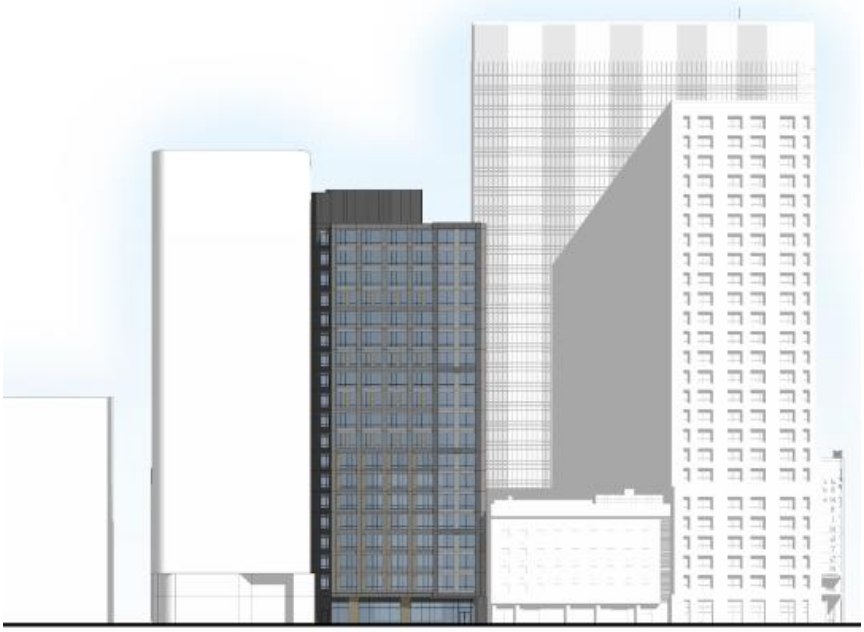
EXPANDED PROJECT NOTIFICATION FORM

41 LaGrange Street



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41 LAGRANGE STREET
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APPENDICES

1.0 PROJECT SUMMARY

1.1 Project Identification

Project Name:	41 LaGrange Street
Project Location:	The Project site is located in the heart of the Midtown Cultural District and the Chinatown/Park Square neighborhood. The site is bounded by three key streets: Boylston Street to the north, Tremont Street to the west, and LaGrange Street to the south.
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1.2 Project Description

1.2.1 Project Site

The 41 LaGrange Street tower ("the Project"), will be located at 41 LaGrange Street, on the border of Chinatown and the Midtown Cultural District. Both of these two vital neighborhoods are important commercial and cultural centers in the City of Boston.

The project site is bordered by Boylston, Tremont, and LaGrange Streets, and has a total area of 8,500 square feet. There are three important social and cultural institutions located in the immediate vicinity of the Project site: (1) The Chinese Cultural Center is located at the corner of Boylston and Washington Streets, (2) St. Francis House is located on Boylston Street directly across from the Project site, and (3) the headquarters of Action for Boston Community Development (ABCD) is located at the corner of Boylston and Tremont Streets. Additionally, the Theatre District, Emerson College, and Boston Common are located to the east and to the south of the Project site. Public transportation, along with ride-share, bike-share, and public parking facilities are located within a quarter mile of the Project site.

Figure 1-1: Site Aerial

1.2.2 Project Background

The Project represents a unique partnership of two experienced nonprofit organizations, the Planning Office for Urban Affairs ("POUA") and St. Francis House ("SFH"); collectively, POUA and SFH are the "Proponent". POUA is a non-profit housing developer whose mission is to serve as a catalyst for social justice through its work in housing development, neighborhood revitalization, and affordable housing advocacy. SFH is a non-profit organization that provides valuable and

necessary services to the homeless and less fortunate populations in the City of Boston, including the provision of food, housing, substance abuse and other counseling, and employment training services.

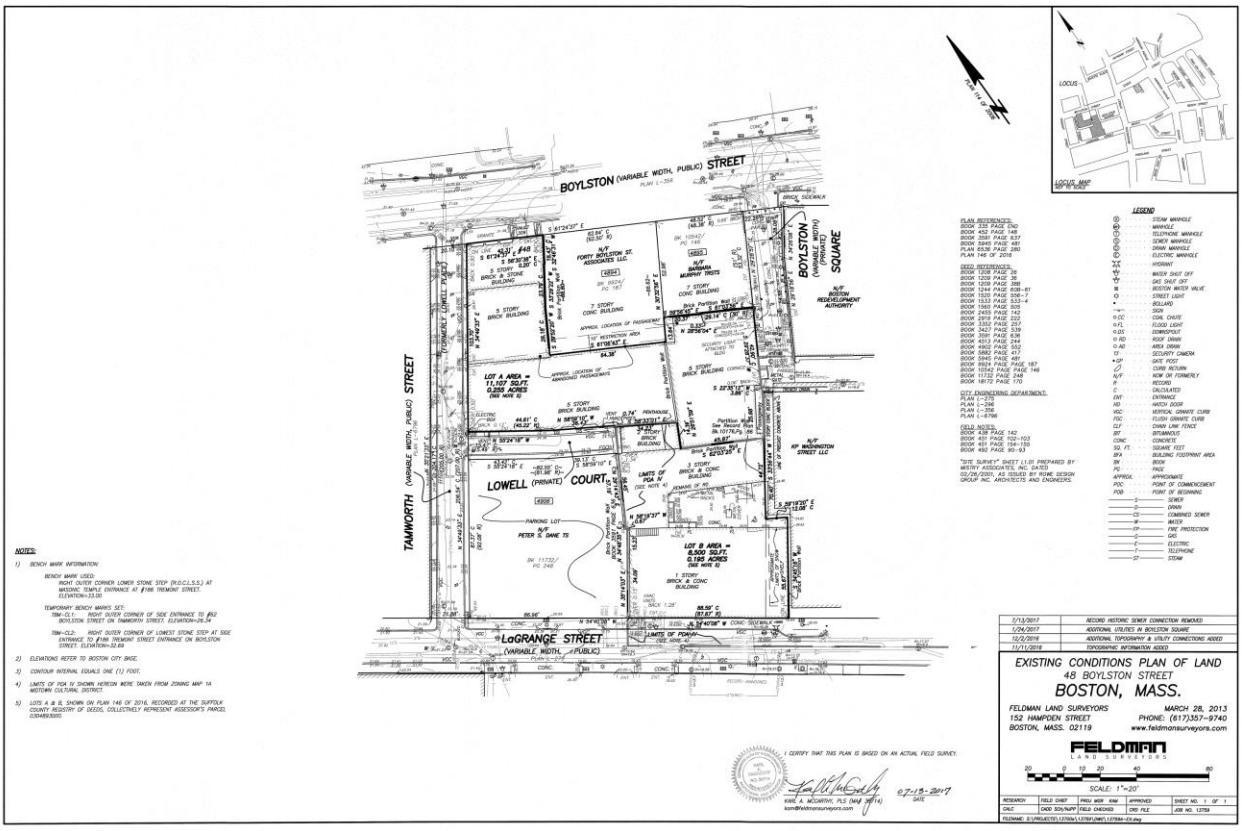
Deeply rooted in a commitment to social justice and serving others, POUA and SFH are undertaking the redevelopment of the former Boston Young Men's Christian Union (BYMCU) building located at 48 Boylston Street, as the first phase of two components. The Phase I BYMCU redevelopment will be a mixed-use project comprised of 46 units of permanent affordable rental housing, with 26 of those units available for formerly homeless households, as well as non-profit administrative offices for SFH and business venture retail space. The Phase I Project is expected to be completed by the end of 2018. The 48 Boylston Phase I Project represents a key opportunity to increase the diminishing stock of high quality affordable and workforce rental housing through the renovation of this iconic building.

Phase II of the 48 Boylston Street Project, which is the focus of this Article 80 EPNF submittal, will build on the goals of Phase 1 by further increasing the affordable and workforce housing opportunities in response to the ongoing market demand. The market-rate units will target empty-nesters, small families, and professionals who want the convenience of easy access to work, cultural activities, and entertainment. Phase II is part of a critical mass of major real estate investments in the Chinatown/Midtown Cultural District neighborhoods that have been spearheaded by key institutions such as Emerson College and private/non-profit real estate investors who are anchoring these neighborhoods with new mixed-income housing stock, and commercial and entertainment activities that will generate a high-quality of life and economic sustainability.

The proposed development program for 41 LaGrange Street will generate 126 units of mixed-income rental housing, providing an unprecedented mix of rental housing at a wide variety of income ranges. Envisioned as a transit-oriented development project, the Project's location will provide easy access to public transit, ride-share and bike-share facilities, as well as public parking facilities, which fully complies with the goals, objectives, and requirements of Article 38 of the Boston Zoning Code ("Midtown Cultural District").

The ultimate goal of the Project is to meet the continuing demand for housing across a broad range of incomes in this growing area of Boston while contributing to the ongoing revitalization of the Boylston and Tremont Street corridors and to generate a residential population that will support the numerous retail, cultural, and entertainment uses that are prominent in the neighborhood.

Figure 1-2: Site Survey Plan



1.2.3 Proposed Development Program

The Proponent plans to develop a $56 million, 19-story residential tower that will be comprised of 126 mixed-income rental units. The current program includes a mix of studios, one- and two-bedroom units, along with management offices, amenity spaces, laundry facilities, and indoor bike storage racks (one per unit). There will be no on-site parking.

The Project will achieve a key goal of bridging the existing income gap in the neighborhood and alleviating displacement of Chinatown residents by providing affordable housing for a range of low and moderate-income residents, including clients of St. Francis House and other homeless individuals. In an effort to maximize economic diversity and sustainability, the Project will also include market-rate rental units that will target working professionals, young married couples, and empty-nesters who want the conveniences associated with this vibrant neighborhood.

Figure 1-3: Site Context

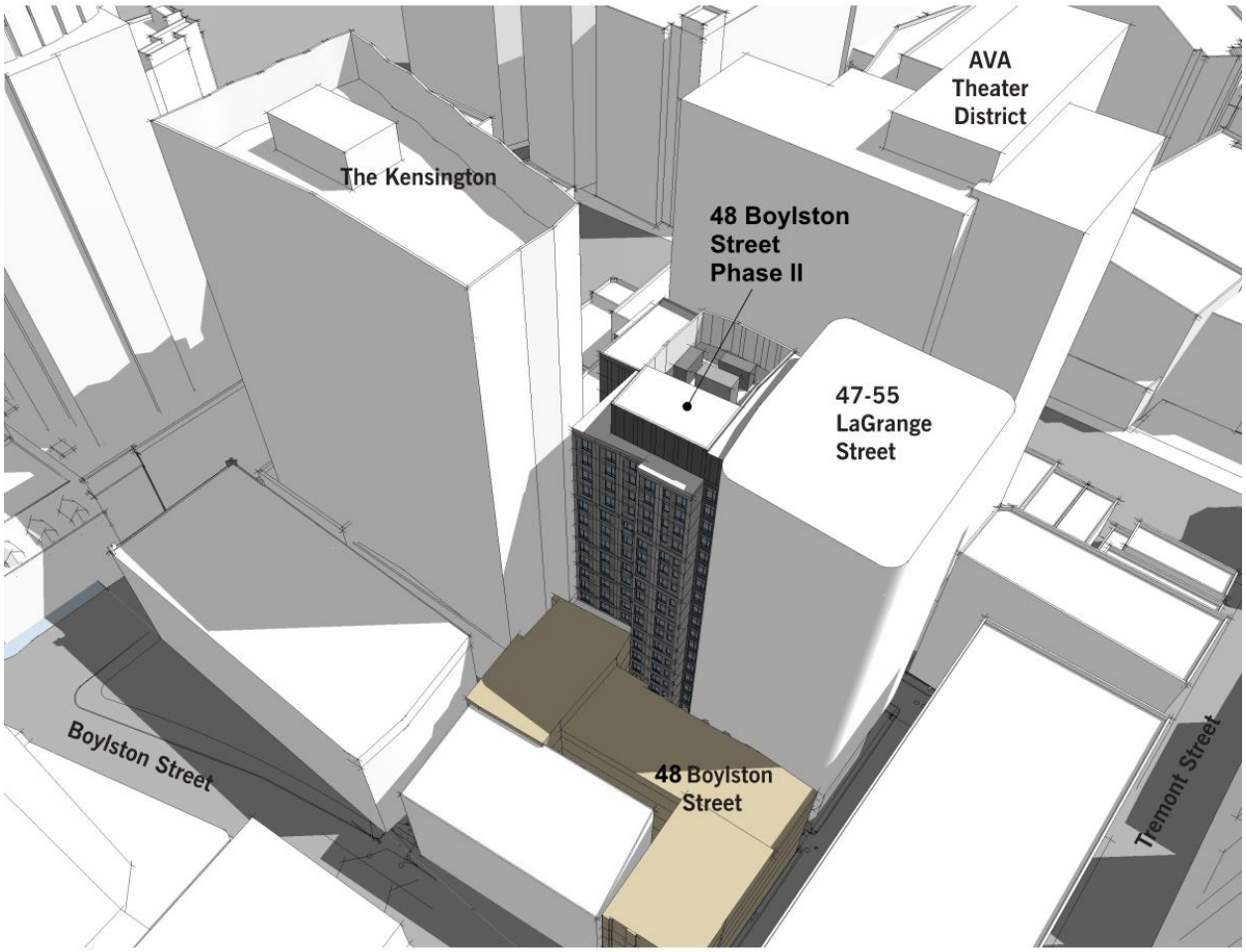


Table 1-1 Approximate Project Dimensions

Project Element	Dimensions
Project Site	8,500 S.F.
Residential Tower	132,045 G.S.F.
Parking	No on-site parking
Total Building Area	7,392 S.F.
Open Space	1,109 S.F.
Building Height (Maximum	207”-0 (not including mechanical)

Table 1-2 Development Program

Residential Support/Office

Ground-Floor Management Office/Laundry/Mechanical	6,592	G.S.F.
Indoor Bike Storage	800	G.S.F.

Residential Units (Floors 2-19)

54 Studios (AVG.	500	S.F.)
18 One-BR (AVG.	840	S.F.)
54 Two-BR (AVG.	954	S.F.)

TOTAL: 126 Units	93,612 G.S.F.
Total Gross Square Footage	132,045 G.S.F.

1.2.4 Public Benefits

1.2.4.1 Neighborhood Revitalization

The Chinatown neighborhood and the Midtown Cultural District continue to be centers of development given their proximity to reliable transportation options and easy access to a broad range of cultural, entertainment, and retail activities. The provision of a mixed-income residential tower will increase the investment value of the area, and generate economic sustainability with a diverse economic base.

1.2.4.2 Affordable Housing

Over the past several years, approximately 2,000 units of market-rate and luxury rental housing and condominiums have been built in the immediate vicinity of the Project site, and a number of additional high-end housing developments are currently under construction. These projects have created a dramatically increased need for a more balanced mix of housing for all income ranges, including the homeless as well as low- and moderate-income individuals and families to facilitate economic diversity and to minimize displacement. In light of this increased demand for mixed-income housing, the Proponent anticipates that approximately 40% of the units will target households whose incomes are below 70% of the area median income, which will significantly exceed the City of Boston's Inclusionary Development Policy (IDP) requirement of 13 percent.

Table 1-3: Project Affordability Analysis

Low-Income Rental Assisted	Low-Income Below 30% AMI	Low-Income Below 50% AMI	Low-Income Below 60% AMI	Other Income 80% AMI	Other Income 110% AMI	Market Rate	Total Units
33 units	17 units	5 units	4 units	3 units	3 units	61 units	126 units
Income Limits (2)							
One person: $22,650 Two person: $25,900	One person: $22,650 Two person: $25,900	One person: $37,750 Two person: $43,150	One person: $45,300 Two person: $51,720	One person: $60,400 Two person: $68,960	One person: $83,050 Two person: $94,820	N/A	
0 BR:30-35% of income 1 BR:30-35% of income 2 BR:30-35% of income	0 BR: $566 1 BR: $606 2 BR: $728	0 BR: $943 1 BR: $1,011 2 BR: $1,213	0 BR: $1,132 1 BR: $1,213 2 BR: $1,456	0 BR: $1,510 1 BR: $1,618 2 BR: $1,942	0 BR: $1,991 1 BR: $2,274 2 BR: $2,560	0 BR: $2,364 1 BR: $2,934 2 BR: $3,540	

NOTE: (1) The ultimate mix of units amongst the different income tiers may vary depending on the final sources of financing; however, the Proponent anticipates making at least 40% of the units affordable to households earning less than 70% of the area median income, which is significantly greater than the City's 13% requirement.
(2) Income limits and rents from Novogradac Rent Calculator, based on HUD 2018 data

1.2.4.3 Smart Growth/Transit-Oriented Development

The construction of the Project will support the ongoing revitalization of the neighborhood. Just as importantly, with direct resident access to the Orange and Green Line on the MBTA's subway system, the MBTA Silver Line and other bus service, and easy access to ride-share, bike-share, and public parking facilities, the proposed Project will generate a minimal number of vehicle trips and supports sustainable design and Transit-Oriented Development/Smart Growth objectives. Therefore, no on-site parking will be provided.

1.2.4.4 New Property Tax Revenues

The Project will generate annual tax payments to the City of Boston that will increase the City's financial and economic base.

1.2.4.5 Economic Benefits

The Proponent is committed to maximizing opportunities for Minority/Women Business Enterprises, (MWBEs) during the pre-construction and construction phases of the Project. Additionally, the Proponent will use all necessary and appropriate measures to establish a diverse construction workforce in compliance with City of Boston requirements.

1.2.5 Community Engagement

The Proponent has established strong relationships with the Chinatown and Midtown Cultural neighborhoods on a very broad level. These key relationships with community stakeholders were

established during the permitting process associated with the renovation of the Boston Young Men's Christian Union Building (Phase I). During this process, the Proponent met with a range of residential, civic, business, and other interested groups, as well as elected officials who represent the area. During the pre-filing phase of this Project, the Proponent re-engaged the neighborhood to obtain their feedback on all significant components of the Project. The Proponent also continues to engage with local elected officials to keep them informed and to seek their support for the critically-needed affordable housing that the Project will provide to the neighborhood. Consequently, the Project has a substantial level of community and political support based on the numerous benefits and opportunities that it will bring to these two important City of Boston neighborhoods. A matrix of community engagement activities and letters of support are attached to this EPNF in Appendix G.

The Proponent looks forward to continuing its ongoing engagement with community stakeholders during the BPDA's Article 80 public process associated with this EPNF.

1.3 Consistency with Zoning

1.3.1 Regulatory Controls and Permits

1.3.1.1 Midtown Cultural District

According to Boston Zoning Map 1A, the Project Site is located in the General Area of the Midtown Cultural District (but is not located within one of the "protection areas" established to protect public open spaces, existing residential neighborhoods or historic buildings) and is also located in Planned Development Area (PDA) IV, which is governed by PDA Development Plan – Area No. 60. The Project Site is not located in one of the Housing Priority Areas of the Midtown Cultural District. According to Boston Zoning Map 1A, the Project Site is located in the Groundwater Conservation Overlay District and the Restricted Parking Overlay District.

1.3.1.2 Use Regulations

According to Section 38-11 of the Zoning Code, the uses allowed in Section 38-18 and Appendix B of Article 38 of the Zoning Code are allowed in PDA No. 60/PDA IV. These uses include multifamily residential, defined as a multifamily building of at least four dwelling units (see Section 2A-1 of the Zoning Code).

1.3.1.3 Dimensional Regulations

Section 38-11 (2) of the Zoning Code contains the applicable dimensional regulations for the PDA No. 60/PDA IV area of the Midtown Cultural District. In addition, the Project shall be in Substantial Accord with the building height and FAR standards set forth in Table A of Article 38. For PDA IV, the maximum building height is 275 feet and maximum FAR is 14. Substantial Accord means, with respect to building height, that the building height shall not exceed the specified height limit by more than 15 additional feet and with respect to FAR, the addition of 1.0. Thus, the building height could be increased to 290 feet and the FAR could be increased to 15.0. The height of the Project is 207 feet which conforms to the requirements of PDA IV. The proposed FAR is 14.9 which is allowed with Substantial Accord as set forth in the Zoning Code and as allowed for the Amended and Restated Development Plan for PDA No. 60.

1.3.1.4 General Standards for Development Plan Approval

Section 38-12 sets forth the approval standards for PDA Development Plans. The Proponent will seek approval to amend the PDA Development Plan – Area No. 60. Pursuant to Section 38-14, a

Development Plan for a PDA in the Midtown Cultural District must include a plan for public benefits which in this case will be satisfied by providing affordable housing.

Section 38-16 details the design and environmental impact standards that apply to projects within PDAs in the Midtown Cultural District. These standards include restrictions on (a) shadows cast on portions of the Boston Common at certain times of day (see Section 38-16(1)); (b) excessive and uncomfortable downdrafts of wind on pedestrians (see Section 38-16(2)); (c) vehicular access and circulation (see Section 38-16(3)); (d) the massing of buildings at a height above 155', requiring horizontal separation of at least 125', known as the skyline plan (see Section 38-16(4)); (e) impacts to existing landmarks and historic buildings (see Section 38-16(5)); and (f) obstacles to enhance the pedestrian environment (see Section 38-16(6)). All proposed projects within a PDA in the Midtown Cultural District must obtain approval of the Boston Civic Design Commission (see Section 38-16(7)).

1.3.1.5 Design Requirements in Midtown Cultural District

Section 38-19 sets forth the specific design requirements for proposed projects in the Midtown Cultural District. The relevant requirements for the Project Site include Street Wall Continuity; Street Wall Height limitation of 90'; Display Window Area Regulations (for those projects including display windows); and Sky Plane Setbacks to enable light to reach the street level. The Project will comply with the relevant design requirements.

1.3.1.6 Off-Street Parking

The Project Site is located within the Restricted Parking Overlay District where parking accessory to non-residential uses requires a conditional use permit from the Board of Appeal; the Project does not include any such spaces. Pursuant to Section 38-22 of the Zoning Code, off-street parking facilities are not required in the Midtown Cultural District, except for the Creation of Affordable Housing in the PDAs, where 0.7 off-street parking spaces per dwelling unit are required. See Section 38-14(3). However, the Project does not include any off-street parking and the Proponent will seek necessary approval(s).

1.3.1.7 First Amendment to Amended and Restated Letter Agreement with the Kensington Investment Company

Pursuant to the private agreement between the Kensington Investment Company (KIC) and Boston Young Men's Christian Union, below are the additional restrictions on the development of the Project site that are specified in that agreement:

Setback Agreement: There is a no-build easement area on the Project Site of approximately up to 10 feet and 6.2 feet in depth from the east and south property lines of the Project Site adjacent to the Kensington site and approximately 83.1 feet and 21.9 feet in length along the property lines, all above a height of 109 feet above Boston City Base. This no-build easement area was created to accommodate the placement of windows in the west and north walls of the Kensington Project 109 feet above Boston City Base, subject to approval of any building code variances needed for the proposed design.

The Project design complies with the above requirements.

1.3.1.8 BCDC Schematic Design Review – Article 28

The Boston Civic Design Commission (BCDC) must review any project exceeding 100,000 square feet of gross floor area, or any project determined by BCDC to be of "special urban design

significance" (see Section 28-5 of the Zoning Code). The Project will have a gross floor area of approximately 132,045 G.S.F, requiring schematic design review by the BCDC.

1.3.1.9 Groundwater Conservation Overlay District – Article 32

Pursuant to Section 32-4 of the Zoning Code, any applicant seeking a building permit for a proposed project within the GCOD that involves (a) the erection or extension of any structure that will occupy more than fifty (50) square feet of lot area; (b) the erection or extension of any structure if construction involves excavation below grade to a depth equal to or below seven (7) feet above Boston City Base; (c) to Substantially Rehabilitate a structure; or (d) any paving or other surfacing of lot area, must obtain a Conditional Use Permit and/or comply with the Groundwater-Retaining Paving requirements of Article 32. The Proponent will seek a Conditional Use Permit from the City of Boston Board of Appeal pursuant to Article 32 of the Zoning Code.

1.3.1.10 Green Buildings – Article 37

Article 37 (Green Buildings) and the Boston Climate Change Preparedness and Resiliency Policy (Resiliency Policy) and Checklist (Resiliency Checklist) ensure that major building projects are planned, designed, constructed, and managed to minimize adverse environmental impacts; conserve natural resources; prepare for climate change; promote a more sustainable city; and enhance the quality of life in Boston. All proposed projects subject to Large Project Review (Article 80B) are subject to Article 37.

Article 37 requires that all projects achieve at least the 'certifiable' level utilizing the most appropriate United States Green Building Council Leadership in Environmental and Energy Design (LEED) Rating System(s). The Proponent is committed to building a LEED certifiable project with a target of the silver level, by incorporating sustainable design features into the Project.

1.3.1.11 Demolition Delay – Article 85

There were two buildings on the Project site that were demolished as part of the Phase 1 redevelopment of the BYMCU building. The buildings were more than fifty years old; therefore, the demolition delay provisions of Article 85 of the Zoning Code applied to the Project. The Proponent applied to the Boston Landmarks Commission and obtained a determination that the two commercial buildings located on the Project site were "not significant buildings" for purposes of the Demolition Delay Ordinance and that no further review is required by the Boston Landmarks Commission. A copy of the Boston Landmarks Commission Letter is attached to this EPNF.

1.3.1.12 Boston Common Shadow Impact

Pursuant to Chapter 362 of the Acts of 1990, no permit granting authority shall take any action that would authorize the construction of any structure that would cast a new shadow on the Boston Common, unless such new shadow occurs for no more than two hours from 8:00 am through 2:30 pm on any day from March 21 to October 21. Notwithstanding the foregoing, a permit granting authority may approve a structure that casts a new shadow on the Boston Common beyond the two-hour period (discussed above) if the area shaded at the end of such two-hour period does not exceed one acre. The Project will not cast any new shadow on any area of the Boston Common during the period from March 21 to October 21.

1.3.1.13 Inclusionary Affordable Housing

The Project is subject to the Mayor's Executive Order regarding inclusionary affordable housing dated February 29, 2000, as amended, as well as the BPDA's Inclusionary Development Policy (IDP). The Project will comply with the BPDA's IDP policy.

1.3.1.14 Boston Public Improvement Commission

Any encroachments of a permanent or temporary nature over, under, or within the City of Boston's public ways require approval by the Boston Public Improvement Commission (PIC). See Municipal Code, Section 8-7. Additionally, specific repairs of existing streets and sidewalks within the Project are subject to PIC review. The Project may require PIC approval for the necessary orders, as well as a License, Maintenance and Indemnification (LMI) Agreement.

1.3.1.15 Boston Water and Sewer Commission

The Boston Water and Sewer Commission's (BWSC's) General Service Application (GSA) is required to construct or change the size or location of a water service pipe or fire pipe connecting to a public water main; to construct a new building sewer or building storm drain; or to reconstruct or modify an existing building sewer or storm drain that connects to a BWSC sanitary sewer, combined sewer or storm drain. The Project is likely to require BWSC to approve new water and sewer connections, including a GSA.

1.4 Legal Information

1.4.1 Legal Judgments Adverse to the Project

The Proponent is not aware of any legal judgments in effect or legal actions pending that would prevent the Proponent from undertaking the Project.

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

No property owned in the City of Boston by the Proponent is in tax arrears to the City of Boston.

1.4.3 Evidence of Site Control/Nature of Public Easements

The Proponent holds fee simple title to the Project Site under a Quitclaim Deed dated April 7, 2016 and recorded in the Suffolk County Registry of Deeds at Book 55951, Page 53. On April 7, 2016, a Subdivision Plan creating the Project Site was recorded in the Suffolk County Registry of Deeds as Plan 146 of 2016.

1.5 Anticipated Permits and Approvals

Table 1-4 sets forth a preliminary list of permits and approvals from governmental agencies and authorities that are expected to be required for the Project. It is possible that only some of these permits and approvals will be required, or that additional permits or approvals will be required.

TABLE 1-4: ANTICIPATED PERMITS AND APPROVALS

AGENCY	APPROVAL
U.S. Environmental Protection Agency	National Pollution Discharge Elimination System (NPDES)
Massachusetts Water Resources Authority	Construction Dewatering Permit
Massachusetts Department of Environmental Protection, Division of Air Quality Control	Notification prior to demolition and/or construction (BWP AQ 06) Certification for Emergency Generator
Boston Planning & Development Agency	Planned Development Area (PDA) – Development Plan Approval Large Project Review (Article 80) Cooperation Agreement Boston Residents Construction Employment Plan Affordable Housing Agreement and Restriction
Boston Board of Appeal	Conditional Use Permit – GCOD Substantial Accord for FAR (if necessary) Off-Street Parking (if necessary)
Boston Civic Design Commission	Schematic Design Review
Boston Landmarks Commission	Demolition Delay Approval (Article 85)
Boston Committee on Licenses/Public Safety Commission	Flammable Storage License
Boston Fire Department	Approval of Fire Safety Equipment
Boston Inspectional Services Department	Demolition Permit Building Permit Occupancy Permit
Boston Public Improvement Commission	Vertical Discontinuance Grant of Location (utility equipment) Projection License (canopy) Specific Repairs (sidewalk) License, Maintenance and Indemnification Agreement (LMI)
Boston Transportation Department	Transportation Access Plan Agreement Construction Management Plan Street and Sidewalk Occupancy Permit(s)
Boston Water and Sewer Commission	Water and Sewer Connection Permits General Service Application Site Plan Review Infiltration and Inflow (I&I) Fee

1.6 Project Schedule

Project construction is expected to get underway in the spring of 2020 and will be completed for occupancy in 24 months.

1.7 Project Design

1.7.1 Design Objectives

The Project will transform an unused vacant lot (as shown in Figures 1-4 and 1-5) into much needed affordable housing in the heart of the City's vibrant Midtown Cultural District which has been inundated with high priced, luxury towers in recent years. The portion of LaGrange Street between Washington Street and Tremont Street is currently largely composed of loading access, service entries, and back of house acivities which do not create a pedestrian-friendly environment. The redevelopment of this site along with the adjacent 47-55 LaGrange Street site will greatly improve the current pedestrian experience and provide much needed low-income housing.

Figure 1-4 and 1-5 Existing Conditions (2018)

Figure 1-5 Existing Conditions (2018)

1.7.2 Design Summary

The addition of the Project to the area, as well as the redevelopment of the adjacent 47-55 LaGrange Street project will add new life to this portion of LaGrange Street. The proposed building is nestled among the existing and proposed luxury housing towers; its massing is designed in such a way to lessen its impact on the immediate streetscape as well as the larger urban context. The ground floor is set back to align with the streetwall established by the adjact Kensington podium which effectively doubles the sidewalk width in this area. Ground floor uses include the residential lobby and amenity spaces which are largely enclosed in glass—adding new vibrance, activity, and eyes on the street thereby improving the pedestrian experience.

Figures 1-6 and 1-7: Street-Level Schematics

48 Boylston Street - New Construction

View from LaGrange Street

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48 Boylston Street - New Construction

Entry Detail

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2.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

2.1 Transportation

2.1.1 Transportation Overview

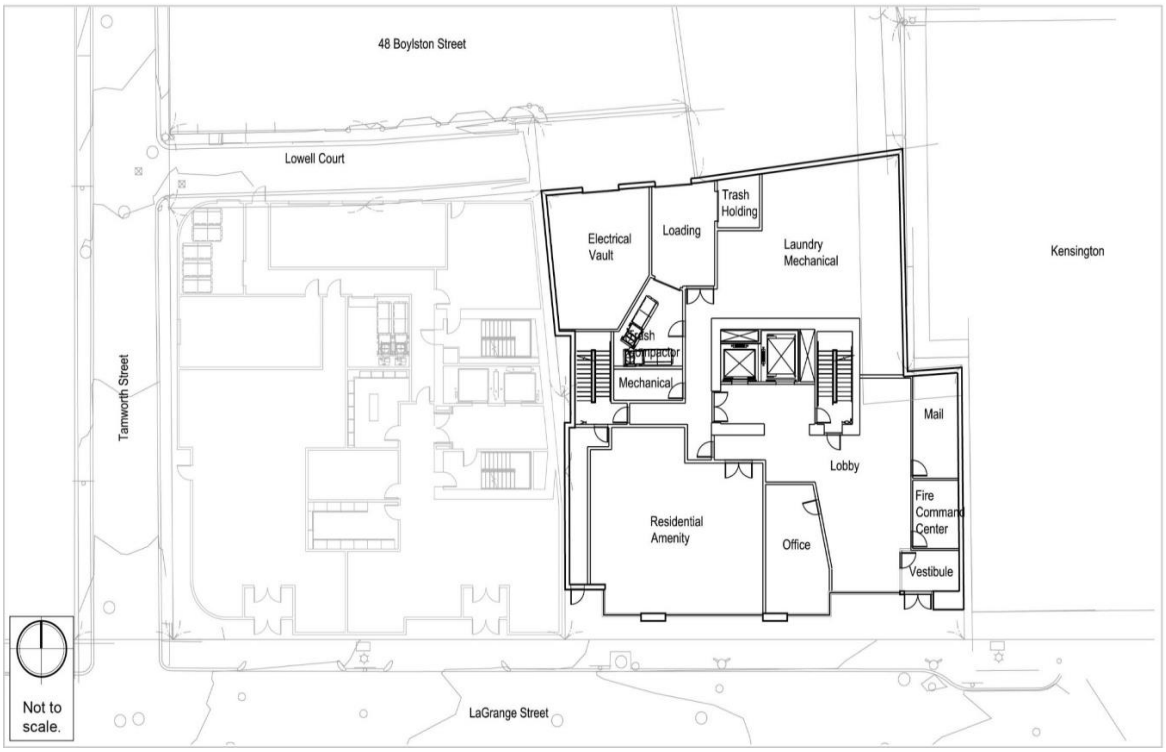
This section presents a summary of the Project's transportation impacts including site access, parking, public transportation, bicycle facilities, trip generation, loading and service, and Transportation Demand Management (TDM) measures. Further analysis of transportation aspects of the Project will be included in the DPIR (Draft Project Impact Report), which will be developed in cooperation with the Boston Planning and Development Agency (BPDA), the Boston Transportation Department (BTD), and the community.

2.1.2 Project Description and Site Access

The Project is located at the rear of 48 Boylston Street/41 LaGrange Street in Boston's Theater District neighborhood. The Project site is bounded by LaGrange Street to the south, a surface parking lot that is being redeveloped to the west, Lowell Court to the north, and commercial and residential buildings to the east. The Project site previously contained two one- to two-story brick and concrete buildings that were demolished as part of Phase I. The site is now a gravel lot.

The Project will consist of the construction of a 19-story residential building containing approximately 126 units with no on-site parking spaces. The Project will also include on-site, secure, and covered storage for up to 126 bicycles (one per unit). An on-site loading dock will be provided for move-in/move-out activity and deliveries and will be accessed off of Lowell Court. The Proponent will work with the BPDA and BTD to refine the design of the site access points for the Project. A preliminary site plan is shown below in Figure 2-1.

Figure 1. *Site Access Plan*



2.1.3 Existing Conditions

2.1.3.1 Existing Roadway Conditions

This section includes descriptions of the adjacent and nearby roadways that serve the Project site.

Washington Street is a two-way, four lane roadway south of Stuart Street, a one-way northbound, two lane roadway between Stuart Street and Boylston Street, and becomes a one-way northbound three lane roadway north of Boylston Street. Washington Street is located to the east of the Project site and runs in a northeast-southwest direction between State Street in Boston to the northeast and Water Street in Walpole to the southwest. Washington Street is classified as an urban principal arterial under BTD jurisdiction. On-street parking is permitted along Washington Street north of LaGrange Street and south of Stuart Street. Sidewalks are provided along both sides of the roadway.

Boylston Street is a two-way, two lane roadway west of Tremont Street and turns into a one-way eastbound, two-lane roadway east of Tremont Street. Boylston Street is located to the north of the Project site and runs in an east-west direction between Brookline Avenue to the west and Essex Street to the east. Boylston Street is classified as an urban principal arterial roadway under BTD jurisdiction. On-street parking is permitted along the south side of Boylston Street and sidewalks are provided along both sides of the roadway.

Tremont Street is a one-way southbound, three lane roadway located to the west of the Project site. Tremont Street runs in a northeast-southwest direction between Court Street to the northeast and Huntington Avenue to the southwest. Tremont Street is classified as an urban principal arterial under BTD jurisdiction. On-street parking is only permitted on the east side of the roadway north of Boylston Street and is permitted on both sides of the roadway south of Stuart Street. Sidewalks are provided along both sides of the roadway.

Essex Street is a one-way eastbound, two-lane roadway located to the north of the Project site. Essex Street runs in an east-west direction between Washington Street to the west and Atlantic Avenue to the east. Essex Street is classified as an urban minor arterial roadway under BTD jurisdiction, and consists of one shared bus bike lane, one travel lane and one parking lane that is peak hour restricted to provide a second travel lane during the peak hours. On-street parking is permitted along the south side of Essex Street and sidewalks are provided along both sides of the roadway.

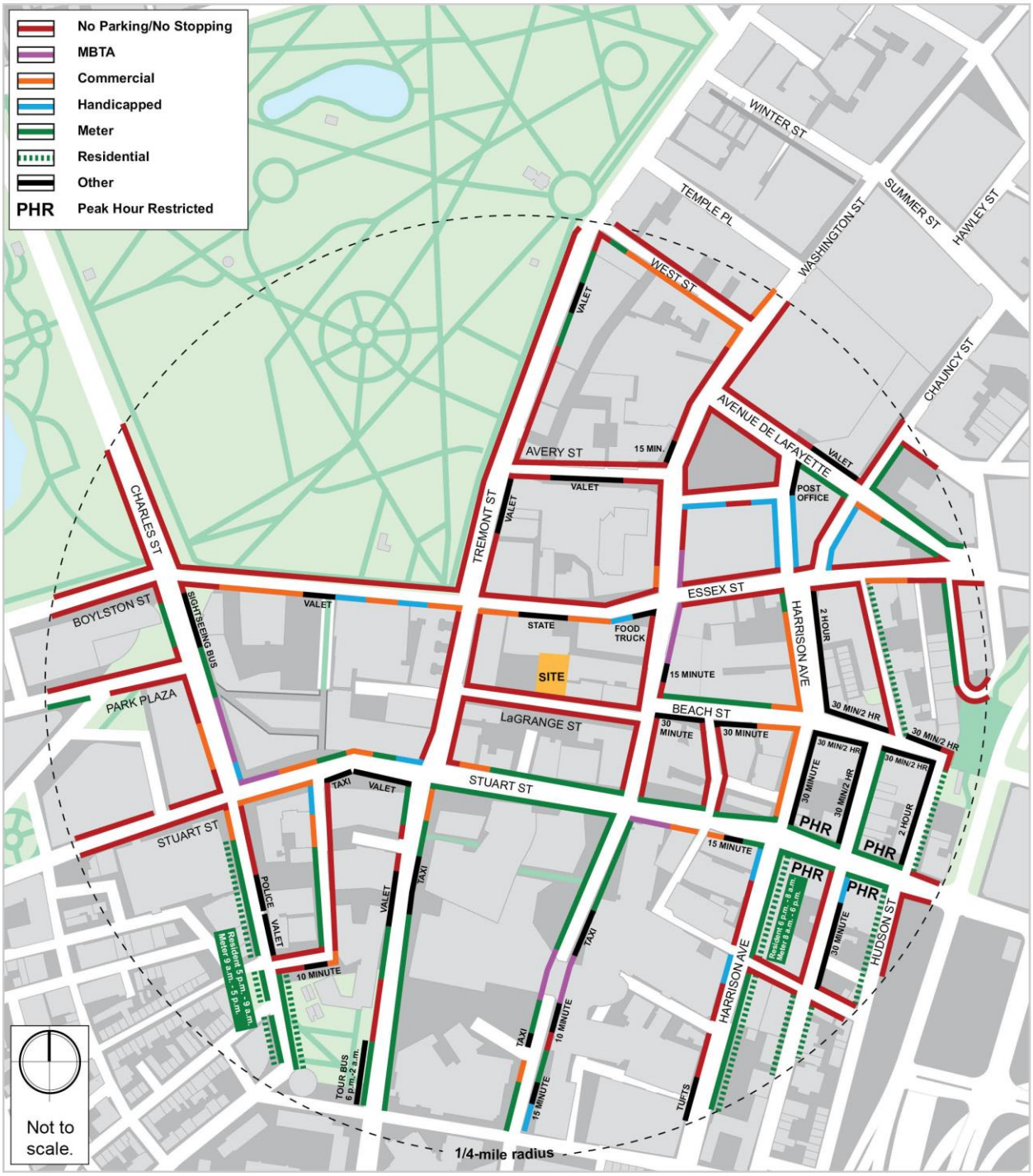
LaGrange Street is a one-way eastbound, one-lane roadway located adjacent to the south side of the Project site. LaGrange Street runs in an east-west direction between Tremont Street to the west and Washington Street to the east. The eastern portion of LaGrange Street accommodates a westbound section for the driveway into the Kensington Tower. LaGrange Street is classified as a local roadway under BTD jurisdiction. On-street parking is not permitted along either side of LaGrange Street and sidewalks are provided along both sides of the roadway.

Tamworth Street is a one-way northbound, one-lane roadway located to the west side of the Project site. Tamworth Street runs in a north-south direction between LaGrange Street to the south and Boylston Street to the north. Tamworth Street is classified as a local roadway under BTD jurisdiction. On-street parking is not permitted along either side of Tamworth Street and substandard sidewalks are provided along both sides of the roadway.

2.1.3.2 Existing Parking and Curb Use

Curb usage within a quarter mile of the site is generally restricted to metered parking, commercial loading, and bus stops for the MBTA. **Figure 2-2** below presents an inventory of existing curb use and parking restrictions within a quarter mile walk of the Project.

Figure 2. ***On-street Parking***



There are ten parking lots and twelve parking garages located within a quarter mile of the Project site with a total of approximately 8,148 public parking spaces. These facilities are summarized in Table 2-1.

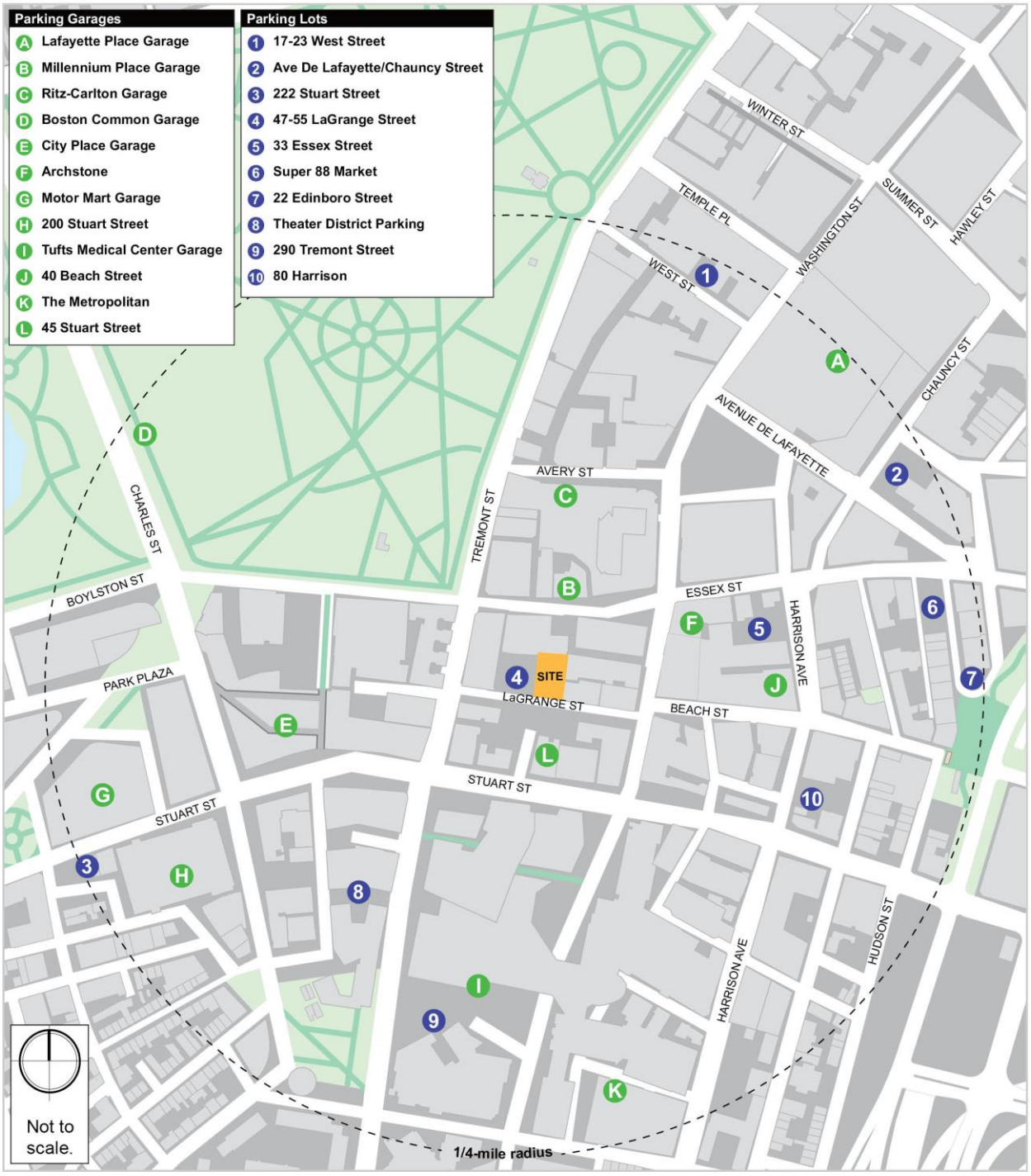
TABLE 2-1 OFF STREET PARKING

Name/Address	Public Capacity	Name/Address	Public Capacity
Garages		Lots	
Lafayette Place Garage	1,000	17-23 West Street	13
Millennium Place Garage	700	Ave De Lafayette/Chauncy St	30
Ritz Carlton Garage	500	222 Stuart Street	20
Boston Common Garage	1,350	47 LaGrange Street	50
City Place Garage	120	33 Essex Street	53
Archstone	461	Super 88 Market	50
Motor Mart Garage	1037	22 Edinboro Street	11
200 Stuart Street	850	Theater District Parking	35
Tufts Medical Garage	900	290 Tremont Street	100
40 Beach Street	475	80 Harrison Avenue	63
The Metropolitan	130		
45 Stuart Street	200		
Subtotal	7,723	Subtotal	425
	Total		8,148

NOTE: All parking space capacity is approximate based on APCC data, field observations and online sources .

The nearby parking facilities are also shown in **Figure 2-3.**

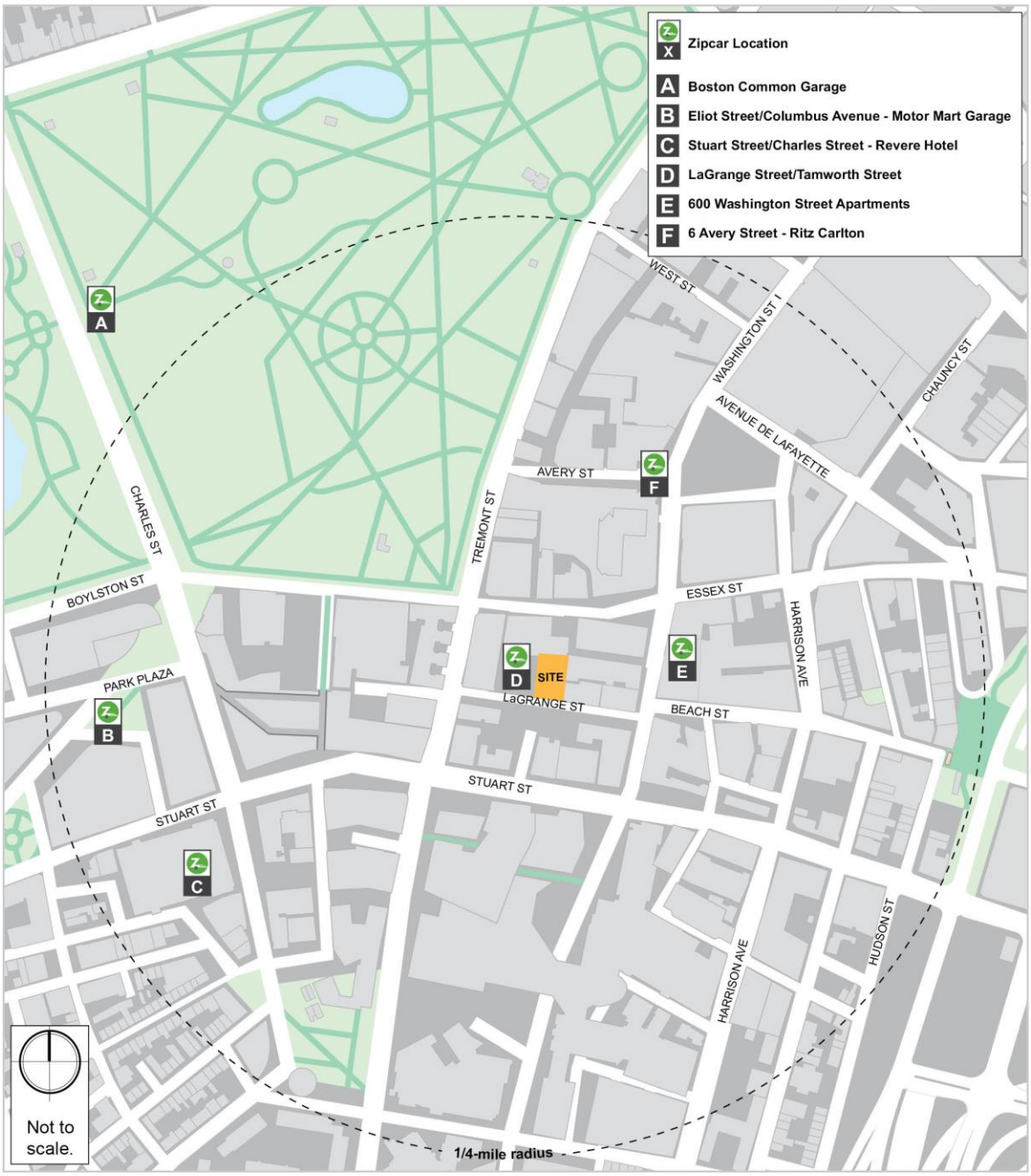
Figure 3. ***Off-street Parking***



2.1.3.3 Existing Car Sharing Services

Car-sharing services provide easy access to vehicular transportation for urban residents and employees who do not own a car. Zipcar is the primary car sharing service in the Boston area offering short-term rental service for members. Vehicles are rented on an hourly basis and all vehicle costs (gas, maintenance, insurance, and parking) are included in the rental fee. Zipcar provides an important transportation option by reducing the need to rent or own a vehicle. **Figure 2-4** shows the nearby Zipcar locations, with a total of six Zipcar locations within a quarter mile of the Project site.

Figure 4. ***Vehicle Sharing Locations***



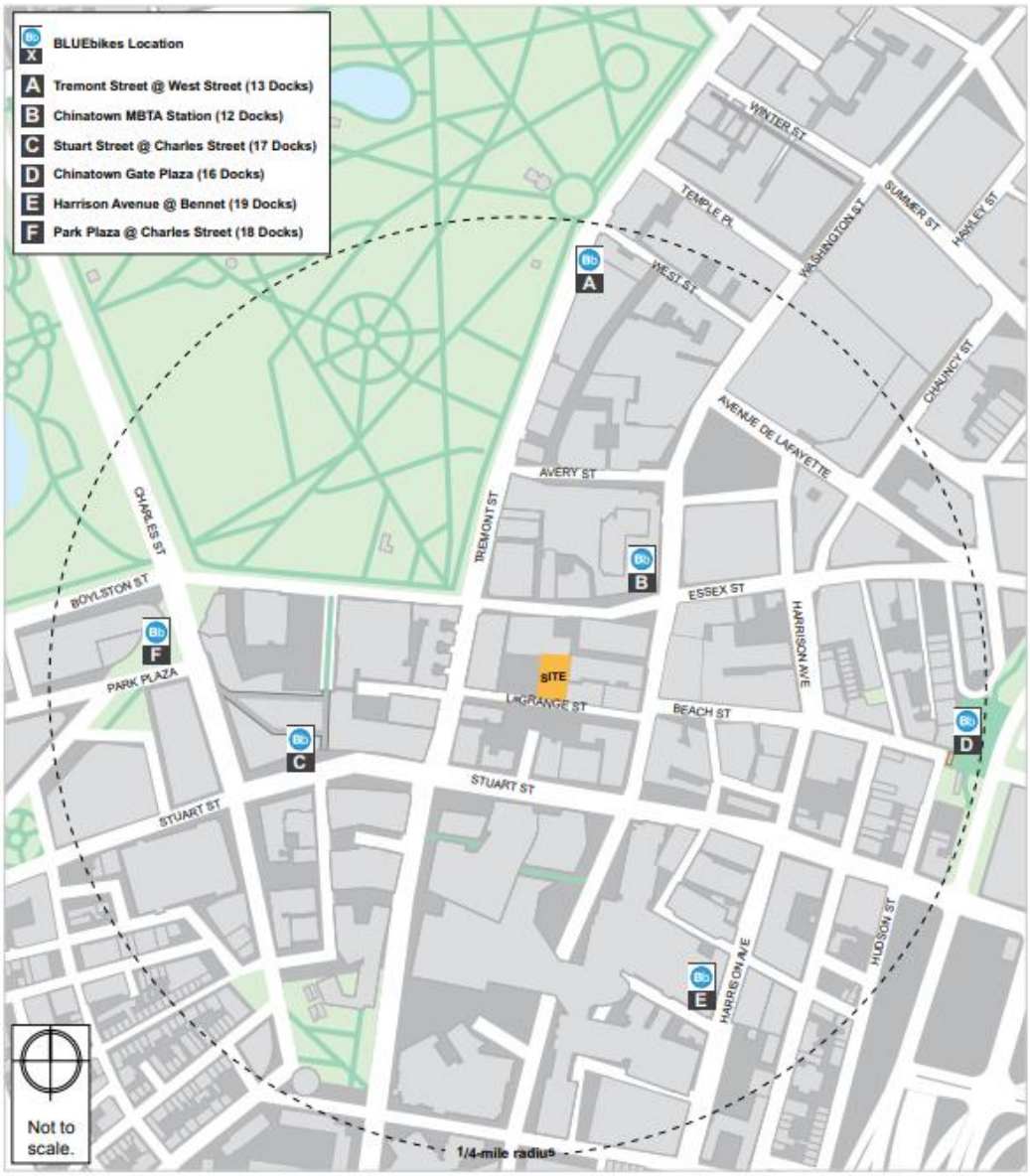
2.1.3.4 Existing Bicycle Conditions

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. Essex Street, east of Washington Street has a shared bus-bike lane, Kneeland has a newly implemented buffered bike lane, and Surface Road has a painted bike lane. Also, Washington Street, north of Temple Place, is car free.

2.1.3.5 Bicycle Sharing Services

Blue Bikes (formerly Hubway), launched in July 2011, is the Boston area's largest bicycle sharing service with more than 200 stations and 1,800 bicycles available throughout Boston, Brookline, Cambridge, and Somerville. There are six Blue Bikes stations located in the vicinity of the Project site as shown in Figure 2-5.

Figure 5. *Bicycle Sharing Locations*



2.1.3.6 Existing Pedestrian Facilities

The Project is in a primary location for walkable access to public transportation and the numerous retail, commercial, and recreational opportunities such as the Boston Common, Downtown Crossing, and South Station. All adjacent roadways currently have sidewalks and the sidewalks are generally in good condition.

2.1.3.7 Existing Public Transportation Services

The Project is located less than a quarter-mile from the MBTA's Boylston Street Station on the Green Line and Chinatown Station on the Orange Line. Connections to the Red Line are available at Downtown Crossing, just over a quarter-mile walk from the site.

The MBTA Silver Line routes 4 and 5 also directly serve the Project site with stops near the intersection of Boylston Street at Washington Street, as well as the intersection of Boylston Street at Tremont Street. MBTA bus routes #11, #43, and #55 operate along Tremont Street and directly serve the Project site with stops near the intersection of Tremont Street and Boylston Street. The local MBTA public transportation services are listed in Table 2-2.

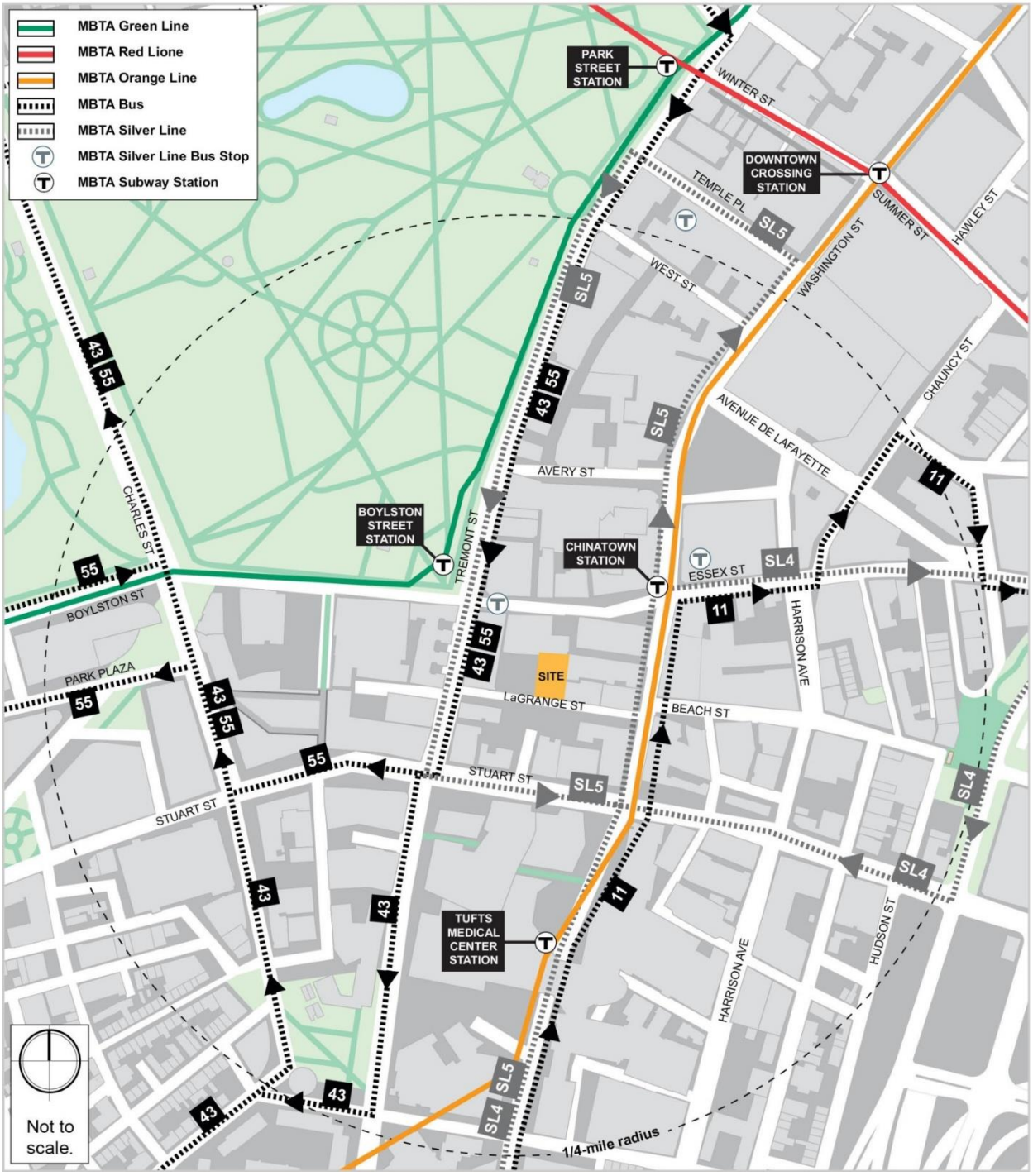
TABLE 2-2 EXISTING PUBLIC TRANSPORTATION SERVICES

Transit Service	Description	Peak-Hour Headway (Minutes)[1]
	Subway Lines	
Orange Line	Forrest Hills-Oak Grove	6
Red Line	Alewife-Braintree	9
	Alewife-Ashmont	9
Green Line	B Branch: Boston College – Park Street	6
	C Branch: Cleveland Circle – North Station	6
	D Branch: Riverside – Government Center	6
	E Branch: Heath Street – Lechmere	6
	Bus Routes	
Silver Line 4	Dudley Station – South Station at Essex Street via Washington Street	12
Silver Line 5	Dudley Station Downtown Crossing at Temple Place via Washington Street	7
11	City Point – Downtown Bayview Route	6
43	Ruggles Station – Park Street & Tremont Street via Tremont Street	18
55	Jersey Street & Queensbury Street – Copley Street or Park Street & Tremont Street via Ipswich Street	15

NOTE: 1. Headway is the scheduled time between trains or buses. Headways are approximate. Source: www.mbta.com, Fall 2018.

The local MBTA public transportation services are listed also mapped in Figure 2-6.

Figure 6. ***Public Transportation***



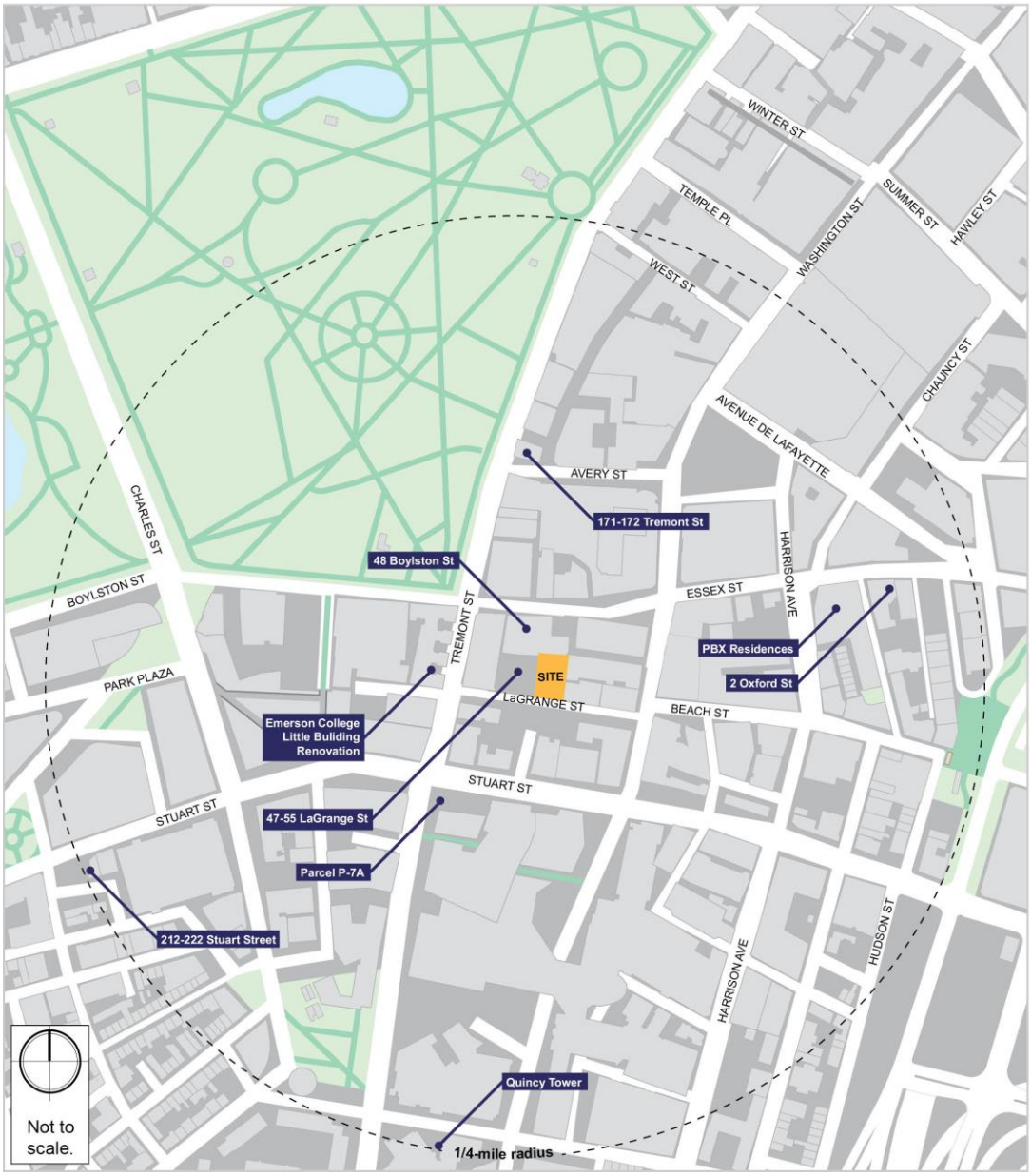
2.1.4 Background Traffic Growth

Future traffic volume changes are based on two factors: an annual growth rate and growth associated with specific developments near the Project. The first part of the methodology for

estimating traffic volume accounts for general background traffic growth that may be affected by changes in demographics, automobile usage, and automobile ownership. Based on a review of recent and historic traffic data collected for nearby projects and to account for any additional unforeseen traffic growth, a half percent per year annual traffic growth rate applies to traffic volumes in the vicinity of the Project site. Should a more detailed analysis be required by the BPDA and the BTD, this growth rate will be used to develop future traffic volume projections.

The second part of the methodology identifies any specific planned developments that are expected to affect traffic patterns throughout the study area within the future analysis time horizon. Nine nearby development projects were identified in close proximity to the Project site. The nearby development projects are presented in Figure 2-7.

Figure 7. ***Area Development Projects***



2.1.5 Transportation Impact Overview

As previously summarized, the Project will consist of the construction of a 19-story residential building containing approximately 126 units. The Project will not have any on-site parking spaces.

2.1.5.1 Site Access, Parking, and Loading

As previously mentioned, on-site parking will not be provided as part of the Project. Approximately 8,148 off-street parking spaces are provided in garages and lots throughout the neighborhood. Loading activity will be provided in an exclusive loading area along Lowell Court to the north of the Project. The loading area will primarily consist of standard mail and package deliveries with occasional move-in/move-out activity. The loading area will accommodate trucks up to the size of an SU-36 delivery truck (a box truck up to approximately 36-feet in length). Trash pick-up will be conducted by a private trash contractor.

2.1.5.2 Trip Generation Methodology

Trip generation is a complex, multi-step process that produces an estimate of vehicle, transit, and walk/bicycle trips associated with a proposed development or land use change. Following standard industry practice, and as required by the BTD, trip generation in this study is derived from the Institute of Transportation Engineers' (ITE) Trip Generation (10th edition, 2017). The ITE rates produce vehicle trip estimates, which are converted to person trips based on average vehicle occupancy (AVO). Using appropriate travel mode share information for this specific Project study area, the total person trips are then allocated to vehicle, transit, and walk/bicycle trips.

Trip generation estimates are based on average trip rates for the following ITE land use codes (LUC) associated with the planned Project:

Land Use Code 222 – Multifamily Housing (High-Rise). This land use code refers to dwelling units located within the same building with at least three other dwelling units. Calculation of the number of trips uses ITE's average rate per dwelling unit.

The BTD provides vehicle, transit, and walking mode split rates for different areas of Boston.

2.1.5.3 Project Mode Share

Mode share splits were obtained from BTD and are consistent with traffic studies conducted for nearby projects, and applied to the trip generation estimates. The expected mode share splits for the Project are shown in Table 2-3.

TABLE 2-3 TRAVEL MODE SHARE AND VEHICLE OCCUPANCY RATES

Land Use	Direction	Auto	Transit	Walk/Bicycle	Average Vehicle Occupancy[1]
Daily					
Apartment	In	34%	17%	49%	1.13
	Out	34%	17%	49%	1.13
a.m. Peak Hour					
Apartment	In	45%	17%	38%	1.13
	Out	22%	13%	65%	1.13
p.m. Peak Hour					
Apartment	In	22%	13%	65%	1.13
	Out	45%	17%	38%	1.13

NOTE: 1. Boston Transportation Department, 2009 National Household Travel Survey

2.1.5.4 Project Trip Generation

The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA). The person trips were then distributed to different modes according to the splits shown in **Table 2-3**. The trip generation for the Project by mode is shown in **Table 2-4**, with the detailed trip generation information provided in Appendix D.

TABLE 2-4 PROJECT TRIP GENERATION

Land Use	Direction	Auto	Transit	Walk/Bicycle
Daily				
Apartment	In	95	56	162
	Out	95	56	162
	Total	180	112	324
a.m. Peak Hour				
Apartment	In	3	2	3
	Out	7	5	24
	Total	10	7	27
p.m. Peak Hour				
Apartment	In	6	4	23
	Out	8	3	7
	Total	14	7	30

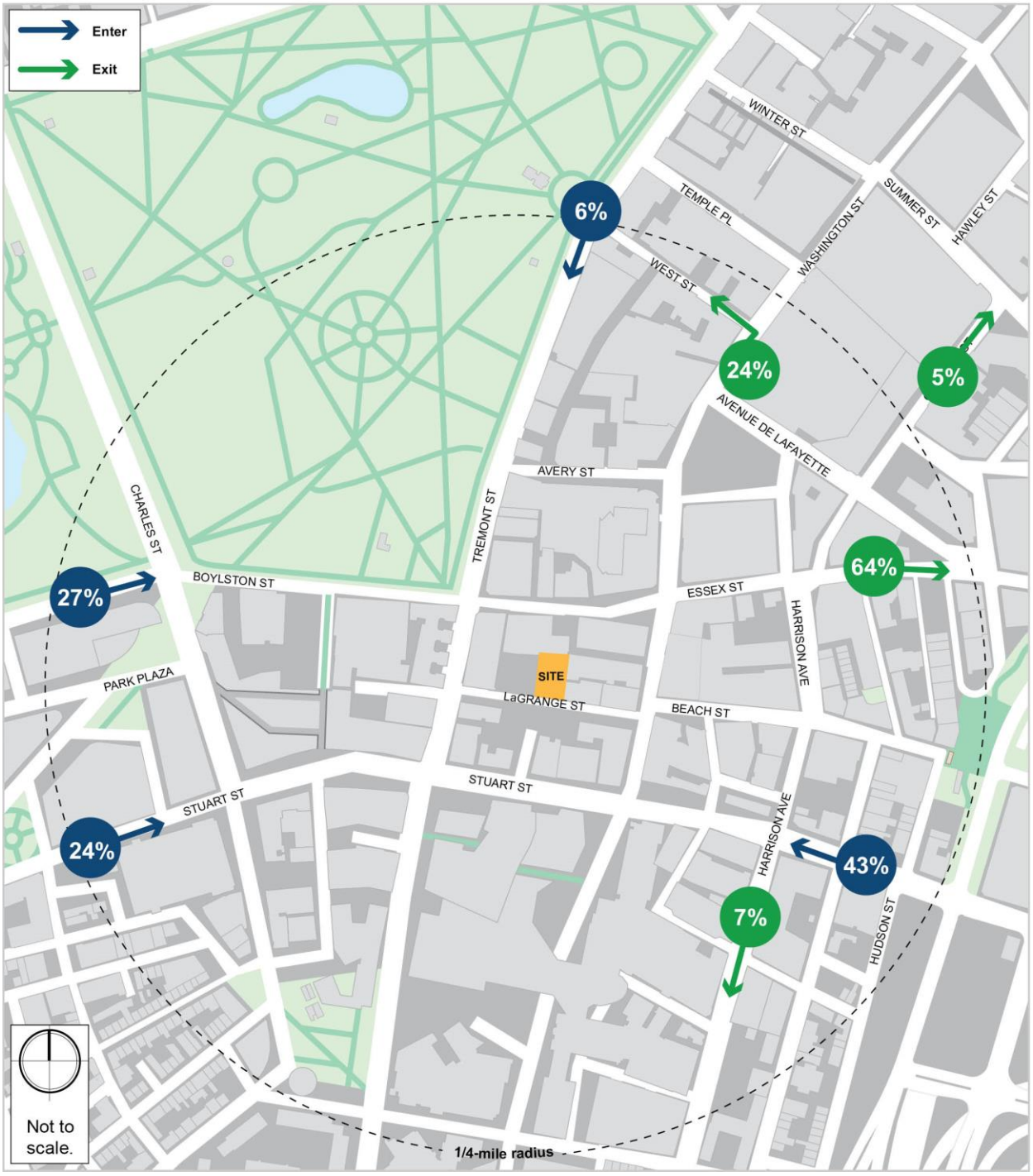
NOTE: Based on ITE Trip Generation, 10th Edition, LUC 222 (Multifamily Housing High-Rise), 126 units, average rate

As shown in **Table 2-4**, the Project is expected to generate approximately 27 new walk/bicycle trips during the a.m. peak hour and 30 new walk/bicycle trips during the p.m. peak hour. The Project is expected to generate 7 new transit trips during the a.m. peak hour and 7 new transit trips during the p.m. peak hour. The Project is expected to generate approximately 10 new vehicular trips during the a.m. peak hour and 14 new trips during the p.m. peak hour. There is no parking on-site; therefore, these vehicle trips are expected to be made from nearby garages. Based on this trip generation analysis, the Project is expected to have a minimal impact upon traffic operations within the vicinity of the site.

2.1.5.5 Project Trip Distribution

The vehicular trip distribution is based on BTD guidelines, using origin-destination characteristics for Area 3, the BTD-designated zone that encompasses the Project site. **Figure 2-8** presents the expected local vehicle trip distribution to and from the site.

Figure 8. ***Trip Distribution***



2.1.6 DPIR Traffic Impact

Based on the absence of parking provided on site, the negligible vehicular trip generation projections, and the proximity to many different public transportation opportunities, the Project is not expected to have a significant vehicular impact in the neighborhood. Therefore, a traffic impact analysis will not be conducted at any intersections. If a traffic analysis of any nearby intersections is required, the Proponent will coordinate with the BPDA and BTD to provide additional information. Additionally, a detailed analysis of intersection operations and the development of appropriate mitigation measures will be addressed by the Proponent if deemed necessary. Any impacts that require mitigation will be carefully coordinated with BTD, as well as with neighbors.

2.1.7 Transportation Demand Management

The Proponent is committed to implementing Transportation Demand Management (TDM) measures to minimize automobile usage and Project related traffic impacts. The TDM program supports the City's efforts to reduce dependency on the automobile by encouraging travelers to use alternatives to driving alone, especially during peak time periods. The Proponent is prepared to take advantage of good transit access in marketing the site to future residents by working to implement the following demand management measures to encourage the use of public transportation, ridesharing, bicycling, and walking.

The TDM program may include an on-site transportation coordinator, transit pass subsidies for residents, secure bicycle parking areas, and distribution of transit maps and schedules to residents. TDM measures may include, but are not limited to, the following:

Transportation Coordinator: The Proponent will designate a transportation coordinator to manage loading and service activities and provide alternative transportation materials to residents and building tenants. The Transportation Coordinator will also provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, and other travel options.

Orientation Packets: The Proponent will provide orientation packets to new residents containing information on the available transportation choices, including transit routes/schedules, and nearby vehicle sharing and bicycle sharing locations.

Public Transportation: The Proponent will promote the use of public transportation by posting real-time information about nearby public transportation options, provide on-site and online sale of MBTA passes through the building management office.

Bicycle Accommodation: The Proponent will provide bicycle storage in secure, sheltered areas for residents (one per unit). Subject to necessary approvals and allowable space, public use bicycle racks for visitors will be placed near the building entrances.

Project Web Site: The web site will include transportation-related information for patrons, workers, and visitors.

2.1.8 Transportation Access Plan Agreement

The Proponent is responsible for preparation of the Transportation Access Plan Agreement (TAPA), a formal legal agreement between the Proponent and BTD. The TAPA formalizes the findings of the transportation study, mitigation commitments, elements of access, and physical design, travel demand management measures, and other responsibilities that are agreed to by both the

Proponent and BTD. The TAPA must incorporate the results of BPDA and BTD review of the EPNF; for that reason, it must be executed after the Article 80 permitting process. The proposed measures listed above and any additional transportation improvements to be undertaken as part of this Project will be defined and documented in the TAPA.

2.1.9 Construction Management Plan

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

2.1.10 Public Improvement Commission

Certain streetscape improvements surrounding the site on LaGrange Street and Tamworth Street may require Public Improvement Commission (PIC) review and approval. As standard practice, the Proponent will work with the City in continuing to develop and obtain approval of these improvements.

2.2 Environmental Impact and Protection

2.2.1 Wind

2.2.1.1 Introduction

Rowan Williams Davies & Irwin (RWDI) conducted a Pedestrian Level Wind (PLW) study for the 41 LaGrange Street residential tower, a planned 19-story building with 126 units located between the Chinatown neighborhood and the Midtown Cultural District in Boston, Massachusetts. The study is based on industry standard wind tunnel testing techniques and architectural drawings provided by The Architectural Team (TAT).

2.2.1.2 Methodology

The test was carried out for two configurations:

- No Build- All existing buildings situated on the study site and surroundings
- Build- The proposed Project with the existing surroundings

2.2.1.3 Results and Conclusions

Based on the testing and analysis, the results show comfortable conditions are expected in the No Build configuration around the site, and are predicted to be much the same with the addition of the Project. Conditions are improved on the upper pool deck of the adjacent building with the addition of the proposed development in the Build configuration. The safety criterion is exceeded in 2 locations in the No Build configuration and this remains unchanged in the Build configuration.

Based on our experience in Boston and working with the BPDA, these are positive results, and we do not expect there to be any mitigation required.

2.2.2 Shadow

A shadow study indicating the potential impacts of the Project on the surrounding area including Boston Common has been prepared and is depicted on **Figures 2-9 - 2-31**. The results of the study indicate that the impact of new shadows cast by the Project is inconsequential. Further, the Project will not cast any new shadow that lasts for more than 2 hours on Boston Common during the period from March 21 to October 21 between the hours of 8:00 a.m. and 2:30 p.m. The following shadow studies include the typical March 21st, June 21st, September 21st, and December 21st dates at 9:00 a.m., 12:00 p.m., 3:00 p.m. and 6:00 p.m. Also included is the worst case scenario of October 21st between the hours of 8:00 a.m. and 10:00 a.m. to demonstrate compliance with the Boston Common Shadow Law.

Figure 2-9-Shadow Study

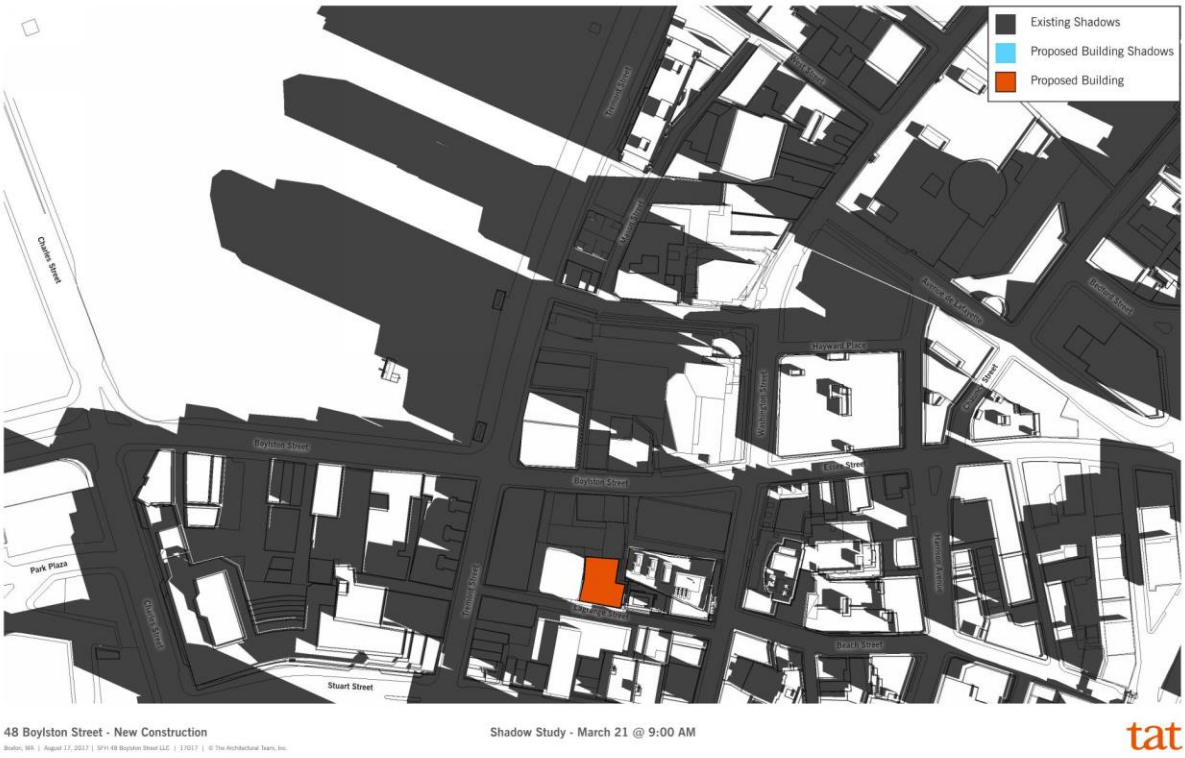


Figure 2-10 Shadow Study

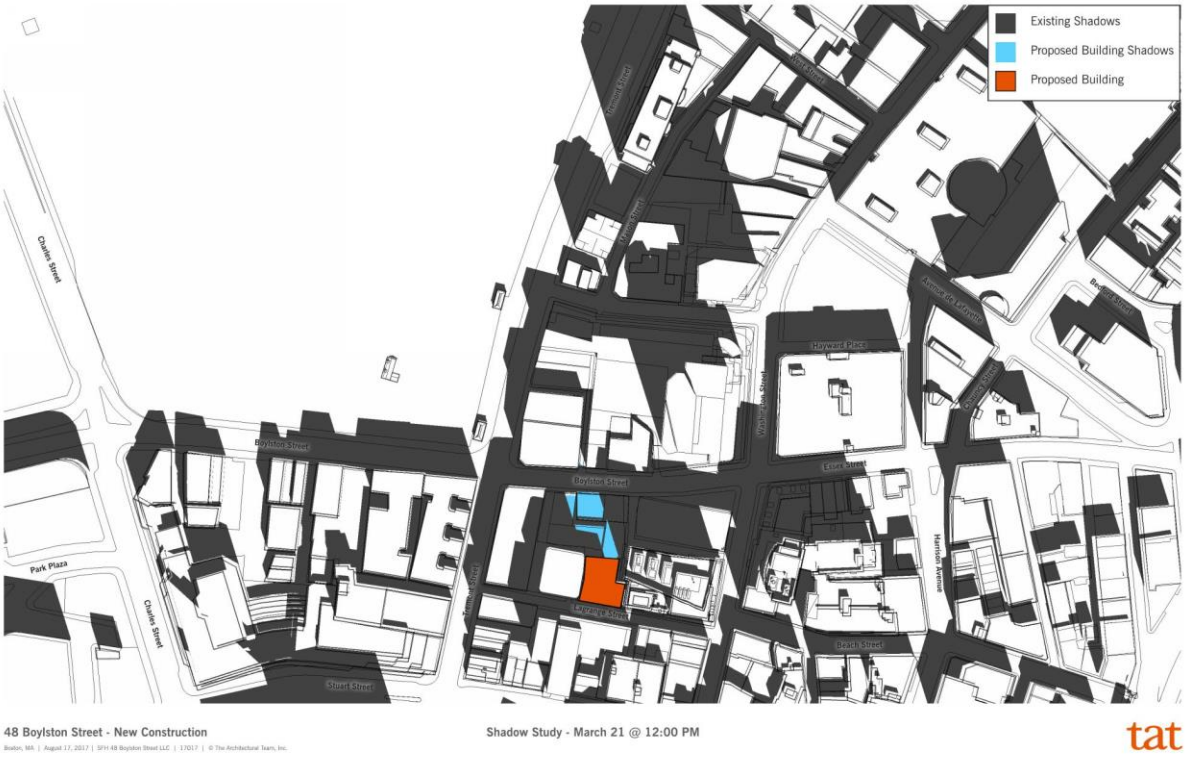


Figure 2-11 Shadow

Figure 2-12 Shadow Study

Figure 2-13 Shadow Study

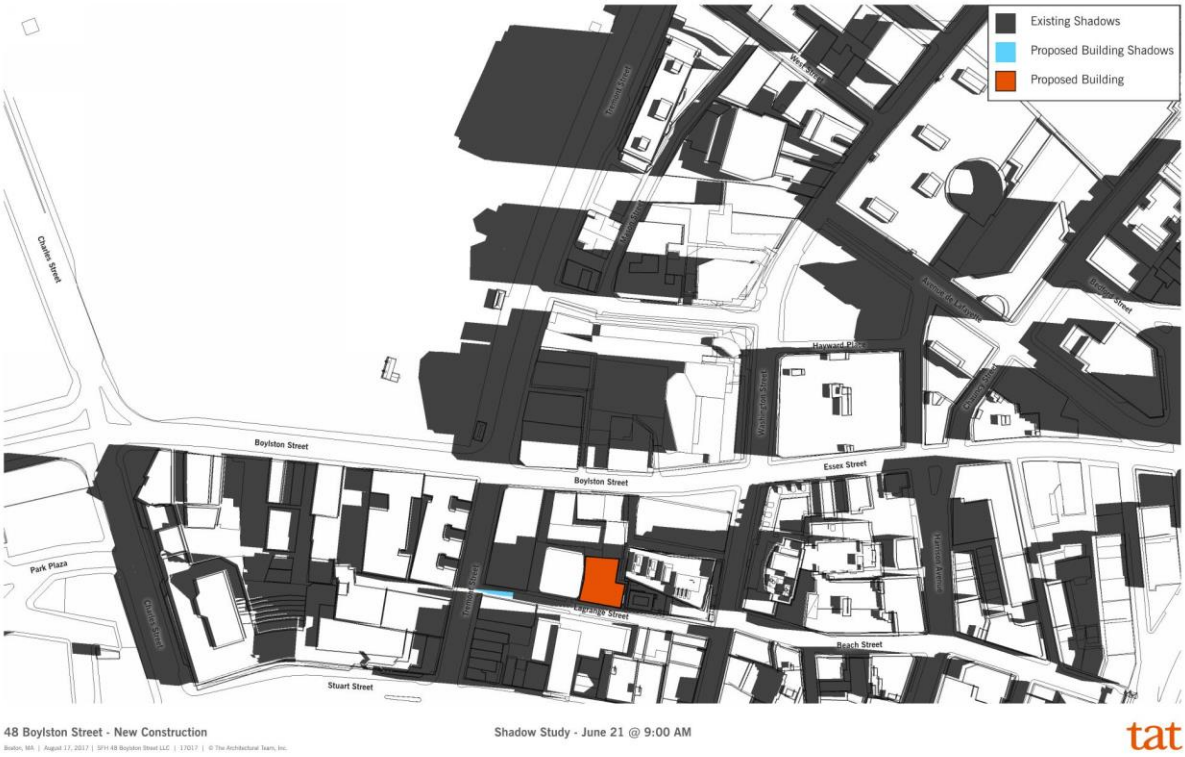


Figure 2-14 Shadow Study

Figure 2-15 Shadow Study

Figure 2-16 Shadow Study

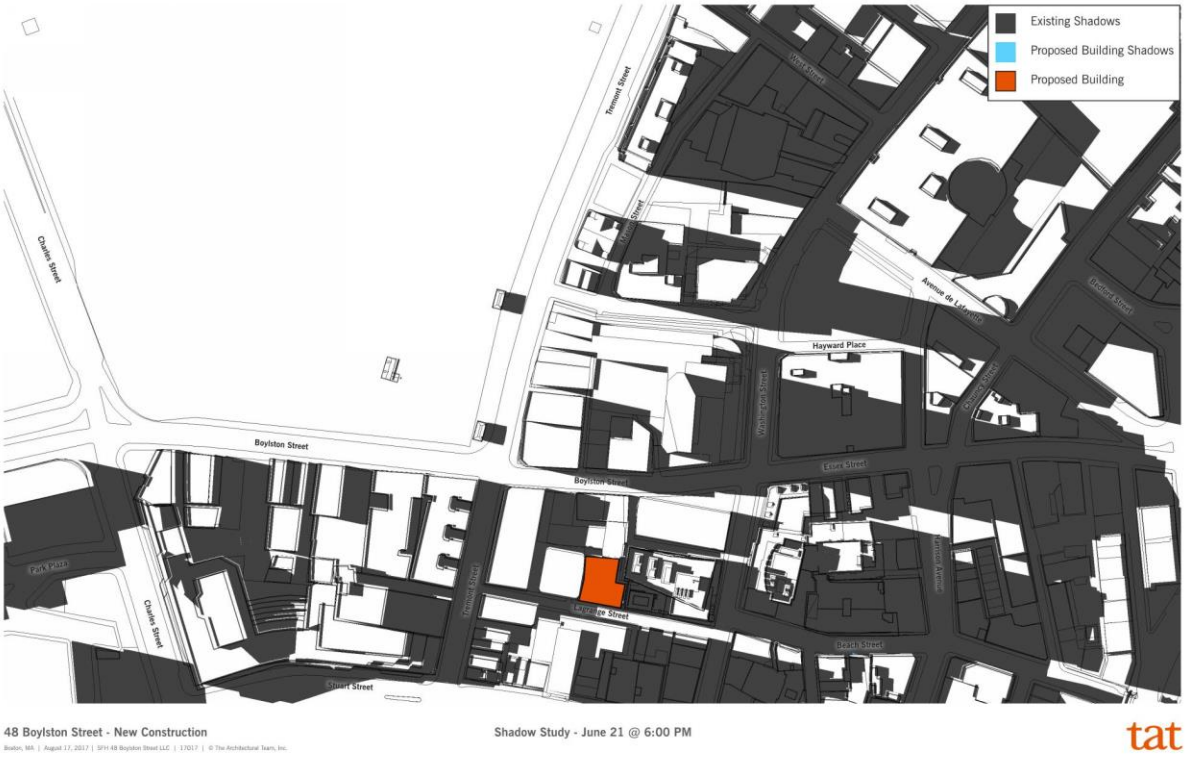


Figure 2-17 Shadow Study

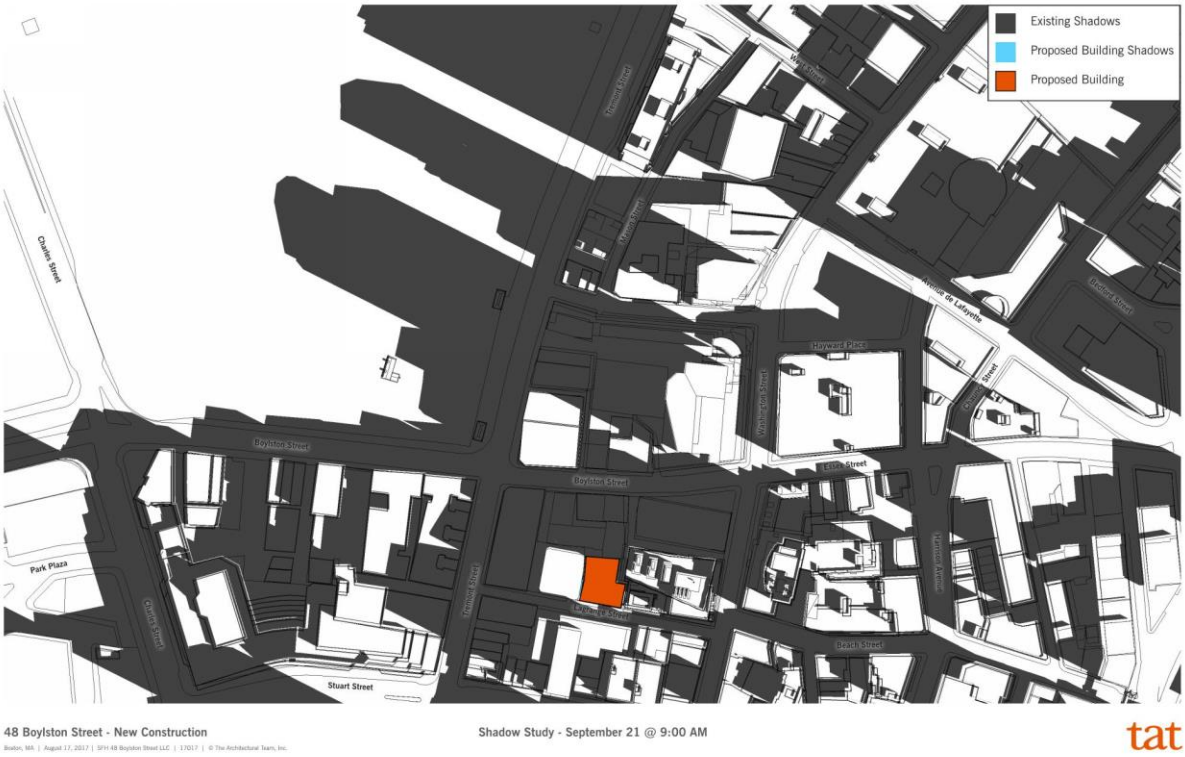


Figure 2-18 Shadow Study

Figure 2-19 Shadow Study

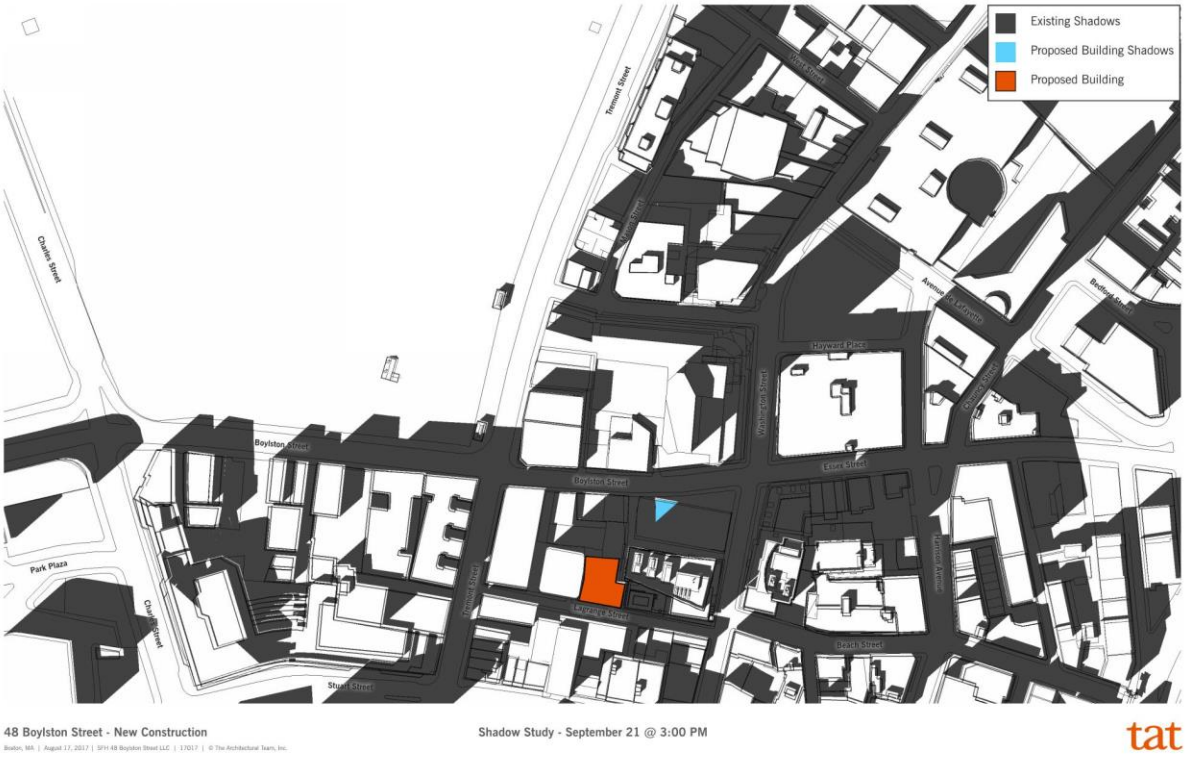


Figure 2-20 Shadow Study

Figure 2-21 Shadow Study

Figure 2-22 Shadow Study

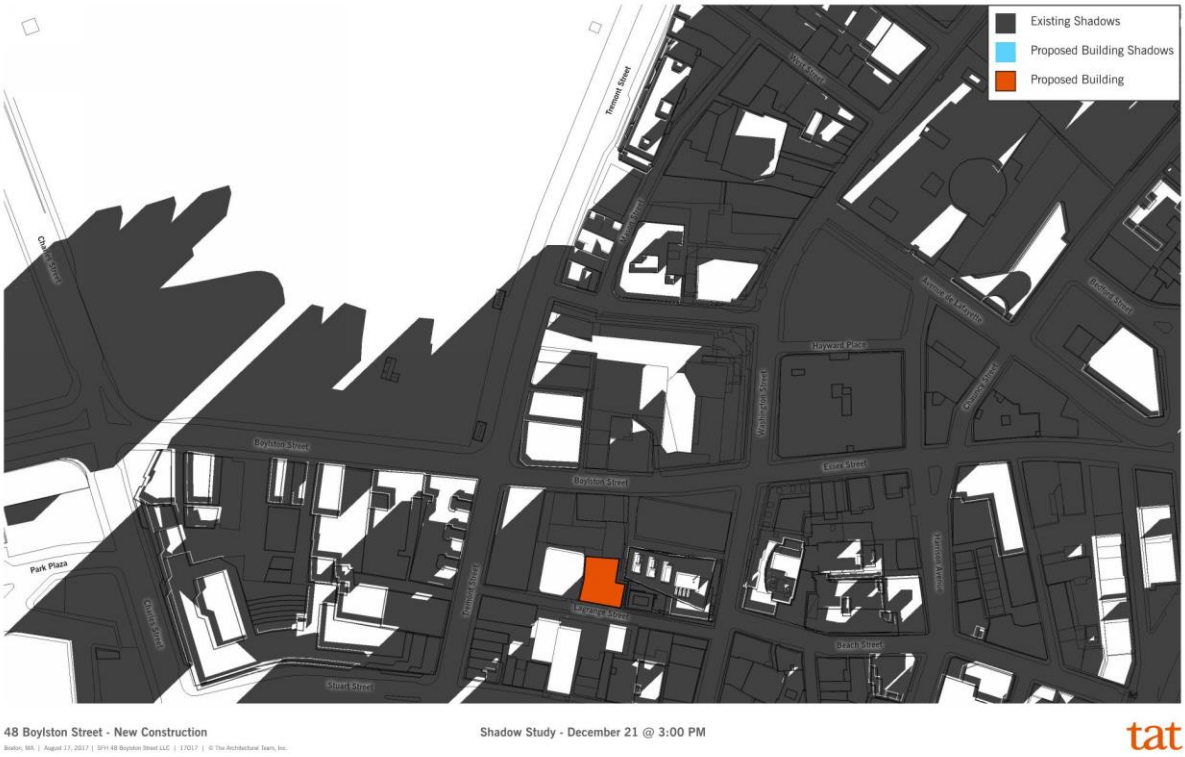


Figure 2-23 Shadow Study

Figure 2-24 Shadow Study

Figure 2-25 Shadow Study

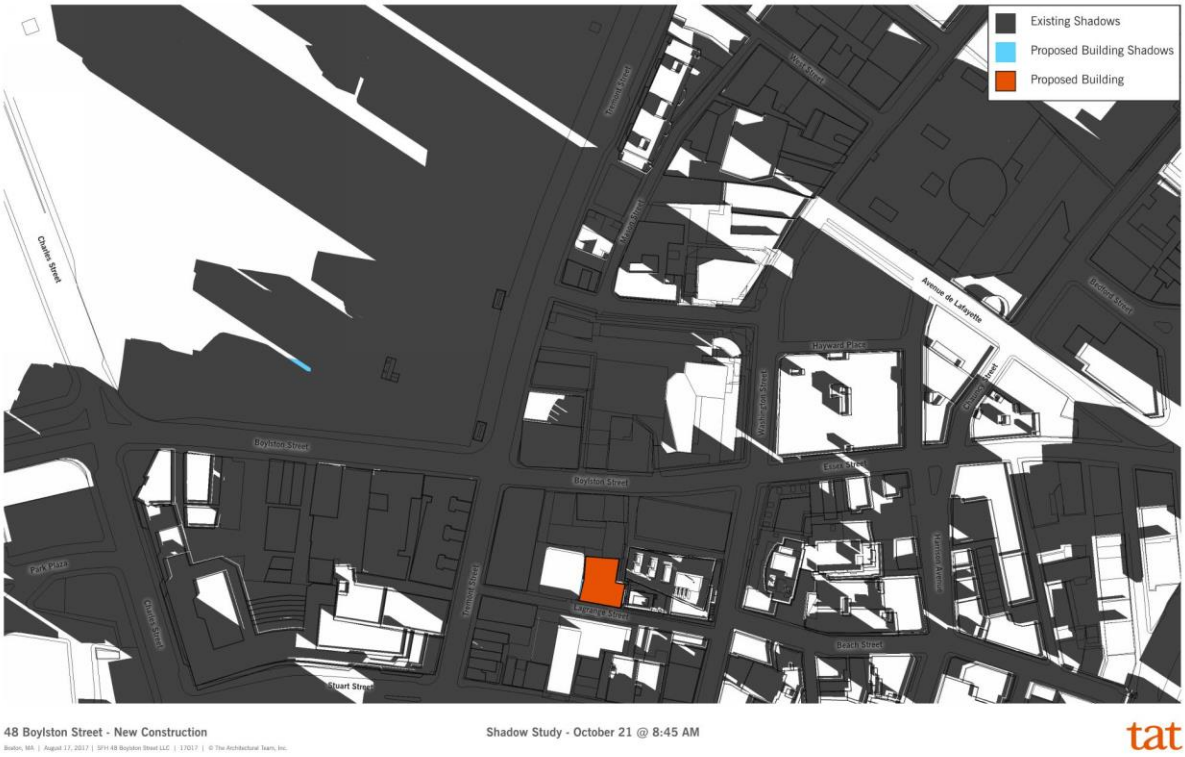


Figure 2-26 Shadow Study

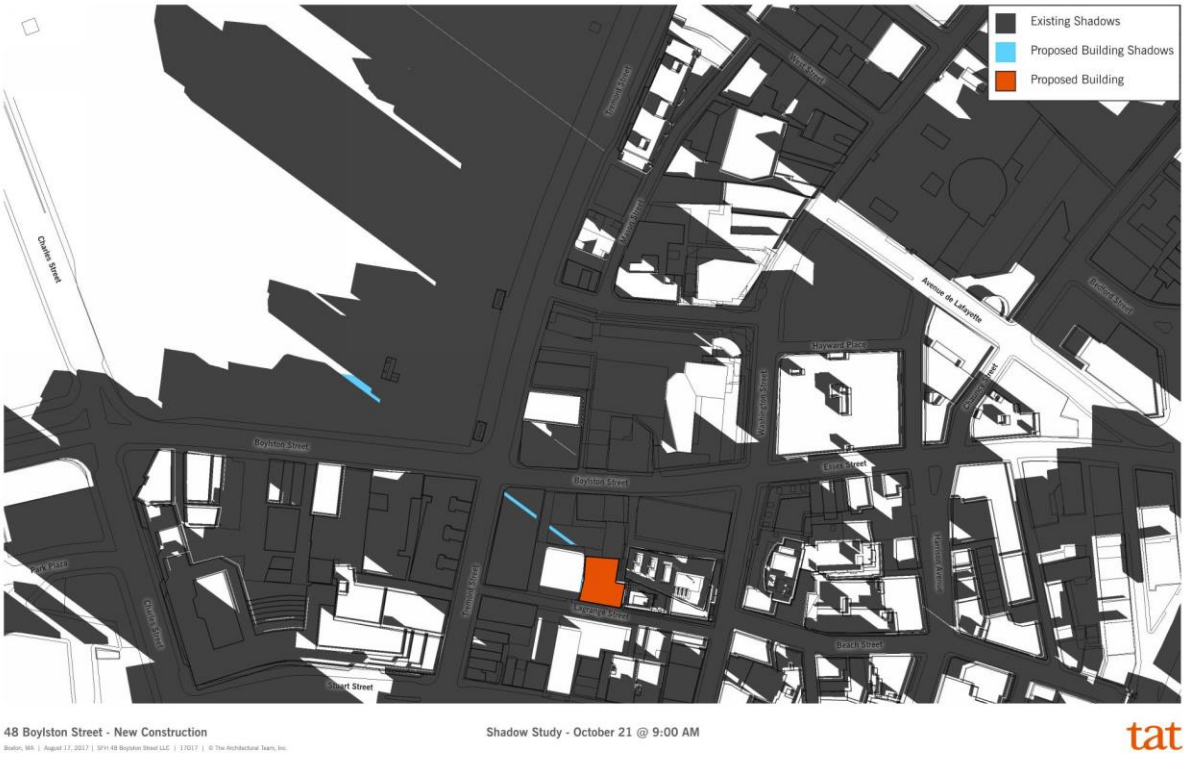


Figure 2-27 Shadow Study

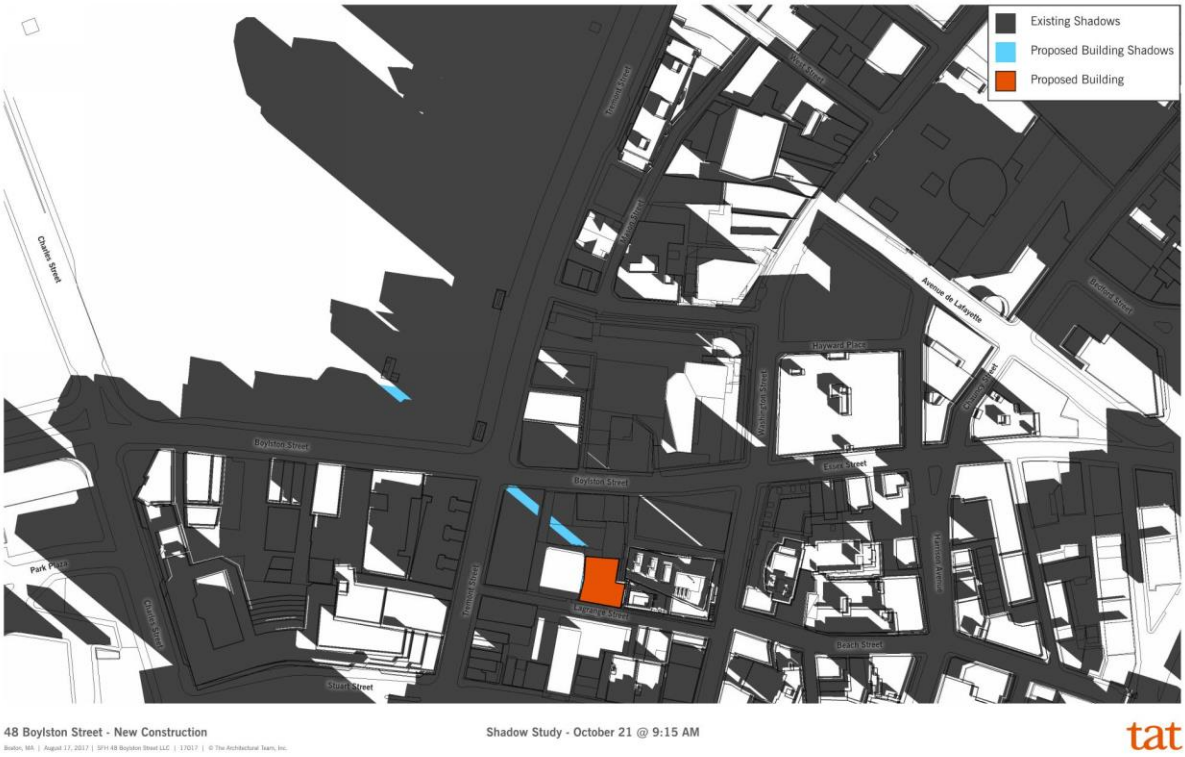


Figure 2-28 Shadow Study

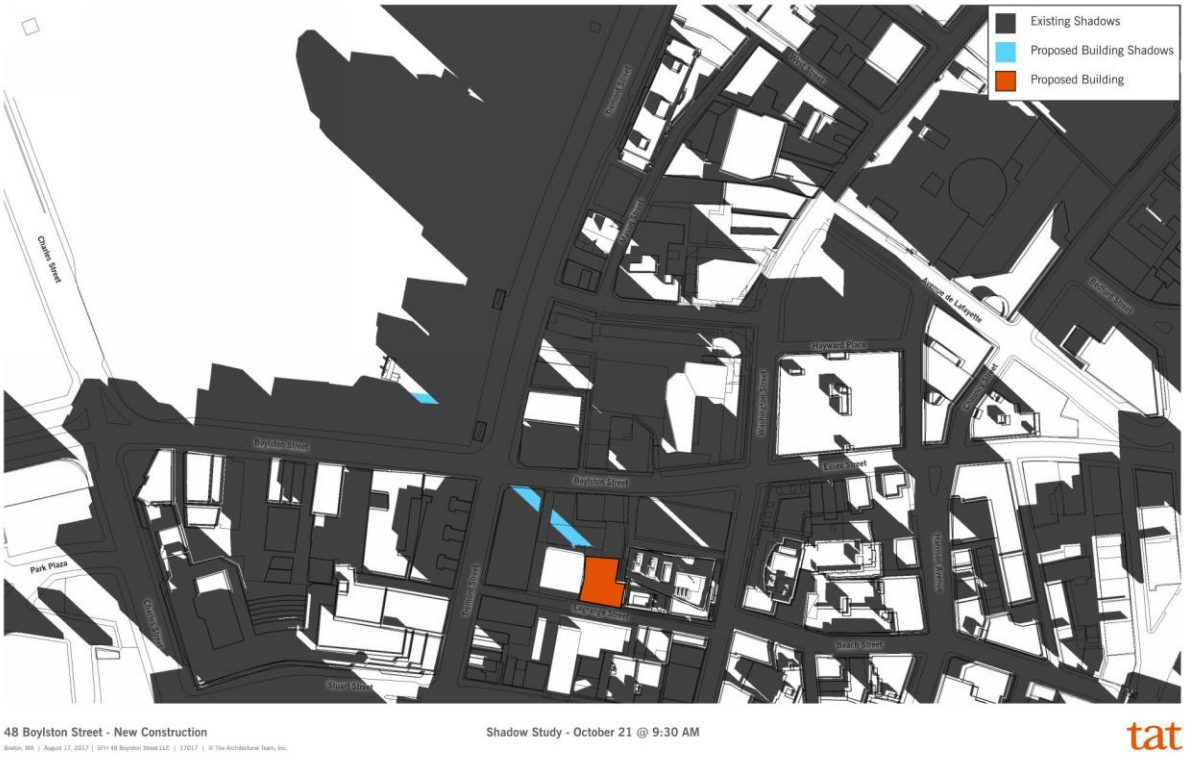


Figure 2-29 Shadow Study

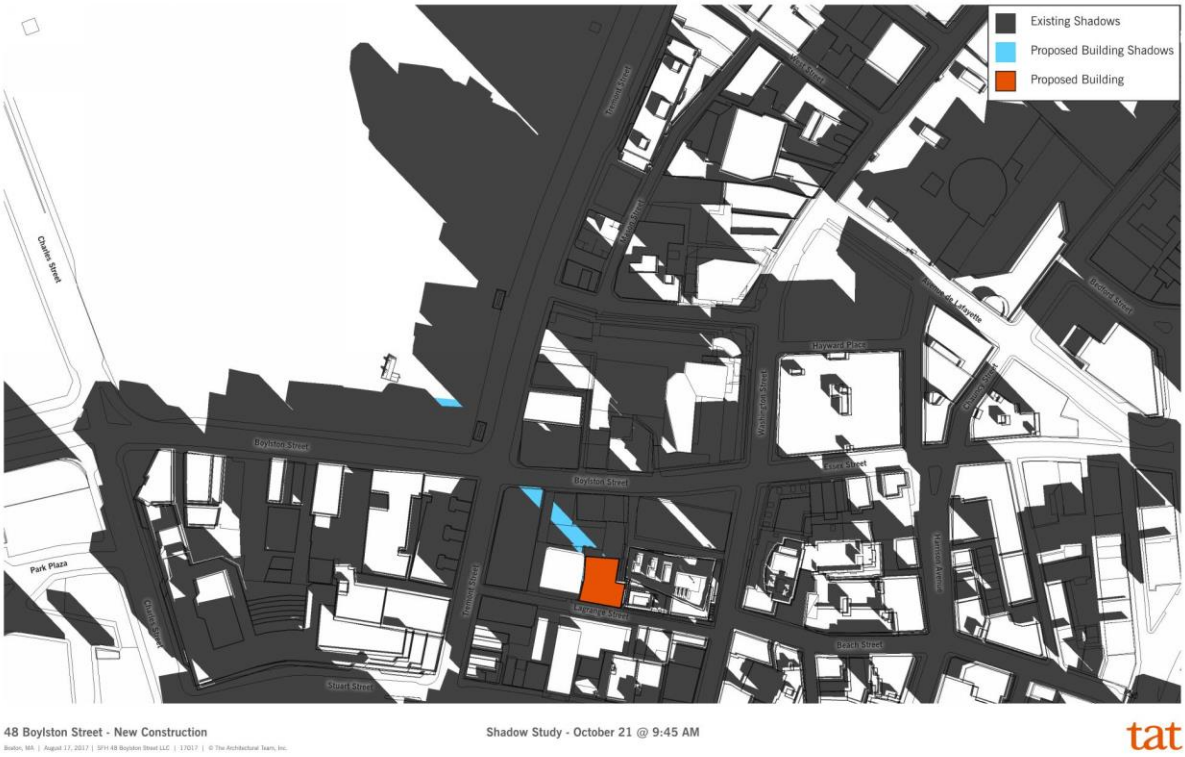


Figure 2-30 Shadow Study

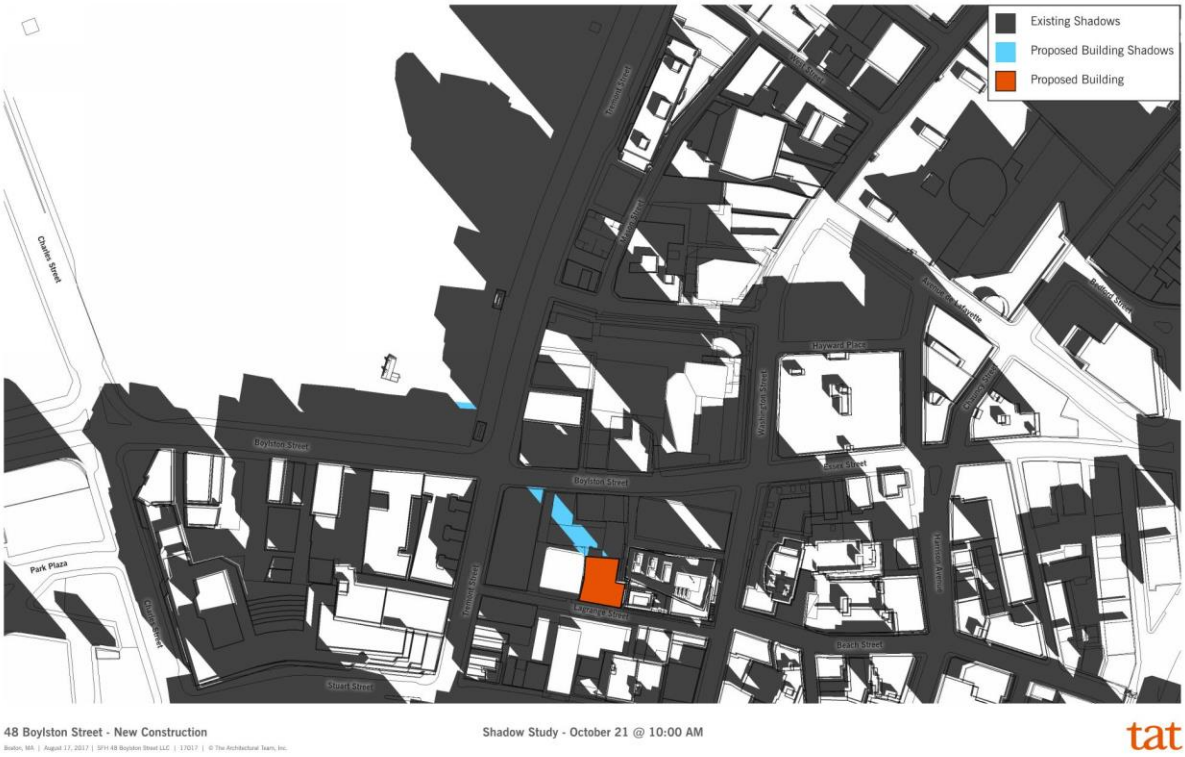
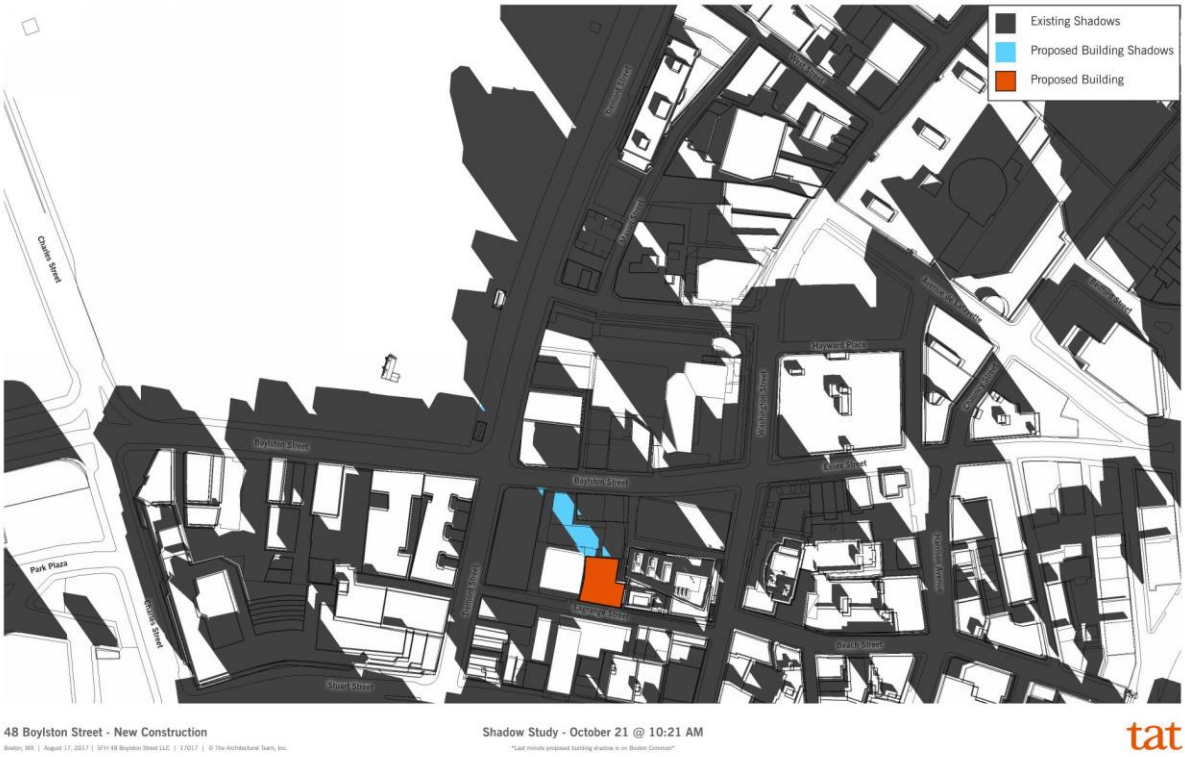


Figure 2-31 Shadow Study



2.2.3 Daylight

The purpose of the daylight analysis is to estimate the extent to which a Project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of a project site. Based on the location of the Project within an area that is not at street edge, it is anticipated that the Project will generate no direct impacts on the streets and sidewalks. Therefore, the Proponent made the preliminary determination that a daylight analysis is not required.

2.2.4 Solar Glare

The solar glare analysis is intended to measure potential glare from buildings onto the streets, public spaces, and sidewalks in order to determine the potential visual impact or discomfort due to reflect spot glare as well as heat build-up on adjacent buildings. This analysis is required if a Project incorporates substantial glass facades as a part of the design.

The Project will not use reflective glass or other reflective materials on the building facades; therefore, the Proponent has made a preliminary determination that there will not be any adverse impacts from reflected solar glare on adjacent buildings, streets, and sidewalks.

2.2.5 Air Quality

Potential long-term air quality impacts are generally attributed to emissions from Project-related mechanical equipment and pollutant emissions from vehicular traffic attributed to the Project. Given the anticipated minimal traffic impacts and the fact that rooftop mechanicals will be enclosed in a screened enclosure, the Proponent has made a preliminary determination that an Air Quality analysis is not required.

2.2.6 Stormwater/Water Quality

The existing infrastructure surrounding the site appears sufficient to service the needs of the Project. The following sections describe the existing sewer, water, and drainage systems surrounding the site and explain how these systems will service the development. The analysis also discusses any anticipated Project-related impacts on the utilities and identifies mitigation measures to address these potential impacts.

A detailed infrastructure analysis will be performed when the Project proceeds into the Design Development Phase. The Project's team will coordinate with the appropriate utilities to address the capacity of the area utilities to provide services for the new building. A Boston Water and Sewer Commission (BWSC) Site Plan and General Service Application is required for the new water, sanitary sewer, and storm drain connections.

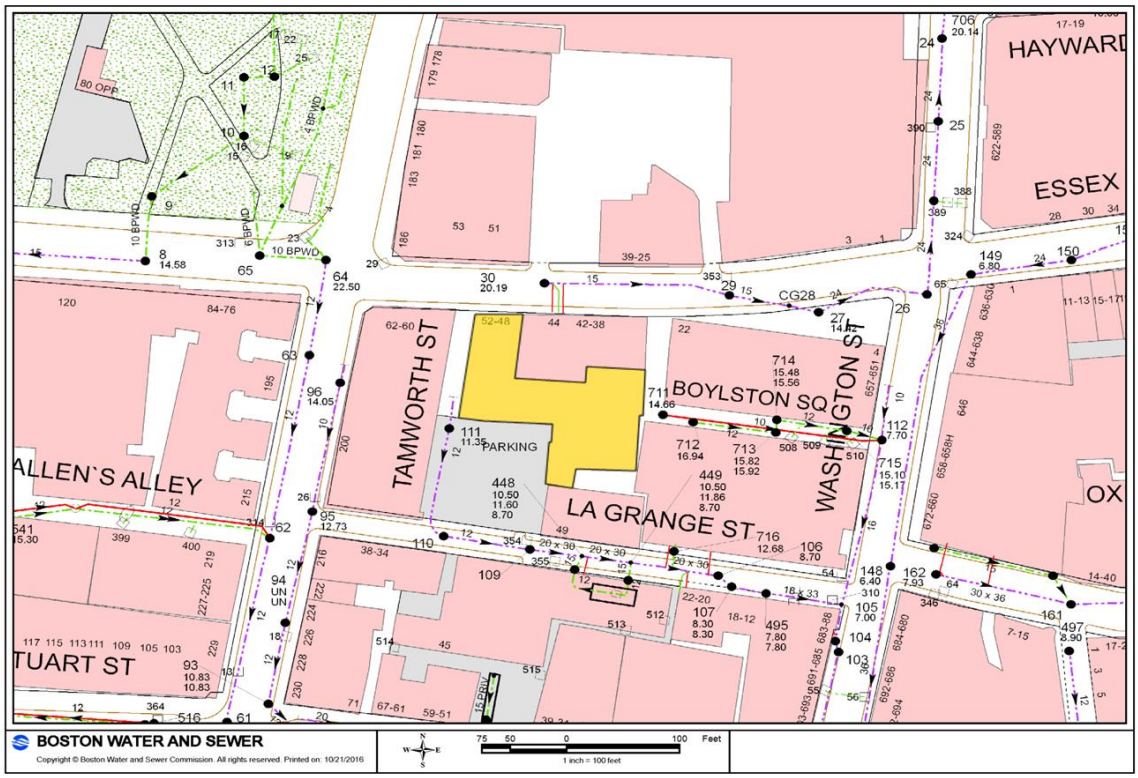
A Drainage Discharge Permit Application is required from BWSC for any construction dewatering. The appropriate approvals from the Massachusetts Water Resource Authority (MWRA), Massachusetts Department of Environmental Protection (MassDEP), and the U.S. Environmental Protection Agency (EPA) will also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

2.2.6.1 Sanitary Sewer System

2.2.6.2 Existing Sewer System

The Boston Water and Sewer Commission owns and maintains the sanitary sewer system located adjacent to the site on LaGrange Street (see **Figure 2-32**). BWSC record drawings indicate an existing 20"x 30" combined sewer line located in LaGrange Street to the south of the Project. The existing site consists of a one-story building. Records show a 6 -inch sanitary sewer connection to the existing 20x30-inch combined sewer main located in LaGrange Street. The existing building is vacant.

Figure 2-32. BWSC Sewer / Drain System Map



2.2.6.3 Project-Generated Sewage Flow

The Project will generate an estimated 19, 800 gallons per day (gpd) based on design sewer flows provided in 310 CMR 15.203 - The State Environmental Code, Title 5 and the proposed building program as summarized in Table 3-1.

Table 3-1. Projected Sanitary Sewer Flows

Use	Quantity	Unit Flow Rate	Estimated Maximum Daily Flow (gpd)
Studio Apartment	54	110 gpd/bedroom	5,940 gpd
1 Bedroom Apartments	18	110 gpd/bedroom	1,980 gpd
2-Bedroom Apartments	54	110 gpd/bedroom	11,880 gpd
Total	126		19,800 gpd

2.2.6.4 Sanitary Sewage Connection

It is anticipated that the proposed building's sanitary services will tie into the 20x30-inch combined sewer main in LaGrange Street. The preliminary estimate is that the building will have one 8-inch sanitary service leaving the site.

The Proponent will submit a Site Plan to the BWSC for review and approval. 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 4:1 ratio of I/I removed to wastewater generated. The existing building sanitary service will be cut and capped at the main.

2.2.6.5 Sewer System Mitigation

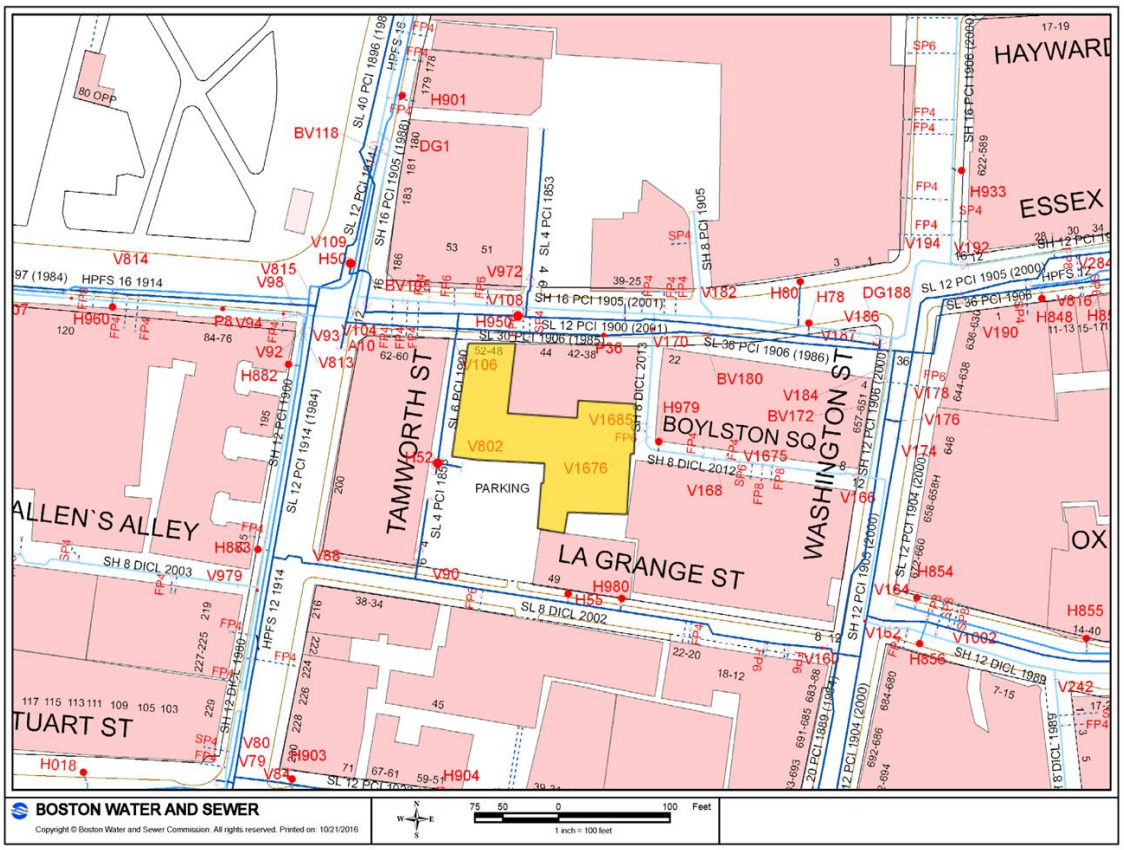
To help conserve water and reduce the amount of wastewater generated by the Project, the Proponent will investigate the use of water-efficient toilets, aerated shower-heads, and low-flow lavatory faucets in compliance with all pertinent Code requirements to reduce water usage and sewer generation.

2.2.6.6 Water System

2.2.6.7 Existing Water Service

The water distribution system in the vicinity of the Project site is owned and maintained by BWSC (see **Figure 2-33**). There is an 8-inch DICL (2002) line located in LaGrange Street to the south of the Project site.

Figure 2-33. BWSC Water System Map



According to records, the existing building has a domestic water service that connects to the 8-inch water main in LaGrange Street. This existing service will be cut and capped.

There are two fire hydrants located on LaGrange Street in front of the Project site. It appears that these hydrants will provide sufficient coverage for the Project. The Proponent will confirm this with BWSC and the Boston Fire Department (BFD) during the detailed design phase.

The BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the site will be requested by the Proponent. If hydrant flow data is not available for any hydrants located near the Project site, as the design progresses, the Proponent will request hydrant flows be conducted by the BWSC adjacent to the site. Hydrant flow data must be less than a year old to be used as a design tool. The Proponent will confirm that the flow and pressure is sufficient for the redevelopment and coordination of any proposed changes with BWSC and the Boston Fire Department (BFD) during the detailed design phase.

2.2.6.8 Anticipated Water Consumption

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, plus a factor to account for consumption, system losses, and other usages to estimate an average water demand. The total estimated water demand is 9,900 gpd. The water for the Project will be supplied by BWSC.

2.2.6.9 Proposed Water Service

It is anticipated that the domestic water and fire protection services for the Project will be directly tapped from the 8-inch water main in LaGrange Street. The water supply systems servicing the building will be gated so as to minimize public hazard or inconvenience in the event of a water main break. Final locations and sizes of the services will be provided on a Site Plan during the detailed design phase and submitted to BWSC for review and approval.

Water service to the building will be metered in accordance with BWSC's requirements. The property owner will provide a suitable location for a Meter Transmission Unit (MTU) as part of BWSC's Automatic Meter Reading System. Water meters over 3-inches will be provided with a bypass to allow BWSC testing without service interruption. A backflow preventer will be installed on the fire protection service and will be coordinated with BWSC's Cross Connection Control Department. Separate services will be provided for domestic use and fire protection.

2.2.6.10 Water Supply System Mitigation

As discussed in the Sewer System Mitigation Section, water conservation measures such as the use of water-efficient toilets, low-flow lavatory faucets, and aerated showerheads in compliance with all pertinent Code requirements are being considered to reduce potable water usage.

2.2.6.11 Storm Drainage System

2.2.6.12 Existing Drainage Conditions

There is no dedicated stormwater system in LaGrange Street. Stormwater runoff from the existing roof is presumed to discharge into the existing 20x30 –inch combined sewer in LaGrange Street.

2.2.6.13 Proposed Drainage Systems

The proposed building will occupy almost the entire Project site. The Project will not result in an increase in impervious area, but will attenuate the quantity of stormwater runoff being discharged to BWSC storm drain system through the installation of an infiltration system. At a minimum, the equivalent of 1-inch over the site's impervious area will be recharged.

As the building occupies the majority of the lot, it is anticipated that a series of injection wells will be required to meet the 1" recharge requirement. These wells may have to be located partially in the Public Right-of-Way and will need approval by Boston's Public Improvement Commission. The overflow from the injection well system will flow to the combined 20x30-inch combined sewer in LaGrange Street. The existing drainage patterns will not change significantly as the runoff will continue to drain to surrounding BWSC combined sewer systems.

The site is located within the Boston Groundwater Conservation District and will require review and approval by the Boston Groundwater Trust.

All storm drain system improvements will be designed in accordance with BWSC's design standards and the BWSC "Requirements for Site Plans." A Site Plan will be submitted for BWSC approval and a General Service Application will be completed prior to any off-site storm drain work. Any storm drain connections terminated as a result of construction will be cut and capped at the main in accordance with BWSC standards.

Erosion and sediment controls will be used during construction to protect adjacent properties and the municipal storm drain system. An operation and maintenance plan will be developed to support the long-term functionality of the proposed stormwater management system.

2.2.6.14 Water Quality

The Project will improve the quality of stormwater leaving the site through the installation of an on-site infiltration system and therefore is not expected to have negative impacts on the water quality of the Boston Harbor. Erosion and sediment controls will be used during construction to protect adjacent properties and the municipal storm drain system. 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 EPA and BWSC discharge permits. Once construction is complete, the Project will be in compliance with BWSC Site Plan requirements.

2.2.7 Flood Hazard Zones/Wetlands

The Project site is not located in a flood hazard zone or wetlands.

2.2.8 Utilities

2.2.8.1 Electric Systems

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

The Proponent is investigating energy conservation measures, including high efficiency lighting.

2.2.8.2 Telephone and Cable Systems

Verizon, Comcast, and RCN provide telephone service in the Project area. It is anticipated that telephone service can be provided by any of the providers. Any upgrades will be coordinated with the provider. Telephone systems will be reviewed with the provider as the design progresses.

Comcast and RCN provide cable and internet service in the Project area. It is expected that Comcast and/or RCN can provide services to the Project site. Any upgrade required to the services will be coordinated with the services providers.

2.2.8.3 Steam and Gas Systems

The Project is not expected to require steam service. Veolia Energy does not own or maintain any steam infrastructure within the vicinity of the Project site.

National Grid owns and maintains an 8-inch gas main in LaGrange Street. The Project is expected to use natural gas for heating and domestic hot water. The actual size and location of the building services will be coordinated with National Grid during the detailed design phase.

2.2.9 Geotechnical/Groundwater

This section addresses the below-grade construction activities anticipated for the Project. It discusses existing soil and groundwater conditions, anticipated foundation construction methods, and excavation work anticipated for the Project based on available subsurface information and a conceptual foundation design study.

A new 19-story building is proposed at the Project site, and a full basement is not currently proposed for the tower. Based on subsurface explorations at adjacent building sites, the anticipated subsurface conditions will likely consist of the following in descending order:

- Urban Fill
- Stratified Clay and Silt Deposits
- Glacial Till, and
- Bedrock (argillite)

2.2.9.1 Urban Fill

Urban fills were generally encountered to average depths of 10-15 feet below ground surface up to a maximum depth of 19 feet. The urban fill generally consisted of fine to coarse sand containing varying amounts of gravel, silt, brick, asphalt, concrete, wood, glass, metal, and ash. It was noted in a Geotechnical Summary prepared for the Kensington Tower, located at 659 Washington Street, that rubble fill consisting of intermixed soil, brick, concrete and debris was also encountered. Fill will likely not be encountered below the existing basements of the structures that will be demolished. However, fill may be encountered in areas outside the footprint of the buildings that will be demolished.

2.2.9.2 Stratified Clay and Silt

Generally described as a marine deposit consisting of interbedded layers of stratified fine sand and silty clay. The deposit was encountered below the fill at depths ranging from 10 to 15 feet below ground surface. The stratified deposits were generally 50 to 75 feet in total

thickness. The deposit is relatively stiff. However, it becomes softer and more compressible with depth.

2.2.9.3 Glacial Till

Glacial till was generally encountered below the clay and silt deposit at depths ranging from 75 to 85 feet below ground surface. The glacial till ranged in thicknesses from 45 to 55 feet and was generally dense to very dense.

2.2.9.4 Bedrock

Bedrock was generally encountered below the glacial till at depths of 120 to 130 feet below ground surface. Bedrock was generally described as Argillite which is part of the Cambridge Formation. It was noted in a Geotechnical Report prepared for the Avalon building, located at 45 Stuart Street, that the argillite had localized areas of thicker weathered rock zones.

2.2.9.5 Groundwater

Groundwater at the Project site is anticipated at approximately 10 to 15 feet below ground surface, and is likely to be impacted by ongoing basement sump pumping. Groundwater levels will fluctuate due to season, precipitation, infiltration, river level, and construction activity in the area. Therefore, groundwater levels during and after construction are likely to vary from those encountered at the time of the historic test borings. It was noted in a Geotechnical Report prepared for the Avalon, located at 45 Stuart Street that groundwater may be perched on the stratified marine clay layer.

2.2.9.6 Site Development/Geotechnical Issues

Based on our current understanding of subsurface conditions, the primary geotechnical issues that may impact site development include:

- Former foundations and slabs
- The likely presence of urban fill
- Compressible clay deposits
- Proximity to nearby buildings and the need to protect them during construction, and
- Relatively shallow groundwater

2.2.9.7 Feasible Foundation Types

Foundations for buildings adjacent to the Project site include shallow foundations (spread footings) and deep foundations (drilled shafts bearing below the Stratified Clay and Silt). The fill and stratified clay deposits at the Project site are not suitable for foundation support given the anticipated building loads of the proposed 19-story building (with no basement). It is likely that the building will need to be supported by a deep foundation system bearing in the underlying glacial till deposit or on bedrock.

Based on the proposed conceptual development program, it is recommended that the proposed building be supported with drilled shafts founded below the stratified clay and silt in the underlying glacial till or bedrock. Deep foundations should be at least 5 feet from any existing basement walls for constructability and to reduce the potential for lateral pressure on the existing basement walls of 48 Boylston Street. This issue should be evaluated during the final geotechnical investigation once the deep foundation system layout and loads have been determined.

It should be noted that the nearby W Hotel (26 stories with 35-foot basement) at the corner of Stuart and Tremont Streets is supported on a floating mat foundation on similar soils anticipated at the Project site. There is potential that if a one-or two-level basement was incorporated into the design, the building could be supported in a floating mat foundation supported in the Stratified Clay and Silt, where the building load is approximately equal to the weight of the soil excavated for the basement. Thus, the incremental load on the compressible clay is limited.

2.2.9.8 Site Demolition and Removal of Existing Structures

The two additions that were demolished as part of the existing five-story Phase I building renovations had basements that extended to approximately 10 feet below ground surface. The basement walls, floors, and footings were removed in their entirety to avoid conflicts with the proposed deep foundation systems. Where space and groundwater conditions permit, excavations may be achieved using sloped, open-cut techniques provided they comply with applicable Occupational Safety and Health Administration excavation safety requirements. Where space is limited, temporary lateral support systems such as soldier piles and lagging may be needed to support adjacent travel ways, buildings, earth supported structures and utilities. A more detailed Geotechnical Report is attached to this EPNF.

2.2.10 Solid and Hazardous Wastes

2.2.10.1 Hazardous Wastes

A search of federal and state databases indicated that the Project site has no history of reportable contamination, nor is there any evidence of above ground or under-ground storage tanks on the property. Should evidence of contaminated soils be discovered during construction, the Proponent will retain a licensed site professional (LSP) to monitor remediation and clean-up operations and will ensure that monitoring and reporting requirements are followed. Soils removed from the site during construction will be managed for off-site disposal in accordance with the current regulations and policies of the Massachusetts Department of Environmental Protection.

2.2.10.2 Operational Solid and Hazardous Wastes

The Project will generate solid waste typical of other residential uses. The Project will include facilities for collecting non-recyclable and recyclable waste. Non-recyclable waste and compacted material will be removed by a waste hauler contracted by the Project. The Project will not generate hazardous waste, with the exception of "household hazardous wastes" typical of residential use, such as cleaning fluids and paint.

2.2.11 Recycling

Solid waste will include wastepaper, cardboard, glass and bottles. The Proponent will coordinate with the City's Recycling Coordinator to develop and implement a recycling program to minimize solid waste. The Project will include space for recycling in the trash room, with space for the storage and pick-up of recyclable materials.

2.2.12 Noise Impact

A preliminary noise analysis was conducted at the Project site to determine existing noise levels and estimate the impacts of the Project. The results of this analysis are reflected in the letter submitted by Acentech, dated August 16, 2017 that is provided below.

ACENTECH
33 Moulton Street
Cambridge MA 02138
617 499 8000
acentech.com

August 16, 2017

Mr. Jay Szymanski
The Architectural Team
50 Commandant's Way at Admiral's Hill
Chelsea, MA 02150

Subject: 48 Boylston Street Community Noise Assessment, Basic Findings
Acentech Proposal No. 629219

Dear Jay:

We have assessed noise emissions from the planned mechanical equipment for the 48 Boylston Street project and hereby provide a summary of our findings relative to meeting the Boston Noise Regulation, with which noise emissions from the building equipment are expected to comply.

The mechanical equipment that is emitting noise to the nearby neighborhood is located on the roof of the proposed building within a screened enclosure. The critical receivers of interest relative to meeting the site noise emission requirements are immediately to the east of the subject building and south of the building, across LaGrange St. There is a building immediately west of the subject building and very closely married to the building, but there are no critical receivers at the top of that building and there will be no one to be disturbed by noise from the 48 Boylston mechanical equipment, especially since our building equipment sits down in the screened roof well. The two critical receiver buildings are both residential buildings and are approximately 60 feet from the equipment that is planned within the roof well. The critical receiver locations are taller than our roof and so they will look down upon the rooftop equipment. Thus, the screened enclosure will provide little or no noise barrier effect and the equipment will need to have inherently low noise emissions to meet the requirements. Having inherently low noise emission equipment is the noise control approach that is planned for the project.

The City noise requirement at the critical neighbor locations is not to exceed 60 dBA during daytime hours and not to exceed 50 dBA during evening and nighttime hours as prescribed in the Boston Noise Regulation. We have applied this requirement at the facades of the receiver buildings above about the 20th floor where the greatest noise exposure will occur.

The generator will only be operated for daytime testing and in the event of a true emergency. This is being designed to meet the daytime noise requirement at the critical receivers and is specified to be provided with a noise reduction/weatherproof enclosure to limit noise emission to be no greater than 63 dBA at a distance of 23 ft from the unit. This noise emission level includes all aspects of noise emission from the unit, but especially the casing, ventilation air paths, and the engine exhaust. With this noise emission level the 60 dBA daytime noise limit is expected to be met.

The cooling tower will be provided with a low noise fan. It is anticipated that at the early evening hours when the most stringent 50 dBA "nighttime" noise limit begins, the tower

will have to be operating at close to full speed and the noise emission controls are set to meet this most stringent requirement. The tower will be operated on VFD controls and at off-peak times the fan will operate more slowly and at lower noise emission levels. The tower will produce a noise level no greater than 42 dBA at a distance of 50 ft in a free field condition. At this noise emission level the sound level it produces will be no greater than 47 dBA at the facades of the nearby critical receiver buildings and with the noise added by the ERV unit the total level is expected to meet the required 50 dBA nighttime noise emission requirement. See discussion of the ERV unit noise below.

The ERV unit will also produce a noise level no greater than 42 dBA at a distance of 50 ft in a free field condition so that the noise it produces will be no greater than 47 dBA at the facades of the critical neighboring buildings. This is consistent with the total noise level from the building equipment not being over 50 dBA. Depending upon the final equipment selection, the unit will be equipped with either internal noise control treatments or applied treatments to meet this noise emission level. Other mechanical equipment for the building will be small and not have appreciable noise emissions.

With the planned equipment noise emission limits and noise reduction treatments, the noise at the most critical adjacent receiver locations is expected to be fully compliant with the Boston Noise Regulation.

I trust that this assessment and report provide the input that is needed to understand the noise emissions from the subject and that they are expected to be compliant with the applicable regulation. If you have questions, please let us know.

Sincerely Yours,
ACENTECH INCORPORATED

Douglas H. Sturz

2.3 Urban Design

2.3.1 City-Wide Context

The Project site is located within the Midtown Cultural District, approximately midblock between Washington Street and Tremont Street with frontage on LaGrange Street. The site is located between the Downtown Crossing shopping area to the North and the Theater District to the South. Just one block to the north west is Boston Common and Boston Public Gardens.

Figure 2-34: Street-Level Context / Open Space, Streetscape

The Project site is immediately bound by luxury rental high rise towers – The Kensington to the East, AVA Theater District to the South and the proposed 47-55 LaGrange Street project to the West. Located to the North is the 48 Boylston Street rehabilitation project. The Project is served by multiple nearby subway stops and bus routes and is within a ten minute walk to South Station. The ground floor is set back to align with the streetwall established by the adjacent Kensington podium which allows for a more comfortable width of the sidewalk. Given the site's limited area, open space is limited to the extra depth of the sidewalk, the required setbacks and loading access at the rear.

Figure 2-35: Aerial Perspective

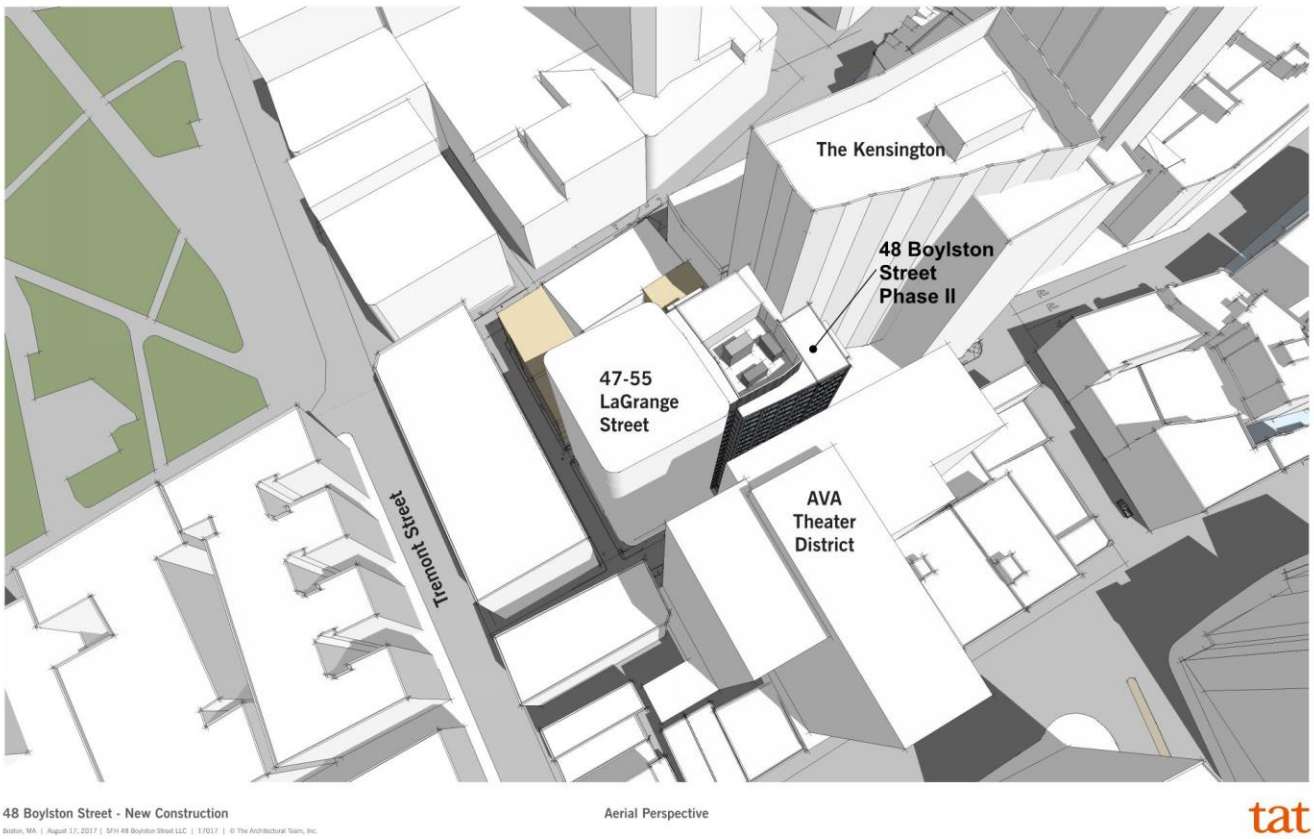


Figure 2-36: View from LaGrange Street

Figure 2-37: View from LaGrange Street

Figure 2-38: Streetscape

2.3.2 Site Plan / Building Access

Ground floor functions accessible from the LaGrange Street entrance include the lobby, residential amenity area, mail room and fire command center. Support spaces such as the electrical vault, loading area and trash pick-up area are accessed from Lowell Court. All service functions will occur from Tamworth Street via Lowell Court. Upper floors consist of residential units as well as mechanical support spaces and circulation space required to serve the residences.

Figure 2-39: Site Plan

Figure 2-40: Typical Floor Plan (Floors 2-7)

Figure 2-41 Typical Floor Plan (Floors 8-19)

2.3.3 Tower Design – Height, Massing and Façade Treatment

The massing of the building is derived as an extrusion of the site along with its given zoning and legal constraints. The extrusion is then sculpted with a full height vertical reveal on both the North and South facades where they abut the curved corners of the adjacent, proposed 47-55 LaGrange Street tower. The reveals merge with the mechanical penthouse and screen at the roof level as well as with the ground floor LaGrange Street façade which is set back to roughly align with the adjacent street wall established by The Kensington tower. Careful consideration was given to any new shadows that would be created by the proposed massing. As the Project is generally surrounded by higher structures, new shadows are minimal. The shadows cast by the Project comply fully with the Boston Common and Public Garden Shadow Laws.

Figure 2-42: Building Elevation/Massing

Exterior cladding treatments emphasize LaGrange Street as the primary façade, while keeping other secondary facades relatively reserved. Materials on the primary LaGrange elevation are largely composed of metal panel and glass in a grid pattern that transitions in scale from the lower floors up to the higher floors. Secondary elevations to the East and North will be constructed of precast concrete panels with punched window openings. Precast panels will include various textures and finishes as well as various depths. Street level treatment on LaGrange Street is meant to be inviting with full height transparency while adding a sense of activity to the pedestrian experience.

Figure 2-43: North Façade Detail

2.4 Historic and Archaeological Resources

2.4.1 Historic Resources Within the Project Site

The Project site is located within the Chinatown and Midtown Cultural District neighborhoods. Both neighborhoods include a broad spectrum of State and National Registers of Historic Places, including Boston Common– a National Historic Landmark, National Historic District, and a Boston Landmark– located to the north of the Project site, and the Young Men's Christian Union building, a National Register of Historic Places property located adjacent to the Project site, which is owned by 48 Boylston Street Residential LLC, an affiliate of the Proponent. The Young Men's Christian Union Building is also the first phase of the 48 Boylston Street/41 LaGrange Street project, and is currently undergoing a historic renovation and conversion to housing and commercial/office space. A list of all known State and National Registers of Historic Places in the Chinatown, Downtown Crossing, and Midtown Cultural District neighborhoods is provided in Table 4-1 below.

Table 4-1: State and National Register Listed Properties

HISTORIC PROPERTY	ADDRESS	DESIGNATION
Historic Buildings		
1. Boylston Building	2-22 Boylston Street	National Register
2. Boston Edison Electric Illuminating Company	25-39 Boylston Street	National Register
	48 Boylston Street	National Register and Local Landmark

3. Young Men's Christian Union		
4. Dill Building	11-25 Stuart Street	National Register
5. Jacob Wirth Building	31-39 Stuart Street	National Register and Local Landmark
6. Wilbur Theatre	244-248 Tremont Street	National Register and Local Landmark
7. Metropolitan Theatre	2522-272 Tremont Street	National Register and Local Landmark
8. Shubert Theatre	263-265 Tremont Street	National Register
9. Charles Playhouse	76-78 Warrenton Street	National Register
10. Hayden Building	681-683 Washington Street	National Register and Local Landmark
11. Blake and Amory Building	59 Temple Place	National Register and Local Landmark
Historic Districts		
12. Liberty Tree Historic District	Washington and Essex Streets	National Register Historic District and Local Landmark
13. Leather District	Atlantic Ave/Kneeland/Lincoln & Essex Streets	National Register Historic District
14. Temple Place Historic District	11-55/25-56 Temple Place	National Register Historic District
15. Commercial Palace Historic District	Franklin/Devonshire/Bedford/Chauncy/Summer and Hawley Streets	Determined eligible for inclusion in the National Register of Historic Places
16. Textile District	Chauncy/Edinboro/Essex & Kingston Streets	National Register Historic District
17. Boston Common	Beacon/Park/Tremont/Boylston & Charles Streets.	National Register Historic District, National Historic Landmark, and Local Landmark
18. Boston Common and Public Garden	Beacon/Park/Tremont/Boylston & Arlington Streets	National Register Historic District
19. Boston Public Garden	Beacon/Charles/Boylston & Arlington Streets	National Register Historic District, National Historic Landmark, and Local Landmark
20. Washington Street Theatre Historic District	511-559 Washington Street	National Register Historic District
21. West Street Historic District	West Street	National Register Historic District
22. Piano Row Historic District	Park Square, Boylston Place & Boylston Street	National Register Historic District

23. Beach-Knapp District	Beach and Knapp Streets	National Register Historic District

2.4.2 Archeological Resources Within the Project Site

There are no known archaeological resources within the Project site that are listed in the State and National Registers of Historic Properties. The Project site consists of a previously developed urban site. Therefore, it is unlikely that the Project will affect previously identified archaeological resources located within close proximity to the site.

2.4.3 Impacts on Historic Resources

2.4.3.1 Visual Impacts to Historic Resources

The Project will be constructed on a surface parking lot that is located adjacent to the Young Men's Christian Union Building. There are also two residential towers of recent construction near the Project site: Kensington and Avalon. Additionally, a planned residential tower that will be located adjacent to the Project site at 45-47 LaGrange Street received Article 80 approval from the Boston Planning and Development Agency (BPDA) as well as other approvals and permits.

As described in **Sections 1.7, 2.3, and 2.5.1** of this document, the proposed Project has been designed to be consistent with the height, scale, massing and materials of buildings located in the Chinatown and Mid-Town Cultural District neighborhoods. Moreover, the majority of the height of the Project will have a significant setback from the streets and roadways that border the site, and will include variations in plane, roof lines, and overhangs that have been designed to complement the historic architecture in the surrounding Chinatown and Midtown Cultural District neighborhoods.

Based on the above-referenced data, the Project will result in no adverse visual impacts to the historic character and integrity of the National Register and Local Landmark Historic buildings and Historic Districts located in the vicinity of the Project site.

2.4.3.2 Shadow Impacts to Historic Resources

A shadow study was designed and performed in accordance with the design and environmental standards of Section 38-16, including sensitivity to project impacts on existing landmark buildings. Moreover, pursuant to Chapter 362 of the Acts of 1990, careful consideration was given to any new shadow impact on the Boston Common. The conclusion of the shadow study is that because the Project site is generally surrounded by higher structures, new shadow impacts are minimal and will comply fully with the requirements of the Boston Common and Boston Public Garden Shadow Impacts. Specifically, the Project will not cast any new shadow on any area of the Boston Common during the period from March 21-October 21.

2.5 Construction Management Plan

2.5.1 Project Description

The proposed 126 unit, 19-story residential tower will be constructed, comprised of a protected structural steel and concrete superstructure. The building envelope will consist of a combination of composite materials such as masonry veneer, curtain wall systems, cementitious siding, thermal-insulated glass windows and door assemblies and roofing system with metal flashings. The building utilities are to be natural gas, domestic water and fire protection services, electrical and telecommunication services and sanitary and storm water discharge services. Handicap access to

all floors will be provided via two elevators. The ground floor will consist of common area resident lobby, laundry facilities, management offices, mechanical equipment, and life safety spaces.

2.5.2 Project Duration

It is estimated that the construction duration is approximately 24 months.

2.5.3 Pre-Construction Survey

A pre-construction survey will be performed on all adjacent properties, streets and sidewalks to document the existing conditions prior to the start of any construction activities. This will establish a base line that can be monitored throughout the construction process. Once proect construction has been completed, the adjacent areas can be re-surveyed to see if any of the existing conditions have changed or have been affected by the construction process. If changes have been found and are deemed to have been caused by construction activities, a remediation plan will be proposed and agreed to by all parties involved before implementation will take place. The Proponent will submit a deposit for the sidewalks in front of the property to insure their return to existing condition or better. The Construction Contractor will procure a bond for all work to take place in the public way.

2.5.4 Utility Protection During Construction

The Construction Contractor will notify utility companies and call "Dig Safe" prior to excavation. During construction, infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The Construction Contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The Construction Contractor will also be required to provide adequate notification to the utility owner prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during switch over to a temporary or permanent system, the Construction Contractor will be required to coordinate the shutdown with the utility owners and project abutters to minimize impacts and inconveniences.

2.5.5 Project Schedule Narrative

Prior to construction, any necessary "soil retention" activities shall be performed to maximize the available square footage of the site. A conventional cast-in-place (CIP) steel reinforced concrete foundation will be utilized. Installation of the underground utilities and preparation for the C.I.P. slab on grade will follow the foundation scope of work. Structural steel erection and composite decking will be erected in conjunction with the underground utility work. The building's weather integrity will be achieved with permanent and temporary means to enable the start of the electrical scope of work at the earliest possible date. After the building is substantially weather tight, the interior roughing activities will commence including, but not limited to, interior framing, electrical, plumbing, mechanical and fire protection systems installation. All necessary inspections and authorizations to proceed will be identified based on close coordination with the City of Boston Inspectional Service Department (ISD) inspectors and the Engineers of Record. The building envelope will be installed simultaneously with the roughing activities allowing for a seamless transition into the finish activities.

All finishes will be installed using quality control means and methods in order to ensure the correctness of the work. Transitioning into the start-up of the M.E.P. systems and commissioning of all equipment will ensure that all necessary environmental controls are in place for the finishes.

With the creation and execution of Work Completion Lists the Project close-out process will be streamlined and efficient.

2.5.6 Project Logistics and Pollution Prevention Plans (Winter Conditions)

The Construction Contractor will also use temporary heat to ensure that the site and concrete will be protected as necessary and in accordance with ACI and good construction practices. Proper permits will be in place prior to using any temporary heating equipment on site.

2.5.7 Rodent and Pest Controls

An environmental pest control company will be selected at least 20 days prior to the commencement of site work. The use of rodent and pest control devices and pesticides prior to the demolition will reduce the potential displacement of these pests into the abutter's property. Throughout the construction process, rodent traps and pesticides will be placed at the site fencing perimeter and will be maintained and monitored by the environmental pest control company.

2.5.8 Storm Water and Erosion Control

A National Pollutant Discharge Elimination System will be designed and implemented for the Project. A professional engineering firm will be retained to perform the review of the contract documents and the existing conditions on the site to insure a quality N.P.D.E.S. is designed and submitted for review and approval. The Storm Water Pollution Prevention Plan will identify the necessary means and methods required to comply with the N.P.D.E.S. including, but not limited to, the maintenance plan required. Control measures will be put in place per the documents. The handling of dewatering will be isolated to the site using sedimentation sacks and sumps.

2.5.9 Dust and Debris Mitigation

Conventional dust control methods, such as water and/or calcium will be applied on an as needed basis. The adjacent apartment building has through wall HVAC units and could be subjected to excessive amounts of dust during the construction process. With the authorization of the apartment building Owner/Management Company, the use of additional filter material will be utilized on the exterior of these units to protect them from potential dust contamination. The construction site fence will be post driven chain link with scrim screening attached to reduce potential dust migration contamination outside the perimeter of the Project site.

2.5.10 Noise and Vibration Mitigation

Seismometers may be placed in strategic locations at the adjacent apartment building to record seismic activity created by the removal of the existing concrete foundations if deemed necessary. Construction schedule start and finish times will be established prior to the commencement of the foundation demolition to insure minimal disruption to the abutting apartment building occupants.

2.5.11 Public Traffic and Pedestrian Control

The Construction Contractor will install a temporary fence with scrim around the entire work area. A pedestrian walkway will be created and accessible to pedestrians throughout the construction process, along with directional signage. There will be a period of time when a temporary walk will be utilized to perform the site improvements required at the street, and sidewalks. There will be two main construction vehicle gates and two personnel gates using existing curb cuts and entrances. Signage will be posted to ensure the public safety of all pedestrians and construction employees by alerting them to trucks, equipment, and personnel that are entering and leaving the

site at these locations. Safety of the public and the workers is paramount. We will hire police details as needed when the safety of the public is compromised by construction activities.

Due to the footprint and height of the building, pedestrians will be protected by locating the walkway a safe distance away from the building, along with the placement of jersey barriers, site fencing, markings and signage to create a safe and accessible pedestrian environment. The erection of scaffolding, concrete trucks, hoisting of rebar, hoisting and setting in place of structural steel, hoisting and setting in place of panels, staging and off-loading of materials, and other construction activities will take place inside the construction area, yellow markings that define the perimeter of the area. Due to the footprint of the building, the narrow surrounding access streets, and the size of the construction vehicles, this zone cannot be created safely within the property line of the building.

2.5.12 Project Deliveries

There will be no deliveries and/or standing vehicles allowed before 7:00 AM or after 7:00 PM Monday through Saturday. There will be no curb side and/or street deliveries allowed without proper notification and a required police detail officer. In an effort to minimize the migration of soil from the construction site onto the public way, a wash down area will be provided on site.

2.5.13 Project Hoisting

All hoisting will be performed from within a designated safe zone within the work perimeter. Anything outside of the site perimeter will require prior approval from the necessary officials. Additional temporary and/or permanent structural reinforcing and shoring will be utilized to maintain the building design integrity while also supporting the proposed dead and live loads for the proposed hoisting.

2.5.14 Project Storage

All storage and temporary construction facilities will be contained within the building in the ground floor area.

2.5.15 No Onsite Parking

Off-site parking and carpooling will be utilized to minimize impact to the neighborhood and to insure that the construction activities are not impeded by personal vehicles.

2.5.16 Strategies and Constructability

- Onsite pre-construction meetings will be required for every subcontractor, tiered subcontractors and/or venders, a minimum of two weeks prior to the scheduled mobilization and start of construction date. These meetings consist of, but are not limited to, scope of work review, schedule review, safety requirements, logistics for proposed deliveries and hoisting, special conditions and planning.

- The project management approach is to be one of a single team between the Owner, Architect, Engineers, and contractors. Consistency of communication methods and documentation will be an unmeasurable advantage.

- Performing the street utility scope of work during the site-clearing process will allow the site contractor to maintain equipment and personnel onsite to support the soil retention

as well as complete utility work. This reduces the equipment down time and longevity of impact to abutters.

- An expedited weather-tight building envelope will allow the contractor to start the electrical scope of work roughing in advance of conventional means.

2.5.17 Quality Management

Two weeks prior to mobilization of any subcontractor, the Project Manager and Onsite Foreman is required to attend a preconstruction meeting. At this meeting the subcontractor's personnel are oriented to the Project, their specific scope of work is reviewed for content and execution, the Project schedule is reviewed and accepted by the subcontractor, safety and housekeeping requirements are reviewed.

2.5.17.1 Construction Indoor Air Quality Management

The efficient management of air quality starts at the ductwork manufacturing facility. All material is cleaned at the fabrication shop and sealed with polyethylene plastic to be ready for shipment to the Project. When the ductwork is received at the site, the poly is repaired if necessary before distribution. At the end of each working day, any open ended ductwork that has been installed is resealed with poly. If for any reason the poly is not installed, missing and/or removed, the subcontractor is required to clean the interior of the ductwork and seal it. After each individual HVAC system is completed, but before occupancy, measures are taken to insure that the HVAC systems are not operated until construction cleaning has been performed. This sequence of operation is meant to prevent unnecessary dust contamination in the ductwork and HVAC equipment. If it is necessary to operate these systems out of sequence, pre-filters at the return registers and construction filters on the equipment are utilized. The equipment construction filter should be left in the unit fan coil and changed upon occupancy of the unit by the future tenants.

2.5.17.2 Safety and Housekeeping Practices

The CM will develop a site specific safety plan (SSSP) that identifies and addresses all of the operations to take place on site that have risk associated with them. This plan meets or exceeds OSHA standards and is included in each subcontractor's contract. The Construction Contractor will also require each subcontractor to develop and submit their own SSSP showing that they have reviewed and are aware of any hazards associated with their work.

Prior to the start of work by any subcontractor a *Hazardous Risk Assessment Plan* is reviewed. During this review, all potential hazardous work requirements and the safety plans required to mitigate these risks are confirmed. Housekeeping and project hygiene are critical to a high quality project and an expeditious completion date. Weekly Project Foreman Meetings are held and each subcontractor onsite is required to have a representative attend this meeting. Safety and Housekeeping are just two of the many subjects discussed on a weekly basis.

2.5.18 NFPA 241 plan

The designated Construction Contractor will develop an NFPA 241 construction plan and submit it to the BFD for review and comment. The Construction Contractor will also work with the local fire department representatives and Boston Fire Prevention to ensure the safety of all workers and the community throughout the construction process and beyond by identifying the hazards and putting a plan in place to mitigate any of those issues before they happen.

2.5.19 First Inspections

A first inspection consists of a copy of the approved as-noted submittal for the proposed construction material, equipment and/or finishes. Prior to accepting and allowing the materials to be delivered or used, the material is inspected for conformation with the approved as noted submittal. If the materials are found to be deficient and/or incorrect the material is not allowed on the Project. This process eliminates the use of inferior materials and delays to the Project due to potential removal and replacement of materials.

2.5.20 Bench-Mark Construction

At each critical phase of the construction process the work in place is reviewed as the *bench-mark* for quality and correct execution of the work. The bench mark construction is reviewed by the entire project team prior to continuing with the construction.

2.5.21 Lean Construction Scheduling

This Project has multiple similar construction activities and/or units that repeat throughout the schedule. The activities required to complete a single unit are identified to the smallest of activities. During the work required to complete this single unit, the activities are verified for time and quality. The construction personnel work as a team, repeating their individual work activities as a group in the same order. This process ensures the Project schedule and quality are maintained.

2.6 Sustainable Design

2.6.1 Overview

The Project will be designed and constructed under the guidelines of U.S. Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) for Building Design and Construction (BD&C) Version 4 (V4) rating system. Through compliance with this rating system, the building will meet, or exceed, the Article 37 requirement of "LEED certifiability". The following is an outline of the LEED BD&C v4 compliance pathway for this Project.

2.6.2 LEED BD+C: New Construction V4 Scorecard

New Ecology, Inc. (NEI) has reviewed the Project scope and understands the credit summary presented in **Table 5-1: Summary Scorecard** appears to be reasonable and achievable – the subsequent Narrative identifies the Project's current approach to compliance with all checklist prerequisites and applicable, optional credits. The official preliminary checklist is included as an attachment to this EPNF in Appendix A.

Table 5-1: Summary Scorecard

Category	Points	Potential Points
Integrative Process	1	0
Location and Transportation	13	0
Sustainable Sites	4	3
Water Efficiency	3	1
Energy and Atmosphere	14	5
Materials and Resources	5	0
Indoor Environmental Quality	5	3
Innovation	4	2
Regional Priority	1	2
Total Points	**50**	**16**

2.6.3 Narrative for LEED Credits

The Project fulfills all the prerequisites for all categories.

Note: Only credits that will be pursued by the Project are discussed below; credits that will not be pursued are not included.

A. Integrative Process

IP Integrative Process	1 point
In compliance with credit requirements, the Project will complete the following tasks: 1. A preliminary "Box" Energy Model: during the schematic design phase, the team will model the project's design and assess potential strategies associated with the limited site conditions, the extensive massing and required building orientation, the basic envelope design, lighting levels within the regularly occupied spaces, the thermal comfort ranges of the occupants, the plug and process load needs, and the programmatic and operational parameters of the building. All iterations and results will be documented and shared with the design team prior to final design decisions. 2. A preliminary Water-Use Systems Analysis: also during the schematic design phase, the team will explore methods of reducing potable water loads within the building as well as any potable water required for irrigation of the building site and process water necessary for equipment within the building.	

B. Location and Transportation

LT Sensitive Land Protection	1 point
The Project is located on a previously developed lot, located in downtown Boston, satisfying the credit conditions.	
LT Surrounding Density and Diverse Uses	5 points
Option 1. Surrounding Density (3 pts). The Project is a large, vertical residential development located in downtown Boston. The surrounding ¼-mile of development will meet, and exceed, the credit thresholds for 3 points under Option 1. Surrounding Density.	
Option 2. Diverse Uses (2 pts.). The Project is located in the Chinatown/Midtown Cultural District area of Boston and has significant access to community resources. The Project easily meets the credit requirement of eight (8) uses within a ½-mile walking distance of the main entrance; these resources include, but are not limited to: • AMC Loews Boston Theatre – 486 feet, • Rock Bottom Restaurant – 0.1 mile, • Thinking Cup Coffee Shop – 0.2 mile, • The Q Restaurant – 449 feet, • Bank of America – 410 feet, • Tufts Medical Center – 0. 2 mile, • CVS Pharmacy – 272 feet, and • Park Street Church – 0.4 mile.	
LT Access to Quality Transit	5 points
The Project site is located within a short walk (0.1 miles) of both the Boylston Street and Chinatown MBTA underground subway and bus stations. These stations will provide building	

occupants with at least 360 weekday trips and 216 weekend trips, qualifying for 5 points via the applicable LEED thresholds.	
LT Bicycle Facilities	1 point
Bicycle Network: The Project is located on a bicycle-friendly road which connects to other bicycle-friendly roads and bike paths throughout the city. Bike Storage: The Project will include the following minimum bicycle storage spaces, as required by the credit language: Short Term Spaces: 126 units x 2.5% = 3.15 < 4 spaces; therefore, the building will include 4 short term bicycle storage spaces. Long Term Spaces: 252 residents x 30% = 76 spaces > 1 space/unit minimum; therefore, the building will include 76 long term bicycle storage spaces.	
LT Reduced Parking Footprint	1 point
Bicycle Network: The Project will not include on-site parking, inherently meeting the intent of the LEED requirements for reduction in parking footprint.	

C. Sustainable Sites

SS Construction Activity Pollution Prevention	Required
The Project's construction documents will include a Soil Erosion and Sedimentation Control Plan to be developed in accordance with the EPA Construction General Permit of the NPDES. A Stormwater Pollution Prevention Plan (SWPPP) will also be developed for the site in accordance with the requirements for the US EPA's National Pollutant Discharge Elimination System Construction General Permit. These documents will be used to document compliance with this prerequisite. Additionally, the Project's construction team will document ongoing SWPPP compliance through a minimum of monthly date-stamped photos.	
SS Site Assessment	1 point
The Project will complete and document an assessment of the site including the following information: 1. Topography – contours and sloping, 2. Hydrology – flood hazards and existing water bodies, 3. Climate – solar exposure and sun angles, 4. Vegetation – vegetation types and greenfield spaces, 5. Soils – soils delineation, prime farmland, and disturbed soils, 6. Human Use – enhanced views, availability of transportation, and future building potential, and 7. Human Health Effects – population assessment, physical fitness, and existing air pollution sources.	
SS Rainwater Management	3 points
The Project is providing an extensive network of stormwater storage and infiltration equipment below the ground surface. This system will strive to contain up to 1-inch of rainfall, which is equivalent to a 90% rainfall event. This Project is a high-density development with a zero lot line so the Project qualifies for three (3) points under Path 3. Zero lot line projects, which requires that the Project divert rainfull equivalent to the 85%.	

D. Water Efficiency

WE Outdoor Water Use Reduction	Required
Due to the small site area within the Project, the design will not include a permanent irrigation system, thereby satisfying the intent of the prerequisite requirements.	
WE Indoor Water Use Reduction	Required
The Project will reduce demand for potable water through high efficiency fixtures within the residential units – this design will surpass the prerequisite requirement for 20% reduction with a goal of 35% reduction. The design will specify WaterSense labeled fixtures and the following flow rates: • Shower: 1.75 GPM, • Bath Lavatory: 1.0 GPM, • Toilet: 1.28 GPF, and • Energy Star Certified clothes washers.	
WE Building-Level Water Metering	Required
The Project will comply with the requirements of this credit by installing a central water meter for the building.	
WE Indoor Water Use	3 points
The Project will reduce demand for potable water through high efficiency fixtures within the residential units – this design will surpass the prerequisite requirement for 20% reduction with a goal of 35% reduction. The design will specify WaterSense labeled fixtures and the following flow rates: • Shower: 1.75 GPM, • Bath Lavatory: 1.0 GPM, • Toilet: 1.28 GPF, and • Energy Star Certified clothes washers.	

E. Energy and Atmosphere

EA Fundamental Commissioning and Verification	Required
The Project team will include an experienced Commissioning (Cx) Agent - this person will be hired before the end of the design development phase and will provide review services for the project Basis of Design and Owner's Project Requirements as well as a thorough review of both the Design Development and Construction Documents plan and specification set, observation of all start-up testing and balancing procedures, and confirmation of installation and operation according to the design parameters.	
EA Minimum Energy Performance	Required
The Project will meet this prerequisite, as well as the Massachusetts Stretch Energy Code through the following design resulting in an ASHRAE 90.1- 2010 Appendix G model demonstrating a minimum Energy Use Reduction of 20%: • Above code levels of insulation within the cavity as well as continuous exterior of the sheathing, • Very high efficiency equipment mechanical systems, • LED lighting and sophisticated, automated controls, • Energy Star appliances, and	

• Energy Recovery for all ventilation.	
EA Building-Level Energy Metering	Required
The Project will include a building-level energy meter for all energy consumption including electricity and natural gas.	
EA Fundamental Refrigerant Management	Required
The Project's HVAC systems will not include any chlorofluorocarbon (CFC)-based refrigerants.	
EA Enhanced Commissioning	5 points
The Project team will include an experienced Commissioning (Cx) Agent . This person will be hired before the end of the design development phase and will provide review services for the project Basis of Design and Owner's Project Requirements as well as a thorough review of both the Design Development and Construction Documents plan and specification set, observation of all start-up testing and balancing procedures, and confirmation of installation and operation according to the design parameters (3 pts). Additionally, an envelope consultant will serve as the Envelope Cx agent throughout the design and construction process (2 pts).	
EA Optimize Energy Use	8 points
The Project will meet this prerequisite, as well as the Massachusetts Stretch Energy Code through the following design resulting in an ASHRAE 90.1- 2010 Appendix G model demonstrating a minimum Energy Use Reduction of 20%: • Above code levels of insulation within the cavity as well as continuous exterior of the sheathing, • Very high efficiency equipment mechanical systems, • LED lighting and sophisticated, automated controls, • Energy Star appliances, and • Energy Recovery for all ventilation. A 20% reduction is equivalent to eight (8) points on the LEED checklist.	
EA Enhanced Refrigerant Management	1 point
The Project will calculate the total impact of all refrigerant-using equipment and ensure that it does not exceed the LEED limits for Global Warming Impact and Ozone Depletion.	

F. Materials and Resources

MR Storage and Collection of Recyclables	Required
The Project will provide a designated storage point for recyclable materials; management will then move all refuse to the street for city collection. Collected materials will include the following: • Mixed paper, • Corrugated cardboard, • Glass, • Plastics, • Metals,	

• Batteries, and • Mercury Containing Lamps.	
MR Construction and Demolition Waste Management Planning	Required
The Project will implement a construction waste management plan with a diversion goal of 50% of the site-generated waste from the landfill. The construction team will provide monthly reports of waste diversion. Additionaly, the plan to identify which waste material streams will be separated on-site, or commingled. Waste management reporting will be tracked throughout the Project's construction phase.	
MR Building Product Disclosure and Optimization – Environmental Product Declarations	1 point
The Project will document the use of at least 20 different permanently installed products, sourced from at least five different manufacturers, that include confirmed environmental product declaration documents.	
MR Building Product Disclosure and Optimization – Sourcing of Raw Materials	1 point
The Project will document the use of at least 20 different permanently installed products, sourced from at least five different manufacturers, that include third-party corporate sustainability reports with information on extraction operations.	
MR Building Product Disclosure and Optimization – Material Ingredients	1 point
The Project will document the use of at least 20 different permanently installed products, sourced from at least five different manufacturers, that include manufacturer's inventory of all contents, Health Product Declarations, and/or Cradle-to-Cradle certification.	
MR Construction and Demolition Waste Management	2 points
The team is committed to reducing construction waste through at least 50% diversion of at least three material streams.	

G. Indoor Environmental Quality

IEQ Minimum Indoor Air Quality Performance	Required
The Project will ensure that all ventilation systems meet the minimum requirements of Sections 4 through 7 of the ASHRAE 62.1-2007 standard for Acceptable Indoor Air Quality. Each unit will have kitchen and bath exhaust directly to the outdoors, as required by the Standard. In addition, fresh air will be mechanically supplied directly to each residential unit.	
IEQ Environmental Tobacco Smoke Control	Required
The Project will prohibit smoking inside the building and within 25-feet of all entries, outdoor air intakes, and operable windows; these prohibitions will be incited in all leasing agreements and will be displayed via onsite signage.	

IEQ Enhanced Indoor Air Quality Strategies	1 point
The project will pursue Option 2. Additional Enhanced IAQ Strategies for one (1) point. Credit compliance requires all entries to be designed to minimize and control the entry of air-borne pollutants into the building. In particular, pollutants that are regulated by the National Ambient Air Quality Standards. The Project will ensure that all main entries are equipped with appropriate pressurization, ventilation, and distance between interior and exterior, to meet the requirements of this credit.	
IEQ Low Emitting Materials	2 points
The Project team will specify paints, coatings, flooring, adhesives, and sealants that comply with California Department of Public Health Standard Method V1.1–2010, using CA Section 01350, Appendix B, New Single-Family Residence Scenario.	
IEQ Construction Indoor Air Quality Management Plan	1 point
The Construction Contractor will ensure that all installed ductwork is adequately protected throughout the construction phase. This protection will be verified throughout the construction phase, by NEI's site inspections.	
IEQ Thermal Comfort	1 point
The Project will provide individual thermal controls for all residential units. Additionally, all shared spaces will include controls for adjustment per group needs.	

H. Innovation in Design

ID Innovation in Design	3 points
The Project will achieve the following Innovation Credits: 1. Green Education: This credit will be met through a residential education seminar and Green Tentant Guide for all new building residents. 2. Affordability In Housing: This credit will be met through the diversity of unit types and affordability included within the Project. 3. Green Cleaning: This credit will be met through a cleaning protocol of healthy and low chemical cleaning products. Additionally, the cleaning schedule will be tailored to meet the needs of the building occupants and ensure that cleaning activities do not interfere with occupant comfort or health.	
ID LEED Accredited Professional	1 point
Ashley Wisse, LEED AP, is coordinating the Article 37 Compliance process and LEED certifiability for this Project.	

I. Regional Priority

RP various	1 point
The project will achieve the following regional priority credits: - credit compliance is described under each credit of the narrative. • SS Rainwater Management	

3.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

3.1 Massachusetts Environmental Policy Act

The Project does not trigger any of the thresholds for review under the Massachusetts Environmental Policy Act (MEPA).

3.2 Massachusetts Historical Commission

Review and approval was granted by the Massachusetts Historic Commission (MHC) for the site in connection with Phase I, the rehabilitation of the historic BYMCU building at 48 Boylston Street. As Phase II is a new construction building and shadow studies show the Project will have no new impact on the site, the Proponent anticipates that no further MHC review is required.

3.3 Boston Landmarks Commission

In a letter dated December 1, 2016, the Boston Landmarks Commission determined that no further review of the Project requires Boston Landmarks Commission review. A copy of the BLC letter is attached to this EPNF.

3.4 Architectural Access Board Requirements

The Project will comply with the requirements of the Architectural Access Board and the standards of the Americans with Disabilities Act.

3.5 Boston Civic Design Commission

Article 28 of the Boston Zoning Code stipulates that projects over 100,000 square feet shall be subject to review by the Boston Civic Design Commission (BCDC). The Project will be introduced to the BCDC at the earliest opportunity as determined by the BPDA.

3.6 Other Permits and Approvals

Section 1.5 of this EPNF lists agencies from which permits and approvals for the Project will be sought.

4.0 PROJECT'S CERTIFICATION

This Form has been circulated to the Boston Planning and Development Agency (former BRA) as required under Article 80 of the Boston Zoning Code.

Signature of Proponent's Representative

Lisa Alberghini
SFH 48 Boylston Street LLC

November 6, 2018

Signature of Preparer

Beverley Johnson
Bevco Associates, Inc.

November 6, 2018

Appendix A

Design Affidavit and LEED Checklist

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Design Affidavit Form

November 6, 2018

Brian P. Golden, Director
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Director Golden:

As the lead architect overseeing the planning and design of 41 LaGrange Street at 41 LaGrange Street in downtown Boston, I, Michael D. Binette, certify that I am knowledgeable of the project's green building strategies, designs, plans and details and to the best of my knowledge this project has been planned and designed so as to meet the prerequisites and earn the credits necessary to achieve Silver certification with 50 points using the LEED for Building Design and Construction Version 4 rating system.

Accompanying this affidavit are an updated LEED Checklist and a Design Green Building Report for the project documenting our point score and detailed approach to achieving the prerequisites and selected credits. An Excel version of the final LEED Checklist and a PDF of these documents has been transmitted to the BRA. We will not be seeking USGBC LEED Certification for this project.

We understand it is our responsibility to notify the BPDA of any changes in our green building strategies and LEED point score. Additionally, we understand we are required to provide a Construction Affidavit, final LEED Checklist and Green Building Report upon completion of construction and prior to application to ISD for building Certificate of Occupancy.

Sincerely,
The Architectural Team, Inc.
50 Commandants Way, Chelsea, MA 02150

By: Michael D. Binette
MA Architects License # 31191

CC: Alexa Pinard, BPDA
Lance Campbell, BPDA

LEED v4 for BD+C: New Construction and Major Renovation

Project Checklist

Project Name: 48 Boylston Street
Date: 5/14/18

Y	?	N			
1			Credit	Integrative Process	1

13	0	3	Location and Transportation		16
			Credit	LEED for Neighborhood Development Location	16
1			Credit	Sensitive Land Protection	1
		2	Credit	High Priority Site	2
5			Credit	Surrounding Density and Diverse Uses	5
5			Credit	Access to Quality Transit	5
1			Credit	Bicycle Facilities	1
1			Credit	Reduced Parking Footprint	1
		1	Credit	Green Vehicles	1

4	3	3	Sustainable Sites		10
Y			Prereq	Construction Activity Pollution Prevention	Required
1			Credit	Site Assessment	1
		2	Credit	Site Development - Protect or Restore Habitat	2
		1	Credit	Open Space	1
3			Credit	Rainwater Management	3
	2		Credit	Heat Island Reduction	2
	1		Credit	Light Pollution Reduction	1

4	1	6	Water Efficiency		11
Y			Prereq	Outdoor Water Use Reduction	Required
Y			Prereq	Indoor Water Use Reduction	Required
Y			Prereq	Building-Level Water Metering	Required
		2	Credit	Outdoor Water Use Reduction	2
3		3	Credit	Indoor Water Use Reduction	6
1		1	Credit	Cooling Tower Water Use	2
	1		Credit	Water Metering	1

12	7	14	Energy and Atmosphere		33
Y			Prereq	Fundamental Commissioning and Verification	Required
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Building-Level Energy Metering	Required
Y			Prereq	Fundamental Refrigerant Management	Required
5		1	Credit	Enhanced Commissioning	6
6	4	8	Credit	Optimize Energy Performance	18
	1		Credit	Advanced Energy Metering	1
		2	Credit	Demand Response	2
		3	Credit	Renewable Energy Production	3
1			Credit	Enhanced Refrigerant Management	1
	2		Credit	Green Power and Carbon Offsets	2

4	1	8	Materials and Resources		13
Y			Prereq	Storage and Collection of Recyclables	Required
Y			Prereq	Construction and Demolition Waste Management Planning	Required
		5	Credit	Building Life-Cycle Impact Reduction	5
1		1	Credit	Building Product Disclosure and Optimization - Environmental Product Declarations	2
1		1	Credit	Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
1		1	Credit	Building Product Disclosure and Optimization - Material Ingredients	2
1	1		Credit	Construction and Demolition Waste Management	2

5	3	8	Indoor Environmental Quality		16
Y			Prereq	Minimum Indoor Air Quality Performance	Required
Y			Prereq	Environmental Tobacco Smoke Control	Required
1		1	Credit	Enhanced Indoor Air Quality Strategies	2
2		1	Credit	Low-Emitting Materials	3
1			Credit	Construction Indoor Air Quality Management Plan	1
		2	Credit	Indoor Air Quality Assessment	2
1			Credit	Thermal Comfort	1
	2		Credit	Interior Lighting	2
		3	Credit	Daylight	3
		1	Credit	Quality Views	1
	1		Credit	Acoustic Performance	1

4	2	0	Innovation		6
3	2		Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

1	2	1	Regional Priority		4
	1		Credit	EA Optimize Energy Performance; Threshold = 8 pts	1
1			Credit	SS Rainwater Management; Threshold = 2 pts	1
	1		Credit	WE Indoor Water Use Reduction; Threshold = 4 pts	1
		1	Credit	LT High Priority Site	1

48	19	43	TOTALS	Possible Points:	110

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

Appendix B

Climate Resiliency Report and Energy Modeling Data

Boston Planning & Development Agency
Climate Resiliency Report Summary

boston planning & development agency

Submitted: 11/07/2018 17:23:53

A.1 - Project Information

Project Name:	41 LaGrange Street			
Project Address:	41 LaGrange Street, Boston, MA 02116			
Filing Type:	Initial (PNF, EPNF, NPC or other substantial filing)			
Filing Contact:	Amarillys Rodriguez	Planning Office for Urban Affairs	arodriguez@poua.org	617-350-8885 ext. 113
Is MEPA approval required?	No	MEPA date:		

A.2 - Project Team

Owner / Developer:	SFH 48 Boylston Street LLC (Planning Office for Urban Affairs and St. Francis House)
Architect:	The Architectural Team
Engineer:	Samiotes
Sustainability / LEED:	Ashley Wisse, New Ecology, Inc.
Permitting:	Beverley Johnson, Bevco Associates
Construction Management:	TBD

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Residential
List the First Floor Uses:	Commercial (support) and residential
List any Critical Site Infrastructure and or Building Uses:	

Site and Building:

Site Area (SF):	8500	Building Area (SF):	132045
Building Height (Ft):	207	Building Height (Stories):	19
Existing Site Elevation – Low (Ft BCB):	18.6	Existing Site Elevation – High (Ft BCB):	25.23
Proposed Site Elevation – Low (Ft BCB):	18.6	Proposed Site Elevation – High (Ft BCB):	25.23
Proposed First Floor Elevation (Ft BCB):	19.0	Below grade spaces/levels (#):	0

Article 37 Green Building:

LEED Version - Rating System:	LEED BD&C v4 New Construction,	LEED Certification:	No

Boston Planning & Development Agency
Climate Resiliency Report Summary

boston planning & development agency

	LEED v4 EApc95 pilot alternative compliance path		
Proposed LEED rating:	Silver	Proposed LEED point score (Pts.):	50-66

Building Envelope:

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	R-38 c.i.	Exposed Floor :	R-21 c.i. + R-13
Foundation Wall:	n/a	Slab Edge (at or below grade):	R-8 c.i.

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	n/a	Wall & Spandrel Assembly Value:	n/a
Area of Framed & Insulated / Standard Wall:	82%	Wall Value:	R-27.8
Area of Vision Window:	18%	Window Glazing Assembly Value:	U-0.28
		Window Glazing SHGC:	SHGC-0.4
Area of Doors:	0.32%	Door Assembly Value :	U-0.5

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	The loads and performance were calculated using eQUEST 3.65 energy modeling software. Modeling assumptions were generated from Simulation Guidelines, ASHRAE 90.1-2013, and schematic design drawings.		
Annual Electric (kWh):	1262351	Peak Electric (kW):	276
Annual Heating (MMbtu/hr):	231	Peak Heating (MMbtu):	0.25147
Annual Cooling (Tons/hr):	151,892	Peak Cooling (Tons):	26.5
Energy Use - Below ASHRAE 90.1 - 2013 (%):	29.80	Have the local utilities reviewed the building energy performance?:	No
Energy Use - Below Mass. Code (%):	29.80	Energy Use Intensity (kBtu/SF):	42

Back-up / Emergency Power System

Electrical Generation Output (kW):		Number of Power Units:	
System Type (kW):	Combustion engine	Fuel Source:	Diesel

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

Electric (kW):	200	Heating (MMbtu/hr):	

Cooling (Tons/hr):

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

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

B.1 – GHG Emissions - Design Conditions

For this filing - Annual Building GHG Emissions (Tons): 430842.3

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

Please see energy modeling results submitted with the EPNF.

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

The building will have a high performance building envelope.

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

The building will utilize energy recovery ventilation, high performance HVAC equipment, high performance lighting and controls, and EnergyStar equipment and appliances.

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

N/A

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:

The project received assistance with its preliminary energy modeling and LEED checklist from New Ecology, Inc., and will seek rebates from MassSave.

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):

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 (Deg.):	0	Temperature Range - High (Deg.):	90
Annual Heating Degree Days:		Annual Cooling Degree Days	

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

Days - Above 90° (#):	8	Days - Above 100° (#):	3
Number of Heatwaves / Year (#):	2	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:

High reflective roof materials

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:

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:

An emergency generator will provide lighting and services for resident evacuation. A high performance building envelope, operable windows, and natural ventilation will also support building functionality and use.

D - Extreme Precipitation Events

Boston Planning & Development Agency

Climate Resiliency Report Summary

boston planning & development agency

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

What is the project design precipitation level? (In. / 24 Hours)	3-4 in. per hour

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

Infiltration galleries and areas.

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):

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level 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 Special Flood Hazard Area?	No	What Zone:	
What is the current FEMA SFHA Zone Base Flood Elevation for the site (Ft BCB)?			
Is any portion of the site in the BPDA Sea Level Rise Flood Hazard Area (see SLR-FHA online map)?	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 by the Sea Level Rise Flood Hazard Area (SLR-FHA), which includes 3.2' of sea level rise above 2013 tide levels,

an additional 2.5" to account for subsidence, and the 1% Annual Chance Flood. After using the SLR-FHA to identify a project's Sea Level Rise Base Flood Elevation, proponents should calculate the Sea Level Rise Design Flood Elevation by adding 12" of freeboard for buildings, and 24" of freeboard for critical facilities and infrastructure and any ground floor residential units.

What is the Sea Level Rise - Base Flood Elevation for the site (Ft BCB)?	19.2		
What is the Sea Level Rise - Design Flood Elevation for the site (Ft BCB)?	Existing site grades vary from +/- 19' at the sidewalk at the east end of the site at LaGrange Street to +/- 25' at the rear of the site at Lowell Court. The ground floor will have multiple floor elevations to meet the existing site grades, the lower at 19.0' to meet existing sidewalk grades and the highest at 25.0' at the rear where critical mechanical and electrical services are located. Multiple accessible routes will be provided at the 19.0' elevation as well as via and egress corridor at 20.2' and at the 25.0' elevation.	First Floor Elevation (Ft BCB):	
What are the Site Elevations at Building (Ft BCB)?		What is the Accessible Route Elevation (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.:

The proposed project has very limited open area, the building footprint takes the entire site from a practical standpoint. Access to the rear of the site will be maintained via Lowell Court which has the highest site elevation.

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.:

Critical building infrastructure will be located in the rear where higher floor levels are required to meet existing grades. Less critical services will be located at the lower elevations.

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:

An emergency generator will provide lighting and services for resident evacuation.

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

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.:

Opportunities to raise elevations exist at the rear of the site where Lowell Court can be adjusted. Opportunities to revise elevations the front of the building at LaGrange Street are limited by the grades in the street.

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

Thank you for completing the Boston Climate Change Checklist!

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

NEW ECOLOGY
Community-Based Sustainable Development

Boston-Climate Resiliency Check List Input

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2010 & 2013
Date	8/30/2018
Project Area total (ft^2)*	129,515

* conditioned area in eQUEST model

90.1-2010 Baseline (LEED v4) vs Proposed Design		
using LEED v4 EA Prerequisite Minimum Energy Performance Option 1 : Whole-Building Energy Simulation compliance path		
Cost Savings	**6.20%**	cost savings meet LEED BD+C: New Construction v4: EA Prerequisite Minimum Energy Performance 5% savings requirement

LEED v4 - EApc95 pilot alternative compliance path

EApc95 is a pilot alternative compliance path that allows an alternate metric for documenting performance improvement. Using metrics of cost, energy sources, greenhouse gas emissions, and (if available) time dependent valuation: Average the percent savings of the two highest-performing metrics using equal weighting to determine percentage energy savings. Projects may use the average of the two highest-performing metrics to achieve points under EA credit Optimize Energy Performance.

Metric categories under EApc95	**% savings**	**two highest performance metric**	
Cost Savings	6%		
Energy Sources Savings	13%	v	
GHG Savings	25%	v	
TDV	n/a		
Averaged % Savingss	**19%**		

Building Envelope as modeled			
Roof	R-38 c.i.	Exposed Floor	R-21 c.i.+R-13
Foundation Wall	n/a	Slab Edge	R-8 c.i.
Area of Opaque Curtain Wall & Spandrel Assembly	n/a	Wall & Spandrel Assembly U Value	n/a
Area of Framed & Insulated / Standard Wall	82%	Wall Value	R-27.8
Area of Vision Window	18%	Window Glazing Assembly Value	U-0.28
		Window Glazing SHGC	SHGC-0.4
Area of Doors	0.32%	Door Assembly Value:	U-0.5
Energy Loads and Performance			
Descrive how energy loads & performance were determined	The loads and performance was calculated using eQUEST 3.65 energy modeling software. Modeling assumptions were generated from Simulation Guideline, ASHRAE 90.1-2013 and schmetic design drawings.		
Annual Electric	1,262,351 kWh	Peak Electric	276 kW
Annual Heating	231 MMBtu	Peak Heating	0.25147 MMBtu/h
Annual Cooling	151,892 kWh	Peak Cooling	26.5 Tons
Energy Use below ASHRAE 90.1-2013	29.80%	Have the local ulities reviewed the building energy performance?	No
Energy Use - Below Mass. Code	29.80%	Energy Use Intensity	42 (kBtu/ft2)

GHG Emissions - Design Conditions		
Annual Building GHG Emission	430842.3 tons	* Details see 90.1-2013 GHG Tab

Article 37 Green Building:

LEED Version - Rating System : | LEED Certification: *Yes / No*

Proposed LEED rating: *Certified/Silver/ Gold/Platinum* | Proposed LEED point score: *Pts.*

Boston Climate Resiliency - Checklist – Page 1 of 6 December 14, 2017 revised

Building Envelope

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof: *(R)* | Exposed Floor: *(R)*

Foundation Wall: *(R)* | Slab Edge (at or below grade): *(R)*

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly: *(%)* | Wall & Spandrel Assembly Value: *(U)*

Area of Framed & Insulated / Standard Wall: *(%)* | Wall Value *(R)*

Area of Vision Window: % | Window Glazing Assembly Value: *(U)*

Window Glazing SHGC: *(SHGC)*

Area of Doors: % | Door Assembly Value: *(U)*

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined

Annual Electric: *(kWh)* | Peak Electric: *(kW)*

Annual Heating: *(MMbtu/hr)* | Peak Heating: *(MMbtu)*

Annual Cooling: *(Tons/hr)* | Peak Cooling: *(Tons)*

Energy Use - Below ASHRAE 90.1 - 2013: % | Have the local utilities reviewed the building energy performance?: *Yes / no*

Energy Use - Below Mass. Code: % | Energy Use Intensity: *(kBtu/SF)*

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: *(Tons)*

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

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

NEW ECOLOGY
Community-Based Sustainable Development

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2013
Date	8/30/2018
Project Area total (ft^2)	129,515

Utility Rates

Electricity	0.164	$/kwh
Natural Gas	0.948	$/therm

Cost Saving Analysis

End Use	Baseline - ASHRAE 90.1-2013				Proposed Design				Energy Savings
	Electricity (kWh)	Natural Gas (Therms)	Total Energy Usage (kBtu)	Percent of Total (%)	Electricity (kWh)	Natural Gas (Therms)	Total Energy Usage (kBtu)	Percent of Total (%)	Percent (%)
Interior Lighting	199,963	-	682,274	8.8%	193,953	-	661,768	12.1%	3%
Exterior Lighting	-	-	-	0.0%	-	-	-	0.0%	n/a
Misc. Equipment	625,445	-	2,134,018	27.5%	603,782	-	2,060,104	37.8%	3%
Space Heating	19,096	19,585	2,023,679	26.1%	47,752	681	231,031	4.2%	89%
Space Cooling	151,574	-	517,170	6.7%	151,892	-	518,257	9.5%	0%
Heat Rejection	-	-	-	0.0%	-	-	-	0.0%	n/a
Pumps & Aux	5,242	-	17,885	0.2%	6,797	-	23,191	0.4%	-30%
Ventilation Fans	180,635	-	616,327	7.9%	257,858	-	879,811	16.1%	-43%
Heat Pump Supplement	-	-	-	0.0%	316	-	1,078	0.0%	n/a
Domestic Hot Water	-	17,742	1,774,200	22.8%	-	10,734	1,073,400	19.7%	39%
Total Energy by Utility	1,181,955	37,327	7,765,554	100%	1,262,351	11,415	5,448,641	100%	
Site Energy (kBtu)	4,032,829	3,732,725			4,307,141	1,141,500			**Energy Savings**
Site EUI ($kBtu/ft^2$)	60				42				**29.8%**
Total Cost by Type	$ 193,250	$ 35,386			$ 206,394	$ 10,821			**Cost Savings**
Total Energy Cost	$ 228,636				$ 217,216				**5.0%**

NEW ECOLOGY
Community-Based Sustainable Development

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2010
Date	8/30/2018
Project Area total (ft²)	129,515

Utility Rates

Electricity	0.164	$/kwh
Natural Gas	0.948	$/therm

Cost Saving Analysis

End Use	Baseline - ASHRAE 90.1-2010				Proposed Design				Energy Savings
	Electricity (kWh)	Natural Gas (Therms)	Total Energy Usage (kBtu)	Percent of Total (%)	Electricity (kWh)	Natural Gas (Therms)	Total Energy Usage (kBtu)	Percent of Total (%)	Percent (%)
Interior Lighting	212,593	-	725,367	9.0%	193,953	-	661,768	12.1%	9%
Exterior Lighting	-	-	-	0.0%	-	-	-	0.0%	n/a
Misc. Equipment	625,445	-	2,134,018	26.4%	603,782	-	2,060,104	37.8%	3%
Space Heating	26,564	22,686	2,359,187	29.2%	47,752	681	231,031	4.2%	90%
Space Cooling	143,012	-	487,956	6.0%	151,892	-	518,257	9.5%	-6%
Heat Rejection	-	-	-	0.0%	-	-	-	0.0%	n/a
Pumps & Aux	5,482	-	18,705	0.2%	6,797	-	23,191	0.4%	-24%
Ventilation Fans	168,415	-	574,630	7.1%	257,858	-	879,811	16.1%	-53%
Heat Pump Supplement	-	-	-	0.0%	316	-	1,078	0.0%	n/a
Domestic Hot Water	-	17,742	1,774,200	22.0%	-	10,734	1,073,400	19.7%	39%
Total Energy by Utility	1,181,511	40,428	8,074,064	100%	1,262,351	11,415	5,448,641	100%	
Site Energy (kBtu)	4,031,314	4,042,750			4,307,141	1,141,500			**Energy Savings**
Site EUI (kBtu/ft²)			62				42		**32.5%**
Total Cost by Type	$ 193,177	$ 38,325			$ 206,394	$ 10,821			**Cost Savings**
Total Energy Cost	$		231,502		$		217,216		**6.2%**

NEW ECOLOGY
Community-Based Sustainable Development

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2010
Date	8/30/2018
Project Area total (ft^2)	129,515

Utility Rates

Electricity	0.164	$/kwh
Natural Gas	0.948	$/therm

LEED v4 - EApc95 pilot alternative compliance path - GHG Analysis

Baseline				Proposed			
Direct Emissions	Site energy Gas (Mbtu)	CO_{2eq} Emissions (kg/MBtu)	Direct GHG Emissions	Direct Emissions	Site energy Gas (Mbtu)	CO_{2eq} Emissions (kg/MBtu)	Direct GHG Emissions
	4042750	53.11	214,710,453		1141500	53.11	60,625,065
Indirect Emissions	Site energy electricity (Mbtu)	CO_{2eq} Emissions (kg/MBtu)	Indirect GHG Emissions	Indirect Emissions	Site energy electricity (Mbtu)	CO_{2eq} Emissions (kg/MBtu)	Indirect GHG Emissions
	4031313.8	76.67	309,080,831		4307140.9	76.67	330,228,495
Total CO_{2eq} Emissions (kg)			523,791,284	Total CO_{2eq} Emissions (kg)			390,853,560

CO_{2eq} Emissions (kg) Savings %	**25.4%**

NEW ECOLOGY
Community-Based Sustainable Development

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2010
Date	8/30/2018
Project Area total (ft^2)	129,515

Utility Rates

Electricity	0.164	$/kwh
Natural Gas	0.948	$/therm

LEED v4 - EApc95 pilot alternative compliance path- Source Energy Analysis

	Baseline			Proposed			Energy % saving
	Site Energy (kBtu)	U.S. Source-Site Ratios	Source Energy (kBtu)	Site Energy (kBtu)	U.S. Source-Site Ratios	Source Energy (kBtu)	
Electricity (kBtu)	4,031,314	3.14	12,658,325	4,307,141	3.14	13,524,423	12.9%
Gas (kBtu)	4,042,750	1.05	4,244,888	1,141,500	1.05	1,198,575	
Total	8,074,064		16,903,213	5,448,641		14,722,998	

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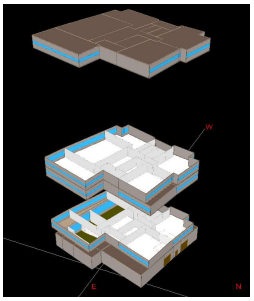
Community-Based Sustainable Development



Modeling Assumptions & Inputs

Project Information

Project Name	48 Boylston
Client	Planning Office for Urban Affairs
Rating Method	ASHRAE 90.1-2010 & 2013
Date	8/30/2018
Project Area total (ft^2)	129,515 * conditioned zones in eQUEST model

Model Input Parameter	90.1-2010 Baseline Model LEED V4	90.1-2013 Baseline Model Stretch Code	Proposed Design Model Currently as Designed	Reference	Notes / Question
Space Use Type	Residential	Residential	Residential		
Conditioned Area in eQUEST	129515 SF	129515 SF	129515 SF	eQUEST LV-B Report	
Operating Schedule	24/7/365	24/7/365	24/7/365		
Envelope Infiltration rate	0.1 ACH	0.1 ACH	0.1 ACH		
Weather file	USA_MA_Boston-Logan.Intl.AP.725090_TMY3	USA_MA_Boston-Logan.Intl.AP.725090_TMY3	USA_MA_Boston-Logan.Intl.AP.725090_TMY3		
HDD	5641	5641	5641		
CDD	2897	2897	2897		
Building envelope	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
Wall	U-0.064 (Steel-Framed)	U-0.055 (Steel-Framed)	R-21 + R-13 Batt Insulation: U-0.036	11.6 Wall Section, ASHRAE 90.1-2010 & 2013	
Floor	U-0.038 (Steel-Joint)	U-0.038 (Steel-Joint)	U-0.038 (Steel-Joint)	11.6 Wall Section, ASHRAE 90.1-2010 & 2013	
Slab	F-0.54(R-10 for 24 in)	F-0.51(R-10 for 24 in)	Concrete slab with 2" continuous rigid insulation (R-8)	11.6 Wall Section, ASHRAE 90.1-2010 & 2013	
Roof	U-0.048 (Insulated Entirely above Deck)	U-0.032 (Insulated Entirely above Deck)	R-38 Insulation: U-0.027	11.6 Wall Section, ASHRAE 90.1-2010 & 2013	
Window to Wall Ratio	18%	18%	18%	eQUEST LV-D report	
Window type and U-factor	Nonmetal framing U-0.35	Nonmetal framing U-0.32	NFRC- U 0.28 Btu/h-ft²-°F	ASHRAE 90.1-2010 & 2013	
Window SHGC	0.4	0.4	0.4	ASHRAE 90.1-2010 & 2013	
Window VT	0.5	0.44	0.44	ASHRAE 90.1-2010 & 2013	Assume VT/SHGC =1.1 for the propsoed
Doors	U-0.5	U-0.5	U-0.5	ASHRAE 90.1-2010 & 2013	
Lighting & Appliances (W/ft²)	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
Residential (RES LPD)	1.1	0.9	0.8	Simulation Guideline	Assume 10% LPD savings over 90.1-2013 baseline LPD
Corridor (CORR LPD)	0.66	0.66	0.66	ASHRAE 90.1-2010 & 2013	
Lobby (LOBB LPD)	0.9	0.9	0.9	ASHRAE 90.1-2010 & 2013	
Stairway (STAI LPD)	0.69	0.69	0.69	ASHRAE 90.1-2010 & 2013	
Storage <50ft² (STOR LPD)	0.63	0.63	0.63	ASHRAE 90.1-2010 & 2013	
Elevator (ELEV LPD)	1.3	1.3	1.3	Simulation Guideline	
Office (OFFI LPD)	1.11	1.11	1.11	ASHRAE 90.1-2010 & 2013	
Electrical/Mechanical (MECH LPD)	0.95	0.42	0.42	ASHRAE 90.1-2010 & 2013	
Multi-purpose (MULT LPD)	1.23	1.23	1.23	ASHRAE 90.1-2010 & 2013	
Vestibule (VEST LPD)	0.66	0.66	0.66	ASHRAE 90.1-2010 & 2013	
Exterior lighting (Total)	n/a	n/a	n/a	assume no exterior lighting	no design information
Lighting controls	n/a	n/a	n/a	ASHRAE 90.1-2010 & 2013	modeled as energy neutral for lighting controls
HVAC System Air-side	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
Primary HVAC system	PTAC with hydraulic hot water loop. DX cooling & gas boiler for heating	PTAC with hydraulic hot water loop. DX cooling & gas boiler for heating	VRF coupled with DOAS +ERV for ventilation	Assume Mitsubishi VRF Pury-P144T(Y)KMU	2013 baseline does not have ERV per 6.5.6.1 exception 8
Unitary Efficiency	Cooling EER- 11.7 (eQUEST EIR - 0.2483) Gas boiler - 80% et	Cooling EER- 11.9 (eQUEST EIR - 0.2486) Gas boiler - 80% et	VRF : Cooling EER-11.7 (eQUEST EIR - 0.2483) VRF: Heating EIR in eQUEST -0.25 DOAS: furnace - 80 % et DOAS: Cooling DX Coil EER-11.7 DOAS ERV - 70% efficiency	Assume Mitsubishi VRF Pury-P144T(Y)KMU	
Cooling Capacity	15% over eQUEST autosized capacity	15% over eQUEST autosized capacity	eQUEST autosized		
Heating Capacity	25% over eQUEST autosized capacity	25% over eQUEST autosized capacity	eQUEST autosized		
Fan System Operation	Fans on continuously	Fans on continuously	Fans on continuously per Mitsubishi VRF modeling guideline	Assume Mitsubishi VRF Pury-P144T(Y)KMU	

Fan Power	0.0003 kW/cfm	0.0003 kW/cfm	VRF : 0.000193 kW/cfm DOAS : 0.0003 KW/CFM ERV : Supply / ExhaustTSP 2.5 in.water	Assume Mitsubishi VRF Pury-P144T(Y)KMU	
Ventilation System	Bathroom exhaust fan - 25 cfm Kitchen exhaust fan - 50 cfm	Bathroom exhaust fan - 25 cfm Kitchen exhaust fan - 50 cfm	DOAS with ERV, 9128 OA CFM	ASHRAE62.1 & 62.2	
OA cfm	9128 cfm	9128 cfm	9128 cfm	eQUEST result	
Bathroom Local Exhaust Ventilation	Continuous	Continuous	Continuous	ASHRAE62.1 & 62.2	
HVAC System Water-side	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
Number of Boilers	2	2	N/A	ASHRAE 90.1-2010 & 2013	
Boiler Type	Natural draft	Natural draft	N/A	ASHRAE 90.1-2010 & 2013	
Boiler efficiency	80% et	80% et	N/A	ASHRAE 90.1-2010 & 2013	
Design HW Temperature (°F)	180	180	180	ASHRAE 90.1-2010 & 2013	
Loop Design ΔT(°F)	50	50	50	ASHRAE 90.1-2010 & 2013	
Loop Operation	Demand	Demand	Demand	ASHRAE 90.1-2010 & 2013	
Loop Control	OA Reset	OA Reset	OA Reset	ASHRAE 90.1-2010 & 2013	OA Reset curve per Appendix G
Domestic Hot Water System	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
DHW Equipment Type	Natural Gas	Natural Gas	Natural Gas Autosized	ASHRAE 90.1-2010 & 2013	
DHW Process Flow (gpm)	15.304	15.304	10.767	LEED_v4_Minimum Energy Performance Calculator	
DHW Pump	19 w/gpm	19 w/gpm	19 w/gpm	ASHRAE 90.1-2010 & 2013	
Equipment efficiency	80%	80%	93%	ASHRAE 90.1-2010 & 2013	Assume proposed design has 93% efficiency
DHW Loop setpoint T (°F)	120	120	120	ASHRAE 90.1-2010 & 2013	
Miscellaneous (per Simulation Guideline Modeling Guideline)	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
In-Unit Appliances Plug load	1.82 W/SF	1.82 W/SF	1.71 W/SF	LEED_v4_Minimum Energy Performance Calculator	Assume energy star in-unit washer, dryer, dish washer, kichten rangehood, cooking stove, refrigerator, bathroom exhaust fan in the proposed design
In-Unit Misc.	0.5 W/SF	0.5 W/SF	0.5 W/SF	Simulation Guideline	
Corridor, Restroom & Stairs	0.2 W/SF	0.2 W/SF	0.2 W/SF	Simulation Guideline	
Office	1.5 W/SF	1.5 W/SF	1.5 W/SF	Simulation Guideline	
Other Public and Common Area	0.5 W/SF	0.5 W/SF	0.5 W/SF	Simulation Guideline	
Utility Cost	**90.1-2010 Baseline Model**	**90.1-2013 Baseline Model**	**Proposed Design Model**	**Reference**	**Notes / Question**
Electricity ($/KWH)	0.164	0.164	0.164	EIA data	State average
Gas ($/THERM)	0.948	0.948	0.948	EIA data	State average

Appendix C

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:	**41 LaGrange Street**
Primary Project Address:	**41 LaGrange Street, Boston, MA 02116**
Total Number of Phases/Buildings:	**1 building**
Primary Contact (Name / Title / Company / Email / Phone):	**Amarillys Rodriguez/Kuehn Fellow/Planning Office for Urban Affairs/ arodriguez@poua.org / 617-350-8885 ext. 113**
Owner / Developer:	**SFH 48 Boylston LLC**
Architect:	**The Architectural Team**
Civil Engineer:	**Samiotes**
Landscape Architect:	
Permitting:	**Beverley Johnson, Bevco Associates**
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.	We do not anticipate filing for any variances 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:	*8,500 SF*	Building Area:	*132,045 GSF*
Building Height:	*207 FT.*	Number of Stories:	*19 Flrs.*
First Floor Elevation:		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 amenity and support (Lobby, property management office, amenity space, mail, laundry, trash, bike storage, mechanical).*			

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:	The Project will be located at 41 LaGrange Street, on the border of Chinatown and the Midtown Cultural District in downtown Boston. The project site is bordered by Boylston Street, the former Boston Young Men's Christian Union Building (48 Boylston St.), and Lowell Court to the north; Tremont Street, commercial and residential buildings, and a surface parking lot that is being redeveloped to the west, Washington Street and commercial and residential buildings to the east, and LaGrange Street to the south. The Project site previously contained two one- to two-story brick and concrete buildings that were demolished for the redevelopment of 48 Boylston St. The site is now a gravel lot.
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	The Project is located a tenth of a mile from the MBTA's Boylston Street Station on the Green Line and Chinatown Station on the Orange Line. Connections to the Red Line are available at Downtown Crossing, just over a quarter-mile walk from the site. The MBTA Silver Line routes 4 and 5 also directly serve the Project site with stops near the intersection of Boylston Street at Washington Street, as well as the intersection of Boylston Street at Tremont Street. MBTA bus routes #11, #43, and #55 operate along Tremont Street and directly serve the Project site with stops near the intersection of Tremont Street and Boylston Street (all 0.1 miles or less).
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	Nearby institutions include Tufts Medical Center (0.2 miles), several theaters including the Boch Center – Wang Theater, Cutler Majestic Theater, and AMC Loews Boston Common 19 (0.2 miles or less), and Emerson College (0.2 miles).

List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	Nearby government buildings or public recreational facilities include the Boston Public Library Chinatown branch (0.1 miles), and the Boston Common and Public Garden (0.2 miles). City Hall is 0.7 miles away via Tremont Street or accessible on the Green Line.
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:	No.
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:	Yes. The existing sidewalk material is concrete with granite curbing. The sidewalks are in good condition.
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:	Yes, however they may need to be replaced depending on impacts from construction. Existing sidewalks have not yet been verified as compliant. Please see attached measurements and photos.
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.	Yes, the proposed sidewalk will be consistent with Boston Complete Street Guidelines. The Neighborhood Connector type was applied.

What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	9'-0" Furnishing Zone: 2'-0" Pedestrian Zone: 5'-0" Frontage Zone: 2'-0"
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	Curb Zone: granite curb Greenscape Zone: poured-in-place scored concrete and/or permeable unit pavers. City of Boston signage, street lights, etc. Pedestrian Zone: varies Typical: poured-in-place scored concrete, pavers Frontage Zone: pavers
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.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	Yes.
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	Certain streetscape improvements surrounding the site on La Grange Street and Tamworth Street may require Public Improvement Commission (PIC) review and approval. As standard practice, the Proponent will work with the City in continuing to develop and obtain approval of these improvements.
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?	There will be no on-site parking provided at the development site. Please see Section 2.1 of the EPNF for more information on nearby parking garages and lots, as well as on-street parking.

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?	N/A
Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need?	N/A
Where is the accessible visitor parking located?	N/A
Has a drop-off area been identified? ***If yes,*** will it be accessible?	No
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:	There is a single main entrance into the building – it will be flush.
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	Yes.
If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	Signage has not yet been developed. All future way-finding signage will be developed to meet Building Code and Accessibility Board requirements.
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?	126 units.

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 of the units will be rental units. The development will include a minimum of 40% of the units below 60% of the area median income, which will significantly exceed the City of Boston's Inclusionary Development Policy (IDP) requirement of 13 percent.
If a residential development, how many accessible Group 2 units are being proposed?	7 accessible units will be provided.
If a residential development, how many accessible Group 2 units will also be IDP units? ***If none***, describe reason.	Accessible units will include a mix of affordable and market rate units, in a proportion similar to the overall composition of units. Final breakdown to be determined.
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.	No.
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes,*** describe:	In addition to stairs, access to the upper floors from the lobby will be available via 2 elevators.
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	This project will improve the safety and street experience on LaGrange by widening the sidewalk in front of the building and activating the ground floor, which previously suffered from the underutilized condition of the site.

refurbishing a local park, or supporting other community-based initiatives?	
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 of these spaces and features provide accessibility?	The main common spaces inside the building, including the lobby, resident amenity space, and laundry area will be accessible. Spaces such as the lobby and amenity space will be furnished with seating, tv's and artwork. The open space on the site is limited to the sidewalk directly in front of the building.
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.	Yes.
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?	No.
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?	N/A

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. N/A
Provide a diagram of the accessible route connections through the site, including distances. The open space on the site is limited to the sidewalk directly in front of the building.
Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable) N/A
Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry. The location of the accessible units has not been finalized at this time.
Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. • • • •

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:

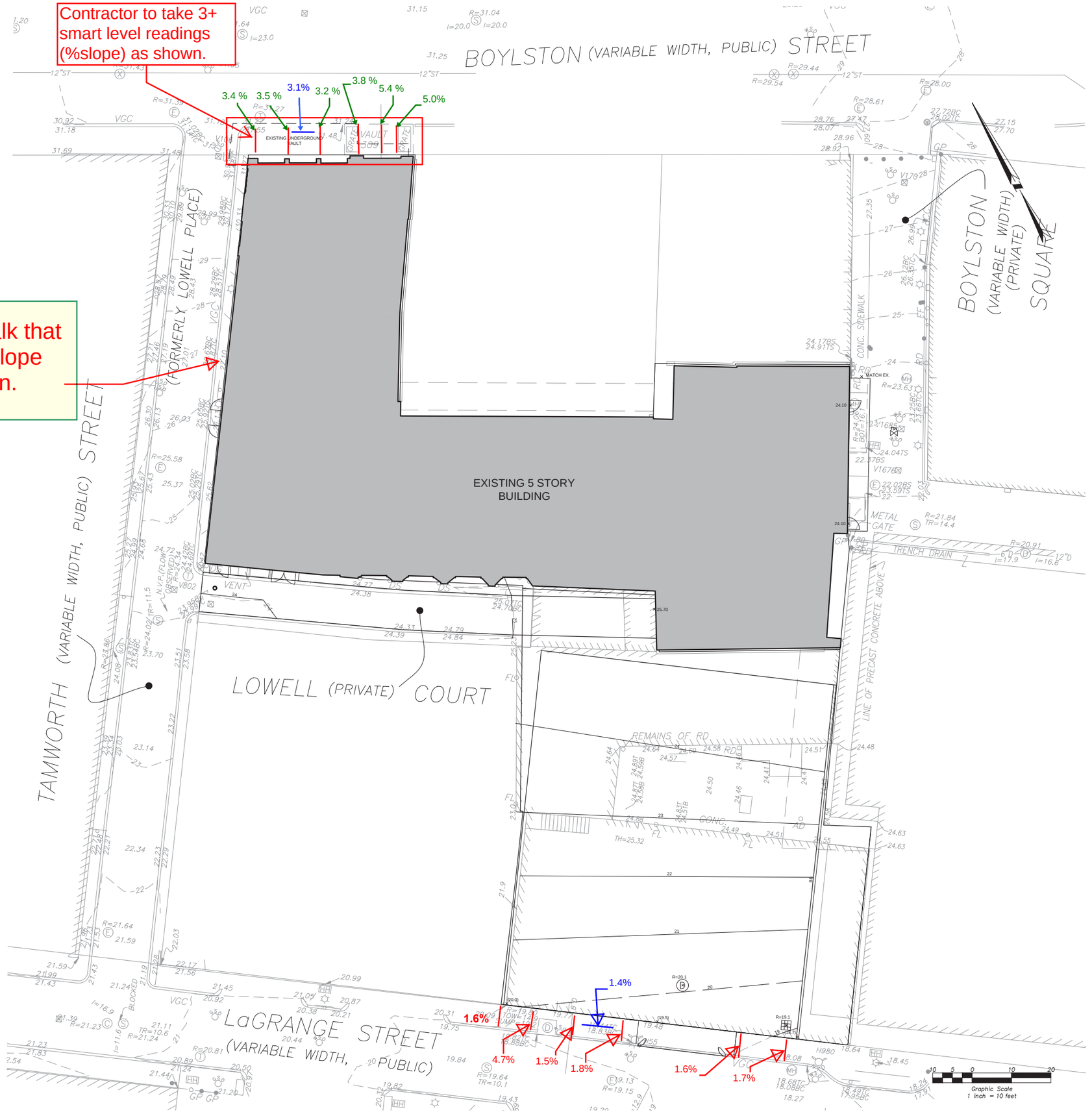
accessibility@boston.gov | patricia.mendez@boston.gov | sarah.leung@boston.gov | 617-635-3682

LEGEND:

129	PROPOSED INTERMEDIATE CONTOUR
130	PROPOSED INDEX CONTOUR
130.0 ×	PROPOSED SPOT GRADE
(130.0) ×	EXISTING GRADE TO REMAIN (V.I.F.)
TC=131.87 BC=130.50 ×	PROPOSED TOP/BOTTOM OF CURB
RIM=130.20 × V.I.F.	PROPOSED RIM ELEVATION (TO FINAL GRADE) VERIFY GRADE IN FIELD \ TO BE SET

Contractor to take 3+ smart level readings (%slope) as shown.

36" wide sidewalk that does not meet slope in either direction.



Friday, March 17, 2017 2:54:24 PM
P:\Projects\20161680.00 48 Boylston Street - Jamaica Plain, MA\dwg\161680.00sd.dwg

Consultant:

samiotes

Samiotes Consultants Inc.
Civil Engineers • Land Surveyors

20 A Street
Framingham, MA 01701

T 508.877.6688
F 508.877.8349

www.samiotes.com

Revision:

Architect of Record:

Drawn: amt

Checked: amt

Scale: AS NOTED

Key Plan:

Project Name:
48 Boylston Street

Boston, MA 02116

Sheet Name:
GRADING PLAN

Project Number:
12176

Issue Date:
January 23, 2017

Sheet Number:
C-3.1


JAMES W.
FLEET
BELMONT


CAT


FLETT
CAT

Appendix D

Trip Generation Data

15062 - 48R Boylston Street

Trip Generation Assessment

HOWARD STEIN HUDSON
6-Nov-2018

XX - Hard coded to balance

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Transit Share[3]	Transit Person-Trips	Walk/Bike/ Other Share[3]	Walk/ Bike/ Other Trips	Auto Share[3]	Auto Person-Trips	Assumed Local Auto Occupancy Rate[4]	Total Adjusted Auto Trips
Daily															
Multifamily Housing (High Rise)[5]	126	Total		4.450	560	1.18	**660**	17%	**112**	49%	**324**	34%	**224**	1.18	**190**
	units	In	50%	2.225	280	1.18	**330**	17%	**56**	49%	**162**	34%	**112**	1.18	**95**
		Out	50%	2.225	280	1.18	**330**	17%	**56**	49%	**162**	34%	**112**	1.18	**95**
AM Peak Hour															
Multifamily Housing (High Rise)[5]	126	Total		0.310	39	1.18	**46**		**7**		**27**		**12**	1.18	**10**
	units	In	20%	0.062	8	1.18	**9**	17%	**2**	38%	**3**	45%	**4**	1.18	**3**
		Out	80%	0.248	31	1.18	**37**	13%	**5**	65%	**24**	22%	**8**	1.18	**7**
PM Peak Hour															
Multifamily Housing (High Rise)[5]	126	Total		0.360	45	1.18	**53**		**7**		**30**		**16**	1.18	**14**
	units	In	65%	0.234	29	1.18	**34**	13%	**4**	65%	**23**	22%	**7**	1.18	**6**
		Out	35%	0.126	16	1.18	**19**	17%	**3**	38%	**7**	45%	**9**	1.18	**8**

1. 2017 National vehicle occupancy rates - 1.18:home to work; 1.82: family/personal business; 1.82: shopping; 2.1 social/recreational
2. Based on ITE Trip Generation Handbook, 3rd Edition method
3. Mode shares based on peak-hour BTD Data for Area 3.
4. Local vehicle occupancy rates based on 2017 National vehicle occupancy rates
5. ITE Trip Generation Manual, 10th Edition, LUC 222 (Multifamily Housing High-Rise (11+ Floors)), average rate

Appendix E

Boston Landmarks Commission Notice of Determination

CITY OF BOSTON
THE ENVIRONMENT DEPARTMENT

Boston City Hall, Room 709 • Boston, MA 02201 • 617/635-3850 • FAX: 617/635-3435

December 1, 2016

William Grogan
SFH 48 Boylston Street LLC
84 State Street Suite 600
Boston MA 02109

NOTICE OF DETERMINATION

Re: Application #17.613D2141
Review of proposed demolition of two commercial buildings at 52 Boylston Street, CBD, Mass.

Dear Mr. Grogan:

The Boston Landmarks Commission staff have determined that the above-mentioned **two commercial buildings at 52 Boylston Street, CBD, Mass.,** additions located on Lot B of parcel #0304893000 as shown on subdivision plan dated October 29, 2015, fronting on Lagrange Street, are not significant buildings under the Criteria for determining significance in Section 85-5.3 (a-e) of the Demolition Delay Ordinance (Article 85, Chapter 665 of the Acts of 1956 as amended). No further review by the Boston Landmarks Commission under Article 85 is required. If you have any questions regarding this decision, please contact me at 617-635-3850.

Please provide a copy of this determination to Inspectional Services Department when applying for a demolition permit. Thank you for your cooperation in this matter.

Sincerely,

Rosanne Foley
Executive Director
Boston Landmarks Commission

cc: Commissioner of Inspectional Services
Mayor's Office of Neighborhood Services

Appendix F

Massachusetts Historic Commission Approval

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

March 8, 2016

William Grogan
Planning Office for Urban Affairs / St. Francis House
84 State Street, Suite 500
Boston, MA 02109

RE: 48 Boylston Street Rehabilitation and New Tower Residential by POUA and St. Francis House, 48 Boylston Street, Boston (Downtown), MA; MHC# RC.58603

Dear Mr. Grogan:

The Massachusetts Historical Commission (MHC) has reviewed the additional information submitted, received September 23, 2015, concerning the proposed project referenced above. The property at 48 Boylston Street, historically known as the Young Men's Christian Union, is individually listed in the National and State Registers of Historic Places and is a Local Landmark. After a review of the information submitted, MHC staff have the following comments.

The proposed three-phase project consisting of, first, the demolition of 1956 addition and a portion of the 1911 addition and rehabilitation for affordable housing of areas of the remaining portions of the building and the building exterior, and, second and third, the construction of a new residential tower with affordable housing on the rear of the site is described in the additional information packet and the Project Notification Form that were submitted to this office, received September 23, 2015 and August 7, 2015. The application indicates that the project proposes to utilize state and federal historic tax credits for portions of the work.

The MHC did not comment within thirty (30) days of receipt of the additional information on September 23, 2015. The federal agency and state bodies may proceed with the funding of the proposed project (36 CFR 800.3(c)(4) and 950 CMR 71.07(2)(f)). ***Please note***: If the proposed work receiving any state and/or federal funding, licensing, permitting, or approvals should change or if any other state or federal licenses, funding, or permits will be used for any future renovation of the building(s) at the property(ies) related to the project referenced above, the MHC looks forward to consulting with you on the project(s).

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), and M.G.L., Chapter 9, Sec. 26-27C, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00) *only*. Please do not hesitate to contact me at this office if you have any questions.

Sincerely,

Ryan T. Maciej
Preservation Planner
Massachusetts Historical Commission

xc: Dan Tobyne, DHCD HOME
Paul Silverstone, MHFA
Elizabeth Stifel, Boston Landmarks Commission
Epsilon Associates Inc.
Jo Ellen Hensley, National Park Service

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

Appendix G

Letters of Support and Schedule of Community Engagement Activities

November 1, 2018

Mary Ann Ponti
453 Washington Street
Boston, MA 02111

Brian Golden, Director
Boston Planning & Development Agency
Once City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Golden,

I am writing to demonstrate my strong support for The Planning Office for Urban Affairs and St. Francis House's proposed construction of a 126 unit mixed income development at 48 Boylston Street. As a long time resident in the Downtown Crossing neighborhood of Boston I have for the most part been very pleased with the revitalization of this area. New housing and commercial developments have helped transform the former Combat Zone into a new vibrant community. My one concern has been the explosion of high-end luxury housing and the dearth of affordable housing.

This community will be best served by a mix of housing options that provide opportunity for the homeless and the people who work in the neighborhood. Currently there is almost no housing affordable for the local workforce or the homeless. This is a significant problem that the proposed development will address.

I am excited that such a significant number of the 126 new units of housing in my neighborhood will welcome the homeless and give people who work here an opportunity to live here.

The proposed development is a most welcome and very much needed addition to this neighborhood.

Sincerely,

Mary Ann Ponti

November 2, 2018

MP BOSTON

Mr. Brian Golden, Director
Boston Planning and Development Agency
1 City Hall Square, Floor 9
Boston, MA 02201-2040

Re: St. Francis House Redevelopment Project on Boylston Street, Boston

Dear Director Golden:

As you know, our organization was the developer of The Ritz-Carlton Hotel and Towers, and we continue to maintain an active profile in Downtown Boston.

From the start of our involvement in this neighborhood twenty years ago, we have admired and appreciated the significant contribution that St. Francis House daily makes in meeting vital needs in the Boston community. Now, we are very pleased to learn that construction renovations to create 46 units of affordable housing are about to begin at 48 Boylston Street as the initial step in creating 126 additional units of mixed-income housing at the rear of this site.

Millennium Partners, now locally known as MP Boston, and St. Francis House, from the start have maintained friendly and respectful relations. Like good neighbors, we watch out for each other, focusing on what brings us together rather than what may separate us. Our neighborhood is better because of the presence of St. Francis House, and we hope that all of our neighbors feel the same way about our developments.

We are eager to express to the Boston Planning and Development Agency our enduring support for the magnificent work of St. Francis House and, specifically, for their current development endeavors.

Sincerely,

Joseph A. Larkin

/rrb

cc: Ms. Karen LaFrazia, St. Francis House

33 Arch Street
Suite 2520
Boston, MA 02110

T 617.451.0300

mpbos.com

HomeStart Inc.

105 Chauncy Street, Suite 502, Boston, Massachusetts 02111 p: 617.542.0338 f: 617.542.1454 www.HomeStart.org

November 1, 2018

Brian Golden, Director
Boston Planning & Development Agency
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Golden,

HomeStart, Boston's premier agency dedicated to preventing and ending homelessness is pleased to offer this letter of support for the Planning Office for Urban Affairs and St. Francis House's proposed redevelopment of the former Boston Young Men's Christian Union property located at 48 Boylston Street. The new construction project will create 126 units of mixedincome housing in the heart of a rapidly gentrifying neighborhood in downtown Boston.

HomeStart and St. Francis House have a long partnership working together to assist people move out of homelessness and into permanent housing. For more than 20 years, HomeStart has worked to prevent and ultimately end homelessness in the Greater Boston area. Our advocates work with clients from over 50 shelters, including St. Francis House, to obtain apartments and subsidized housing. This not only serves to preserve our clients' dignity but also saves millions of dollars in taxpayer assistance.

Our experience has taught us that the one singular most effective solution to ending homelessness is the provision of affordable housing and assisting people to integrate into a neighborhood. As a mixed income development this project has a significant number of deeply affordable units (55/43%) and has wisely created a development that ensures a blending of socio economic households.

Once completed the new development will be a major resource in our effort to both prevent homelessness for low-income households as well as provide a sorely needed housing option for those already homeless. Furthermore, the greatest challenge individuals face after moving into a permanent home is maintaining it. Our clients often report to us that after years of living in congregate settings such as shelters, once housed, formerly homeless individuals sometimes experience social isolation and depression. The project's location in downtown Boston also ensures the residents will be part of a familiar and vibrant community and in close proximity to the stabilization services they need to ensure they remain housed.

I have the utmost respect for the Planning Office and St. Francis House and consider this project a timely investment in addressing an urgent problem.

Sincerely,

Matt Pritchard
President & Executive Director

United Way
United Way of Massachusetts Bay and Merrimack Valley

ST. ANTHONY SHRINE
The Church on Arch Street

November 5, 2018

Brian Golden, Director
Boston Planning & Development Agency
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Golden,

St. Anthony's Shrine and Ministry Center located at 100 Arch Street in downtown Boston is pleased to offer this letter of support for St. Francis House's proposed construction of a 126 unit mixed income housing development.

The new millennium has seen new directions in the Shrine's mission as it has continued to participate in the life of the city of Boston in meaningful ways. We serve and stand in solidarity with all people, especially the alienated, the immigrant, and the poor. As the downtown workplace continues to face many new challenges, the Shrine continually attempts to respond to the emerging needs of the people it serves.

Daily, we witness the need for affordable housing opportunities for working families and the homeless. Our Franciscan Food Center has seen a dramatic increase in the number of people from the Chinatown community struggling with the high cost of housing, unable to meet their basic needs. The homeless often seek out our support to create a new life. The working poor pray with us to find solutions for their economic hardship. The one clear, constant and necessary response is the creation of affordable housing in this neighborhood targeted to those most in need.

In this rapidly changing neighborhood, it is extremely important to create a blend of housing options. Downtown Boston should not become an exclusive community affordable only to those who can live in the abundance of luxury condominiums that has been the only focus of developers in the past few years. The proposed development will create 126 new units of housing with more than 40% targeting the poorest of the poor. It also embraces a philosophy that does concentrate poverty in one single development and integrates individuals and families that are working but struggle to meet the burden of rent as well as families that can afford what the market bears. Such an approach creates a neighborhood that is welcoming for all.

St. Anthony's Shrine has a long history with both the Planning Office for Urban Affairs and St. Francis House. Both organizations are credible and enjoy a positive reputation in the community. The project design with its mix of income ranges will help the very poor as well as help stabilize moderate-income households.

I strongly support the project not only for whom it will serve but also because of where it is located. It will help maintain the cultural and economic diversity that is the strength of this neighborhood and an asset to the broader community.

Sincerely,

Fr. Thomas Conway, OFM
Executive Director

Boston Rescue Mission
Transforming Lives At Risk
Since 1899

November 1, 2018

Brian Golden, Director
Boston Planning & Development Agency
One City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Golden,

The Boston Rescue Mission located in Downtown Boston offers its enthusiastic support for St. Francis House's proposed construction of 126 units of mixed income housing at 48 Boylston Street.

Located just a few blocks away, The Boston Rescue Mission is dedicated to serving poor and homeless men and women from Boston's inner city. Our goal is to provide the support, training, and resources necessary to sustain independent living for a lifetime. Essential to that goal is the ability to access affordable housing options.

The number of homeless people in the city of Boston is on the rise. Essential to ending homelessness is the need that every neighborhood in the city has affordable housing options for very low-income people. This is particularly true for the downtown area, which is rapidly gentrifying. Employment opportunities, easy access to support services and area amenities make this area ideal for people taking the first steps out of poverty.

I am thrilled that more than 40% of the units will house homeless and extremely low income individuals and another 29 units will ensure middle income working individuals and families will not be priced out of the neighborhood. The proposed project with its blend of mixed income households will be an asset to the City and is in keeping with the Governor's plan to provide affordable housing opportunities for all.

I have incredible respect for St. Francis House and I commend them for their commitment to the poor and homeless and to ensuring that every neighborhood in Boston has a place for everyone.

Sincerely,

John G. Samaan
President and CEO

Boston Rescue Mission *Mailing Address* • PO Box 120069 • Boston, MA 02112-0069 • (617) 338-9000 • Fax (617) 482-6623
Located at 39 Kingston Street • Boston, MA 02111 • www.bostonrescuemission.com • info@bostonrescuemission.com

BOSTON HEALTH CARE *for the* HOMELESS PROGRAM
SINCE 1985

November 1, 2018

Brian Golden, Director
Boston Planning & Development Agency
Once City Hall Square, 9th Floor
Boston, MA 02201

Dear Mr. Golden,

Boston Health Care for the Homeless Program is pleased to provide this letter of support for the proposed development of a new building to be constructed as part of the redevelopment of the former Boston Young Men's Christian Union at 48 Boylston Street.

For more than 30 years Boston Health Care for the Homeless Program (BHCHP) has partnered with St. Francis House and operated a clinic located within its facility located at 39 Boylston Street. Through meaningful partnerships such as this we are able to ensure the most vulnerable in our community receive the highest quality health care.

St. Francis House's commitment to its mission and its organizational capacity has made them an excellent partner with BHCHP. Informed by their holistic approach they understand that housing is a basic need that improves the health of people and communities. They are committed to the belief that the creation of affordable housing should be done in ways that integrate people of diverse backgrounds. The proposed project is an example of such.

This 126 unit mixed income development has 40% of the units dedicated to serving the needs of homeless and extremely low income individuals. The project will create much needed affordable housing and enable those once marginalized to contribute to and enjoy in the vitality and prosperity of the neighborhood.

Once completed, this project will bring about a healthier life not only for those who will live there but create a healthier neighborhood for all. We enthusiastically support this project. Please feel free to reach out to me if I can be of further assistance.

Sincerely,

Barry Bock
Chief Executive Officer

48 Boylston/41 LaGrange Community Group Meetings
11/05/2018

Name of Organization/ Individual	Acronym	Leadership	Meeting Date(s)	Follow-Up Type Needed	Due Date	Lead Contact
Boston Planning and Development Agency	BPDA	Lance Campbell, Project Manager	11/12/15 1/20/17*, 10/15/18 (Pre-File Meeting)*	Pre-file meetings, ongoing		Beverley
Captain Ken Fong, Area A-1 Commander			7/2015	Phone call		Karen
Frank Chin, Chinatown community leader			11/17/13	Meeting		
Chinese Progressive Association	CPA	Lydia Lowe, Baolian Kuang	1/24/14 5/7/14 9/20/14	Meeting (group)		Lisa
Chinatown Neighborhood Council	CNC	Ruth Moy, Sherry Dong, Felix Liu	9/21/15	Meeting (group)		Lisa
Chinese Residents Association	CRA	Chu Huang, Michael Wong, Arturo Gossage	3/1/17*	Meeting (group)		Lisa
City Councilor Bill Linehan			7/7/15	Phone call		Karen
Downtown Boston BID		Rosemarie Sansone	Multiple communications starting in 1/2014	Meeting		Karen
Midtown Cultural District Residents' Association	MCDRA	Deva Hirsch, Rishi Shukla	8/7/15 (leadership) 8/10/15 (group)	Meeting (leadership, group)		Karen
Midtown Park Plaza Neighborhood Association	MPPNA	Rosemarie Sansone, Peggy Ings	7/27/15 (leadership) 8/12/15 (group) 7/12/17 (group)*	Meeting (leadership, group)		Lisa
Millennium		Tony Pangaro, Joe Larkin	8/6/13			Karen
Aaron Michlewitz	State Rep			Phone call		Karen
Josepth Boncore	State Senate			Phone call		Karen
Robert DeLeo	Speaker of MA House of Reps			Phone call		Karen

*Presentation focused on New Construction Phase

Appendix H

Phase 1 ESA Summary

Note: The complete Phase 1 ESA report is on file with the BPDA.

Proactive by Design

PHASE I ENVIRONMENTAL SITE ASSESSMENT UPDATE

Former Boston Young Men's Christian Union
48-52 Boylston Street
Boston, Massachusetts

December 13, 2017
File No. 04.0190787.00

PREPARED FOR:
Planning Office for Urban Affairs, Inc.
Boston, Massachusetts

GZA GeoEnvironmental, Inc.
5 Commerce Park North | Bedford, New Hampshire 03110
(603) 623-3600

Offices Nationwide
www.gza.com

EXECUTIVE SUMMARY

Planning Office for Urban Affairs, Inc. (also referred to herein as "Client" or "User") retained GZA GeoEnvironmental, Inc. (GZA) to perform a Phase I Environmental Site Assessment (ESA) Update of the property located at 48-52 Boylston Street, Boston, Massachusetts 02116 (hereafter referred to as the "Site"). GZA performed this Phase I ESA Update in connection with the Client's planned financing of the Site.

This Phase I ESA Update was performed in general conformance with the scope and limitations of ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process – E1527-13 (ASTM E1527-13), and included our visual observation of the Site; a review of historical information, environmental databases, and information provided by the User; and interviews with current Site representatives. Limiting conditions and/or deviations from ASTM E1527-13 are described in **Sections 1.4** and **6.0** of this Phase I ESA Report Update. GZA prepared this Phase I ESA Report Update in conformance with the limitations presented in **Section 14.0** and with the terms and conditions of our proposal dated November 27, 2017, which are included in **Appendix A**.

The Site is located in the central part of the City of Boston, Massachusetts (Suffolk County). The Site is bounded by Boylston Street to the north, Tamworth Street to the west, Lowell Court to the southwest, LaGrange Street to the southeast, and commercial properties to the east. The Site is identified by the City of Boston Assessor Office as lot #4893-1 as shown on the Assessors Ward 3 Map for Central Boston. The Site is approximately 0.44 acres in size and consists of one 5-story building, known as Boston Young Men's Christian Union (BYMCU).

The building was originally constructed in 1876 on the northern portion of the Site by the BYMCU, which occupied the Site until circa 2012-2013. The Site has remained vacant since that time. Several additions and renovations have been made to the building to create the current extent and layout. The northern portion of the building contains five stories, while the remaining southern portion of the building is only two floors. The third through fifth floors formerly contained offices indicative of the past use by the Massachusetts Commission for the Blind. The first and second floors were formerly used by the BYMCU as athletic facilities and office space. The basement contained a laundry room, building heating systems, hot water, electrical equipment, locker rooms and a weight room.

Based on the findings of our Phase I ESA and on our professional judgment, GZA has identified the following in connection with the Site:

Report Section		No RECs Identified	REC	CREC	HREC	Other Environmental Considerations	Comments
4.0	HISTORICAL USE INFORMATION	✔					
5.0	PREVIOUS SITE INVESTIGATIONS	✔					
6.0	SITE RECONNAISSANCE	✔					
7.0	REGULATORY DATABASE REVIEW	✔					

Report Section		No RECs Identified	REC	CREC	HREC	Other Environmental Considerations	Comments
9.0	USER-PROVIDED INFORMATION	✔					
11.4	DE MINIMIS CONDITIONS	✔					
11.5	DATA GAPS AND THEIR SIGNIFICANCE	✔					

Proactive by Design

GEOTECHNICAL
ENVIRONMENTAL
ECOLOGICAL
WATER
CONSTRUCTION MANAGEMENT

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Bedford, New Hampshire
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www.gza.com

VIA EMAIL

December 13, 2017
File No. 04.0190787.00

Planning Office for Urban Affairs, Inc.
84 State Street
Boston, Massachusetts 02109

Attention: Caitlin Madden

Re: Phase I Environmental Site Assessment Update
Former Boston Young Men's Christian Union
48-52 Boylston Street
Boston, Massachusetts 02116

Dear Ms. Madden:

Pursuant to our proposal dated November 27, 2017, GZA is pleased to submit the appended Phase I Environmental Site Assessment Report Update for the above-referenced target property ("Site"). GZA completed this Phase I Environmental Site Assessment Update in general conformance with the guidelines described in ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process - E1527-13.

We hope this report satisfies your present needs. If you need additional information, please call Megan Murphy at (603) 232-8731.

Very truly yours,

GZA GEOENVIRONMENTAL, INC.

Megan Murphy
Geologist I

John Murphy
Consultant Reviewer

Kenneth D. Boivin
Principal/Environmental Professional

Attachment: Report

TABLE OF CONTENTS

Appendices

1.0 INTRODUCTION

This Phase I Environmental Site Assessment Report Update (Phase I ESA Report Update) presents the field observations, results, and opinions of a Phase I ESA conducted by GZA GeoEnvironmental, Inc. (GZA) for the Planning Office for Urban Affairs, Inc. (also referred to herein as "Client" or "User") at property identified as the Former Boston Young Men's Christian Union, 48-52 Boylston Street, Boston, Massachusetts (hereafter referred to as the "Site). GZA prepared this Phase I ESA Report Update in conformance with the limitations presented in **Section 14.0** and with the terms and conditions of our proposal dated November 27, 2017, which are included in **Appendix A**. This Phase I ESA Report Update is subject to modification if GZA or any other party develops subsequent information.

1.1 REASON FOR PERFORMING THE PHASE I ENVIRONMENTAL SITE ASSESSMENT UPDATE

GZA understands that this Phase I ESA Update was requested as part of environmental due diligence in support of the financing of the Site. We understand that this Phase I ESA Update is not funded with a federal grant under the US Environmental Protection Agency (EPA) Brownfield Assessment and Characterization Program or the US Small Business Administration, and that an evaluation of controlled substances at the Site is not required.

1.2 PROJECT OBJECTIVES

We designed the Scope of Services described below in general conformance with ASTM International's Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process – E1527-13 (ASTM E1527-13). The objectives of this Phase I ESA Update were:

- To render an opinion as to whether surficial or historical evidence indicates the presence of recognized environmental conditions (RECs) that could result in the presence of hazardous materials in the environment, as defined in ASTM E1527-13; and
- To permit the User of this Phase I ESA Update to satisfy one of the requirements for qualifying for certain Landowner Liability Protections under the Comprehensive Environmental Response, Compensation and Liability Act.

1.3 DEFINITIONS

As defined in ASTM E1527-13:

- A REC indicates "the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment."
- The term "Controlled REC" (CREC) applies to a site that has reached regulatory closure with the implementation of an engineering control, such as an impermeable cap, and/or an institutional control,

such as a deed restriction or property use restriction. If regulatory standards have changed since the prior release was closed and the data used to close the case indicate hazardous substances or petroleum products are or are likely to be on the Site at concentrations greater than their respective regulatory standard(s) for unrestricted land use, then GZA will identify the historical (previously closed) release as a REC.

- A *"de minimis"* condition, as defined by ASTM E1527-13, is "a condition that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies." ASTM E1527-13 does not consider *de minimis* conditions RECs.

- The term "data gap" refers to "a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice." A data gap is only significant if other information and/or professional experience raises reasonable concerns involving the data gap.

- A business environmental risk (BER) is a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated under ASTM E1527-13. Consideration of BERs, for example, may involve addressing one or more non-scope considerations outlined in ASTM E1527-13. Common non-scope environmental business risk items referred to include: asbestos, lead paint, lead and arsenic in drinking water, radon, wetlands, cultural and historic resources, regulatory compliance, industrial hygiene, health and safety, indoor air quality, mold, etc.

1.4 SCOPE OF SERVICES

GZA's Scope of Services consisted of the following activities:

- A review of federal and State regulatory agency databases for the Site and the minimum search distance from the Site;

- Contact with certain local regulatory agencies to inquire about environmental conditions at the Site and in its vicinity;

- A review of the Site history through available Standard Historical Sources;

- A Site reconnaissance to observe current Site conditions for evidence of recognized environmental conditions;

- The completion of a reconnaissance of the Site vicinity;

- A review of adjoining properties to identify the use of hazardous materials or petroleum products;

- Interview(s) with the Key Site Manager (Mr. Joe Fitzpatrick), as well as certain other available occupants and major tenants, regarding the current and past Site usage and facility operations; and

- The preparation of this Phase I ESA Report Update of our findings.

There were no significant deviations from ASTM E1527-13.

Omissions from ASTM E1527-13 include:

- ASTM identifies a title search for environmental liens as a User Responsibility and recommends that the User provide it to the Environmental Professional for review. The Planning Office for Urban Affairs, Inc. did not provide a title search for our review. In GZA's opinion, however, this is not a significant data gap.
- Past owners were not interviewed as part of this assessment. However, it is unlikely that the past owners would provide information not obtained from other sources.

Limitations to GZA's assessment include:

- Due to lack of access, GZA was unable to view the inside of the electric room where multiple transformers are reportedly kept. Mr. Fitzpatrick informed GZA that the transformers were in good condition, were still in use, and were serviced regularly.

This Phase I ESA Update does not include an evaluation of environmental issues or conditions that ASTM E1527-13 considers non-scope considerations.

In addition, it should be noted that, while E1527-13 includes an evaluation of the potential migration of vapors in the subsurface that originate from hazardous substances or petroleum products, it does not require Vapor Encroachment Screening as defined in ASTM guidance E2600.

2.0 DESCRIPTION OF SITE AND VICINITY

GZA obtained the following information resulting from its Site reconnaissance, its research, and from interviews with people knowledgeable about the Site. Photographs depicting Site conditions during GZA's reconnaissance are presented in **Appendix B**.

2.1 SITE LOCATION AND USE

The Site is located in the central part of the City of Boston, Massachusetts (Suffolk County). The Site is bounded by Boylston Street (north), Tamworth Street (west), Lowell Court (southwest), LaGrange Street (southeast), and commercial properties (east). The Site is comprised of one parcel according to the City of Boston Assessor's office, identified as lot #4893-1 as shown on the Assessor's Ward 3 Map for Central Boston.

The topography of the Site is generally flat. Vicinity topography generally slopes northwest towards the Charles River.

Site Information	
Site Address	48-52 Boylston Street Boston, Massachusetts 02116
Site Acreage	0.44
Tax Parcel ID	Lot 4893-1 on Ward 3 Map for Central Boston
Site Property Use(s)	At the time of GZA's Site reconnaissance, the Site was vacant. Previously, a portion of the Site was occupied by the Boston Young Men's Christian Union (BYMCU) as an athletic facility with office spaces within the basement, first, and second floors. The remaining space (the third through fifth floors) was utilized as office spaces and was previously occupied by the Massachusetts Commission for the Blind.
Site Inspection Date	December 6, 2017

A topographic map showing the location of the Site is provided as **Figure 1**.

2.2 DESCRIPTIONS OF SITE AND SITE BUILDINGS

The Site is improved with one approximately 73,000-square-foot, five-story brick and concrete building with a basement on the Site property. The building was originally constructed in 1876 on the northern portion of the Site. Several additions and renovations have been made to the building to create the current extent and layout. The northern portion of the building contains five stories, while the remaining southern portion of the building consists of two stories. The Site building is currently vacant. The third through fifth floors formerly contained offices indicative of the past use by the Massachusetts Commission for the Blind. The first and second floors were formerly used by BYMCU as athletic facilities and office space. The basement contained a laundry room, building heating systems, hot water, electrical equipment, locker rooms and a weight room.

Information regarding the Site building is provided in the table(s) below.

Building	
Feature	**Description**
Year of Construction	1876
Square Feet	73,000 square feet
# Stories/Basement	5 stories The Property has a full basement.
Foundation Type	Concrete masonry unit (CMU), cast in place concrete and stone
Building Superstructure	Combination of concrete, masonry, and structural steel
Upper Floor Superstructure	Wood
Roof Covering	Multi-ply bituminous built-up roofing membrane
Exterior Wall Finishes	Brick veneer, stone cladding, and concrete

Building	
Feature	**Description**
Interior Wall Finishes	Wood, brick, gypsum board, painted/unfinished CMU
Floor Coverings	Wood, carpet, concrete, vinyl tiles
Interior Ceiling Finishes	Wood, gypsum board, suspended ceilings with drop-in ceiling tiles
Heating/Cooling Systems	Two natural gas-fired boilers with heat exchangers and hot water tanks located in the basement for hot water. Two natural gas-fired furnaces also located in the basement provide heat to a forced hot air system. The air handling portion of the system is located on the roof of the second floor on the south side of the building,
Vertical Conveyances	Two hydraulic elevators
Other Relevant Building Features	There are no other relevant building features.

Site Utility Providers	
Service	**Provider**
Electricity	Electrical services are provided by Eversource.
Natural Gas	Natural gas is provided by National Grid.
Drinking Water	Drinking water is provided by the municipality.
Sanitary Sewer Services	Sanitary sewer services are provided by the municipality.
Other Services	There are no other utility services.

2.3 ADJOINING PROPERTIES

The following table lists the properties that adjoin the Site and describes their current use. GZA observed no evidence of storage or usage of hazardous substances and/or petroleum products at adjoining properties during the Site reconnaissance. Due to the property usage of this area, storage and usage of oil and/or hazardous materials at adjoining properties is believed to have been limited to the storage and use of de minimis (i.e. residential) quantities of heating oil, fuel products, paints, and cleaning products.

Direction	Street Address/Location	Name (as applicable) and Current Use
North	38-42 Boylston Street	Mixed Use (commercial and residential)
North	39 Boylston Street	Educational building, parking garage, residential
South	24-58 LaGrange Street	Mixed Use (commercial and residential)
South	47-55 LaGrange Street	Parking lot
East	22 Boylston Street	Mixed Use (commercial and residential)
East	659-677 Washington Street	Mixed Used (commercial and residential)
West	60-62 Boylston Street	Mixed Use (commercial and residential)

2.4 VICINITY PROPERTIES

As part of this Phase I ESA Update, GZA performed a reconnaissance from public properties of the immediate Site vicinity within 1/4 mile of the Site. The Site is located within a highly urbanized area of downtown Boston. Commercial properties were primarily observed in the Site vicinity. GZA did not observe the significant use of oil and hazardous materials (OHMs) at vicinity properties from our viewing points. Refer to Section 7.0 below for review of the various federal and state databases.

3.0 ENVIRONMENTAL SETTING

Section 3.0 provides information regarding the general physiographic, hydrogeologic, hydrologic, and soil conditions in the area of the Site.

Setting	Description
General Physiographic Condition	Based on review of the U.S. Geological Survey (USGS) topographic map of the Boston South Quadrangle, dated 2012, the Site is situated in downtown Boston on nearly level ground between at an approximate elevation of 10 to 20 feet above mean sea level. The topographic gradient near the Site slopes downward in a northwesterly direction towards the Charles River approximately ½ mile from the Site.
Hydrology	No wetlands or waterbodies were identified at the Site.
Hydrogeology and Groundwater Flow	Based on groundwater data compiled as part of a prior GZA study (refer to **Section 5.0**), groundwater at the Site is approximately 10 to 15 feet below the ground surface, and is likely to be impacted by the ongoing basement sump pumping. Based on a review of the USGS topographic map, GZA anticipates that regional groundwater flow is generally in the northwesterly direction toward the Charles River. However, localized flow directions in the vicinity of the Site may vary as a result of underground utilities (e.g., storm drains, sewers, utility conduits) or heterogeneous subsurface conditions. Subsequent references to upgradient and downgradient properties are based on the estimated northwesterly groundwater flow direction.
Soil Type	Based on soil data compiled as part of a prior GZA study (refer to **Section 5.0**), the Site is underlain by urban fill, generally consisting of fine to coarse sand containing varying amounts of gravel, silt, brick, asphalt, concrete, wood, glass, metal, and ash, to depths of up to 19 feet below ground surface. Beneath the urban fill, reports have indicated that stratified clay and silt (generally 60 to 75 feet in total thickness) consisting of interbedded layers of stratified fine sand and silty clay exist which is then underlain by glacial till ranging in thickness from 45 to 44 feet (generally encountered approximately 75 to 85 feet below ground surface).

Setting	Description
Bedrock	Based on a previous report prepared by GZA (**Section 5.0**), bedrock is predicted to be encountered approximately 120 to 130 feet below ground surface at the Site. Bedrock in the Site vicinity was generally described as Argillite which is part of the Cambridge Formation.

4.0 HISTORICAL USE INFORMATION

The Site history was developed from "Standard Historical Sources" as defined in ASTM E1527-13, available files at the City of Boston, including the Fire Department, Assessors Office, and Inspectional Services, and interviews with knowledgeable parties. We include a historical summary in **Section 4.1** of this Phase I ESA Report Update. Specific information obtained from standard historical sources is contained in following subsections, and **Appendix C** includes copies of relevant historical documents.

4.1 SITE AREA HISTORY SUMMARY

Historical information reviewed and observations made as part of this assessment indicates that the Site has been the location of the BYMCU since approximately 1876. The BYMCU used the Site for religious, recreation and education purposes. During this time, the BYMCU leased portions of the building to the Massachusetts Commission for the Blind. The Site has also been used for residential purposes at various times according to historical documentation reviewed during this assessment.

The properties adjoining and in the vicinity of the Site in downtown Boston have historically been utilized for mixed use commercial and residential operations. The properties that directly adjoin the Site are currently commercial or mixed use (commercial and residential). Other commercial and mixed use properties are located across Boylston, LaGrange, and Tamworth Streets. A parking lot is located to the southwest of the Site.

4.2 AERIAL PHOTOGRAPH REVIEW

GZA consulted historical aerial photographs provided by Environmental Data Resources, Inc, (EDR). The table below contains GZA's description of the Site and vicinity properties as shown in the aerial photographs.

Year	Scale	Description of Site	Description of Vicinity
1938, 1946, 1952, 1955	1 = 500	The northern portion of the Site building is depicted.	The surrounding areas are depicted as densely populated with significant infrastructure development.
1960, 1969, 1970	1 = 500	The Site building footprint appears similar to its currently existing condition.	The surrounding areas are depicted as significantly developed. The southerly abutting parking lot is also depicted.

Year	Scale	Description of Site	Description of Vicinity
1978	1 = 500	Due to poor image quality, no significant details can be interpreted.	Due to poor image quality, no significant details can be interpreted.
1980, 1985, 1996	1 = 500	Site building footprint appears similar to its currently existing condition.	No significant changes are depicted.
2008, 2010	1 = 500	No significant changes are depicted.	The southeastern abutting building appears to have been demolished.
2012	1 = 500	No significant changes are depicted.	Construction of a new building is depicted at the southeastern abutting property.

4.3 FIRE INSURANCE MAPS

GZA consulted historical fire insurance maps provided by EDR. The table below contains GZA's description of the Site and vicinity properties as shown in the historical fire insurance maps.

Year	Description of Site	Description of Vicinity
1867	Numerous unlabeled, buildings structures are depicted within the Site property boundary.	Residential properties are depicted abutting the Site to the north and south. Commercial properties and factories abut the Site to the east, beyond Boylston Court, and to the west, beyond Lowell Place.
1885, 1895	The northern portion of the Site is depicted, including the the 5-story building structure currently existing at the Site. The northern portion of the Site is labeled, "Young Men's Christian Union". An elevator, two large oil tanks, a bank, and a labeled, "boiler room" are also depicted within this portion of the building. Buildings located on the southern portion of the Site are labeled for commercial occupations.	The surrounding properties are depicted as occupied by commercial businesses including grocery stores, hat manufacturers, restaurants, hotels, and other miscellaneous retail shops.
1904	Little to no detail depicting the Site is displayed.	A hotel is depicted as abutting the Site to the west, beyond Tamworth Street. No further details of the adjoining properties are depicted.
1909	A third oil tank is depicted alongside the previously existing tanks.	Multiple buildings previously depicted as adjoining the Site to the south appear to have been demolished and replaced with a hotel.

Year	Description of Site	Description of Vicinity
1922	No significant details are depicted.	No significant details are depicted.
1929	A southern addition was added to the Site building.	No significant changes are depicted.
1951	The majority of the individual buildings along the southern portion of the Site are no longer depicted and appear to have been demolished.	The building structures to the south of the Site, beyond LaGrange Street, are no longer depicted and appear to have been demolished and the properties converted to a parking lot.
1964, 1988, 1990, 1992, 1993, 1994, 1995, 1998, 2002	The final southern addition of the Site building is depicted. The Site building footprint appears similar to the its currently existing condition.	The hotel located to the south of the Site and the building structures located to the east of the Site are no longer depicted and appear to have been demolished and the properties converted to parking lots.

4.4 PROPERTY TAX FILES

GZA consulted property tax files available at the Boston Assessors Office.

Information on file at the Assessor's Office indicates that the Site is located at the address of 48 – 52 Boylston Street and consists of approximately 0.44 acres of land improved with one building originally constructed in 1876 with additions and renovations completed at various times resulting in the current building size and layout. The information contained on the Tax Cards for the Site indicates that the building is heated with a natural gas-fired forced hot air heat system, with no mention of the steam boilers. The current Site is owned by the Boston Young Men's Christian Union. Previous ownership information provided by the Assessor's Office is summarized in **Section 4.5**.

4.5 RECORD LAND TITLE RECORDS

The Client did not provide GZA with any abstract of title for its review; therefore, a title search was not included in the scope of this Phase I ESA Update. However, a title agreement (Sprague et al Trs. and DeBlois et al Trs., 5034/506) for the installation of a fuel oil tank for use at the Site, dated September 5, 1928, was provided to GZA for review. The title indicated that an agreement was determined to allow the installation of "oil burning furnaces in the [Site] building" and therefore to install a "storage tank for fuel oil in a private way known as Lowell Court, abutting [the Site] premises".

No records were readily identified suggesting the installation of a underground storage tank (UST) in Lowell Court. During GZA's Site visit, no fill or vent pipes were visible along the southern and western exterior Site walls adjoining the parking lot nor did GZA observe any obvious signs of a UST grave within the Lowell Court area. During GZA's Site reconnaissance, Mr. Fitzpatrick indicated that the land owned by the adjoining property extends slightly under the current building footprint near the area where a tank and tank vault was located within the basement of the Site.

A limited Activity and Use Limitation (AUL) review conducted by EDR (see **Section 7.0**) did not identify any AULs or other institutional or engineering controls associated with the study Site.

The Site is currently owned by Boston Young Men's Christian Union, as identified by the Boston Assessor's Office. GZA reviewed historical ownership records available in the Tax Assessors Office as follows:

Year of Ownership	Deed Book and Page	Owner(s)
September 14, 1993	1850 / 2129	Boston Young Men's Christian Union, Robert Winsor
January 1, 1987	Not Available	Walter H. Trumbull Jr. et al.

4.6 HISTORICAL USGS TOPOGRAPHIC MAPS

GZA reviewed historical USGS topographic maps provided by EDR. The table below contains GZA's description of the Site and vicinity properties as shown on the historical topographic maps.

Year	Description of Site	Description of Vicinity
1893, 1903, 1943, 1944, 1946, 1949, 1950, 1954, 1956, 1970, 1979, 1987, 2012	The Site is located in a significantly developed urban setting. No other Site details are depicted.	The surrounding areas have significant infrastructural development.

4.7 CITY DIRECTORIES

GZA reviewed historical city directories provided by EDR. The table below contains GZA's description of the Site as presented in the historical city directories.

Site		
Year(s)	**Address**	**Site Occupant**
1930, 1935	48 Boylston Street 52 Boylston Street	The Eaton Club; The Country Week; The Union Hall; The Camera Club Great Eastern Bus Lines
1945	48 Boylston Street	The Eaton Club; The Country Week; The Union Hall; The Camera Club; Apollo Club
1950	48 Boylston Street	The Eaton Club; The Country Week; The Union Hall; The Camera Club; Apollo Club
1960	48 Boylston Street	Boston Young Men's Christian Union; The Camera Club; Citizen Training Dept – Boston Juvenile Court; Social Services & Camping; Seamen's Club
1965, 1971	48 Boylston Street	Boston Young Men's Christian Union; The Camera Club; Citizen Training Dept – Boston Juvenile Court; Social Services & Camping; Center Club, Center House Foundation
1975	48 Boylston Street	Boston Young Men's Christian Union; Citizen Training Dept – Boston Juvenile Court; Dr. Samuel Grob

Site		
Year(s)	**Address**	**Site Occupant**
1985	48 Boylston Street	Boston YMC Union; Boylston Chess Club; The Center Club; The Center House; Citizens Training; Ctr for Bld Rsrch
1989	48 Boylston Street 50 Boylston Street	Boston YMC Union; Boylston Chess Club; The Center Club; The Center House; Citizens Training; Ctr for Bld Rsrch Acuptnctre Plus
1992, 1995	48 Boylston Street	Boston Young Men's Christian Union; Center for Blood Research Inc.-Day Treatmt Program
2000	48 Boylston Street	Boston Young Men's Christian Union
2005	48 Boylston Street	Massachusetts Comm For Blind; Young Mens Christian Union
2010	48 Boylston Street	Boston Young Men's Christian Union; Ferguson Industries for Blind; Massachusetts Comm For Blind; Talking Information Center
2014	48 Boylston Street	Boston YMCU; Industries for Blind Inc.; Talking Information Center

4.8 BUILDING DEPARTMENT RECORDS

GZA requested access to records available at the Boston Building Department through a Freedom of Information Act (FOIA) request. Ms. Lori Donovan, Senior Administrative Assistant, of the Fire Marshal Office Boston Fire Prevention Division completed the FOIA request and reported that "there are no records on file for these locations".

The FIOA records requested from the Insepctional Services/Health Department were not available within the timeframe allotted for this Phase I ESA. However, prior documentation provided during the November 2012 Phase I ESA conducted by GZA indicated the following:

"Inspectional Services maintains files related to inspections completed by the City [of Boston], including building, zoning, fire, and health. Records review at the Inspectional Services Department was completed on November 20, 2012. Records for the Site included various types of inspection reports and permits issued for the Site (building, electrical, plumbing, fire and sprinkler system, and alterations). There was no information within any of the files reviewed that would cause concern as a threat to public health, safety, or the environment."

Due to the Site vacancy reported circa 2012-2013 and the report that no significant changes have occurred since the 2016 Phase I ESA Update by Mr. Fitzpatrick, it is GZA's opinion that these records would not have significantly varied since that time.

4.9 OTHER HISTORICAL RECORDS

No other land use records were reviewed as part of this ESA.

5.0 PREVIOUS SITE INVESTIGATIONS

GZA reviewed the November 2012 Phase I ESA previously prepared by GZA. The report provided a historical summary of prior operations at the Site and summarized several historical environmental reports conducted at the Site. The 2012 Phase I ESA concluded that no RECs were identified at that time.

The previous environmental reports associated with GZA's 2012 Phase I ESA are as follows:

"An Environmental Transaction Screen Questionnaire was completed by Nover-Armstrong Associates, Inc. (NAA) dated April 21, 2005. The report identified three aboveground storage tanks (ASTs) present in the basement of the building:

- One 275-gallon AST associated with the electrical transformer room;
- One 275-gallon diesel AST for the emergency generator located on the roof; and
- One 15,000-gallon AST located within a vault that was no longer in use. This AST had historically stored fuel oil used to heat the building.

In October 2000, CYN Environmental Services, Inc. cleaned the inside of the AST removing 1,150 gallons of residual fuel oil and steam cleaned the tank. This AST was on site during the inspection by NAA in 2005.

The NAA report identified two additional previously completed reports:

- Phase I Environmental Site Assessment Hygienetics Environmental, Inc. dated May 25, 2000; and
- Asbestos Abatement The Aulson Company, Inc., dated April 11, 2005.

These reports were not reviewed by GZA during this assessment. However, excerpts from the NAA report regarding these previous reports is provided below:

Hygienetics Environmental, Inc. (HEI) issued a Phase I Environmental Site Assessment Report (the HEI report) for the Site on May 25, 2000. The HEI report detailed Site inspection and records research activities. At the time of HEI's inspection, the Site was occupied by BYMCU. HEI observed oils and hazardous materials (OHMs) in a basement paint storage room and in the fourth floor photography laboratory. OHMs included: paints, paint products, and photographic development chemicals. HEI observed fair to poor housekeeping associated with OHM storage. HEI had recommended appropriate labeling and storage of said materials or disposal. NAA's inspection of the fourth floor (location of the former photo lab) did not reveal evidence of OHMs. This area was occupied by the Massachusetts Commission for the Blind at the time of NAA's study. NAA observed OHMs in the laundry room area of the basement. OHMs included: glass cleaners, bleach, disinfectant, grouts, etc. These OHMs were observed to be stored and managed appropriately.

HEI identified the 15,000-gallon fuel oil AST (in a concrete vault) as a potential recognized environmental condition and recommended its removal. The HEI Report stated that the Site was not listed with federal or State environmental regulatory databases, nor did the Site have any records of spills or releases of oil or hazardous materials.

The Aulson Company, Inc. (Aulson) issued an Asbestos Abatement Report (the Aulson report) for the Site on April 11, 2005. The Aulson report detailed asbestos abatement and AST cleaning activities. Approximately 1,500 linear feet of asbestos-containing pipe insulation, 250 square feet of asbestos-containing transite board, and 17,500 square feet of asbestos-containing vinyl floor tile and associated mastic were removed from the on-Site structure in September and October 2000.

A 15,000-gallon AST located within a concrete vault within the subbasement of the structure is no longer in use and historically stored fuel oil to heat the structure. In October 2000, CYN Environmental Services, Inc. cleaned the inside of the AST. Hazardous waste manifest documentation states AST cleaning activities involved; pumping approximately 1,150 gallons of residual product from the AST and steam cleaning the AST.

NAA did not identify any RECs associated with the Site and no further investigation was recommended.

Additional assessments by GZA were performed at the Site since November 2012 and are listed as follows:

- Limited Asbestos and Hazardous Building Materials Survey, dated December 2012;
- Asbestos and Hazardous Materials Survey, dated December 2016;
- Preliminary Geotechnical Evaluation, Proposed 14-Story Building, dated February 2017; and
- Phase I ESA, dated June 22, 2017.

Each report has been prepared under a separate cover and previously delivered to the Planning Office for Urban Affairs, Inc. Although the geotechnical report did not provide any additional environmental-related information, the two hazardous material survey reports identified the presence of asbestos-containing materials (ACMs) and lead-based paint present within the Site building. These reports concluded that prior to any demolition or renovation activities, a State-licensed asbestos abatement contractor and a qualified hazardous waste contractor should be hired to remove identified ACMs and lead-based paint, respectively, in accordance with applicable state and federal regulations.

The additional Phase I ESA performed by GZA during June 2017 summarized the previous reports conducted at the Site, the current conditions (as of June 2017), and concluded that there was no evidence of RECs, CRECs, or HRECs associated with the Site.

6.0 SITE RECONNAISSANCE

The purpose of GZA's Site reconnaissance was to observe current Site conditions for evidence of recognized environmental conditions that could result in the presence of oil or hazardous materials in the environment at the Site. GZA Geologist I, Ms. Megan Murphy, conducted a Site reconnaissance at the Site on December 6, 2017. Mr. Joe Fitzpatrick, Vice-President of Facilities for St. Francis House Inc., accompanied GZA during the Site reconnaissance. GZA documented its observations and photo-documented pertinent features and/or areas of environmental concern, which we reference in this Phase I ESA Update Report. Selected photographs are included in **Appendix B**, and **Figure 2 - Site Plan** depicts pertinent Site features.

The following table discusses features of potential environmental concern that we identified at the Site.

Item	Yes	No	Description
Aboveground storage tank (AST) systems	✔		Two 275-gallon ASTs were observed within the Site basement. One AST was reported to be associated with a roof-mounted emergency generator. The function of the second AST was unknown. Both ASTs were observed to be empty and neither were reported to be used since the Site became vacant circa 2012-2013. A third AST reportedly exists at the site and is presumed to be the 15,000-gallon AST referenced in previous environmental reports (refer to **Section 5.0**). This tank was not observed during GZA's Site visit. However, GZA did observe a CMU enclosed area located in the basement. GZA was not able to access or observe the inside of this structure. A photograph of the CMU structure is included within **Appendix B**.
Underground storage tank (UST) systems		✔	
Chemical or petroleum storage or handling areas		✔	
Chemical waste or petroleum waste storage or handling areas		✔	
Dumpsters		✔	Miscellaneous debris associated with offices and gym equipment was observed throughout the Site in varying conditions.
Floor drains, trenches, sumps and associated piping	✔		Multiple sumps were observed within the boiler room within the basement. Mr. Fitzpatrick reported that these sumps were to help with occasional flooding. Floor drains were observed within bathrooms, locker rooms, saunas, and steam rooms.
Oil/water separators		✔	
Storm water drains, grates and associated piping		✔	Stormwater drains were observed along adjacent streets.
Drainage swales, culverts, impoundments, and surface water bodies		✔	
Septic systems, leach fields, seepage pits, and dry wells		✔	
Open pipe discharges		✔	
Landfills and solid waste dumping		✔	

Item	Yes	No	Description
Historical fill or other fill material		✔	
Staining or stressed vegetation		✔	
Electrical transformers or capacitors	✔		An electrical room containing numerous transformers exists at the Site. However, GZA was unable to view this room due to lack of access. Mr. Fitzpatrick informed GZA that the transformers were in good condition, were still in use, and were serviced regularly.
Hydraulic equipment, including lifts, elevators, and compactors	✔		Two passenger elevators exist at the Site. One services only two floors while the second services all five floors. Both hydraulic systems appeared to be in fair condition.
Active or inactive production wells		✔	
Monitoring wells, former boreholes, or other evidence of environmental investigations		✔	
Other observations potentially indicative of the presence of RECs		✔	

7.0 REGULATORY DATABASE REVIEW

GZA developed the information in this section based on public information obtained from various federal, State, and local agencies that maintain environmental regulatory databases.

7.1 FEDERAL AND STATE ENVIRONMENTAL RECORD SOURCES

GZA obtained data from federal and State databases contained in a report dated December 7, 2017 provided by EDR, a professional data search company. The following table indicates the databases provided in the EDR database report, the approximate minimum search distances from the Site utilized by GZA in evaluating that database, and the number of properties that appear on the databases within the approximate minimum search distances used. Descriptions of the federal and State databases and the dates that EDR accessed the federal and State database(s) are provided in EDR's report (see **Appendix D**).

Federal and State List	Approximate Minimum Search Distance*	Site and Adjoining Properties	# Sites Within Search Distance	# Potential Sites of Concern
NPL	1 mile	0	0	0
Delisted NPL	1 mile	0	0	0
SEMS	½ mile	0	1	0

Federal and State List	Approximate Minimum Search Distance*	Site and Adjoining Properties	# Sites Within Search Distance	# Potential Sites of Concern
SEMS ARCHIVE	½ mile	0	1	0
RCRIS CORRACTS	1 mile	0	0	0
RCRIS-TSD	½ mile	0	0	0
RCRIS-LQG/SQG	Site and adjoining properties	0	7	0
Federal IC/EC Registries	Site only	0	0	0
ERNS	Site only	0	0	0
State Equivalent NPL	1 mile	0	0	0
State Equivalent CERCLIS	½ mile	1	83	0
SWMF	½ mile	0	0	0
State Landfill and/or Solid Waste Disposal Site	½ mile	0	0	0
Leaking Underground Storage Tanks (LUSTs)	½ mile	1	31	0
Leaking Aboveground Storage Tanks (LASTs)	½ mile	0	10	0
Registered USTs	Site and adjoining properties	0	3	0
State IC/EC Registries	Site only	0	0	0
Voluntary/Brownfield Cleanup Program Sites	½ mile	0	0	0

* The approximate minimum search distance indicates the minimum distance measured from the nearest Site boundary for which Environmental Data Resources, Inc, performed the database review.

7.2 LISTINGS FOR SITE AND ADJOINING PROPERTIES

The Site is not listed by EDR on their provided databases.

However, the Site was listed during the June 2017 Phase I ESA on the lead database. The June 2017 Phase I ESA stated, "[a]lthough not covered in this Phase I ESA, the EDR Radius Map Report indicates that the Site was inspected for lead during February 2016 and was positively identified. This was confirmed via GZA's prior Asbestos and Hazardous Materials Survey report dated December 2016."

The following databases lists the Site adjoining property to the south: SHWS, LUST. A brief description is provided in the table below.

Target Property Summary

Database	Site Name	Address	Dist. (mi) / Dir.	Elev. diff. (ft)	Comments
SHWS, LUST	No Location Aid	24 LaGrange Street	0.014 / South-southeast	17	Release Tracking Number (RTN) 3-0031734. The source of contamination located at this property was a #2 fuel oil UST. This property is currently filed with a Response Action Outcome (RAO) of "A2 - A permanent solution has been achieved. Contamination has not been reduced to background" as of November 4, 2013.

7.3 LISTINGS FOR OTHER VICINITY PROPERTIES

Approximately 83 properties were identified as hazardous waste sites and 31 properties were identified as LUST facilities within a half mile of the Site. Due to the distance and direction from the Site and their respective RAOs, these identified properties are not expected to have impacted soil or groundwater at the Site.

7.4 EVALUATION OF UNMAPPED PROPERTIES

GZA also reviewed the list of "orphan" sites, which are properties with insufficient address information to allow the mapping software to plot a location. Based on the incomplete descriptions provided in the database summary, it does not appear that any of the listed properties could impact the Site.

7.5 REGULATORY FILE REVIEW

GZA accessed the Searchable Sites and Reportable Release Online Databases provided by Massachusetts Department of Environmental Protection (MADEP) regarding the Former Boston Young Men's Christian Union located at 48-52 Boylston Street, Boston, Massachusetts and the abutting properties. Neither the Site or abutting properties were listed.

8.0 INTERVIEWS

GZA reviewed the available information provided by the following government agencies as part of this assessment in addition to reviewing previous assessments performed at the Site (refer to **Section 4.8**):

- Assessor's Office
- Inspectional Services

- Clerk's Office
- Fire Department
- Engineering Department
- Department of Planning and Community Development
- MADEP

9.0 USER-PROVIDED INFORMATION

GZA requested information from the Client regarding title information, environmental liens, Activity and Use Limitations, and specialized knowledge or commonly known information regarding the Site and, if applicable, the reason for a significantly discounted purchase price. Provided in **Appendix E** is a copy of the User Questionnaire.

10.0 NON-ASTM E1527-13 CONSIDERATIONS

This Phase I ESA Update does not include an evaluation of environmental issues or conditions that ASTM E1527-13 stipulates as non-scope considerations. Previous non-ASTM E1527-13 reports, listed within **Section 5.0**, were completed by GZA and submitted to you under a separate cover.

11.0 FINDINGS AND CONCLUSIONS

GZA performed a Phase I ESA Update in general conformance with the scope and limitations of ASTM E1527-13 for the property located at 48-52 Boylston Street, Boston, Massachusetts. Any exceptions to, or deletions from, this practice are described in **Section 1.4** of this Phase I ESA Update Report.

11.1 RECOGNIZED ENVIRONMENTAL CONDITIONS

In GZA's opinion, this Phase I ESA Update revealed no evidence of RECs in connection with the Site.

11.2 CONTROLLED RECOGNIZED ENVIRONMENTAL CONDITIONS

In GZA's opinion, this Phase I ESA Update revealed no evidence of CRECs in connection with the Site.

11.3 HISTORICAL RECOGNIZED ENVIRONMENTAL CONDITIONS

In GZA's opinion, this Phase I ESA Update revealed no evidence of HRECs in connection with the Site.

11.4 DE MINIMIS CONDITIONS

This Phase I ESA Update revealed no evidence of *de minimis* conditions in connection with the Site.

11.5 DATA GAPS AND THEIR SIGNIFICANCE

In GZA's opinion, this Phase I ESA Update encountered no data gaps, as defined by ASTM E1527-13.

11.6 NON-ASTM E1527-13 CONSIDERATIONS

No non-ASTM E1527-13 considerations were evaluated as part of GZA's Scope of Services.

12.0 REFERENCES

EDR, December 7, 2017. Certified Sanborn® Map Report, 48-52 Boylston Street, Boston, MA.

EDR, December 7, 2017. EDR Aerial Photo Decade Package, 48-52 Boylston Street, Boston, MA.

EDR, December 7, 2017. EDR-City Directory Image Report, 48-52 Boylston Street, Boston, MA.

EDR, December 7, 2017. EDR Historical Topo Map Report, 48-52 Boylston Street, Boston, MA.

EDR, December 7, 2017. Radius Map Report with Geocheck™, 48-52 Boylston Street, Boston, MA.

13.0 ENVIRONMENTAL PROFESSIONAL OPINION

I declare, to the best of my professional knowledge and belief, that I meet the definition of Environmental Professional as defined in §312.10 of 40 CFR 12; that I have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property; and that I have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR 312. The signature of the Environmental Professional is contained on the cover letter of this Phase I ESA Update Report. The qualifications of the Environmental Professional are provided in **Appendix F**.

14.0 LIMITATIONS

GZA prepared this Phase I ESA Update Report on behalf of, and for the exclusive use of Planning Office for Urban Affairs, Inc. for the stated purposes for the Site identified in this Phase I ESA Update Report.

Use of this Phase I ESA Update Report, in whole or in part, at other locations, or for other purposes, might lead to inappropriate conclusions, and we do not accept any responsibility for the consequences of such use. Further, reliance by any party not identified in the agreement, for any use, shall be at that party's sole risk, and without any liability to GZA.

GZA performed its services to render an opinion on the presence of RECs in connection with the Site. We performed our services using that degree of skill and care ordinarily exercised by qualified professionals performing the same type of services, at the same time, under similar conditions, at the same or a similar property. We make no warranty, express or implied.

Our findings and conclusions are based on the work conducted as part of the Scope of Services set forth in this Phase I ESA Update Report, and reflect our professional judgment. Our findings and conclusions should

not be considered as scientific certainties or engineering certainties, but rather as our professional opinions concerning the limited data gathered during the course of our work.

No environmental site assessment can eliminate the uncertainty of the possible presence of RECs. This Phase I ESA Update Report was prepared to help reduce, not to eliminate, such uncertainties. Consistent with ASTM E1527-13, we developed our opinions in light of the constraints imposed by time and budget.

As indicated within this Phase I ESA Update Report, we observed conditions at the Site and at adjoining properties for evidence of RECs at the Site. Where access to portions of the Site or to structures on the Site was unavailable or limited, GZA renders no opinion as to the presence of hazardous substances, hazardous waste, or petroleum products, or to the presence of indirect evidence relating to these materials, in those portions of the Site or structure. In addition, GZA renders no opinion as to the presence of hazardous substances, hazardous waste, or petroleum products, or to the presence of indirect evidence relating to these materials, where direct observation of the interior walls, floors, and/or ceilings of a structure on the Site was obstructed by objects and/or coverings on and/or over such surfaces. We based our opinions on such limited observations. Additionally, some activities or events impacting environmental conditions at the Site or on adjoining properties might have been transient and not observable at the time of GZA's site reconnaissance.

We relied upon information made available by federal, state, and local authorities, the key site manager, and others. We did not attempt to independently verify the accuracy or completeness of that information. We noted inconsistencies in this information within the Report.

The lender, seller, buyer, or other parties that might become involved with the Site might develop additional opinions or information regarding the presence or absence of RECs at the Site. Such additional opinions or information might not fully support the opinions provided in this Phase I ESA Update Report. In the event such additional opinions or information is developed, we recommend retaining GZA to review this material so that we have the opportunity to evaluate and modify, as necessary, the opinions provided in this Phase I ESA Update Report.

Unless otherwise specified within this Phase I ESA Update Report, we have rendered no opinion on the compliance of Site conditions or activities with federal, state, and local codes, laws, or regulations.

GZA based the opinions expressed in this Phase I ESA Update Report on conditions observed during the course of our work on this Site; these conditions might change over time. ASTM E1527-13 specifies that observations and opinions are only valid for 180 days from the date the underlying information is developed. After 180 days, portions of this Phase I ESA Update Report may need to be updated.