 PROJECT SITE AND SURROUNDINGS

The proposed multi-family residential development located at 144 Addison Street, East Boston is located on an approximately 143,139 sf (3.3 acre) parcel entirely paved with asphalt and currently used for surface parking. There are no existing buildings on the Project Site.

The parcel is bounded by the Brandywyne Village Apartments on the north, the Maverick Mills building on the west, Addison Street on the south, and a private access driveway (the "Addison Driveway") and Saratoga Street homes on the east. The adjacent neighborhood south of Orient Heights is characterized by a mix of land uses including commercial/industrial space and two to three-story multi-family residences and townhomes on small urban lots. The Massachusetts Bay Transportation Authority (MBTA) Orient Heights Blue Line station is located an approximately 10-minute walk northeast of the Project Site and the Wood Island Blue Line station is located an approximately 10-minute walk to the southeast.

Existing grades range from a low point of approximately eight feet Boston City Base (BCB) in the parcel's central-east end to approximately 19 feet at Addison Street on the south, approximately nine feet on the west at the Maverick Mills site, approximately 12 to 16 feet on the north at the Brandywyne Village edge, and approximately 10 to 15 feet on the east and west where it meets the backyard of its Saratoga Street neighbors and the Addison Driveway. See Figures 2-1 and 2-2, Existing Conditions Survey; Figure 2-3, Oblique View of Project Site; and Figures 2-4 and 2-5, Existing Conditions Photographs.

2.2 PROPOSED PROJECT

2.2.1 INTRODUCTION

The Project entails the redevelopment of an existing surface parking lot into a transit-oriented 189,770 sf residential development including approximately 270 housing units, 179 parking spaces, residential amenity space, and landscaping off Addison Street and McClellan Highway. The Project will complement ongoing development in East Boston and the surrounding neighborhood and support the City's goal of the creation of new multi-family housing units.

The Project is designed in two buildings, ranging from three to five levels of wood-frame construction above one level of parking within a concrete podium at-grade. The layout and shapes of the buildings are designed to make the most efficient use of the Project Site, provide new landscaped areas, and to minimize impacts on neighbors in each direction. See Table 2-1, Project Program; Figure 2-6, Project Site Plan; and Figure 2-7 Parking Plan.

Table 2-1: Project Program

Project Component	Dimensions/Count
Project Site	143,139 sf (3.3 acre)
Gross Floor Area	approximately 189,770 sf
Floor Area Ratio	1.3
Residential Uses	270 new housing units 7,250 sf residential amenity space
Bicycle Parking	270 covered spaces for residents 15 exterior spaces for visitors
Vehicle Parking	179 parking spaces
Open Space	approximately 77,500 sf

2.2.2 RESIDENTIAL PROGRAM

The Project will provide new housing to the area with approximately 270 residential units, including studio, 1-bedroom, and 2-bedroom apartment units and amenity space for a total of approximately 189,770 square feet of new development. Approximately 179 at-grade parking spaces are proposed for a ratio of 0.66 spaces per residential unit. See Figures 2-8 through 2-10, Floor Plans.

The breakdown of the residential units is:

Table 2-2: Residential Program Summary

	Residential (sf)	Amenities (sf)	Total (sf)
North Building	98,000	0	98,000
South Building	84,500	7,270	91,770
Total	**182,500**	**7,270**	**189,770**

Table 2-3: Residential Units

	Studio	1 Bed	2 Bed	Total
North Building	30	85	30	145
South Building	29	64	32	125
Total	**59**	**149**	**62**	**270**
% of Total	**22**	**55**	**23**	**100**

2.3.1 SITE CIRCULATION, PARKING, AND ACCESS

Vehicular access to Project is arguably the most sensitive, and one of the most critical, aspects of the Project. The Project Site has limited public street frontage, with approximately 215 linear feet on Addison Street. Additionally, there is a desire by the abutters to limit new vehicular traffic on Addison Street. To address the abutter concerns, while also creating a front door to the Project, main vehicular access for the Project's future residents will be via the McClellan Driveway off McClellan Highway (Route 1A) with a separate and smaller scaled vehicular access point for taxis, ride sharing vehicles, and temporary visitors located off Addison Street.

There will be a single point of entry into the parking level for residents of the building, off McClellan Highway and through a shared easement on the adjacent 175 McClellan Highway (Maverick Mills) property. This single entry will help address the abutters' concerns related to additional traffic volumes on Addison Street, while limiting new vehicular traffic on Addison Street. Some abutters also voiced concerns regarding the number of vehicles exiting Project Site into the neighborhood, specifically by the Courtyard Marriot and Boardman Street, impacting the Orient Heights neighborhood. In an effort to address this concern, future residents will be able to either exit the Project directly to McClellan Highway via the existing McClellan Driveway or use a secondary exit out of the parking level to the privately-owned Addison Driveway on the east side of the Project Site, providing access toward the Saratoga Street end of Addison Street.

Entry for taxis, ride sharing vehicles, mail delivery, and future residents visiting the Project will occur off a small entry court located at the southwest corner of the Project Site, via a new curb cut off Addison Street. This entry court will have four guest parking spaces, to keep future residents from parking on Addison Street.

Residential move-ins and loading will occur either from the McClellan Driveway or from the Addison Driveway off the east end of Addison Street. Vehicles that require access to the north loading area will bypass the garage entry, along the northern edge of the Project Site, and park alongside the North Building. The Addison Driveway, which currently provides the Saratoga Street residents vehicular access to their backyards through existing private land, will be improved through new paving and an improved curb cut. See Figure 2-11, Project Site Circulation Plan.

2.3.2 OPEN SPACE AND LANDSCAPING

The Project's landscape is an integral part of the overall design concept. Today, the Project Site is a large asphalt parking lot, engineered to fit 900 vehicles at capacity, and is walled off from the surrounding neighborhood with a continuous and deteriorated chain link fence. The proposed design imagines that this massive,

inorganic surface could be revitalized with native plantings and vegetation running across the property to provide stormwater management and blur the boundary between the proposed parking level with the landscape.

The residential buildings have been designed to touch the ground as lightly as possible, and are lifted off the ground by a field of sculptural columns. The typical podium typology of garage below and building above is also blurred by transforming the traditional podium into a sculptural element which both floats above the landscape and peels down to meet the ground, encouraging movement across the Project Site and up through the buildings. The Project's residents and the surrounding neighborhood will not only benefit from enhanced views, but will also be more visually connected with the landscape.

In addition to creating a physical connection beneath the building, elevating the building above the landscape is also meant to maintain as much of the existing grade as possible. The existing soil is mostly clay and silt and the existing groundwater table is just a few feet below the lowest point of the Project Site. Understanding that the Project Site will be prone to periodic flooding and water retention during events of extreme precipitation, the lowest lying areas will be planted with native and hardy vegetation, which will also reduce stormwater runoff in the surrounding area. Additionally, maximizing vegetated, open spaces on the Project Site will allow a slow percolation and recharging of groundwater. See Figure 2-12, Landscape Plan.

2.3.3 CONSTRUCTION PHASING

The Project is anticipated to be built in two phases, starting in late 2018.

2.4 COMPLIANCE WITH BOSTON ZONING CODE

2.4.1 LARGE PROJECT REVIEW

Because the Project involves new construction in excess of 50,000 sf of gross floor area, the Project is subject to Large Project Review. Under the Mayor's Executive Order dated October 10, 2000, and amended on April 3, 2001, regarding mitigation for development projects, the Mayor may appoint an Impact Advisory Group to advise the BPDA on mitigation measures for projects undergoing Large Project Review. In connection with the Project's Large Project Review, the Project will also be subject to Boston Civic Design Commission review and the green building requirements of Article 37 of the Code.

2.4.2 ZONING DISTRICT

The Property is located in the McClellan Highway Economic Development Area Subdistrict of the East Boston Neighborhood District and is eligible for designation as a Planned Development Area (PDA). There are no applicable overlay districts. Zoning relief will be required in connection with the Project and is anticipated to be obtained via approval of the Applicant's proposed PDA Development Plan.

2.4.3 USES

Under the underlying zoning, allowed uses include community center, accessory parking, local or accessory retail, and certain service uses; however, multifamily dwelling use is forbidden. The establishment on the Project Site of any use not currently permitted under the underlying zoning is anticipated to be approved in the PDA Development Plan.

2.4.4 BUILDING DIMENSIONS

The Boston Zoning Code (the "Code") provides that a PDA Development Plan may increase the allowed height up to 55 feet within 250 feet of any street and any Subdistrict boundary. Addison Street abuts the southern lot line of the Project Site and certain residential Subdistricts (3F-2000 and MFR) abut the eastern/northern lot lines of the Project Site such that the PDA Development Plan may increase the allowed height for the Project Site accordingly. The Code further provides that a PDA Development Plan may increase the allowed floor area ratio up to 2.0. The establishment on the Project Site of any dimensional alteration not currently permitted under the underlying zoning is anticipated to be approved in the PDA Development Plan.

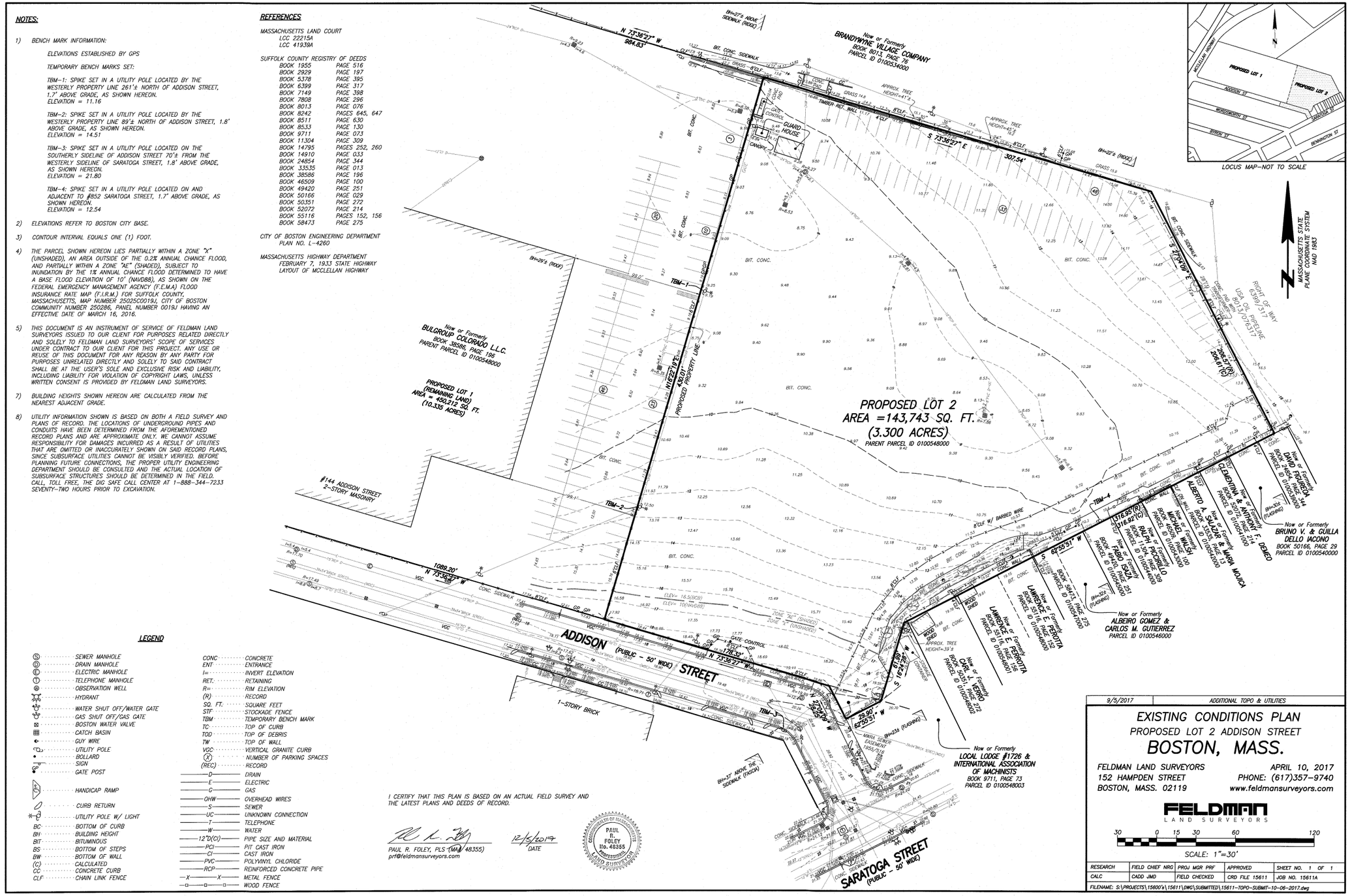
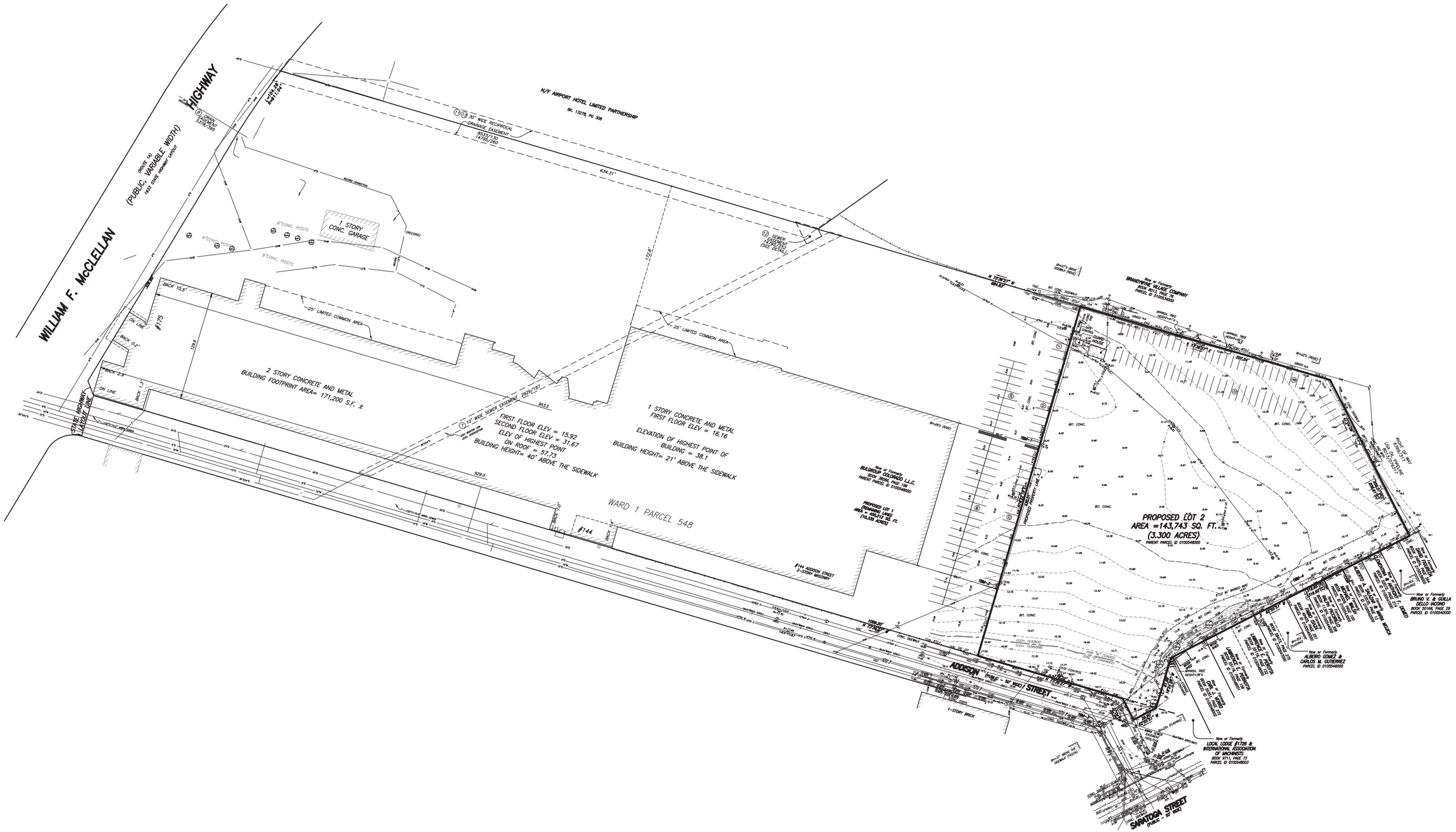


Figure 2-1
Existing Conditions Survey
Source: Feldman Land Surveyors, 2017



East Boston, Massachusetts

Figure 2-2
Existing Conditions Survey
Source: Fort Point Associates, Inc., 2014

East Boston, Massachusetts

Figure 2-3
Oblique View of Project Site
Source: Google Earth; Fort Point Associates, Inc., 2017

View 1: Project Site looking West - Brandywyne Village

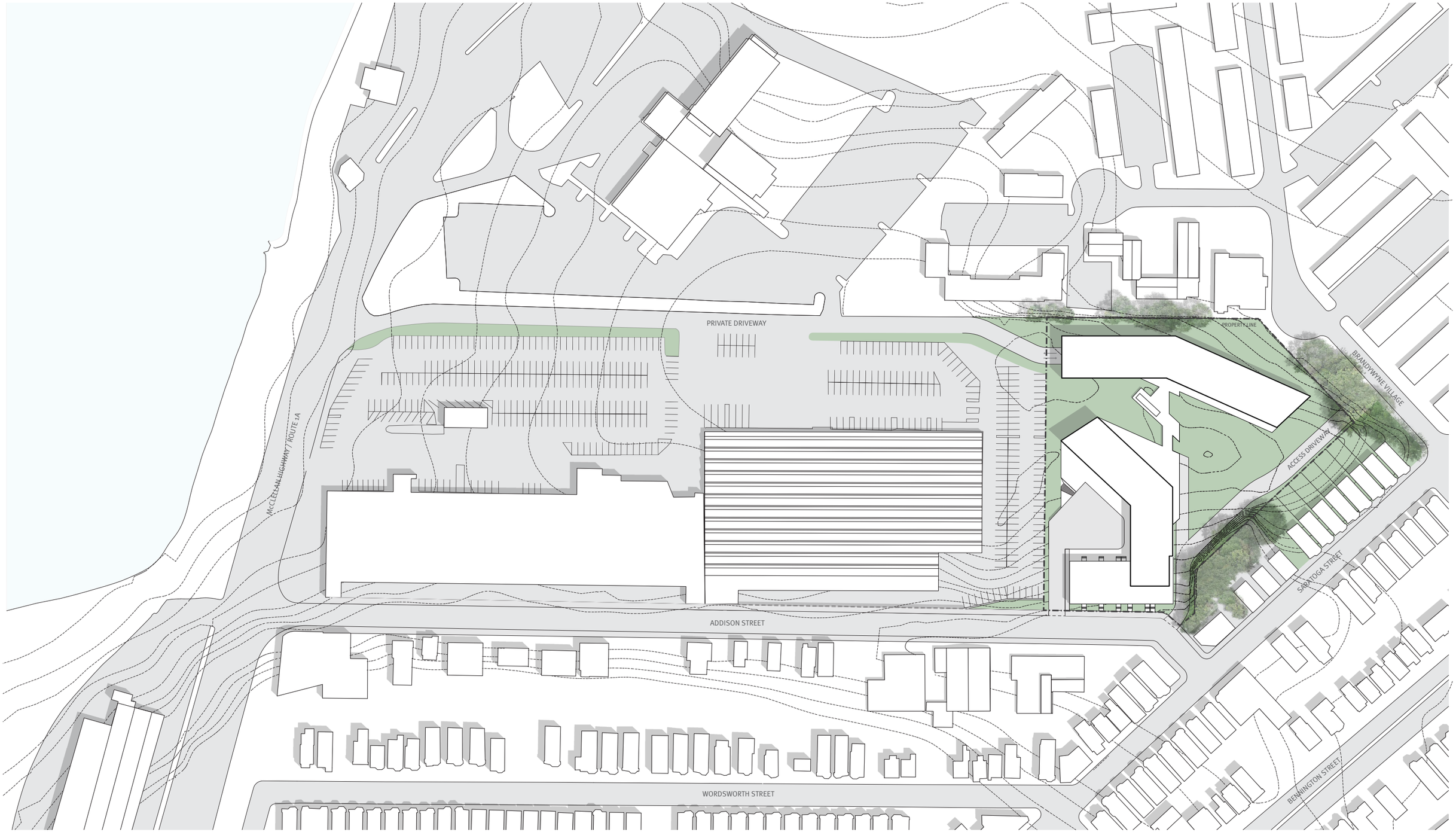
View 2: Private Driveway

Figure 2-4
Existing Conditions Photographs
Source: Fort Point Associates, Inc., 2017

View 3: Project Site looking North

View 4: Project Site looking East - Saratoga Street Homes

Figure 2-5
Existing Conditions Photographs
Source: Fort Point Associates, Inc., 2017



East Boston, Massachusetts

Figure 2-6
Project Site Plan
Source: Arrowstreet, 2017

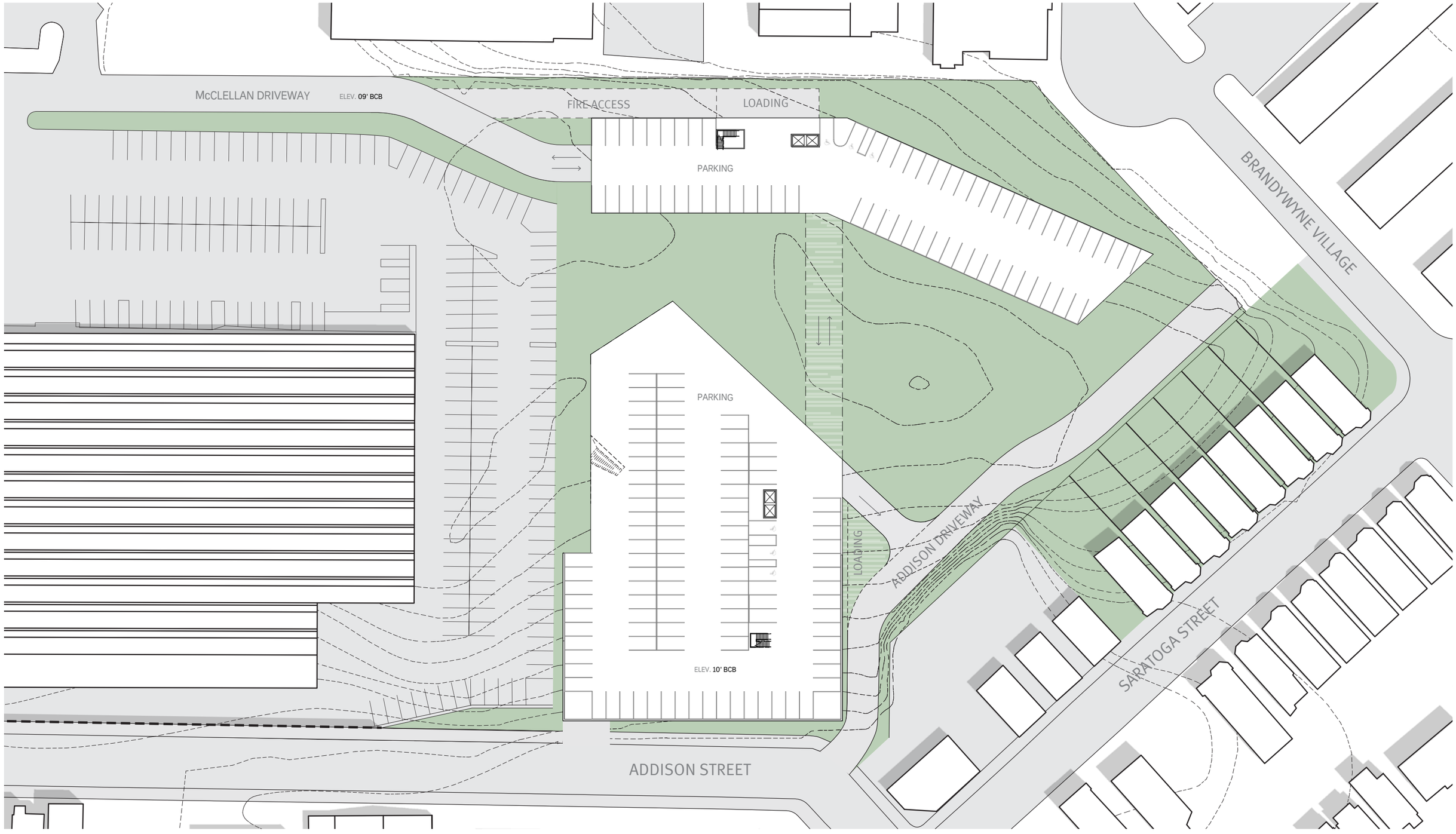


Figure 2-7
Parking Plan
Source: Arrowstreet, 2017

Figure 2-8
Ground Floor Plan
Source: Arrowstreet, 2017

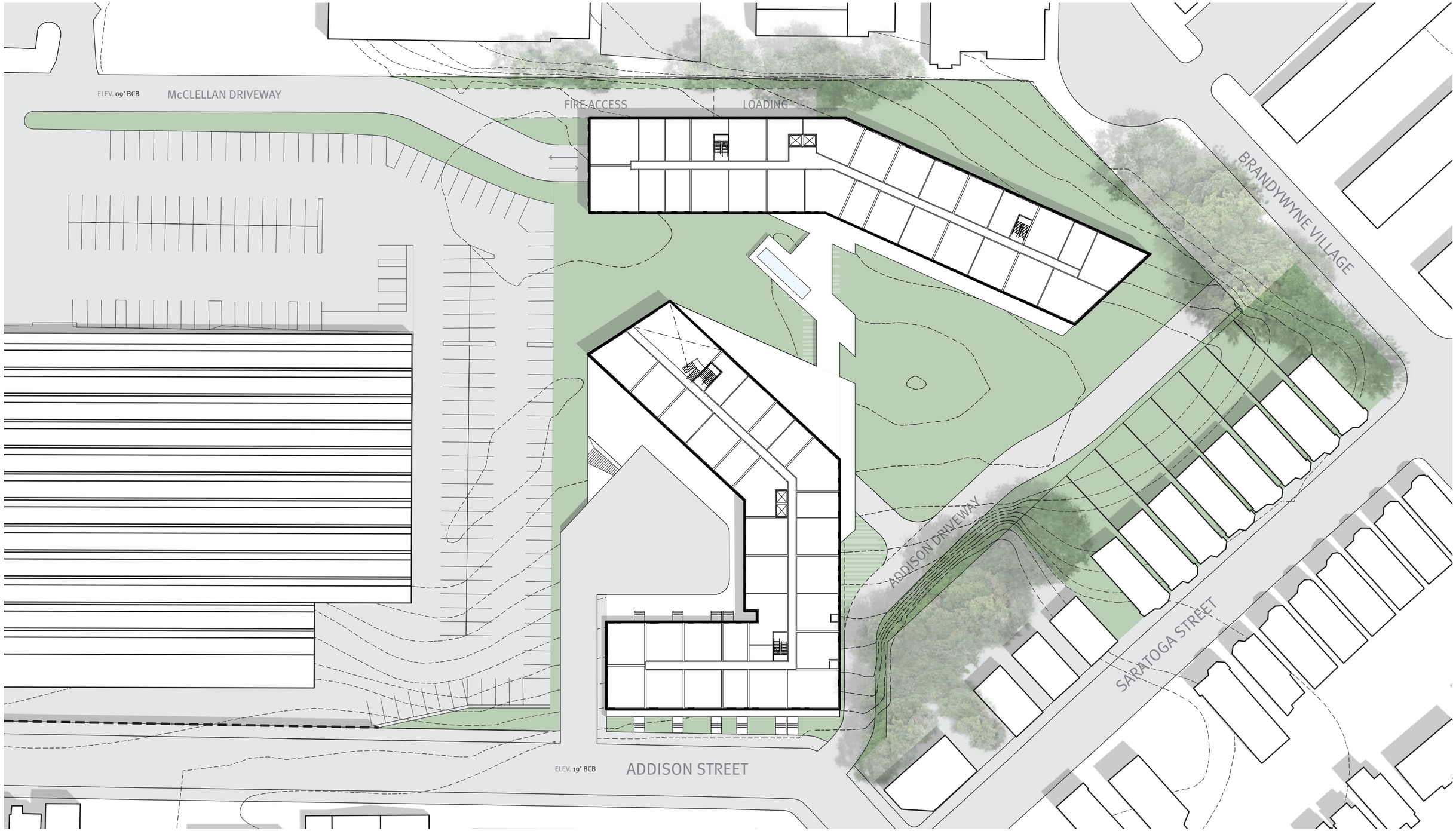


Figure 2-9
Level 2 and 3 Typical Floor Plan
Source: Arrowstreet, 2017

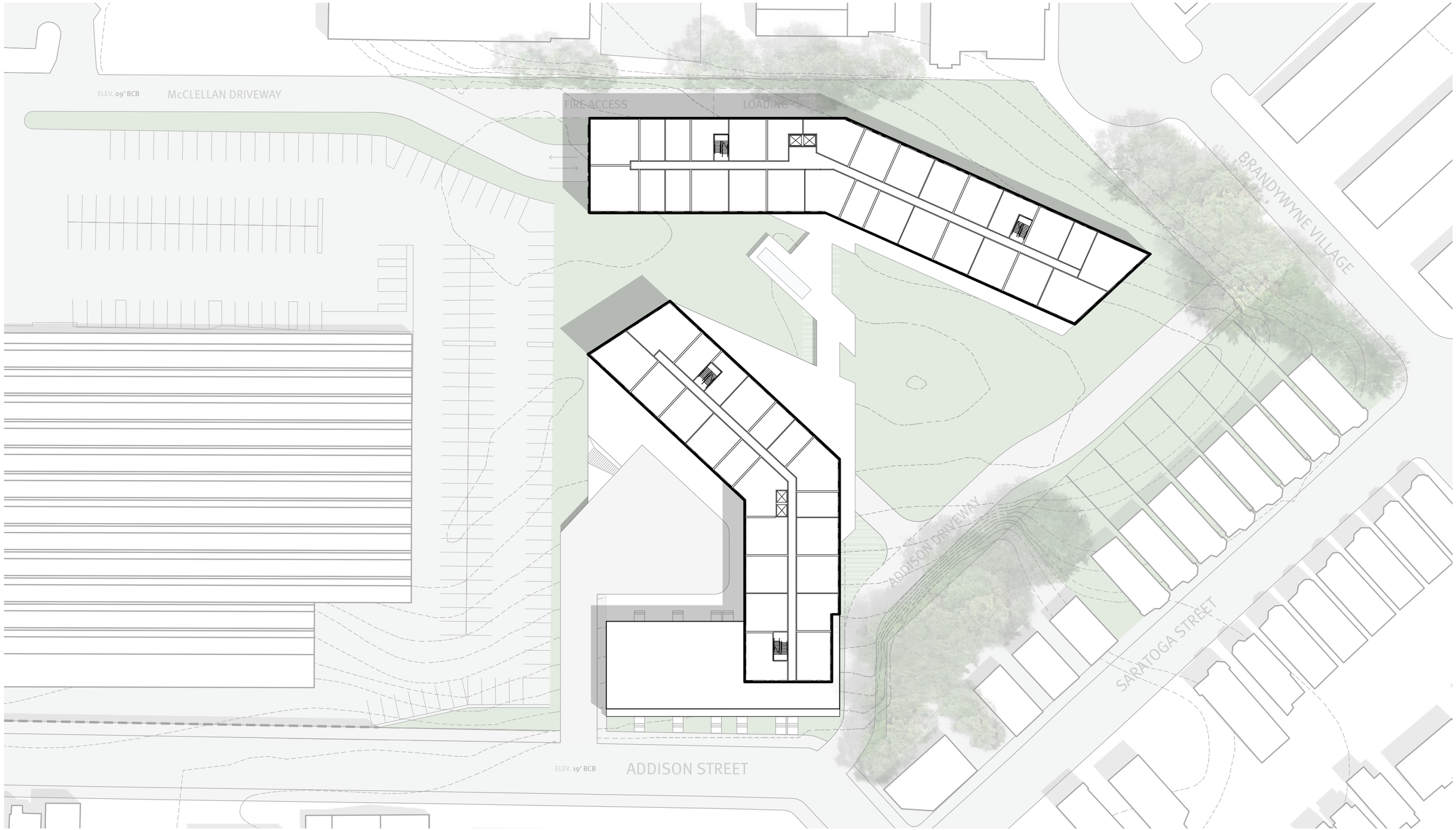


Figure 2-10
Levels 4 and 5 Typical Floor Plan
Source: Arrowstreet, 2017

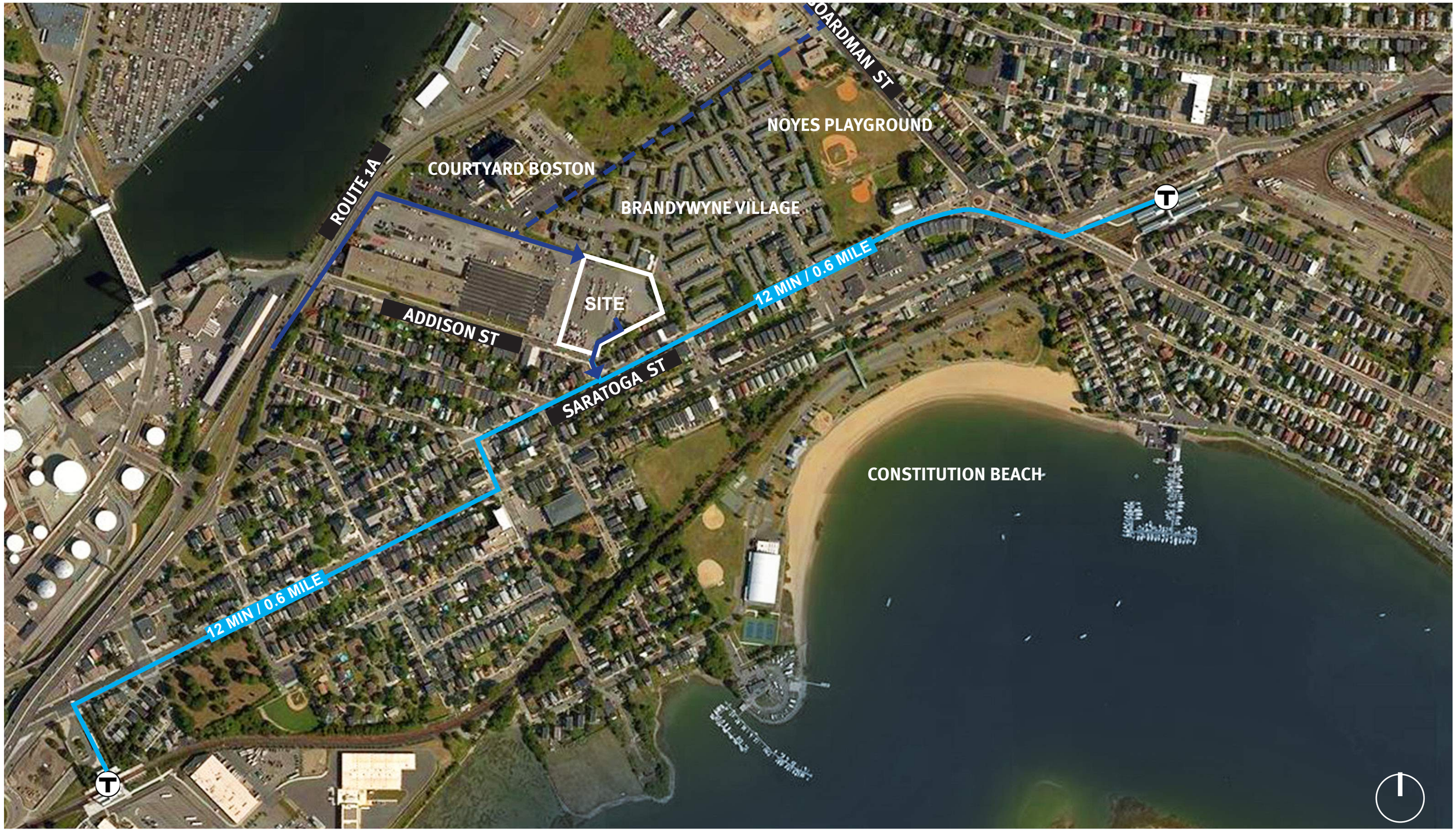


Figure 2-11
Project Site Circulation Plan
Source: Arrowstreet, 2017

East Boston, Massachusetts

Figure 2-12
Landscape Plan
Source: Copley Wolff Design Group, 2017

Chapter 3

URBAN DESIGN

CHAPTER 3: URBAN DESIGN

3.1 INTRODUCTION

The Project Site is adjacent to the terminus of the former Maverick Mills building, or 175 McClellan Highway. Built in 1909, Maverick Mills was the first and largest textile mill built entirely of reinforced concrete. The building is comprised of a two-story main mill, approximately 550 feet long by 130 feet wide and a one-story weave shed, approximately 340 feet long by 231 feet wide. Today, the Maverick Mills building stretches across the entire northern side of Addison Street and is currently populated with a mix of local businesses that range from art studios to light industrial and warehouse spaces including Parlor Skis and Sterlingwear of Boston, which has manufactured the official US Navy pea coat for over four decades.

The land surrounding the Project Site was originally laid out in a grid of wide straight streets by the East Boston Company in the 1830s for speculative residential development. While the area south and east of the Project Site was developed with double and triple-deckers, the area north remained undeveloped until the East Boston Company began filling in these low-lying areas between approximately 1912-1919 and rebranding them as "factory sections". Following that, it took decades before adjacent areas were developed into a commercial property on the north (the current twelve-story Courtyard by Marriot), the residential Brandywyne Village in 1967, and a mix of industrial and commercial developments on either side of McClellan Highway.

The Project, which will add new residential units at the eastern edge of the Maverick Mills site, is sited on a parcel currently entirely paved and used as an overflow lot for rental cars and presents an opportunity to improve current and future urban connections within the Harborview and Orient Heights neighborhoods and to revitalize the Project Site.

3.2 URBAN DESIGN OBJECTIVES

The Project Team, in conjunction with a series of initial meetings with the City and abutters, created a number of urban design goals to guide the design of the Project, including:

- Maximize the open space and landscape on the Project Site, using this to restore and revitalize the property from a parking lot to a greener space that enhances stormwater management and resiliency of the neighborhood;
- Maintain view corridors across and through the Project Site;
- Minimize the impacts of shadows on the existing backyards of Saratoga Street;

- Create new pedestrian connections across the Project Site;
- Minimize the impacts of new vehicles on Addison Street and the greater neighborhood;
- Create visual and pedestrian connections between the existing 175 McClellan Highway parking lot and the Project;
- Enhance the streetscape of Addison Street, immediately adjacent to the existing building, with new plants, new fencing, and repaired sidewalk;
- Enhance the northern and eastern edges of the 175 McClellan Highway parking lot with landscape features to create welcoming entry points to the Project Site; and
- Anticipate potential future adaptive reuse or redevelopment of the adjacent Maverick Mills site.

3.3 MASSING

The Project will be composed of two separate residential buildings, varying in height from three to five stories and connected by an amenity deck, floating above the landscape. On Addison Street, the South Building will remain lower in height, at three stories, relating to the scale of the triple-decker residences at the corner of Saratoga and Addison Street. Front doors, small balconies, and stoops will open up onto Addison Street, extending the residential character of the street and activating it with pedestrians. The South Building terraces up to five-stories, toward the center of the Project Site, and is organized around an urban entry court with pedestrian and vehicular access off Addison Street.

Along the northern edge of the Project Site, the five-story North Building is oriented perpendicular to the Saratoga Street backyards to maximize the view corridor through the property. This residential bar has a slight bend in it to provide a landscaped buffer between Brandywyne Village and the Project. Both buildings are surrounded by extensive landscaping, which engages the edges of the buildings underneath and creates a green focal point from the McClellan Driveway approach and an extended backyard buffer for the Saratoga Street residences alongside the Addison Driveway.

The buildings are oriented to minimize any new shadow on the surrounding residential neighborhood while also creating a front door and visitor entry sequence off, of the limited street frontage of Addison Street, and a residential entry sequence off McClellan Highway by way of the existing driveway. See Figures 3-1, 3-2, and 3-3, Perspectives and Figures 3-4 and 3-5, Aerial Views.

3.3.1 PREVIOUS MASSING STUDIES

The Project Team has studied a significant number of alternative massings that led to the current Project configuration. Early site layouts organized the buildings around the perimeter of the Project Site, maximizing private open space for future residents. Ultimately this option was rejected by the Project Team as it did not adequately tie into the neighborhood. Later studies explored required significant amounts of backfill and regrading of the Project Site, due to potential impacts on stormwater and geotechnical constraints. Finally, studies were developed that linked the buildings with a "bridge" structure. This option also organized the building entry more focused on the eastern end of Addison Street, organized off the Addison Driveway. Ultimately, this option was dismissed as it eliminated view corridors and did not adequately address future urban connections at the neighboring Maverick Mills site. See Figure 3-6, Massing Studies.

3.4 CHARACTER AND MATERIALS

3.4.1 EXISTING CHARACTER AND MATERIALS

The neighborhood surrounding the Project contains a variety of building types, different materials, and overall scales. On Addison Street, the Project will be directly across the street from the single-story East Boston Neighborhood Health and its associated parking lot, the backyards of two triple-deckers on Saratoga Street and two buildings of a vending machine supplier, Automated Food Services, at 141-143 Addison Street. The street character, at this end of Addison Street, is generally commercial in nature and not activated with much street life, due to the large expanses of paving and blank walls of the adjacent commercial buildings. The largest, most direct influence on the Project Site is the adjacent Maverick Mills building, originally clad with hollow concrete tile and surrounded on three sides by parking lots. At the north and east boundaries of the Project Site, Brandywyne Village and Saratoga Street backyards contain two and three-story residences with a mix of vinyl siding and wooden decks.

3.4.2 PROPOSED CHARACTER AND MATERIALS

The proposed materials for the Project are a mix of masonry, corrugated metal, and fiber cement siding. These materials were chosen to create a natural palette to complement the surrounding industrial-residential neighborhood while also designing the expanses of facade, visible from McClellan Highway, as “larger works of art” through color, texture, and orientation of these materials.

A physical connection to Addison Street is established by a three-story masonry volume that anchors the South Building to the street while also serving as the most

visible facade of that building. The facade is subdivided into vertical, row house-like sections, reinterpreting the traditional triple-deckers of East Boston. The exterior will pull out to create inhabitable terraces for some residential units, while pulling back and creating entries at others. Stoops at the ground floor units allow for direct resident connections to Addison Street and punctuate the landscape into garden size plots, creating a series of urban front yards for the Project. At the southwest corner abutting the former Maverick Mills, the masonry facade wraps around the building as a party wall to signify the entrance into the Project.

A few facades, primarily visible from McClellan Highway and the Maverick Mills parking lot, are envisioned as large canvases that will become a focal point at the end of the Maverick Mills view corridor. For example, the western and southern facade of the North Building is proposed as fiber cement siding with accents of fine-ribbed metal cladding designed to reflect the temporal qualities of the sky and surrounding landscape throughout the seasons and times of day. The play of light and shadow across these facades is designed to minimize the perceived scale of the building while also playing into the urban street art culture of East Boston. The remaining facade will be clad with fiber cement siding with smaller accents of metal, designed as quieter backdrops along the northern and eastern property lines. See Figure 3-7 and 3-8, Sections and Elevations.

3.5 LANDSCAPE AND STREETSCAPE

The Project includes significant open space, streetscape, and landscaping improvements throughout the Project Site. These open space and landscape areas total approximately 77,500 sf exclusive of new surface parking and the upgrades to the McClellan Driveway connecting to McClellan Highway, and will include:

- The impervious surface of existing asphalt, currently covering 100 percent of the Project Site, will be removed and replaced with a mix of landscape and hardscape areas designed to mitigate stormwater and periodic flooding. Tree plantings will be larch, poplar, willow, and numerous shrubs and grasses all tolerant of storm surges and occasional flooding. Plantings will be clustered to break down the scale of the buildings to the neighbors. New planting species selections also mimic existing plant species in an effort to expand the existing urban plant palette across the Project Site instead of introducing a traditional residential landscape of lawn and shade trees.

- The existing fence, enclosing the entire perimeter of the Project Site, will be removed enhancing pedestrian access to the businesses in the former Maverick Mills.

- At Addison Street, the existing streetscape will be substantially upgraded and redesigned as a residential street. New sidewalks, lighting, and street tree planting in the small yards with front stoops will activate the street edge along the Project's frontage.

- At the western boundary of the Project Site, where the Project meets the large surface parking lot of 175 McClellan Highway, a large, landscaped open space is proposed to create both a visual focal point, from the approach off McClellan Highway, and to provide an area of recharge to support drainage at the Project Site and resiliency during storm and flood conditions. This space will be programmed with amenities for the Project's residents.

- Along the eastern side of the Project Site, where the Project faces the privately-owned Addison Driveway and the triple-decker backyards of Saratoga Street, a large landscaped "backyard" is proposed to both provide a significant setback to the adjacent residential neighborhood as well as a prominent green space that visually extends their backyards.

- The Addison Driveway, which currently provides the Saratoga Street residents vehicular access to their backyards, will be improved through new paving and lighting. The existing mature trees (hackberry, tree of heaven, poplar, white pine, maple, crabapple) along the edge of this driveway will be protected through construction of the Project.

- Existing plantings along the eastern and northern property lines (tree of heaven, arborvitae, white pine, and poplar) will all be retained and protected.

- All landscape lighting will be indirect LED fixtures with fixtures pointed to the ground to reduce light glare migration to neighbors.

- Project Site lighting will be LED fixtures with strong cutoff distributions to reduce light glare migration.

3.6 CONSISTENCY WITH AREA PLANS

3.6.1 CLIMATE READY BOSTON

In December 2016, the BPDA released a comprehensive study report ("Climate Ready Boston") that identified East Boston as having the most land area of all Boston neighborhoods that is exposed to coastal storms in the coming decades. As a result, the Project Team has worked to design the Project with resiliency to future climate change impacts in mind.

The Project Site is located within the floodplain and is prone to flooding during events of extreme precipitation. The Climate Ready Boston report expects extreme precipitation to increase in frequency and intensity. To address resiliency concerns and plan for future flood risks, the first floor elevation will be located at approximately 21 BCB, which is 4.5 feet above the Base Flood Elevation (BFE). In addition, all mechanical equipment for the Project will be located in one or more utility rooms on the second floor. The Project will be compliant with the Article 25 provisions of the Boston Zoning Code relating to flood zones and the Massachusetts State Building Code provisions relating to floodplain construction.

The Project will replace an entirely impervious surface parking lot with mostly vegetated greenspace and permeable surfaces, which will significantly reduce stormwater runoff and encourage groundwater recharge at the Project Site. The lowest lying areas on the Project Site will be covered with native vegetation and salt tolerant grasses that will withstand storm surges and occasional flooding, thus increasing the resiliency of the Project Site.

Finally, the Climate Ready Boston report identifies an increased frequency and intensity of heatwaves as a priority issue that must be addressed. The Project is replacing a paved asphalt parking lot with mostly vegetated surfaced and highly reflective paving and roofing materials. The majority of hardscape created will be located directly beneath the building footprint, making it over 75% shaded. Additionally, the only exposed hardscape at the vehicle entry court will contain absorptive materials and trees for shading. These measures will help significantly reduce the urban heat-island effect at the Project Site.

3.6.2 EAST BOSTON MASTER PLAN

The Project is consistent with the objectives of the East Boston Master Plan, which was implemented by the Boston Redevelopment Authority (BRA) in April 2000. The Project will promote the revitalization of an East Boston neighborhood by redeveloping an underutilized urban lot with close access to public transportation, the East Boston Waterfront, and downtown Boston. The Project has been designed to ensure that the quality of life of existing residents is not diminished by emulating the scale of adjacent residential structures, providing off-street parking opportunities for residents, and screening adjacent neighbors with landscaped buffers.

East Boston, Massachusetts

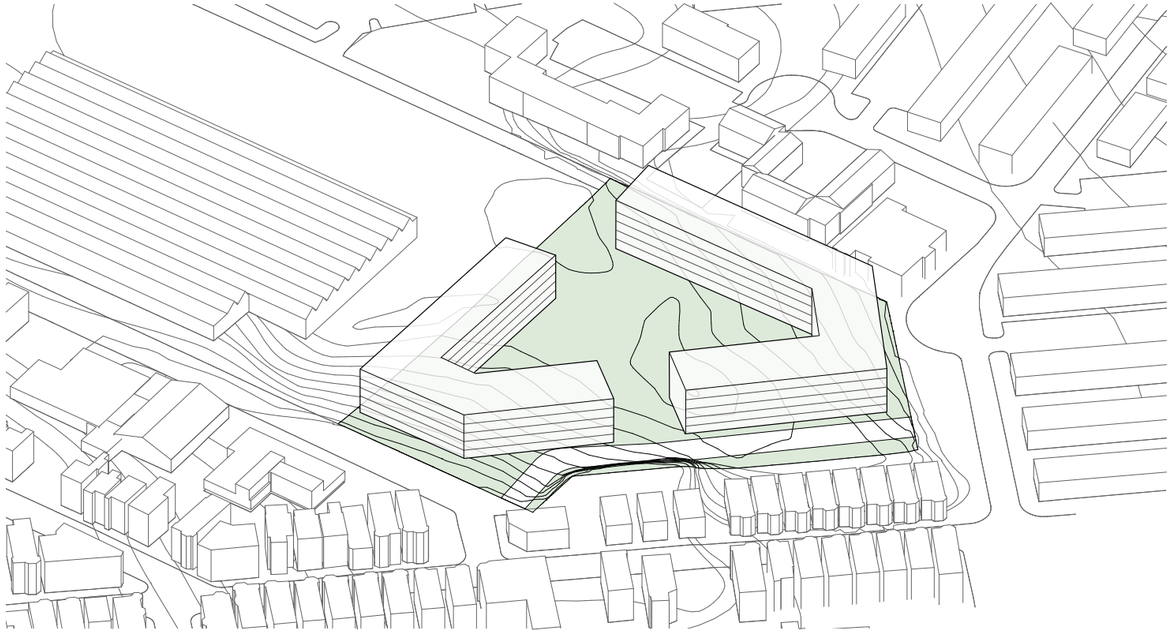
Figure 3-1
Perspective from Addison and Saratoga Street Intersection
Source: Arrowstreet, 2017

Figure 3-2
Perspective from McClellan Highway
Source: Arrowstreet, 2017

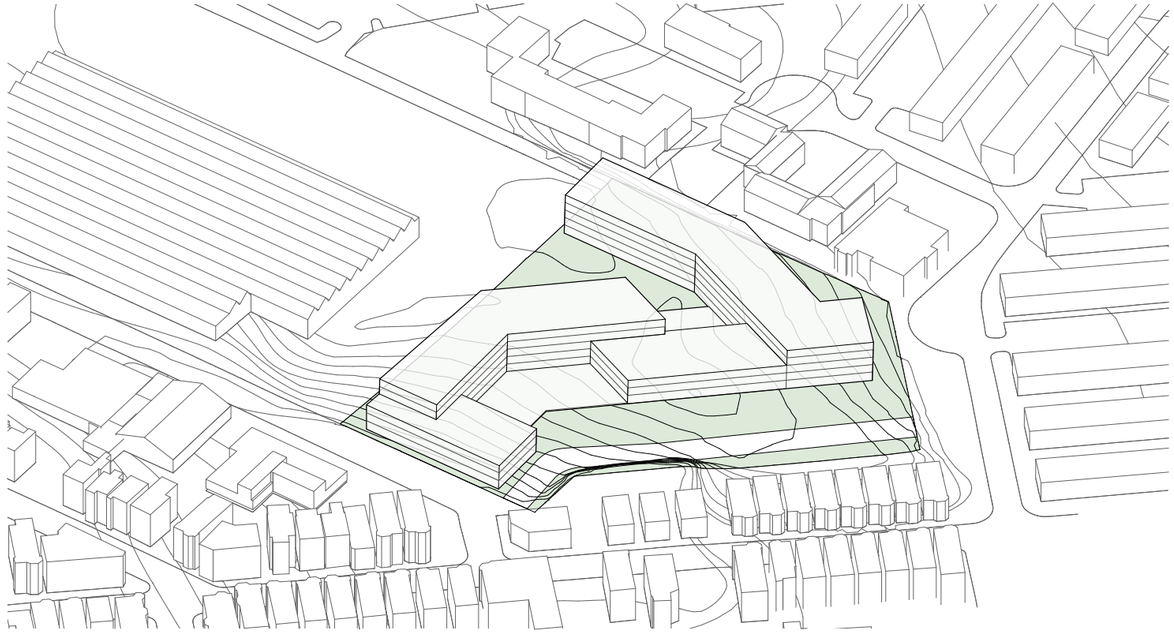
Figure 3-3
Perspective from Addison Street West
Source: Arrowstreet, 2017

Figure 3-4
Aerial View From East
Source: Arrowstreet, 2017

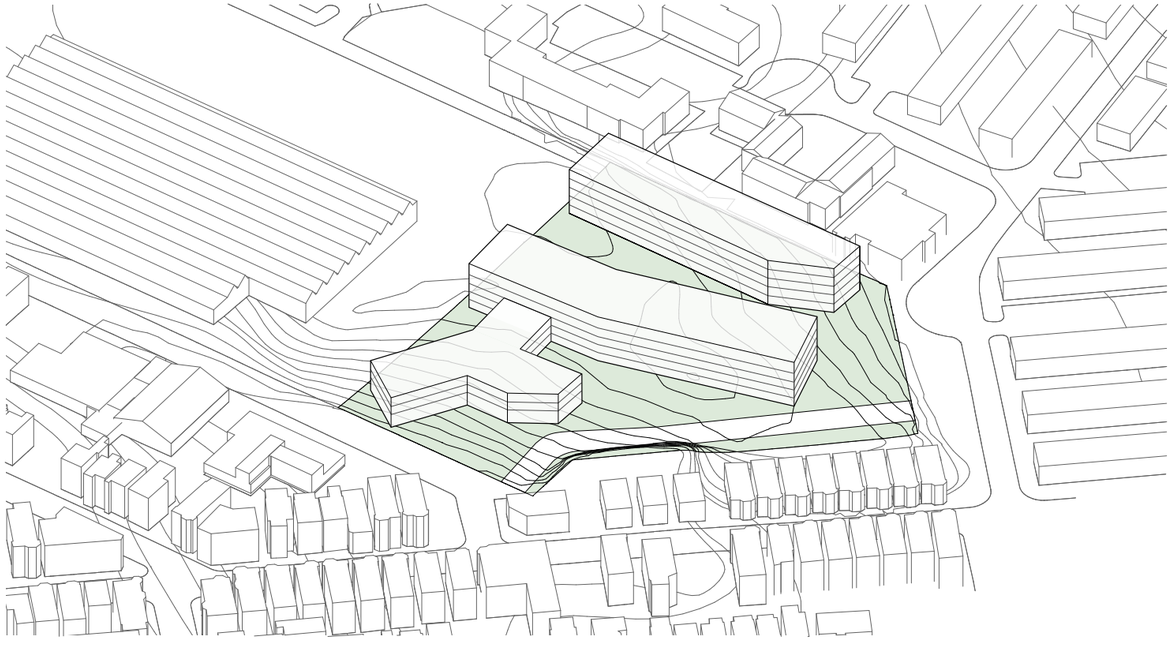
Figure 3-5
Aerial View From West
Source: Arrowstreet, 2017



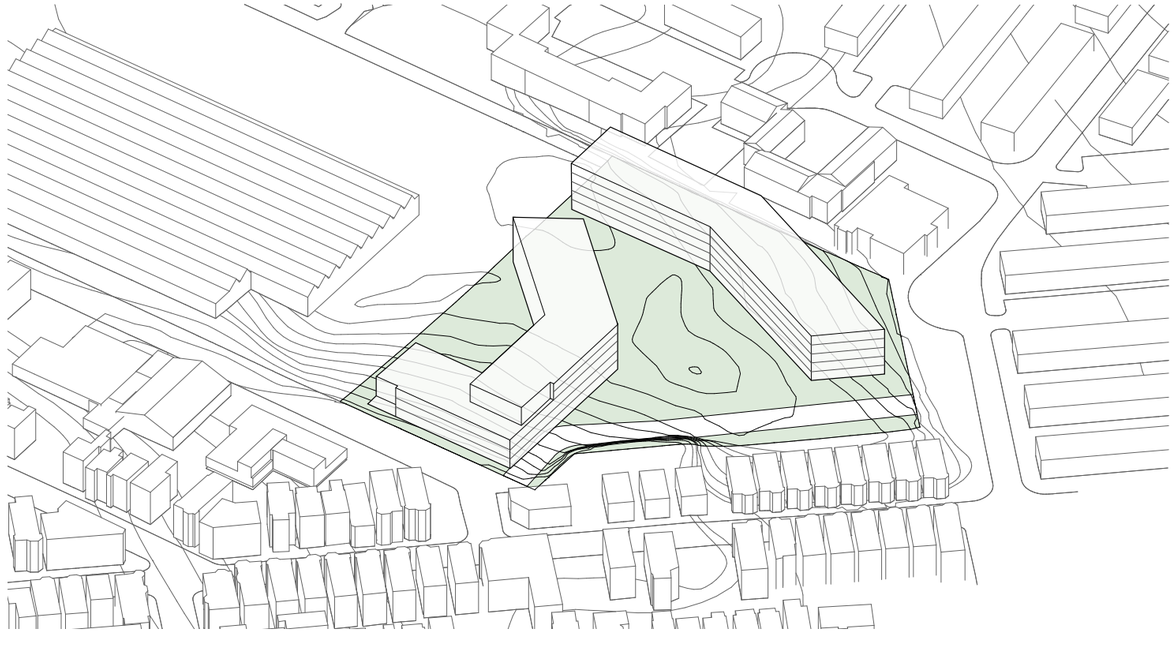
Massing 1: Simple extrusion that follows the perimeter of the site.



Massing 3: Two residential buildings anchor into higher topography of the site, and a physical connector hosing amenities bridges across the site.



Massing 2: Two buildings run linearly east to west across site.



Final Massing: Two residential buildings remain on either side of the site, anchored in higher topography, and a pedestrian bridge links the two together.

Figure 3-6
Massing Studies
Source: Arrowstreet, 2017

1/32" = 1'-0"

Figure 3-7
North/South Section and Elevations
Source: Arrowstreet, 2017

1/32" = 1'-0"

Figure 3-8
East/West Section and Elevations
Source: Arrowstreet, 2017

Chapter 4

SUSTAINABILITY

CHAPTER 4: SUSTAINABILITY

4.1 ARTICLE 37 / LEED COMPLIANCE

The Project will achieve compliance with the City of Boston's Article 37 Green Building standards and the Governor's Executive Order 484 – Leading by Example – Clean Energy and Efficient Buildings. The Project Team is currently targeting the LEED Silver Level at a minimum: Multifamily Midrise rating system. The LEED checklist will continue to be revised, as the Project is further refined throughout the design process. The following sections describe the elements incorporated into the LEED Checklist. While not seeking LEED certification, the LEED checklist and Sustainability Narrative are being submitted to the City of Boston's IGBC as a courtesy under the Article 37 permitting process. See Figure 4-1, LEED Checklist.

4.2 LEED CREDIT NARRATIVES

4.2.1 INTEGRATIVE PROCESS (IP)

IP 1 Integration Project Team

The Project team will provide expertise in mid-rise energy systems and components, including mechanical equipment and envelope upgrades and has experience performing energy modeling per ASHRAE Standard 90.1, Appendix G. (1 point)

4.2.2 LOCATION & TRANSPORTATION (LT)

The Project Site was selected based on the opportunity it presented: the ability to utilize a previously developed lot as infill within dense urban context. Considering the Site's juxtaposition to existing urban development, the Project will take advantage of a vast network of transportation, existing infrastructure and other resources that are innate urban living. The Project itself will efficiently populate 270 units of housing within a 3.3 acre site, while leaving more than 50% of the Project Site as open space.

LT Prerequisite Floodplain Avoidance

Although the Project Site is located within a floodplain, it is a previously developed site, thus meeting the prerequisite. The Project will be designed and constructed in compliance with local building codes and state regulations.

LT 2.1 Site Selection: Previously Developed Site

The entirety of the Project Site was previously developed as an asphalt parking lot for rental vehicles; the Project maximizes open space and redevelops the Project Site into more than 50% greenspace. (4 points)

LT 2.2 Site Selection: Infill Development

The surrounding context is completely developed with different building typologies, hardscapes and a street network. It is adjacent to many services and easily accessible from public transportation. (2 points)

LT 2.4 Site Selection: Street Network

The Project Site is located within a dense urban neighborhood, with at least 90 major and minor intersections within a square mile. (1 point)

LT 3.1 Compact Development: Housing Density

The Project will have more than 80 dwelling units per acre, with 270 housing units in an approximately 3.3-acre lot. (3 points)

LT 4 Community Resources

The Project Site is located within 1/2 mile walking distance of eight to 11 services, including a clothing store, convenience store, pharmacy, other retail, bank, health club, hair care, laundry, restaurant, community center, place of worship, medical clinic, and a public park. (2 points)

LT 5 Access to Transit

The Project Site is 0.1 miles to a local bus route servicing areas north and south of the property, which runs roughly three times an hour. The Project Site is also within 0.5 miles of the Blue Line, Boston's light rail system, which runs approximately 4-7 minutes at peak hours. Both public transit systems run from roughly 5am until close to 1am every day. This gives future residents and visitors access to over 360 weekday public transit trips. (2 points)

4.2.3 SUSTAINABLE SITES (SS)

The Project will make a minimal to no impact on adjacent sites, relative to storm water runoff, heat island effect and other potentially negative environmental effects. The Project will provide more than 50% open space, mostly surfaced with hearty and native vegetation. The selected plantings will be able to withstand periods of drought, as well as over saturation and flooding. The Project Site itself has the potential to flood and will be able to retain water, while its permeable surfaces slowly filter stormwater and recharge the ground water.

SS Prerequisite Construction Activity Pollution Prevention

The Project Team will endeavor to reduce stormwater runoff, erosion, and airborne dust throughout construction, as part of an Erosion and Sediment Control plan carried out by the Construction Team.

SS Prerequisite No Invasive Plants

The Project plans to use native and hardy vegetation, selected to be able to slow and filter stormwater. No invasive species will be selected.

SS 1 Heat Island Reduction

The Project will be mostly vegetated greenspace, and the majority of hardscape created will be located directly beneath the building footprint making it over 75% shaded. Additionally, the only exposed hardscape at the vehicle entry court will contain absorptive materials and trees for shading. (2 points)

SS 2 Rainwater Management

The Project will direct nearly 100% of stormwater to on site drainage locations. The existing site topography acts as a basin, pooling the water on Project Site. The Project Team plans to maintain this basin-like typography and to optimize open space using hearty, native vegetation to help slow and filter stormwater. (3 point)

SS 3 Non-Toxic Pest Control

The Project will employ non-pesticide methods to reduce pest control. (2 points)

4.2.4 WATER EFFICIENCY (WE)

The Project will endeavor to reduce water usage through high efficiency fixtures, and monitor its use through water metering. The Project's landscape is meant to feel wild and natural; its plantings will be capable of withstanding drought and flood, as well as saturation from salt water. This allows the landscape to require little to no maintenance, and no additional irrigation or watering.

WE Prerequisite Water Metering

The Project will include water metering for each unit.

WE 2.2 Indoor Water Use

The Project will commit to using WaterSense and Energy Star labeled fixtures and appliances for all in-unit spaces. (6 points)

WE 3 Outdoor Water Use

Due to the Project's unique vulnerability to flooding, all landscape vegetation will be selected to withstand periods of over saturation and drought. These species will require minimal maintenance, and little to no irrigation. (4 points)

4.2.5 ENERGY & ATMOSPHERE (EA)

The massing on site is meant to maximize open space and allow for potential natural ventilation strategies. The building is positioned with the long façade oriented southeast and southwest, which allows optimum solar gains and daylight. Optimized envelope systems have been considered in the design, along with insulated operable windows with Low-E coating, LED lighting fixtures in common areas, and low flow fixtures. The Project also utilize active energy efficiency measures such as Energy Star appliances for kitchen and laundry, Dedicated Outdoor Air System (DOAS) with heat recovery for ventilation and vertical fan coil units (heat pump systems) for mechanical cooling and heating have been considered in estimating the GHG emissions.

EA Prerequisite Minimum Energy Performance

The Project Team will run an energy model to determine overall building performance, and commit to perform 5% better than the prescribed baseline.

EA Prerequisite Energy Metering

The Project will include electricity metering for each unit.

EA Prerequisite Education of the Homeowner, Tenant, or Building Manager

The Proponent will work with the Project Team to provide a compiled manual for operation and maintenance of all equipment and materials used in the Project. Furthermore, occupants of dwelling units will be advised on proper maintenance and care of their individual units, to prolong the energy efficiency of each unit and the overall building.

EA 1 Annual Energy Use

The Project anticipates performing approximately 15% above baseline building performance of ASHRAE 90.1-2010. (10 points)

4.2.6 MATERIALS & RESOURCES (MR)

The Project Team will be environmentally responsible in its selection of building materials, utilizing locally-sourced and recycled material whenever possible. The Project Team will also coordinate the proper storage, installation and disposal of all building materials on site, throughout construction. All existing materials demolished on site will be considered for reuse, for example, asphalt may be considered for non-structural fill.

MR Prerequisite Certified Tropical Wood

The Project Team is committed to using FSC-approved wood throughout the Project.

MR Prerequisite Durability Management

The Project will carry out best practices for moisture control, including proper ventilation, proper waterproofing and drainage in wet areas, as well as use of water-resistant materials in moisture prone areas.

MR 2 Environmentally Preferable Products

The Project will attempt to locally source aggregate for concrete and interior sheathing. The Project will also target one or more materials from Table 2, committing to recycled content or responsible sourcing. (3 points)

MR 3 Construction Waste Management

The Project will attempt to reduce overall construction waste, and divert waste from landfills, as part of a larger Construction Waste Management plan carried out by the Construction Team. (3 points)

4.2.7 INDOOR ENVIRONMENTAL QUALITY (IEQ)

The Project Team will work throughout design and construction to ensure optimized ventilation and adjacencies of intake equipment, relative to harmful exhausts, etc. The Project will also ensure the quality of air for occupants, by reducing the amount of harmful particulates infiltrating the space, by eliminating indoor smoking and selecting low-emitting materials. Prior to occupation, the Project Team will evaluate the quality of air and perform a pre-occupancy flush, as required.

IEQ Prerequisite Ventilation

The Project plans for operable windows, providing direct outdoor air ventilation, at each bedroom and each shared living space in every unit.

IEQ Prerequisite Combustion Venting

This Project does not intend to install any fireplaces and/or woodstoves in residential units.

IEQ Prerequisite Garage Pollutant Reduction

The Project will have an open-air garage, and will not enclose and/or capture excess fumes adjacent to dwelling units

IEQ Prerequisite Radon-Resistant Construction

The Project site will be tested for radon, and provide radon-resistant construction techniques if required.

IEQ Prerequisite Air Filtering

Air filters with a minimum efficiency of a MERV 8 or higher will be used on this project.

IEQ Prerequisite Environmental Tobacco Smoke

Smoking will be prohibited within dwelling unit and shared interior, public spaces.

IEQ Prerequisite Compartmentalization

All walls between units and corridors will be sealed properly and will not contain any through wall penetrations, in an effort to meet fire rating, as well as reduce transfer of air pollutants.

IEQ 2.1 Contaminant Control: Walk-off Mat

The Project will provide walk-off mat for 10'-0" at the main entry points of the building. (0.5 point)

IEQ 2 Contaminant Control: Preoccupancy Flush

The Construction Team will be advised to seal all ducts during construction, and to flush all units prior to occupancy. (0.5 point)

IEQ 3.1 Balancing of Heating and Cooling Distribution Systems: Multiple Zones

All units in this project will be approximately 1,200 sf or less, and each will have its own thermal zone. (1 point)

IEQ 5 Enhanced Combustion Venting

This Project does not intend to install any fireplaces and/or woodstoves in residential units. (2 points)

IEQ 6 Enhanced Garage Pollutant Protection

The Project will have an open-air garage, and will not enclose and/or capture excess fumes adjacent to dwelling units. (1 point)

IEQ 7 Low-Emitting Products

The Project Team is committed to selecting 90% or more low-emitting products. (3 points)

IEQ 8 No Environmental Tobacco Smoke

Smoking will be prohibited within dwelling unit and shared interior, public spaces. (1 point)

4.2.8 INNOVATION (IN)

The Project Team will work together to identify strategies to optimize building performance, and provide an end product which is healthy for both user and surrounding environment.

IN Prerequisite Preliminary Rating

During the early design process, the Project Team will hold a LEED for Homes meeting to discuss ways to optimize the Project's overall performance.

IN 1 Innovation

The Project Team hopes to integrate several innovation and/or pilot credits; these have not been identified at this time, but will be incorporated as the design develops. (0 points)

IN LEED AP Homes

The Project Team includes a LEED Accredited Professional.

4.2.9 REGIONAL PRIORITY (RP)

The Project Site is an ideal candidate for Regional Priority credits, given its existing condition as a large asphalt parking lot located within an urban context. The Project will become a highly advantageous infill site, providing residents with access to transportation and other urban resources, while optimizing open greenspace.

RP 1 Regional Priority: Access to Transit

As previously mentioned, the Project Site is 0.1 miles to a local bus route servicing areas north and south of the property, which runs roughly three times an hour. The Project Site is also within 0.5 miles of the Blue Line, Boston's light rail system, which runs approximately 4-7 min at peak hours. Both public transit systems run from roughly 5am until close to 1am. This gives future residents and visitors access to over 360 weekday public transit trips. (2 points)

RP 2 Regional Priority: Heat Island Effect

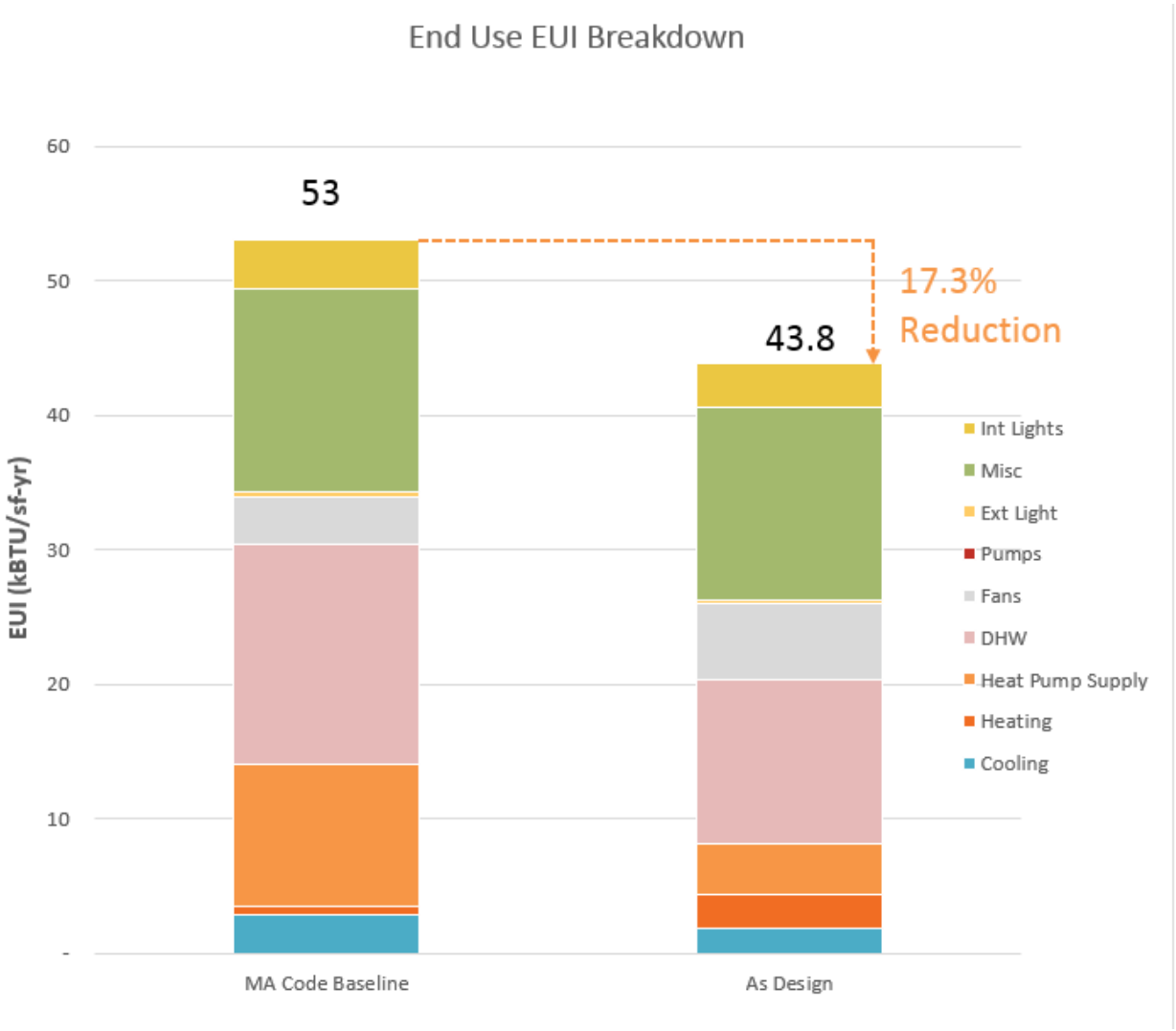
As previously mentioned, the Project will be mostly vegetated greenspace, and the majority of hardscape created will be located directly beneath the building footprint making it over 75% shaded. Additionally, the only exposed hardscape at the vehicle entry court will contain absorptive materials and trees for shading. (2 points)

4.3 PRELIMINARY ENERGY MODEL

Whole building energy simulations were used to determine the preliminary energy performance of the design and its comparison to the MA stretch code. The purpose of the

modeling exercise is to gain an understanding of energy loads distribution and evaluate strategies that have the maximum benefit for performance.

The results show that the current design has an energy use intensity (EUI) of approximately 43.8 kBtu/sf-yr, which is 17.3% savings from ASHRAE 90.1-2013. This indicates that the project is on track to meet the MA stretch code. The design utilizes passive energy efficient measures, such as optimized envelope, a double-pane glazing system with Low-E coating, LED lighting, and low-flow fixtures to reduce the energy demand. The Project also uses high-efficient heat pump system via vertical fan coil units to further reduce the energy use. The largest energy end uses are equipment (34%), domestic hot water (29%), and fans (13%). The peak electric demand is 1,033 kW, peak heating demand is 784 kW, and peak cooling demand is 754 kW. The main HVAC systems (DOAS, heat pump) will use electricity, and the domestic hot water heater will be gas-fired. Based on $0.1993/kWh for electricity and $1.246/therm for natural gas (based on the EIA average utility cost for Massachusetts), the operational cost for the building is $438,800 per year.



4.4 CLEAN AND RENEWABLE ENERGY

The Proponent will consider photovoltaic systems (PV) through a Power Purchase Agreement for installation.– PVs provide clean energy and can be an effective solution to meet energy demand peaks – especially in hot summer months where energy demand is high, which in turn allows reduction of the building's GHG emissions and increases its resiliency. It is estimated that a 150kW fixed open rack PV system can generate up to 204,000 kWh per year, which can offset 10% of the totally electricity use, and results in $40,000 savings per year.

4.5 ENERGY EFFICIENY ASSISTANCE

The Project Team will contact National Grid and Eversource, and participate in applicable incentive programs:

National Grid offers technical assistance and financial incentives of up to 75 percent of incremental costs to large commercial and industrial customers who are building new facilities. This program provides assistance in four critical areas: design, technical, educational, and financial services.

Eversource offers prescriptive and custom rebates designed to help customers to purchase more energy efficient equipment, such as energy efficient lighting, motors, HVAC systems, chillers, variable frequency drives, and air compressors. There are also custom rebates for all non-prescriptive equipment and other qualifying measures where energy (kWh) savings can be realized.

LEED v4 for Building Design and Construction: Multifamily Midrise

Project Checklist

Project Name: 144 Addison Street
Date: 11/27/2017

Y	?	N			
1	1		Credit	Integrative Process	2

14	1	0	**Location and Transportation**		15
Y			Prereq	Floodplain Avoidance	Required
				PERFORMANCE PATH	
			Credit	LEED for Neighborhood Development Location	15
				PRESCRIPTIVE PATH	
7	1		Credit	Site Selection	8
3			Credit	Compact Development	3
2			Credit	Community Resources	2
2			Credit	Access to Transit	2

7	0	0	**Sustainable Sites**		7
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	No Invasive Plants	Required
2			Credit	Heat Island Reduction	2
3			Credit	Rainwater Management	3
2			Credit	Non-Toxic Pest Control	2

10	0	0	**Water Efficiency**		12
Y			Prereq	Water Metering	Required
				PERFORMANCE PATH	
			Credit	Total Water Use	12
				PRESCRIPTIVE PATH	
6			Credit	Indoor Water Use	6
4			Credit	Outdoor Water Use	4

10	13	14	**Energy and Atmosphere**		37
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Energy Metering	Required
Y			Prereq	Education of the Homeowner, Tenant or Building Manager	Required
10	10	10	Credit	Annual Energy Use	30
	2	3	Credit	Efficieng Hot Water Distribution	5
	1	1	Credit	Advanced Utility Tracking	2

5	4	0	**Materials and Resources**		9
Y			Prereq	Certified Tropical Wood	Required
Y			Prereq	Durability Management	Required
	1		Credit	Durability Management Verification	1
2	3		Credit	Environmentally Preferable Products	5
3			Credit	Construction Waste Management	3

9	7	2	**Indoor Environmental Quality**		18
Y			Prereq	Ventilation	Required
Y			Prereq	Combustion Venting	Required
Y			Prereq	Garage Pollutant Protection	Required
Y			Prereq	Radon-Resistant Construction	Required
Y			Prereq	Air FIltering	Required
Y			Prereq	Environmental Tobacco Smoke	Required
Y			Prereq	Compartmentalization	Required
	1	2	Credit	Enhanced Ventilation	3
1	1		Credit	Contaminant Control	2
1	2		Credit	Balancing of Heating and Cooling Distribution Systems	3
	3		Credit	Enhanced Compartmentalization	3
2			Credit	Enhanced Combustion Venting	2
1			Credit	Enhanced Garage Pollutant Protection	1
3			Credit	Low Emitting Products	3
1			Credit	No Environmental Tobacco Smoke	1

1	5	0	**Innovation**		6
Y			Prereq	Preliminary Rating	Required
	5		Credit	Innovation	5
1			Credit	LEED AP Homes	1

4	0	0	**Regional Priority**		4
2			Credit	Regional Priority: Access to Transit	1
2			Credit	Regional Priority: Heat Island Reduction	1
			Credit	Regional Priority: Specific Credit	1
			Credit	Regional Priority: Specific Credit	1

61	31	16	**TOTALS**	Possible Points:	110

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

Figure 4-1
LEED Checklist
Source: Arrowstreet, 2017

Chapter 5

TRANSPORTATION

CHAPTER 5: TRANSPORTATION

5.1 INTRODUCTION

Howard Stein Hudson (HSH) has conducted an evaluation of the transportation impacts of the Project in the East Boston neighborhood of Boston, Massachusetts. This transportation study adheres to the Boston Transportation Department (BTD) Transportation Access Plan Guidelines and BPDA Article 80 Large Project Review process. This study includes an evaluation of existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian activity.

5.1.1 STUDY METHODOLOGY

This transportation study and its supporting analyses were conducted in accordance with BTD guidelines, and are described below.

The Existing (2017) Condition analysis includes an inventory of the existing transportation conditions such as traffic characteristics, parking, curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. Existing counts for vehicles, bicycles, and pedestrians were collected at the study area intersections. A traffic data collection effort forms the basis for the transportation analysis conducted as part of this evaluation.

The future transportation conditions analysis evaluates potential transportation impacts associated with the Project. The long-term transportation impacts are evaluated for the year 2024, based on a seven-year horizon from this traffic study.

The No-Build (2024) Condition analysis includes general background traffic growth, traffic growth associated with specific developments (not including this Project), and transportation improvements that are planned in the vicinity of the Project Site.

The Build (2024) Condition analysis includes a net increase in traffic volume due to the addition of Project-generated trip estimates to the traffic volumes developed as part of the No-Build (2024) Condition analysis. The transportation study identified expected roadway, parking, transit, pedestrian, and bicycle accommodations, as well as loading capabilities and deficiencies.

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

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

5.1.2 STUDY AREA

The transportation study area is bounded by Boardman Street to the north, Addison Street to the south, Saratoga Street to the east, and Route 1A to the west. The study area consists of the following eight intersections in the vicinity of the Project site, also shown on Figure 5-1:

- Route 1A/Boardman Street (signalized);
- Boardman Street/Ashley Street/Marriott Driveway (signalized);
- 175 McClellan Highway Driveway/Marriott Driveway (unsignalized);
- Route 1A/175 McClellan Highway Driveway (unsignalized);
- Route 1A/Addison Street (unsignalized);
- Addison Street/Saratoga Street (unsignalized);
- Saratoga Street/Boardman Street/Ford Street (unsignalized roundabout); and
- Saratoga Street/Bennington Street (signalized).

5.2 PROJECT DESCRIPTION

The Project Site is an approximately 143,139 sf parcel that is bounded by the former Maverick Mills mixed-use building to the west, Brandywyne Village to the north and east, and Addison Street to the south. The Project Site is currently leased to Avis Car Rental and operates as surface parking for hundreds of vehicles.

The Project includes the construction of a residential building containing approximately 270 residential units. The parking will be located in a garage and consist of approximately 179 spaces, 175 covered spaces and 4 uncovered spaces. Vehicular access to the on-site parking will be provided from the existing McClellan Driveway off Route 1A. Egress from the Project Site will be provided via the McClellan Highway driveway and also left turns onto Addison Street.

5.3 EXISTING CONDITIONS

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

5.3.1 EXISTING ROADWAY CONDITIONS

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

Addison Street is a two-way, two-lane roadway located adjacent to the south of the Project that runs in an east to west direction between Route 1A to the west and Saratoga Street to the east. Addison Street is classified as a local roadway under BTD jurisdiction. On-street parking and sidewalks are provided on both sides of Addison Street.

Saratoga Street is a two-way, two-lane roadway located to the south of the Project that runs in a northeast to southwest direction between Main Street in Winthrop to the northeast and Border Street to the southwest. Saratoga Street is classified as an urban minor arterial under BTD jurisdiction. Near the Project, on-street parking is provided on both sides of the roadway. Sidewalks are provided on both sides of Saratoga Street.

William F McClellan Highway (Route 1A) is a two-way, four-lane divided roadway located to the west of the Project that runs in a north to south direction discontinuous between Salisbury to the north and the Rhode Island border to the south. William F McClellan Highway is a named portion of Route 1A that runs through East Boston from the East Boston Expressway to the south to the Lee Burbank Highway to the north. Route 1A is classified as an urban principal arterial under MassDOT jurisdiction. On-street parking is not permitted on Route 1A. Sidewalks are provided on both sides of the roadway near the Project Site.

Ashley Street is a one-way, one lane roadway located to the north of the Project that runs in an east-west direction between Bennington Street to the east and Boardman Street to the west. Ashley Street runs one way in the westbound direction west of Breed Street and runs one way in the eastbound direction east of Breed Street. Ashley Street is classified as a local roadway BTD jurisdiction. Ashley Street is one-way westbound between Boardman Street and Breed Street, between Breed Street and Bennington Street Ashley Street is one-way eastbound. Parking and sidewalks are located along both sides of Ashley Street.

Ford Street is a two-way, two-lane roadway located northeast of the Project and runs in an east-west direction between Breed Street to the east and Boardman Street to the west. Ford Street is classified as a local roadway under BTD jurisdiction. On-street parking and sidewalks are provided on both sides of Ford Street.

Bennington Street is a two-way, primarily four lane divided roadway, located to the east of the Project that generally runs in a north to south direction, from its intersection with Winthrop Avenue to the north to its intersection with Porter Street to the south. The roadway narrows from four lanes to two at its intersection with Chelsea Street about three-fifths of a mile from its southern terminus. Bennington Street is classified as an urban minor arterial under BTD jurisdiction. On-street parking is permitted on both sides of the roadway. Sidewalks, curb-ramps, and crosswalks are also provided near the Project Site.

5.3.2 EXISTING INTERSECTION CONDITIONS

Existing conditions at the study area intersections are described below.

Boardman Street/Route 1A is a four-leg signalized intersection with four approaches. The Boardman Street eastbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The Boardman Street westbound approach consists of an exclusive left-turn lane, a shared left-turn/through lane, and an exclusive right-turn lane. The Route 1A northbound approach consists of an exclusive left-turn lane, two through lanes, and an exclusive channelized right-turn lane. The Route 1A southbound approach consists of an exclusive left-turn lane, a through lane, and a through/right-turn lane. There are crosswalks located across the eastbound, westbound, and southbound approaches. There is no on-street parking provided in the immediate area of the intersection.

Boardman Street/Marriott Driveway/Ashley Street is a four-leg intersection with four approaches and a signalized pedestrian crossing. The Marriott Driveway eastbound approach consists of a shared left-turn/right-turn lane. The Ashley Street westbound approach is a one-way yield controlled approach with a shared left-turn/through/right-turn lane. The Boardman Street northbound approach consists of a shared left-turn/through lane. The Boardman Street southbound approach consists of a shared through/right-turn lane. There are crosswalks provided across Ashley Street and Boardman Street, with the Boardman Street crosswalk being a signalized pedestrian crossing. On-street parking is provided along the Ashley Street westbound approach. There is a MBTA Bus Stop located along the Boardman Street northbound approach.

175 McClellan Highway Driveway/Marriott Driveway is a four-leg, unsignalized intersection with four approaches. Each of the approaches consists of a shared left-turn/through/right-turn lane. There are no crosswalks or sidewalks provided at this intersection since both the roadways are private driveways.

Route 1A/175 McClellan Highway Driveway is a three-leg unsignalized intersection with three approaches and limited access. The westbound approach is a driveway for the 175 McClellan Highway office complex and consists of an exclusive right-turn lane. The Route 1A northbound approach consists of a through lane and a shared through/right-turn lane. The Route 1A southbound approach consists of two through lanes. Sidewalks are provided on both sides of Route 1A. No on-street parking or crosswalks are provided at the intersection.

Addison Street/Route 1A is a four-leg unsignalized intersection with four approaches and limited access. The eastbound approach is a driveway for a self-storage facility and consists of an exclusive right-turn lane. The Addison Street westbound approach consists of an exclusive right-turn lane. The Route 1A northbound and southbound approaches are divided by a median and both consist of an exclusive through lane and a shared through/right-turn lane. Sidewalks are provided at all approaches to the intersection except at the self-storage driveway. The only crosswalk at the intersection is across the Addison Street westbound approach. On-street parking is provided along the westbound approach to the intersection.

Addison Street/Saratoga Street is a three-leg all-way stop controlled intersection with three approaches. The Addison Street eastbound approach consists of a shared left-turn/through lane and the westbound approach consists of a shared through/right-turn lane. The Saratoga Street southbound approach consists of a shared left-turn/right-turn lane. There are sidewalks at all approaches to the intersection but the Addison Street southbound approach is the only approach with a crosswalk and pedestrian ramps. On-street parking is permitted at both of the Addison Street approaches to the intersection.

Saratoga Street/Boardman Street/Ford Street is a four-leg unsignalized roundabout with four approaches. Each of the approaches consists of a shared left-turn/through/right-turn lane. Both the Saratoga Street eastbound and westbound approaches are yield controlled while both the Ford Street westbound approach and Boardman Street southbound approach are stop controlled. Crosswalks are provided across each approach to the intersection. On-street parking is provided at all of the approaches except the Boardman Street southbound approach.

Saratoga Street/Bennington Street is a four-leg signalized intersection, with four approaches. The Saratoga Street eastbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The Saratoga Street westbound approach consists of an exclusive left-turn lane, a shared left-turn/through lane, and a channelized right turn. The Bennington Street northbound approach consists of a shared left-turn/through lane and an exclusive right-turn lane. The southbound approach consists of a shared left-turn/through lane and a shared through/right-turn lane. Crosswalks with curb-ramps are provided across each leg of the intersection and on-street parking is provided at each approach except the Saratoga westbound approach.

5.3.3 EXISTING PARKING CONDITIONS

An inventory of the existing on-street and off-street parking in the vicinity of the Project was collected. A description of each follows.

5.3.3.1 ON-STREET PARKING AND CURB USAGE

On-street parking surrounding the Project Site consists of predominately residential parking, unrestricted parking, and 2-hour parking. The on-street parking regulations within the study area are shown in Figure 5-2.

5.3.3.2 CAR SHARING SERVICES

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

Zipcar is the primary company in the Boston car sharing market. There are currently two Zipcar locations within a half-mile walk of the Project Site. The nearby car sharing locations are shown in Figure 5-3.

5.3.4 EXISTING TRAFFIC DATA

Traffic volume data was collected at the eight study area intersections on September 12, 13, and October 5, 2017. Turning Movement Counts (TMCs) and vehicle classification counts were conducted during the weekday a.m. and weekday p.m. peak periods (7:00 – 9:00 a.m. and 4:00 – 6:00 p.m., respectively). The traffic counts included car, heavy vehicle, pedestrian, and bicycle movements. The detailed traffic counts are provided in the Appendix.

5.3.5 EXISTING VEHICULAR TRAFFIC VOLUMES

The existing traffic volumes that were collected in September 2017 were used to develop the Existing (2017) Condition traffic volumes. The Existing (2017) weekday a.m. Peak Hour and weekday p.m. Peak Hour traffic volumes are shown in Figures 5-4 and Figure 5-5, respectively.

To account for seasonal variation in traffic volumes throughout the year, data provided by MassDOT was reviewed. The most recent (2011) MassDOT Weekday Seasonal Factors were used to determine the need for seasonal adjustments to the September 2017 TMCs. The seasonal adjustment factor for roadways similar to the study area (Group 6) is 0.93. This indicates that average month traffic volumes are approximately seven percent less than the traffic volumes that were collected. Therefore, the traffic counts were not adjusted downward to reflect average month conditions and provide a conservatively high analysis consistent with the peak season traffic volumes. The MassDOT 2011 Weekday Seasonal Factors table is provided in the Appendix.

5.3.6 EXISTING BICYCLE VOLUMES AND ACCOMMODATIONS

In recent years, bicycle use has increased dramatically throughout the City of Boston. The Project Site is conveniently located in close proximity to several bicycle facilities. The City of Boston's "Bike Routes of Boston" map designates Saratoga Street as an intermediate route and Bennington Street as an advanced route. Bicycle counts were conducted concurrent with the vehicular TMCs and are presented in Figure 5-6. As shown in the figure, bicycle volumes are light in the study area during the peak periods.

5.3.6.1 BICYCLE SHARING SERVICES

The Project Site is also located in proximity to a bicycle sharing stations provided by Hubway. The Hubway system is regional public transportation by bike, owned by the municipalities of Boston, Brookline, Cambridge, and Somerville. System wide, there are more than 180 stations offering 1,600 bikes to more than 15,000 members. Since launching in July 2011, users have taken 5.3 million trips. There are two Hubway locations within a quarter mile of the site. Figure 5-7 shows the Hubway stations within one-quarter mile radius.

5.3.7 EXISTING PEDESTRIAN VOLUMES AND ACCOMMODATIONS

In general, sidewalks are provided along all roadways except the private driveways and are in good condition. Crosswalks are provided at all study area

intersections except for the two intersections along the 175 McClellan Highway Driveway. Pedestrian signal equipment is provided at all both of the signalized study area intersections.

To determine the amount of pedestrian activity within the study area, pedestrian counts were conducted concurrent with the TMCs at the study area intersections and are presented in Figure 5-8. As shown in the figure, pedestrian activity is light throughout the study area but heaviest at the intersection of Boardman Street/Saratoga Street/Ford Street.

5.3.8 EXISTING PUBLIC TRANSPORTATION SERVICES

The Project is located in East Boston with reliable public transportation opportunities. The MBTA Blue Line, which provides service between Revere and Downtown Boston, is approximately a half-mile from the Project.

The MBTA operates nine bus routes in close proximity to the Project. Figure 5-9 maps all of the public transportation service located in close proximity of the Project, and Table 5-1 provides a brief summary of all routes.

Table 5-1: Existing Public Transportation Service Summary

Transit Service	Description	Rush-hour Headway (in minutes)*
Subway Lines		
Blue	Bowdoin - Wonderland	5
Bus Routes		
112	Wellington Station – Wood Island Station	40
120	Orient Heights – Maverick Station	13-16
121	Wood Island – Maverick Station	13-16
448	Marblehead – Downtown Crossing	28-30
449	Marblehead – Downtown Crossing	28-30
450	Salem Depot – Haymarket	30
459	Salem Depot – Downtown Boston	15-35
712	Orient Heights – Point Shirley	2-20
713	Orient Heights – Point Shirley	2-20

* Headway is the time between buses.

5.3.9 EXISTING (2017) CONDITION TRAFFIC OPERATIONS ANALYSIS

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay experienced by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 9) software package was used to calculate average delay and associated LOS at all but one of the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 Highway Capacity Manual (HCM). The intersection of Saratoga Street/Boardman Street/Ford Street is a roundabout and was modeled using SIDRA Intersection, one of the MassDOT approved traffic analysis tools for modeling roundabouts.

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. Table 5-2 displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. LOS D or better is typically considered desirable during the peak hours of traffic in urban and suburban settings.

Table 5-2: Vehicle Level of Service Criteria

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

Source: 2000 Highway Capacity Manual, Transportation Research Board.

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

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

The 95th percentile queue, measured in feet, denotes the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line. This maximum queue occurs five percent, or less, of the time during the peak hour, and typically does not develop during off-peak hours. Since volumes fluctuate throughout the hour, the 95th percentile queue represents what can be considered a "worst case" condition. Queues at an intersection are generally below the 95th percentile length throughout most of the peak hour. It is also unlikely that 95th percentile queues for each approach to an intersection occur simultaneously.

Table 5-3 and Table 5-4 summarize the Existing (2017) Condition capacity analysis for the study area intersection during the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the Appendix.

Table 5-3: Existing (2017) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Signalized Intersections					
Boardman St/Route 1A	**D**	**51.2**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.31	51	98
Boardman St EB thru/right	F	>80.0	0.94	147	#307
Boardman St WB left	F	>80.0	0.86	238	#377
Boardman St WB left/thru	F	>80.0	0.88	246	#394
Boardman St WB right	B	18.1	0.32	0	61
Rt 1A NB left	F	>80.0	0.96	252	#427
Rt 1A NB thru | thru	C	23.0	0.41	340	388
Rt 1A NB right	A	3.4	0.06	0	24
Rt 1A SB left	F	>80.0	0.43	116	186
Rt 1A SB thru | thru/right	C	29.5	0.65	670	741
Boardman St/Marriott Driveway/Ashley St	**A**	**0.2**	**-**	**-**	**-**
Marriott Driveway EB left/right	B	13.4	0.14	-	12
Ashley St WB left/thru/right	B	11.8	0.14	-	12
Boardman St NB left/thru	A	0.2	0.20	0	0
Boardman St SB right/thru	A	0.1	0.10	0	0
Saratoga St/Bennington St	**D**	**53.2**	-	-	-
Saratoga St EB left/thru	F	82.4	0.75	196	264
Saratoga St EB right	A	0.7	0.11	0	0
Saratoga St WB left	E	60.8	0.73	423	#678
Saratoga St WB left/thru	E	61.1	0.74	444	#710
Saratoga St WB right	A	3.5	0.23	0	35
Bennington St NB left/thru	E	74.6	0.63	120	202
Bennington St NB right	A	3.5	0.28	0	53
Bennington St SB left/thru | thru/right	E	65.0	0.89	325	413
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	2.4	0.01	-	1
McClellan WB thru/right	A	0.0	0.02	-	0
Marriott SB left/right	A	8.9	0.06	-	5
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	B	13.5	0.07	-	6
Rt 1A NB thru | thru/right	A	0.0	0.44	-	0
Rt 1A SB thru | thru	A	0.0	0.55	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	B	14.2	0.16	-	14
Rt 1A NB thru | thru/right	A	0.0	0.40	-	0
Rt 1A SB thru | thru/right	A	0.0	0.55	-	0

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	A	9.5	0.20	-	1
Saratoga St NB left/thru	A	9.2	0.21	-	1
Saratoga St SB thru/right	B	11.9	0.51	-	3
Boardman St/Saratoga St/Ford St	**A**	**7.7**	-	-	-
Boardman St EB left/thru/right	A	6.3	0.21	-	20
Saratoga St WB left/thru/right	A	8.1	0.40	-	53
Saratoga St NB left/thru/right	A	4.6	0.11	-	10
Ford St SB left/thru/right	B	10.0	0.38	-	43

Grey Shading indicates LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

Table 5-4: Existing (2017) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Signalized Intersections					
Boardman St/Route 1A	**D**	**49.1**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.63	111	176
Boardman St EB thru/right	F	>80.0	0.95	163	#315
Boardman St WB left	F	>80.0	0.87	234	#371
Boardman St WB left/thru	F	>80.0	0.86	235	#371
Boardman St WB right	B	16.5	0.47	0	79
Rt 1A NB left	F	>80.0	0.63	156	237
Rt 1A NB thru | thru	C	32.4	0.75	884	977
Rt 1A NB right	A	3.8	0.06	1	25
Rt 1A SB left	F	>80.0	0.83	218	#328
Rt 1A SB thru | thru/right	C	24.7	0.53	499	565
Boardman St/Marriott Driveway/Ashley St	**A**	**1.8**	**-**	**-**	**-**
Marriott Driveway EB left/right	C	17.2	0.40	-	47
Ashley St WB left/thru/right	B	11.9	0.10	-	8
Boardman St NB left/thru	A	1.8	0.20	0	83
Boardman St SB right/thru	A	1.8	0.18	0	73
Saratoga St/Bennington St	**D**	**48.5**	-	-	-
Saratoga St EB left/thru	E	72.9	0.79	259	313
Saratoga St EB right	A	0.3	0.06	0	0
Saratoga St WB left	F	80.7	0.88	~435	#653
Saratoga St WB left/thru	F	84.6	0.90	~465	#685
Saratoga St WB right	A	6.1	0.36	0	41
Bennington St NB left/thru	E	61.0	0.75	286	433
Bennington St NB right	A	3.7	0.50	0	70
Bennington St SB left/thru | thru/right	D	47.9	0.72	166	236

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	7.0	0.07	-	6
McClellan WB thru/right	A	0.0	0.03	-	0
Marriott SB left/right	B	10.0	0.05	-	4
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	C	20.2	0.07	-	6
Rt 1A NB thru | thru/right	A	0.0	0.71	-	0
Rt 1A SB thru | thru	A	0.0	0.48	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	C	21.2	0.14	-	12
Rt 1A NB thru | thru/right	A	0.0	0.69	-	0
Rt 1A SB thru | thru/right	A	0.0	0.48	-	0
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	A	9.9	0.25	-	1
Saratoga St NB left/thru	B	11.4	0.44	-	2
Saratoga St SB thru/right	A	9.6	0.29	-	1
Boardman St/Saratoga St/Ford St	**A**	**6.7**	-	-	-
Boardman St EB left/thru/right	A	7.0	0.31	-	36
Saratoga St WB left/thru/right	A	8.2	0.35	-	40
Saratoga St NB left/thru/right	A	6.8	0.25	-	26
Ford St SB left/thru/right	A	5.6	0.12	-	11

Grey Shading indicates LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

As shown in Table 5-3 and Table 5-4, the majority of intersections and approaches operate well under the Existing (2017) Condition with the following exceptions:

- The signalized intersection of **Boardman Street/Route 1A** operates at LOS D during both the a.m. and p.m. peak hours. The Boardman Street eastbound left-turn and shared thru/right-turn lanes each operate at LOS F during both the a.m. and p.m. peak hours. The Boardman Street westbound left-turn and shared left-turn/thru lanes each operate at LOS F during both the a.m. and the p.m. peak hours. Both the Route 1A northbound and southbound left-turn lanes operate at LOS F during both the a.m. and the p.m. peak hours.

- The signalized intersection of **Saratoga Street/Bennington Street** operates at LOS D during both the a.m. and p.m. peak hours. The Saratoga Street eastbound shared left-turn/through lane operates at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. The Saratoga Street westbound left-turn only lane and shared left-turn/through lane both operate at LOS E during the a.m. peak hour and LOS F

during the p.m. peak hour. The Bennington Street northbound shared left-turn/through lane operates at LOS E during the both the a.m. and p.m. peak hours. The Bennington Street southbound shared left-turn/through lane and shared through/right-turn lane operate at LOS E during the a.m. peak hour.

5.4 NO-BUILD (2024) CONDITION

The No-Build (2024) Condition reflects a future scenario that incorporates anticipated traffic volume changes associated with background traffic growth independent of any specific project; traffic associated with other planned specific developments, and planned infrastructure improvements that will affect travel patterns throughout the study area. These infrastructure improvements include roadway, public transportation, pedestrian and bicycle improvements.

5.4.1 BACKGROUND TRAFFIC GROWTH

The methodology to account for generic future background traffic growth, independent of this Project, may be affected by changes in demographics, smaller scale development projects, or projects unforeseen at this time. Based on a review of recent and historic traffic data collected recently and to account for any additional unforeseen traffic growth, a traffic growth rate of one-half percent per year, compounded annually, was used.

5.4.2 SPECIFIC DEVELOPMENT TRAFFIC GROWTH

Traffic volumes associated with known development projects can affect traffic patterns throughout the study area within the future analysis time horizon. Two such projects were specifically accounted for in the traffic volumes for future scenarios, while others were included in the general background traffic growth (background projects are mapped on Figure 5-10):

Orient Heights Redevelopment consists of the demolition of 331 existing BHA residential units and the construction of 373 new mixed-income residential units. This project is currently under construction.

Hilton Garden Inn Expansion consists of the demolition of a 1-story, 4,000 sf retail building and the construction of a 5-story, 84-room addition to the existing Hilton Garden Inn hotel. This project is currently under review by the BPDA.

The other background projects included on the figure are smaller projects that are included in the background traffic growth.

5.4.3 PROPOSED INFRASTRUCTURE IMPROVEMENTS

A review of planned improvements to roadway, transit, bicycle, and pedestrian facilities was conducted to determine if there are any nearby improvement projects in the vicinity of the study area. Based on this review, it was determined that there are no planned improvements in the vicinity of the Project.

5.4.1 NO-BUILD TRAFFIC VOLUMES

The one-half percent per year annual growth rate, compounded annually, was applied to the Existing (2017) Condition traffic volumes, then the traffic volumes associated with the background development projects listed above were added to develop the No-Build (2024) Condition traffic volumes. The No-Build (2024) weekday morning and evening peak hour traffic volumes are shown on Figures 5-11 and Figure 5-12, respectively.

5.4.2 NO-BUILD (2024) CONDITION TRAFFIC OPERATIONS ANALYSIS

The No-Build (2024) Condition analysis uses the same methodology as the Existing (2017) Condition capacity analysis. Tables 5-5 and Table 5-6 present the No-Build (2024) Condition operations analysis for the a.m. and p.m. peak hours, respectively. The shaded cells in the tables indicate a decrease in LOS between the Existing (2017) Condition and the No-Build (2024) Condition to an LOS below LOS D. The detailed analysis sheets are provided in the Appendix.

Table 5-5: No-Build (2024) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Signalized Intersections					
Boardman St/Route 1A	**D**	**52.8**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.32	52	99
Boardman St EB thru/right	F	>80.0	0.97	151	#319
Boardman St WB left	F	>80.0	0.88	249	#400
Boardman St WB left/thru	F	>80.0	0.90	254	#413
Boardman St WB right	B	17.8	0.33	0	62
Rt 1A NB left	F	>80.0	0.99	265	#454
Rt 1A NB thru | thru	C	23.6	0.42	356	405
Rt 1A NB right	A	3.3	0.07	0	25
Rt 1A SB left	F	>80.0	0.44	120	191
Rt 1A SB thru | thru/right	C	30.7	0.67	710	782
Boardman St/Marriott Driveway/Ashley St	**A**	**1.8**	**-**	**-**	**-**
Marriott Driveway EB left/right	B	13.6	0.14	-	12
Ashley St WB left/thru/right	B	11.9	0.14	-	12
Boardman St NB left/thru	A	1.9	0.23	0	96
Boardman St SB right/thru	A	1.7	0.11	0	46
Saratoga St/Bennington St	**E**	**55.1**	-	-	-
Saratoga St EB left/thru	F	82.9	0.76	203	273
Saratoga St EB right	A	0.7	0.11	0	0
Saratoga St WB left	E	63.9	0.78	~485	#713
Saratoga St WB left/thru	E	64.4	0.79	~516	#750
Saratoga St WB right	A	3.5	0.25	0	35
Bennington St NB left/thru	E	77.1	0.67	123	210
Bennington St NB right	A	3.5	0.29	0	54
Bennington St SB left/thru | thru/right	E	67.0	0.91	333	#445
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	2.4	0.01	-	1
McClellan WB thru/right	A	0.0	0.02	-	0
Marriott SB left/right	A	8.9	0.06	-	5
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	B	13.8	0.07	-	6
Rt 1A NB thru | thru/right	A	0.0	0.46	-	0
Rt 1A SB thru | thru	A	0.0	0.25	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	B	14.7	0.17	-	15
Rt 1A NB thru | thru/right	A	0.0	0.42	-	0
Rt 1A SB thru | thru/right	A	0.0	0.57	-	0

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	A	9.6	0.21	-	1
Saratoga St NB left/thru	A	9.3	0.21	-	1
Saratoga St SB thru/right	B	12.4	0.53	-	3
Boardman St/Saratoga St/Ford St	**A**	**8.0**	-	-	-
Boardman St EB left/thru/right	A	6.4	0.22	-	22
Saratoga St WB left/thru/right	A	8.4	0.42	-	55
Saratoga St NB left/thru/right	A	4.7	0.11	-	10
Ford St SB left/thru/right	B	10.5	0.40	-	46

Grey Shading indicates degradation to LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

Table 5-6: No-Build (2024) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Signalized Intersections					
Boardman St/Route 1A	**D**	**51.8**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.66	116	#188
Boardman St EB thru/right	F	>80.0	0.99	170	#330
Boardman St WB left	F	>80.0	0.90	257	#418
Boardman St WB left/thru	F	>80.0	0.90	258	#420
Boardman St WB right	B	16.1	0.48	0	79
Rt 1A NB left	F	>80.0	0.64	162	243
Rt 1A NB thru | thru	C	34.8	0.61	958	1046
Rt 1A NB right	A	4.0	0.06	2	26
Rt 1A SB left	F	>80.0	0.85	229	#352
Rt 1A SB thru | thru/right	C	25.9	0.55	531	593
Boardman St/Marriott Driveway/Ashley St	**A**	**1.8**	**-**	**-**	**-**
Marriott Driveway EB left/right	C	17.8	0.41	-	49
Ashley St WB left/thru/right	B	12.1	0.10	-	9
Boardman St NB left/thru	A	1.9	0.20	0	86
Boardman St SB right/thru	A	1.8	0.18	0	74

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length (feet)	95th Percentile Queue length (feet)
Saratoga St/Bennington St	**D**	**52.3**	-	-	-
Saratoga St EB left/thru	E	73.1	0.80	267	323
Saratoga St EB right	A	0.3	0.06	0	0
Saratoga St WB left	F	91.8	0.94	~465	#676
Saratoga St WB left/thru	F	99.7	0.98	~501	#714
Saratoga St WB right	A	6.2	0.37	0	42
Bennington St NB left/thru	E	61.7	0.76	299	#473
Bennington St NB right	A	3.8	0.51	0	72
Bennington St SB left/thru | thru/right	D	48.9	0.74	173	245
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	7.0	0.07	-	6
McClellan WB thru/right	A	0.0	0.03	-	0
Marriott SB left/right	B	10.0	0.05	-	4
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	C	21.1	0.07	-	6
Rt 1A NB thru | thru/right	A	0.0	0.74	-	0
Rt 1A SB thru | thru	A	0.0	0.50	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	C	22.4	.15	-	13
Rt 1A NB thru | thru/right	A	0.0	0.72	-	0
Rt 1A SB thru | thru/right	A	0.0	0.50	-	0
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	B	10.1	0.26	-	1
Saratoga St NB left/thru	B	11.7	0.46	-	2
Saratoga St SB thru/right	A	9.8	0.30	-	1
Boardman St/Saratoga St/Ford St	**A**	**6.9**	-	-	-
Boardman St EB left/thru/right	A	7.2	0.33	-	38
Saratoga St WB left/thru/right	A	8.5	0.37	-	43
Saratoga St NB left/thru/right	A	7.0	0.27	-	27
Ford St SB left/thru/right	A	5.8	0.13	-	12

Grey Shading indicates degradation to LOS E or F.

~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

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

As shown in Table 5-5 and Table 5-6, the following operational deficiencies are expected under the No-Build (2024) Condition:

- The signalized intersection of Boardman Street/Route 1A continues to operate at LOS D during both the a.m. and p.m. peak hours. The Boardman Street eastbound left-turn and shared thru/right-turn lanes each operate at LOS F during both the a.m. and p.m. peak hours. The Boardman Street westbound left-turn and shared left-turn/thru lanes each operate at LOS F during both the a.m. and the p.m. peak hours. The Route 1A northbound and southbound left-turn lanes operate at LOS F during both the a.m. and the p.m. peak hours.

- The signalized intersection of Saratoga Street/Bennington Street decreases to LOS E during the a.m. peak hour and continues to operate at LOS D during the p.m. peak hour. The Saratoga Street eastbound left-turn/thru lane continues to operate at LOS F during the a.m. peak hour and LOS E during the p.m. peak hour. The Saratoga Street westbound approach continues to operate at LOS E during the a.m. peak hour and continues to operate at LOS F during the p.m. peak hour. The Bennington Street northbound left-turn/through lane continues to operate at LOS E during both the a.m. and p.m. peak hours. The southbound approach continues to operate at LOS E during the a.m. peak hour and LOS D during the p.m. peak hour.

5.5 BUILD (2024) CONDITION

As previously mentioned, the Project will consist of the construction of a residential apartment building located east of 175 McClellan Highway on the north side of Addison Street. The Project will consist of approximately 270 residential units and 179 parking spaces.

5.5.1 SITE ACCESS AND VEHICLE CIRCULATION

Vehicular access to the on-site parking will be provided from the 175 McClellan Highway driveway off Route 1A. Egress from the Site will be provided via the 175 McClellan Highway driveway and also left turns onto Addison Street. There will also be a separate pick-up/drop-off zone with access along Addison Street to accommodate visitors that arrive by taxi or Uber/Lyft. The primary pedestrian access to the buildings will be located along Addison Street. The site plan is shown in Figure 5-13.

5.5.2 PROJECT PARKING

The parking goals developed by the BTD for this section of East Boston are a maximum of 1.0 to 1.5 parking spaces per residential unit. The Project includes a parking supply of approximately 179 spaces. This results in a parking ratio of 0.66 spaces per residential unit.

5.5.3 LOADING AND SERVICE ACCOMMODATIONS

Residential units primarily generate delivery trips related to small packages and prepared food on a daily basis. Move-in/move-out activity is also related to residential units, although less frequent. The area is located on the northern edge of the Project Site and will be accessed off the 175 McClellan Highway Driveway. This space will accommodate most deliveries, trash pick-up, and most residential move-in/move-out activity. An additional loading area will be located on the eastern edge of the South Building accessible from the Addison Driveway. Deliveries to the Project Site will be limited to mostly SU-36 trucks and smaller delivery vehicles.

5.5.4 TRIP GENERATION METHODOLOGY

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

To estimate the number of trips expected to be generated by the Project, data published by the Institute of Transportation Engineers (ITE) in the Trip Generation Manual[1] were used. ITE provides data to estimate the total number of unadjusted vehicular trips associated with the Project. In an urban setting well served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit.

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

Land Use Code 221 – Multifamily Housing (Mid-Rise). The Multifamily Housing (Mid-Rise) land use includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors). Calculations of the number of trips use ITE's average rate per dwelling unit.

5.5.5 MODE SHARE

BTD provides vehicle, transit, and walking mode split rates for different areas of Boston. The Project is located in the northern portion of designated Area 7 – East

[1] Trip Generation Manual, 10th Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.

Boston. The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[2]. The person trips were then distributed to different modes according to the mode shares shown in Table 5-7.

Table 5-7: Travel Mode Share

Land Use		Walk/Bicycle Share	Transit Share	Auto Share	Vehicle Occupancy Rate
Daily					
Residential	In	29%	17%	54%	1.13
	Out	29%	17%	54%	1.13
a.m. Peak					
Residential	In	34%	15%	51%	1.13
	Out	31%	25%	44%	1.13
p.m. Peak					
Residential	In	31%	25%	44%	1.13
	Out	34%	15%	51%	1.13

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

5.5.6 PROJECT TRIP GENERATION

The mode share percentages shown in Table 5-7 were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates for the Project. The trip generation for the Project by mode is shown in Table 5-8. The detailed trip generation information is provided in the Appendix.

Table 5-8: Net New Project Trip Generation

Land Use		Walk/Bicycle Trips	Transit Trips	Vehicle Trips
Daily				
Residential[1]	In	240	141	396
	Out	240	141	396
	Total	480	282	792
a.m. Peak Hour				
Residential	In	10	4	12
	Out	25	20	32
	Total	35	24	44
p.m. Peak Hour				
Residential	In	25	20	32
	Out	17	8	24
	Total	42	28	56

1.ITE Trip Generation Rate, 10th Edition, LUC 221 (Multifamily Housing (Mid-Rise)), 270 units.

As shown in Table 5-8, there is expected to be 480 new pedestrian/bicycle trips, 282 new transit trips, and 792 new vehicle trips throughout the day. During the a.m. peak hour, there is expected to be 35 pedestrian trips (10 in and 25 out), 24 transit trips (4 in and 20 out), and 44 vehicle trips (12 in and 32 out). During the p.m. peak hour, there is expected to be 42 pedestrian trips (25 in and 17 out), 28 transit trips (8 in and 28 out), and 56 vehicle trips (32 in and 24 out).

5.5.7 TRIP DISTRIBUTION

The trip distribution identifies the various travel paths for vehicles associated with the Project. Trip distribution patterns for the Project were based on BTD's origin-destination data for Area 7 and trip distribution patterns presented in traffic studies for nearby projects. The trip distribution patterns for the Project are illustrated in Figure 5-14.

5.5.8 TRIP ASSIGNMENT

The vehicle trips were distributed through the study area. The Project-generated trips for the a.m. and p.m. peak hours are shown in Figure 5-15 and Figure 5-16, respectively.

5.5.9 BUILD TRAFFIC VOLUMES

The trip assignments were added to the No-Build (2024) Condition vehicular traffic volumes to develop the Build (2024) Condition vehicular traffic volumes. The Build (2024) Condition a.m. and p.m. peak hour traffic volumes are shown on Figure 5-17 and Figure 5-18, respectively.

5.5.10 BICYCLE ACCOMMODATION

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure bicycle parking for residents and short-term bicycle racks for visitors. Based on BTD guidelines, the Project will supply approximately 270 secure bicycle parking/storage spaces within the Project Site for the residents and employees, as well as public bicycle racks throughout the Project Site for visitors.

5.5.11 BUILD CONDITION TRAFFIC OPERATIONS ANALYSIS

The Build (2024) Condition analysis uses the same methodology as the Existing (2017) Condition and No-Build (2024) Condition analysis. Table 5-10 and Table 5-11 present the Build (2024) Condition capacity analysis for the a.m. and p.m. peak hours, respectively. The shaded cells in the tables indicate a worsening in LOS between the No-Build (2024) Condition and the Build (2024) Condition. The detailed analysis sheets are provided in the Appendix.

Table 5-9: Build (2024) Condition, Capacity Analysis Summary, a.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length	95th Percentile Queue length
Signalized Intersections					
Boardman St/Route 1A	**D**	**52.8**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.32	52	99
Boardman St EB thru/right	F	>80.0	0.97	151	#319
Boardman St WB left	F	>80.0	0.88	249	#400
Boardman St WB left/thru	F	>80.0	0.90	254	#413
Boardman St WB right	B	17.8	0.33	0	62
Rt 1A NB left	F	>80.0	0.99	265	#454
Rt 1A NB thru | thru	C	23.6	0.43	359	409
Rt 1A NB right	A	3.3	0.07	0	25
Rt 1A SB left	F	>80.0	0.45	123	195
Rt 1A SB thru | thru/right	C	30.7	0.67	710	782
Boardman St/Marriott Driveway/Ashley St	**A**	**0.2**	**-**	**-**	**-**
Marriott Driveway EB left/right	B	13.7	0.14	-	12
Ashley St WB left/thru/right	B	12.0	0.15	-	13
Boardman St NB left/thru	A	0.3	0.21	0	0
Boardman St SB right/thru	A	0.1	0.10	0	0
Saratoga St/Bennington St	**E**	**55.5**	**-**	**-**	**-**
Saratoga St EB left/thru	F	>80.0	0.77	206	277
Saratoga St EB right	A	0.7	0.11	0	0
Saratoga St WB left	E	64.0	0.78	~485	#713
Saratoga St WB left/thru	E	64.6	0.79	~516	#750
Saratoga St WB right	A	3.5	0.25	0	35
Bennington St NB left/thru	E	77.9	0.67	123	211
Bennington St NB right	A	3.5	0.29	0	54
Bennington St SB left/thru | thru/right	E	67.8	0.92	335	#448
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	1.9	0.01	-	1
McClellan WB thru/right	A	0.0	0.02	-	0
Marriott SB left/right	A	9.0	0.07	-	5
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	B	14.0	0.09	-	7
Rt 1A NB thru | thru/right	A	0.0	0.46	-	0
Rt 1A SB thru | thru	A	0.0	0.57	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	B	14.7	0.17	-	15
Rt 1A NB thru | thru/right	A	0.0	0.42	-	0
Rt 1A SB thru | thru/right	A	0.0	0.57	-	0
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	A	9.8	0.25	-	1
Saratoga St NB left/thru	A	9.4	0.22	-	1
Saratoga St SB thru/right	B	12.7	0.54	-	3

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length	95th Percentile Queue length
Boardman St/Saratoga St/Ford St	**A**	**8.0**	-	-	-
Boardman St EB left/thru/right	A	6.4	0.22	-	22
Saratoga St WB left/thru/right	A	8.4	0.42	-	55
Saratoga St NB left/thru/right	A	4.7	0.11	-	10
Ford St SB left/thru/right	B	10.5	0.40	-	46
Addison St/Site Driveway	**-**	**-**	-	-	-
Addison St EB thru	A	0.0	0.09	-	0
Addison St WB thru	A	0.0	0.05	-	0
Site Driveway SB left	B	10.0	0.04	-	3

Grey Shading indicates degradation to LOS E or F.

~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.

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

Table 5-10: Build (2024) Condition, Capacity Analysis Summary, p.m. Peak Hour

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length	95th Percentile Queue length
Signalized Intersections					
Boardman St/Route 1A	**D**	**52.2**	**-**	**-**	**-**
Boardman St EB left	F	>80.0	0.66	116	#188
Boardman St EB thru/right	F	>80.0	0.99	170	#330
Boardman St WB left	F	>80.0	0.90	257	#418
Boardman St WB left/thru	F	>80.0	0.90	258	#420
Boardman St WB right	B	16.2	0.48	0	79
Rt 1A NB left	F	>80.0	0.64	162	243
Rt 1A NB thru | thru	D	35.2	0.79	963	1052
Rt 1A NB right	A	4.0	0.07	2	26
Rt 1A SB left	F	>80.0	0.87	239	#370
Rt 1A SB thru | thru/right	C	26.0	0.55	531	593
Boardman St/Marriott Driveway/Ashley St	**A**	**1.8**	**-**	**-**	**-**
Marriott Driveway EB left/right	C	18.0	0.41	-	50
Ashley St WB left/thru/right	B	12.2	0.10	-	9
Boardman St NB left/thru	A	1.9	0.21	0	87
Boardman St SB right/thru	A	1.8	0.18	0	74
Saratoga St/Bennington St	**D**	**52.7**	-	-	-
Saratoga St EB left/thru	E	73.4	0.80	271	327
Saratoga St EB right	A	0.3	0.06	0	0
Saratoga St WB left	F	95.0	0.95	~473	#685
Saratoga St WB left/thru	F	98.9	0.97	~494	#708
Saratoga St WB right	A	6.2	0.37	0	42
Bennington St NB left/thru	E	61.9	0.77	300	#473
Bennington St NB right	A	3.8	0.51	0	72
Bennington St SB left/thru | thru/right	D	49.2	0.75	174	245
Unsignalized Intersections					
175 McClellan Highway/Marriott Driveways	**-**	**-**	**-**	**-**	**-**
McClellan EB left/thru	A	5.9	0.07	-	6
McClellan WB thru/right	A	0.0	0.03	-	0
Marriott SB left/right	B	10.4	0.06	-	5
Route 1A/175 McClellan Highway	-	-	-	-	-
McClellan WB right	C	21.9	0.10	-	8
Rt 1A NB thru | thru/right	A	0.0	0.74	-	0
Rt 1A SB thru | thru	A	0.0	0.50	-	0
Route 1A/Addison St	-	-	-	-	-
Addison St WB right	C	22.8	0.15	-	13
Rt 1A NB thru | thru/right	A	0.0	0.73	-	0
Rt 1A SB thru | thru/right	A	0.0	0.50	-	0
Addison St/Saratoga St	-	-	-	-	-
Addison St EB left/right	B	1.2	0.29	-	10
Saratoga St NB left/thru	B	2.4	0.46	-	12
Saratoga St SB thru/right	A	1.3	0.31	-	10

Intersection/Approach	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue length	95th Percentile Queue length
Boardman St/Saratoga St/Ford St	**A**	**6.9**	-	-	-
Boardman St EB left/thru/right	A	7.2	0.33	-	38
Saratoga St WB left/thru/right	A	8.5	0.37	-	43
Saratoga St NB left/thru/right	A	7.0	0.27	-	27
Ford St SB left/thru/right	A	5.8	0.13	-	12
Addison St/Site Driveway	-	-	-	-	-
Addison St EB thru	A	0.0	0.11	-	0
Addison St WB thru	A	0.0	0.03	-	0
Site Driveway SB left	A	10.0	0.03	-	2

Grey Shading indicates degradation to LOS E or F.
~ 50th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
# 95th percentile volume exceeds capacity. Queue shown is the maximum after two cycles.
m Volumes for 95th percentile queue is metered by upstream signal.

As shown in Table 5-9 and Table 5-10, there are no additional operational deficiencies that are expected to occur under the Build (2024) Condition, indicating that the Project should have a minimal impact to traffic operations in the study area.

5.6 TRANSPORTATION DEMAND MANAGEMENT

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

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

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

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

- The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries, and will work with tenants as they move in to office space to raise awareness of public transportation, bicycling, and walking opportunities.

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

- Provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options.

- Provide electric vehicle charging stations to accommodate 5 percent of the total parking and sufficient infrastructure capacity for future accommodation of 15% of the garage parking spaces.

- Vehicle Sharing Program: The Proponent will explore the feasibility of providing spaces in the garage for a car sharing service such as Zipcar.

5.7 TRANSPORTATION MITIGATION MEASURES

Although the traffic impacts associated with the new trips are minimal (generating less than one vehicle trip per minute during the peak hours), the Proponent will continue to work with the City of Boston so that the Project efficiently serves vehicle trips, improves the pedestrian environment, and encourages transit and bicycle use.

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

The Project expects to contribute to mitigation measures to improve the existing transportation conditions in the area. Potential additional mitigation measures that could be appropriate for a Project with this level of impact include pedestrian improvements and bicycle accommodations;

Further mitigation measures will be discussed with BTD as the Project moves through the permitting process. All mitigation measures will be detailed in the TAPA, which is a legally binding document.

The Proponent will also produce a Construction Management Plan for review and approval by BTD. The CMP will detail the schedule, staging, parking, delivery, and other associated impacts of the construction of the Project.

5.8 EVALUATION OF SHORT-TERM CONSTRUCTION IMPACTS

Most construction activities will be accommodated within the current Project Site boundaries. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a CMP to be filed with BTD in accordance with the City's transportation maintenance plan requirements.

To minimize transportation impacts during the construction period, the following measures will be considered for the CMP:

- Limited construction worker parking on-site;
- Encouragement of worker carpooling;
- Explore the feasibility of a subsidy for MBTA passes for workers; and
- Providing secure spaces on-site for workers' supplies and tools so they do not have to be brought to the site each day.

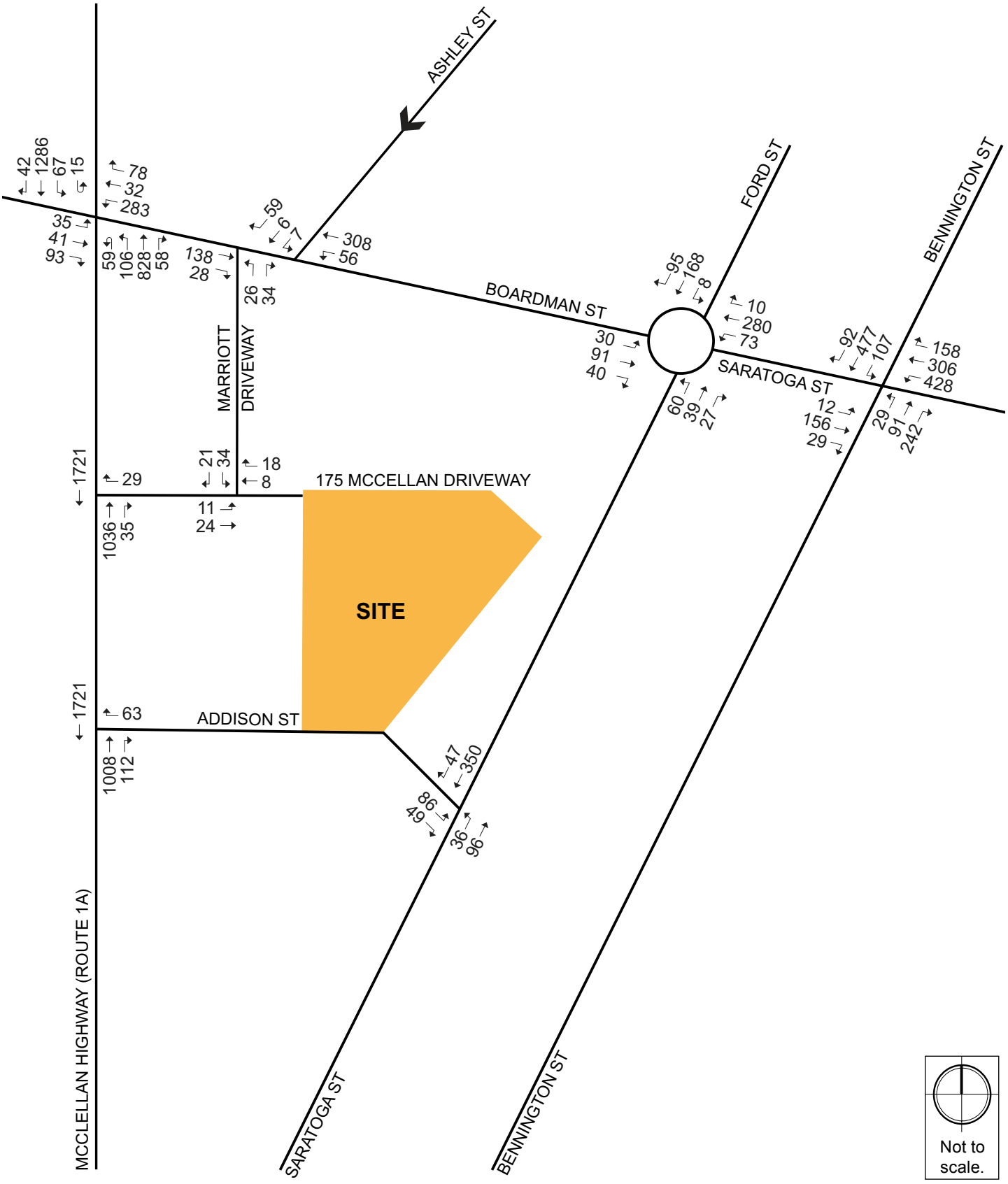
The CMP to be executed with the City prior to commencement of construction will document all committed measures.

Figure 5-1
Study Area Intersection
Source: Howard Stein Hudson, 2017

Figure 5-2
On-Street Parking Regulation
Source: Howard Stein Hudson, 2017

East Boston, Massachusetts

Figure 5-3
Car Sharing Services
Source: Howard Stein Hudson, 2017

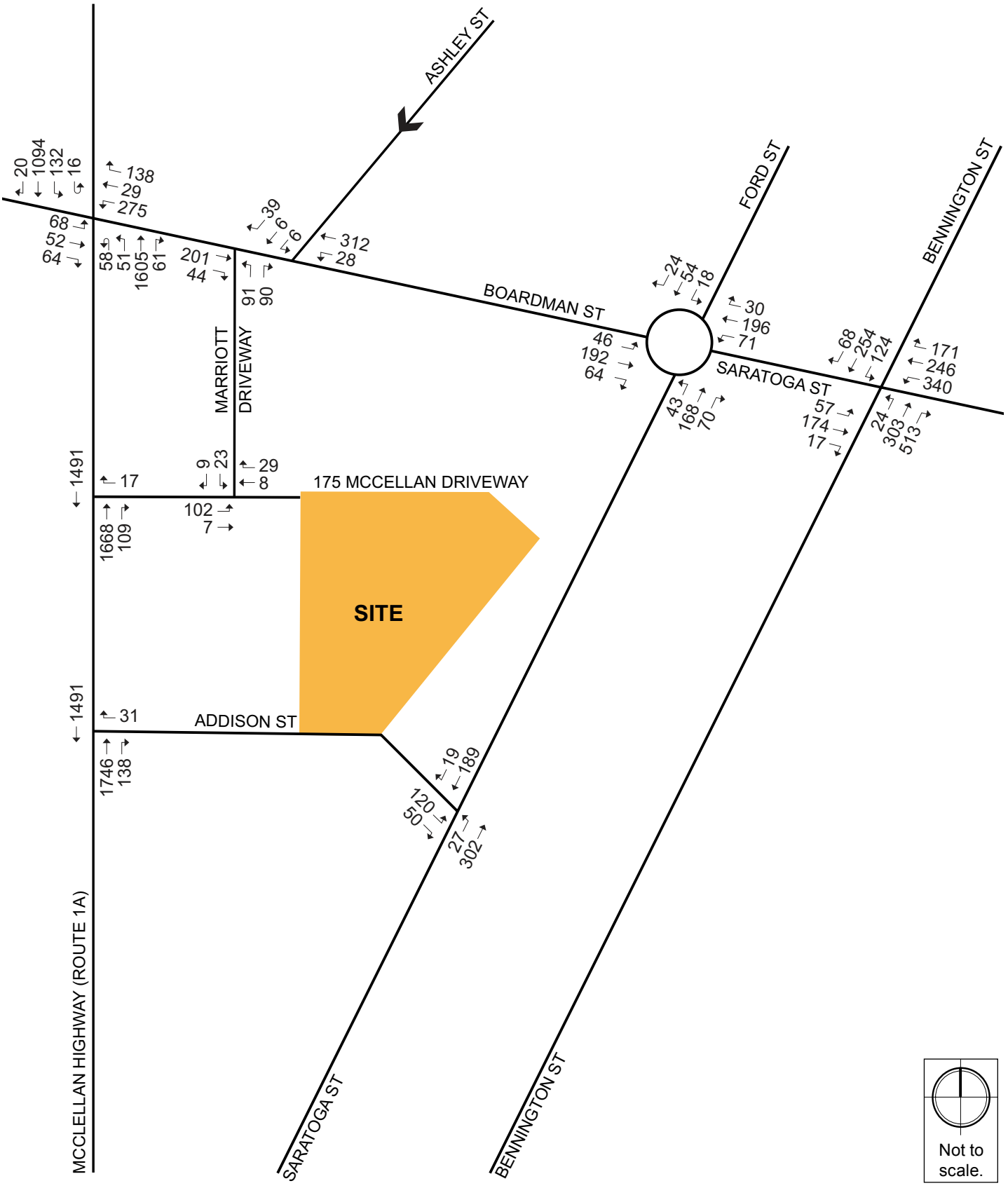


East Boston, Massachusetts

Figure 5-4

Existing (2017) Condition Traffic Volumes, Weekday a.m. Peak Hour

Source: Howard Stein Hudson, 2017

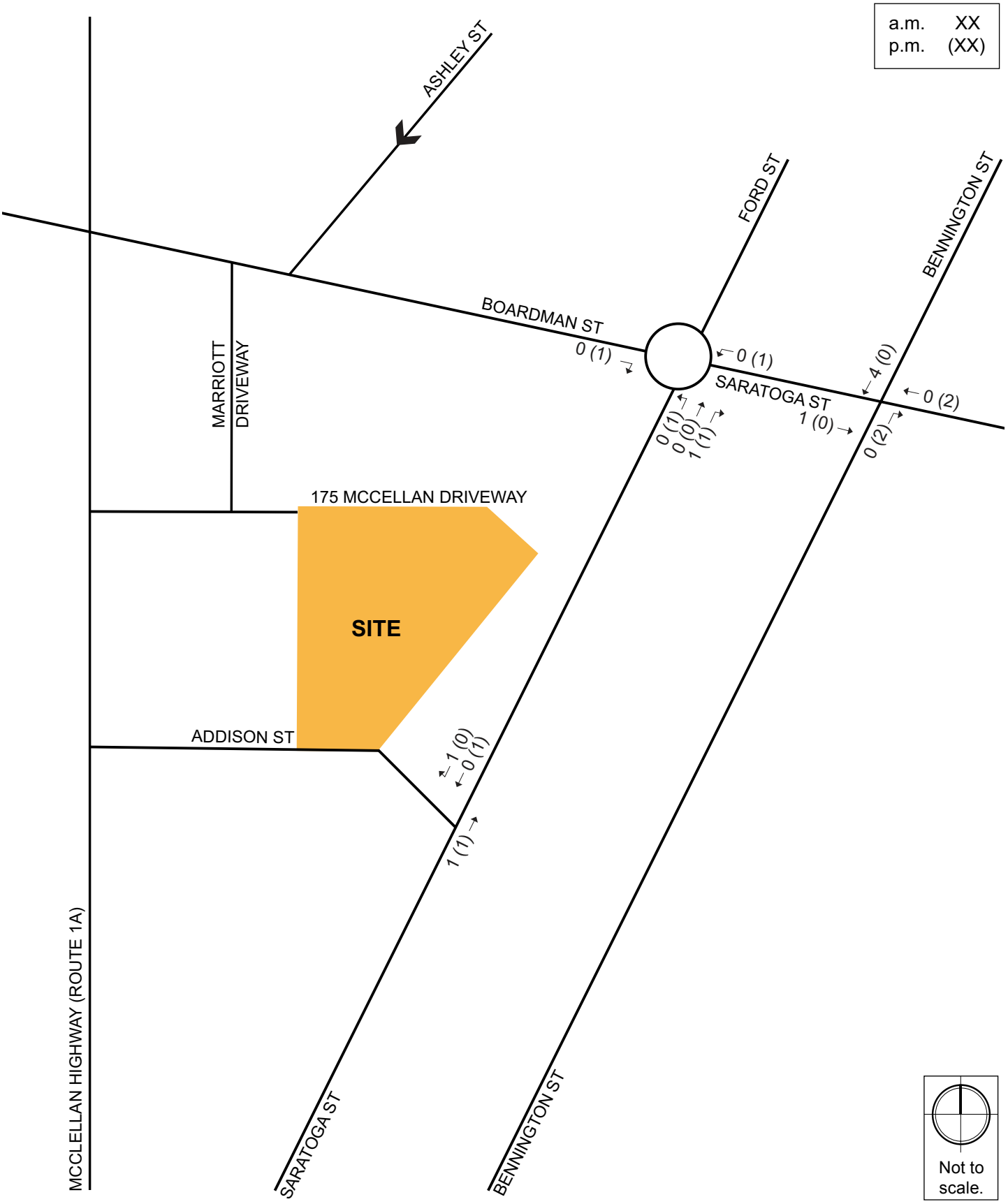


East Boston, Massachusetts

Figure 5-5

Existing (2017) Condition Traffic Volumes, Weekday p.m. Peak Hour

Source: Howard Stein Hudson, 2017



East Boston, Massachusetts

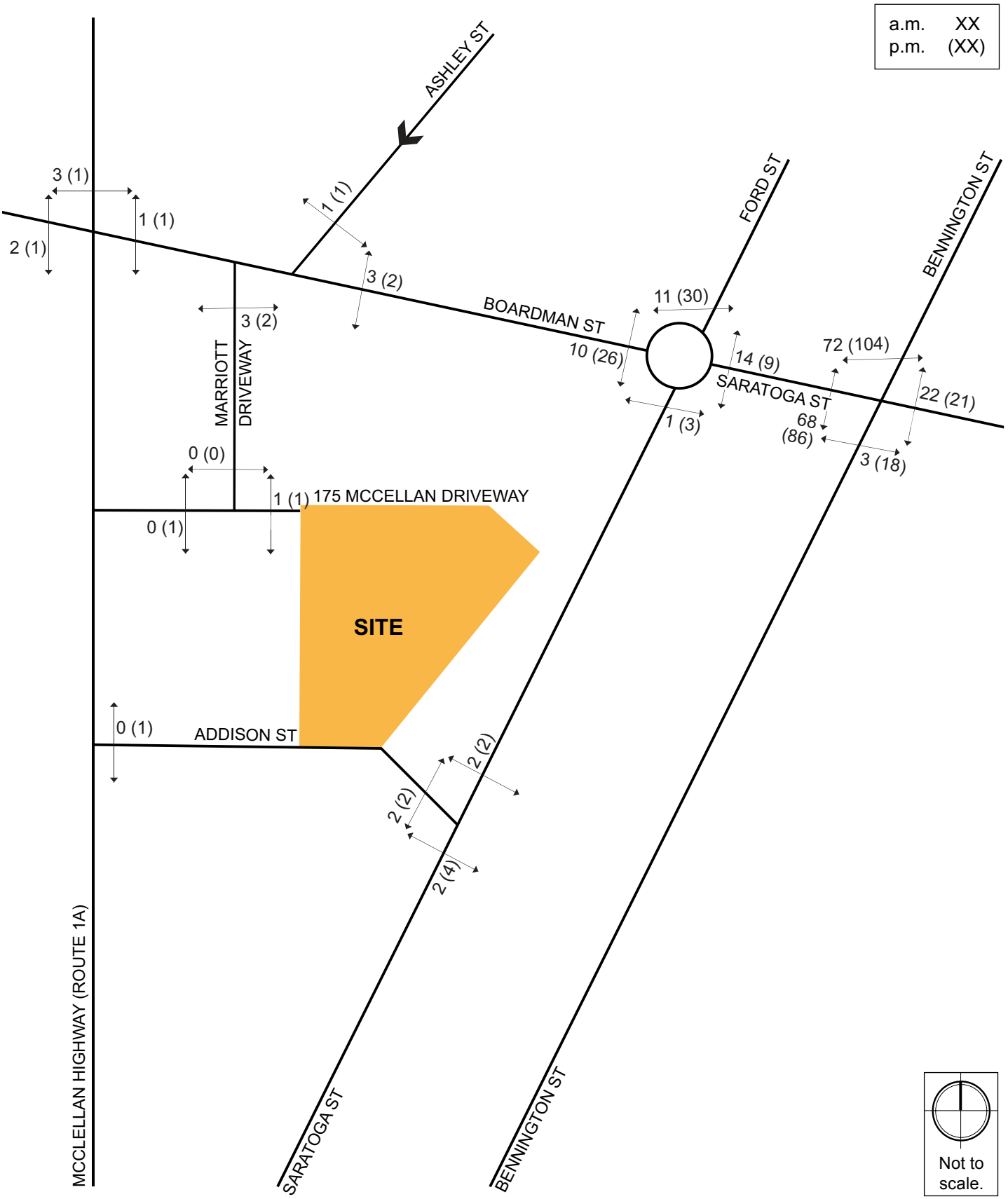
Figure 5-6

Existing (2017) Condition Bicycle Volumes, Weekday a.m. and p.m. Peak Hour

Source: Howard Stein Hudson, 2017

East Boston, Massachusetts

Figure 5-7
Bicycle Sharing Locations
Source: Howard Stein Hudson, 2017



East Boston, Massachusetts

Figure 5-8

Existing (2017) Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hour

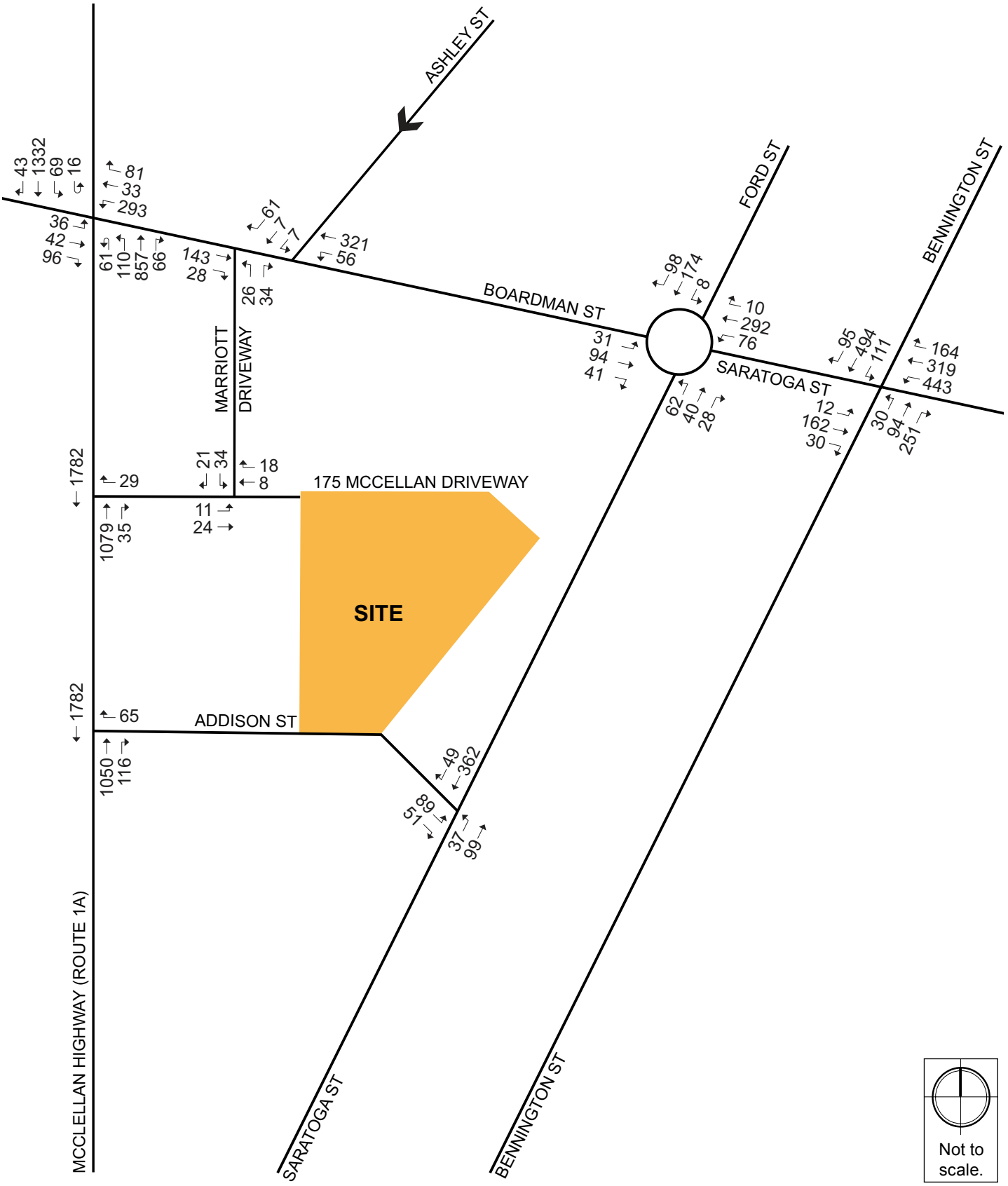
Source: Howard Stein Hudson, 2017

East Boston, Massachusetts

Figure 5-9
Public Transportation
Source: Howard Stein Hudson, 2017

East Boston, Massachusetts

Figure 5-10
Background Projects
Source: Howard Stein Hudson, 2017

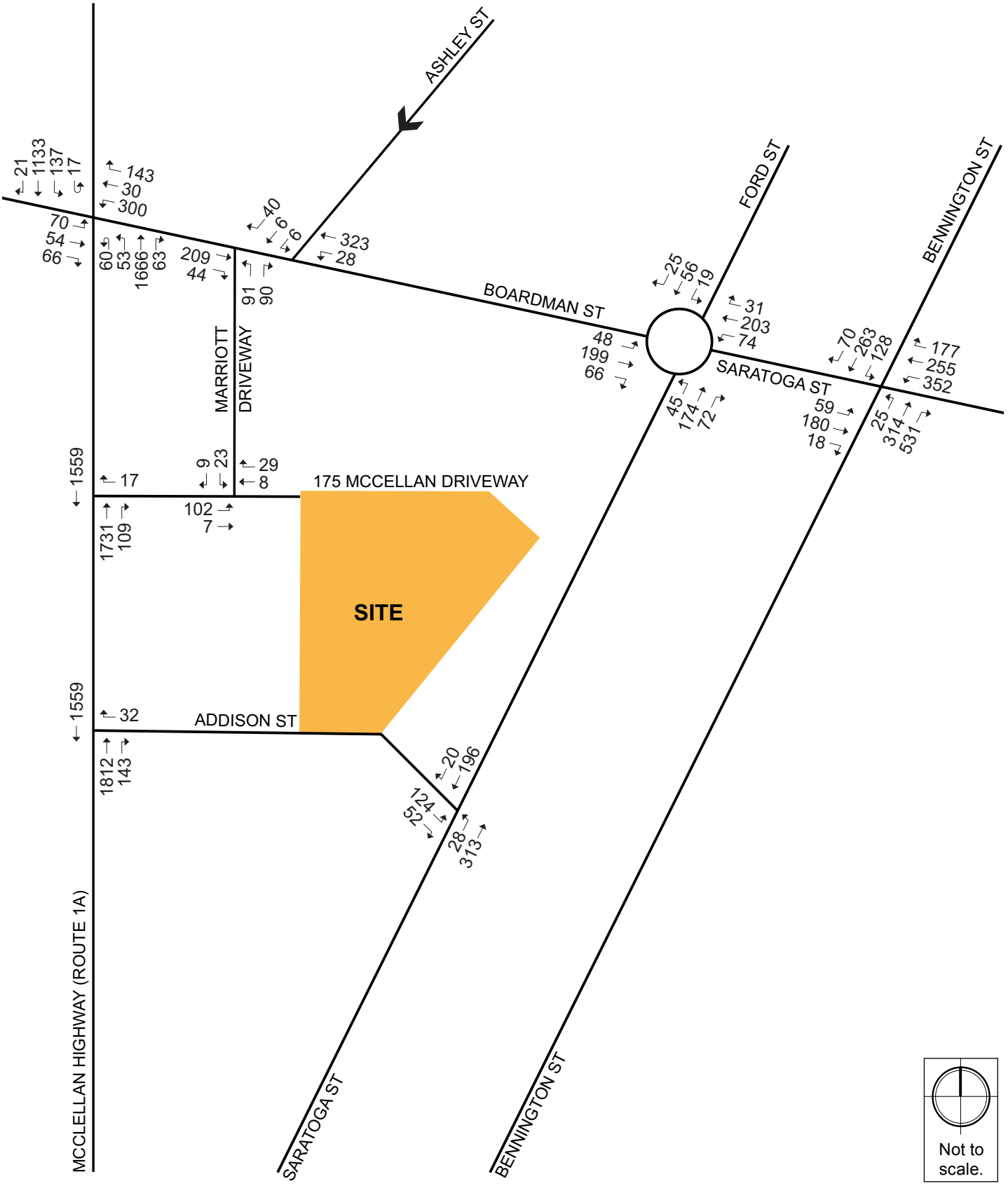


East Boston, Massachusetts

Figure 5-11

No-Build (2024) Condition Traffic Volumes, Weekday a.m. Peak Hour

Source: Howard Stein Hudson, 2017

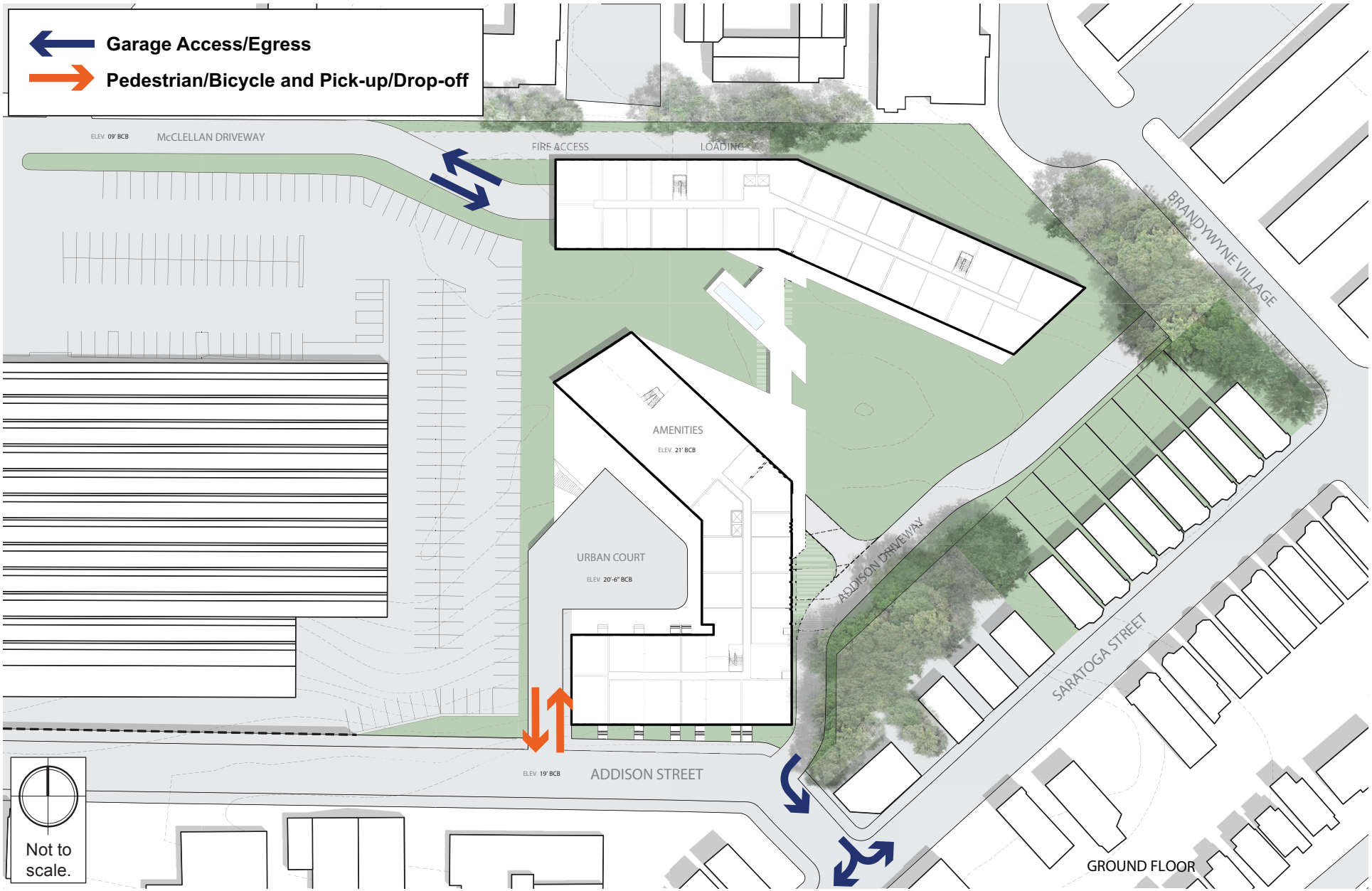


East Boston, Massachusetts

Figure 5-12

No-Build (2024) Condition Traffic Volumes, Weekday p.m. Peak Hour

Source: Howard Stein Hudson, 2017

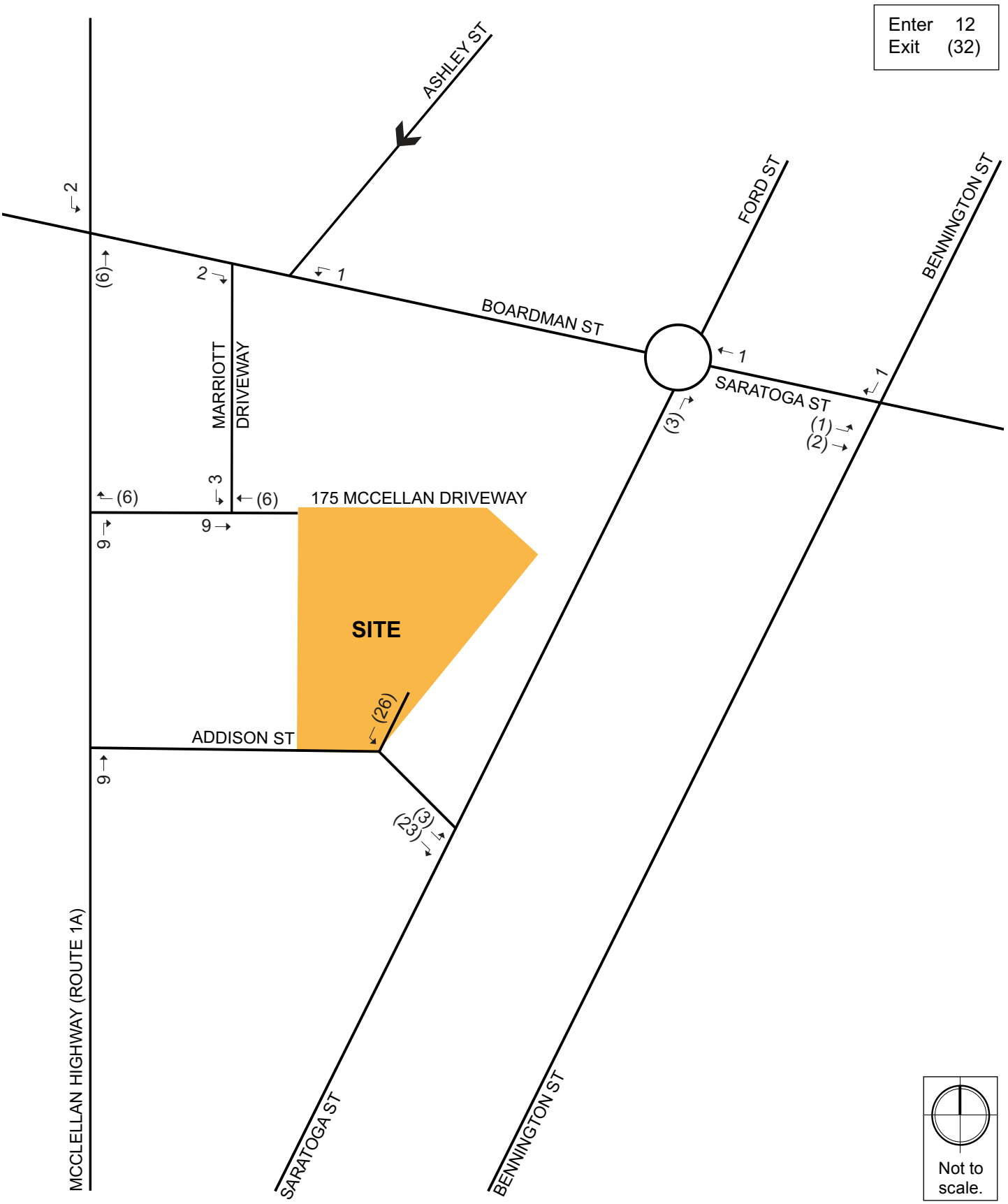


144 Addison Street
East Boston

Figure 5-13
Site Plan
Source: Howard Stein Hudson

East Boston, Massachusetts

Figure 5-14
Trip Distribution
Source: Howard Stein Hudson, 2017

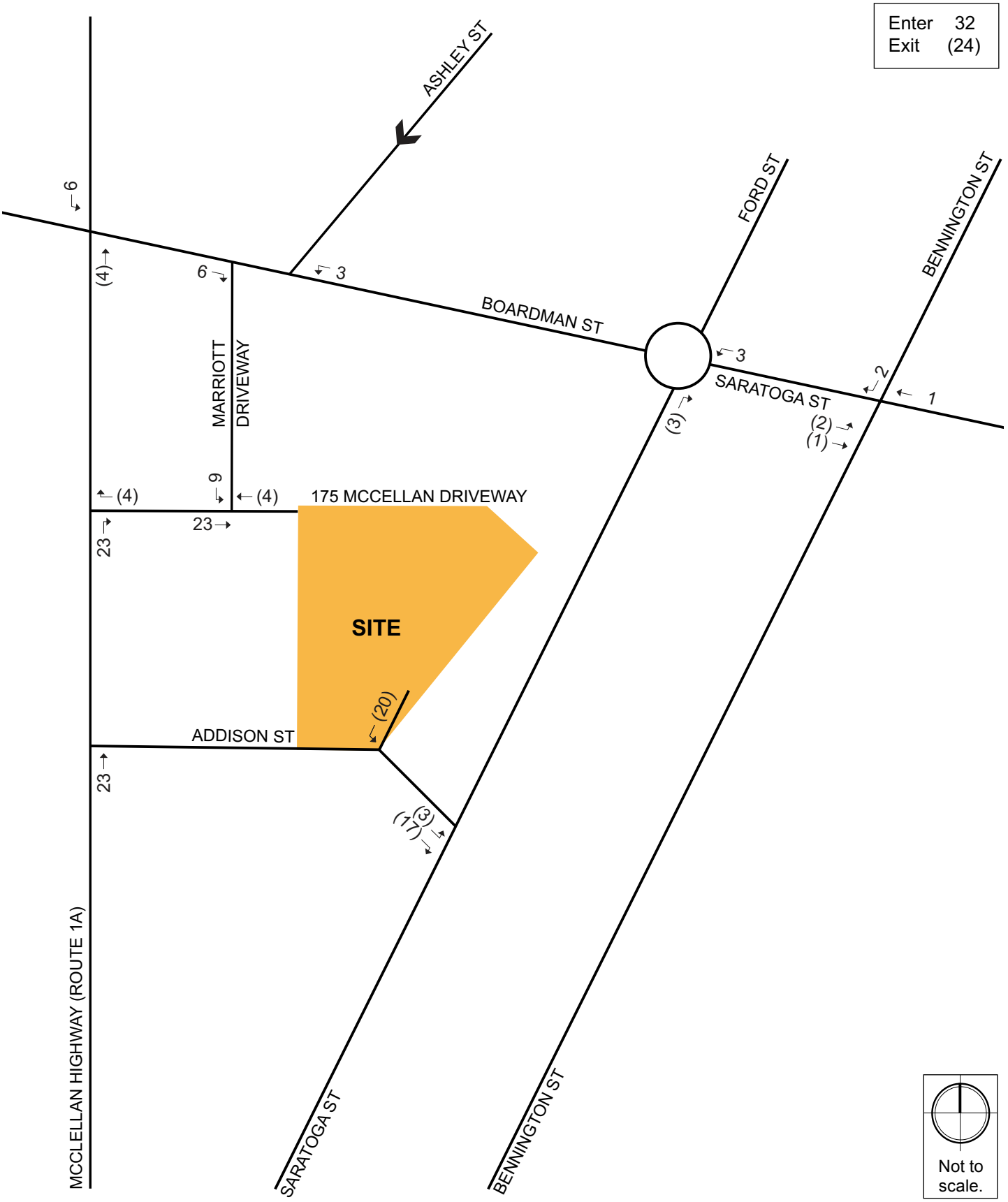


East Boston, Massachusetts

Figure 5-15

Project Generated Vehicle Trips, Weekday a.m. Peak Hour

Source: Howard Stein Hudson, 2017

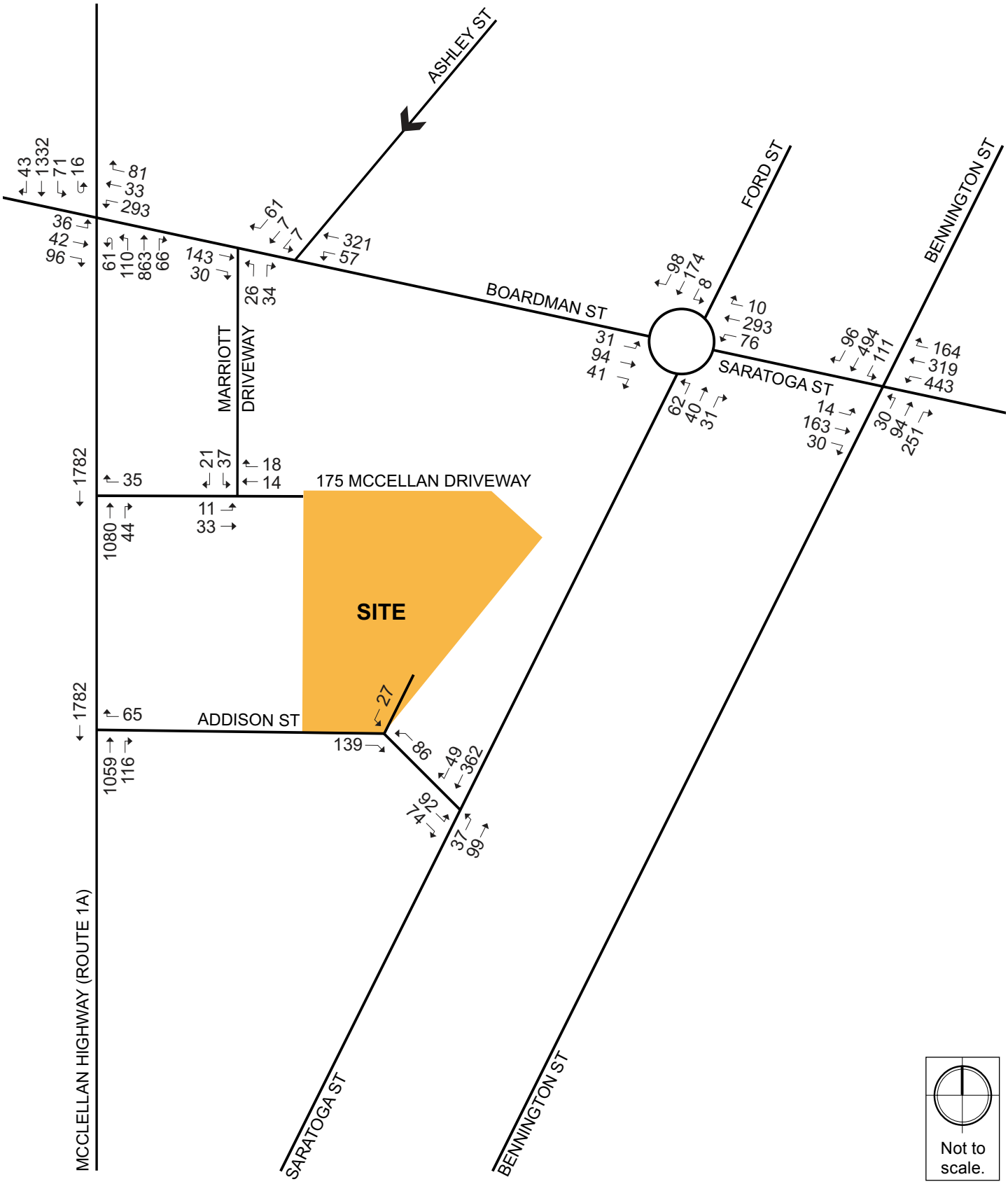


East Boston, Massachusetts

Figure 5-16

Project Generated Vehicle Trips, Weekday a.m. Peak Hour

Source: Howard Stein Hudson, 2017

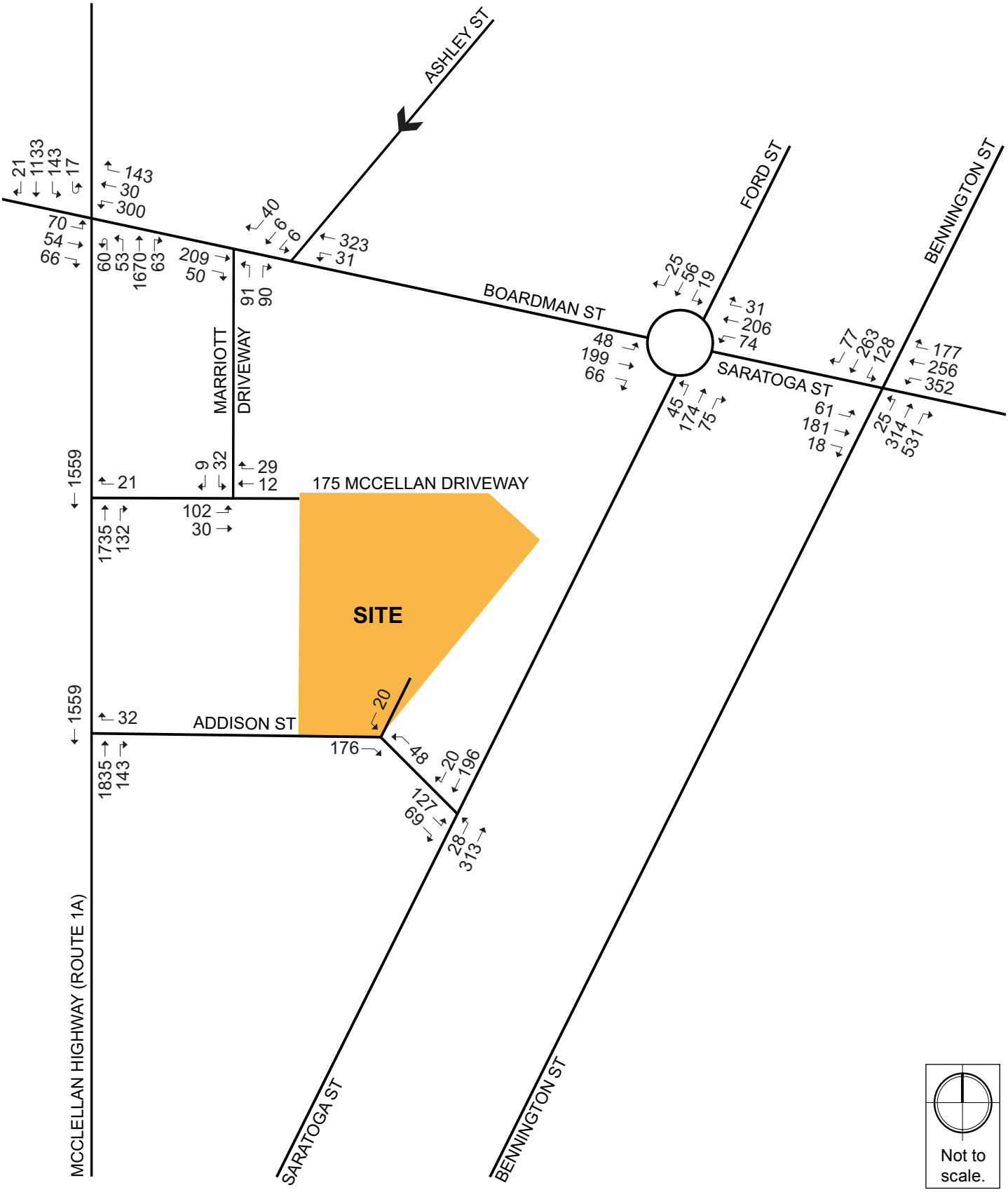


East Boston, Massachusetts

Figure 5-17

Build (2024) Condition Traffic Volumes, Weekday a.m. Peak Hour

Source: Howard Stein Hudson, 2017



East Boston, Massachusetts

Figure 5-18

Build (2024) Condition Traffic Volumes, Weekday p.m. Peak Hour

Source: Howard Stein Hudson, 2017

Chapter 6

ENVIRONMENTAL PROTECTION

CHAPTER 6: ENVIRONMENTAL PROTECTION

6.1 INTRODUCTION

The Project will be built in full compliance with local, state, and federal environmental regulations and will substantially improve the environmental conditions of the Project Site. The Project will not create undue wind, shadow, noise, solar glare, or air quality impacts in the surrounding area.

6.2 WIND

The Project is not expected to have adverse pedestrian-level wind impacts adjacent to, and in the vicinity of, the Project Site due to its modest size and proximity to nearby buildings. Although a wind impact study was not required, it is expected that as a result of the placement of the proposed new building in the existing context, pedestrian level winds along adjacent sidewalks are not anticipated to exceed the BPDA guidelines for wind speeds of 31 miles per hour.

6.3 SHADOW

A shadow analysis was conducted for the Project to ensure the proposed buildings would not create adverse shadow impacts to neighboring properties. Table 6-1, Shadow Study Dates and Times, identifies the dates and times for which shadow conditions have been simulated.

Table 6-1: Shadow Study Dates and Times

Date	Time
Vernal Equinox — March 21st	9:00 a.m., 12:00p.m., 3:00 p.m., 5:00 p.m.
Summer Solstice — June 21st	9:00 a.m., 12:00 p.m., 3:00 p.m., 6:00 p.m.
Autumnal Equinox — September 21st	9:00 a.m., 12:00 p.m., 3:00 p.m., 5:00 p.m.
Winter Solstice — December 21st	9:00 a.m., 12:00 p.m., 3:00 p.m.

A shadow impact analysis was conducted to investigate shadow impacts from the Project during four time periods (9:00 a.m., 12:00 p.m., 3:00 p.m., and 6:00 p.m.) during the Vernal Equinox, Summer Solstice, and Winter Solstice.

The shadow analysis presents new shadow that would be created by the Project, while also evaluating existing context shadow. The analysis focuses on impacts on nearby residential neighbors, as well as open spaces, sidewalks, and existing adjacent parking. Shadows have been determined using the applicable altitude and azimuth data for Boston. The results of this analysis are shown in Figures 6-1, 6-2, and 6-3, Shadow Studies.

Due to the existing conditions as a surface parking lot, any structure built in this location would inevitably create new shadow; however, the overall shadow impacts from the Project are minor. This is due to two reasons:

- The proposed buildings are designed to allow significant buffers between the taller portions of the Project and its residential neighbors in an effort to reduce any new shadow on these existing structures and their associated yards. These setbacks mean that the new shadow from the proposed Project will be mostly contained within the Project's property line.

- The Project Site is surrounded by several areas of dense, taller trees, along the north and east boundaries of the Project Site. These existing trees cast more shadow onto neighboring residential properties than the Project.

The largest area of new shadow by the Project will fall on the Maverick Mills parking lot (175 McClellan Highway), associated March and December at 9 a.m. This shadow will not impact the existing mill building itself. Additionally, some new shadow will occur north of the Project, on Brandywine Village, at 12 p.m. and 3 p.m. in December. The Addison Street frontage is located south of the Project and will not receive any new shadow.

6.4 DAYLIGHT

The Project Site is located in a relatively low-density urban setting. The open space at the core of the Project Site, and the wide landscaped pedestrian passageways between Project's proposed buildings will also increase daylight penetration levels. The buildings have been designed with a generous setback from the adjacent residential neighborhoods to avoid additional shade impacts.

6.5 SOLAR GLARE

A solar glare analysis is intended to measure potential reflective glare from the buildings onto streets, public open spaces, and sidewalks in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. As a result of the design and the distance between the new building and existing buildings, it is not anticipated that the Project will have adverse solar glare impacts or create solar heat buildup in nearby buildings. Landscaping in front of the buildings will further absorb sunlight to minimize its reflection off of the building onto the street and sidewalk.

6.6 AIR QUALITY

This section provides a qualitative review of air quality sources and impacts as a result of the Project from traffic, parking, and heating and mechanical ventilation systems. Impacts from construction and operations are addressed in Section 6.13, Construction Impacts.

6.6.1 TRAFFIC SOURCES

Due to the relatively modest number of net new vehicle trips contributed to the local network by the Project, the impact of Project trips on the performance of the transportation study area intersections relative to air quality is minor. The BPDA typically requires a future air quality CO analysis for any intersection where the level of service (LOS) is expected to fall to a D or lower and the proposed Project causes a 10% increase in traffic; or where the LOS is E or F and the Project contributes to a reduction in LOS.

Transportation Demand Management (TDM) strategies are a significant component of this Project and are anticipated to assist in minimizing traffic impacts and, by extension, air quality impacts. The following measures aim to keep vehicle traffic levels at acceptable volumes, promoting alternative means of transportation that have lesser impacts on overall air quality for the Project:

- The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries, and will work with tenants as they move in to office space to raise awareness of public transportation, bicycling, and walking opportunities.

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

- Provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options.

- Provide electric vehicle charging stations for 5 percent of the parking spaces in the garage.

- Vehicle Sharing Program: The Proponent will explore the feasibility of providing spaces in the garage for a car sharing service such as Zipcar.

The Project Site is currently covered with a surface parking lot. The Project will enliven the Project Site with residential apartments and open space and will include approximately 179 parking spaces, including six accessible spaces and two van accessible spaces.

In keeping with Boston's Complete Streets Guidelines, a high bicycle to vehicle parking ratio will be used to encourage bicycle use and help reduce parking demand. Combined with the Project's close proximity to transit, these factors will minimize air pollution from parking sources associated with the Project.

6.6.2 BUILDING OPERATION SOURCES

There will be individual heating and cooling units for the residential apartments and a condenser will be located on the roof for the commercial/retail and common areas of the buildings. In combination, these building operation factors are not expected to contribute to significant changes in air quality. On-site parking will be naturally ventilated.

6.7 NOISE

The Proponent does not anticipate a significant increase in noise impacts associated with the residential uses at the Project Site. The Boston Air Pollution Control Commission regulates noise in the City of Boston based on zoning and land use classification. The regulations set fixed noise limits for daytime and nighttime use of equipment serving the building (for residential areas, a maximum level of 60 dBA for daytime use, and 50 dBA for nighttime use is required). These levels are limits for equipment sound assessed at the property lines of the Project. The limits apply to equipment which operates on a significant basis to serve the building, such as air conditioning equipment and fans. In addition to the overall sound level requirements, the regulations list specific octave band frequency limits for daytime and night time periods.

The primary sources of exterior sound for the Project will include individual unit heating and cooling systems, and a rooftop condensing unit serving individual common areas and commercial areas. Based on the general equipment design, the rooftop equipment is residential in scale and is not expected to produce significant sound levels at the building property lines, though noise control measures will be provided if required.

Intermittent increases in noise levels will occur in the short-term during construction. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Noise impacts will be controlled during construction, as appropriate, through the use of mufflers on heavy equipment, construction hour restrictions, and/or other noise mitigation.

6.8 FLOODPLAIN

As part of its administration of the National Flood Insurance Program (NFIP), the Federal Emergency Management Agency (FEMA) publishes flood hazard maps, called Flood Insurance Rate Maps (FIRM). The purpose of a FIRM is to show the areas in a community that are subject to flooding and the risk associated with these flood hazards. According to the most recent maps updated in March 2016, the entire Project Site is within Zone AE 10 or elevation 16.5 feet Boston City Base (BCB) and is considered Land Subject to Coastal Storm Flowage under the state's Wetlands Protection Act. See Figure 6-4, Floodplain Map.

In order to address climate resiliency concerns, the building's finished floor elevation will be raised above the current floodplain level by approximately four feet. In addition, mechanical equipment for the Project will be located in one or more utility rooms on the second floor or higher. The Project will be compliant with the Article 25 provisions of the Boston Zoning Code relating to flood zones and the Massachusetts State Building Code provisions relating to floodplain construction.

6.9 WATER QUALITY

During construction, best management practices (BMPs) will be used to limit the transportation of sediment off-site. The Contractor will obtain a National Pollution Discharge Elimination System (NPDES) stormwater permit and implement BMPs to minimize pollutant runoff. The Contractor will also use the following water quality related measures:

- Complying with all federal, state, and local codes, ordinances, and regulations; governing the on-site discharge of construction dewatering effluent;
- Using hay bales and silt fencing to prevent silt or soil from entering existing catch basins;
- Using temporary gravel entrance berms at the main exits from the Project Site;
- Isolating and protecting stockpiled materials;
- Monitoring the proper use of tarpaulin covered trucks;
- Preventing/controlling truck spillage; and
- Cleaning the adjacent portions of local streets entering and exiting the Project Site.

6.10 GROUNDWATER

The proposed buildings will be constructed above-grade (no below-grade space). Subsurface utilities will be constructed and may require a limited amount of temporary dewatering. As such, it is not anticipated that the proposed construction will impact groundwater levels at the Project Site.

6.11 GEOTECHNICAL

An initial geotechnical program was performed at the Project Site to evaluate the subsurface conditions. The program included advancing three (3) deep test borings to depths ranging from 63 to 117 feet below ground surface (bgs). Two shallow borings were advanced to 6 to 8 feet bgs to further evaluate the fill material. The deep borings were completed as flush-mounted groundwater monitoring wells.

6.11.1 SUBSURFACE SOIL CONDITIONS

Based on the subsurface explorations advanced at the Project Site, the subsurface profile consists of the following from the ground surface down:

- Approximately 4 to 6 feet of historic (urban) fill consisting of sand with various amounts of gravel and silt, and trace to little amounts of brick, ash, asphalt and other non-soil constituents;
- Approximately 2 to 9 feet of organic silt/peat;
- Approximately 3 to 11 feet of natural deposits of sand and silty sand;
- Approximately 40 to 100 feet of Boston Blue Clay (BBC); and,
- Underlain by glacial till followed by bedrock.

6.11.2 GROUNDWATER CONDITIONS

Groundwater readings measured from the three (3) monitoring indicate groundwater is approximately five feet bgs. It should be noted that groundwater levels will fluctuate depending on construction, presence of utilities and seasonal variations in temperature and precipitation. It is also possible that tidal effects may influence the groundwater level.

6.11.3 PROPOSED CONSTRUCTION

The Project includes the construction of two residential buildings interconnected by an open exterior amenities space. The structures will be built with a concrete podium at-grade above parking, with up to five levels of timber frame construction above the podium. The Project Site grades may be raised by one to three feet to achieve finished grade. Retaining walls, utilities, and landscaped areas will be constructed to improve the property.

6.11.4 EXCAVATION AND FOUNDATION CONSTRUCTION

Based on the subsurface conditions and proposed building concepts, the proposed buildings will likely be supported by spread footings with the lowest floor level constructed approximately as a slab-on-grade. The existing fill and organic silt will be

improved by ground improvement (such as rammed aggregate piers) prior to construction of footings and slabs.

Underdrain systems are not anticipated given the proposed construction. Temporary excavation support may be required for deep(er) utilities, but is not anticipated for proposed buildings.

Programs will be implemented during construction for monitoring noise, dust, and vibrations, as appropriate.

6.12 SOLID AND HAZARDOUS WASTE

Environmental due-diligence has been performed as part of the proposed development work relative to applicable standards and regulations. Soil and groundwater will be managed in accordance with applicable local, State and Federal regulations.

6.12.1 SITE HISTORY AND COMPLIANCE WITH MA CONTINGENCY PLAN

The Project Site is located adjacent to the former Boston Naval Fuel Annex and Storage Depot, as well as the western portion of 144 Addison Street (not part of the Project Site), which had several Release Tracking Numbers (RTNs) assigned to it. Based on the information reviewed, the releases have been either: remediated and achieved regulatory closure, are located in apparent down-gradient or cross-gradient locations from the Project Site, and/or consist of small spills located a significant distance from the Project Site. Releases are not likely to have significantly impacted Project Site soil, groundwater, or soil vapor.

A limited subsurface investigation was completed to evaluate the quality of the urban fill soil at the Project Site. The results of the soil sampling indicated that no reporting obligation is required under the Massachusetts Contingency Plan (MCP). The installed monitoring wells were gauged with an oil/water interface probe; light non-aqueous phase liquid (LNAPL) was not observed in the wells.

Given the nature of the fill, soil generated during construction will be managed under a Soil Management Plan given the documented urban fill related impacts. It is should be anticipated that excess soil that cannot otherwise be reused at the Project Site during construction will need to be shipped to an in-state lined or unlined landfill. Additional soil cover or a physical barrier may be necessary in landscaped areas.

6.12.2 EXISTING HAZARDOUS BUILDING MATERIALS

The Project Site is predominantly vacant (paved) apart from a small guard house and canopy located in the northwestern corner of the property. As such, it is not

anticipated that a significant amount of building materials will be generated during demolition.

6.13 CONSTRUCTION IMPACTS

This section describes the Project impacts during the construction period.

6.13.1 CONSTRUCTION MANAGEMENT PLAN

A Construction Management Plan (CMP), in compliance with the City of Boston's Construction Management Program, will be submitted to the Boston Transportation Department (BTD). This plan will include detailed information about construction activities, specific construction mitigation measures, and construction materials access and staging area plans to minimize impact on the surrounding neighborhood.

Construction methodologies that ensure public safety and protect nearby residents will be employed. Techniques such as barricades, walkways, and signage will be used as necessary. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting, routing plans for trucking and deliveries, and control of noise and dust. Although the final design of the new building is in process, the Proponent has begun to develop a plan for how traffic, parking, and construction staging will be managed during construction.

6.13.2 CONSTRUCTION ACTIVITY SCHEDULE

The construction period for the proposed Project is estimated to last approximately 24 months, with the first available residential units open in December 2020. The Project will comply with the City of Boston Noise and Work Ordinance. Normal work hours will be from 7:00 A.M. to 6:00 P.M., Monday through Friday, along with any approved exceptions.

6.13.3 CONSTRUCTION TRAFFIC IMPACTS

Designated truck routes will be established to govern where construction trucks access and egress the Project Site. The Proponent will work closely with the BTD in developing a CMP that will include more detail on construction phasing, number of trips, haul routes, and hours of operation.

6.13.4 CONSTRUCTION WORKER PARKING

The number of workers required for the construction of the Project will vary depending upon the stage of construction. Construction workers will typically arrive

and depart prior to peak traffic conditions and the construction trips are not expected to substantially impact traffic conditions.

The general contractor will be responsible for educating all construction workers about public transit options and encouraging the use of High Occupancy Vehicles (HOVs). All construction workers will be encouraged to utilize mass transit and ridesharing options to access the construction site and to minimize vehicle traffic and parking on the local streets. As part of the program to promote public transportation, the following will be implemented:

- Providing on-site secured space for workers' tool storage
- Posting transit schedules and maps at the jobsite
- Distributing informational brochures regarding public transportation
- Notifying all subcontractors and suppliers of the worker access/parking limitations and options

The Proponent will submit a Boston Residents Construction Employment Plan in accordance with the Boston Jobs Policy. The Plan will provide that the Proponent make good faith efforts to employ local tradespeople from the City of Boston. In this effort, the Proponent will meet with local agencies prior to the start of construction to establish a community outreach program.

6.13.5 CONSTRUCTION AIR QUALITY

Short-term air quality impacts from fugitive dust may be expected during the removal of soil materials and during the early phases of the Project Site preparation activities. The construction contract for the Project will require the contractor to reduce potential emissions and minimize air quality impacts. Mitigation measures are expected to include the use of wetting agents where needed on a scheduled basis, covered trucks, minimizing exposed construction debris stored on-site, monitoring construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized, locating aggregate storage piles away from areas having the greatest pedestrian activity when possible, and periodic cleaning of abutting street and/or sidewalks when necessary to reduce dust accumulation.

6.13.6 CONSTRUCTION NOISE IMPACTS

Intermittent increases in noise levels will occur in the short term during the construction of the new building. Work will comply with the requirements of the City of Boston Noise Ordinance. Efforts will be made to minimize the noise impact of construction activities, including appropriate mufflers on all equipment such as air compressors and welding equipment, maintenance of intake and exhaust mufflers, turning off idling equipment, replacing specific operations and techniques with less

noisy ones, and scheduling equipment operations to synchronize the noisiest operations with times of highest ambient noise levels.

6.13.7 SEDIMENT CONTROL MEASURES

During demolition and construction, erosion and sediment control measures will be implemented to minimize the transport of Project Site soils to off-site areas and BWSC storm drain systems. The existing catch basins will be protected with filter fabric or silt sacks to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until all areas of disturbance have been stabilized through the placement of pavement, structure, or vegetative cover.

Other sediment controls, which will be implemented as needed during construction, will include the following:

- Stacked hay bales and/or silt fence barriers will be installed at the base of stockpiled soils and at erosion-prone areas throughout the construction phase of the Project
- Erosion controls will be maintained and replaced as necessary to ensure their effectiveness
- Where necessary, temporary sedimentation basins will be constructed to prevent the transport of sediment off-site
- Measures to control dust will be implemented during construction. All debris will be properly contained on the Project Site
- Erosion controls will be maintained and replaced as necessary until the installation of pavements and/or the establishment of stabilized vegetation at the Project Site

6.13.8 RODENT CONTROL

The Proponent's contractor will file a rodent extermination certificate with the building permit application to the City. Rodent inspection, monitoring, and treatment will be carried out before and during sitework construction work for the Project, in compliance with the City's requirements. Rodent extermination prior to commencing work will treat areas throughout the Project Site. During the construction process regular service visits will be made to maintain effective rodent control levels.

6.14 WILDLIFE HABITAT

The Project Site is fully developed with urban landscape materials and, as such, the Project will not impact important wildlife habitats. According to the latest Natural Heritage and Endangered Species Program maps, no Priority or Estimated Habitats are located on or near the Project Site.

6.15 HISTORIC AND ARCHAEOLOGICAL RESOURCES

An area of potential effect (APE) of 0.25 miles has been analyzed for the purposes of identifying historic resources and assessing potential project-related impacts. A review of the Massachusetts Historical Commission's (MHC) Inventory, Massachusetts Cultural Resource Information System (MACRIS), revealed 14 extant inventoried historic properties and three historic inventory areas within the APE that are architecturally significant. See Table 6-2, Individual Historic Inventory Properties Listed on MACRIS and Table 6-3, Historic Inventory Areas Listed on MACRIS. See Figure 6-5, Historic Resources.

The Maverick Cotton Mills have been designated as eligible for the National Register of Historic Places (the "Register"). The 10 individual properties within the BOS.ZE Ohabei Shalom Cemetery Inventory Area are listed on the Register. The Project will have no negative impacts on the historic resources in the vicinity of the Project Site.

Table 6-2: Individual Historic Inventory Properties listed on MACRIS

MACRIS #	Historic Name	Location	Description of Resource	Impact of Project on Resource
*BOS.9665	Ohabei Shalom Cemetery - Anthony Paired Headstones	147 Wordsworth St	Other Funerary	No Impact
*BOS.9659	Ohabei Shalom Cemetery - Chain Link Fence	147 Wordsworth St	Other Funerary	No Impact
BOS.7	Schleichey, Carl House	664 Bennington St	Colonial Revival	No Impact
*BOS.232	Temple Ohabei Shalom Cemetery Chapel	147 Wordsworth St	Victorian Gothic	No Impact
*BOS.9670	Ohabei Shalom Cemetery - Warshauer Monument	147 Wordsworth St	Other Funerary	No Impact
*BOS.801	Temple Ohabei Shalom Cemetery	147 Wordsworth St	Burial Ground	No Impact
*BOS.9669	Ohabei Shalom Cemetery - Cohen Urn	147 Wordsworth St	Other Funerary	No Impact
*BOS.9666	Ohabei Shalom Cemetery - Frankenstein Headstones	147 Wordsworth St	Other Funerary	No Impact

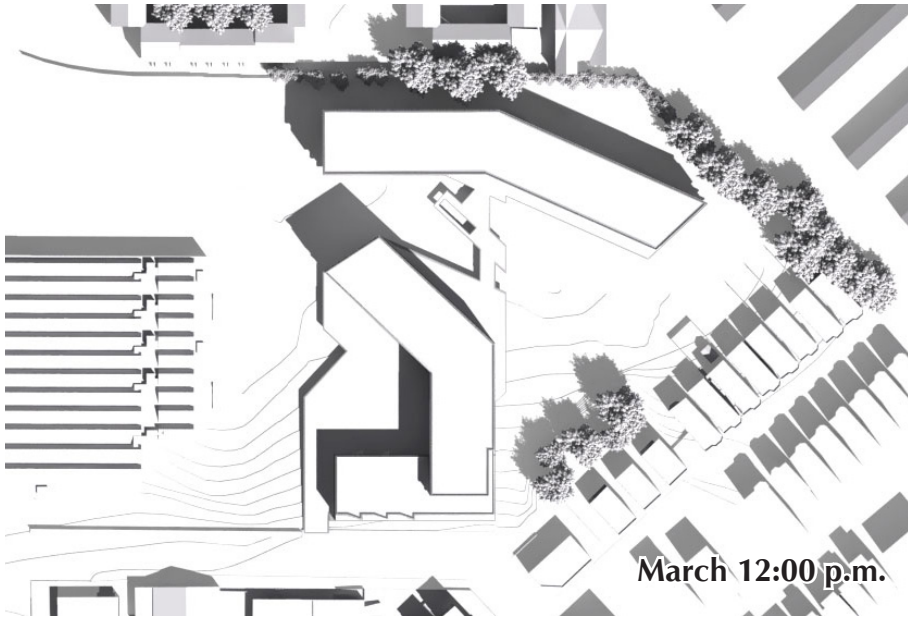
MACRIS #	Historic Name	Location	Description of Resource	Impact of Project on Resource
*BOS.9660	Ohabei Shalom Cemetery - Beal Mausoleum	147 Wordsworth St	Other Funerary	No Impact
BOS.12871	Maverick Cotton Mills	144 Addison St	Mill building and weave shed constructed in 1910	No Impact
*BOS.9667	Ohabei Shalom Cemetery - Holtz Paired Headstones	147 Wordsworth St	Other Funerary	No Impact
BOS.909	Wordsworth Street Footbridge over MBTA Blue Line	Wordsworth St	*Demolished	No Impact
BOS.156	Baker Congregational Church	760 Saratoga St	Colonial Revival; Shingle Style;	No Impact
*BOS.9658	Ohabei Shalom Cemetery - Wordsworth Street Fence	147 Wordsworth St	Other Funerary	No Impact

**National Register of Historic Places*

Table 6-3: Historic Inventory Areas listed on the MACRIS

MACRIS #	Historic Name	Description of Resource	Use Type	Impact of Project on Resource
BOS.Y	Saint Mary Star of the Sea Roman Catholic Church	Church, rectory, school, and convent constructed between 1887 and 1960. Reflects the growth of the Catholic Church in East Boston.	Other Institutional; Other Religious	No Impact
BOS.RO	Chelsea River Industrial Area	Industrial District along the Chelsea River waterfront that played an important role in East Boston's commercial and Industrial history.	Industrial District	No Impact
*BOS.ZE	Ohabei Shalom Cemetery	The first legally established Jewish cemetery in Massachusetts, founded in 1844.	Burial Ground	No Impact

**National Register of Historic Places*



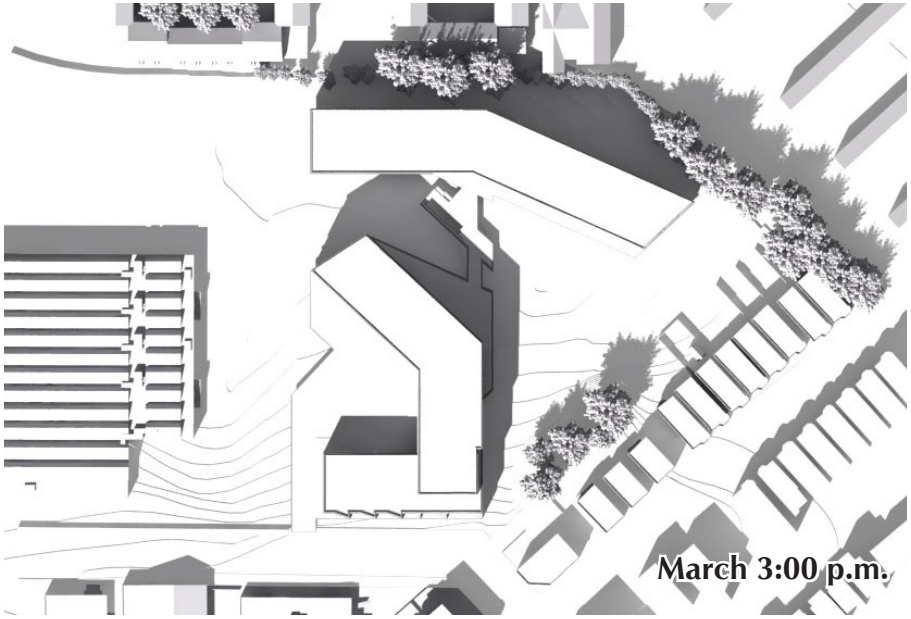
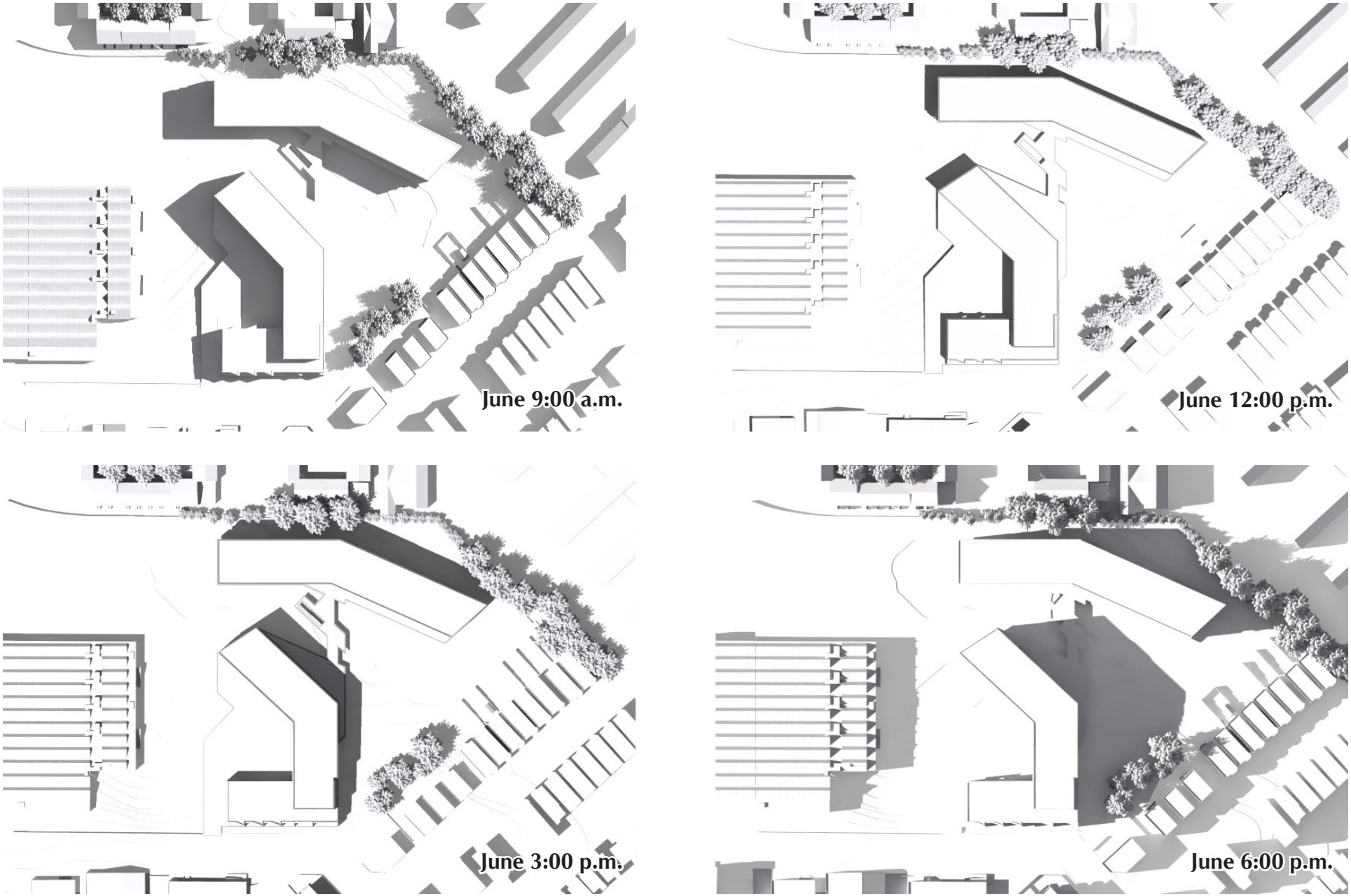


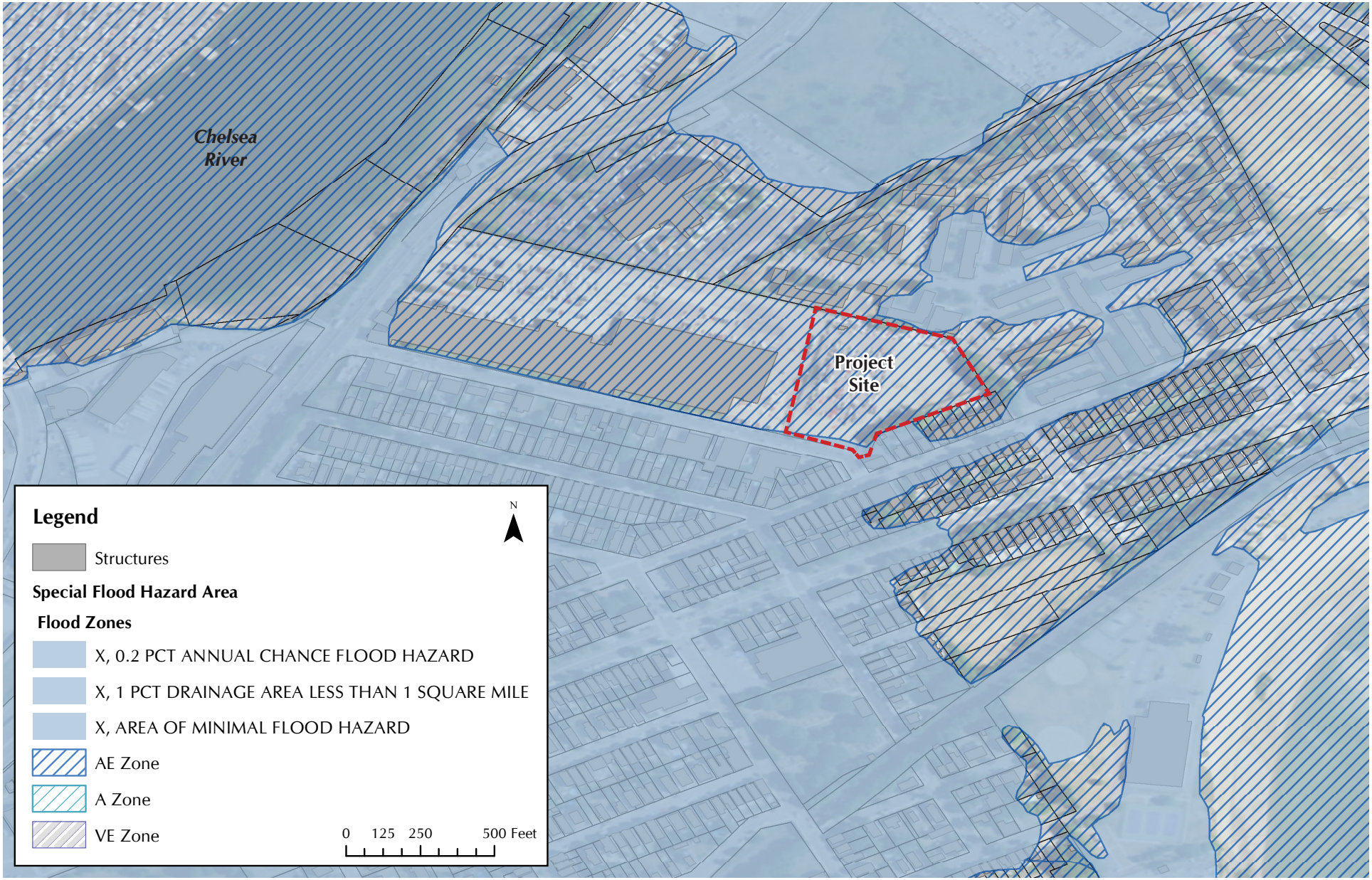
Figure 6-1
March Shadow Studies
Source: Arrowstreet, 2017



East Boston, Massachusetts

Figure 6-2
June Shadow Studies
Source: Arrowstreet, 2017

Figure 6-3
December Shadow Studies
Source: Arrowstreet, 2017



East Boston, Massachusetts

Figure 6-4
Floodplain Map
Source: Fort Point Associates, Inc., 2017

Historic Inventory Areas

- BOS.Y Saint Mary Star of The Sea Roman Catholic Church
- BOS.RO Chelsea River Industrial Area
- BOS.ZE Ohabei Shalom Cemetery

Individual Historic Inventory Properties

BOS.9665 Ohabei Shalom Cemetery - Anthony Paired Headstones
BOS.9659 Ohabei Shalom Cemetery - Chain Link Fence
BOS.7 Schleichey, Carl House
BOS.232 Ohabei Shalom Cemetery Chapel
BOS.9670 Ohabei Shalom Cemetery - Warshauer Monument
BOS.801 Temple Ohabei Shalom Cemetery
BOS.9669 Ohabei Shalom Cemetery - Cohen Um
BOS.9666 Ohabei Shalom Cemetery - Frankenstein Headstones
BOS.9660 Ohabei Shalom Cemetery - Beal Mausoleum
BOS.12871 Maverick Cotton Mills
BOS.9667 Ohabei Shalom Cemetery - Holtz Paired Headstones
BOS.909 Wordsworth Street Footbridge over MBTA Blue Line
BOS.156 Baker Congregational Church
BOS.9659 Ohabei Shalom Cemetery - Wordsworth Street Fence

Figure 6-5
Historic Resources
Source: Massachusetts Historical Commission; Fort Point Associates, Inc., 2017

Chapter 7

INFRASTRUCTURE

CHAPTER 7: INFRASTRUCTURE

7.1 INTRODUCTION

This chapter outlines the existing utilities surrounding the Project Site, the connections required to provide service to the Project, and any impacts on the existing utility systems that may result from the construction of the Project. The following utility systems are discussed herein:

- Sewer
- Domestic water
- Fire protection
- Drainage
- Natural gas
- Electricity
- Telecommunications

The Project includes the demolition of an existing surface parking lot located at 144 Addison Street and the construction of two new five–story residential buildings connected by an amenity level and with covered parking at grade.

7.2 WASTEWATER

7.2.1 EXISTING SEWER SYSTEM

The Boston Water and Sewer Commission (BWSC) owns and maintains the sewer system that services the City of Boston. The BWSC sewer system connects to the Massachusetts Water Resources Authority (MWRA) interceptors for conveyance, treatment, and disposal through the MWRA Deer Island Wastewater Treatment Plant. Existing BWSC combined sewer mains are located in Addison Street and Brandywyne Drive adjacent to the Project Site.

Addison Street

There is also a 102-inch by 110.5-inch BWSC combined sewer main, which flows in an easterly direction. There is a 10-inch BWSC sewer main in Addison Street, which flows in a westerly direction. The 10-inch BWSC sewer main and the 102-inch by 110.5-inch BWSC combined sewer main ultimately flow to the MWRA Deer Island Waste Water Treatment Plant for treatment and disposal.

Brandywyne Drive

There is a 10-inch BWSC sewer main, which flows in a northerly direction in Brandywyne Drive. The 10-inch BWSC sewer main ultimately flows to the MWRA Deer Island Waste Water Treatment Plant for treatment and disposal. The existing sewer system is illustrated in Figure 7-1.

The Proponent will work with BWSC to determine where existing sewer connections to the Project Site are located.

The Project Site under existing conditions has zero sewage flow.

7.2.2 PROPOSED CONDITIONS

The Project's sewage generation rates were estimated using 310 CMR 15.00 and the proposed building program. 310 CMR 15.00 lists typical sewage generation values for the proposed building use, as shown in Table 7-1. Typical generation values are conservative values for estimating the sewage flows from new construction.

Table 7-1: Proposed Project Wastewater Generation

Use	Size/Unit	310 CMR Value (gpd/unit)	Total Flow (gpd)
Existing Parking Lot			
Parking Lot		0	0
Total Existing Sewer Flow			0
Proposed Apartment Building (using average 310 CMR values)			
Family Dwelling, Multiple	332 bedrooms	110/bedroom	36,520
Total Proposed Sewer Flows			36,520
Increase in Sewer Flows (gpd):			36,520

The Project will require new sanitary sewer connections to the BWSC sewer system. Improvements to and connections to BWSC infrastructure will be reviewed as part of the BWSC's Site Plan Review process for the Project. This process will include a comprehensive design review of the proposed service connections, an assessment of Project demands and system capacity, and the establishment of service accounts. Coordination with BWSC will include review and approval of the design, capacity, connections, and flow increase resulting from the proposed discharges to the sanitary sewer system. In total, the Project's sewer generation is expected to increase wastewater flows by approximately 36,520 gpd. Approval for the increase in sanitary flow will come from BWSC.

Based on the proposed estimated sanitary flow, which is greater than 15,000 gpd, BWSC will require the removal of infiltration/inflow (I/I) at a minimum ratio minimum 4:1 ratio of I/I removed to wastewater generated.

New sewer flows resulting from the Project will connect to the existing sanitary sewer mains in Addison Street.

7.2.3 IMPACT ON EXISTING SEWER SYSTEM

The adjacent roadway sewer systems in Addison Street, Brandywyne Drive, and potential building service connections to the sewer system were analyzed.

Table 7-2 indicates the hydraulic capacity of the existing 10-inch BWSC sewer main in Addison Street, 10-inch BWSC sewer main in Brandywyne Drive, and the 102-inch by 110.5-inch BWSC combined sewer main in Addison Street. The minimum hydraulic capacity is 0.78 million gallons per day (MGD) or 1.2 cubic feet per second (CFS) for the 10-inch sewer main in Addison Street and 0.8 MGD or 1.23 CFS for the 10-inch sewer main in Brandywyne Drive.

Based on an average daily flow estimate for the Project of 36,520 gpd or .0369 MGD, an increase of 36,520 gpd or .0365 MGD from the existing Project Site; and with a factor of safety estimate of 10 (total estimate = 0.0365 MGD x 10 = 0.37 MGD), no capacity problems are expected within the BWSC sewer systems in Addison Street and Brandywyne Drive.

Table 7-2: Sewer Hydraulic Capacity Analysis

Manhole (BWSC Number)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
Addison Street								
125 to 124	189	10.84	9.9	0.50%	10	0.013	1.55	1.00
124 to 123	200	9.9	9.3	0.30%	10	0.013	1.20	0.78
126 to 1	500	2.9	2.75	0.03%	102x110.5	0.013	1441.48	931.65
						Minimum Flow Analyzed:	1.20	0.78
Brandywyne Drive								
293 to 10	297	10.84	9.9	0.32%	10	0.013	1.23	0.80
						Minimum Flow Analyzed:	1.23	0.80

Note:
1. Manhole numbers taken from BWSC Sewer System Map
2. Flow Calculations based on Manning Equation

7.3 WATER SYSTEM

7.3.1 EXISTING WATER SYSTEM

Water service for the Project will be provided by BWSC. There are five water systems within the City, and these provide service to portions of the City based on ground surface elevation. The five systems are southern low (commonly known as low service), southern high (commonly known as high service), southern extra high, northern low, and northern high. Water mains are labeled by their pipe size, year installed, pipe material, and year cement lined (CL), if applicable. There are existing BWSC water mains in Addison Street and in Brandywyne Drive.

There is a 16-inch northern low main in Addison Street and an 8-inch northern low main in Brandywyne Drive. Record Drawings indicate that the existing building shares an 8-inch water service and fire protection service, which connects to the 16-inch water main in Addison Street. The existing BWSC water system is shown in Figure 7-2.

7.3.2 ANTICIPATED WATER CONSUMPTION

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, described above. A conservative factor of 1.1 (10%) is applied to the estimated average daily wastewater flows calculated with 310 CMR 15.00 values to account for consumption, system losses and other usages to estimate an average daily water demand. The Project's estimated domestic water demand is 40,172 gpd. The water for the Project will be supplied by the BWSC systems in Addison Street.

7.3.3 PROPOSED WATER SERVICES

The domestic and fire protection water services for the Project will connect to the existing BWSC water main in Addison Street. The Project's impacts to the existing water system will be reviewed as part of the BWSC's Site Plan Review process.

The domestic and fire protection water service connections required for the Project will meet the applicable City and State codes and standards, including cross-connection backflow prevention. Compliance with the standards for the domestic water system service connection will be reviewed as part of BWSC's Site Plan Review Process. This review will include sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and Siamese connections that conform to BWSC and Boston Fire Department requirements.

7.3.4 WATER SUPPLY CONSERVATION AND MITIGATION MEASURES

Water capacity problems are not anticipated within this system as a result of the Project's construction. Efforts to reduce water consumption will be made. Aeration fixtures and appliances will be chosen for water conservation qualities. In public areas, sensor operated faucets and toilets will be installed.

New water services will be installed in accordance with the latest local, state, and federal codes and standards. Backflow preventers will be installed for the fire protection service connections. New meters will be installed with Meter Transmitter Units (MTU's) as part of the BWSC's Automatic Meter Reading (AMR) system.

7.4 STORM DRAINAGE

7.4.1 EXISTING STORM DRAINAGE SYSTEM

There are existing BWSC drain mains in Addison Street, Brandywyne Street, and 175 McClellan Highway adjacent to the Project Site. The existing drainage in Addison Street and Brandywyne Drive join BWSC's combined sewer before ultimately flowing to the MWRA Deer Island Waste Water Treatment Plant for treatment and disposal.

Addison Street

There is a 10-inch BWSC drain main in Addison Street, which flows in a westerly direction. The 10-inch BWSC drain main flows into a 15-inch BWSC drain main in Addison Street, which joins a BWSC combined sewer main before ultimately flowing to the MWRA Deer Island Waste Water Treatment Plant for treatment and disposal.

Brandywyne Drive

There is an existing 15-inch BWSC drain line, which flows in a northerly direction in Brandywyne Drive. The 15-inch BWSC drain main, which joins a BWSC combined sewer main, which ultimately flows to the MWRA Deer Island Waste Water Treatment Plant for treatment and disposal.

175 McClellan Highway

There is an existing 24-inch storm drain in the adjacent site, which increases in size to 60-inches before it discharges into the Chelsea River. The existing surface parking lot drain from the adjacent site and the Project Site is connected to this existing storm drain.

7.4.2 PROPOSED STORM DRAINAGE SYSTEM

The Project Site is currently used as a paved parking lot and is comprised of 100-percent (100%) impervious area. The Project will reduce the impervious area by replacing the parking lot with new surfaces, including building roof, grass and landscaped areas, and paved roads and sidewalks. As a result, the Project will reduce the volume of stormwater runoff discharged from the Project Site, and will promote runoff recharge to the greatest extent possible.

The Project is not located in the Groundwater Conservation District. The Project will infiltrate one-inch of stormwater runoff from impervious areas into the ground to the greatest extent possible. Different approaches to stormwater recharge will be assessed. It is anticipated that the stormwater recharge systems will work to passively infiltrate runoff into the ground with recharge wells, a gravity recharge system, or a combination of storage tanks in the building and pumps. The underground recharge system and any required site closed drainage systems will be designed so that there will be no increase in the peak rate of stormwater discharge from the Project Site in the developed condition compared to the existing condition.

The Project will continue to connect to the storm drain on the adjacent site (175 McClellan Highway) that ultimately flows to the Chelsea River.

Improvements and connections to BWSC infrastructure will be reviewed as part of BWSC's Site Plan Review process. The process will include a comprehensive design review of the proposed service connections, and assessment of Project demands and system capacity.

7.4.3 WATER QUALITY IMPACT

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

All necessary dewatering will be conducted in accordance with applicable MWRA and BWSC discharge permits. Once construction is complete, the Project will comply with local and state stormwater management policies, as described below.

7.4.4 MASSDEP STORMWATER MANAGEMENT POLICY STANDARDS

In March 1997, MassDEP adopted a Stormwater Management Policy to address non-point source pollution. In 1997, MassDEP published the Massachusetts Stormwater Handbook as guidance on the Stormwater Policy, which was revised in February 2008. The Policy prescribes specific stormwater management standards for development projects, including urban pollutant removal criteria for projects that may impact environmental resource areas. Compliance is achieved through the implementation of Best Management Practices (BMPs) in the stormwater management design. The Policy is administered locally pursuant to MGL Ch. 131, s. 40.

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

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 will comply with this Standard. The design will incorporate the appropriate stormwater treatment, and 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.

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

Compliance: The proposed design will comply with this Standard. The Project discharges to Land Subject to Coastal Storm Flowage. The existing discharge rate will be met or decreased as a result of the improvements associated with the Project.

Standard 3: *Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmental sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.*

Compliance: The Project will comply with this Standard to the maximum extent practicable.

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

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

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

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

Compliance: The proposed design will comply with this Standard. Within the Project's limit of work, there will be mostly building roof, paved sidewalk, and roadway areas. Runoff from paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by deep sump, hooded catch basins, and conveyed through water quality units before discharging into the BWSC system.

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

Compliance: The Project will comply with this Standard. The Project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-6).

Standard 6: *Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution*

prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

Compliance: The Project will comply with this Standard. The Project will not discharge untreated stormwater to a sensitive area or any other area.

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

Compliance: The Project will meet this Standard to the fullest extent possible.

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

Compliance: The Project will comply with this Standard. Sedimentation and erosion controls will be incorporated as part of the design of these projects and employed during construction.

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: The Project will comply with this standard. An O&M Plan, including long-term BMP operation requirements, will be prepared for the proposed Project and will assure proper maintenance and functioning of the stormwater management system.

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

Compliance: The Project will comply with this Standard. There will be no illicit connections associated with the Project.

7.5 ELECTRICAL SERVICES

Eversource owns the existing above-grade electrical system in the in the public ways of Addison Street and McClellan Highway. The Project Site currently receives electrical service via an overhead wire system off Addison Street. The current design anticipates underground electric service to the site off Addison Street. It is expected that adequate service is available in the existing electrical system for Project improvements. The Proponent will work with Eversource to determine if any infrastructure improvements are needed and confirm adequate system capacity for the Project as the design is progressed.

The Proponent is committed to taking an integrated and comprehensive approach to energy planning which is sensitive to high and rising energy prices and growing concern over global climate change. The highest priority, and most cost-effective approach, is to make the Project's buildings energy efficient.

7.6 TELECOMMUNICATIONS SYSTEM

There is an existing above-grade telecommunication system to provide telephone, cable and data services in the public ways of Addison Street and McClellan Highway with service provided by private telecommunication companies. It is expected that adequate service is available in the existing system for the Project and will serve the site via underground conduits. The Proponent will work with the private telecommunication companies to determine if any infrastructure improvements are needed and confirm adequate system capacity for the Project, coordinate service connection locations, and obtain appropriate approvals.

7.7 NATURAL GAS SYSTEM

National Grid owns the existing underground gas system in the public ways of Addison Street and McClellan Highway. It is expected that adequate service is available in the existing system for the Project. The current design anticipates underground gas service to the Project Site off Addison Street. The Proponent will work with National Grid to determine if any infrastructure improvements are needed and confirm adequate system capacity for the Project, coordinate service connection locations, and obtain appropriate approvals.

7.8 UTILITY PROTECTION DURING CONSTRUCTION

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

The Proponent will continue to work and coordinate with the BWSC and the utility companies to ensure safe and coordinated utility operations in connection with the Project.

7.9 CONSERVATION OF RESOURCES

The State Building Code requires the use of water-conserving fixtures. Water conservation measures such as low-flow toilets and restricted flow faucets will help reduce the domestic water demand on the existing distribution system. The installation of sensor-operated sinks with water conserving aerators and sensor-operated toilets in all non-residential restrooms will be incorporated into the design plans for the Project.

Appendix 1

CLIMATE CHANGE QUESTIONNAIRE

boston planning & development agency

Climate Resiliency Checklist

NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

A.1 - Project Information

Project Name:	144 Addison Street			
Project Address:	144 Addison Street, Boston, MA 02128			
Project Address Additional:	N/A			
Filing Type	EPNF			
Filing Contact	*Damian Szary, Principal*	*Gate Residential*	*das@gateresidential.com*	*(617) 904-7111*
Is MEPA approval required	*No*		*N/A*	

A.3 - Project Team

Owner / Developer:	Addison Street Partners, LLC
Architect:	Arrowstreet, Inc.
Engineer:	Thornton Tomasetti
Sustainability / LEED:	Arrowstreet, Inc.
Permitting:	Fort Point Associates, Inc.
Construction Management:	TBD

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Residential
List the First Floor Uses:	Residential
List any Critical Site Infrastructure and or Building Uses:	n/a

Site and Building:

Site Area:	143,139 *SF*	Building Area:	215,700 *GSF*
Building Height:	53'-4"	Building Height:	5 *Stories*
Existing Site Elevation – Low:	7'-10" *BCB*	Existing Site Elevation – High:	19'-0" *BCB*
Proposed Site Elevation – Low:	8'-0" *BCB*	Proposed Site Elevation – High:	21'-0" *BCB*
Proposed First Floor Elevation:	21'-0" *BCB*	Below grade levels:	1 *Stories*

Article 37 Green Building:

LEED Version - Rating System :	New Construction	LEED Certification:	No
Proposed LEED rating:	Silver	Proposed LEED point score:	61 *Pts.*

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	**Energy modeling was performed using eQuest 3.65.**		
Annual Electric:	*2,007,800(kWh)*	Peak Electric:	*1,033 (kW)*
Annual Heating:	*415,000 (kWh)*	Peak Heating:	*784 (kW)*
Annual Cooling:	*126,000 (kWh)*	Peak Cooling:	*754 (kW)*
Energy Use - Below ASHRAE 90.1 - 2013:	*17.3%*	Have the local utilities reviewed the building energy performance?:	*No*
Energy Use - Below Mass. Code:	*17.3%*	Energy Use Intensity:	*43.8 (kBtu/SF)*

Back-up / Emergency Power System

Electrical Generation Output:	*n/a*	Number of Power Units:	*n/a*
System Type:	*n/a*	Fuel Source:	*n/a*

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

Electric:	*n/a*	Heating:	*n/a*
		Cooling:	*n/a*

B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing GHG emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon neutrality by 2050 new buildings performance will need to progressively improve to net carbon zero and positive.

B.1 – GHG Emissions - Design Conditions

For this Filing - Annual Building GHG Emissions:	*960 (Tons)*

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

A sustainability consultant has been engaged during the filing process to brainstorm ideas to improve energy performance. As part of this process, the consultant has performed an energy model to understand energy use distribution and to prioritize Energy Conservation Measures (ECMs).

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

The massing on site is meant to maximize open space and allow for potential natural ventilation strategies. The building is positioned with the long façade oriented South-East and South-West, which allows optimum solar gains and daylight. Optimized envelope systems have been considered in the design, along with high performance glazing that are operable and double pane Low-E coated, LED lighting fixtures in common areas, and low flow fixtures.

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

Energy Star appliances for kitchen and laundry, Dedicated Outdoor Air System (DOAS) with heat recovery for ventilation and Vertical fan coil units (heat pump) systems for mechanical cooling and heating have been considered in estimating the GHG emissions.

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

Domestic hot water, heating, and plug loads are the three predominant energy use loads. The focus was on reducing loads on these end uses to achieve the maximum return on investment for the project. Strategies include low flow fixtures, optimized envelope, and Energy Star Appliances. The project will consider Power Purchase Agreement (PPA) for future installation of PV panels.

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

N/A

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

A sustainability consultant is engaged in the project. The project owner and the design team will pursue energy efficiency incentives from Eversource and National Grid.

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

The project goal is to minimize the building loads such that future upgrades do not involve cost prohibitive strategies such as added insulation or a major retrofit to reduce loads. The building is targeting an EUI that can be offset by potential PV system via PPA in the future.

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low:	*10.4 F*	Temperature Range - High:	*90.5 F*
Annual Heating Degree Days:	4973	Annual Cooling Degree Days	3421

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

Days - Above 90°:	90	Days – Above 100°:	*33*
Number of Heatwaves / Year:	*3*	Average Duration of Heatwave (Days):	*3*

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

The building site will remain more than 50% open area, mostly vegetated, with areas of trees and shrubs to provide shading. The horizontally-applied building materials and non-vegetated surfaces will have a high reflectivity, to avoid absorption of additional heat.

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

The project design parameters will be optimized for both heating and cooling, with consideration to projected extreme heat temperatures. Strategies include shading devices, insulated operable windows with Low-E coating and optimum solar heat gain coefficient (SHGC), natural ventilation strategies, and added cooling capacity by using higher design temperatures.

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

A high performing envelope will allow the indoor temperature to change gradually, while operable windows promote natural ventilation. Potable water for drinking, food preparation, sinks, and sanitary systems will be maintained.

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25". There is a significant probability that this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

10 Year, 24 Hour Design Storm: *6 in.*

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

The building site will retain its original grading, which is currently lower than its surrounding neighbors, and will not produce run-off to adjacent sites. The large amount of vegetated, open space will promote water capture and gradual ground water recharge.

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

The Project will replace an entirely impervious surface parking lot with mostly vegetated greenspace and permeable surfaces, which will reduce stormwater runoff and encourage groundwater recharge at the site.

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, sea levels in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA SFHA? Yes

What Zone: AE

Current FEMA SFHA Zone Base Flood Elevation:	16.5 *Ft BCB*

Is any portion of the site in a BPDA Sea Level Rise - Flood Hazard Area? Use the online BPDA SLR-FHA Mapping Tool to assess the susceptibility of the project site.	Yes

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented on the BPDA Sea Level Rise - Flood Hazard Area (SLR-FHA) map, which depicts a modeled 1% annual chance coastal flood event with 40 inches of sea level rise (SLR). Use the online BPDA SLR-FHA Mapping Tool to identify the highest Sea Level Rise - Base Flood Elevation for the site. The Sea Level Rise - Design Flood Elevation is determined by adding either 24" of freeboard for critical facilities and infrastructure and any ground floor residential units OR 12" of freeboard for other buildings and uses.

Sea Level Rise - Base Flood Elevation:	16.5 *Ft BCB*		
Sea Level Rise - Design Flood Elevation:	*19.5 Ft BCB*	First Floor Elevation:	21 *Ft BCB*
Site Elevations at Building:	*(varies) 8'BCB to 19' BCB*	Accessible Route Elevation:	21 *Ft BCB*

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

All inhabited space (residential, entry, amenities, etc.) will be elevated to 21'-0" BCB, which is 4'-6" above anticipated flood levels. The site itself will remain low-lying at 8'-0" BCB at its lowest point with open air parking at 10'-0" BCBC below the enclosed floors. The large amount of low-lying open space will be able to manage a large influx of water. The vegetated, pervious open areas will help reduce and slow water leaving the site.

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

Mechanical systems will be located above the first floor. The project will also provide water tight utility conduits, as well as stormwater and wastewater back flow prevention.

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

Occupants will be able to remain in their residences during these events; all inhabited areas are raised well above the anticipated flood level.

Describe any strategies that would support rapid recovery after a weather event:

If the adjacent roadways remain un-altered, occupants will be able to resume normal activities post-weather event. The Ground Floor and main entry of the building will be elevated 4'-6" above the anticipated flood plain.

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

Should Sea Level Rise affect the low-lying areas of Orient Heights, the main entry drive to this building could be relocated from McClellan Highway to Addison Street, which is anticipated to remain accessible.

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

All critical equipment will be located above the anticipated flood plain, on the roof.

A pdf and word version of the Climate Resiliency Checklist is provided for informational use and off-line preparation of a project submission. NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

For questions or comments about this checklist or Climate Change best practices, please contact: John.Dalzell@boston.gov

Appendix 2

ACCESSIBILITY CHECKLIST

Article 80 – Accessibility Checklist

A requirement of the Boston Planning & Development Agency (BPDA)
Article 80 Development Review Process

The Mayor's Commission for Persons with Disabilities strives to reduce architectural, procedural, attitudinal, and communication barriers that affect persons with disabilities in the City of Boston. In 2009, a Disability Advisory Board was appointed by the Mayor to work alongside the Commission in creating universal access throughout the city's built environment. The Disability Advisory Board is made up of 13 volunteer Boston residents with disabilities who have been tasked with representing the accessibility needs of their neighborhoods and increasing inclusion of people with disabilities.

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

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

Accessibility Analysis Information Sources:

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

Glossary of Terms:

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

1. Project Information:

If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.

Project Name:	**144 Addison Street**
Primary Project Address:	**144 Addison Street, Boston, MA 02128**
Total Number of Phases/Buildings:	**(2) Buildings constructed in (2) Phases**
Primary Contact (Name / Title / Company / Email / Phone):	**Damian Szary, Principal, Gate Residential 617-904-7111, das@gateresidential.com**
Owner / Developer:	**Addison Street Partners, LLC**
Architect:	**Arrowstreet, Inc.**
Civil Engineer:	**Nitsch Engineering, Inc.**
Landscape Architect:	**Copley Wolff Design Group, Inc.**
Permitting:	**Fort Point Associates, Inc.**
Construction Management:	**TBD.**

At what stage is the project at time of this questionnaire? Select below:

PNF / Expanded PNF Submitted	Draft / Final Project Impact Report Submitted	BPDA Board Approved
BPDA Design Approved	Under Construction	Construction Completed:

Do you anticipate filing for any variances with the Massachusetts Architectural Access Board (MAAB)? ***If yes,*** identify and explain.	None at this time.

2. Building Classification and Description:

This section identifies preliminary construction information about the project including size and uses.

What are the dimensions of the project?

Site Area:	*143,139 SF*	Building Area:	*215,700 GSF*
Building Height:	*53'-4" FT.*	Number of Stories:	*5 Flrs.*

First Floor Elevation:	21'-0" BCB	Is there below grade space:		*Yes / No*
What is the Construction Type? (Select most appropriate type)				
	Wood Frame	Masonry	Steel Frame	Concrete
What are the principal building uses? (IBC definitions are below – select all appropriate that apply)				
	Residential – One - Three Unit	Residential - Multi-unit, Four +	Institutional	Educational
	Business	Mercantile	Factory	Hospitality
	Laboratory / Medical	Storage, Utility and Other		
List street-level uses of the building:	*Residential, only.*			

3. Assessment of Existing Infrastructure for Accessibility:

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

Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:	Located in Orient Heights, East Boston, the Project is at the intersection of a number of building typologies: a historic textile mill, a community health center, a large airport hotel, 3-story residences, and multi-family affordable housing. The Project Site is currently used as a surface parking lot for rental cars.
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	The Project Site is located between two Blue Line MBTA T stations. It is approximately 0.5 miles south of Orient Heights and 0.6 miles north of Wood Island. It is less than 0.1 miles from bus stops for 120, located on Rt. 145, headed both northbound (Revere) and southbound (Boston).
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	East Boston High School, and the East Boston Public School District, is located within 1.5 miles of the Project Site. The closest hospital is a branch of MGH located in Chelsea, 2.5 miles from the Project site. There is an assisted living facility for the elderly, as well as a rehabilitation center, within a mile of the Project Site. Brandywyne Village is an affordable housing development, which borders the Project Site on the north.
List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	The East Boston Branch Library, BCYF Pino Community Center, Noyes Playground, Constitution Beach, and Wood Island Bat Edge Park are all within a mile of the Project Site.

4. Surrounding Site Conditions – Existing:

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

Is the development site within a historic district? ***If yes,*** identify which district:	The Project Site is not located in a historic district.
Are there sidewalks and pedestrian ramps existing at the development site? ***If yes***, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site:	There is one existing sidewalk that borders the Project Site, on Addison Street, which is approximately 6'-0" wide. The existing sidewalk condition is cracked and deteriorated. There are no existing ramps, and the existing grade at the entry to the Project Site contains a significant slope.
Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? ***If yes,*** provide description and photos:	The Project will contribute site improvements to the existing pedestrian sidewalks, including level walking surface, adequate lighting, and demarcation of accessible entry. The Project will also reduce the grade change at the entry to the Project Site to a 1:20 slope or less.
5. Surrounding Site Conditions – Proposed *This section identifies the proposed condition of the walkways and pedestrian ramps around the development site. Sidewalk width contributes to the degree of comfort walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Wider sidewalks allow people to walk side by side and pass each other comfortably walking alone, walking in pairs, or using a wheelchair.*	
Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard.	The proposed sidewalks will meet the Boston Complete Street Guidelines for Neighborhood Residential streets.
What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	The proposed enhancements to the existing sidewalk would provide 2'-6" of Frontage Zone and 7'-6" of Pedestrian Zone, for an overall sidewalk width of 10'-0". One additional Pedestrian sidewalk will provide a safe walkway from the street, around the perimeter of the vehicle entry court, to the main entry vestibule. This connecting sidewalk will measure 5'-0" wide and will be sloped at 1:20 or less.
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be	The existing sidewalk will be re-worked with cast-in-place concrete, and is part of a City of Boston pedestrian right-of-way. The new sidewalk will consist of an even walking surface of pavers, and will be located on private property.

on the City of Boston pedestrian right-of-way?	
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?	No, not at this time.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	n/a
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	n/a
6. 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 – Disabled Parking Regulations*.	
What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage?	The Project plans to accommodate approximately 175 parking spaces in an open-air parking lot, below the building footprint and will be accessible by two different elevator cores. There will also be approximately 4 additional short-term parking spaces provided.
What is the total number of accessible spaces provided at the development site? How many of these are "Van Accessible" spaces with an 8 foot access aisle?	The Project will provide six (6) accessible parking spaces, with two (2) van accessible spaces, distributed between each elevator core.
Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need?	This is not anticipated to be required.
Where is the accessible visitor parking located?	There will be guest parking spaces available at the vehicle entry court, including at minimum one (1) accessible spot.

Has a drop-off area been identified? ***If yes,*** will it be accessible?	Yes, the drop off will be located at the vehicle entry court and will be designed to be accessible.
7. Circulation and Accessible Routes: *The primary objective in designing smooth and continuous paths of travel is to create universal access to entryways and common spaces, which accommodates persons of all abilities and allows for visitability with neighbors.*	
Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator:	Each entryway will provide a Flush Condition, with a transition no more than ½" in height. Elevator cores will be provided in both buildings, with access from parking to the top level of the building. Additionally, there will be four (4) stair cores total, two in each building, designed for egress, and designed per NFPA, IBC, and ANSI.
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	The accessible entrance will be integral to the standard entry; there will be no separate entries for accessibility. The standard entry points will be below the building at parking, accessible by elevators and stairs, and at the vehicle entry court. The vehicle entry court will provide curb cuts between the drop off, accessible parking, and the sidewalk, which borders the perimeter of the entry court. The entry into the building will be a Flush Condition, as previously mentioned.
If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	n/a
8. Accessible Units (Group 2) and Guestrooms: (If applicable) *In order to facilitate access to housing and hospitality, this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing and hotel rooms.*	
What is the total number of proposed housing units or hotel rooms for the development?	Approximately 270 housing units are proposed for the Project.
If a residential development, how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units?	All housing units will be rental. Creation of new affordable housing units on-site and/or the contribution of funds to support the creation of affordable housing units off-site in compliance with the Inclusionary Development Policy (IDP).

If a residential development, how many accessible Group 2 units are being proposed?	The Project will make 5% of units Group 2 accessible.
If a residential development, how many accessible Group 2 units will also be IDP units? ***If none***, describe reason.	If IDP units are located on-site then approximatley 5% of the affordable units would be Group 2 units.
If a hospitality development, how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? ***If yes,*** provide amount and location of equipment.	n/a
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs / thresholds at entry, step to balcony, others. ***If yes***, provide reason.	The Project has six (6) total units at street level, which will require four risers from street level to Ground Floor level. These units will have small entries from the street, but will also be accessible from the main entry, through the interior building corridor. All balconies will have a Flush Condition at across the entry, and will be large enough for a 5'-0" turning radius.
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes***, describe:	None at this time.
9. Community Impact: *Accessibility and inclusion extend past required compliance with building codes. Providing an overall scheme that allows full and equal participation of persons with disabilities makes the development an asset to the surrounding community.*	
Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives?	Yes, the proposed Project will provide site improvements along Addison Street and along two (2) existing access drives: one from McClellan Highway and one existing on the right-of-way on the Project Site's east side. These improvements will include re-surfacing of existing sidewalks and roads, adequate lighting, demarcation of accessible entry and some light landscaping enhancements.
What inclusion elements does this development provide for persons with disabilities in common social and open spaces? Example: Indoor seating and TVs in common rooms; outdoor seating and barbeque grills in yard. Will all	All resident amenity spaces, interior and exterior, will be fully accessible. These amenities are still in development, but may include an outdoor swimming pool, a gym, a lounge area, and potentially some co-working spaces. Additionally, all open green spaces at grade will be accessible by stair or elevator, and by a level pedestrian walkway.

of these spaces and features provide accessibility?	
Are any restrooms planned in common public spaces? ***If yes,*** will any be single-stall, ADA compliant and designated as "Family"/ "Companion" restrooms? ***If no***, explain why not.	Restrooms in common public spaces will be designed for equal access, per MAAB and ANSI requirements.
Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? ***If yes,*** did they approve? ***If no,*** what were their comments?	This review has not occurred yet.
Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? ***If no,*** what recommendations did the Advisory Board give to make this project more accessible?	This review has not occurred yet.

10. Attachments

Include a list of all documents you are submitting with this Checklist. This may include drawings, diagrams, photos, or any other material that describes the accessible and inclusive elements of this project.

Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances.

See Appendix 2-1, Parking Accessibility and Appendix 2-2, Ground Floor Accessibility

Provide a diagram of the accessible route connections through the site, including distances.

See Appendix 2-2, Ground Floor Accessibility

Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable)

See Appendix 2-3, Upper Floor Accessibility

Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry.

The Group 2 units are not yet designed, but the Project will be in compliance with all regulations and standards.

Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. **Not applicable at this time.**

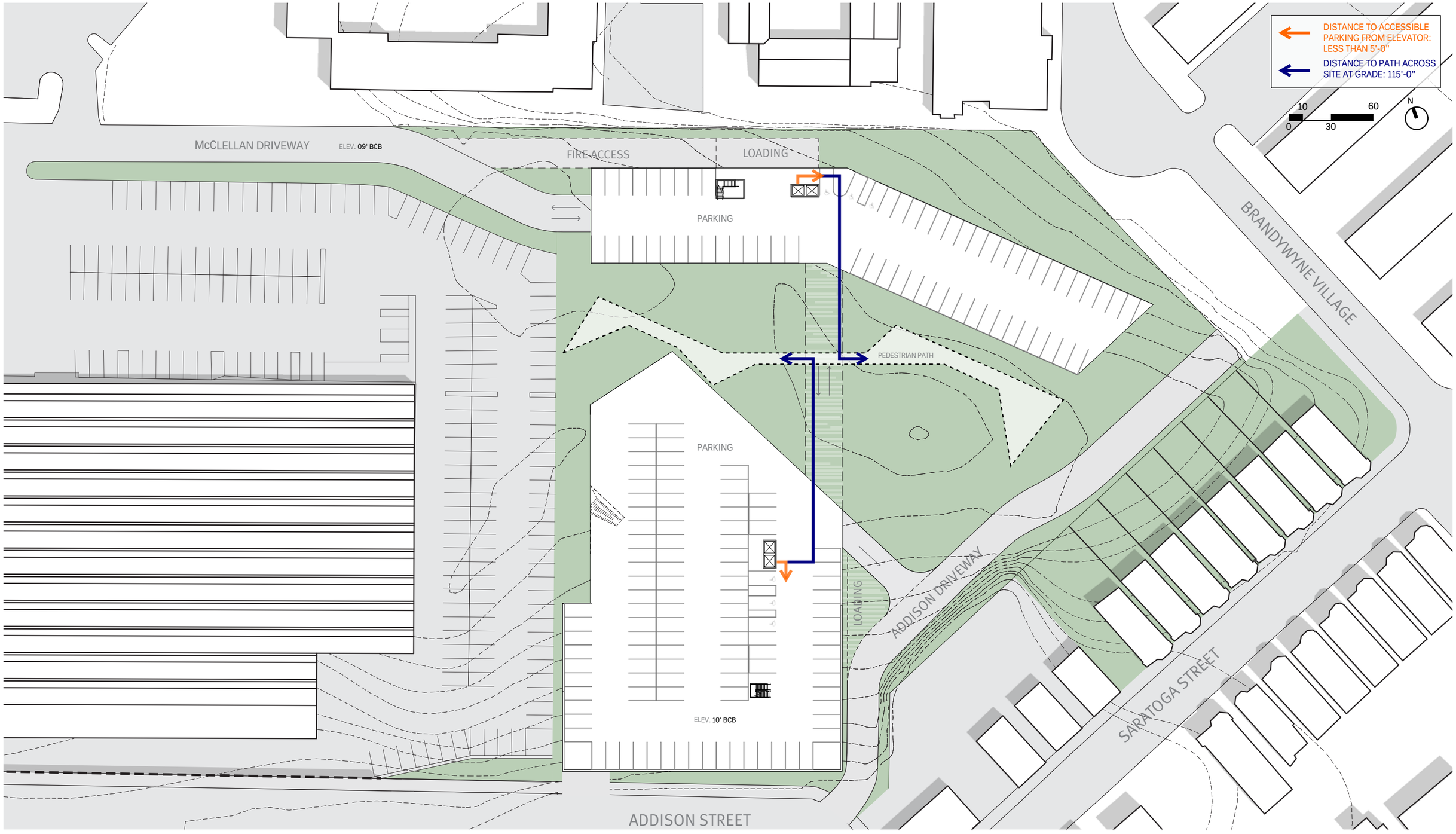
This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open spaces are usable and welcoming to Boston's diverse residents and visitors, including those with physical, sensory, and other disabilities.

For questions or comments about this checklist, or for more information on best practices for improving accessibility and inclusion, visit www.boston.gov/disability, or our office:

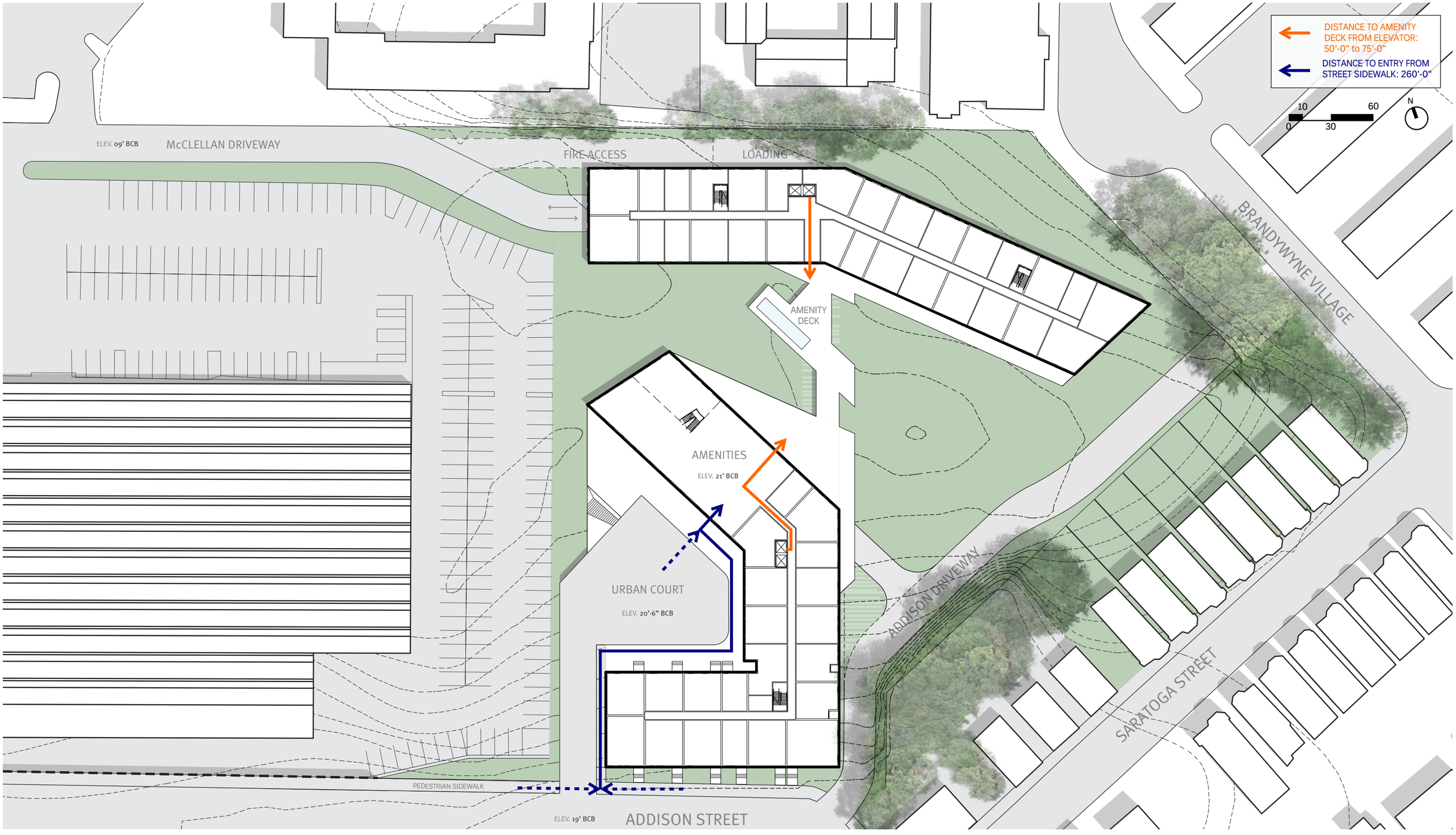
The Mayor's Commission for Persons with Disabilities
1 City Hall Square, Room 967,
Boston MA 02201.

Architectural Access staff can be reached at:

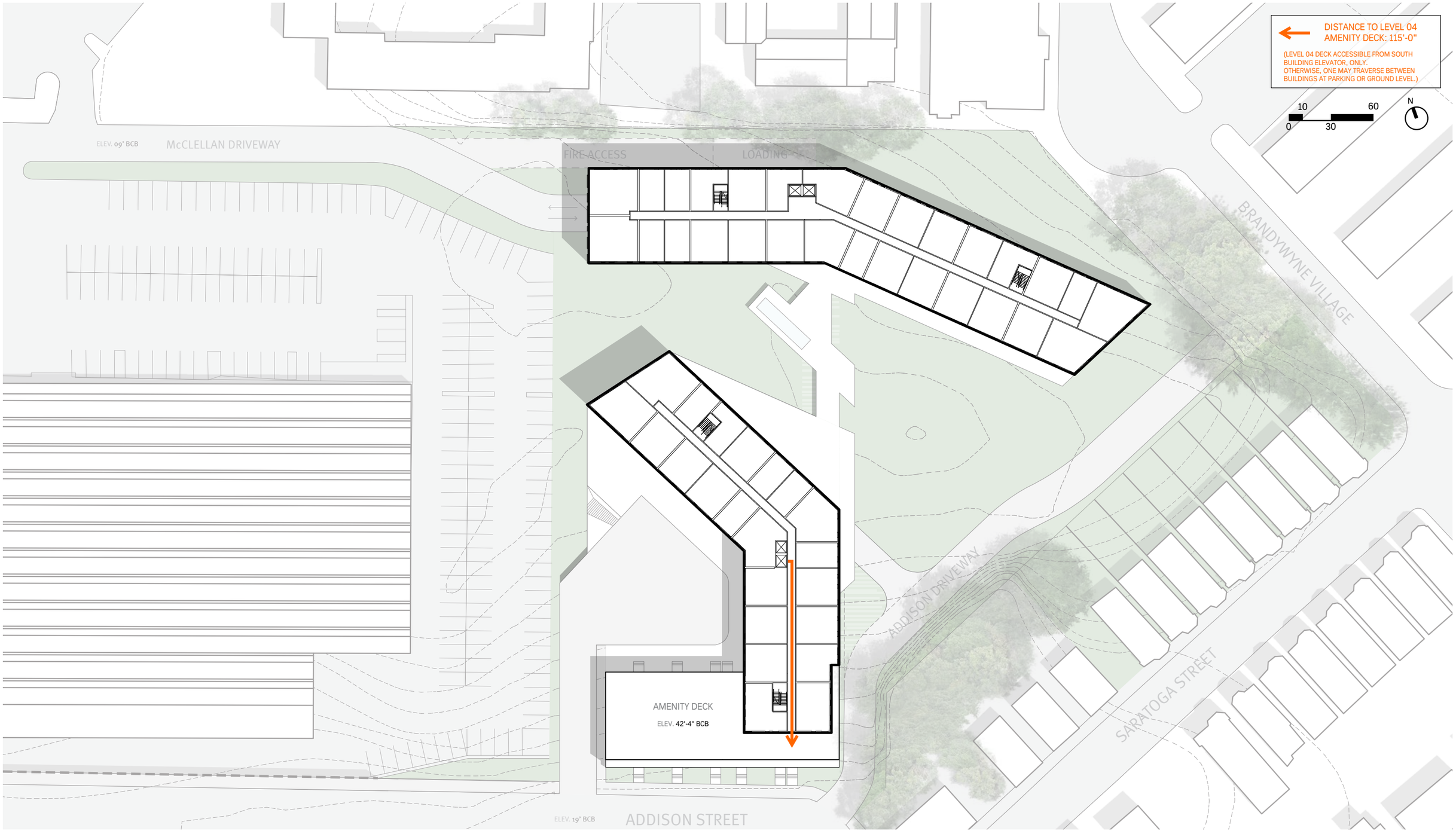
accessibility@boston.gov | patricia.mendez@boston.gov | sarah.leung@boston.gov | 617-635-3682



Appendix 2-1
Parking Accessibility
Source: Arrowstreet, 2017



Appendix 2-2
Ground Floor Accessibility
Source: Arrowstreet, 2017



Appendix 2-3
Upper Floor Accessibility
Source: Arrowstreet, 2017

Appendix 3

BROADBAND QUESTIONNAIRE

Broadband Ready Buildings Questionnaire
for
Inclusion in BPDA Article 80 Development Review

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

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

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

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

Section 1: General Questions

For consistency, general intake questions below are modeled after Boston Planning and Development Agency Climate Change Resiliency and Preparedness Checklist.

Project Information

- Project Name: *144 Addison Street, East Boston*
- Project Address Primary: *144 Addison Street, East Boston*
- Project Address Additional: *c/o Gate Residential, 265 Franklin St, 6th Fl, Boston, MA 02110*
- Project Contact (name / Title / Company / email / phone): *Damian Szary, Principal, Gate Residential; das@gateresidential.com, 617-904-7111*
- Expected completion date
  Estimated Construction Completion December 2020

Team Description

- Owner / Developer *Addison Street Partners, LLC*
- Architect *Arrowstreet*
- Engineer (building systems): *TBD*
- Permitting: *Fort Point Associates & Goulston & Storrs*
- Construction Management *TBD*

Section 2: Right of Way to Building

Point of Entry Planning

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

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

- Number of Points of Entry *unknown*
- Locations of Points of Entry *unknown*
- Quantity and size of conduits *unknown*
- Location where conduits connect (e.g. building-owned manhole, carrier-specific manhole or stubbed at property line) *Anticipate installing underground conduits across Addison Street to stub at the property line*
- Other information/comments

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

- Yes *Through existing conditions survey work and conversations with service providers.*
- No
- Unknown

Section 3: Inside of the Building

Riser Planning

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

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

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

Telecom Room

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

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

- What is the size of the telecom room? *unknown*

- Describe the electrical capacity of the telecom room (i.e. # and size of electrical circuits) *unknown*

- Will the telecom room be located in an area of the building containing one or more load bearing walls? *unknown*

- Will the telecom room be climate controlled?
  - Yes
  - No
  - Unknown

- If the building is within a flood-prone geographic area, will the telecom equipment will be located above the floodplain?
  - Yes
  - No
  - Unknown

- Will the telecom room be located on a floor where water or other liquid storage is present?
  - Yes
  - No
  - Unknown

- Will the telecom room contain a flood drain?
  - Yes
  - No
  - Unknown

- Will the telecom room be single use (telecom only) or shared with other utilities?
  - Telecom only
  - Shared with other utilities
  - Unknown

- Other information/comments

Delivery of Service Within Building (Residential Only)

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

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

- Yes
- No
- Unknown

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

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

- Yes
- No
- Unknown

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

Section 4: Accommodation of New and Emerging Technologies

Cellular Reception

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

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

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

- Yes
- No
- Unknown

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

- Yes
- No
- Unknown

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

- Yes
- No
- Unknown

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

- Carrier
- Neutral host provider
- Self-installing

Rooftop Access

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

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

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

- Yes
- No
- Unknown

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

- Yes
- No
- Unknown

Section 5: Telecom Provider Outreach

Supporting Competition and Choice

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

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

- Comcast - enter contact info
- RCN - enter contact info
- Verizon - enter contact info
- Wicked Broadband - enter contact info
- WebPass
- Starry
- Level 3
- Cogent
- Lightower
- XO Communications
- AT&T
- Zayo
- Other(s) - please specify - enter contact info

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

- Yes
- No
- Unknown

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

- Yes
- No
- Unknown

Section 6: Feedback for Boston Planning and Development Agency

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

We appreciate the City's initiative to develop a more forward-thinking environment that responds to residents' future connectivity needs. There are numerous emerging connectivity trends and technologies that we believe would appeal to and benefit our residents. We will be exploring these options as we progress design, typically throughout the schematic design and design development phases of the project.

Appendix 4

TRANSPORTATION APPENDIX

TRANSPORTATION APPENDIX

The Transportation Technical Appendix is available under separate cover.