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Project Notification Form

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# TAJ HOTEL BOSTON



Submitted to:  
**Boston Planning and Development Agency**  
One City Hall Square  
Boston, MA 02201

Submitted by:  
**IREP Newbury Hotel, LLC,**  
an affiliate of Highgate Hotels  
870 7<sup>th</sup> Avenue, 2<sup>nd</sup> Floor  
New York, NY 10019

Prepared by:  
**Epsilon Associates, Inc.**  
3 Mill & Main Place, Suite 250  
Maynard, Massachusetts 01754

In Association with:  
**CBT Architects**  
**Commercial Construction Consulting, Inc.**  
**Columbia Construction Company**  
**Goulston & Storrs PC**  
**Jones Lang LaSalle Americas, Inc.**  
**Nitsch Engineering, Inc.**  
**Vanasse Hangen Brustlin, Inc.**

March 11, 2019

**Epsilon**  
ASSOCIATES INC.

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March 11, 2019



## Table of Contents

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# Table of Contents

---

<b>1.0</b>	<b>GENERAL INFORMATION AND PROJECT DESCRIPTION</b>	<b>1-1</b>
1.1	Introduction	1-1
1.2	Project Identification and Team	1-1
1.3	Public Benefits	1-3
1.4	Legal Information	1-3
1.4.1	Legal Judgements Adverse to the Proposed Project	1-3
1.4.2	History of Tax Arrears on Property	1-3
1.4.3	Site Control/Public Easements	1-3
1.5	Public Participation	1-3
1.6	Project Description	1-4
1.6.1	Project Site	1-4
1.6.2	Area Context	1-4
1.6.3	Proposed Project	1-4
1.7	City of Boston Zoning	1-11
1.7.1	Site Zoning	1-11
1.7.2	Article 80 – Large Project Review	1-11
1.8	Anticipated Permits	1-12
1.9	Schedule	1-12
<b>2.0</b>	<b>TRANSPORTATION</b>	<b>2-1</b>
2.1	Introduction	2-1
2.2	Summary of Key Findings and Benefits	2-1
2.3	Project Description	2-2
2.3.1	Site Access and Circulation	2-3
2.4	Study Methodology	2-3
2.4.1	Traffic Study Area	2-3
2.4.2	Analysis Conditions	2-3
2.5	2018 Existing Conditions	2-5
2.5.1	Roadways	2-5
2.5.2	Data Collection	2-5
2.5.3	Pedestrian Environment	2-6
2.5.4	Bicycle Environment	2-9
2.5.5	Public Transportation	2-9
2.5.6	Existing Parking and Carshare Locations	2-9
2.5.7	Existing Hotel Events	2-18
2.5.8	Existing Valet Operations	2-18
2.5.9	Existing Loading Operations	2-18

## Table of Contents (Continued)

---

2.6	Future Transportation Conditions	2-18
2.6.1	2023 No Build Condition	2-18
2.6.1.1	General Background Growth	2-19
2.6.1.2	Area Development Projects	2-19
2.6.1.3	2023 No-Build Condition Traffic Volumes	2-19
2.6.2	2023 Build Condition	2-20
2.6.2.1	Project-Generated Trips	2-20
2.6.2.2	Vehicle Trip Distribution	2-25
2.6.2.3	Valet Drop-off Relocation	2-25
2.6.2.4	2023 Build Condition Traffic Volume	2-25
2.6.2.5	Future Vehicle Parking	2-32
2.6.2.6	Future Pedestrian Environment and Accessibility	2-32
2.6.2.7	Future Bicycle Access	2-32
2.6.2.8	Future Loading and Service	2-32
2.6.2.9	Future Hotel Events	2-32
2.7	Transportation Demand Management	2-33
2.8	Traffic Operations Analysis	2-33
2.8.1	Signalized Capacity Analysis	2-33
2.9	Construction Management	2-35
2.10	Transportation Access Plan Agreement	2-35
<b>3.0</b>	<b>ENVIRONMENTAL REVIEW COMPONENT</b>	<b>3-1</b>
3.1	Wind	3-1
3.2	Shadow	3-1
3.2.1	Introduction and Methodology	3-1
3.3	Daylight Analysis	3-17
3.4	Solar Glare	3-17
3.5	Air Quality	3-17
3.5.1	Introduction	3-17
3.5.2	BPDA Air Quality Analysis Requirements	3-17
3.5.3	National Ambient Air Quality Standards and Background Concentrations	3-18
3.5.3.1	National Ambient Air Quality Standards	3-18
3.5.3.2	Background Concentration	3-19
3.5.4	Mobile Sources	3-21
3.5.4.1	Methodology	3-21
3.5.4.2	Air Quality Results	3-23
3.5.4.3	Conclusions	3-26

## Table of Contents (Continued)

---

3.5.5	Stationary Sources	3-26
3.6	Stormwater/Water Quality	3-28
3.7	Flood Hazard Zones/Wetlands	3-28
3.8	Geotechnical Impacts	3-28
3.9	Solid and Hazardous Waste	3-29
3.9.1	Hazardous Waste	3-29
3.9.2	Operation Solid and Hazardous Waste Generation	3-29
3.9.3	Recycling	3-30
3.10	Noise Impacts	3-30
3.11	Construction Impacts	3-30
3.11.1	Introduction	3-30
3.11.2	Construction Methodology/Public Safety	3-31
3.11.3	Construction Schedule	3-31
3.11.4	Construction Staging/Access	3-32
3.11.5	Construction Mitigation	3-32
3.11.6	Construction Employment and Worker Transportation	3-32
3.11.7	Construction Truck Routes and Deliveries	3-33
3.11.8	Construction Air Quality	3-33
3.11.9	Construction Noise	3-33
3.11.10	Construction Waste	3-34
3.11.11	Protection of Utilities	3-34
3.11.12	Rodent Control	3-35
<b>4.0</b>	<b>SUSTAINABLE DESIGN AND CLIMATE CHANGE PREPAREDNESS</b>	<b>4-1</b>
4.1	Green Building	4-1
4.2	Sustainable Design	4-1
4.2.1	Location and Transportation (LT)	4-1
4.2.2	Sustainable Sites (SS)	4-2
4.2.3	Water Efficiency (WE)	4-2
4.2.4	Energy and Atmosphere (EA)	4-3
4.2.5	Materials and Resources (MR)	4-5
4.2.6	Indoor Environmental Quality (IEQ)	4-6
4.2.7	Innovation and Design (ID)	4-7
4.2.8	Regional Priority (RP)	4-7
4.3	Climate Change Resilience	4-8
4.3.1	Introduction	4-8
4.3.2	Extreme Heat Events	4-8
4.3.3	Rain Events	4-8
4.3.4	Drought Conditions	4-8
4.4	Renewable Energy	4-8

## Table of Contents (Continued)

---

<b>5.0</b>	<b>URBAN DESIGN</b>	<b>5-1</b>
<b>6.0</b>	<b>HISTORIC AND ARCHAEOLOGICAL RESOURCES</b>	<b>6-1</b>
6.1	Introduction	6-1
6.2	Historic Resources	6-1
6.2.1	Historic Resources on the Project Site	6-1
6.2.2	Historic Resources in the Vicinity of the Project Site	6-2
6.2.2.1	Historic Districts	6-2
6.2.2.2	Historic Properties	6-5
6.3	Archaeological Resources on the Project Site	6-9
6.4	Impacts to Historic Resources	6-9
6.4.1	Urban Design	6-9
6.4.2	Shadow Impacts to Historic Resources	6-9
6.5	Consistency with Other Historic Reviews	6-10
6.5.1	Boston Landmarks Commission Article 80 Review	6-10
6.5.2	Back Bay Architectural Commission Review	6-10
6.5.3	Massachusetts Historical Commission	6-10
6.6	Conclusion	6-10
<b>7.0</b>	<b>INFRASTRUCTURE</b>	<b>7-1</b>
7.1	Introduction	7-1
7.2	Wastewater Infrastructure	7-1
7.2.1	Existing Sewer System	7-1
7.2.2	Projected Sanitary Sewer Flow	7-2
7.2.3	Sanitary Sewer Connection	7-2
7.2.3.1	Proposed Conditions	7-4
7.3	Water System	7-5
7.3.1	Existing Water System	7-5
7.3.1.1	Existing Water Capacity	7-5
7.3.2	Anticipated Water Consumption	7-5
7.3.3	Existing Water Capacity and Impacts	7-7
7.3.4	Proposed Water Service	7-7
7.4	Storm Drainage Infrastructure	7-7
7.4.1	Existing Storm Drainage System	7-7
7.4.2	Proposed Drainage Conditions	7-8
7.5	Mitigation Measures	7-8
7.5.1	Water Quality Impact	7-9
7.5.2	DEP Stormwater Management Policy Standards	7-9

## Table of Contents (Continued)

---

7.6	Smart Utilities	7-12
7.7	Electrical Services	7-12
7.8	Telecommunications System	7-12
7.9	Natural Gas Systems	7-12
7.10	Utility Protection During Construction	7-13
7.11	Fire Prevention	7-13
<b>8.0</b>	<b>COORDINATION WITH OTHER GOVERNMENTAL AGENCIES</b>	<b>8-1</b>
8.1	Architectural Access Board Requirements	8-1
8.2	Massachusetts Environmental Policy Act (MEPA)	8-1
8.3	Massachusetts Historical Commission	8-1
8.4	Boston Landmarks Commission (BLC) Article 80 Review	8-1
8.5	Back Bay Architectural Commission Review	8-1
8.6	Boston Parks and Recreation	8-1

## List of Appendices

---

Attachment A	Site Survey
Attachment B	Floor Plans
Attachment C	Transportation
Attachment D	Air Quality
Attachment E	Climate Change Checklist
Attachment F	Accessibility Checklist

## List of Figures

---

Figure 1-1	Aerial Locus Map	1-5
Figure 1-2	Site Plan	1-6
Figure 1-3	Existing Conditions	1-7
Figure 1-4	Proposed Conditions	1-8
Figure 1-5	Existing Conditions – Restaurant	1-9
Figure 1-6	View of the Rooftop Restaurant Space from Arlington and Boylston Streets	1-10
Figure 1-7	Arlington Street Section	1-13
Figure 1-8	Existing Newbury Street Section	1-14
Figure 1-9	Proposed Newbury Street Entry Section	1-15
Figure 1-10	Existing and Proposed Rooftop Restaurant Sections	1-16
Figure 1-11	Existing Arlington Street Elevation	1-17
Figure 1-12	Existing Newbury Street Elevation	1-18
Figure 1-13	Proposed Newbury and Arlington Streets Elevations	1-19



## List of Figures (Continued)

---

Figure 2-1	Study Area Intersections	2-4
Figure 2-2	2018 Existing Conditions Vehicle Volumes Morning Peak Hour (8:00 – 9:00 a.m.)	2-7
Figure 2-3	2018 Existing Conditions Vehicle Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-8
Figure 2-4	2018 Existing Conditions Pedestrian Volumes Morning Peak Hour (8:00 – 9:00 a.m.)	2-10
Figure 2-5	2018 Existing Conditions Pedestrian Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-11
Figure 2-6	2018 Existing Conditions Bicycle Volumes Morning Peak Hour (8:00 – 9:00 a.m.)	2-12
Figure 2-7	2018 Existing Conditions Bicycle Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-13
Figure 2-8	Car Sharing and Blue Bike Stations	2-14
Figure 2-9	Public Transportation	2-15
Figure 2-10	Curb Regulations	2-16
Figure 2-11	Off-Street Public Parking Facilities	2-17
Figure 2-12	2023 No-Build Conditions Vehicle Volumes Morning Peak Hour (8:00 -9:00 a.m.)	2-21
Figure 2-13	2023 No-Build Conditions Vehicle Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-22
Figure 2-14	Project Trip Distribution – Morning Peak Hour	2-26
Figure 2-15	Project Trip Distribution – Evening Peak Hour	2-27
Figure 2-16	Project Generated Trips Vehicle Volumes Morning Peak Hour (8:00 – 9:00 a.m.)	2-28
Figure 2-17	Project Generated Trips Vehicle Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-29
Figure 2-18	2023 Build Conditions Vehicle Volumes Morning Peak Hour (8:00 – 9:00 a.m.)	2-30
Figure 2-19	2023 Build Conditions Vehicle Volumes Evening Peak Hour (4:45 – 5:45 p.m.)	2-31
Figure 3-1	Shadow Study: March 21, 9:00 a.m.	3-2
Figure 3-2	Shadow Study: March 21, 12:00 p.m.	3-3
Figure 3-3	Shadow Study: March 21, 3:00 p.m.	3-4
Figure 3-4	Shadow Study: March 21, 6:00 p.m.	3-5
Figure 3-5	Shadow Study: June 21, 9:00 a.m.	3-6
Figure 3-6	Shadow Study: June 21, 12:00 p.m.	3-7
Figure 3-7	Shadow Study: June 21, 3:00 p.m.	3-8
Figure 3-8	Shadow Study: June 21, 6:00 p.m.	3-9

## List of Figures (Continued)

---

Figure 3-9	Shadow Study: September 21, 9:00 a.m.	3-10
Figure 3-10	Shadow Study: September 21, 12:00 p.m.	3-11
Figure 3-11	Shadow Study: September 21, 3:00 p.m.	3-12
Figure 3-12	Shadow Study: September 21, 6:00 p.m.	3-13
Figure 3-13	Shadow Study: December 21, 9:00 a.m.	3-14
Figure 3-14	Shadow Study: December 21, 12:00 p.m.	3-15
Figure 3-15	Shadow Study: December 21, 3:00 p.m.	3-16
Figure 3-16	Intersection of Arlington Street and Commonwealth Avenue	3-24
Figure 3-17	Intersection of Arlington Street and Boylston Street	3-25
Figure 5-1	Concept Imagery - Newbury Street Entrance	5-3
Figure 5-2	Concept Imagery – Restaurant	5-4
Figure 6-1	Historic Resources	6-8
Figure 7-1	Existing BWSC Sanitary Sewer System	7-3
Figure 7-2	Existing BWSC Water Systems	7-6

## List of Tables

---

Table 1-1	Project Program	1-11
Table 1-2	Anticipated Permits and Approvals	1-12
Table 2-1	Project Development Program	2-2
Table 2-2	Newbury Street Northern Sidewalk Pedestrian Volumes (adjacent to the Taj Hotel)	2-6
Table 2-3	Project Area MBTA Service	2-9
Table 2-4	Trip Generation Land Use Codes	2-20
Table 2-5	Unadjusted Project Generated Vehicle Trips	2-23
Table 2-6	Project Generated Person Trips	2-23
Table 2-7	Mode Share	2-24
Table 2-8	Trip Generation by Mode	2-24
Table 2-9	Project Trip Distribution	2-25
Table 2-10	Level of Service Criteria	2-33
Table 2-11	Signalized Intersection Level of Service (LOS) Summary – Morning Peak Hour	2-34
Table 2-12	Signalized Intersection Level of Service (LOS) Summary – Evening Peak Hour	2-34

## List of Tables (Continued)

---

Table 3-1	National (NAAQS) and Massachusetts (MAAQS) Ambient Air Quality Standards	3-19
Table 3-2	Observed Ambient Air Quality Concentrations and Selected Background Levels	3-20
Table 3-3	Summary of Microscale Modeling Analysis (Existing 2018)	3-26
Table 3-4	Summary of Microscale Modeling Analysis (No-Build 2023)	3-27
Table 3-5	Summary of Microscale Modeling Analysis (Build 2023)	3-27
Table 6-1	State and National Register Resources on and in the Vicinity of the Project Area	6-7
Table 7-1	Proposed Project Wastewater Generation	7-2
Table 7-2	Sewer Hydraulic Capacity Analysis	7-4
Table 7-3	Existing Hydrant Flow Data	7-7

## Chapter 1

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### General Information and Project Description

## 1.0 GENERAL INFORMATION AND PROJECT DESCRIPTION

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### 1.1 Introduction

IREP Newbury Hotel, LLC, an affiliate of Highgate Hotels (the Proponent) proposes to conduct interior renovations for the Taj Hotel Boston (or the Hotel) that include updating the existing hotel guest rooms, creating 16 additional guest rooms, and permanently enclosing the existing seasonal rooftop restaurant (the Project). The Project also proposes to relocate the main entrance of the hotel from Arlington Street to Newbury Street. This new main entrance and related improvements will enhance the public realm by creating a raised, accessible entry, illuminating the public right-of-way, refurbishing the existing canopy on Arlington Street, adding street trees, and adjusting the existing grade change of the sloped sidewalk in front of the hotel to improve overall access.

This Expanded Project Notification Form (PNF) is being submitted to the Boston Redevelopment Authority (BRA), doing business as Boston Planning and Development Agency (herein, the BPDA), to initiate review of the Project under Article 80B of the Zoning Code, Large Project Review. The PNF offers a description of the Project, its minimal impacts and proposed mitigation strategies, and its benefits to the City of Boston.

### 1.2 Project Identification and Team

Address/Location:	15 Arlington Street
Proponent:	IREP Newbury Hotel, LLC 870 7 <sup>th</sup> Avenue, 2 <sup>nd</sup> Floor New York, NY 10019(972) 444-9700 Christina Zimmer
Real Estate Consultant	Jones Lang LaSalle Americas, Inc. 1 Post Office Square Boston, MA 02109 (617) 523-8000 Louis Molinini
Architect:	CBT Architects 110 Canal Street Boston, MA 02114 (617) 262-4354 Li Wang James Saunders

Landscape Architect	Carol R. Johnson Associates, Inc. 21 Custom House Street, 3 <sup>rd</sup> Floor Boston, MA 02110 (617) 896-2500 Rick Williams
Legal Counsel:	Goulston & Storrs 400 Atlantic Avenue Boston, MA 02110 (617) 482-1776 David Linhart
Civil Engineer	Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108 (617) 338-0063 John Schmid
Permitting Consultant:	Epsilon Associates, Inc. 3 Mill & Main Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Cindy Schlessinger Fiona Vardy
Transportation and Parking Consultant:	Vanasse Hangen Brustlin, Inc. 99 High Street, 10 <sup>th</sup> Floor Boston, MA 02110 (617) 728-7777 Ryan White
Mechanical, Electrical and Plumbing Engineer	Commercial Construction Consulting, Inc. 313 Congress Street Boston, MA 02210 (617) 330-9390 Gregory Gilson
Sustainability Consultant	Columbia Construction Company 100 Riverpark Drive North Reading, MA 01864 (978) 664-9500 Conor Maguire

Construction Manager                      Columbia Construction Company  
100 Riverpark Drive  
North Reading, MA 01864  
(978) 664-9500  
Mike Hamill

### **1.3 Public Benefits**

The Project will generate numerous public benefits for the surrounding neighborhood and the City of Boston as a whole. It will create a welcoming and vibrant corner that anchors the building to the entrance of Newbury Street at this important location and enhances the character of the downtown area. In addition to improving the public realm at this noteworthy location, the Project will generate public benefits that include improvements to the urban design characteristics and aesthetic character of the Hotel and its surroundings, the reconstruction of the existing sloped sidewalk, introducing a new seating area with art installations and new street trees, and the creation of approximately 90 new construction jobs.

### **1.4 Legal Information**

#### ***1.4.1 Legal Judgements Adverse to the Proposed Project***

To the Proponent's knowledge, there are no legal judgments or actions pending concerning the Project.

#### ***1.4.2 History of Tax Arrears on Property***

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

#### ***1.4.3 Site Control/Public Easements***

The Proponent owns the Project site pursuant to a deed recorded with the Suffolk County Registry of Deeds in Book 59401, Page 35. There are no public easements into, through, or surrounding the Project site that would impair the advancement of the Project.

### **1.5 Public Participation**

The Project team has provided extensive community outreach efforts for the proposed Project including community meetings in the Back Bay neighborhood, and presentations before the elected officials. The Proponent will continue to meet with public agencies, neighborhood representatives, local business organizations, abutting property owners, and other interested parties, and will follow the requirements of Article 80 pertaining to the public review process.

## 1.6 Project Description

### 1.6.1 *Project Site*

The approximately 15,063 sf (0.35-acre) Project site is located in the Back Bay neighborhood of Boston. It is bounded by Public Alley 437 and the Carlton House of Boston (or the Carlton) to the north, Arlington Street to the east, Newbury Street to the south and commercial retail properties to the west. The Project site currently includes the 195-room Taj Hotel which has been used for hotel purposes since its construction in 1927. See Figure 1-1 for an aerial locus map and Figure 1-2 for a site plan. Figure 1-3 includes photographs of the existing conditions on the Project site. Figure 1-4 shows the proposed relocation of the Hotel entrance to Newbury Street.

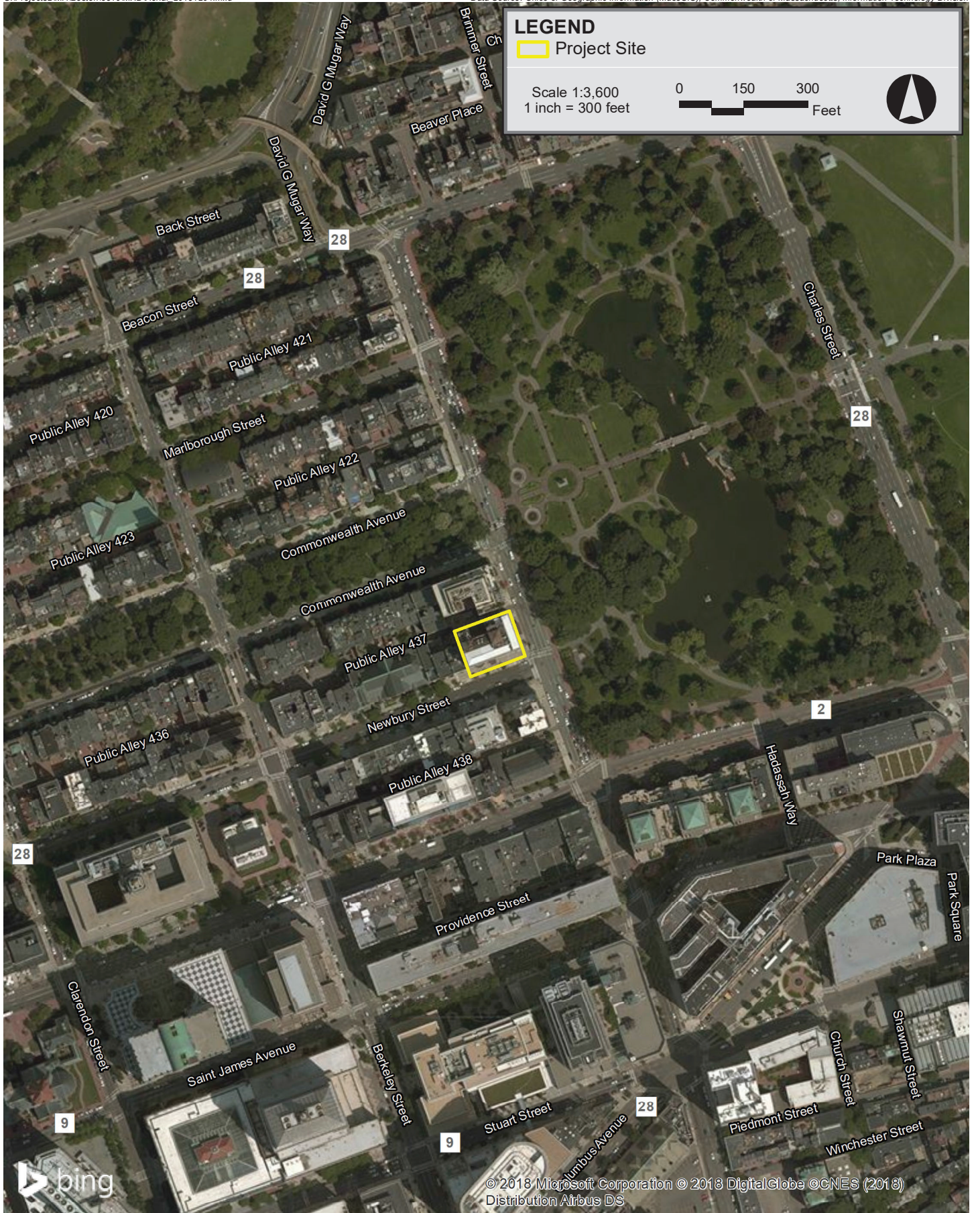
### 1.6.2 *Area Context*

The Project site is located in the Back Bay neighborhood of Boston on the corner of Arlington and Newbury streets, prominent locations in the downtown area. To the east of the Project is the Boston Public Garden and Boston Common. Immediately to the west of the Project site on Newbury Street are commercial retail properties. The site is located within one-tenth mile (about a two-minute walk) of the MBTA Arlington Green Line station, and is less than one-half mile to the MBTA Boylston Green Line station. The area is an attraction in downtown Boston and includes numerous restaurants, shops, educational facilities as well as cultural resources such as the Boston Public Garden and the Boston Common.

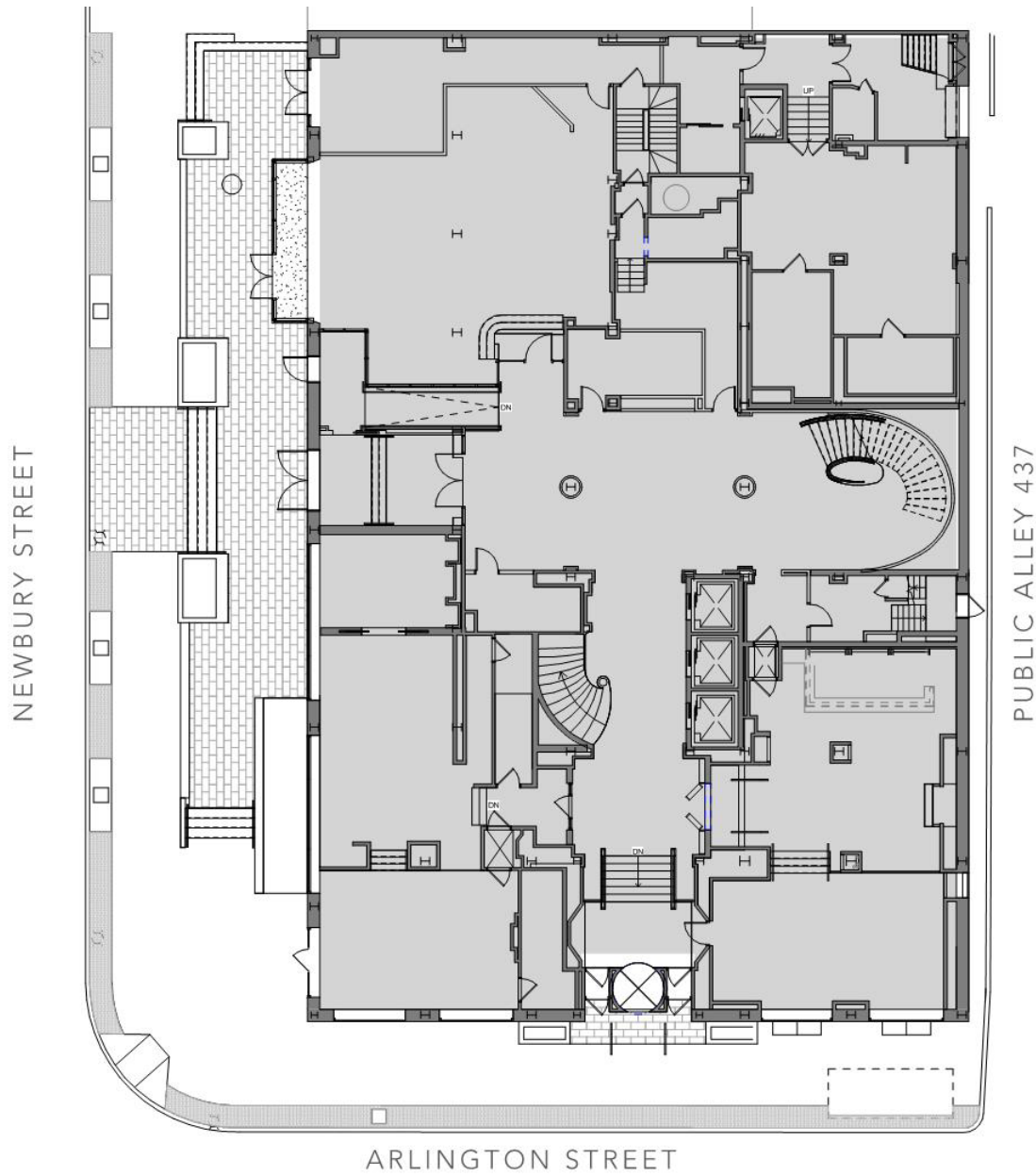
### 1.6.3 *Proposed Project*

The Project includes the reconfiguration of the main entrance of the Hotel from the current location on Arlington Street to the building's frontage on Newbury Street. See Figure 1-4. Additional renovations include permanently enclosing the existing seasonal rooftop restaurant, updating the existing 195 hotel rooms and adding 16 new hotel rooms for a total of 211 rooms. See Figures 1-5 and 1-6 showing the restaurant concept and views of the restaurant. Figures 1-7 through 1-13 at the end of this chapter provide additional sections and elevations. The Project also includes the existing bridge over the Public Alley connecting to the Carlton House. The Proponent plans to clean the underbelly of the bridge and conduct other minor maintenance items, but there are no proposed changes to the bridge as part of the Project. Attachment A includes a site survey and Attachment B includes floor plans. Table 1-1 includes the Project program.





Taj Hotel Boston Boston, Massachusetts



Taj Hotel Boston Boston, Massachusetts



Figure 1-2  
Site Plan





Taj Hotel Boston Boston, Massachusetts



Taj Hotel Boston Boston, Massachusetts



**Figure 1-5**  
*Existing Conditions - Restaurant*

# ARLINGTON / BOYLSTON VIEW



Taj Hotel Boston Boston, Massachusetts

**cbt**

**Figure 1-6**  
*View of the Rooftop Restaurant Space from Arlington and Boylston Streets*

**Table 1-1 Project Program**

Project Element	Approximate Dimension <sup>1</sup>	
	Existing Program	Proposed Program
Hotel	195 keys / 116,554 sf	211 keys / 124,361 sf
Meeting / Function Space	42,168 sf	21,566 sf
Restaurant	2,881 sf / 106 seats <sup>2</sup>	9,887 sf / 294 seats <sup>4</sup>
Retail	2,704 sf <sup>3</sup>	4,264 sf <sup>5</sup>
Total Square Footage	164,307 sf	160,078 sf

<sup>1</sup> Approximate square footages are subject to further design.

<sup>2</sup> Existing restaurant space is comprised of the lobby bar (50 seats) and the lobby café (56 seats).

<sup>3</sup> Existing retail is comprised of Tiffany’s first and fifth floor space.

<sup>4</sup> Proposed restaurant space is comprised of a lobby bar (54 seats) and the rooftop restaurant (240 seats).

<sup>5</sup> Proposed retail is comprised of Tiffany’s first floor space.

## 1.7 City of Boston Zoning

### 1.7.1 Site Zoning

The Project site is subject to Boston Proper/Subdistrict B-8 (General Business) underlying zoning, within the Restricted Parking Overlay District (RPOD) and the Groundwater Conservation Overlay District (GCOD). However, the existing hotel was built prior to the adoption of the Boston Zoning Code. The Zoning Board of Appeal approved a structural alteration to create the existing bridge to the adjacent Carlton House over Public Alley No. 437 in a decision issued on August 29, 1978 (BZC-4238).

The Project does not contemplate any additional parking spaces, any exceedance of the Floor Area Ratio of 11.6 (including the existing bridge) approved for the Project site in BZC-4238, or any changes to the height or other dimensions of the existing structure. Allowed uses under the underlying zoning include the existing uses, which will be continued as part of the Project (i.e., hotel, retail, and restaurant). Accordingly, the Project is not anticipated to require any new dimensional or use zoning relief. Zoning Board of Appeal GCOD conditional approval will be required for “substantial rehabilitation” of the existing structure, and the Proponent will apply for such conditional approval following Large Project Review (further discussed below).

### 1.7.2 Article 80 – Large Project Review

Because the Project involves “substantial rehabilitation” (defined in the Boston Zoning Code as alterations or repairs within a 12-month period that cost more than 50% of the physical value of the structure) of a building having a Gross Floor Area of more than 100,000 square feet, the Project is subject to Large Project Review. Under the Mayor’s Executive Order dated October 10, 2000, and amended on April 3, 2001, regarding mitigation for

development projects, the Mayor may appoint an Impact Advisory Group to advise the BPDA on mitigation measures for projects undergoing Large Project Review. In connection with the Project's Large Project Review, the Project will also be subject to Boston Civic Design Commission review and the green building requirements of Article 37 of the Zoning Code.

## 1.8 Anticipated Permits

Table 1-2 represents a preliminary list of permits and approvals from governmental agencies that are expected to be required for the Project, based on currently available information. It is possible that only some of these permits or actions will be required, or that additional permits or actions will be required.

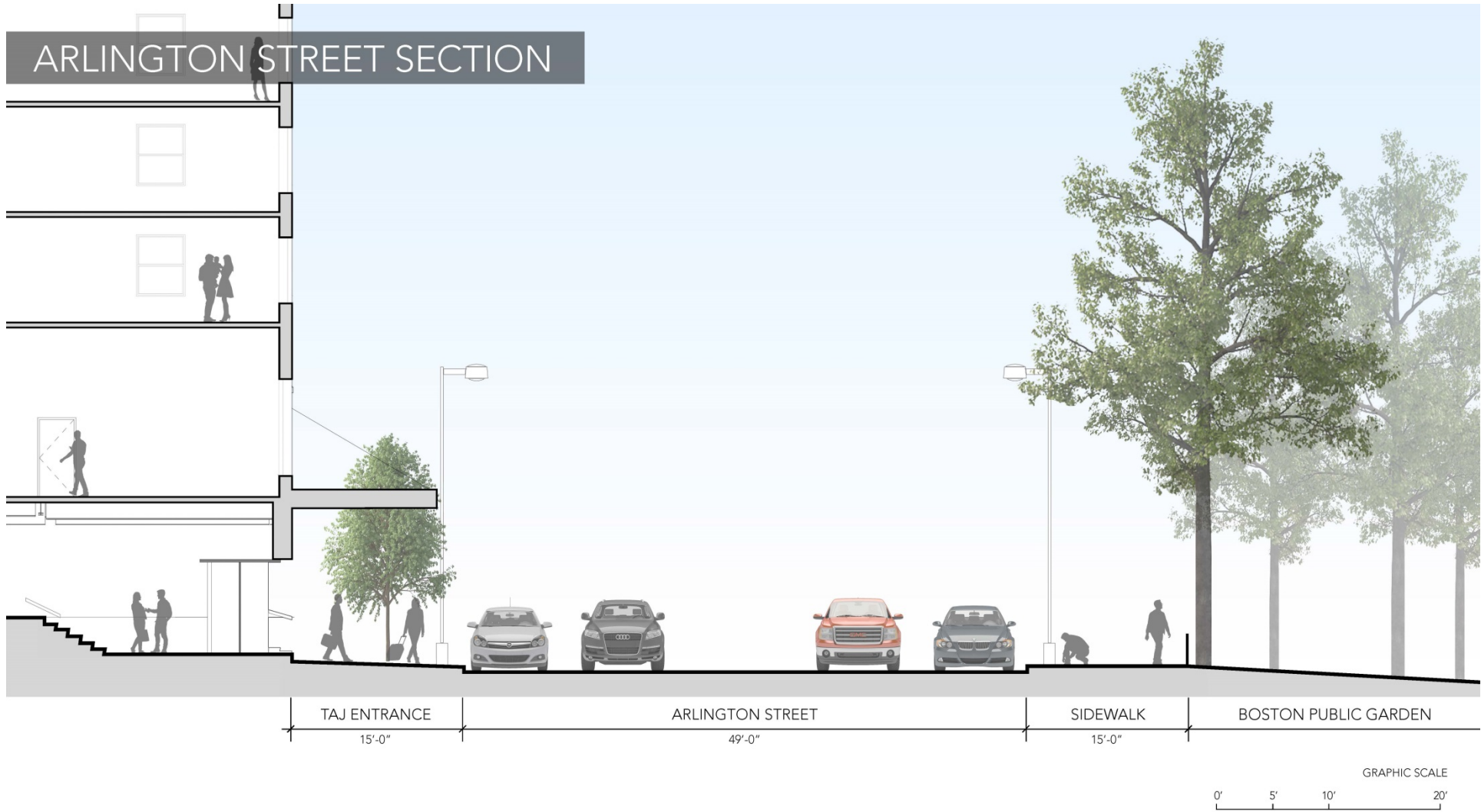
**Table 1-2 Anticipated Permits and Approvals**

<i>Agency</i>	<i>Permit / Approval</i>
<b>Local</b>	
Boston Planning & Development Agency	Article 80 Review; Mitigation Agreements; Section 80B-6 Certificate of Compliance
Boston Civic Design Commission	Design Review
Interagency Green Building Committee	Article 37 Compliance
Zoning Board of Appeal	Groundwater Conservation Overlay District condition approval
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Agreement
Boston Parks and Recreation Department	Approval of Construction Within 100 feet of a Park (Boston Public Garden)
Public Improvements Commission	Street Sidewalk Specific Repair Plan; Maintenance Agreement Approval
Boston Department of Public Works	Street Opening Permit; Street/Sidewalk Occupancy Permit
Boston Water and Sewer Commission	Local Sewer and Water Tie-in; Site Plan Approval, if necessary
Boston Inspectional Services Department	Certificates of Occupancy; Other Construction-Related Permits
<b>State</b>	
Department of Environmental Protection	Notification of Demolition and Construction

## 1.9 Schedule

It is anticipated that construction activities will start in the second quarter of 2019, with completion by the first quarter of 2020.



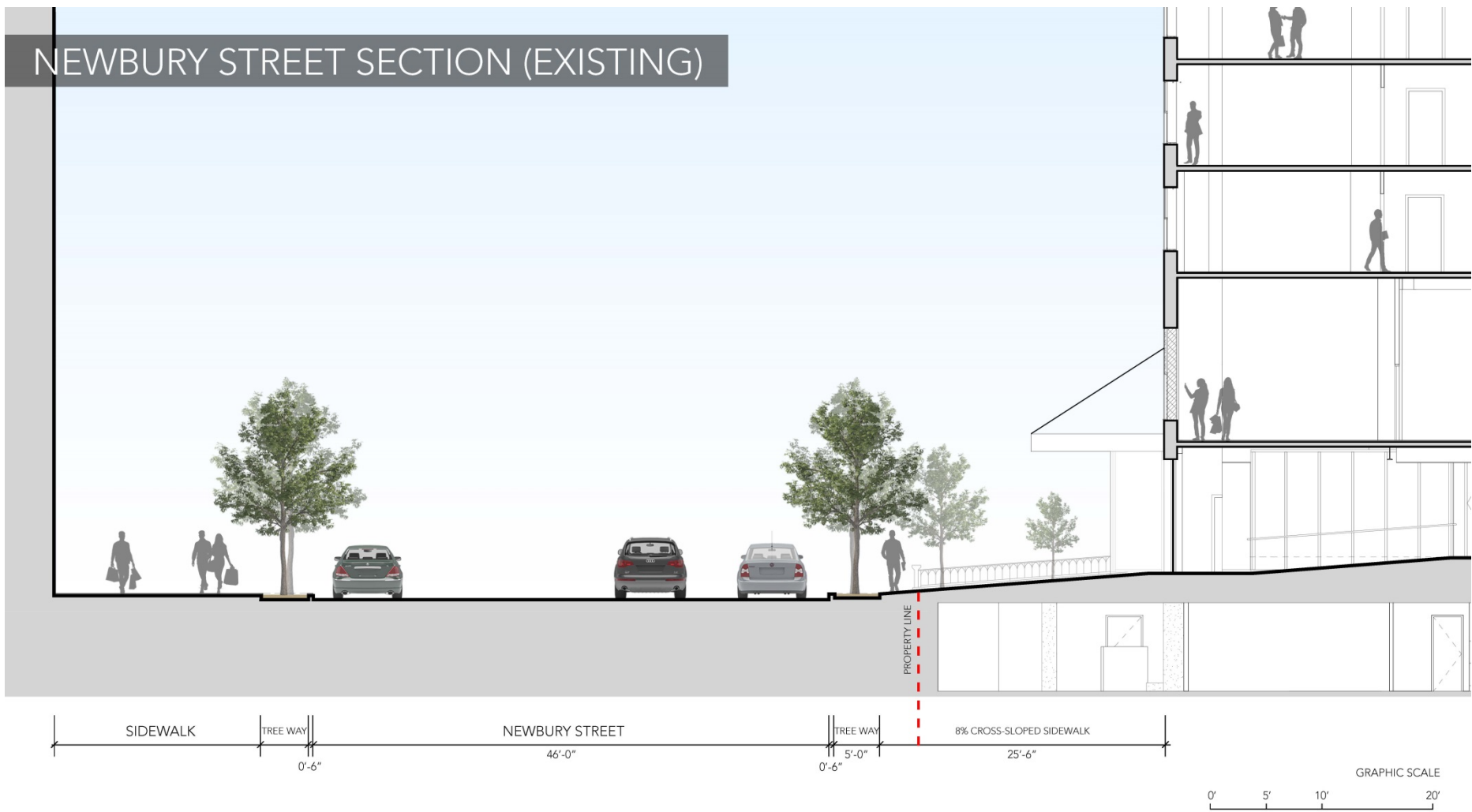


Taj Hotel Boston Boston, Massachusetts



**Figure 1-7**  
*Arlington Street Section*

# NEWBURY STREET SECTION (EXISTING)



Taj Hotel Boston Boston, Massachusetts

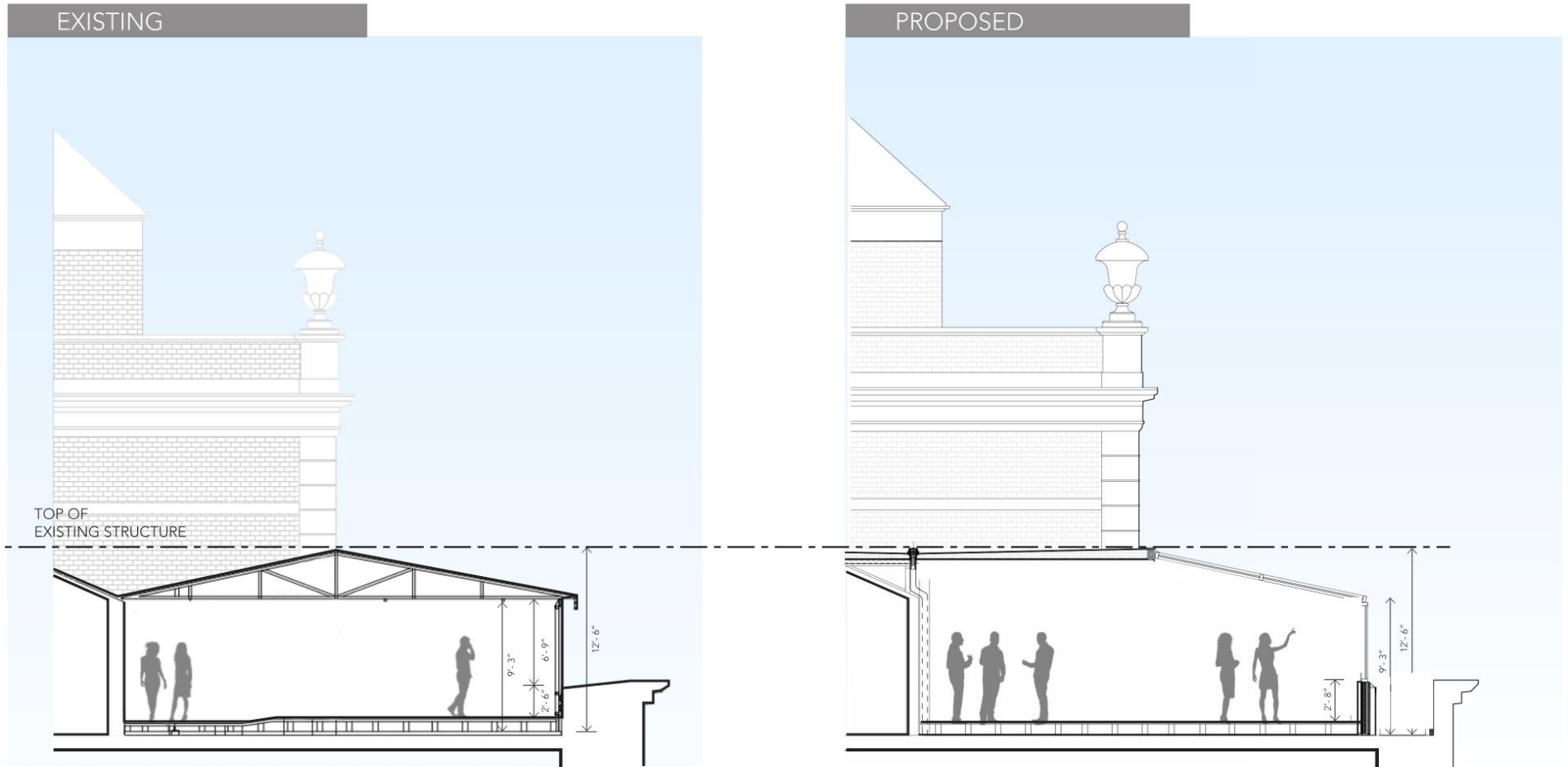


**Figure 1-8**  
Existing Newbury Street Section

PROPOSED NEWBURY ENTRY SECTION



# ROOFTOP SECTIONS



Taj Hotel Boston Boston, Massachusetts



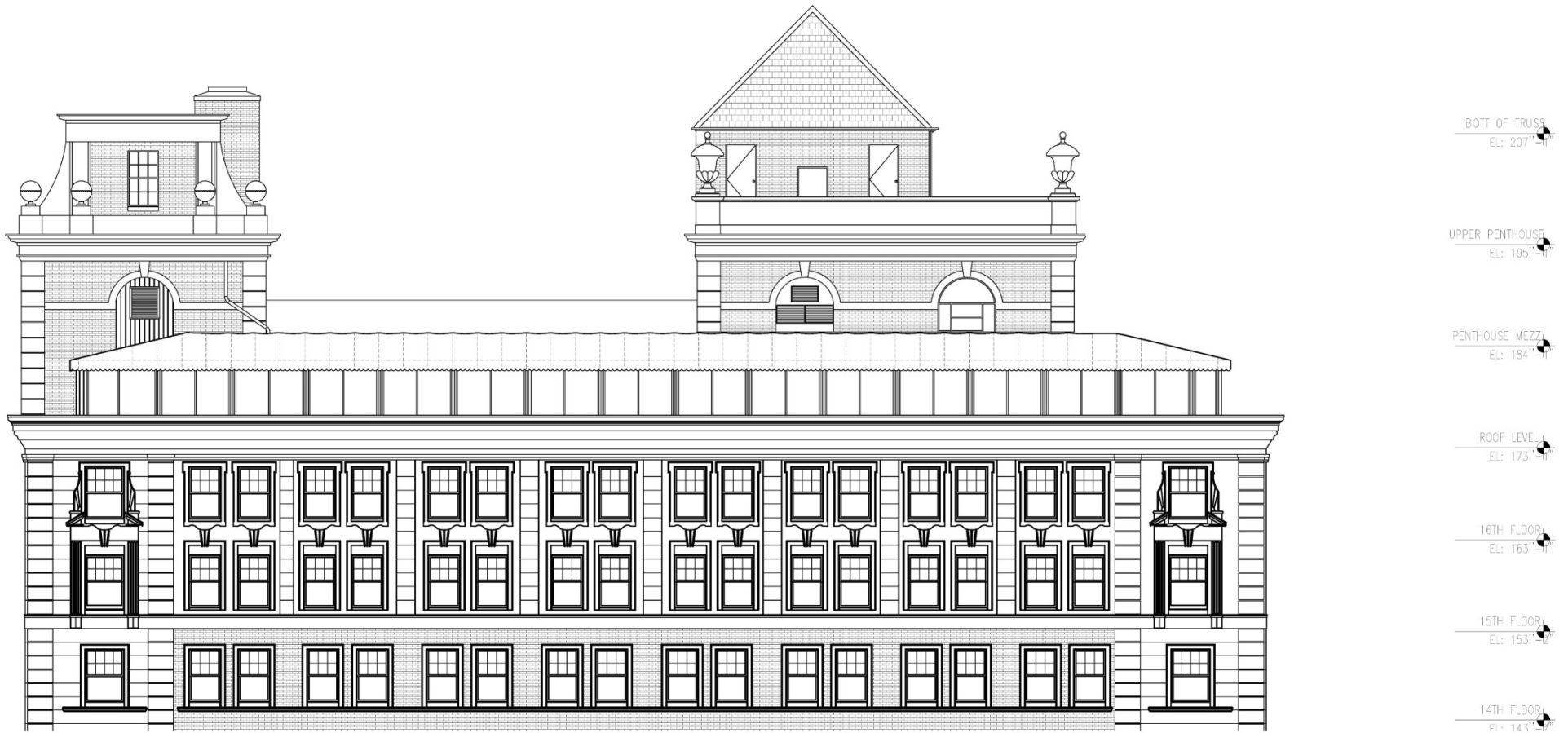
**Figure 1-10**  
*Existing and Proposed Rooftop Restaurant Sections*



Taj Hotel Boston Boston, Massachusetts



**Figure 1-11**  
Existing Arlington Street Elevation



Taj Hotel Boston Boston, Massachusetts



**Figure 1-12**  
Existing Newbury Street Elevation

RENDERED NEWBURY ELEVATION



RENDERED ARLINGTON ELEVATION



Taj Hotel Boston Boston, Massachusetts



**Figure 1-13**  
*Proposed Newbury and Arlington Streets Elevations*

## Chapter 2

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Transportation



## 2.0 TRANSPORTATION

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### 2.1 Introduction

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

This study has been developed to conform with the Boston Transportation Department's (BTD) Transportation Access Plans Guidelines and uses standard methodologies, including the Institute of Transportation Engineers *Trip Generation Manual* (10th Edition) and local travel characteristics as defined in *Access Boston 2000-2010*. The Study analyzes the following as part of the evaluation of 2018 Existing Conditions:

- ◆ Vehicle traffic on study area roadways and intersections;
- ◆ Parking conditions and valet operations;
- ◆ Loading and service activities;
- ◆ Pedestrian and bicycle operations; and
- ◆ Public transportation services.

In addition, this study quantifies and assesses the transportation impacts that are expected under future conditions. The purposes of these analyses are to:

- ◆ Define and quantify existing transportation conditions in the Project study area;
- ◆ Estimate the transportation impacts that will be generated under future conditions based on the anticipated program for the Project; and
- ◆ Help develop a set of mitigation strategies and improvement measures which will lessen the transportation effects of the Project.

### 2.2 Summary of Key Findings and Benefits

The Project is expected to have only a minimal impact to the area's peak period traffic operations, transportation network and infrastructure. The primary reason for this is the Project is an existing and fully operational hotel. The renovation entails a small increase in hotel keys, and a slight increase in retail and restaurant space. There are no expected changes in the size or number of events at the site. The Project will shift the Hotel's main entrance and valet drop-off from Arlington Street to Newbury Street. As part of this shift, the sidewalk

along Newbury Street will be modified to provide an enhanced streetscape and a plaza area along the Hotel frontage. The Project will also create an accessible main entrance into the Hotel.

The Project is expected to generate three net-new vehicle trips during the morning peak hour and fifteen net-new vehicle trips during the evening peak hour. The results of the analysis contained in this report indicates that there will be no changes in level of service (LOS) in the study area from Project-related traffic. Finally, the Hotel will continue its Transportation Demand Management (TDM) program for its employees, and it will promote the use of public transportation and other alternative modes of travel for both staff and guests. The Proponent will codify all of its mitigation commitments in a Transportation Access Plan Agreement (TAPA). Attachment C includes the complete transportation appendix.

### 2.3 Project Description

The Taj Boston is currently a 195-key hotel in the Back Bay neighborhood, adjacent to the Boston Public Garden, and is bounded by Public Alley 437 and the Carlton House of Boston to the north, Arlington Street to the east, Newbury Street to the south and commercial properties to the west. The Project includes the reconfiguration of the main entrance of the Hotel from the current location on Arlington Street to the building’s frontage on Newbury Street. Additional renovations include permanently enclosing the existing seasonal rooftop restaurant. There are no expected changes to event size and frequency due to the renovation. The Project will shift the Hotel’s main entrance, and valet drop-off location, from Arlington Street to Newbury Street and will provide an enhanced streetscape and a plaza area. No additional parking is proposed as part of the Project, and the Hotel’s valet parking operation will continue to utilize the Motor Mart Parking Garage on Stuart Street. There are no expected changes to loading operations or an increase in frequency/use.

A summary of the proposed uses for the Project are provided in Table 2-1.

**Table 2-1 Project Development Program**

Project Element	Approximate Dimension <sup>1</sup>	
	Existing Program	Proposed Program
Hotel	195 keys / 116,554 sf	211 keys / 124,361 sf
Meeting / Function Space	42,168 sf	21,566 sf
Restaurant	2,881 sf / 106 seats <sup>2</sup>	9,887 sf / 294 seats <sup>4</sup>
Retail	2,704 sf <sup>3</sup>	4,264 sf <sup>5</sup>
Total Square Footage	164,307 sf	160,078 sf

<sup>1</sup> Approximate square footages are subject to further design.

<sup>2</sup> Existing restaurant space is comprised of the lobby bar (50 seats) and the lobby café (56 seats).

<sup>3</sup> Existing retail is comprised of Tiffany’s first and fifth floor space.

<sup>4</sup> Proposed restaurant space is comprised of a lobby bar (54 seats) and the rooftop restaurant (240 seats).

<sup>5</sup> Proposed retail is comprised of Tiffany’s first floor space.

### **2.3.1 Site Access and Circulation**

The Project proposes to relocate the Hotel main entrance from the existing location along Arlington Street to a newly constructed Newbury Street entrance. The sidewalk along Newbury Street will be modified to provide an enhanced streetscape and plaza area along Newbury Street as well as provide an accessible main entrance into the Hotel. As part of this relocation, the valet parking operation for hotel guests will also be modified. Drop-off valet transactions will shift from their current location along Arlington Street to the new main entrance along Newbury Street. It is expected that pick-up valet transactions will remain along Arlington Street.

## **2.4 Study Methodology**

The analysis presented in this chapter provides a detailed description of the Project's transportation characteristics and evaluates key impacts to the transportation infrastructure. The transportation analysis presented in this chapter conforms to BTM Guidelines.

The transportation analysis includes the projection of Project-related trips based on the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (10th Edition) and the application of local travel characteristics established through the Access Boston 2000-2010 initiative. Synchro software was used to facilitate the evaluation of traffic operations based on the Transportation Research Board's Highway Capacity Manual (HCM) methodologies.

### **2.4.1 Traffic Study Area**

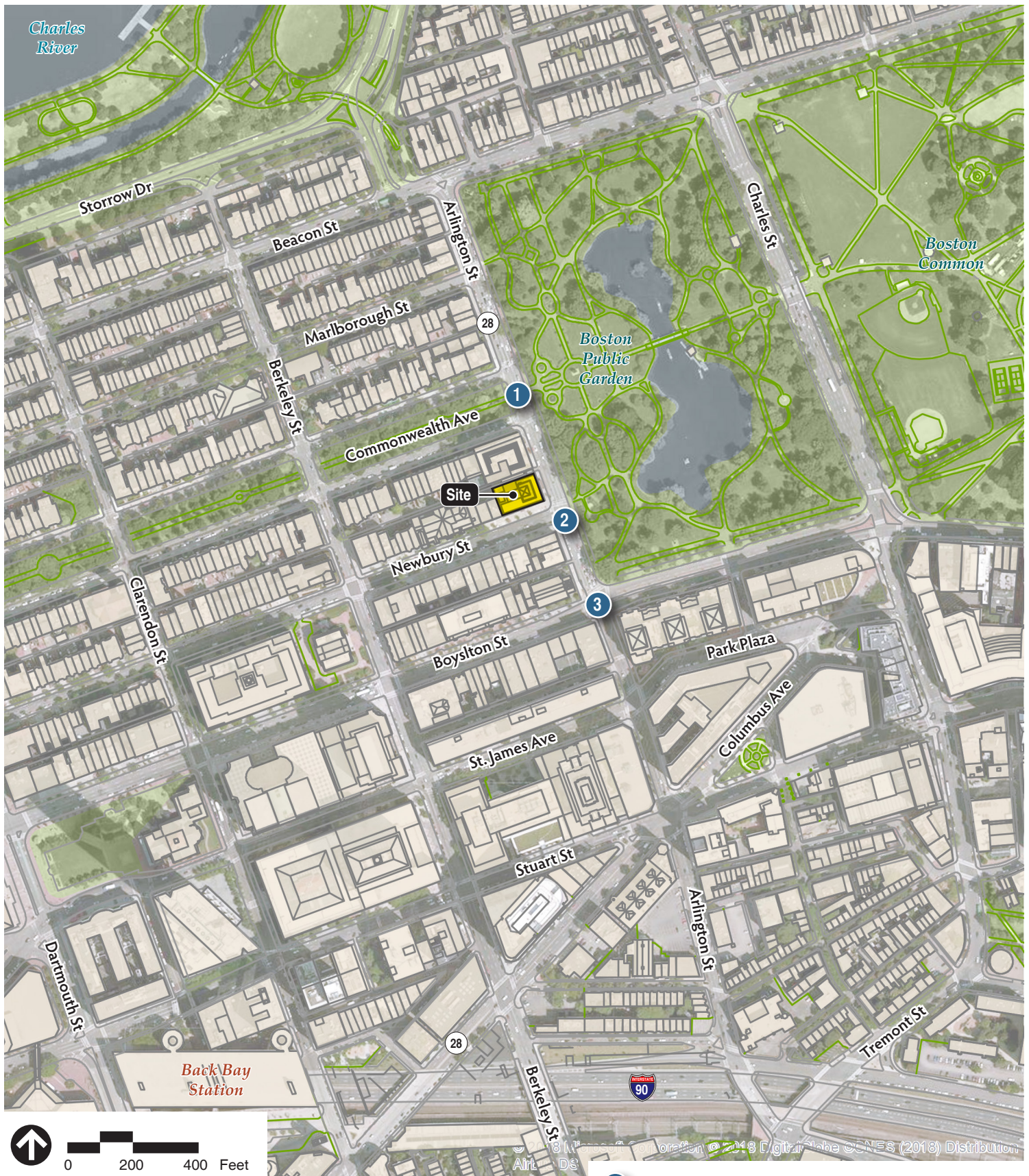
Based on the Project program and the surrounding vehicular network, three study intersections were determined. As shown in Figure 2-1, the following intersections were included in the study area for the analysis:

1. Arlington Street at Commonwealth Avenue Eastbound & Westbound (signalized)
2. Arlington Street at Newbury Street (signalized)
3. Arlington Street at Boylston Street (signalized)

### **2.4.2 Analysis Conditions**

The transportation analysis considers the following analysis scenarios:

- ◆ **2018 Existing Condition** – Based on traffic data collected within the study area in November 2018;
- ◆ **2023 No-Build Condition** – A five-year time horizon future condition expected to occur if the Project was not constructed; and
- ◆ **2023 Build Condition** – A five-year time horizon future condition assuming construction and full occupancy of the Project.



Source: MassGIS, City of Boston

- 1 Arlington Street at Commonwealth Avenue EB/WB
- 2 Arlington Street at Newbury Street
- 3 Arlington Street at Boylston Street

TAJ Hotel



**Figure 2-1**  
Study Area Intersections

## 2.5 2018 Existing Conditions

This section describes existing transportation conditions, including an overview of area roadways, public transportation, pedestrian and bicycle facilities, and general site conditions.

### 2.5.1 *Roadways*

The site is located at 15 Arlington Street and is bounded by Public Alley 437 and the Carlton House of Boston to the north, Arlington Street to the east and Newbury Street to the south.

- ◆ **Arlington Street** – Arlington Street is a one-way southbound arterial roadway that extends from Beacon Street to Tremont Street. The number of travel lanes on Arlington Street varies due to the width of the striped travel lanes. For example, the Arlington Street southbound approach at Commonwealth Avenue westbound has three striped travel lanes, but field observations noted that the approach can, and occasionally does, accommodate five vehicles at the stop bar. There are segments of on-street and valet parking allowed on the west side of Arlington Street while the east side has no parking. Crosswalks are provided at intersections and sidewalks are provided along both sides of Arlington Street.
- ◆ **Commonwealth Avenue** – Commonwealth Avenue is an east/west arterial roadway with a large median, the Commonwealth Avenue Mall, extending from Arlington Street, to the east, through the Fenway into Newton to the west. The roadway provides two travel lanes in each direction with a bicycle lane along the northern and southern sides of the Mall. On-street parking is allowed on the south side of Commonwealth Avenue eastbound and on the north side of Commonwealth Avenue westbound. Crosswalks and signals are provided at intersections and sidewalks are provided along the north and south side as well as paved pathways through the Mall.
- ◆ **Newbury Street** – Newbury Street is a one-way westbound collector roadway extending from Arlington Street, to the east, through Massachusetts Avenue to the Charlesgate area. The roadway provides two travel lanes and on-street parking on both sides of the street near the site. Crosswalks and signals are typically provided at the intersections, and sidewalks are provided along both sides of Newbury Street.

### 2.5.2 *Data Collection*

To assess the traffic conditions of the surrounding street network, manual turning movement counts (TMCs) were collected at the three study area intersections. The TMCs were collected on Thursday, November 1, 2018 during a typical weekday morning commuter period (7:00 a.m. - 9:00 a.m.) and evening peak commuter period (4:00 p.m. - 6:00 p.m.). Additionally, pedestrian volumes along Newbury Street, adjacent to the Hotel, were collected from 7:00 a.m. – 6:00 p.m.

The TMCs were used to establish the study area network peak hour volumes for the 2018 Existing Condition analysis. The weekday morning peak hour was determined to be 8:00 a.m. to 9:00 a.m. and the weekday evening peak hour from 4:45 p.m. to 5:45 p.m. The existing morning and evening peak hour vehicle volumes are shown in Figures 2-2 and 2-3, respectively.

**2.5.3 Pedestrian Environment**

The study area has pedestrian accommodations with sidewalks along the surrounding roadways and crosswalks provided at the intersections. Pedestrian volumes at the study area intersections were collected in conjunction with the TMCs. Figures -2-4 and 2-5 present the 2018 Existing Condition pedestrian volumes. The highest pedestrian volumes in the study area were observed at the intersection of Arlington Street at Boylston Street with approximately 1,442 pedestrians crossing at the intersection during the morning peak hour and 2,113 pedestrians crossing during the evening peak hour.

In addition to the TMCs, a full day (7:00 a.m. to 6:00 p.m.) pedestrian count was conducted along the north sidewalk of Newbury Street, adjacent to the Hotel. The count took place on Thursday, November 1, 2018. Table 2-2 below is a summary of the data collected.

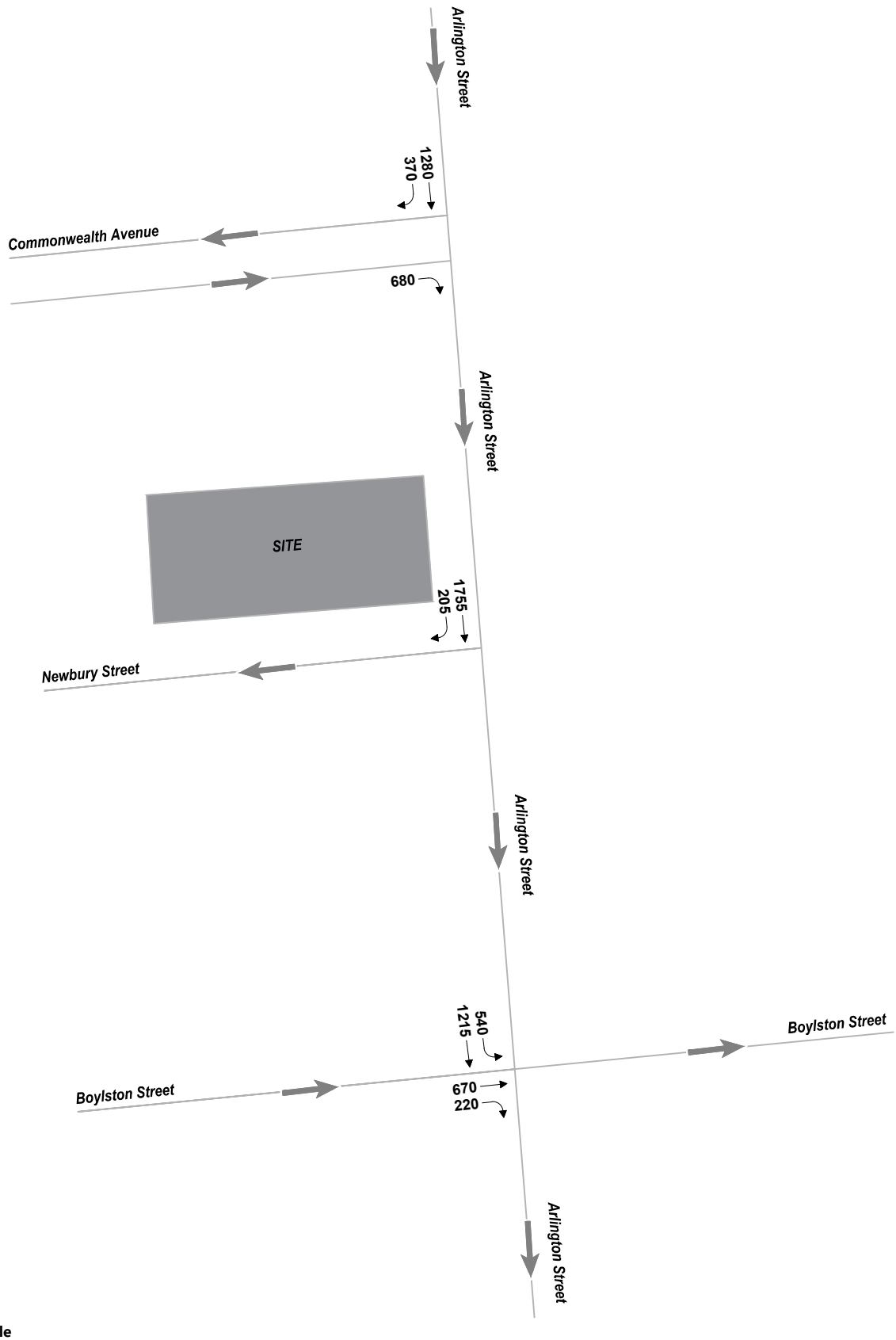
**Table 2-2 Newbury Street Northern Sidewalk Pedestrian Volumes (adjacent to the Taj Hotel)**

Hour Commencing	Pedestrian Volume		
	Eastbound	Westbound	Total
7:00 a.m.	39	77	116
8:00 a.m.	63	117	180
9:00 a.m.	74	125	199
10:00 a.m.	87	200	287
11:00 a.m.	110	229	339
12:00 p.m.	157	228	385
1:00 p.m.	195	258	453
2:00 p.m.	178	241	419
3:00 p.m.	155	255	410
4:00 p.m.	214	261	475
5:00 p.m.	258	350	608

Source: Counts collected on Thursday, November 1, 2018

As seen in Table 2-2, the busiest pedestrian period was from 5:00 p.m. to 6:00 p.m. with a total of 608 pedestrians walking along the north sidewalk of Newbury Street.





TAJ Hotel



Figure 2-3

2018 Existing Conditions Vehicle Volumes Evening Peak Hour (4:45-5:45 PM)



### 2.5.4 *Bicycle Environment*

Bicycle volumes, shown in Figures 2-6 and 2-7, at the study area intersections were collected simultaneously with the vehicle turning movement counts. Within the immediate study area, there are shared bicycle markings on Arlington Street and dedicated bicycle lanes in the eastbound and westbound directions on Commonwealth Avenue. The intersection of Arlington Street at Newbury Street has approximately 156 cyclists pass through the intersection during the morning peak hour and 40 during the evening peak hour.

The Hotel currently provides short-term bike rentals to Hotel guests at no cost. Additionally, the closest Blue Bikes Station is at Boylston Street at Berkeley Street which is about a five-minute walk southeast of the Project site. This Blue Bikes station features 15 bicycle docks, as shown in Figure 2-8.

### 2.5.5 *Public Transportation*

The study area is well served the MBTA. There are four MBTA bus routes within a half-mile of the Project site, as shown in Figure 2-9. Routes 9 and 55 stop at Boylston Street at Berkeley Street. Route 39 stops at Saint James Avenue at Arlington Street and Route 43 stops at Tremont Street at Boylston Street. The B, C, D, and E Branches of the MBTA Green Line all serve Arlington Station, which is located about 500 feet from the Project site. Peak period frequencies/headways for MBTA bus services are summarized in Table 2-3.

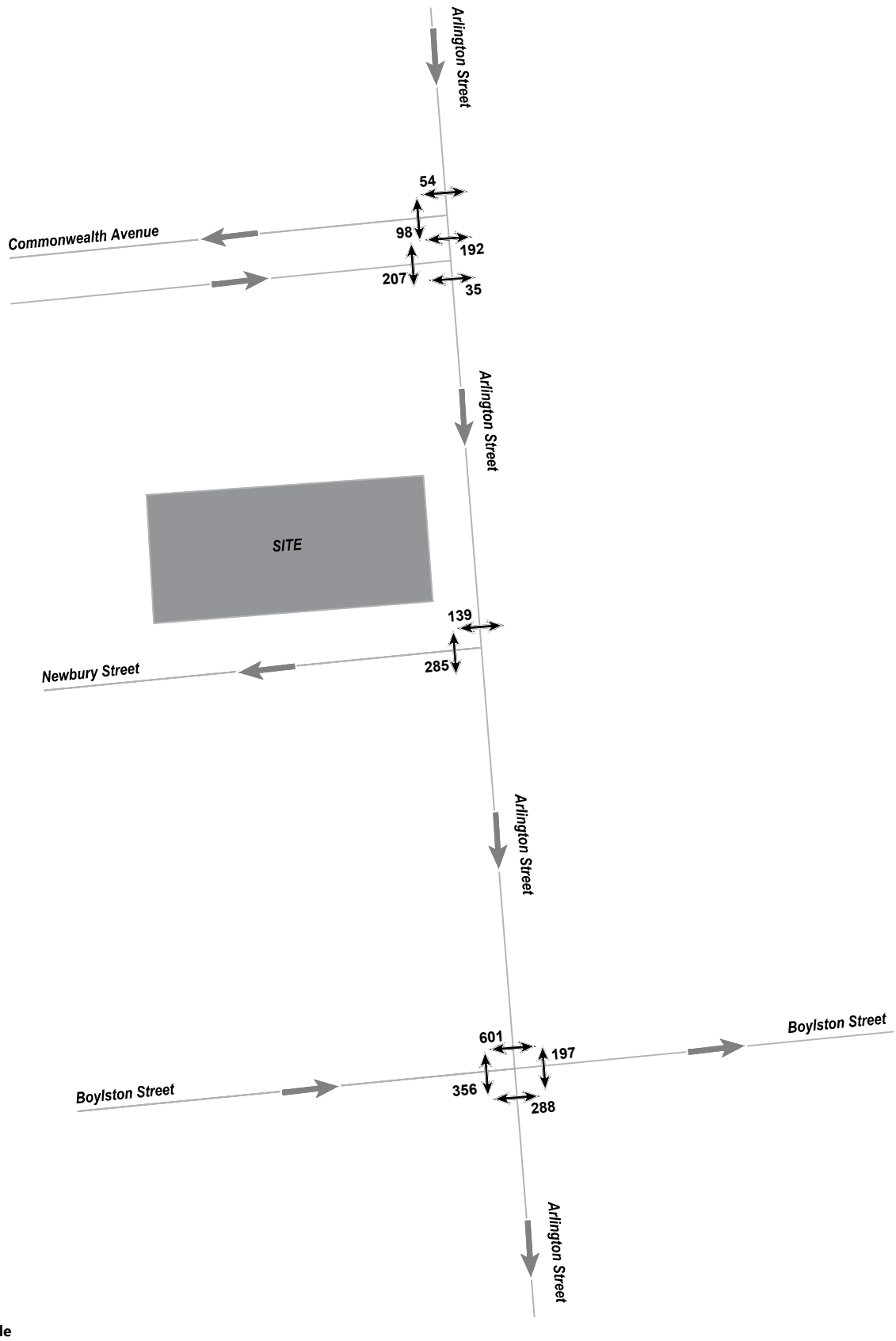
**Table 2-3 Project Area MBTA Service**

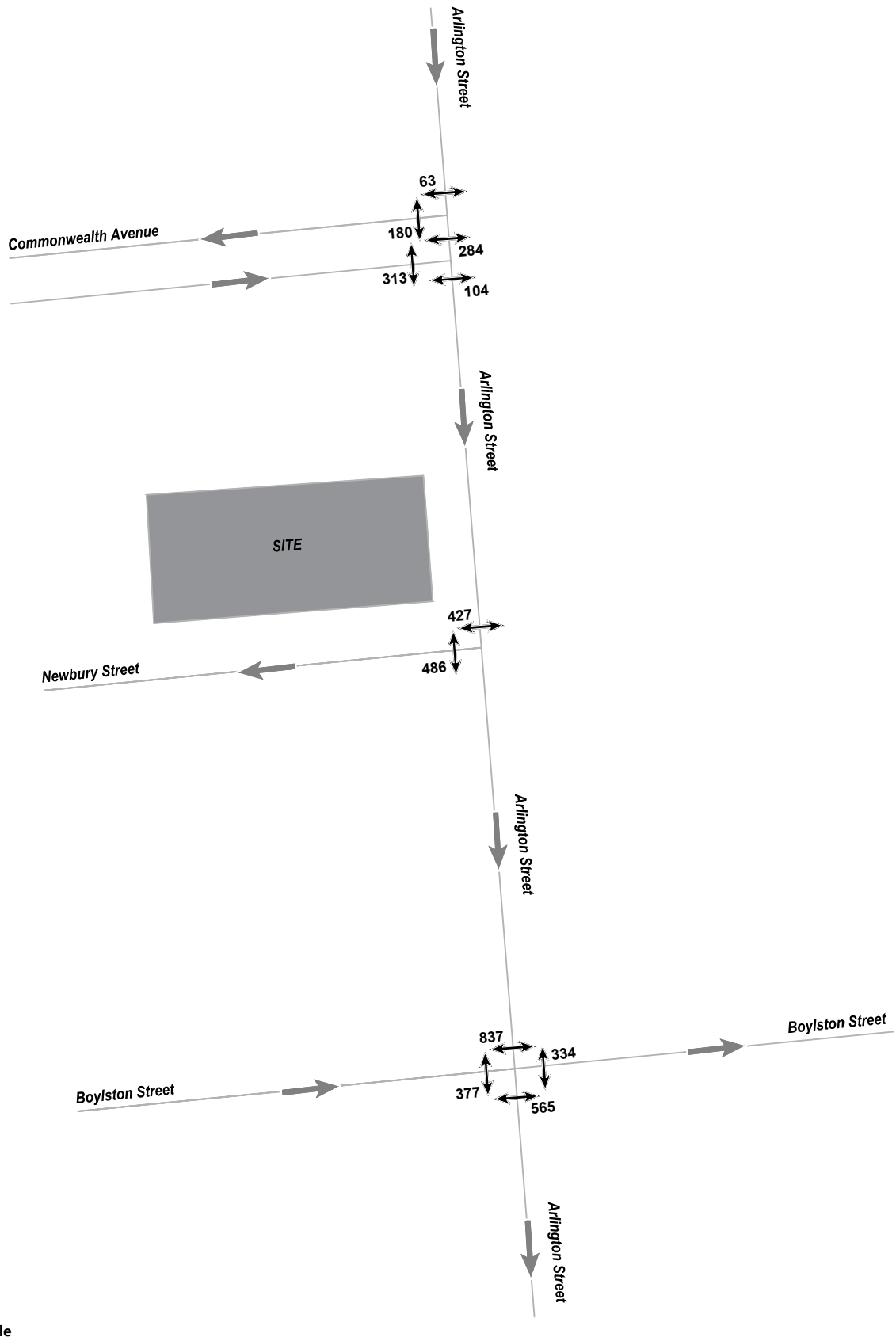
Service	Origin / Destination	Peak-Hour Frequency (minutes)
Route 9	City Point – Copley Square	5 – 10
Route 39	Forest Hills Station – Back Bay Station	6 – 8
Route 43	Ruggles Station – Park & Tremont Streets	20 – 21
Route 55	Jersey & Queensberry Streets – Copley Square of Park & Tremont Streets	18 - 30
B Branch Green Line	Park Street – Boston College	6
C Branch Green Line	Cleveland Circle – North Station	6 – 7
D Branch Green Line	Riverside – Government Center	6
E Branch Green Line	Lechmere – Heath Street	6

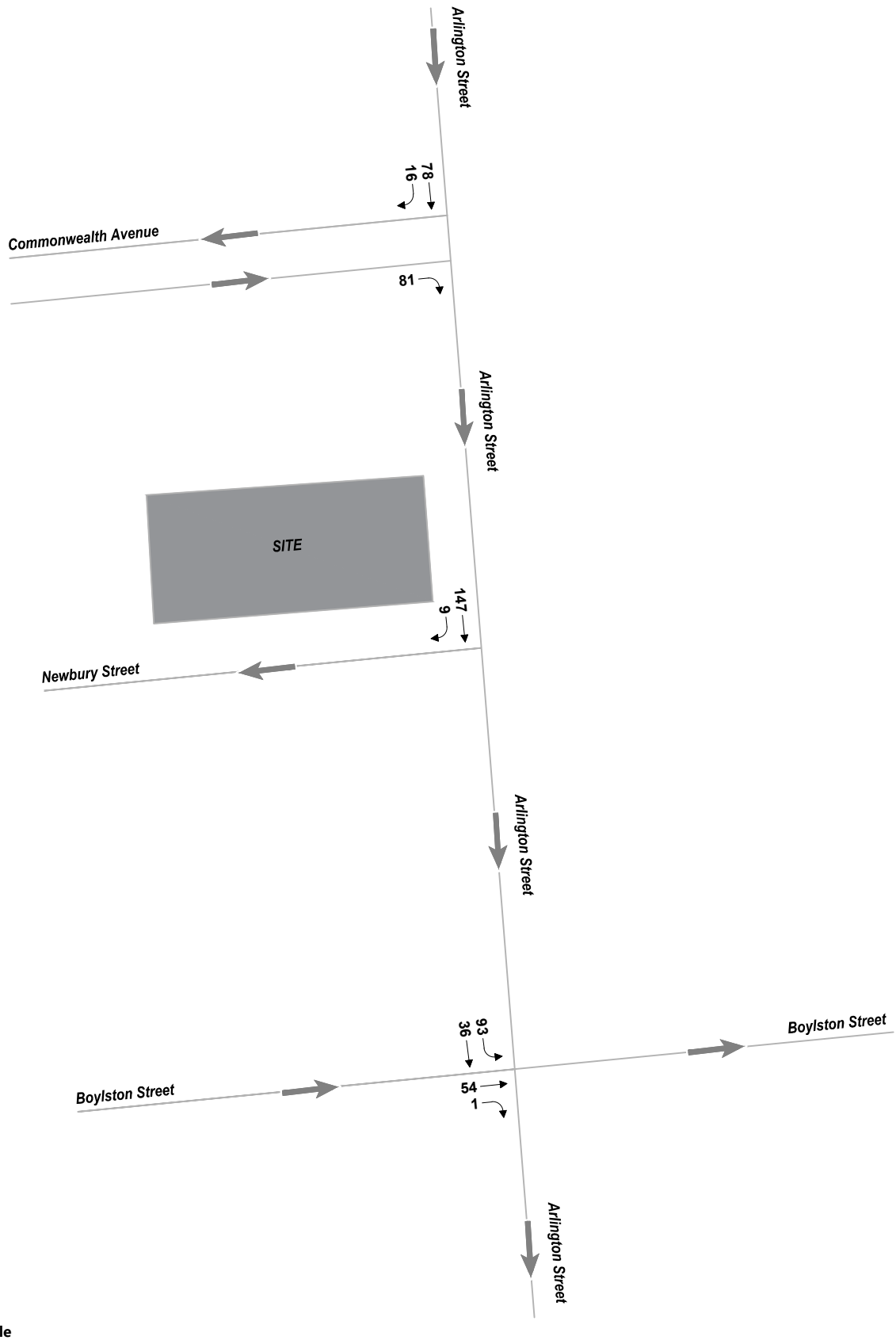
Source: MBTA, Fall Schedule 2018


### 2.5.6 *Existing Parking and Carshare Locations*

The Hotel currently does not provide any on-site parking for either guests or staff. The Hotel offers a valet parking program for guests that utilizes the nearby Motor Mart Garage. Existing on-street parking regulations are shown in Figure 2-10 within a quarter-mile radius from the site. Additionally, the off-street parking facilities within the area are shown on Figure 2-11.

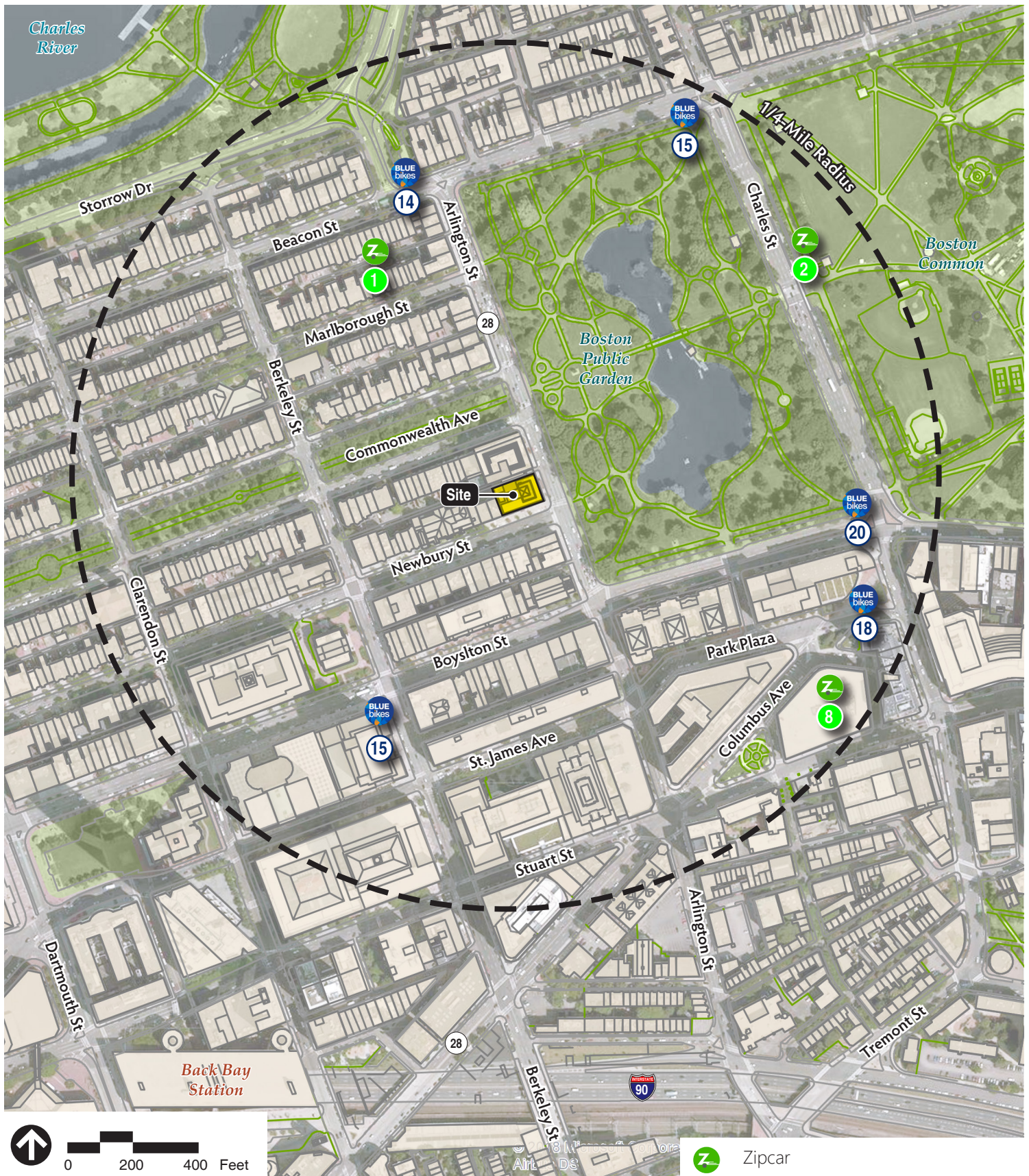







  
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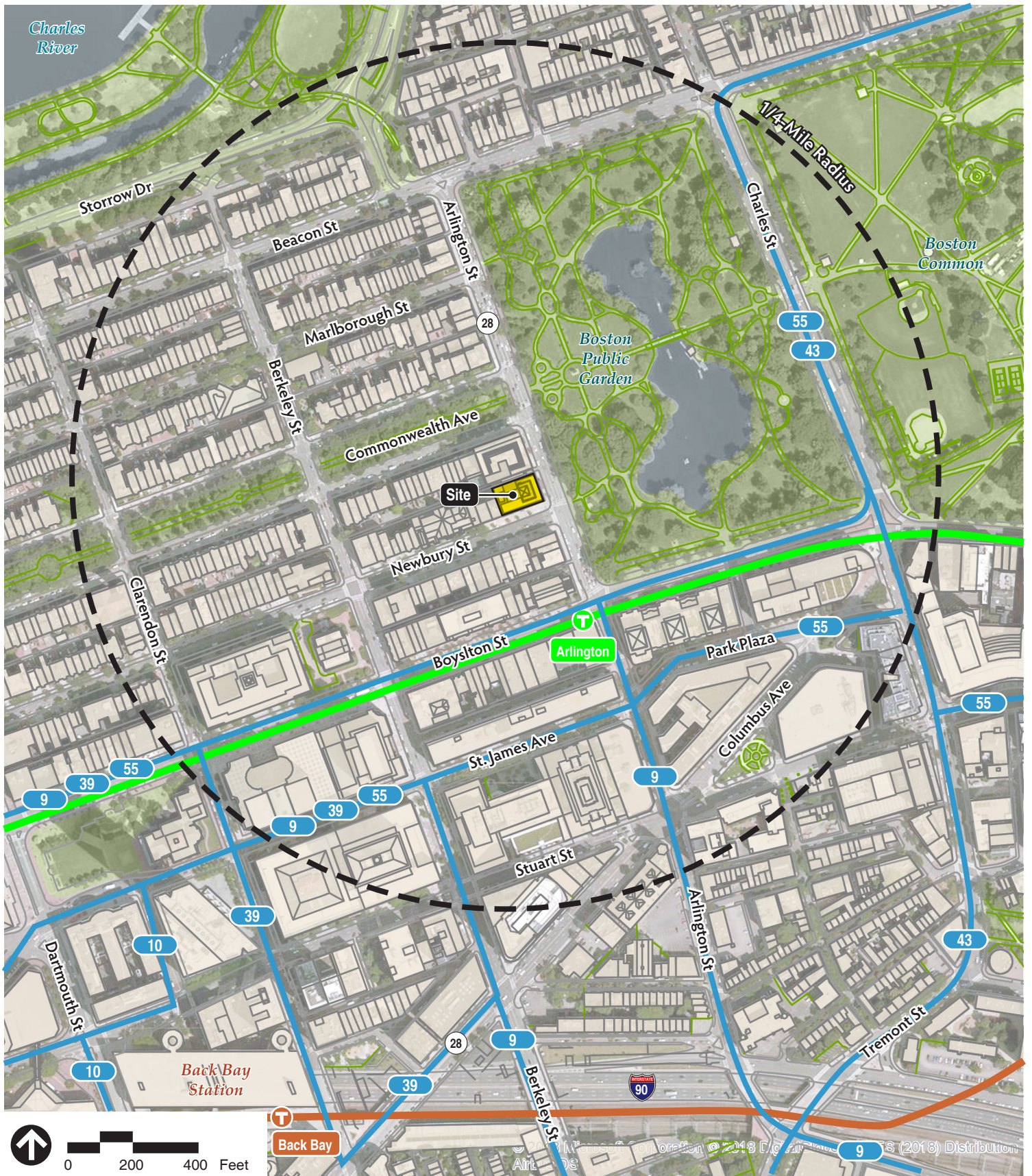


Source: MassGIS, City of Boston

TAJ Hotel



**Figure 2-8**  
Car Sharing and Blue Bike Stations



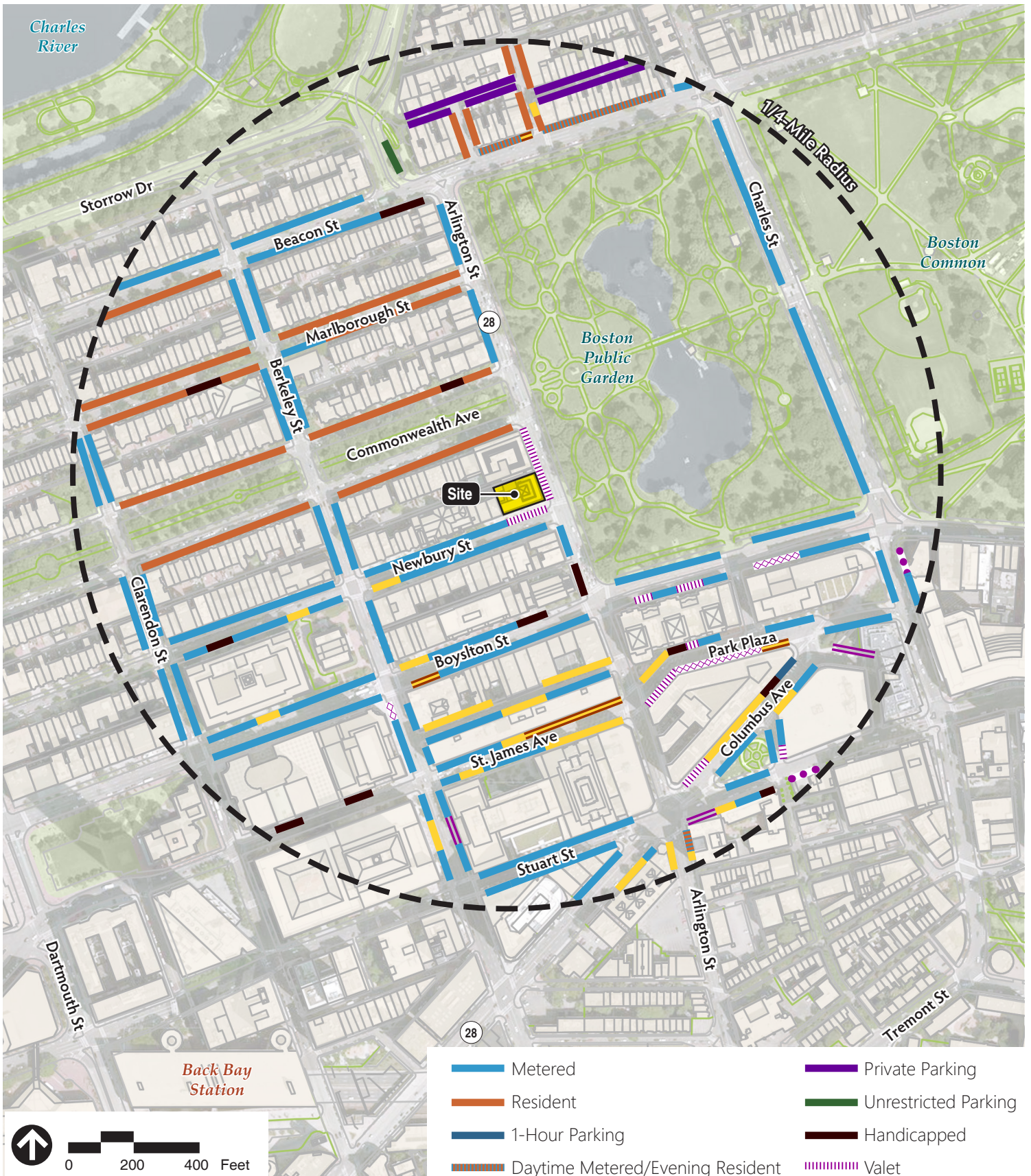
Source: MassGIS, City of Boston

- MBTA Green Line
- MBTA Orange Line
- MBTA Bus

TAJ Hotel



**Figure 2-9**  
Public Transportation



Source: MassGIS, City of Boston

**TAJ Hotel**



- Metered
- Private Parking
- Resident
- Unrestricted Parking
- 1-Hour Parking
- Handicapped
- Daytime Metered/Evening Resident
- Valet
- Reserved for Consular Corps
- Cab Stand
- Commercial Vehicle
- Pick-Up/Drop-Off
- 30-Minute Loading Zone
- Bus (Non MBTA)

**Figure 2-10**  
Curb Regulations





TAJ Hotel



**Figure 2-11**  
Off Street Public Parking Facilities

As shown in Figure 2-8, there are three carsharing (Zipcar) locations near the site. The Public Alley 421 location north of the Project provides one vehicle. The Boston Common Garage, located to the east of the Hotel, provides two vehicles, and the Motor Mart Garage provides eight vehicles.

### **2.5.7**      *Existing Hotel Events*

The Hotel has a long history of hosting and managing events. These events range in size from corporate meetings, which have less than 75 attendees and occur Monday to Thursday, to weddings and other social events, which can have up to 200 attendees and occur Wednesday to Sunday. There are about 150 total events at the Hotel each year. During events, the Hotel provides additional staff and valets along the curbside to actively manage the main entrance and curbside.

### **2.5.8**      *Existing Valet Operations*

The Hotel offers a valet parking program that assists hotel guests in parking their vehicles. Currently, guests who drive to the Hotel drop-off and pick-up their vehicle at the Arlington Street entrance. According to the weekday valet data that was provided by the Taj Hotel, a nominal volume of vehicles arrive at the valet drop-off during the morning peak hour and approximately five vehicles arrive at the valet drop-off during the evening peak hour. The majority of the transactions occur mid-day or later in the evening - outside of the morning and evening peak hours. The valet data provided shows that there are approximately 30-40 valet transactions on a typical day.

### **2.5.9**      *Existing Loading Operations*

Loading activities for the Hotel are accommodated at the existing, single loading dock along Public Alley 437. Existing receiving hours are 6:00 a.m. to 3:00 p.m. All truck traffic enters the Alley from Arlington Street and exits to Berkeley Street. The Hotel's existing loading dock logs shows about 10-20 trucks utilize the dock on a typical weekday.

## **2.6**      **Future Transportation Conditions**

Two future conditions scenarios were evaluated for a five-year time horizon (2023) to assess the potential Project-related traffic impacts: the No-Build and Build conditions. These future conditions are summarized in the sections below.

### **2.6.1**      *2023 No Build Condition*

The 2023 No-Build Condition was developed to evaluate future transportation conditions in the traffic study area without consideration of the Project. In accordance with BTD Guidelines, this future analysis year represents a five-year horizon (2023) from existing

conditions (2018). The No-Build Condition provides insight into future traffic conditions resulting from regional growth and traffic generated by specific planned projects that are expected to affect the local roadway network.

### **2.6.1.1 General Background Growth**

A background growth rate of 0.5-percent per year was applied to the 2018 Existing Condition traffic volumes to account for traffic growth and smaller projects that cannot be specifically identified. The background growth rate is consistent with other traffic studies in the area.

### **2.6.1.2 Area Development Projects**

In addition to the background growth rate, traffic projections for several nearby planned or approved projects were also incorporated into the development of the 2023 No-Build Condition. These include the following development projects:

- ◆ **212 Stuart Street** – The proposal calls for an approximately 146,000 square foot, 19-story building, with approximately 3,000 square feet of first floor retail and/or restaurant use and approximately 133 residential units on the upper floors. No new parking is provided as part of the project, but an agreement has been made with the owner of the adjacent garage at 200 Stuart Street to provide long term parking to occupants and visitors to the project.
- ◆ **Motor Mart Garage** – The proposal calls for the existing eight-story parking garage to be turned into a mixed-use building by adding basement level retail space, reducing parking, and constructing new residential apartments within the existing building as well as the construction of a 20-story residential tower. The project will create approximately 306 new residential units, 46,000 square feet of retail/restaurant space, and will retain 672 parking spaces.
- ◆ **350 Boylston Street** – The proposal calls for a nine-story office building with ground floor retail, a health club, and 150 below grade parking spaces. The building would replace the existing use at 350 Boylston Street, and it is expected that new project-generated trips would be minimal. Since the Draft Project Impact Report does not call out the project trip routes, this project was accounted for in the general one-half percent background growth.

### **2.6.1.3 2023 No-Build Condition Traffic Volumes**

The 2023 No-Build Condition peak-hour traffic volumes were developed by increasing the 2018 Existing Condition volumes to include both general background traffic growth as previously described and by adding traffic volumes associated with known traffic forecasts projected for the three cited development projects.

Figures 2-12 and 2-13 present the 2023 No-Build Condition traffic volumes for the weekday morning and evening, respectively.

**2.6.2 2023 Build Condition**

The 2023 Build Condition includes the 2023 No-Build Condition with the addition of the Project-generated trips.

**2.6.2.1 Project-Generated Trips**

To estimate future traffic impacts of the Project, it is necessary to determine the traffic volumes expected to be generated by the Project. The process employed for calculation of this volume estimate is described below.

***Unadjusted Trip Generation***

The trip generation for the Project was based on Institute of Transportation Engineers (ITE) trip rates and methodology published in *Trip Generation Manual* (10th Edition). Trip generation for the proposed project was estimated based on the ITE Land Use Codes (LUC) as shown in Table 2-4 below.


**Table 2-4 Trip Generation Land Use Codes**

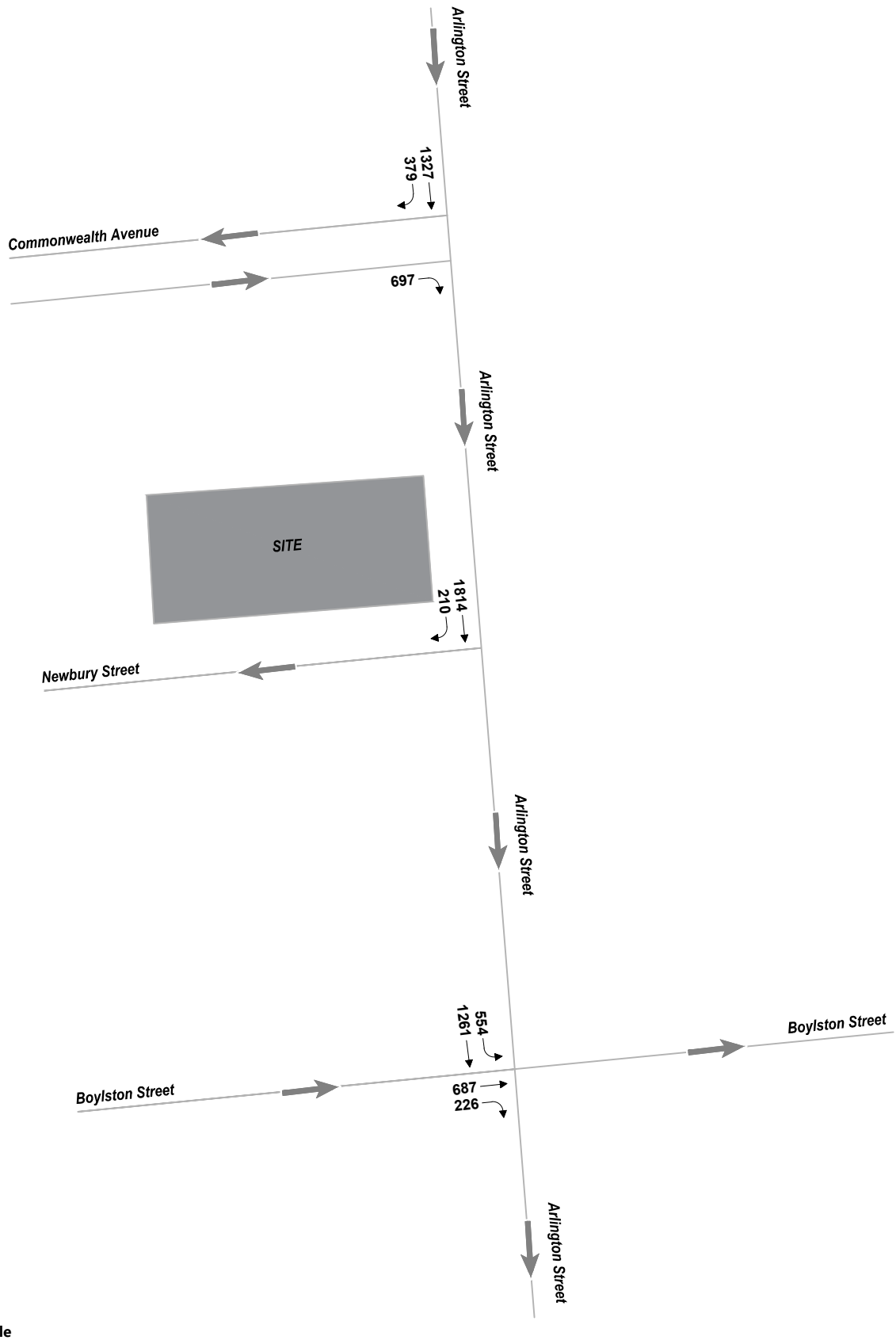
Land Use	ITE Land Use Code (LUC)	Independent Variable
Hotel	310 – Hotel	Keys
Retail	876 – Apparel Store	Thousand Square Feet
Restaurant	931 – Quality Restaurant	Thousand Square Feet


Source: ITE Trip Generation Manual; Tenth Edition

The trip generation estimate is based on the incremental increase of 16 hotel keys, from 195 keys to 211 keys, as well as retail space increasing by 1,560 sf from 2,704 sf to 4,264 sf and restaurant space increasing by 7,006 sf from 2,881 sf to 9,887 sf. A summary of net new unadjusted trip generation for the Project is presented below in Table 2-5.




  
 Not to Scale




  
 Not to Scale

**Table 2-5 Unadjusted Project Generated Vehicle Trips**

		Unadjusted Vehicle Trips
<b>Daily</b>	In	436
	<u>Out</u>	<u>436</u>
	Total	872
<b>Morning Peak Hour</b>	In	9
	<u>Out</u>	<u>7</u>
	Total	16
<b>Evening Peak Hour</b>	In	46
	<u>Out</u>	<u>27</u>
	Total	73

Source: ITE *Trip Generation Manual*, 10<sup>th</sup> Edition

The Federal Highway Administration’s 2017 National Household Travel Survey Summary of Travel Trends provided the national vehicle occupancy rate (VOR) of 2.10 persons per vehicle for social/recreational trips, which was applied to the unadjusted hotel vehicle trips to determine person-trips. These trips are presented in Table 2-6.

**Table 2-6 Project Generated Person Trips**

		Person Trips
<b>Daily</b>	In	916
	<u>Out</u>	<u>916</u>
	Total	1,832
<b>Morning Peak Hour</b>	In	18
	<u>Out</u>	<u>14</u>
	Total	32
<b>Evening Peak Hour</b>	In	97
	<u>Out</u>	<u>57</u>
	Total	154

As quantified in Table 2-6, using the methodology described herein, the Project is anticipated to generate 1,832 net new daily person trips including 32-person trips during the weekday morning peak hour and 154-person trips during the evening peak hour.

### *Adjusted Trip Generation*

Trip generation estimates presented in Table 2-6 do not include any adjustments to reflect the availability of public transportation, walking, or bicycling that are characteristic of an urban location such as this. Applying a mode share to these trips allow for the evaluation of overall Project-related traffic impacts, as there will be a mixture of automobile travel, public transit, and walk/bike trips to the Project site.

The BTM mode shares for Area 4 (area including the site) were used for the trip generation. The mode share splits for the trip generation estimate and provided in Table 2-7.

**Table 2-7 Mode Share**

Mode	Daily	a.m. Peak		p.m. Peak	
		IN	OUT	IN	OUT
Automobile	24%	19%	21%	21%	19%
Public Transportation	19%	22%	15%	15%	22%
Walk/Bike/Other	57%	59%	64%	64%	59%

Source: BTM Guidelines Area 4

The resulting adjusted trip generation estimates are presented in Table 2-8. As shown, the Project is expected to generate a total of three vehicle trips (1 entering, and 2 exiting) during the weekday morning peak hour, and a total of fifteen vehicle trips (10 entering, and 15 exiting) during the weekday evening peak hour. On a typical weekday, the Project is expected to generate 210 new vehicle-trips (105 entering, and 105 exiting).

**Table 2-8 Trip Generation by Mode**

		Auto (vehicle)	Transit (person)	Walk/Bike/Other (person)
<b>Daily</b>	In	105	174	522
	<u>Out</u>	<u>105</u>	<u>174</u>	<u>522</u>
	Total	210	348	1,044
<b>Morning Peak Hour</b>	In	1	4	11
	<u>Out</u>	<u>2</u>	<u>2</u>	<u>8</u>
	Total	3	6	19
<b>Evening Peak Hour</b>	In	10	15	61
	<u>Out</u>	<u>5</u>	<u>12</u>	<u>33</u>
	Total	15	27	94



### 2.6.2.2 Vehicle Trip Distribution

Having estimated changes in auto trips associated with the Project, the next step in the analysis involved the assignment of these trips to the local roadway network based on geographic distribution of project traffic. The directional distribution of Project traffic is a function of several variables. These include the relative locations and densities of population, competing uses, existing travel patterns, and the efficiency of the roadways leading to the site.

Trip distribution patterns were developed based on BTD’s guidelines for Zone 4 trip distribution data. A summary of the regional trip distribution results is presented in Table 2-9 and shown graphically in Figures 2-14 and 2-15.

**Table 2-9 Project Trip Distribution**

Corridor	AM Peak Hour		PM Peak Hour	
	Entering	Exiting	Entering	Exiting
Arlington Street SB (north of site)	54%	-	48%	-
Arlington Street SB (south of site)	-	38%	-	45%
Commonwealth Avenue EB	46%	-	52%	-
Newbury Street WB	-	51%	-	52%
Boylston Street EB	-	11%	-	3%
Total	100%	100%	100%	100%

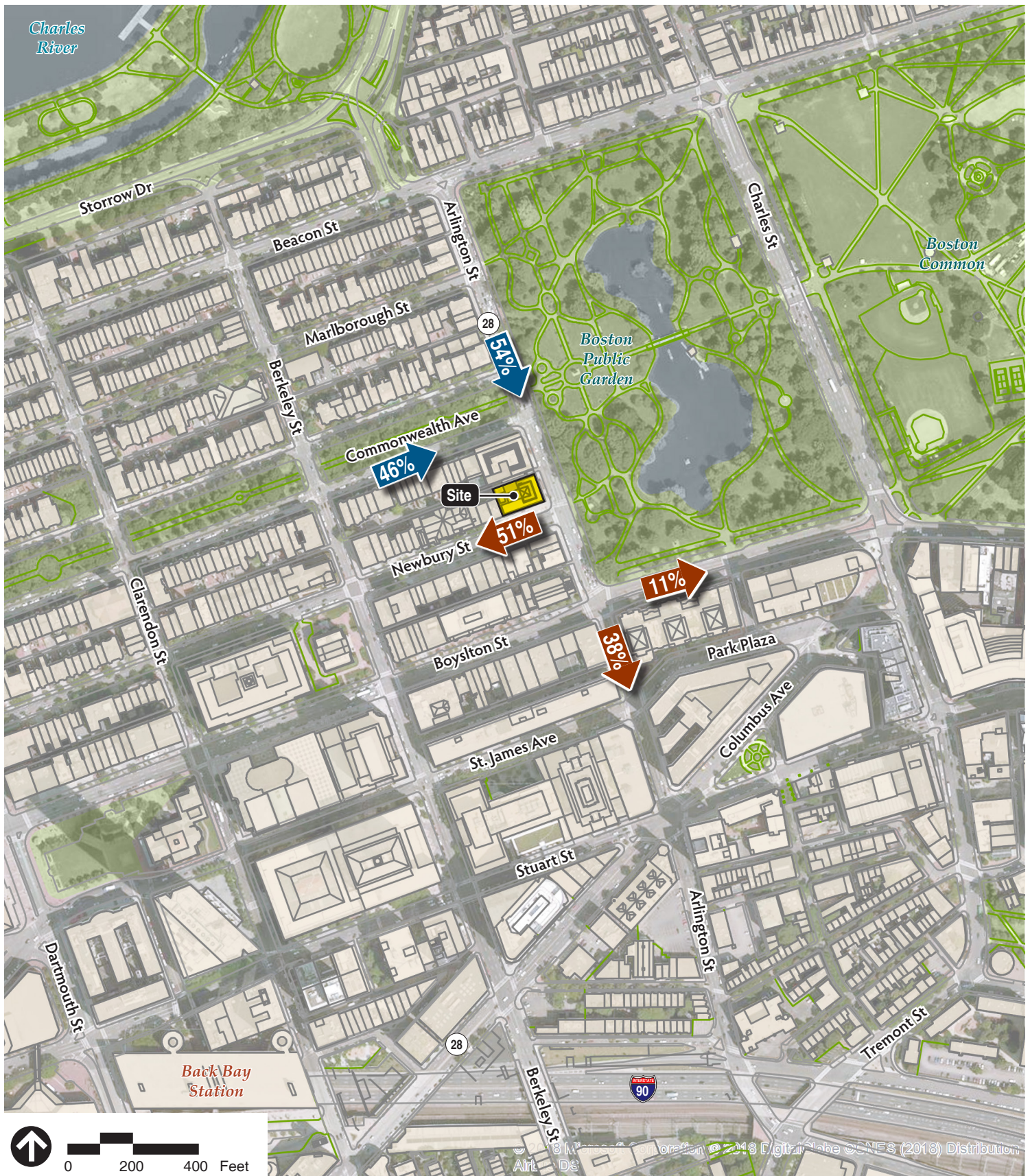
Source: BTD Area 4 Trip Distribution

### 2.6.2.3 Valet Drop-off Relocation

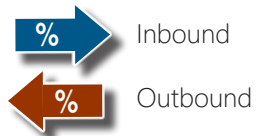
As mentioned previously, the Project will shift the Hotel’s main entrance and valet drop-off location from Arlington Street to Newbury Street. Due to this, existing valet drop-off transactions will shift from their current location along Arlington Street to the new main entrance along Newbury Street. It is expected that pick-up valet transactions will remain along Arlington Street.

### 2.6.2.4 2023 Build Condition Traffic Volume

The new Project-generated vehicle and relocated valet trips were added to the traffic networks using the local trip distribution patterns described above. These new Project-generated trips are shown in Figures 2-16 and 2-17 for the weekday morning and evening peak hours, respectively. To form the 2023 Build Condition, the new Project-generated trips were added to the 2023 No-Build Condition volumes. The resulting 2023 Build Condition volumes are shown in Figures 2-18 and 2-19 for the morning and evening peak hours, respectively.



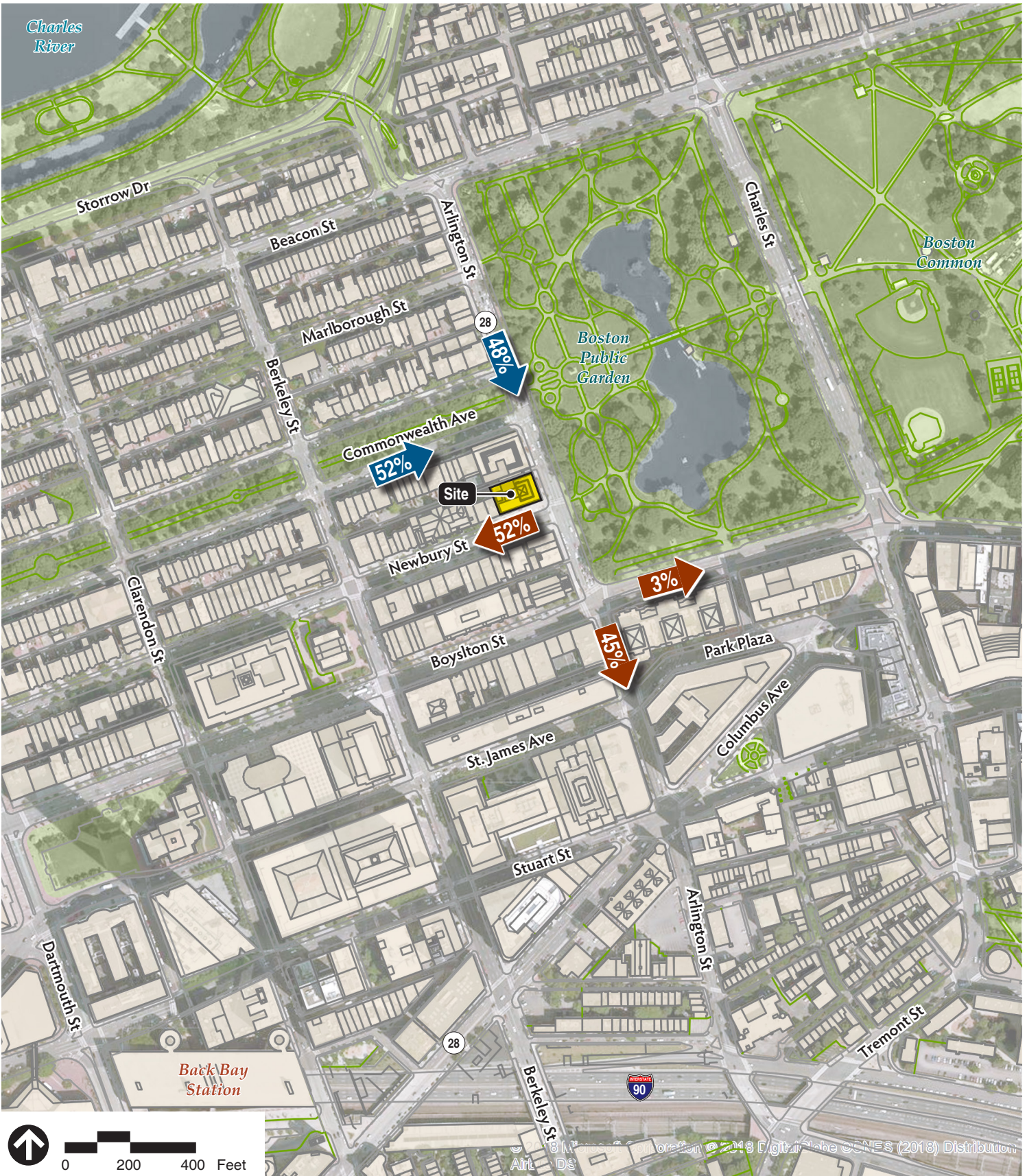
Source: MassGIS, City of Boston





TAJ Hotel



**Figure 2-14**  
Project Trip Distribution - Morning Peak Hour



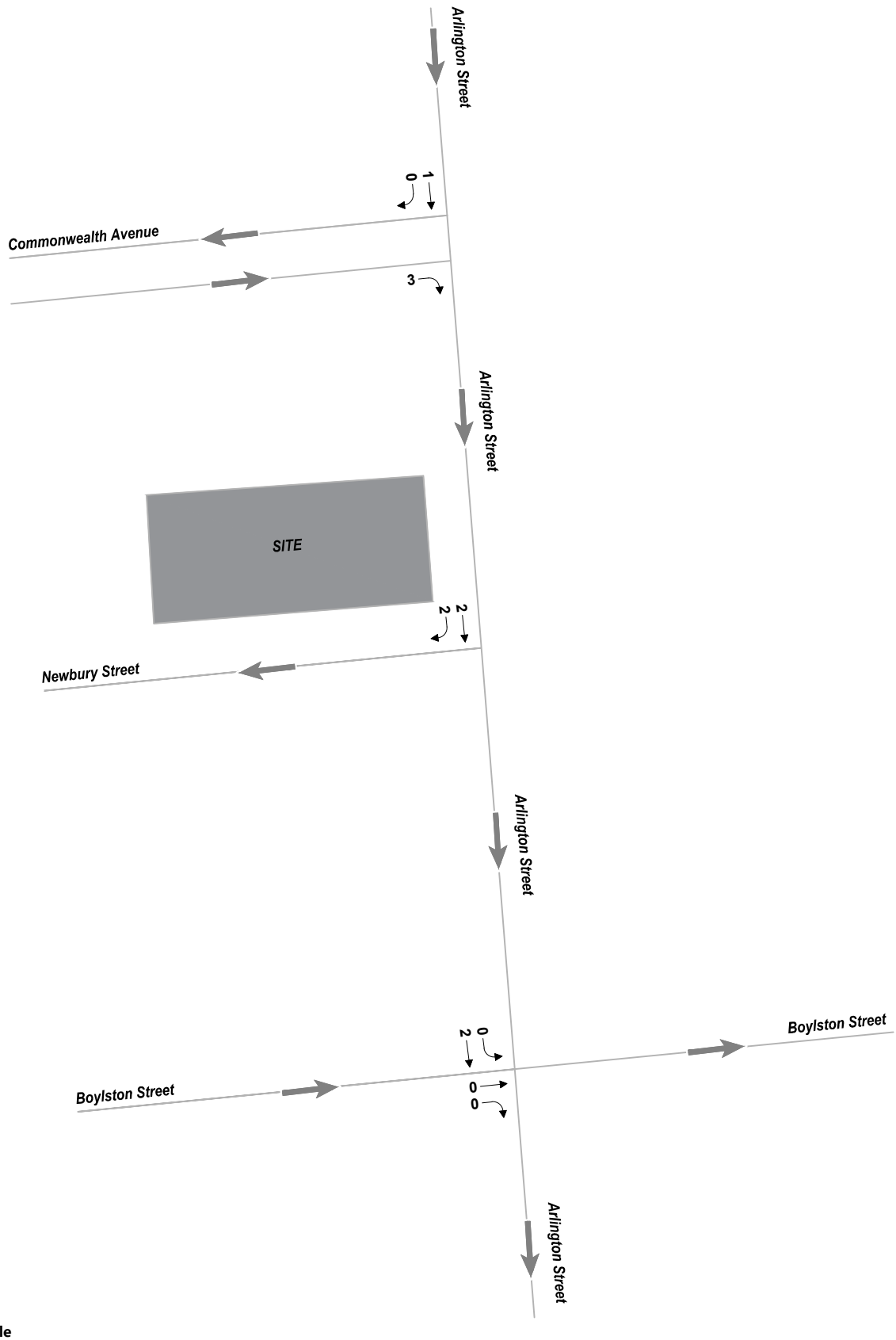
Source: MassGIS, City of Boston


 Inbound  
 Outbound

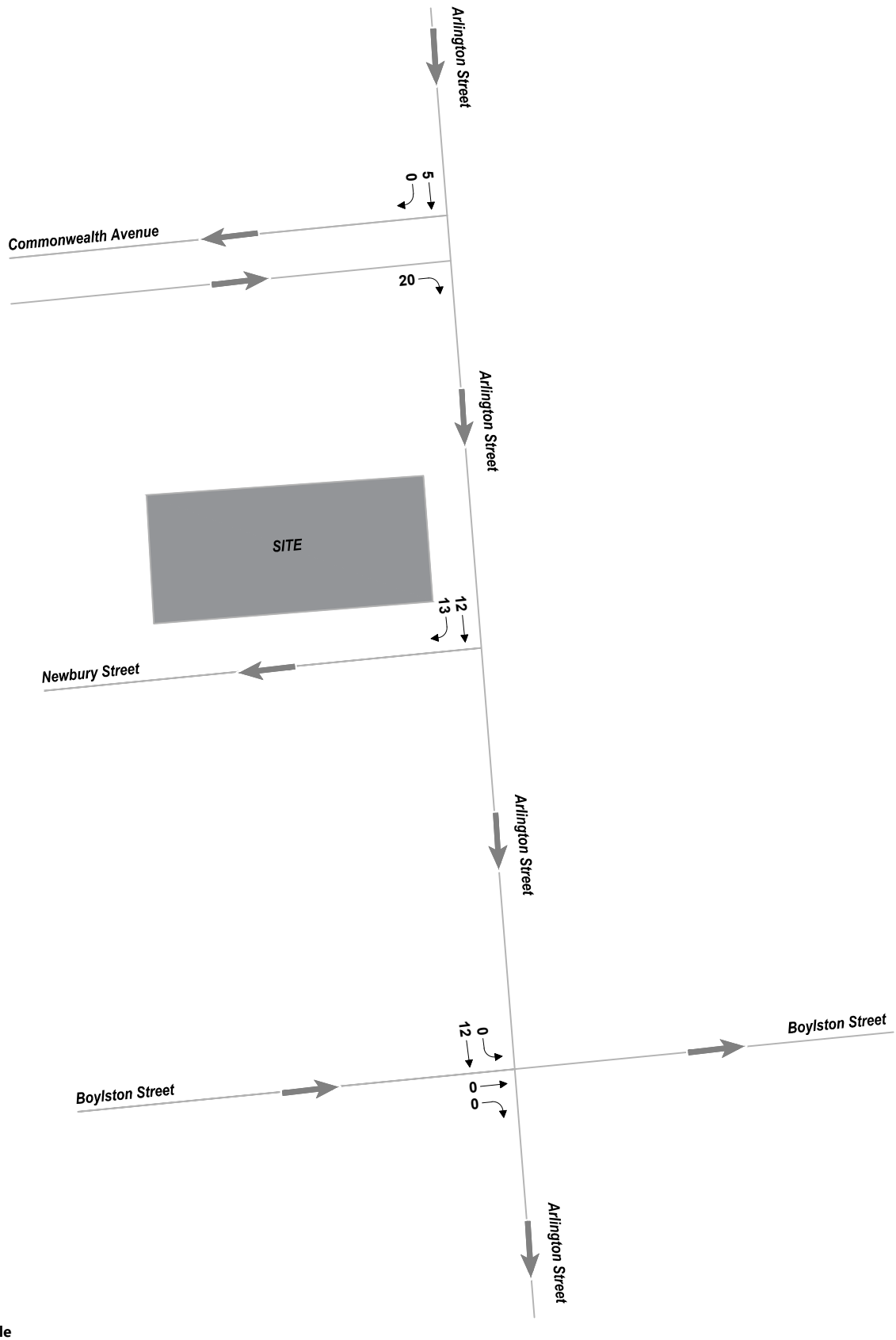
TAJ Hotel




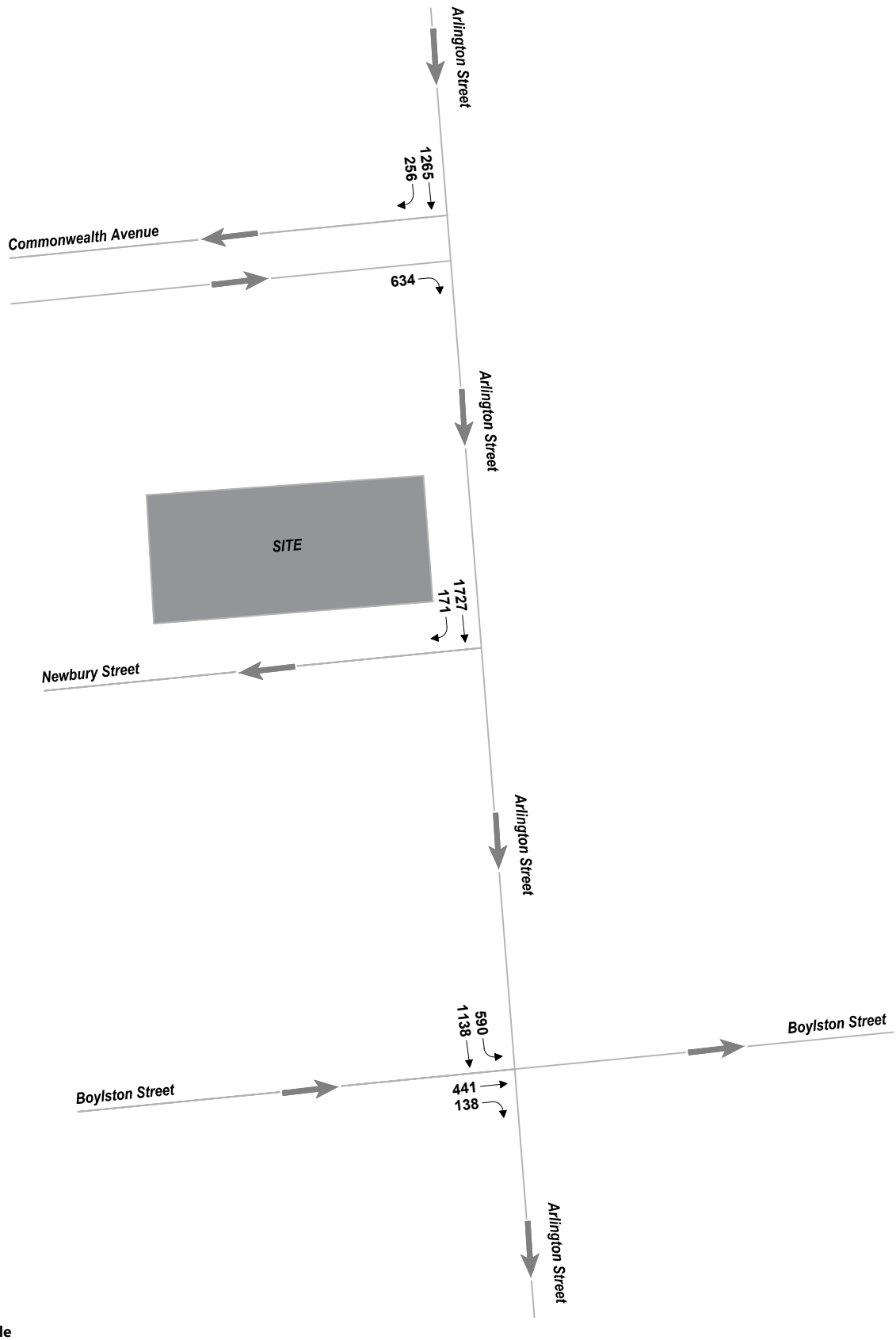
**Figure 2-15**  
Project Trip Distribution - Evening Peak Hour





 Not to Scale





  
 Not to Scale




  
 Not to Scale




  
 Not to Scale

#### **2.6.2.5 Future Vehicle Parking**

There are no expected changes to the parking supporting the Hotel as part of this Project. Valet parking will continue to be provided by the Hotel. The Motor Mart Garage is used for the valet operations. Hotel guests who choose to self-park are welcome to use one of the many public parking facilities previously indicated in Figure 4.8. Additionally, alternate means of travel such as taxi and private ride services (Uber, Lyft, and others) should continue to reduce the need for parking.

#### **2.6.2.6 Future Pedestrian Environment and Accessibility**

As shown previously in Table 2-8, the Project is expected to generate 19 morning peak hour pedestrian/bicycle/other trips and 94 evening peak hour pedestrian/bicycle/other trips. It is expected that many hotel guests will chose to walk and explore the City and surrounding neighborhoods.

The Project will shift the Hotel's main entrance and valet drop-off from Arlington Street to Newbury Street. As part of this shift, the sidewalk along Newbury Street will be modified to provide an enhanced streetscape and a plaza area along the Hotel frontage. The Project will also create an accessible main entrance into the Hotel.

#### **2.6.2.7 Future Bicycle Access**

As shown previously in Table 2-8, the Project is expected to generate 19 morning peak hour pedestrian/bicycle/other trips and 94 evening peak hour pedestrian/bicycle/other trips. The Hotel will continue to provide loaner bicycles for guests to use for the duration of their stay. As previously mentioned, Blue Bikes have seasonal stations in the immediate area available for use by hotel staff and guests.

#### **2.6.2.8 Future Loading and Service**

The Hotel's loading and service will remain essentially unchanged by the Proposed Project. No additional deliveries are expected due to the Project. However, the Project plans to replace the existing dumpster with a more efficient dumpster. This change is expected to cause a slight decrease in trash pick-up frequency.

#### **2.6.2.9 Future Hotel Events**

While the Project modifies event/function space within the Hotel, no significant changes to events are expected. This includes no expected changes to the number or size of events. Event management is also expected to stay similar to the existing condition, with the exception of the valet drop-off which will be relocated from Arlington Street to Newbury Street.



## 2.7 Transportation Demand Management

The Hotel will continue its TDM programs to its employees to promote the use of public transportation and other alternative modes of travel. This includes a subsidy for the purchase of monthly MBTA passes.

As for guests, the Hotel will provide transit information (schedules, maps, fare information) in the lobby and provide loaner bicycles for guests to use for the duration of their stay.

## 2.8 Traffic Operations Analysis

Consistent with BTG Guidelines, Synchro software was used to model LOS operations at the study area intersections. LOS is a qualitative measure of control delay at an intersection providing an index to the operational qualities of a roadway or intersection.

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

Table 2-10 below presents the level of service delay threshold criteria as defined in the 2000 Highway Capacity Manual (HCM).

**Table 2-10 Level of Service Criteria**

Level of Service	Signalized Intersection Control Delay (sec/veh)
LOS A	$\leq 10$
LOS B	> 10-20
LOS C	> 20-35
LOS D	> 35-55
LOS E	> 55-80
LOS F	> 80

Source: 2000 Highway Capacity Manual (HCM)

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

### **2.8.1 Signalized Capacity Analysis**

The LOS results of the signalized capacity analyses are summarized in Table 2-11 and Table 2-12 for the 2018 Existing, 2023 No-Build, and 2023 Build Condition morning and evening peak hours, respectively.

**Table 2-11 Signalized Intersection Level of Service (LOS) Summary – Morning Peak Hour**

Location	2018 Existing Condition			2023 No-Build Condition			2023 Build Condition		
	v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
Arlington Street at Commonwealth Avenue EB/WB	<b>0.67</b>	<b>43.1</b>	<b>D</b>	<b>0.69</b>	<b>48.1</b>	<b>D</b>	<b>0.69</b>	<b>48.2</b>	<b>D</b>
Commonwealth Avenue EB Right	0.73	34.6	C	0.75	35.4	D	0.75	35.5	D
Arlington Street SB Thru	0.97	54.6	D	>1.0	62.6	E	>1.0	62.6	E
Arlington Street SB Right	0.30	7.1	A	0.31	7.2	A	0.31	7.2	A
Arlington Street at Newbury Street	<b>0.51</b>	<b>1.1</b>	<b>A</b>	<b>0.53</b>	<b>1.4</b>	<b>A</b>	<b>0.53</b>	<b>1.4</b>	<b>A</b>
Arlington Street SB Thru/Right	0.61	1.1	A	0.63	1.4	A	0.63	1.4	A
Arlington Street at Boylston Street	<b>0.73</b>	<b>42.5</b>	<b>D</b>	<b>0.76</b>	<b>46.2</b>	<b>D</b>	<b>0.76</b>	<b>46.2</b>	<b>D</b>
Boylston Street EB Thru/Right	0.69	37.5	D	0.71	38.0	D	0.71	38.0	D
Arlington Street SB Hard Left	>1.0	>80	F	>1.0	>80	F	>1.0	>80	F
Arlington Street SB Bear Left/Thru	0.79	25.1	C	0.81	26.0	C	0.81	26.0	C

1 volume to capacity ratio  
2 delay in seconds  
3 level of service

**Table 2-12 Signalized Intersection Level of Service (LOS) Summary – Evening Peak Hour**

Location	2018 Existing Condition			2023 No-Build Condition			2023 Build Condition		
	v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
Arlington Street at Commonwealth Avenue EB/WB	<b>0.69</b>	<b>37.3</b>	<b>D</b>	<b>0.71</b>	<b>39.5</b>	<b>D</b>	<b>0.72</b>	<b>40.8</b>	<b>D</b>
Commonwealth Avenue EB Right	0.86	42.5	D	0.88	44.4	D	0.91	47.8	D
Arlington Street SB Thru	0.88	42.6	D	0.91	45.4	D	0.92	45.8	D
Arlington Street SB Right	0.43	8.5	A	0.44	8.7	A	0.44	8.7	A
Arlington Street at Newbury Street	<b>0.52</b>	<b>1.3</b>	<b>A</b>	<b>0.54</b>	<b>1.4</b>	<b>A</b>	<b>0.55</b>	<b>1.5</b>	<b>A</b>
Arlington Street SB Thru/Right	0.62	1.3	A	0.64	1.4	A	0.65	1.5	A
Arlington Street at Boylston Street	<b>0.85</b>	<b>56.8</b>	<b>E</b>	<b>0.87</b>	<b>60.4</b>	<b>E</b>	<b>0.88</b>	<b>61.8</b>	<b>E</b>
Boylston Street EB Thru/Right	0.92	46.8	D	0.94	49.9	D	0.94	49.9	D
Arlington Street SB Hard Left	>1.0	>80	F	>1.0	>80	F	>1.0	>80	F
Arlington Street SB Bear Left/Thru	0.83	28.4	C	0.86	29.9	C	0.86	30.1	C

1 volume to capacity ratio  
2 delay in seconds  
3 level of service

The study area intersections show no changes in performance from the 2023 No Build Condition to the 2023 Build Condition. All of the LOS remain constant for both the morning and evening peak hours. The traffic volumes generated from the Project are extremely small and are not expected to have a noticeable effect on the surrounding area intersections.

## **2.9 Construction Management**

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

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

Contractors will be encouraged to devise access plans for their personnel that deemphasize auto use (such as seeking off-site parking, provide transit subsidies, on-site lockers, etc.). Construction workers will also be encouraged to use public transportation to access the Project Site because no new parking will be provided for them. Because of the construction workers early arrival/departure (typically 7:00 a.m. – 3:00 p.m.) schedule.

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

## **2.10 Transportation Access Plan Agreement**

A Transportation Access Plan Agreement (TAPA) will be entered into between the Proponent and BTM. The TAPA will codify the specific measures and agreements between the Proponent and the City of Boston.

## Chapter 3

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### Environmental Review Component

## 3.0 ENVIRONMENTAL REVIEW COMPONENT

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### 3.1 Wind

Major buildings, especially those that protrude above their surroundings, may cause increased local wind speeds at the pedestrian level. Typically, wind speeds increase with elevation below the ground surface, and taller buildings intercept these faster winds and deflect them down to the pedestrian level. The funneling of wind through gaps between buildings and the acceleration of wind around corners of buildings may also cause an increase in wind speed. Conversely, if a building is surrounded by others of equivalent height, it may be protected from the prevailing upper-level winds, resulting in no significant changes to the local pedestrian-level wind environment.

The proposed Project includes the reconfiguration of the main entrance from Arlington Street to Newbury Street, the renovation of the interior guest rooms and permanently enclosing the existing seasonal rooftop restaurant. The Project will not affect the existing height or massing of the building and therefore wind impacts are not anticipated.

### 3.2 Shadow

#### *3.2.1 Introduction and Methodology*

A shadow impact analysis was conducted to investigate shadow impacts from the Project during three time periods (9:00 a.m., 12:00 noon, and 3:00 p.m.) during the vernal equinox (March 21), summer solstice (June 21), autumnal equinox (September 21), and winter solstice (December 21). In addition, shadow studies were conducted for the 6:00 p.m. time period during the summer solstice and autumnal equinox.

The shadow impact analysis was prepared to present the existing shadow and net new shadow that would be created by the Project in order to illustrate the incremental impact of the Project. The analysis focuses on nearby open spaces and sidewalks adjacent to and in the vicinity of the Project site. As shown in Figures 3-1 through 3-14, the Project does not create any net new shadow and therefore does not impact nearby transit stops, open spaces or sidewalks adjacent to the Project site.

Shadows have been determined using the applicable Altitude and Azimuth data for Boston.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-1**  
 Shadow Study: March 21, 9:00 a.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-2**  
 Shadow Study: March 21, 12:00 p.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-3**  
 Shadow Study: March 21, 3:00 p.m.

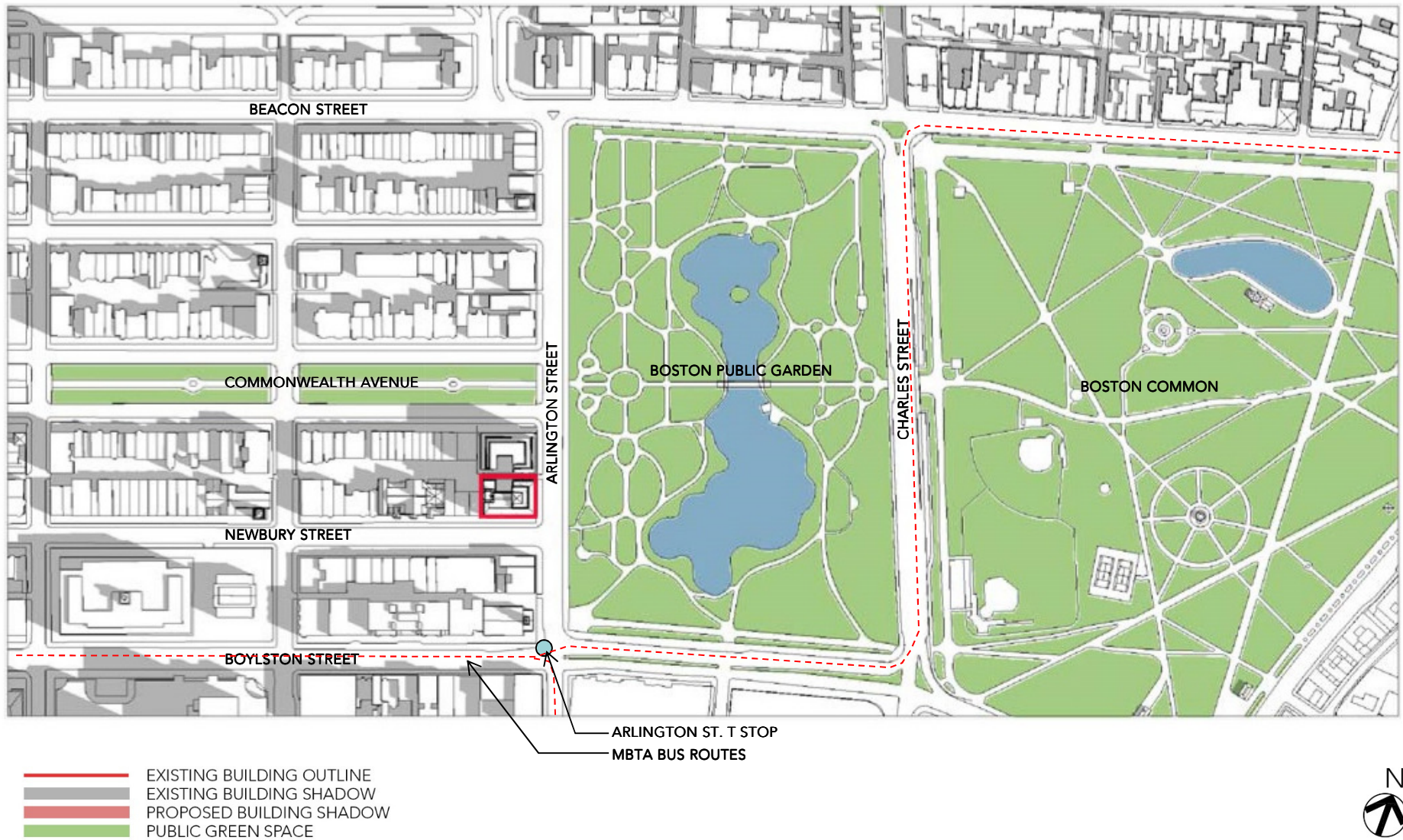




Taj Hotel Boston Boston, Massachusetts



**Figure 3-4**  
 Shadow Study: March 21, 6:00 p.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-5**  
 Shadow Study: June 21, 9:00 a.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-6**  
Shadow Study: June 21, 12:00 p.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-7**  
 Shadow Study: June 21, 3:00 p.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-8**  
 Shadow Study: June 21, 6:00 p.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-9**  
 Shadow Study: September 21, 9:00 a.m.



Taj Hotel Boston Boston, Massachusetts



**Figure 3-10**  
 Shadow Study: September 21, 12:00 p.m.







Taj Hotel Boston Boston, Massachusetts



**Figure 3-12**  
 Shadow Study: September 21, 6:00 p.m.



Taj Hotel Boston Boston, Massachusetts



Figure 3-13

Shadow Study: December 21, 9:00 a.m.





Taj Hotel Boston Boston, Massachusetts



Figure 3-15

Shadow Study: December 21, 3:00 p.m.

### 3.3 Daylight Analysis

Daylight, as defined by the Large Project Review guidelines, relates to the amount of “skydome” that will be obstructed by new building elements when viewed from the adjacent public way. The Project will not have an impact on the currently visible sky plane and therefore will not impact the public pedestrian environment or adjacent properties.

### 3.4 Solar Glare

The existing building is primarily masonry with punched windows. The glass of the street-level storefronts along Newbury Street will be replaced with clear glass that is typically installed for retail uses. The proposed improvements will not result in any significant solar glare impacts to the public right-of-way or adjacent buildings.

### 3.5 Air Quality

#### **3.5.1 Introduction**

BPDA requires that proposed projects evaluate the air quality in the local area, and assess any adverse air quality impacts attributable to the project. The BPDA guidelines state that impacts from stationary sources (boilers, engines) and mobile sources (vehicles) must be addressed.

#### **3.5.2 BPDA Air Quality Analysis Requirements**

BPDA guidelines state:

*A mesoscale analysis predicting the change in regional emissions of volatile organic compounds (“VOCs”) and nitrogen oxides (“NOx”) should be performed for projects that generate more than 10,000 vehicle trips per day. The above analyses shall be conducted in accordance with the modeling protocols established by the Massachusetts Department of Environmental Protection (and the U.S. Environmental Protection Agency).*

For this Project, the vehicle trip threshold is not exceeded and therefore a mesoscale analysis is not required.

BPDA guidelines also state:

*A microscale analysis predicting localized carbon monoxide concentrations should be performed, including identification of any locations projected to exceed the National or Massachusetts Ambient Air Quality Standards, for projects in which: 1) project traffic would impact intersections or roadway links currently operating at Level of Service (“LOS”) D, E, or F or would cause LOS to decline to D, E, or F; 2) project traffic would increase traffic volumes on nearby roadways by 10% or more*

*(unless the increase in traffic volume is less than 100 vehicles per hour); or, 3) the project will generate 3,000 or more new average daily trips on roadways providing access to a single location.*

For this Project, there will be no added parking. The Project is expected to only generate three new weekday morning peak hour trips and fifteen weekday evening peak hour trips. The study area intersections show no changes in LOS performance from the 2023 No Build Condition to the 2023 Build Condition. Two of the three intersections studied meet the BPDA criteria for study described above. The Project doesn't generate enough traffic to require a mesoscale vehicle emissions quantification analysis.

Any new stationary sources will be reviewed by the Massachusetts Department of Environmental Protection during permitting under the Environmental Results Program, as required. It is expected that all stationary sources will be small, and any impacts from stationary sources would be insignificant.

An analysis of existing air quality in the area is presented.

### **3.5.3 National Ambient Air Quality Standards and Background Concentrations**

Background air quality concentrations and federal air quality standards were utilized to conduct the above air quality impact analyses. Federal National Ambient Air Quality Standards (NAAQS) were developed by the U.S. Environmental Protection Agency (EPA) to protect the human health against adverse health effects with a margin of safety. The modeling methodologies were developed in accordance with the latest Massachusetts Department of Environmental Protection (MassDEP) modeling policies and Federal modeling guidelines.<sup>1</sup> The following sections outline the NAAQS standards and detail the sources of background air quality data.

#### **3.5.3.1 National Ambient Air Quality Standards**

The 1970 Clean Air Act was enacted by the U.S. Congress to protect the health and welfare of the public from the adverse effects of air pollution. As required by the Clean Air Act, EPA promulgated NAAQS for the following criteria pollutants: nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter (PM) (PM-10 and PM-2.5), carbon monoxide (CO), ozone (O<sub>3</sub>), and lead (Pb). The NAAQS are listed in Table 3-1. Massachusetts Ambient Air Quality Standards (MAAQS) are typically identical to NAAQS (differences are highlighted in **bold** in Table 3-1).

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<sup>1</sup> 40 CFR 51 Appendix W, Guideline on Air Quality Models, 70 FR 68228, Nov. 9, 2005

NAAQS specify concentration levels for various averaging times and include both “primary” and “secondary” standards. Primary standards are intended to protect human health, whereas secondary standards are intended to protect public welfare from any known or anticipated adverse effects associated with the presence of air pollutants, such as damage to vegetation. The more stringent of the primary or secondary standards were applied when comparing to the modeling results for this Project.

The NAAQS also reflect various durations of exposure. The non-probabilistic short-term periods (24 hours or less) refer to exposure levels not to be exceeded more than once a year. Long-term periods refer to limits that cannot be exceeded for exposure averaged over three months or longer.

**Table 3-1 National (NAAQS) and Massachusetts (MAAQs) Ambient Air Quality Standards**

Pollutant	Averaging Period	NAAQS ( $\mu\text{g}/\text{m}^3$ )		MAAQs ( $\mu\text{g}/\text{m}^3$ )	
		Primary	Secondary	Primary	Secondary
NO <sub>2</sub>	Annual (1)	100	Same	100	Same
	1-hour (2)	<b>188</b>	None	<b>None</b>	None
SO <sub>2</sub>	Annual (1)(9)	80	None	80	None
	24-hour (3)(9)	365	None	365	None
	3-hour (3)	None	1300	None	1300
	1-hour (4)	<b>196</b>	None	<b>None</b>	None
PM-2.5	Annual (1)	<b>12</b>	<b>15</b>	<b>None</b>	<b>None</b>
	24-hour (5)	<b>35</b>	<b>Same</b>	<b>None</b>	<b>None</b>
PM-10	Annual (1)(6)	<b>None</b>	None	<b>50</b>	Same
	24-hour (3)(7)	150	Same	150	Same
CO	8-hour (3)	10,000	Same	10,000	Same
	1-hour (3)	40,000	Same	40,000	Same
Ozone	8-hour (8)	<b>147</b>	Same	<b>235</b>	Same
Pb	3-month (1)	1.5	Same	1.5	Same

- (1) Not to be exceeded.
- (2) 98th percentile of one-hour daily maximum concentrations, averaged over three years.
- (3) Not to be exceeded more than once per year.
- (4) 99th percentile of one-hour daily maximum concentrations, averaged over three years.
- (5) 98th percentile, averaged over three years.
- (6) EPA revoked the annual PM-10 NAAQS in 2006.
- (7) Not to be exceeded more than once per year on average over three years.
- (8) Annual fourth-highest daily maximum eight-hour concentration, averaged over three years.
- (9) EPA revoked the annual and 24-hour SO<sub>2</sub> NAAQS in 2010. However, they remain in effect until one year after the area’s initial attainment designation, unless designated as “nonattainment”.

### 3.5.3.2 Background Concentration

To estimate background pollutant levels representative of the area, the most recent air quality monitor data reported by the MassDEP in their Annual Air Quality Reports was obtained for 2015 to 2017. The three-hour and 24-hour SO<sub>2</sub> values are no longer reported in the annual reports. Data for these pollutant and averaging time combinations were obtained from the EPA’s AirData website.

The Clean Air Act allows for one exceedance per year of the CO and SO<sub>2</sub> short-term NAAQS per year. The highest second-high accounts for the one exceedance. Annual NAAQS are never to be exceeded. The 24-hour PM-10 standard is not to be exceeded more than once per year on average over three years. To attain the 24-hour PM-2.5 standard, the three-year average of the 98th percentile of 24-hour concentrations must not exceed 35  $\mu\text{g}/\text{m}^3$ . For annual PM-2.5 averages, the average of the highest yearly observations was used as the background concentration. To attain the one-hour NO<sub>2</sub> standard, the three-year average of the 98<sup>th</sup> percentile of the maximum daily one-hour concentrations must not exceed 188  $\mu\text{g}/\text{m}^3$ .

Background concentrations were determined from the closest available monitoring stations to the proposed development. All pollutants are not monitored at every station, so data from multiple locations are necessary. The closest monitor is at Kenmore Square (1.3 miles west), but this site only samples for SO<sub>2</sub>, PM10, PM2.5, and NO<sub>2</sub>. A site on Harrison Avenue is roughly 1.75 miles southwest of the Project. This site samples for the remaining pollutants. A summary of the background air quality concentrations are presented in Table 3-2.

**Table 3-2 Observed Ambient Air Quality Concentrations and Selected Background Levels**

POLLUTANT	AVERAGING TIME	2015	2016	2017	Background Concentration ( $\mu\text{g}/\text{m}^3$ )	NAAQS	Percent of NAAQS
SO <sub>2</sub> <sup>(1)(6)(7)</sup>	1-Hour <sup>(5)</sup>	14.4	10.7	7.3	10.8	196.0	6%
	3-Hour <sup>(6)</sup>	11.5	10.0	0.0	11.5	1300.0	1%
	24-Hour	7.6	5.2	3.9	7.6	365.0	2%
	Annual	1.4	1.1	1.3	1.4	80.0	2%
PM-10 <sup>(8)</sup>	24-Hour	30.0	30.0	27.0	30.0	150.0	20%
	Annual	14.2	14.1	11.2	14.2	50.0	28%
PM-2.5	24-Hour <sup>(5)</sup>	14.5	13.0	12.2	13.2	35.0	38%
	Annual <sup>(5)</sup>	6.5	6.2	6.1	6.3	12.0	52%
NO <sub>2</sub> <sup>(3)(7)</sup>	1-Hour <sup>(5)</sup>	105.3	88.4	86.5	93.4	188.0	50%
	Annual	32.5	28.3	47.5	47.5	100.0	47%
CO <sup>(2)(7)</sup>	1-Hour	1560.9	2750.4	1512.7	2750.4	40000.0	7%
	8-Hour	1031.4	1375.2	1439.4	1439.4	10000.0	14%
Ozone <sup>(4)</sup>	8-Hour	109.9	113.9	135.4	135.4	147.0	92%
Lead <sup>(9)</sup>	Rolling 3-Month	0.016	0.017	N/A	0.017	0.15	12%

Notes:

From 2015-2017 MassDEP's Annual Ambient Air Quality Reports and EPA's AirData Website

1 SO<sub>2</sub> reported ppb. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 2.62  $\mu\text{g}/\text{m}^3$ .

2 CO reported in ppm. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1146  $\mu\text{g}/\text{m}^3$ .

3 NO<sub>2</sub> reported in ppb. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1.88  $\mu\text{g}/\text{m}^3$ .

4 O<sub>3</sub> reported in ppm. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1963  $\mu\text{g}/\text{m}^3$ .

5 Background level is the average concentration of the three years.

6 The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.

7 CO monitor at Kenmore Square was deactivated in January 2015. Harrison Avenue monitor used for 2015 and 2016.

8 PM10 monitor at Kenmore Square was deactivated in 2016. Harrison Avenue monitor used for 2016 and 2017.

9 Lead is not reported at any site in Massachusetts in 2017.



Air quality in the vicinity of the Project site is generally good, with all local background concentrations found to be well below the NAAQS.

### **3.5.4 Mobile Sources**

Mobile sources of air pollution include emissions from gasoline, diesel, and natural gas fueled vehicle traffic. Emissions from mobile sources have continually decreased as engine technology and efficiency have been improved.

#### **3.5.4.1 Methodology**

A “microscale” analysis is required for any intersection where (1) Project traffic would impact intersections or roadway links currently operating at LOS D, E, or F, or would cause LOS to decline to D, E, or F; (2) Project traffic would increase traffic volumes on nearby roadways by 10% or more (unless the increase in traffic volume is less than 100 vehicles per hour); or, (3) the Project will generate 3,000 or more new average daily trips on roadways providing access to a single location. The microscale analysis involves modeling of CO emissions from vehicles idling at and traveling through signaled intersections. Predicted ambient concentrations of CO for the Build and No-Build cases are compared with federal (and state) ambient air quality standards for CO.

The microscale analysis typically examines ground-level CO impacts due to traffic queues in the immediate vicinity of a project. CO is used in microscale studies to indicate roadway pollutant levels since it is the most abundant pollutant emitted by motor vehicles and can result in so-called "hot spot" (high concentration) locations around congested intersections. The NAAQS standards do not allow ambient CO concentrations to exceed 35 parts per million (ppm) for a one-hour averaging period, and 9 ppm for an eight-hour averaging period, more than once per year at any location. The widespread use of CO catalysts on current vehicles has reduced the occurrences of CO hotspots. Air quality modeling techniques (computer simulation programs) are typically used to predict CO levels for both existing and future conditions to evaluate compliance of the roadways with the standards. The microscale analysis has been conducted using the latest versions of EPA’s MOVES and CAL3QHC programs to estimate CO concentrations at sidewalk receptor locations. Baseline (2018) and future year (2023) emission factor data calculated from the MOVES model, along with traffic data, were input into the CAL3QHC program to determine CO concentrations due to traffic flowing through the selected intersections. The modeling methodology was developed in accordance with the latest MassDEP modeling policies and Federal modeling guidelines.<sup>2</sup>

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<sup>2</sup> 40 CFR 51 Appendix W, Guideline on Air Quality Models, 70 FR 68228, Nov. 9, 2005

Existing background values of CO at the nearest monitor location at Harrison Avenue were obtained from MassDEP. CAL3QHC results were then added to background CO values of 2.4 ppm (one-hour) and 1.3 ppm (eight-hour), as provided by MassDEP, to determine total air quality impacts due to the Project. These values were compared to the NAAQS for CO of 35 ppm (one-hour) and 9 ppm (eight-hour).

Modeling assumptions and backup data for results presented in this section are provided in Attachment D.

### ***Intersection Selection***

Two signalized intersections included in the traffic study meet the conditions described at the beginning of this section (see also Chapter 2). The traffic volumes and LOS calculations provided in Chapter 2 form the basis of evaluating the traffic data versus the microscale thresholds. The intersection of Arlington Street and Boylston Street and the intersection of Arlington Street and Commonwealth Avenue were both found to meet the criteria.

Microscale modeling was performed for this intersection based on the aforementioned methodology. The 2018 Existing Condition and the 2023 No-Build and Build conditions were each evaluated for both morning (a.m.) and afternoon (p.m.) peak.

### ***Emissions Calculations (MOVES)***

The EPA MOVES computer program was used to estimate motor vehicle emission factors on the roadway network. Emission factors calculated by the MOVES model are based on motor vehicle operations typical of daily periods. The Commonwealth's statewide annual Inspection and Maintenance (I&M) program was included, as well as the county specific vehicle age registration distribution, fleet mix, meteorology, and other inputs. The inputs for MOVES for the existing (2018) and future year (2025) are provided by MassDEP.

All link types for the modeled intersections were input into MOVES. Idle emission factors are obtained from factors for a link average speed of 0 miles per hour (mph). Moving emissions are calculated based on speeds at which free-flowing vehicles travel through the intersection as stated in traffic modeling (Synchro) reports. A speed of 25 mph is used for all free-flow traffic, consistent with the City of Boston speed limit. Speeds of 10 and 15 mph were used for right (and U-turns, if necessary), and left turns, respectively. Roadway emissions factors were obtained from MOVES using EPA guidance.<sup>3</sup>

Winter CO emission factors are typically higher than summer. Therefore, January weekday emission factors were conservatively used in the microscale analysis.

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<sup>3</sup> U.S. EPA, 2010. Using MOVES in Project-Level Carbon Monoxide Analyses. EPA-420-B-10-041

### ***Receptors & Meteorology Inputs***

Sets of up to 215 receptors were placed in the vicinity of the modeled intersections. Receptors extended approximately 300 feet on the sidewalks along the roadways approaching the intersections. The roadway links and receptor locations of the modeled intersection are presented in Figures 3-16 and 3-17.

For the CAL3QHC model, limited meteorological inputs are required. Following EPA guidance<sup>4</sup>, a wind speed of one meter per second, stability class D(4), and a mixing height of 1,000 meters were used. To account for the intersection geometry, wind directions from 0° to 350°, at every 10° were selected. A surface roughness length of 321 centimeters was selected due to the urban environment.<sup>5</sup>

### ***Impact Calculations (CAL3QHC)***

The CAL3QHC model predicts one-hour concentrations using queue-links at signalized intersections, worst-case meteorological conditions, and traffic input data. The CAL3QHC methodology was based on EPA CO modeling guidance. Signal timings were provided directly from the traffic modeling outputs.

For use in the microscale analysis, background concentrations of CO in ppm were required. The corresponding maximum background concentrations in ppm were 2.4 ppm (2,750  $\mu\text{g}/\text{m}^3$ ) for one-hour and 1.3 ppm (1,439  $\mu\text{g}/\text{m}^3$ ) for eight-hour CO.

#### **3.5.4.2 Air Quality Results**

The results of the maximum one-hour predicted CO concentrations from CAL3QHC are provided in Tables 3-3 through 3 -5 for the 2018 and 2023 scenarios. Eight-hour average concentrations are calculated by multiplying the maximum one-hour concentrations by a factor of 0.9.<sup>6</sup>

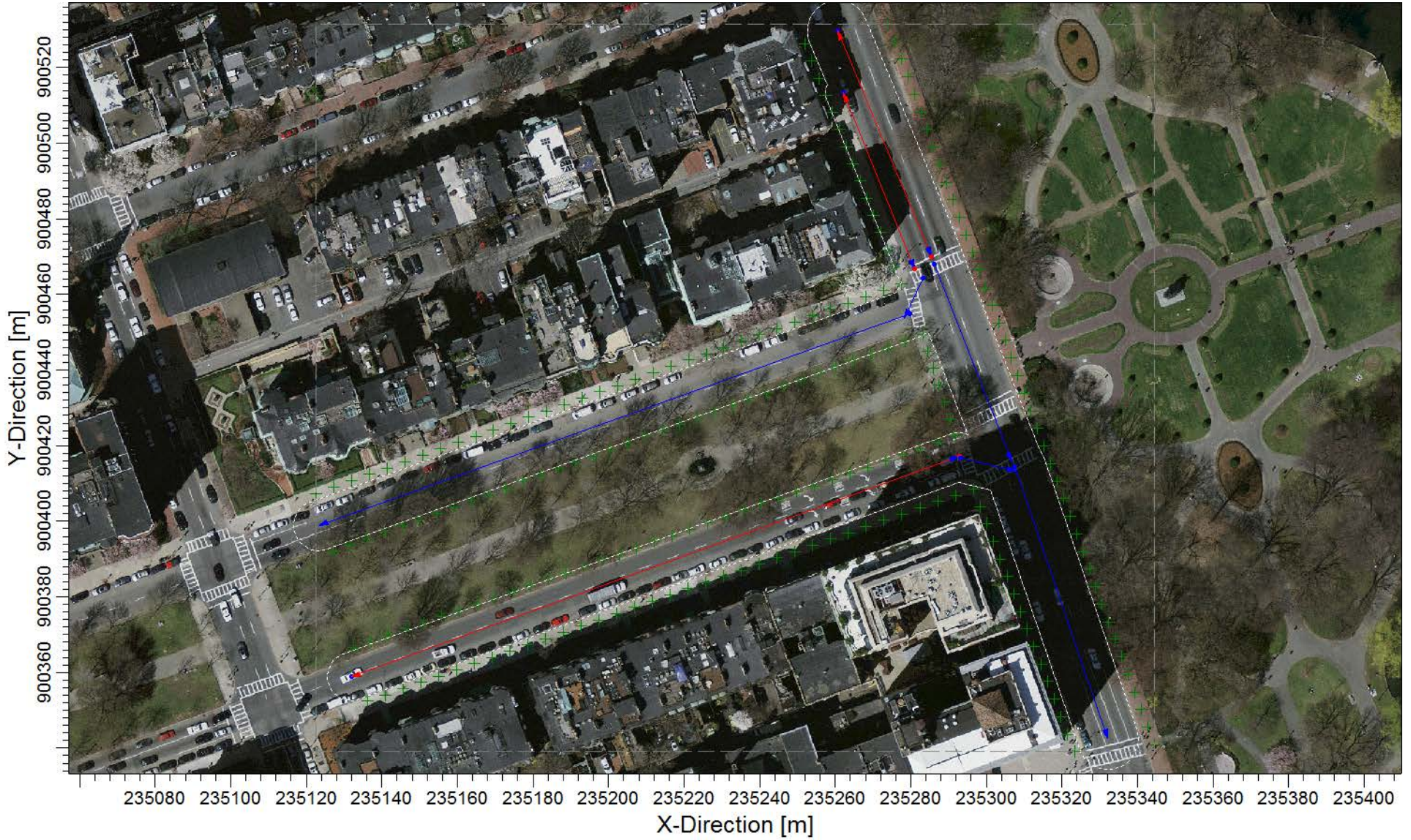
The results of the one-hour and eight-hour maximum modeled CO ground-level concentrations from CAL3QHC were added to EPA supplied background levels for comparison to the NAAQS. These values represent the highest potential concentrations at the intersection as they are predicted during the simultaneous occurrence of "defined" worst case meteorology.

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<sup>4</sup> U.S. EPA, Guideline for Modeling Carbon Monoxide from Roadway Intersections. EPA-454/R-92-005, November 1992.

<sup>5</sup> U.S. EPA, *User's Guide for CAL3QHC Version 2: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*. EPA -454/R-92-006 (Revised), September 1995.

<sup>6</sup> U.S. EPA, AERSCREEN User's Guide; EPA-454/B-11-001, March 2011.



Taj Hotel Boston, Boston, MA



Taj Hotel Boston, Boston, MA

The highest one-hour traffic-related concentration predicted in the area of the Project for the future modeled conditions (0.3 ppm) plus background (2.4 ppm) is 2.7 ppm. The highest eight-hour traffic-related concentration predicted in the area of the Project for the future modeled conditions (0.3 ppm) plus background (1.3 ppm) is 1.6 ppm.

All concentrations are well below the one-hour NAAQS of 35 ppm and the eight-hour NAAQS of 9 ppm.

### 3.5.4.3 Conclusions

Results of the microscale analysis show that all predicted CO concentrations are well below one-hour and eight-hour NAAQS. There is no discernable change to the modeled concentrations from the No-Build to Build cases. Therefore, it can be concluded that there are no anticipated adverse air quality impacts resulting from increased traffic from the Project.

### 3.5.5 Stationary Sources

Stationary sources of air pollution are typically units that combust fuel. In this case, these sources consist of heating and hot water units and emergency electrical generators. Cooling towers, although not a combustion source, are a source of particulate emissions.

It is expected that the majority of stationary sources (boilers, engines, etc.) may be subject to the MassDEP's Environmental Results Program (ERP). The Proponent will complete the required applications and submittals for the equipment, as necessary.

**Table 3-3 Summary of Microscale Modeling Analysis (Existing 2018)**

<i>Intersection</i>	<i>Peak</i>	<i>CAL3QHC Modeled CO Impacts (ppm)</i>	<i>Monitored Background Concentration (ppm)</i>	<i>Total CO Impacts (ppm)</i>	<i>NAAQS (ppm)</i>
<b>1-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	2.4	2.7	35
	PM	0.3	2.4	2.7	35
Arlington Street and Commonwealth Avenue	AM	0.3	2.4	2.7	35
	PM	0.3	2.4	2.7	35
<b>8-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	1.3	1.6	9
	PM	0.3	1.3	1.6	9
Arlington Street and Commonwealth Avenue	AM	0.3	1.3	1.6	9
	PM	0.3	1.3	1.6	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.					

**Table 3-4 Summary of Microscale Modeling Analysis (No-Build 2023)**

<i>Intersection</i>	<i>Peak</i>	<i>CAL3QHC Modeled CO Impacts (ppm)</i>	<i>Monitored Background Concentration (ppm)</i>	<i>Total CO Impacts (ppm)</i>	<i>NAAQS (ppm)</i>
<b>1-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	2.4	2.7	35
	PM	0.3	2.4	2.7	35
Arlington Street and Commonwealth Avenue	AM	0.2	2.4	2.6	35
	PM	0.3	2.4	2.7	35
<b>8-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	1.3	1.6	9
	PM	0.3	1.3	1.6	9
Arlington Street and Commonwealth Avenue	AM	0.2	1.3	1.5	9
	PM	0.3	1.3	1.6	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.					

**Table 3-5 Summary of Microscale Modeling Analysis (Build 2023)**

<i>Intersection</i>	<i>Peak</i>	<i>CAL3QHC Modeled CO Impacts (ppm)</i>	<i>Monitored Background Concentration (ppm)</i>	<i>Total CO Impacts (ppm)</i>	<i>NAAQS (ppm)</i>
<b>1-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	2.4	2.7	35
	PM	0.3	2.4	2.7	35
Arlington Street and Commonwealth Avenue	AM	0.2	2.4	2.6	35
	PM	0.3	2.4	2.7	35
<b>8-Hour</b>					
Arlington Street and Boylston Street	AM	0.3	1.3	1.6	9
	PM	0.3	1.3	1.6	9
Arlington Street and Commonwealth Avenue	AM	0.2	1.3	1.5	9
	PM	0.3	1.3	1.6	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.9.					

### **3.6 Stormwater/Water Quality**

Section 7.0 includes a discussion of stormwater and water quality.

### **3.7 Flood Hazard Zones/Wetlands**

The most current version of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project site located in the City of Boston – Community Panel 25025C0077J, effective March 16, 2016, indicates the FEMA Flood Zone Designation for the site area. The map shows the Project is located outside of the 0.2 percent annual change floodplain (commonly referred to as the 500-year flood limit) identifying it as an area of minimal flooding

The Project site does not contain wetlands.

### **3.8 Geotechnical Impacts**

#### *Soils*

The soils at the Project site are classified as Urban Land. Urban Land complex are those soils in which the soil's original structure and content have been so altered by human activities it has lost its original characteristics and is thus unidentifiable.

#### *Geology*

There are no predominant geological surface features such as rock outcroppings on the site. The bedrock in the area of the Project site is composed of Cambridge and Braintree argillite, a fine-grained rock derived from the moderate metamorphism of siltstone, claystone, or shale that is early Paleozoic in age. The bedrock depth is greater than 125 feet below ground surface (bgs).

#### *Groundwater*

Under natural, undisturbed conditions, shallow groundwater flow generally follows the topography of the land surface and on this basis, the topography suggests that groundwater flow across the Project site is in a northerly direction. However, localized conditions can alter flow direction and thus the presumed flow may not coincide with the actual in the Project site area.

Section 7.5.1 includes a discussion of compliance with the Groundwater Conservation Overlay District (GCOD).

There is no below grade work proposed other than in the current finished basement.



## 3.9 Solid and Hazardous Waste

### 3.9.1 *Hazardous Waste*

A Phase I Environmental Site Assessment (ESA) was conducted by CBRE for Real Estate Credit Solutions, LLC in January of 2018 to assess existing site conditions and render an opinion as to the identified or potential presence of recognized environmental conditions in connection with the property within the scope and limitations of ASTM International's Standard Practice for Environmental Site Assessments: Phase 1 Environmental Site Assessment Process E 1527-13 and the limitations identified. The assessment revealed no evidence of recognized environmental conditions (RECs) in connection with the Taj site; however, the following historical recognized environmental condition (HREC) was identified.

The Subject of the 21E is listed as a closed state hazardous waste site (SHWS) and MA Release site due to a reportable release that occurred at the site, Release Tracking Number (RTN) 3-10622) on February 28, 1994. The incident was reported when a release of No. 2 fuel oil occurred during a routine filling of the 7,500-gallon basement fuel oil storage tank. Cleanup was completed and a Class A-1 Response Action Outcome (RAO) was assigned to the release on May 5, 1994. The DEP database reports that the site currently has a "no phase" status under the Massachusetts Contingency Plan (MCP), indicating that no additional investigation was required at this site. The RAO indicates that a permanent solution has been achieved at the site and that the contamination has been reduced to background levels. Based on the forgoing, CBRE has no significant environmental concerns regarding this historical release and therefore no further action is recommended.

According to the CBRE report, a significant portion of the building's asbestos-containing materials have been removed. Activities involving ACM will be conducted in accordance with applicable regulations.

### 3.9.2 *Operation Solid and Hazardous Waste Generation*

The Project will generate waste typical of hotel uses. Solid waste is expected to include wastepaper, cardboard, glass bottles and food. Recyclable materials will be recycled through a program implemented by building management. The Project will generate approximately 154 tons of solid waste per year.

With the exception of hazardous wastes typical of hotel developments (e.g., cleaning fluids and paint), the Project will not involve the generation, use, transportation, storage, release, or disposal of potentially hazardous materials. Typical waste generated by the uses will be handled in compliance with all local, state, and federal regulations. In addition, the Proponent has been coordinating with Waste Management to replace the existing trash

compactor with a dual compactor, which allows mixed trash to be compacted on one side, with single stream recycling to be compacted on the other side. All trash from the hotel is proposed to be picked up once per week.

### **3.9.3        *Recycling***

The Project will include recycling areas for items such as paper, plastic, glass and cans. Currently recycling for the hotel is picked up every Monday, Wednesday and Friday of each week. There are two two-yarders and approximately ten to fifteen totes in each pickup. The yarders and totes are set on the curb in front of the hotel on Newbury Street. It is anticipated that the current recycling program will remain the same after the completion of the Project.

## **3.10    Noise Impacts**

The proposed interior renovations to the Taj Hotel will result in minimal changes to exterior or rooftop mechanical equipment analyzed in a typical quantitative sound level impact analysis. Existing equipment such as intake fans, air-handling units, cooling towers, emergency generator, chiller, and air-cooled condensing units will all remain at the hotel and will not be replaced with newer and/or larger units. The minor changes proposed include the replacement of three exhaust fans and the addition of one energy recovery ventilator (ERV) to the roof. The three new exhaust fans will be quieter than the fans they replace. The sound levels associated with this 450 cfm ERV unit will be insignificant as compared to the sound levels from existing rooftop equipment such as the cooling towers. In the absence of any substantial changes to exterior mechanical equipment, the proposed renovations are not expected to have a significant impact on the sound levels currently present in the surrounding community.

Construction period noise impacts and mitigation are discussed below in Section 3.11.9.

## **3.11    Construction Impacts**

### **3.11.1        *Introduction***

A Construction Management Plan (CMP) in compliance with the City's Construction Management Program will be submitted to the Boston Transportation Department (BTD) once final plans are developed and the construction schedule is fixed. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Proper pre-planning with the City and neighborhood will be essential to the successful construction of the Project. Construction methodologies, which ensure public safety and protect nearby residences and businesses, will be employed. Techniques such as barricades, walkways and signage will be used. The CMP will include routing plans for trucking and deliveries, plans for the protection of existing utilities, and control of noise and dust.

During the construction phase of the Project, the Proponent will provide the name, telephone number and address of a contact person to communicate with on issues related to the construction.

The Proponent intends to follow the guidelines of the City of Boston and the MassDEP, which direct the evaluation and mitigation of construction impacts.

### ***3.11.2 Construction Methodology/Public Safety***

Construction methodologies that ensure public safety and protect nearby tenants will be employed.

Techniques such as barricades and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.

As the design of the Project progresses, the Proponent will meet with BTM to discuss the specific location of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. Secure fencing, signage, and covered walkways may be employed to ensure the safety and efficiency of all pedestrian and vehicular traffic flows. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered pedestrian walkways when appropriate. These measures will be incorporated into the CMP which will be submitted to BTM for approval prior to the commencement of construction work.

### ***3.11.3 Construction Schedule***

It is anticipated that construction activities will start in the second quarter of 2019, with completion by the first quarter of 2020.

Typical construction hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 3:30 p.m. No substantial sound-generating activity will occur before 7:00 a.m. If longer hours, additional shifts, or Saturday work is required, the construction manager will place a work permit request to the Boston Air Pollution Control Commission and BTM in advance. Notification should occur during normal business hours, Monday through Friday. It is noted that some activities such as finishing activities could run beyond 6:00 p.m. to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete cannot be interrupted.

### **3.11.4 Construction Staging/Access**

Access to the Project site and construction staging areas will be provided in the CMP.

Although specific construction and staging details have not been finalized, the Proponent and its construction management consultant will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the Project site. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.

### **3.11.5 Construction Mitigation**

The Proponent will follow City and MassDEP guidelines which will direct the evaluation and mitigation of construction impacts. As part of this process, the Proponent and construction team will evaluate the Commonwealth's Clean Air Construction Initiative.

A CMP will be submitted to BTD for review and approval prior to issuance of a Building Permit. The CMP will include detailed information on specific construction mitigation measures and construction methodologies to minimize impacts to abutters and the local community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

"Don't Dump - Drains to Charles River" plaques will be installed at storm drains that are replaced or installed as part of the Project.

### **3.11.6 Construction Employment and Worker Transportation**

The number of workers required during the construction period will vary. It is anticipated that approximately 90 construction jobs will be created over the length of construction. The Proponent will make reasonable good-faith efforts to have at least 51% of the total employee work hours be for Boston residents, at least 40% of total employee work hours be for minorities and at least 12% of the total employee work hours be for women. The Proponent will enter into jobs agreements with the City of Boston.

Construction worker parking will be available at the Project site; however, all workers will be strongly encouraged to use public transportation and ridesharing options. The general contractors will work aggressively to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the Project site each day.

### **3.11.7 Construction Truck Routes and Deliveries**

Truck traffic will vary throughout the construction period, depending on the activity. The construction team will manage deliveries to the Project site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. Construction truck routes to and from the Project site for contractor personnel, supplies, materials, and removal of excavations required for the development will be coordinated with BTM. Traffic logistics and routing will be planned to minimize community impacts. Truck access during construction will be determined by the BTM as part of the CMP. These routes will be mandated as a part of all subcontractors' contracts for the development. The construction team will provide subcontractors and vendors with Construction Vehicle & Delivery Truck Route Brochures in advance of construction activity.

"No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

### **3.11.8 Construction Air Quality**

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during demolition, excavation and construction include mechanical street sweeping, wetting portions of the Project site during periods of high wind, and careful removal of debris by covered trucks. The construction contract will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts, pursuant to this Article 80 approval. These measures are expected to include:

- ◆ Using wetting agents on areas of exposed soil on a scheduled basis;
- ◆ Using covered trucks;
- ◆ Minimizing spills on the construction site;
- ◆ Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- ◆ Minimizing storage of debris on the construction site; and
- ◆ Periodic street and sidewalk cleaning with water to minimize dust accumulations.

### **3.11.9 Construction Noise**

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

- ◆ Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;
- ◆ Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- ◆ Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- ◆ Replacing specific construction operations and techniques by less noisy ones where feasible;
- ◆ Selecting the quietest of alternative items of equipment where feasible;
- ◆ Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- ◆ Turning off idling equipment; and
- ◆ Locating noisy equipment at locations that protect sensitive locations by shielding or distance.

#### ***3.11.10 Construction Waste***

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible. For those materials that cannot be recycled, solid waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

#### ***3.11.11 Protection of Utilities***

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. All necessary permits will be obtained before the

commencement of the specific utility installation. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its Site Plan Review process.

***3.11.12 Rodent Control***

A rodent extermination certificate will be filed with each building permit application for the Project. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work for each phase of the Project, in compliance with the City's requirements.

Sustainable Design and Climate Change Preparedness



## 4.0 SUSTAINABLE DESIGN AND CLIMATE CHANGE PREPAREDNESS

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### 4.1 Green Building

As required under Article 37 of the Boston Zoning Code, projects that are subject to Article 80B, Large Project Review, shall be U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) certifiable. The Project will use LEED for Hospitality (LEED v4 for BD+C) as the rating system to demonstrate compliance with Article 37 for the Hotel.

A LEED checklist is included at the end of this section, and details the credits the Project anticipates achieving. This is a preliminary evaluation of the LEED checklist, and applicable credits may change as the building design advances.

### 4.2 Sustainable Design

#### 4.2.1 *Location and Transportation (LT)*

LT Credit: Sensitive Land Protection. The Project site is located on a previously developed lot, located in downtown Boston, satisfying the credit conditions.

LT Credit: High Priority Site. The Project is within the Back Bay Historic District and Architectural District.

LT Credit: Surrounding Density and Diverse Uses. The Project will meet the criteria for both Option 1 and Option 2. The building is a hotel development located in downtown Boston, and the surrounding ¼-mile radius will meet, and exceed, the credit thresholds for Option 1 – Surrounding Density. The building also has significant access to community resources. The building easily meets the credit requirement of eight uses within a ½-mile walking distance of the main entrance. These resources include, but are not limited to:

- ◆ Emmanuel Episcopal Church of Boston – 0.1 mile;
- ◆ The Puppet Free Library – 207 feet;
- ◆ Goose Valley Natural Foods – 0.2 mile;
- ◆ Southworth’s Market – 0.2 mile;
- ◆ Boston Body Pilates – 0.1 mile;
- ◆ Pini Swissa Salon – 0.1 mile;
- ◆ CVS Pharmacy – 0.4 mile;
- ◆ 7-Eleven – 0.4 mile.

LT Credit: Access to Quality Transit. The building is located within a short walk (338 feet) of the Arlington MBTA underground subway station. This station provides at least 360 weekday trips and 216 weekend trips. In addition, MBTA bus stops are within ½-mile from the Project entrance, located at Boylston Street, St. James Avenue, and Arlington Street.

LT Credit: Reduced Parking Footprint. The building will not include on-site parking, inherently meeting the LEED requirements for reduction in parking footprint.

#### **4.2.2 Sustainable Sites (SS)**

SS Prerequisite: Construction Activity Pollution Protection. Nitsch Engineering will create an Erosion and Sedimentation Control Plan. The plan will be implemented by the Contractor.

SS Credit: Site Assessment. This is a renovation project where the limits of the site disturbance are limited to the existing impervious site. An existing condition site survey is included in Attachment A and will be supplemented as the Project team evaluates 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 Credit: Site Development – Protect or Restore Habitat, Option 2. The Project will provide financial support (\$0.40 / sf) for total site area to nationally or locally recognized land trust or conservation organization.*

*SS Credit: Rainwater Management. The Project is committed to capturing and recharging the 1.25-inch rainfall event per BPDA requirements. The Project has the capacity to capture and recharge the 1.6-inch rainfall.*

SS Credit: Heat Island Reduction. The building will utilize high albedo materials for all hardscapes. All installed materials will meet LEED requirements for either initial or three-year Solar Reflectance Index values.

SS Credit: Light Pollution Reduction. The team will ensure that all exterior lighting fixtures are full cutoff and meet the LEED dark sky requirements. No up lighting will be utilized, and fixtures will be dimmed at night to keep the site safe while minimizing light pollution.

#### **4.2.3 Water Efficiency (WE)**

WE Prerequisite: Outdoor Water Use Reduction. Due to the small building area, the design will not include a permanent irrigation system, thereby satisfying the requirements of this prerequisite.

WE Prerequisite: Indoor Water Use Reduction. The building will reduce demand for potable water through high efficiency fixtures within the hotel rooms – 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 Prerequisite: Building-Level Water Metering. A water meter will be installed for the building.

WE Credit: Outdoor Water Use Reduction. Due to the small building area, the design may not include a permanent irrigation system.

WE Credit: Indoor Water Use Reduction. The building will reduce demand for potable water through high efficiency fixtures within the hotel rooms – 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 Credit: Cooling Tower Water Use. The building will include a cooling tower. The design will maximize the number of water cycles through filtration and strict concentration control of calcium, alkalinity, silica, chlorine, and the overall conductivity.

*WE Credit: Water Metering. The property will meter the indoor plumbing usage as well as the cooling tower makeup water. The team is also considering the inclusion of additional water meters to measure domestic hot water.*

#### **4.2.4 Energy and Atmosphere (EA)**

EA Prerequisite: Fundamental Commissioning and Verification. The team has contracted with an experienced Commissioning (Cx) Agent - this firm 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 Prerequisite: Minimum Energy Performance. The building will meet this prerequisite, as well as the Massachusetts Stretch Energy Code, through the following design approaches, resulting in an ASHRAE 90.1 Appendix G model demonstrating a minimum Energy Use Reduction of at least 16% by cost, below ASHRAE 90.1-2010 (LEED) and at least 10% by energy use, below ASHRAE 90.1-2013 (Stretch Code). The preliminary energy model is expected to be complete before the end of February 2019. The energy modeling firm under contract has completed many models worthy of LEED standards:

1. Above code levels of insulation within the cavity as well as continuous exterior of the sheathing;
2. High efficiency equipment mechanical systems;
3. LED lighting and sophisticated, automated controls; and
4. Energy Star appliances.

EA Prerequisite: Building-level Energy Metering. The building will include a building-level energy meter for all energy consumption including electricity and natural gas.

EA Prerequisite: Fundamental Refrigerant Management. The building's HVAC systems will not include any chlorofluorocarbon (CFC)-based refrigerants.

EA Credit: Enhanced Commissioning. The team has contracted with an experienced Commissioning (Cx) Firm. This firm will review 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. The firm will also test all systems post-occupancy.

EA Credit: Optimized Energy Performance. The building will meet this credit, as well as the Massachusetts Stretch Energy Code, through the following design approaches, resulting in an ASHRAE 90.1 Appendix G model demonstrating a minimum Energy Use Reduction of at least 16% by cost, below ASHRAE 90.1-2010 (LEED) and at least 10% by energy use, below ASHRAE 90.1-2013 (Stretch Code):

1. High efficiency equipment mechanical systems;
2. LED lighting and sophisticated, automated controls; and
3. Energy Star appliances.

*EA Credit: Enhanced Refrigerant Management. The team 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.*

*EA Credit: Green Power and Carbon Offsets. The team will explore options for Green Power and Carbon Offset purchasing to counteract the environmental toll of fossil fuel production for creation of building energy.*

#### 4.2.5 *Materials and Resources (MR)*

MR Prerequisite: Storage and Collection of Recyclables. The building 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.

Prerequisite: Construction and Demolition Waste Management Planning. The team will implement a construction waste management plan with a diversion goal of 75% of the site-generated waste from the landfill. The construction team will provide monthly reports of waste diversion.

MR Credit: Building Life-Cycle Impact Reduction. This is a renovation project where the limits of the site disturbance are limited to the existing impervious site. At least 50%, by surface area, and of the existing building structure, enclosure and interior structural elements will be preserved.

*MR Credit: Building Product Disclosure and Optimization – Environmental Product Declarations. The team 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 Credit: Building Product Disclosure and Optimization – Sourcing of Raw Materials. The team 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 Credit: Building Product Disclosure and Optimization – Material Ingredients. The team 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 Credit: Construction and Demolition Waste Management. The team is committed to reducing construction waste through at least 50% diversion of three material streams; if possible, the team will strive to increase the reduction to 75% diversion and four material streams.

#### 4.2.6 *Indoor Environmental Quality (IEQ)*

IEQ Prerequisite: Minimum Indoor Air Quality Performance. The team 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.

IEQ Prerequisite: Environmental Tobacco Smoke Control. Smoking will be prohibited inside the building and within 25-feet of all entries, outdoor air intakes, and operable windows; these prohibitions will be displayed via on-site signage.

IEQ Credit: Enhanced Indoor Air Quality Strategies. *The team will consider inclusion of the following:*

- ◆ *A permanent entryway system at least 10-feet long in the primary direction of travel;*
- ◆ *Direct exhaust of all housekeeping and laundry areas to prevent cross-contamination; and*
- ◆ *MERV 13 filtration on all ventilation systems.*

IEQ Credit: Low-Emitting Materials. The team anticipates achieving points for paints and coatings and for adhesives and sealants.

IEQ Credit: Construction Indoor Air Quality Management Plan. The general contractor will ensure that all installed ductwork is adequately protected throughout the construction phase. This protection will be verified by site inspections.

IEQ Credit: Thermal Comfort. The building will provide individual thermal controls for all hotel rooms. Additionally, all shared spaces will include controls for adjustment per group needs.

IEQ Credit: Interior Lighting. The building will meet the criteria for both Option 1 and Option 2:

Option 1 - Lighting Control. The building will provide individual lighting controls for all building occupants within all hotel rooms. Additionally, all shared spaces will include controls for adjustment per group needs.

Option 2 - Lighting Quality. The building will include the following lighting strategies:

1. All light sources will have a CRI of 80, or higher,
2. At least 75% of the total connected lighting load will use lights with a rated light of at least 24,000 hours,
3. All regularly occupied spaces will use light fixtures with a luminance of less than 2,500 cd/m<sup>2</sup>, and
4. 90% of the regularly occupied floor area will meet the thresholds for LEED requirements for area-weighted average surface reflectance.

#### **4.2.7 Innovation and Design (ID)**

ID LEED Accredited Professional. A point will be earned through the inclusion of a LEED Accredited Professional on the core Project team.

ID LEED Innovation: The hotel has a variety of sustainable focused programs and equipment that will be maintained and possibly extended as part of the integrated guest experience at the conclusion of the renovation. These programs serve to educate and encourage a greater awareness with our environment.

- ◆ Bee farm – The hotel maintains 12 apiaries on its property. Situated on a low roof, the honey bees produce honey packaged for food and beverage offerings at the hotel.
- ◆ Herb Garden – The hotel cultivates and maintains a series of planters on a sheltered exterior roof, each growing herbs harvested by the staff and used by chefs in their menus.
- ◆ Ecofriendly cleaning supplies – The hotel will continue its practice of using environmentally friendly cleaning supplier with the kitchen and general housekeeping programs.
- ◆ Guest towels opt-out program – Guests have an option to change between linen and terry towels, as linen towels will require less energy to clean and dry. Guests staying multiple evenings will have the option of re-using towels. Signage in the guestrooms and manuals provide directions to guests.
- ◆ Recycling programs – The hotel maintains a rigorous recycling program by recycling cardboard, plastic, glass, light bulbs, and electronics. In addition, the hotel is a partner with Clean the World Foundation <https://cleantheworld.org/> whose focus is to improve the quality of life and hygiene for vulnerable communities around the world. By providing used soaps to this organization, the hotel greatly reduces the waste stream, while also contributing a very important cause.
- ◆ Steam condensate – The hotel utilizes steam fed from Newbury Street for general heating use. The steam condensate is captured for pre-heating of domestic hot water.

#### **4.2.8 Regional Priority (RP)**

Regional Priority Credits (RPCs) are established LEED credits designated by the USGBC to have priority for a particular area of the country. When a Project team achieves one of the designated RPCs, an additional credit is awarded to the Project. RPCs applicable to the site include: *SS Rainwater Management*, *MR Building Life-Cycle Impact Reduction* and/or *High Priority Site*, *EA Optimize Energy Performance*, and *WE Cooling Tower Water Use*.

## 4.3 Climate Change Resilience

### 4.3.1 *Introduction*

Climate change conditions considered by the Project team include higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts, more severe freezing rain and heavy rainfall events, and increased wind gusts. A Climate Change Checklist for the Hotel is included in Attachment E. Given the preliminary level of design, the responses are also preliminary and may be updated as the Project design progresses.

### 4.3.2 *Extreme Heat Events*

The *Climate Ready Boston* report predicts that in Boston, there may be between 25 to 90 days over 90 degrees by 2070, compared to an average of 11 days per year over 90 degrees between 1971 to 2000. The Project design will include measures to adapt to these conditions, including a stormwater retention system and new street trees to reduce the urban heat island effect

### 4.3.3 *Rain Events*

As a result of climate change, the Northeast is expected to experience more frequent and intense storms. To mitigate this, the Proponent will take measures to minimize stormwater runoff and protect the Project's mechanical equipment, as necessary. The Project will be designed to reduce the existing peak rates and volumes of stormwater runoff from the site, and promote runoff recharge to the greatest extent practicable.

### 4.3.4 *Drought Conditions*

Although more intense rain storms are predicted, extended periods of drought are also predicted due to climate change. Under the high emissions scenario, the occurrence of droughts lasting one to three months could go up as much as 75% over existing conditions by the end of the century. Aeration fixtures and appliances will be chosen for water conservation qualities, conserving potable water supplies.

## 4.4 Renewable Energy

The roof of the Hotel is almost entirely devoted to rooftop mechanical space and the proposed conversion of the existing seasonal rooftop function space into a year-round restaurant. There would be very little roof space left to accommodate a roof-mounted solar photovoltaic (PV) system (roughly 2,300 square feet). Additionally, in order to install a system, the associated conduits and equipment would be located on the side of the building, which would detract from the distinguished exterior elevations of the prominent Boston hotel. A 2,300 square foot PV array will yield 12 kW at 1,100 EDLH for a total



annual production of 30,360 kWh/yr. The Taj yearly energy consumption is roughly 3,300,000 kWh (energy model is in the process of completion). Maximizing the PV potential would yield less than 1% of the buildings total energy consumption.



**LEED v4 for BD+C: Hospitality**  
Project Checklist

Project Name: Taj Hotel Boston  
Date:

Resp Party	Y	?	N
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Owner			N	Credit	Integrative Process	1
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Resp Party	13	0	4	Location and Transportation	16
Owner			1	Credit LEED for Neighborhood Development Location	16
Owner	1			Credit Sensitive Land Protection	1
Owner	1		1	Credit High Priority Site	2
Owner	5			Credit Surrounding Density and Diverse Uses ***	5
Owner	5			Credit Access to Quality Transit	5
Arch			1	Credit Bicycle Facilities	1
Arch	1			Credit Reduced Parking Footprint	1
Owner			1	Credit Green Vehicles	1

	2	5	3	Sustainable Sites	10
Civil	Y			Prereq Construction Activity Pollution Prevention	Required
Civil	1			Credit Site Assessment	1
Civil		1	1	Credit Site Development - Protect or Restore Habitat	2
Civil			1	Credit Open Space	1
Civil		2	1	Credit Rainwater Management	3
Arch	1	1		Credit Heat Island Reduction	2
Arch		1		Credit Light Pollution Reduction	1

	7	2	2	Water Efficiency	11
MEP	Y			Prereq Outdoor Water Use Reduction	Required
MEP	Y			Prereq Indoor Water Use Reduction	Required
MEP	Y			Prereq Building-Level Water Metering	Required
MEP	2			Credit Outdoor Water Use Reduction	2
MEP	3	1	2	Credit Indoor Water Use Reduction	6
MEP	2			Credit Cooling Tower Water Use	2
MEP		1		Credit Water Metering	1

	10	3	20	Energy and Atmosphere	33
Cx	Y			Prereq Fundamental Commissioning and Verification	Required
MEP	Y			Prereq Minimum Energy Performance	Required
MEP	Y			Prereq Building-Level Energy Metering	Required
MEP	Y			Prereq Fundamental Refrigerant Management	Required
Cx	3		3	Credit Enhanced Commissioning	6
MEP	6	2	10	Credit Optimize Energy Performance	18
MEP			1	Credit Advanced Energy Metering	1
MEP			2	Credit Demand Response	2
MEP			3	Credit Renewable Energy Production	3
MEP		1		Credit Enhanced Refrigerant Management	1
Owner	1		1	Credit Green Power and Carbon Offsets	2

	5	7	1	Materials and Resources	13
	Y			Prereq Storage and Collection of Recyclables	Required
	Y			Prereq Construction and Demolition Waste Management Planning	Required
	3	2		Credit Building Life-Cycle Impact Reduction	5
		1	1	Credit Building Product Disclosure and Optimization - Environmental Product ** Declarations	2
		2		Credit Building Product Disclosure and Optimization - Sourcing of Raw Materials	2
	2			Credit Building Product Disclosure and Optimization - Material Ingredients	2
				Credit Construction and Demolition Waste Management	2

	5	4	7	Indoor Environmental Quality	16
	Y			Prereq Minimum Indoor Air Quality Performance	Required
	Y			Prereq Environmental Tobacco Smoke Control	Required
		2		Credit Enhanced Indoor Air Quality Strategies	2
	1	2		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	3	0	Regional Priority	4
		1		Credit Rainwater Management	1
	1			Credit Building Life-Cycle Impact Reduction and/or High priority site	1
		1		Credit Optimize energy performance	1
		1		Credit Cooling Tower water use	1

<b>47</b>	<b>26</b>	<b>37</b>	<b>TOTALS</b>	Possible Points:	<b>110</b>
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Certified: 40 to 49 points, Silver: 50 to 59 points, Gold: 60 to 79 points, Platinum: 80 to 110

## Chapter 5

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Urban Design

## 5.0 URBAN DESIGN

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The Taj Hotel is situated at a historically significant location within the city of Boston. The property faces the Boston Public Garden and connects the picturesque starting point of the Commonwealth Avenue mall to the north, with the beginning of Newbury Street immediately to the west. The proposed design of the new entry plaza facing Newbury Street along with planned upgrades at the street level will connect these two nodes.

The existing sidewalk condition at this location is understated, with few city trees and minimal decorative plantings. Further, the sloped bare sidewalk condition at the Newbury Street side will be substantially improved with the Project.

The proposed plaza within the property will serve as a new “front door” for pedestrians to travel from the Public Garden down Newbury Street, as the plaza will create gentle steps and a sloped sidewalk to address the existing deficiencies. Additionally, there are a number of proposed features such as planters, a seating area and sculptural elements to draw in the public and encourage informal gatherings. See Figure 5-1 for the Newbury Street entrance concept. The hotel may also use this plaza for public events to further enhance the public engagement. Finally, all existing City street trees are planned to be replanted with new sidewalk details and standards adhering to the Boston Complete Streets initiative.

If less was said about the exterior, the rooftop towers of the Hotel are admired; somewhat ingeniously for the 20<sup>th</sup> century, their greater height relative to that of the building’s main block sheathed the overrides of elevators communicating with an inviting roof garden. Below a blue-green ceiling bedizened with silver stars, this open-air ballroom overlooking the Public Garden offered patrons a magnificent panorama of the city. Although the nighttime blackout regulations of World War II later prompted the shutdown of the roof garden, it reopened, after a half-century hiatus, in 1995.

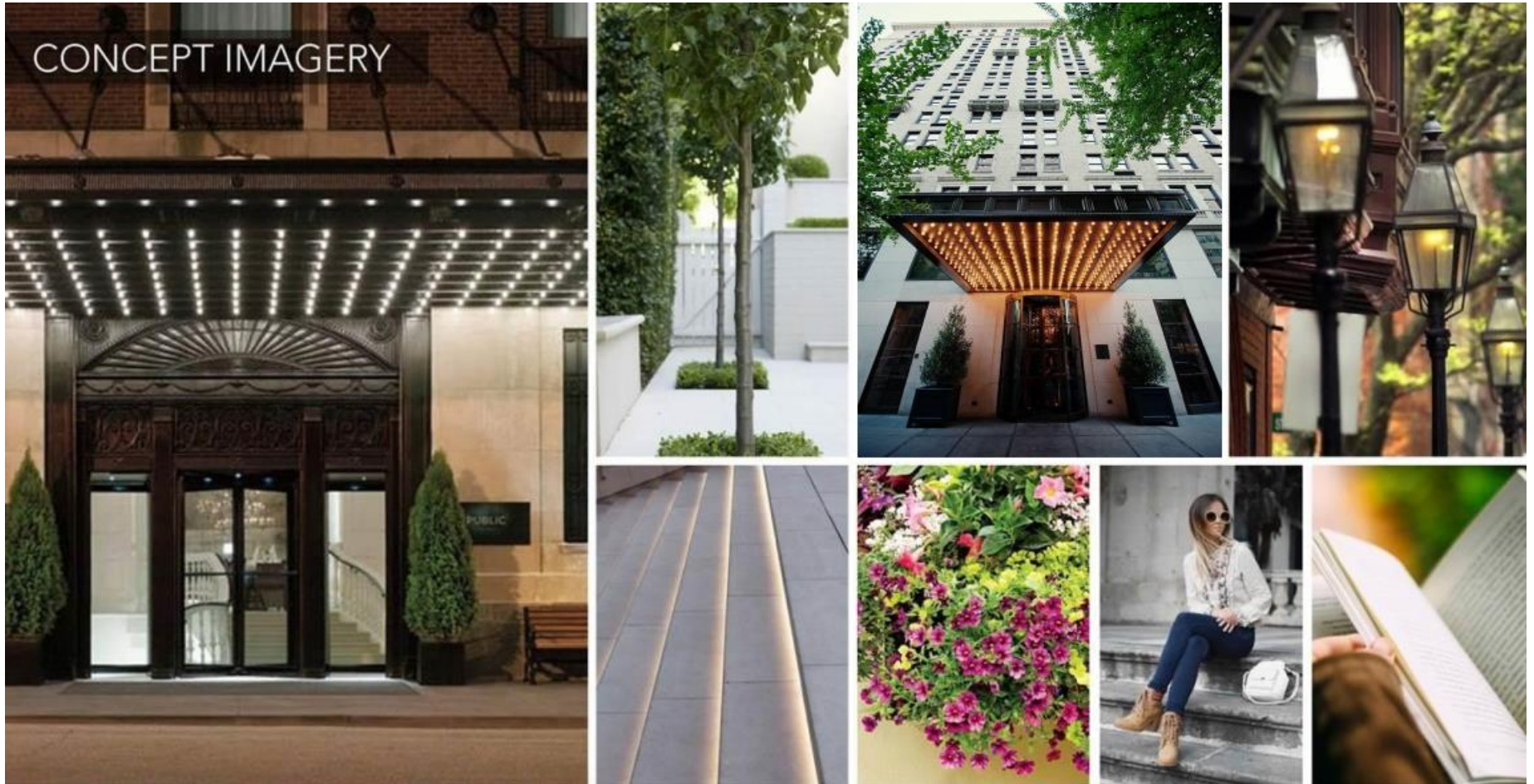
The proposed permanent enclosure of the existing seasonal rooftop space to a year-round independent restaurant will recognize the past uses of the rooftop garden while providing modern enhancements. See Figure 5-2 for the restaurant concept.

### *Evolution of Design*

The Taj, also known to locals as the “Old Ritz”, is undergoing a series of significant renovations and upgrades to re-position itself as a landmark destination and premier hotel for Boston. Originally opened in 1927, the 18-story hotel was one of the first high rises erected in the City and catered to the luxury traveler. It had existed as the only Ritz-Carlton Hotel in the country for more than 50 years.

External upgrades to the property include the introduction of a new entry plaza for the hotel on Newbury Street, select restorations and upgrades to existing masonry and glazing elements on the street, and the permanent enclosure of the existing seasonal rooftop restaurant on level seventeen with public access via an upgraded hotel service elevator.

Internal renovations of levels one and two include reconfiguration of major function spaces with mechanical and finish upgrades. The commercial kitchen will be reconfigured with a new layout and new equipment serving the revamped food and beverage program. The renovation of the guestrooms and facilities from levels three through sixteen includes brand new guestroom layouts and finishes, a re-positioned fitness center and updated offices and facilities for hotel staff. Corridors and lobbies will receive new finishes, flooring, and lighting, along with mechanical upgrades. Finally, the six elevators serving all major floors of the property will receive a major retrofit with new equipment and cab finishes.



Taj Hotel Boston Boston, Massachusetts

**cbt**

**Figure 5-1**  
*Concept Imagery – Newbury Street Entrance*



Taj Hotel Boston Boston, Massachusetts

cbt

Figure 5-2  
Concept Imagery - Restaurant

## Chapter 6

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### Historic and Archaeological Resources



## 6.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

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### 6.1 Introduction

This section identifies and describes the existing buildings on the Project site and the individual historic resources and districts near the Project site.

### 6.2 Historic Resources

#### *6.2.1 Historic Resources on the Project Site*

Completed in 1927 as the first Ritz-Carlton hotel in the United States, the Taj Hotel Boston at 15 Arlington Street was designed by Strickland, Blodget & Law. Specialists in hotels and apartment buildings, the architects had begun their careers at the firm Shepley, Rutan & Coolidge, the successors to H. H. Richardson. Replacing five circa-1860 rowhouses (at 3-5 Newbury and 13-15 Arlington Street), the hotel's 15-story main block exceeds the average height of the context by a factor of three. Typical of the period, the limestone-trimmed, red-brick exterior elevations quote from 18<sup>th</sup>-century English precedent while managing at the same time to suggest the delicacy and whimsy of the Art Déco style then daringly new. This combination is particularly evident in the low-relief tympanum carving of the *piano nobile* windows and in the romantic silhouettes of its rooftop pavilions.

As initially conceived as early as 1925, the hotel was to have been called the Mayflower. Although that name survives on original drawings, the developer Edward Wyner entered into a long-term lease with the Ritz-Carlton organization the following year. Following certain modifications to accommodate the chain's standards, including room-service kitchens on every floor, the 350-room hotel opened its doors in May 1927. The interiors were described in the Boston *Globe* as "dignified and simple," with the extensive use of imported marble and the elegance of the second-floor lounge and dining room receiving particular praise.

Both the exclusivity and the domesticity of the hotel were in some ways reflections of its owner's presence on site: Wyner and his wife lived and raised their family there. Until his death in 1961, Wyner would not allow the hotel to accommodate group tour or convention business, nor would it accept reservations by telephone. Although these policies undoubtedly discouraged some, they apparently attracted others whose visits to Boston required privacy and peace. Winston Churchill was a loyal guest, as were playwrights and actors whose Broadway productions were trying out nearby at the Colonial, Wilbur or Shubert theaters.

In 1964, the hotel was acquired by the P&G Investment Trust, an arm of the Boston real-estate development firm Cabot, Cabot & Forbes, which held the property until the early 1980s. Following several transfers of ownership later in that decade, the hotel was purchased by Millennium Partners of New York in 1999.

This entity undertook a three-year restoration of the exterior before selling the building in 2007 to the Mumbai-based Tata Group. Re-branded as the Taj, the hotel continues to operate under that name.

## **6.2.2**        *Historic Resources in the Vicinity of the Project Site*

### **6.2.2.1**      **Historic Districts**

The Project site is within the **Back Bay Historic District** and **Architectural District**, which is bounded by Arlington Street to the east and Massachusetts Avenue and Charlesgate East to the west, Boylston Street to the south and the Charles River Esplanade to the north. Beginning in 1857 at Arlington Street, the area of land known as the Back Bay was created by filling in vast spans of tidal flats. Heavily influenced by the contemporary redevelopment of Paris under Napoleon III, the landfill operation was conceived on a rational gridded plan. This incorporated regular setbacks, minimum building heights and a public alley system to ensure a harmonious appearance.

By the late 1880s, the marshy flats that once separated Boston and the neighboring town of Brookline had been completely filled in. The result was the creation of approximately 400 acres of dry, developable—and highly desirable—land. Attracting the interest of prosperous private individuals, churches and cultural institutions, the new area’s appeal soon eclipsed that of the neighboring South End.

Notable among its buildings are major residential, ecclesiastic and civic and institutional works by nationally significant architects, including H. H. Richardson, McKim, Mead & White, and Peabody & Stearns. Other architects of local and regional importance are also well represented. Aesthetically, these designs epitomize the Second Empire, Romanesque Revival, Queen Anne, Colonial Revival, and Classical Revival styles. Enacted in 1966, the locally designated Back Bay Architectural District has similar boundaries to the Back Bay National Register district established in 1973 but does not include properties on the south side of Boylston Street.

Established in 1634 as a public pasture for the grazing of settlers’ livestock, the **Boston Common** is the oldest municipal park in the U.S. It is also the oldest link in the so-called Emerald Necklace of contiguous Boston parklands. Bounded by Tremont, Park, Beacon, Charles and Boylston streets, its footprint encompasses some 50 acres. Used as an encampment by occupying British forces during the Revolutionary War, the Common was also the scene of public executions until the early nineteenth century. Thereafter it came to function more as a modern city park, enhanced by ornamental plantings and pedestrian promenades (or “malls”), as well as decorative fencing, water features and commemorative statuary. One of its more admired works of public art is the memorial to Capt. Robert Gould Shaw and the 54<sup>th</sup> Massachusetts Regiment, which faces Beacon Street opposite the State House. Unveiled in 1897, this bronze relief by Augustus St. Gaudens depicts the Boston native Shaw on horseback leading his volunteer infantry of African-American

freedmen and escaped slaves prior to battle in the Civil War. Following its National Register listing in 1972 and local landmark designation in 1977, the Boston Common attained recognition as a National Historic Landmark in 1987.

Located just west of the Common on a former tidal marsh, the **Boston Public Garden** was initially conceived in 1837 as a formal botanical garden of a type previously known only in Europe. As the first of its kind in the U.S., the Public Garden was designed to include specimen trees and a rotating display of flowering plant materials. Its rectangular footprint of 24 acres is bounded by Charles, Boylston, Arlington and Beacon Streets and contained by ornamental cast-iron fencing. The centerpiece of the landscape is an artificial pond, some four acres in area, which is spanned by a small suspension bridge supported by granite piers. Throughout the warmer months, the shallow waters of this lagoon, as it is called, are traversed by the Swan Boats. A fleet of flat-bottomed, pedal-operated craft first launched in 1877, these have long been among Boston's most famous tourist attractions. As with the Boston Common, commemorative sculpture abounds within the Garden. Notable works include a prominent equestrian statue of General Washington by Thomas Ball, installed at the Arlington Street entrance in 1869, and the "Angel of the Waters" by Daniel Chester French. A memorial to the philanthropist George Robert White, this was dedicated in 1924 at the Garden's northwest corner. First listed in the National Register in 1972 and designated a Boston Landmark in 1977, the Public Garden was recognized as a National Historic Landmark in 1987.

Widely admired as one of the finest and least altered American urban neighborhoods, the narrow, tree-shaded streets of **Beacon Hill** are lined with brick rowhouses in the delicate Federal and robust Greek Revival styles. Although well located just north of the Common, the area was long maintained only as pasture land as its steep and rocky topography discouraged its use as a building site until well after the Revolution. At that time, the crest of the hill was cut down to its present grade, accommodating the Charles Bulfinch-designed State House, completed in 1798.

The presence of the Commonwealth's seat of government in turn attracted the interest of the local elite, many of whom engaged Bulfinch to design freestanding mansions, particularly on the Hill's sunny southern slope. Initially set within ornamental gardens, the desirability of these properties was such that speculative development soon followed; as a result, what had been conceived as an exclusive enclave dotted with expensive villas quickly became a neighborhood of attached rowhouses. Nevertheless, the value of the land along such streets as Beacon, Mount Vernon and Chestnut ensured high standards of design and material, which eventually yielded the handsome streetscapes celebrated today.

A few blocks away, the neighborhood was also home to Bostonians who, though disadvantaged by their minority status and humbler means, nonetheless established vibrant communities on the Hill's north slope. Built for and by its black congregants in 1806, the African Meeting House on Smith Court is now maintained as the Museum of African American History. On Joy Street, just around the corner from the museum is the former

Abiel Smith School; completed in 1835, it was the country's first public school for black children. As the locus of Boston's African-American community shifted to the South End in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, the north slope drew immigrants from Eastern Europe, many of them Jews displaced by Tsarist pogroms. A synagogue erected on Phillips Street in 1919 by a Lithuanian congregation, the Vilna Shul is today a cultural center and living museum that connects that history to the Boston of the present day.

The Beacon Hill Architectural District was locally designated in 1955, and recognized as a National Historic Landmark in 1962.

The **Bay Village Historic District** was designated by the BLC in 1983. Located southwest of Downtown Boston, Bay Village was first constructed on landfill in the 1820s. Before acquiring its present name during the so-called urban pioneer movement of the 1960s, the area had been known as the Church Street District. Dating from the second quarter of the nineteenth century, the early dwellings of Bay Village exemplify the late Federal and Greek Revival styles, resembling smaller, more modestly ornamented versions of houses found on Beacon Hill. This phenomenon is explained by the fact that housewrights (home builders at the time) active in the development of Beacon Hill built their own homes here in the prevailing architectural fashions of the day, though smaller in scale and simpler in detail.

As the nearby South End and Back Bay neighborhoods were developed in the years immediately before and after the Civil War, substantial brick houses and residential hotels went up along Cortes and Isabella streets, in the area west of Arlington Street.

In the early 20<sup>th</sup> century, Bay Village benefited from its proximity to the downtown theater district, becoming a hub for film distribution throughout New England. Though since converted to residential use, a number of former movie warehouses and newsreel studios survive from this era, particularly on Piedmont, Winchester and Church streets. Modest in size and economical in detail, these vernacular buildings echo the fanciful Art Déco and streamlined Art Moderne idioms associated with the cinemas of the period.

A linear park extending more than a mile westward from the Public Garden to Charlesgate, just east of Kenmore Square, the **Commonwealth Avenue Mall** is both the central axis of the Back Bay and a major component of Boston's so-called Emerald Necklace of contiguous public parklands. An integral feature of architect Arthur Gilman's original 1857 plan for the neighborhood, the mall was modeled on the landscaped boulevards of Second Empire Paris. Four rows of American elms (now partially replaced with more disease-resistant specimens) form a double allée lining a broad central promenade; this is punctuated in each block by statuary depicting such well-known historical figures as Leif Eriksson, Alexander Hamilton, and William Lloyd Garrison, among others. The most recent addition, from 2003, is the Boston Women's Memorial, which honors the enslaved African-American poet Phillis Wheatley, presidential wife and mother Abigail Adams and feminist Lucy Stone. Included in the National Register in 1973, the Commonwealth Avenue Mall was designated a local landmark in 1978.

The **Piano Row Historic District** comprises two blocks of distinguished late nineteenth-century commercial buildings along Tremont and Boylston Streets overlooking the southwest corner of the Boston Common. Its name reflects a historic concentration of music-related business enterprises, including several piano showrooms. Most notable among these is the establishment of M. Steinert & Sons, which has retailed Steinways since 1896. Its location at 162 Boylston Street includes an acoustically superior basement-level concert hall. Piano Row was included in the National Register of Historic Places in 1980.

The **Charles River Basin** is the keystone of metropolitan park systems in both Boston and Cambridge, providing these cities' residents and visitors with popular, accessible and well-maintained resources for both passive and active recreation. In addition to the Charles and the parklands along its banks, the basin also includes Memorial Drive and Cambridge Parkway in Cambridge, Embankment Road and the James J. Storrow Memorial Drive and Soldiers' Field Road in Boston, as well as the Charles River Dam, seven bridges, and two canals. The built structures reflect achievements in both architecture and civil engineering over a period spanning more than a century. The Charles River Basin was listed in the National Register in 1978; the **Charles River Esplanade**, which is the significant portion of its Boston frontage, was locally designated in 2009.

#### 6.2.2.2 Historic Properties

The fortress of rock-faced granite at 97-105 Arlington Street was built as the **Armory of the First Corps of Cadets**, an élite militia unit, in 1895. Designed by William Gibbons Preston in a robust Romanesque Revival style, its round-arched window openings and six-story corbeled tower demonstrate the continuing influence of H. H. Richardson. Listed on the National Register in 1973, the building was designated a Boston Landmark in 1977.

The **Paine Furniture Building** at 75 Arlington Street is a ten-story, steel-framed Classical Revival design. Its three street-facing elevations are veneered in limestone and buff brick with ornaments of terra cotta; the main entrance is sheltered by a robustly curved cast-iron marquee. The work of architects Densmore & LeClear, it was completed in 1913 and remained in use by the Paine company for more than eight decades. As the first new construction to occupy former railroad yards in Park Square, it established the style, scale and materials palette for subsequent buildings erected there over the next twenty years. The building was listed in the National Register in 2002.

Completed in 1860, the **Arlington Street Church** at 351-355 Boylston Street was the first house of worship to be erected in the Back Bay, a neighborhood whose creation had only barely begun. Working for a Unitarian congregation, its architect Arthur Gilman had been one of the designers of the Back Bay plan itself. At a time when the Gothic Revival style reigned supreme in American ecclesiastic architecture, Gilman chose instead to re-interpret the Georgian meetinghouses of New England's eighteenth-century past. The Arlington Street Church, together with its use of brownstone, the favored material of the age, mark its exterior as the product of a later period. Equally traditional in its basilican plan, the interior

is distinguished by a series of exquisite stained-glass windows designed by Louis Comfort Tiffany, installed in 1898. The church was listed in the National Register in 1973 and attained designation as a local landmark in 1978; it is also the subject of a preservation restriction established in 1989.

Initially built in 1862, **Emmanuel Church** at 15 Newbury Street is both the only Back Bay church to occupy a mid-block site and the only one to lack a steeple. Nevertheless, the building enjoys a major presence on the streetscape, occupying approximately one-third of the block between Arlington and Berkeley Streets. Designed by Alexander Estey in a restrained English rural Gothic style, its principal elevations are of randomly coursed Roxbury puddingstone trimmed with low-contrast sandstone below a steeply pitched roof of gray slate. Included in the Back Bay Architectural District and the Back Bay National Register District, Emmanuel Church is also the subject of a Preservation Restriction instituted in 2014.

One of the earliest dwellings to be completed in the Back Bay, the **Gibson House** at 137 Beacon Street was built in 1859 to the designs of Edward Clarke Cabot, architect of the Boston Athenaeum. Unusually, in a rowhouse neighborhood where side-hall entries are the norm, its five-story façade of brick and brownstone is symmetrical, with a recessed central entrance, second-floor oriel and bell-curved mansard roof. Occupied by three generations of Gibsons, the property is today maintained as a historic house museum. Located in the Back Bay Architectural District, its significant interiors gained local-landmark recognition in 1992 and National Historic Landmark status in 2001. The Gibson House is additionally the subject of preservation restrictions established in 1999 and 2006.

Table 6-1 lists State and National Register-listed properties and historic districts located within a quarter-mile radius of the Project site. The individually listed properties are assigned numbers, which correspond to Figure 6-1. Figure 6-1 also identifies the locations of the State and National Register-listed historic districts within a quarter mile of the Project site; these are indicated by letters.

**Table 6-1 State and National Register Resources on and in the Vicinity of the Project Area**

No.	Historic Resource	Address	Designation
A	First Corps of Cadets Armory	97-105 Arlington Street	LL, NR
B	Paine Furniture Building	75-81 Arlington Street	NR
C	Arlington Street Church	351-355 Boylston Street	LL, NRDIS, NR, PR
D	Emmanuel Church	15 Newbury Street	LHD, NRDIS, PR
E	Gibson House	137 Beacon Street	LHD, LL, NHL, NRDIS, PR (2)
1	Boston Common		NRDIS, LL, NHL
2	Boston Common & Public Garden		NRDIS, LL, NHL
3	Boston Public Garden		NRDIS, LL, NHL
5	Piano Row Historic District		NRDIS, NRMRA
4	Beacon Hill Historic District		NHL, NRDIS
5	Beacon Hill Architectural District		LHD
6	Bay Village Historic District		LHD
7	Back Bay Historic District		NRDIS
8	Back Bay Architectural District		LHD
9	Commonwealth Avenue Mall		LHD, LL, NRDIS
10	Piano Row Historic District		NRDIS, NRMRA
11	Charles River Basin Historic District		NRDIS
12	Charles River Esplanade		LL, NRDIS
Designation Legend:			
NR	Individually listed in the National Register of Historic Places		
NRDIS	National Register of Historic Places historic district		
NRMRA	National Register Multiple Resources Area		
NHL	National Historic Landmark		
LHD	Local Historic District		
LL	Local Landmark		
PR	Preservation Restriction		



Taj Boston Boston, Massachusetts



### **6.3 Archaeological Resources on the Project Site**

The Project site is a previously developed urban parcel whose existing and prior buildings were constructed on landfill. As such, there are no archaeological resources listed in the State and National Registers of Historic Places or included in the Inventory within the Project site.

### **6.4 Impacts to Historic Resources**

Potential urban design and shadow impacts of the new construction on nearby historic resources were considered and are summarized below.

#### ***6.4.1 Urban Design***

No negative urban design impacts are anticipated to any historic resources within the vicinity of the Project site. The proposed reorientation of the hotel's principal entrance from Arlington Street to Newbury Street will be executed without alteration to the historic entry marquees of either elevation.

Further, these interventions will also address the steeply sloping sidewalk along the building's Newbury Street frontage. Differing from the relatively level grade enjoyed by adjacent buildings, this condition has not only impeded accessibility but also prevented the introduction of an outdoor dining installation. The terraced forecourt will rectify both challenges in a fashion that is complementary to the historic hotel and worthy of the its gateway location at the head of Boston's famed Newbury Street.

Similarly, the Project includes the proposed permanent enclosure of the existing seasonal rooftop restaurant, continuing an amenity introduced early in the building's history into a permanent feature. This outcome will be achieved in a sensitive fashion whose appearance will reflect its familiar design vocabulary. Thus, the enclosure's profile will remain low, so as not to compete with the building's silhouette, while the rhythm of its glazing modules aligns with the fenestration pattern of the building's lower floors.

#### ***6.4.2 Shadow Impacts to Historic Resources***

A shadow impact analysis was conducted to demonstrate the anticipated impacts from the Project. This exercise consisted of standard shadow studies done for March 21, June 21, September 21, and December 21 at 9:00 a.m., 12:00 p.m. and 3:00 p.m., as well as 6:00 p.m. for June 21 and September 21.

As discussed in Section 3.2.1, the shadow analysis for the Project demonstrates that there is no net new shadow on the locally designated Back Bay Architectural District. Similarly, there are no anticipated shadow impacts on other historic districts or properties within a quarter-mile radius of the Project site.

The results of these shadow studies are included in Section 3.2.1 and shown in Figures 3-1 to 3-14.

## **6.5 Consistency with Other Historic Reviews**

### ***6.5.1 Boston Landmarks Commission Article 80 Review***

The submission of this PNF initiates review of the Project by the BLC, under the City's Article 80 process.

### ***6.5.2 Back Bay Architectural Commission Review***

All exterior work to properties located within the locally designated Back Bay Architectural District is subject to the review and approval of the Back Bay Architectural Commission, an Application for Certificate of Appropriateness will be filed at the prescribed time.

### ***6.5.3 Massachusetts Historical Commission***

No state or federal funding, licensing, permits and/or approvals requiring review by the Massachusetts Historical Commission (MHC) are anticipated. In the event that a state or federal action is identified as required for the proposed Project, an MHC Project Notification Form will be filed for the proposed Project in compliance with State Register Review (950 CMR 71.00) and/or Section 106 of the National Historic Preservation Act (36 CFR 800).

## **6.6 Conclusion**

The Project has been sensitively designed to be responsive to and harmonious with its context. Specifically, the sidewalk modifications along the Newbury Street frontage will enhance accessibility to the building and the public realm around the site. At roof level, the proposed enclosure of the existing seasonal rooftop restaurant will result in no increase in the building's existing height. The Project will have no shadow or wind impacts to the surrounding area, and in fact, will provide significant aesthetic appeal along Newbury and Arlington streets, two important thoroughfares of Boston's Back Bay.

## Chapter 7

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Infrastructure

## 7.0 INFRASTRUCTURE

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### 7.1 Introduction

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

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

The Project site is approximately 0.35-acres and is bounded by Public Alley 437 and the Carlton House of Boston (or the Carlton) to the north, Arlington Street to the east, Newbury Street to the south and various commercial properties to the south, and mixed commercial uses to the west. The existing site is comprised of the Taj Boston Hotel, which, along with associated walkways, covers the entirety of the property area. The Project includes the reconfiguration of the main entrance of the Hotel from the current location on Arlington Street to the building's frontage on Newbury Street. Additional renovations include permanently enclosing the existing seasonal rooftop restaurant, updating the existing 195 hotel rooms and adding 16 new hotel rooms for a total of 211 rooms.

### 7.2 Wastewater Infrastructure

#### *7.2.1 Existing Sewer System*

The Boston Water and Sewer Commission (BWSC) owns and maintains the sewer system that services the City of Boston. The BWSC sewer system connects to the Massachusetts Water Resources Authority (MWRA) interceptors for conveyance, treatment, and disposal through the MWRA Deer Island Wastewater Treatment Plant. There are existing Boston Water and Sewer Commission (BWSC) sanitary sewer mains near the Project site.

There is existing BWSC infrastructure in Public Alley adjacent to the site, to the hotel's rear. There is no BWSC sewer infrastructure located within Arlington Street or Newbury Street within the vicinity of the project. There is an 18-inch BWSC combined sanitary sewer main in Public Alley No. 437. This connects to a 72-inch by 78-inch sewer main within Berkeley Street. This flows north and increases to a 48-inch by 80-inch sewer main within Berkeley

Street, and connects to a 96" MWRA Main. This MWRA main is ultimately directed to the Deer Island Wastewater Treatment Plant for treatment and disposal. The existing BWSC sanitary sewer system is shown in Figure 7-1.

The existing site contains the existing layout of the Taj Boston Hotel, and connects to the combined sewer main within Public Alley No. 437.

### 7.2.2 Projected Sanitary Sewer Flow

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

**Table 7-1 Proposed Project Wastewater Generation**

Use	Size/Unit <sup>1</sup>	310 CMR Value (gpd/unit)	Total Flow (gpd)
<b>Existing Building Program</b>			
Meeting/Function Space	42,168 square feet	75/1,000 sf	3,163
Restaurant	2,881 sf / 106 seats <sup>2</sup>	35/seat	3,710
Retail	2,704 sf <sup>3</sup>	50/1,000 sf	135
Total Bedrooms	195 Bedrooms	110/bedroom	21,450
<b>Total Existing Sewer Flows</b>			<b>28,458</b>
<b>Proposed Hotel Building (using average 310 CMR values)</b>			
Meeting/Function Space	21,566 square feet	75/1,000 sf	1,618
Restaurant	9,887 sf / 294 seats <sup>4</sup>	35/seat	10,290
Retail	4,264 sf <sup>5</sup>	50/1,000	213
Total Bedrooms	211 Bedrooms	110/bedroom	23,210
<b>Total Proposed Sewer Flows</b>			<b>35,331</b>
Increase in Sewer Flows (gpd):			6,873

<sup>1</sup> Approximate square footages are subject to further design.

<sup>2</sup> Existing restaurant space is comprised of the lobby bar (50 seats) and the lobby café (56 seats).

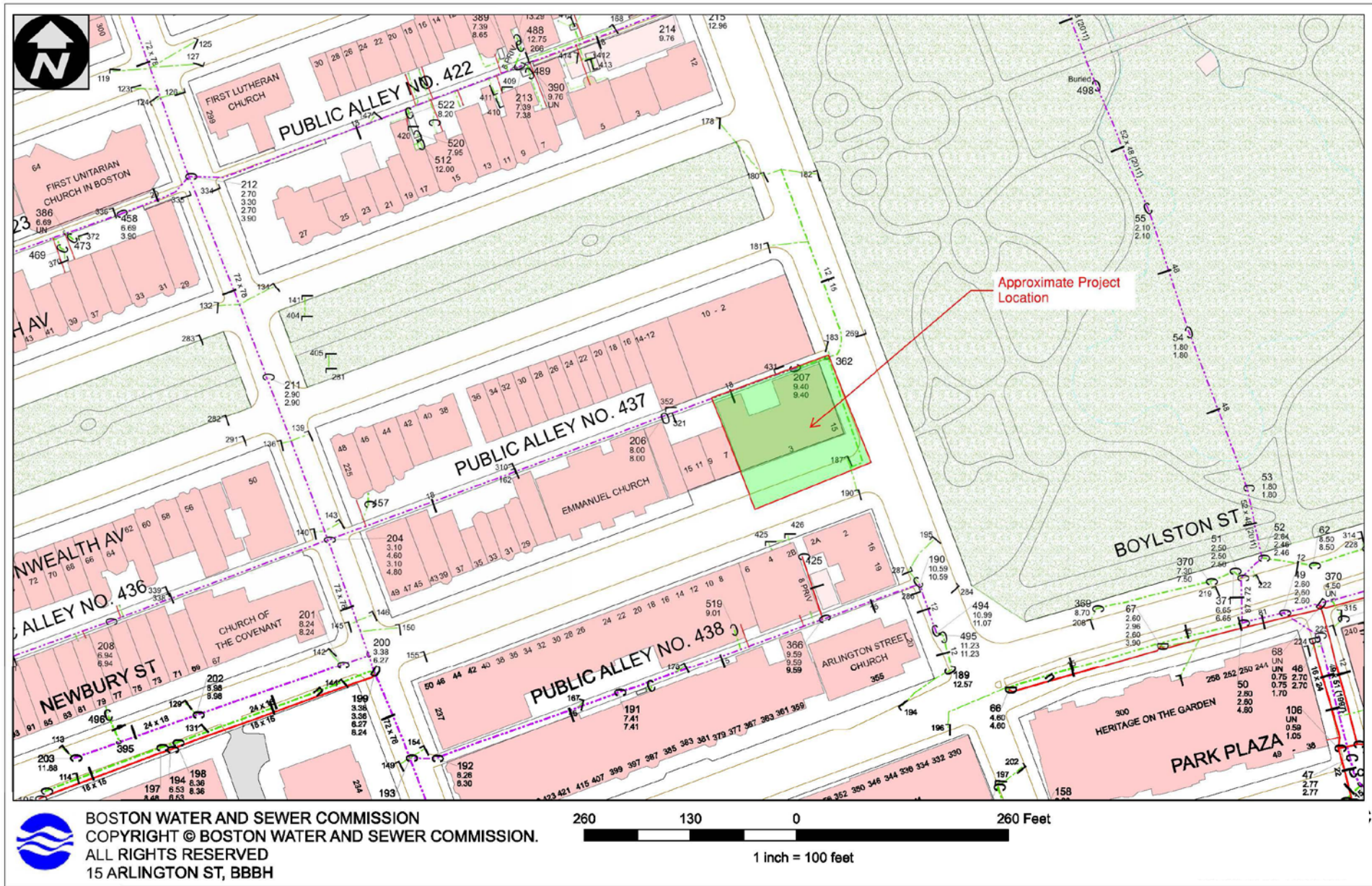
<sup>3</sup> Existing retail is comprised of Tiffany's first and fifth floor space.

<sup>4</sup> Proposed restaurant space is comprised of a lobby bar (54 seats) and the rooftop restaurant (240 seats).

<sup>5</sup> Proposed retail is comprised of Tiffany's first floor space.

### 7.2.3 Sanitary Sewer Connection

The Project's impact on the existing BWSC 18-inch combined sewer main in Public Alley No. 437 were analyzed. The existing sewer system capacity calculations are presented in Table 7-2.



**Taj Hotel Boston Boston, Massachusetts**



**Figure 7-1**  
 Existing BWSC Sanitary Sewer System

**Table 7-2 Sewer Hydraulic Capacity Analysis**

BWSC Sewer Manhole <sup>2</sup>	Slope (%) <sup>1</sup>	Dia. (inches)	Manning's Number	Flow Capacity (cfs) <sup>3</sup>	Flow Capacity (MGD)
Public Alley No. 437					
207 to 206	0.8%	18	0.013	9.42	6.09
206 to 204	0.7%	18	0.013	8.97	5.80
Minimum Flow Analyzed:				8.97	5.80

1. Manhole numbers taken from BWSC Sewer Map received 12/1/2018 prepared by Nitsch Engineering.
2. Flow calculations based on Manning's Equation.
3. Inverts Provided by BWSC on 12/1/2018

Table 7-2 indicates the hydraulic capacity of the existing 18-inch sewer main in Public Alley No. 437. The minimum hydraulic capacity is 5.80 million gallons per day (MGD) or 8.97 cubic feet per second (CFS) for the 18-inch main in Public Alley No. 437.

Based on an average daily flow estimate for the Project of 35,331 GPD or 0.035 MGD, an increase of 6,873 GPD or .0069 MGD from the existing building; and with a factor of safety estimate of 10 (total estimate = 0.0069 MGD x 10 = 0.069 MGD), no capacity problems are expected within the BWSC sewer systems in any of the adjacent roadways.

**7.2.3.1 Proposed Conditions**

The Proponent will coordinate with the BWSC on the design and capacity of any connections to the sewer system. The Project is expected to generate an increase in wastewater flows of approximately 6,873 gpd. Approval for the increase in sanitary flow will come from BWSC.

Sewer services for the existing building will be evaluated for capacity and condition and will be replaced as necessary. New sewer services resulting from the Project will connect to the existing sanitary sewer mains in Public Alley No. 437.

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

## 7.3 Water System

### 7.3.1 *Existing Water System*

Water for the Project will be provided by BWSC. BWSC is supplied water by the MWRA system.

There are five water systems within the City of Boston, and these provide service to portions of the City based on ground surface elevation. The five systems are the southern low (SL), southern high (SH), southern extra high (SEH), northern low (NL), and northern high (NH). Water mains are labeled by their system, pipe size, year installed, pipe material, and year cement lined (CL), if applicable.

There is a 12-inch BWSC southern low main in Newbury Street (SL 12 DICL 2013) adjacent to the Project site. There is also a 16-inch BWSC southern low main in Arlington Street (SL 16 DICL 1984) adjacent to the project site. The existing BWSC water system is shown in Figure 7-2.

There are existing water services at the existing site. The existing BWSC water systems are shown in Figure 7-2.

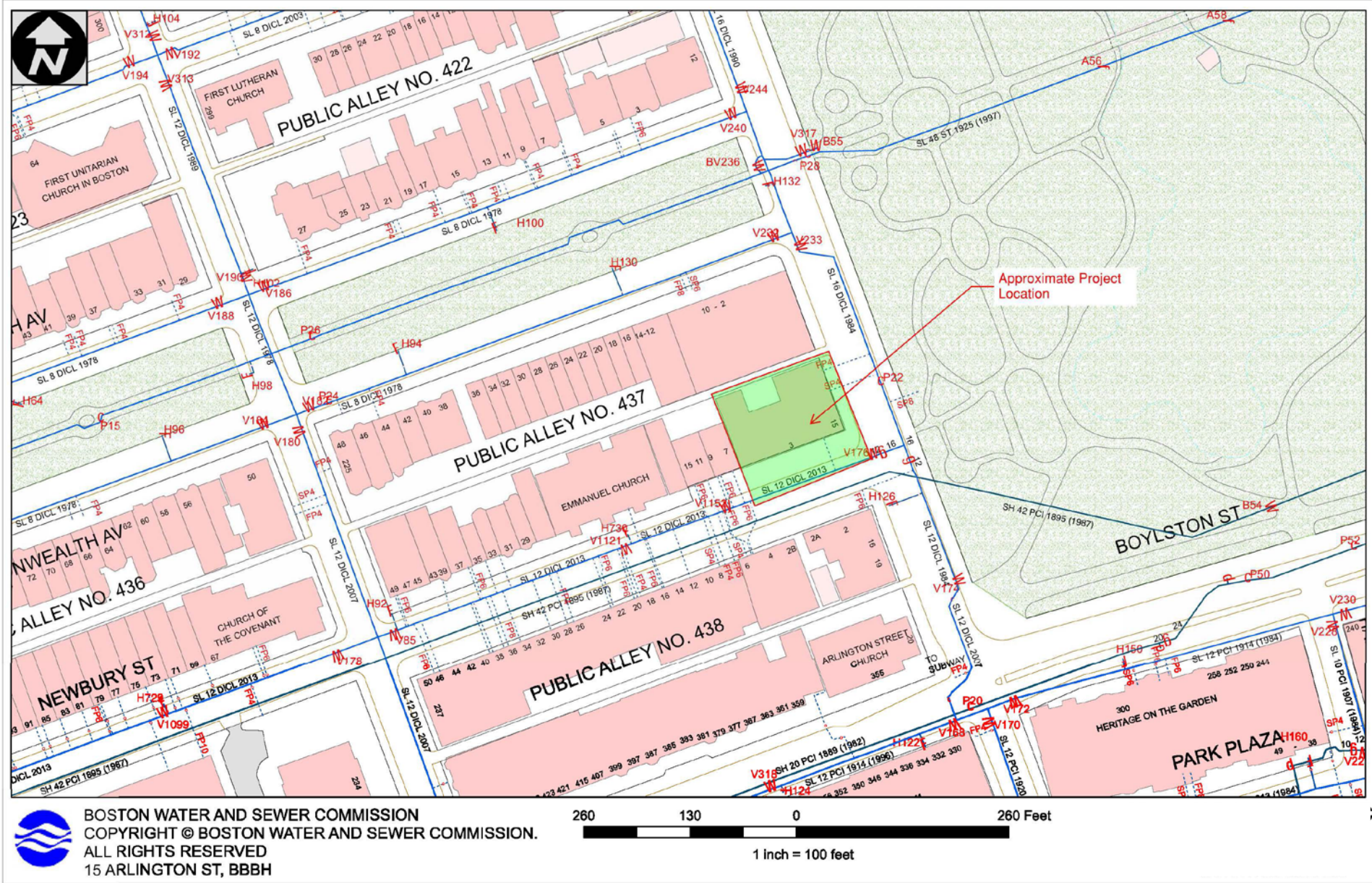
#### 7.3.1.1 Existing Water Capacity

BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the Project site was requested by the Proponent. Recent hydrant flow data was available near the Project site. As the design progresses, the Proponent will request hydrant flows be conducted by BWSC adjacent to the Project, as hydrant flow test data must be less than one-year old when used for design.

### 7.3.2 *Anticipated Water Consumption*

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, described above. A conservative factor of 1.1 (10%) is applied to the estimated average daily wastewater flows calculated with 314 CMR 15.00 values to account for consumption, system losses and other usages to estimate an average daily water demand. The Project's current domestic water demand is 31,304 gpd, while the projected domestic water demand 38,864 gpd. This results in a projected increase of 7,560 gpd in the domestic water demand. The water for the Project will be supplied by the BWSC systems in Arlington Street and Newbury Street, as it currently is through the existing services.





Taj Hotel Boston Boston, Massachusetts

### 7.3.3 Existing Water Capacity and Impacts

BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the Project site was requested by the Proponent. Hydrant flow data was available for two hydrants near the Project site. The existing hydrant flow data is shown in Table 7-3.

**Table 7-3 Existing Hydrant Flow Data**

Flow Hydrant Number	Date of Test	Static Pressure (psi)	Residual Pressure (psi)	Total Flow (gpm)
H242 (Arlington St)	9/9/2014	71	68	2,242
H92 (Newbury St)	8/3/2017	76	74	2,004

Note: Data provided by BWSC on December 5, 2018

### 7.3.4 Proposed Water Service

The Proponent will coordinate with the BWSC on the design and capacity of any proposed connections to the water system. Water and fire services for the existing building will be evaluated for capacity and condition and will be replaced as necessary. New sewer services resulting from the Project will connect to the existing water mains in Newbury Street and Arlington Street.

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

## 7.4 Storm Drainage Infrastructure

### 7.4.1 Existing Storm Drainage System

The existing site is comprised of the existing Taj Boston hotel, and associated walkways surrounding it. The existing site is entirely (100%) impervious.

There is an existing BWSC storm drain main in Arlington Street. Two catch basins located on Newbury Street at its intersection with Arlington connect to this main. The 12" main these inlets connect to appear to connect to the combined sewer line that also services the site within Public Alley No. 437.

Currently, stormwater runoff is collected by existing catch basins located around the site, and closed drainage systems incorporated into the existing building.

The existing BWSC Storm Drainage System is shown in Figure 7-1.

#### **7.4.2 Proposed Drainage Conditions**

The Project site is comprised of one existing building and is nearly entirely impervious. The Project will meet or reduce the existing peak rates of stormwater discharge and volumes of stormwater runoff from the site and promote runoff recharge to the greatest extent possible.

The Project will strive to infiltrate 1.25 inches of stormwater runoff from the Project area into the ground to the greatest extent possible. The plaza area totals approximately 15,063 sf, which would require storage of 1,569 cubic feet for the 1.25 inches runoff. Different approaches to stormwater recharge will be assessed. Depending on the groundwater elevation at the project, using a tank within the basement to infiltrate below the slab is a possibility. If this is not an option, a system of injection wells to infiltrate underneath the public way (pumped from a storage tank) will be evaluated.

There will be no increase in the peak rate or volume of stormwater discharge from the Project site in the proposed condition compared to the existing condition.

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

### **7.5 Mitigation Measures**

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

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

### **7.5.1 Water Quality Impact**

The BPDA oversees proposed projects within the Groundwater Conservation Overlay District under Article 32. The Project parcel is located within the City of Boston's Groundwater Conservation Overlay District. The purpose of the article is to prevent deterioration of and, where necessary, promote the restoration of, groundwater levels in the city of Boston, to protect and enhance the city's historic neighborhoods and structures, reduce surface water runoff and water pollution and maintain public safety. Article 32 requires that the Project captures and infiltrates no less than 1.0 inches across the portion of impervious surface area of the lot to be occupied by the Project. The BPDA's Smart Utilities Policy will strive to infiltrate 1.25 inches of stormwater runoff from the impervious areas of the Project into the ground to the greatest extent possible.

The Project will strive to comply with Article 32 and Article 80 by capturing within a suitably-designed system a volume of rainfall on the lot equivalent to no less than 1.25 inches across that portion of the surface area of the lot to be occupied by the Project. The Project will result in no negative impact on groundwater levels within the lot in question or adjacent lots, subject to the terms of any (i) dewatering permit or (ii) cooperation agreement entered into by the Proponent and the BPDA, to the extent that such agreement provides standards for groundwater protection during construction.

### **7.5.2 DEP Stormwater Management Policy Standards**

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

A description of the Project's anticipated compliance with the Standards is outlined below:

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

Compliance: The proposed design will comply with this Standard. The design will not propose new stormwater conveyances and no new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Project.

**Standard #2:** Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates. This Standard may be waived for discharges to land subject to coastal storm flowage as defined in 310 CMR 10.04.

Compliance: The proposed design will comply with this Standard to the maximum extent practicable. The existing peak discharge rate will be met or will be decreased as a result of the improvements associated with the Project.

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

Compliance: The Project will comply with this standard. The Project is located within Boston's Groundwater Conservation Overlay District, and the stormwater system shall be designed to capture and infiltrate 1.25 inches of stormwater from the area of the plaza within the public way to be re-developed to the greatest extent possible.

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

- a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;
- b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and
- c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

Compliance: The proposed design will comply with this standard. Within the Project site, there will be mostly roof, and paved pedestrian areas. Runoff from these paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by area drainage and treated before discharging into the BWSC system.

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

Compliance: The proposed design will comply with this standard. The proposed design will include source control, pollution prevention and pretreatment practices, as necessary.

**Standard #6:** Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A “storm water discharge” as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

Compliance: Not Applicable. The proposed Project is not within an outstanding resource area.

**Standard #7:** A plan to control construction-related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

Compliance: The proposed design will comply with this standard. A plan to control temporary construction-related impacts including erosion, sedimentation, and other pollutant sources during construction and land disturbing activities will be developed and implemented.

**Standard #8:** A long-term operation and maintenance (O&M) plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Compliance: The Project will comply with this standard. An O&M Plan including long-term Best Management Practices (BMP) operation requirements will be prepared for the Proposed Project and will assure proper maintenance and functioning of the stormwater management system.

**Standard #9:** All illicit discharges to the stormwater management system are prohibited.

Compliance: The Project will comply with this standard. There will be no illicit connections associated with the Proposed Project. Temporary construction dewatering will be conducted in accordance with applicable BWSC and Massachusetts Water Resource Authority (MWRA) requirements, as necessary.

## 7.6 Smart Utilities

The BPDA adopted the “Smart Utility Policy for Article 80 Development Review 2018. For all projects at or above 100,000 sf of floor area, the BPDA, in consultation with the Boston Water & Sewer Commission (BWSC) shall recommend the use of Green Infrastructure to retain, on site, a volume of runoff equal to 1.25 inches of rainfall multiplied by the total impervious area. As noted above, the Project will strive to infiltrate 1.25 inches of stormwater runoff from the impervious areas of the Project into the ground to the greatest extent practicable.

## 7.7 Electrical Services

The Hotel is provided with a 3,000A, 120/208V, three-phase electrical service powered from a side-walk transformer vault. Power is distributed throughout the Hotel in conduit to panelboards.

## 7.8 Telecommunications System

There will be no changes to the Hotel’s telecommunications system.

## 7.9 Natural Gas Systems

Natural gas is supplied to the Hotel within the basement of the building meters along Newbury Street. There is a single Roots model# 7M meter for the property. Low pressure Natural gas is then distributed throughout the building to each commercial kitchen. Natural gas is only used for kitchen applications and is not the source of heat or domestic hot water for the Hotel. The commercial kitchens utilizing natural gas are located on the 2nd, 3rd, and 17th levels and will require a total of approximately 4,000 cubic feet per hour (CFH).

## **7.10 Utility Protection During Construction**

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

## **7.11 Fire Prevention**

The Hotel is provided with fire automatic sprinkler and standpipe protection. A 1000 diesel fire pump rated at 100 pounds per square inch (PSI) is located in the basement and boosts the system pressure. A six-inch standpipe riser is located in each egress stairwell with 2.5-inch fire department valves located on the main stair landings. The sprinkler systems on each floor are supplied by floor control valve assemblies connected to the standpipe riser. The sprinkler system is designed for light hazard protection except in the mechanical, storage, kitchens, and similar spaces which are designed for ordinary hazard protection.



## Chapter 8

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### Coordination with Other Governmental Agencies

## **8.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES**

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### **8.1 Architectural Access Board Requirements**

The Project will comply with the requirements of the Massachusetts Architectural Access Board and will be designed to comply with the standards of the Americans with Disabilities Act. The Accessibility Checklist is included in Attachment F.

### **8.2 Massachusetts Environmental Policy Act (MEPA)**

The Proponent does not expect that the Project will require review by the Massachusetts Environmental Policy Act (MEPA) Office of the Massachusetts Executive Office of Energy and Environmental Affairs. The Project does not exceed any of the review thresholds for the filing of an Environmental Notification Form under MEPA.

### **8.3 Massachusetts Historical Commission**

The Massachusetts Historical Commission (MHC) has review authority over projects requiring state funding, licensing, permitting, and/or approvals that may have direct or indirect impacts to properties listed in the State Register of Historic Places. The Project does not require state action that triggers MHC review under Sections 27-27c of Chapter 9 of the Massachusetts General Laws, as amended by Chapter 254 of the Acts of 1988. Should this change, MHC's review of the Project under the State Register Review process would be initiated through the filing of an MHC Project Notification Form.

### **8.4 Boston Landmarks Commission (BLC) Article 80 Review**

The submission of this PNF initiates review of the Project by the BLC, under the City's Article 80 process.

### **8.5 Back Bay Architectural Commission Review**

In that all exterior work to properties located within the locally designated Back Bay Architectural District is subject to the prior review and approval of the Back Bay Architectural Commission, an Application for Certificate of Appropriateness will be filed at the prescribed time.

### **8.6 Boston Parks and Recreation**

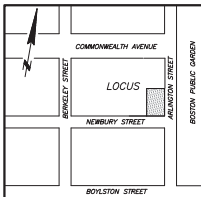
Given that the Project involves construction within 100 feet of the Boston Public Garden, the Project requires review and approval by the Boston Parks and Recreation Commission.

**Attachment A**

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Site Survey

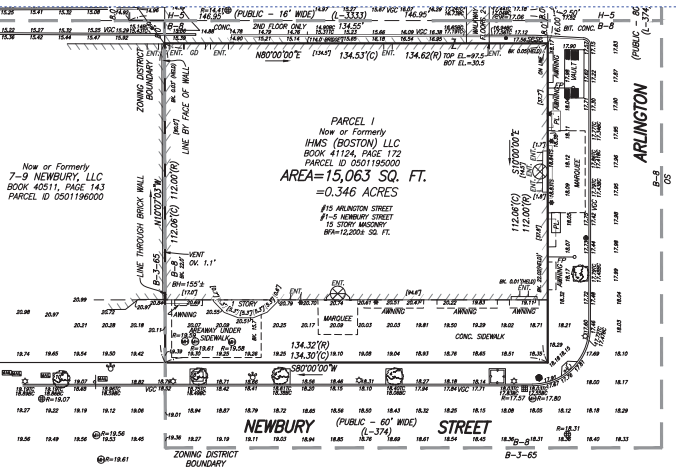
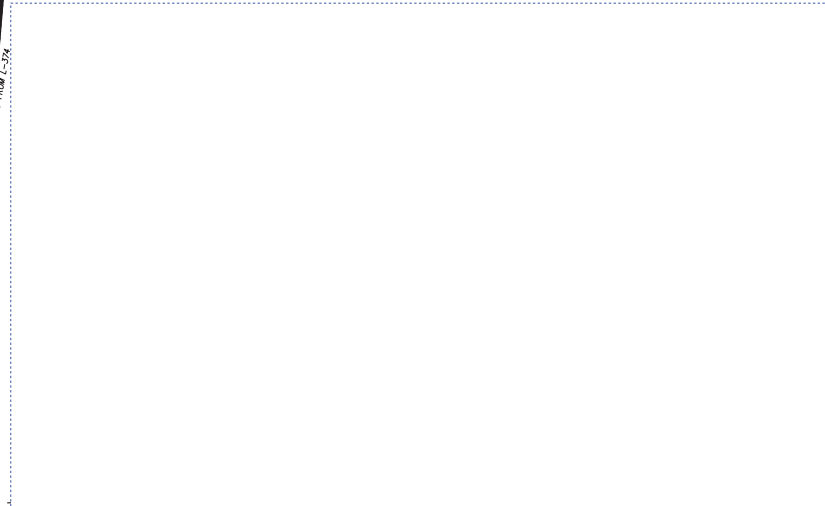


RESERVED FOR REGISTRY USE



**LEGEND**

- ⊙ ..... SEWER MANHOLE
- ⊕ ..... MANHOLE
- ⊗ ..... HYDRANT
- ⊕ ..... WATER SHUT OFF/WATER GATE
- ⊕ ..... GAS SHUT OFF/GAS GATE
- ⊕ ..... ROUND CATCH BASIN
- ⊕ ..... LIGHT POLE
- ⊕ ..... WALL LIGHT
- ⊕ ..... BOLLARD
- ⊕ ..... MAIL BOX
- ⊕ ..... SIGN
- ⊕ ..... FLAG POLE
- ⊕ ..... FIRE ALARM
- ⊕ ..... SECURITY CAMERA
- ⊕ ..... STAND PIPE/SWISS CONNECTION
- ⊕ ..... DECADUOUS TREE
- ⊕ ..... EXCEPTION NUMBER LISTED IN TITLE COMMENT
- ⊕ ..... HANDICAP RAMP
- 1 ..... INDICATES COMMON OWNERSHIP
- [LX] ..... BUILDING DIMENSION
- SFA ..... BUILDING FOOTPRINT AREA
- BH ..... BUILDING HEIGHT
- BT ..... BITUMINOUS
- BR ..... BRICK
- (C) ..... CALCULATED
- CONC ..... CONCRETE
- ENT ..... ENTRANCE
- GD ..... GARAGE DOOR
- GRAN ..... GRANITE
- LOC ..... LAND COURT CASE
- LD ..... LOADING DOCK
- M&D ..... MASON & GRANITE
- OV ..... OVER
- POB ..... POINT OF BEGINNING
- (R) ..... RECORD
- SQ. FT. ..... SQUARE FEET
- TYP ..... TYPICAL
- VSP ..... VERTICAL GRANITE CURB
- WFO ..... WROUGHT IRON FENCE



**NOTES:**

- 1) BY GRAPHIC PLOTTING ONLY, THE PARCELS SHOWN HEREON LIE WITHIN A ZONE "Y" (UNSHADED), AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD, AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR SUFFOLK COUNTY, MASSACHUSETTS, MAP NUMBER 250502070C, CITY OF BOSTON, COMMUNITY NUMBER 250286, PANEL NUMBER 0077, HAVING AN EFFECTIVE DATE OF MARCH 16, 2016.
- 2) BUILDING HEIGHT SHOWN HEREON IS CALCULATED FROM THE AVERAGE GRADE PLANE AND THE TOP OF ROOF, BY CITY OF BOSTON ZONING CODE, THE DEFINITION OF BUILDING HEIGHT IS TO THE TOP OF THE HIGHEST ROOF BEAM, THIS WAS UNACCESSIBLE AT TIME OF SURVEY, THEREFORE THE BUILDING HEIGHT BY DEFINITION WOULD BE LESS THAN THE HEIGHT SHOWN HEREON.
- 3) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FELDMAN LAND SURVEYORS ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO FELDMAN LAND SURVEYORS' SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT, ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY FELDMAN LAND SURVEYORS.
- 4) ELEVATIONS REFER TO BOSTON CITY BASE.
- 5) BENCH MARK INFORMATION:  
 BENCH MARKS USED:  
 RIGHT OUTER CORNER LOWEST STONE STEP OF THE RITZ CARLTON, 15 ARLINGTON STREET.  
 ELEVATION = 16.52  
 RIGHT OUTER CORNER LOWEST STONE STEP OF THE ARLINGTON STREET CHURCH AT THE INTERSECTION OF THE NORTHERLY SIDE OF BOYLSTON STREET AND THE WESTERLY SIDE OF ARLINGTON STREET.  
 ELEVATION = 19.36  
 6) AREAS SHOWN HEREON DOES NOT INCLUDE ANY LAND WITHIN THE LAYOUT OF ARLINGTON STREET AND PUBLIC ALLEY NO. 437.

I CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND THE LATEST RECORD PLANS, DEEDS AND CERTIFICATES OF TITLE.

PAUL R. FOLEY, PLS (MAF 48355) DATE  
 PRF@FELDMANSURVEYORS.COM

- REFERENCES**
- SUFFOLK COUNTY REGISTRY OF DEEDS
  - PLAN IN BOOK 4866, PAGE 6
  - MASSACHUSETTS LAND COURT
  - LOC #15729A
  - LOC #16403A
  - LOC #33716A
  - LOC #40694A
  - CITY BOSTON ENGINEERING DEPARTMENT
  - FIELD BOOK 704 PAGE 69-71
  - FIELD BOOK 732 PAGE 100-101
  - PLAN NO. L-374
  - L-3333

**EXISTING CONDITIONS PLAN OF LAND**  
 15 ARLINGTON STREET,  
**BOSTON, MASS.**  
 FELDMAN LAND SURVEYORS MAY 31, 2017  
 152 HAMPDEN STREET PHONE: (617)357-9740  
 BOSTON, MASS. 02119 www.feldmansurveyors.com



RESEARCH TRM	FIELD CHK	JE/JD	PROJ MGR	PRF	APPROVED	SHEET NO.	1 OF 1
CALC TRA	CADD AA	FIELD CHECKED	CRD FILE	14900			
FILENAME: S:\PROJECTS\14900\14900\DWG\14900-PLC.dwg							

**Attachment B**

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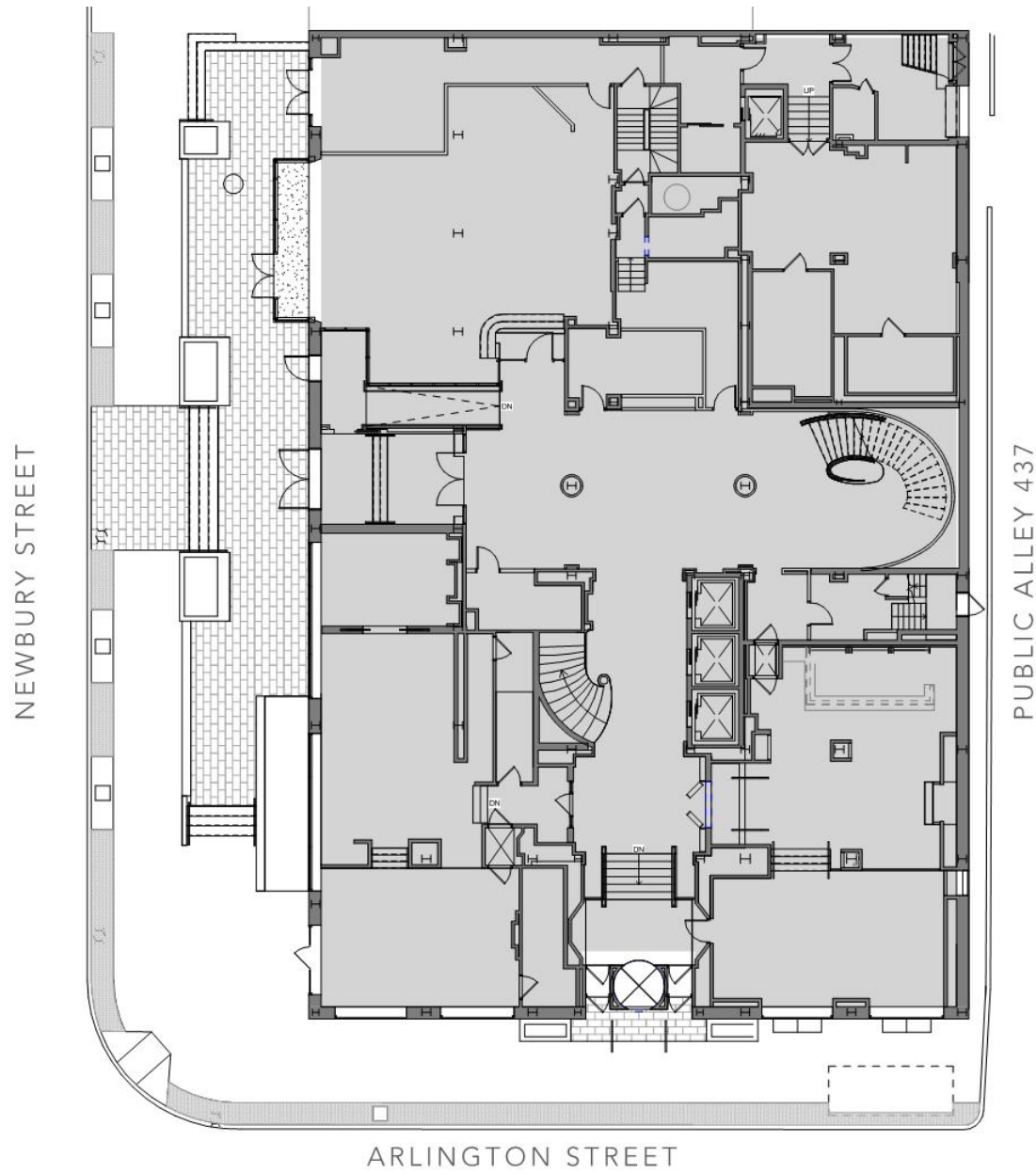
Floor Plans



Taj Hotel Boston Boston, Massachusetts



Figure B-1  
Basement Floor Plan



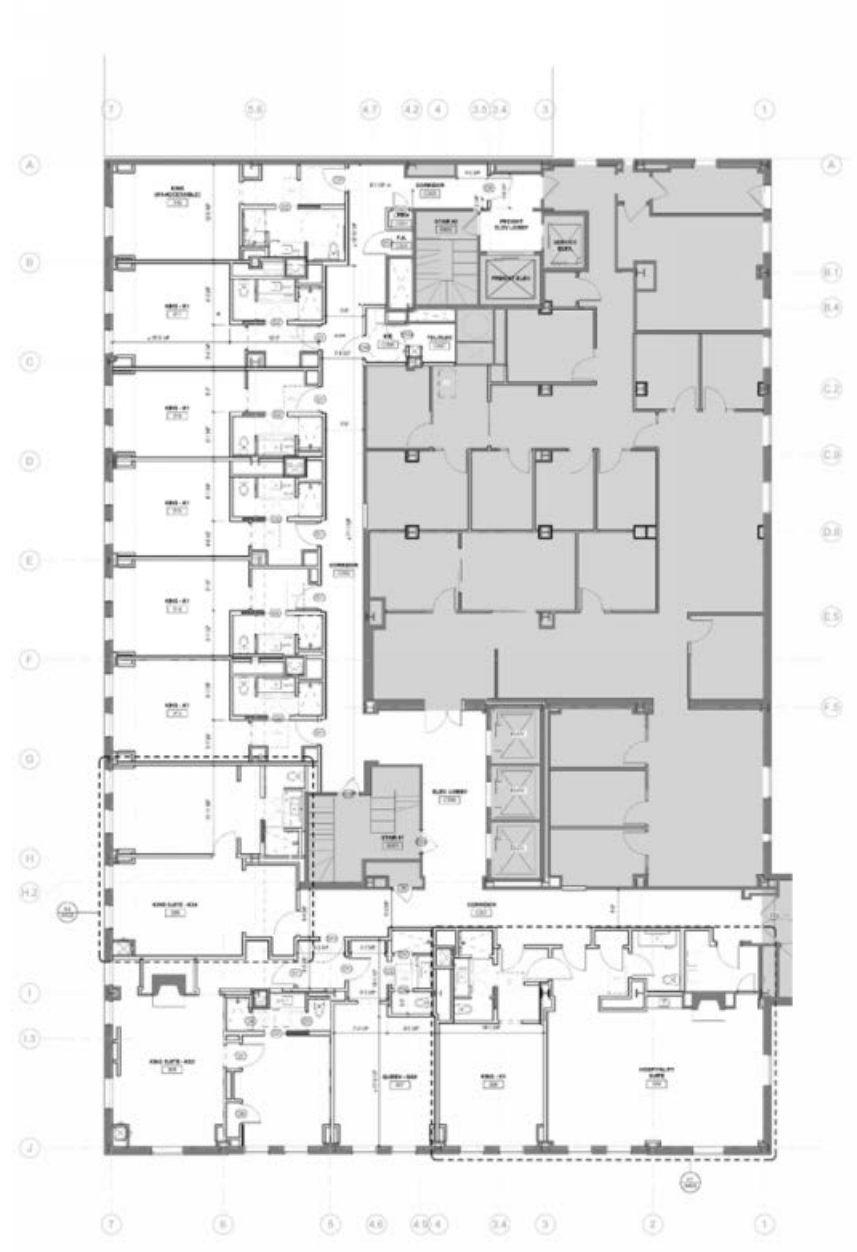
Taj Hotel Boston Boston, Massachusetts



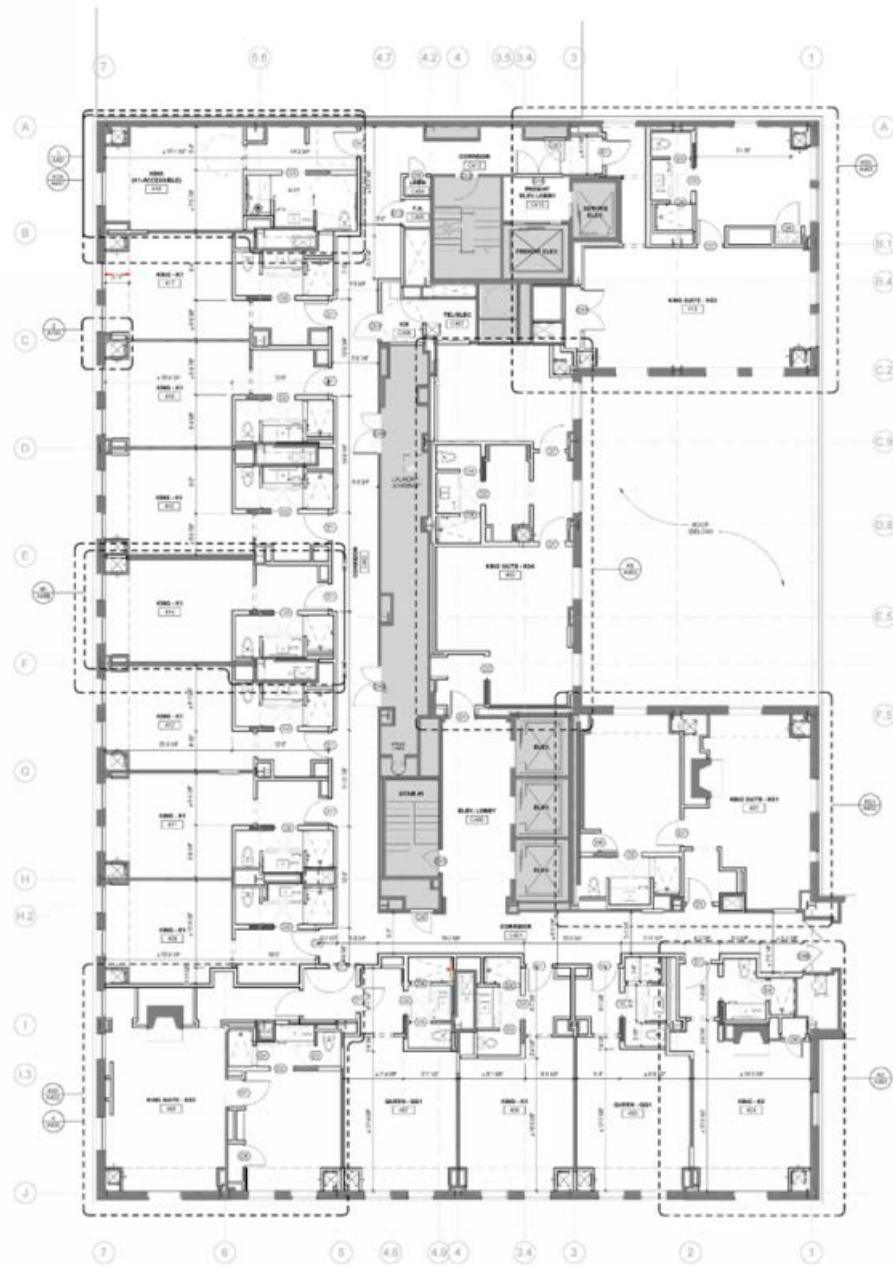
**Figure B-2**  
Ground Floor Plan







Taj Hotel Boston Boston, Massachusetts



Taj Hotel Boston Boston, Massachusetts



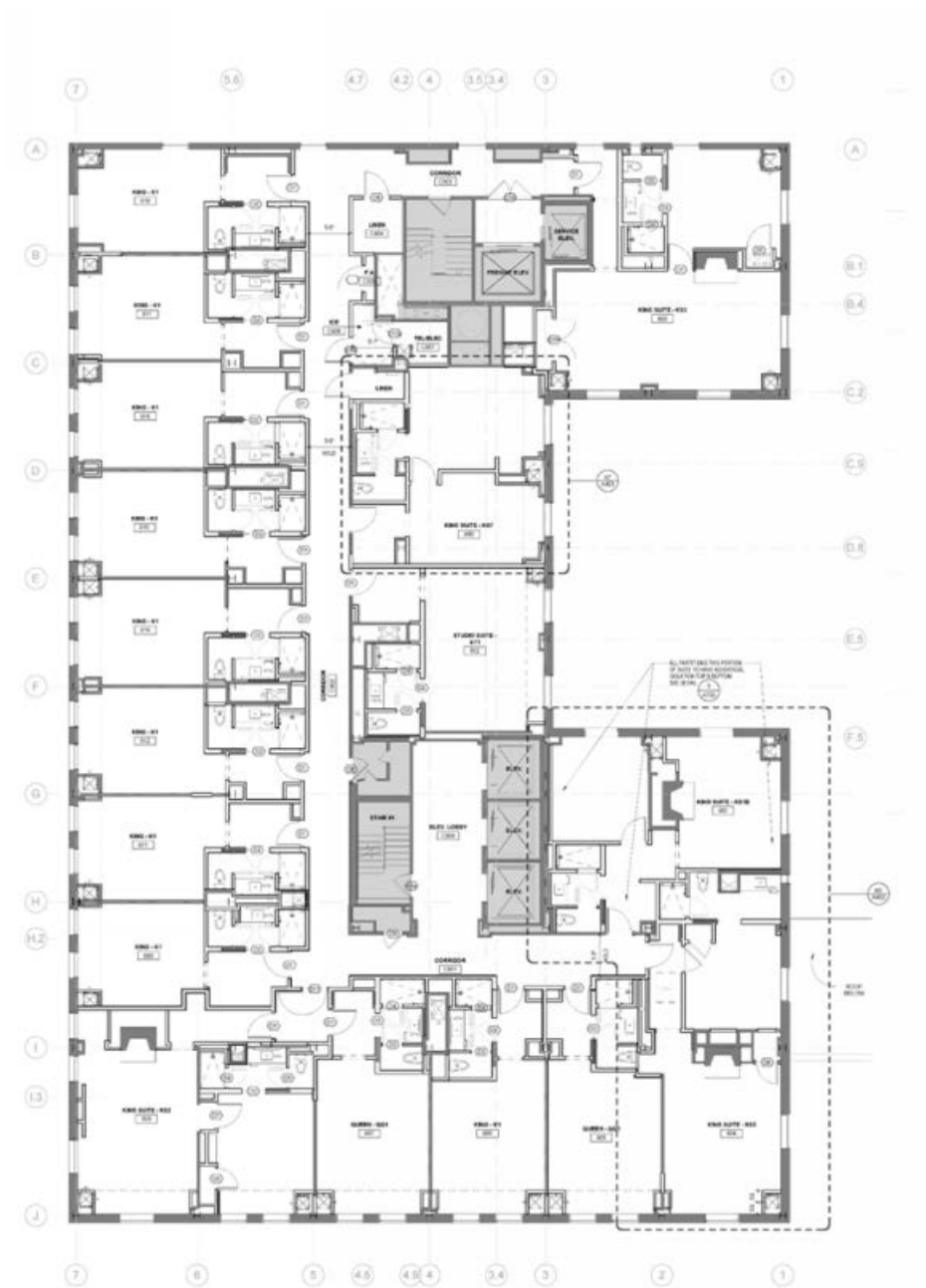
Figure B-5  
Fourth Floor Plan



Taj Hotel Boston Boston, Massachusetts



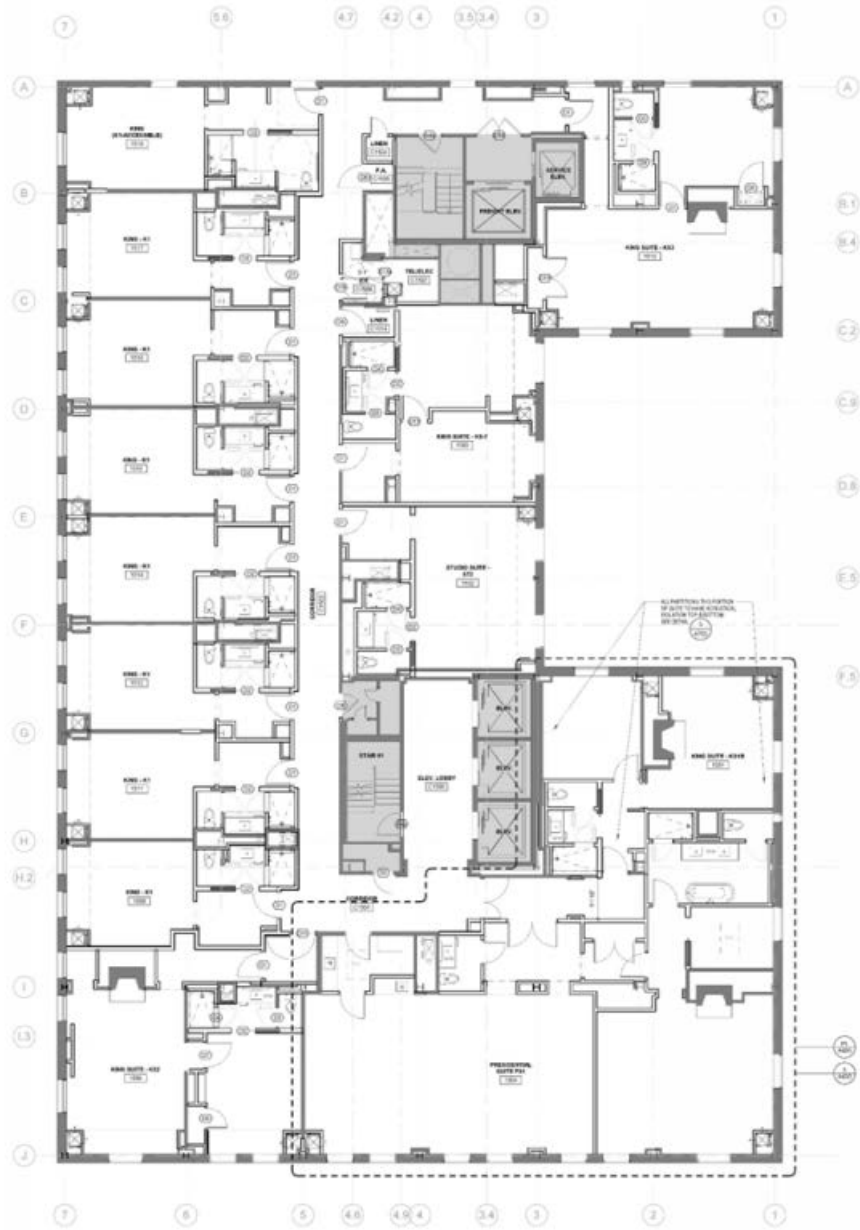
Figure B-6  
Fifth Floor Plan



Taj Hotel Boston Boston, Massachusetts

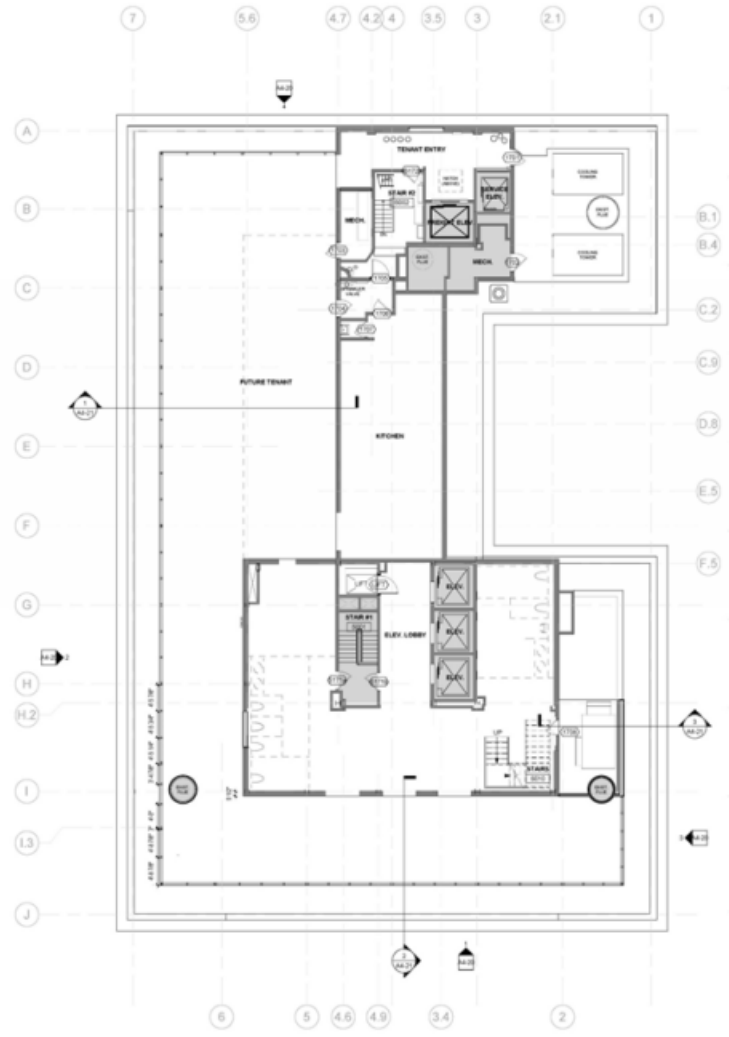


Figure B-7  
Eighth Floor Plan



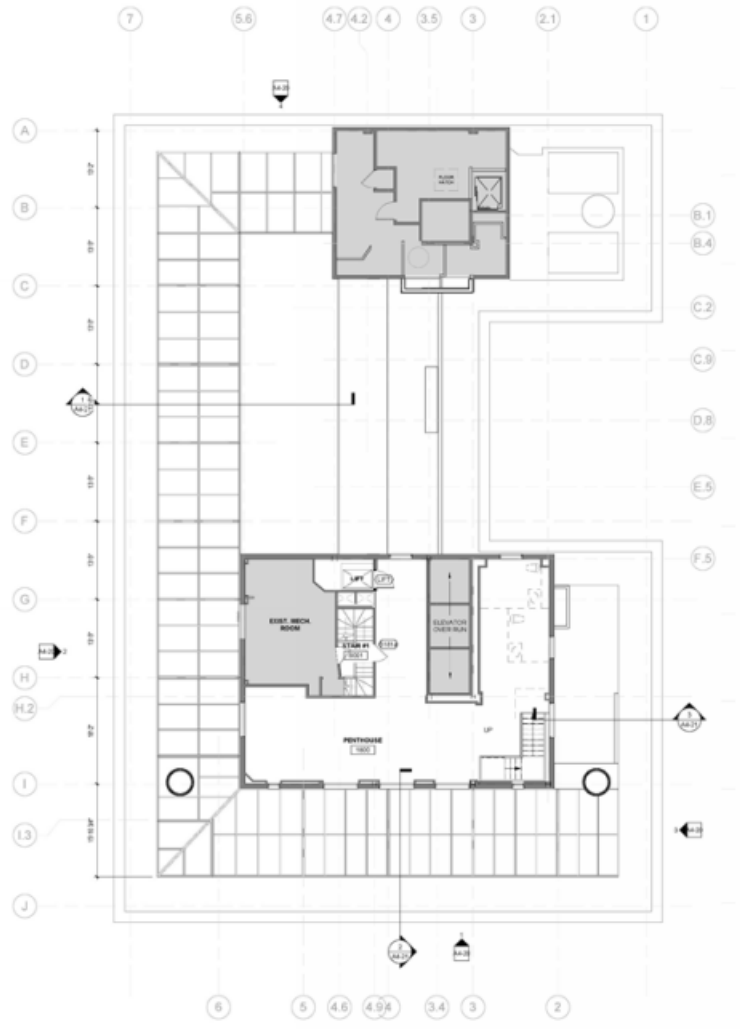
**PLAN LEGEND**

-  EXISTING CONSTRUCTION TO REMAIN
-  EXISTING CONSTRUCTION TO BE DEMOLISHED
-  INDICATES AREA NOT IN SCOPE (OR UNDER SEPARATE COVER)



**PLAN LEGEND**

-  EXISTING CONSTRUCTION TO REMAIN
-  EXISTING CONSTRUCTION TO BE DEMOLISHED
-  INDICATED AREA NOT IN SCOPE OR LARGER SEPARATE COVER



Attachment C

Transportation



Transportation Appendix is Available Upon Request

**Attachment D**

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Air Quality

# ATTACHMENT D AIR QUALITY

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## Introduction

This Air Quality Appendix provides modeling assumptions and backup for results presented in Section 3.5 of the report. Included within this documentation is a brief description of the methodology employed along with pertinent calculations and data used in the emissions and dispersion calculations supporting the microscale air quality analysis.

## Motor Vehicle Emissions

The EPA MOVES computer program generated motor vehicle emissions used in the garage stationary source analysis along with the mobile source CAL3QHC modeling and mesoscale analysis. The model input parameters were provided by MassDEP. Emission rates were derived for 2018 and 2025 for speed limits of idle, 10, 15, and 25 mph for use in the microscale analyses.

### MOVES CO Emission Factor Summary

#### Carbon Monoxide Only

		2018	2023
Free Flow	25 mph	2.448	1.921
Right Turns	10 mph	3.788	2.956
Left Turns	15 mph	3.288	2.586
Queues	Idle	6.673	4.102

Notes: Winter CO emission factors are higher than Summer and are conservatively used  
Urban Unrestricted Roadway type used

## CAL3QHC

For the intersection studied, the CAL3QHC model was applied to calculate CO concentrations at sensitive receptor locations using emission rates derived in MOVES. The intersection's queue links and free flow links were input to the model along with sensitive receptors at all locations nearby each intersection. The meteorological assumptions input into the model were a 1.0 meter per second wind speed, Pasquill-Gifford Class D stability combined with a mixing height of 1000 meters. For each direction, the full range of wind directions at 10 degree intervals was examined. In addition, a surface roughness ( $z_0$ ) of 321 cm was used for the intersection. Idle emission rates for queue links were based on 0 mph emission rates derived in MOVES. Emission rates for speeds of 10, 15, and 25 mph were used for right turn, left turn, and free flow links, respectively.

## Background Concentrations

---

## Background Data

POLLUTANT	AVERAGING TIME	Form	2015	2016	2017	Units	ppm/ppb to $\mu\text{g}/\text{m}^3$ Conversion Factor	2015-2017 Background Concentration ( $\mu\text{g}/\text{m}^3$ )	Location
SO <sub>2</sub> <sup>(1)(6)(7)</sup>	1-Hour <sup>(5)</sup>	99th %	5.5	4.1	2.8	ppb	2.62	10.8	Kenmore Sq., Boston
	3-Hour <sup>(6)</sup>	H2H	4.4	3.8		ppb	2.62	11.5	Kenmore Sq., Boston
	24-Hour	H2H	2.9	2.0	1.5	ppb	2.62	7.6	Kenmore Sq., Boston
	Annual	H	0.53	0.43	0.50	ppb	2.62	1.4	Kenmore Sq., Boston
PM-10 <sup>(8)</sup>	24-Hour	H2H	30	30	27	$\mu\text{g}/\text{m}^3$	1	30	Kenmore Sq., Boston
	Annual	H	14.2	14.1	11.2	$\mu\text{g}/\text{m}^3$	1	14.2	Kenmore Sq., Boston
PM-2.5	24-Hour <sup>(5)</sup>	98th %	14.5	13	12.2	$\mu\text{g}/\text{m}^3$	1	13.2	Kenmore Sq., Boston (FRM)
	Annual <sup>(5)</sup>	H	6.5	6.2	6.1	$\mu\text{g}/\text{m}^3$	1	6.3	Kenmore Sq., Boston (FRM)
NO <sub>2</sub> <sup>(3)(7)</sup>	1-Hour <sup>(5)</sup>	98th %	56	47	46	ppb	1.88	93.4	Kenmore Sq., Boston
	Annual	H	17.3	15.0	25.3	ppb	1.88	47.5	Kenmore Sq., Boston
CO <sup>(2)(7)</sup>	1-Hour	H2H	1.4	2.4	1.3	ppm	1146	2750.4	Harrison Ave., Boston
	8-Hour	H2H	0.9	1.2	1.3	ppm	1146	1439.4	Harrison Ave., Boston
Ozone <sup>(4)</sup>	8-Hour	H4H	0.056	0.058	0.069	ppm	1963	135.4	Harrison Ave., Boston
Lead <sup>(9)</sup>	Rolling 3-Month	H	0.016	0.017	N/A	$\mu\text{g}/\text{m}^3$	1	0.017	Harrison Ave., Boston

**Notes:**

From 2015-2017 MassDEP's Annual Ambient Air Quality Reports and EPA's AirData Website

<sup>1</sup> SO<sub>2</sub> reported ppb. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 2.62  $\mu\text{g}/\text{m}^3$ .

<sup>2</sup> CO reported in ppm. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1146  $\mu\text{g}/\text{m}^3$ .

<sup>3</sup> NO<sub>2</sub> reported in ppb. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1.88  $\mu\text{g}/\text{m}^3$ .

<sup>4</sup> O<sub>3</sub> reported in ppm. Converted to  $\mu\text{g}/\text{m}^3$  using factor of 1 ppm = 1963  $\mu\text{g}/\text{m}^3$ .

<sup>5</sup> Background level is the average concentration of the three years.

<sup>6</sup> The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.

<sup>7</sup> CO monitor at Kenmore Square was deactivated in January 2015. Harrison Avenue monitor used for 2015 and 2016.

<sup>8</sup> PM10 monitor at Kenmore Square was deactivated in 2016. Harrison Avenue monitor used for 2016 and 2017.

<sup>9</sup> Lead is not reported at any site in Massachusetts in 2017.

## **Model Input/Output Files**

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Due to excessive size CAL3QHC, and MOVES input and output files are available on digital media upon request.

**Attachment E**

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Climate Change Checklist

# Boston Planning & Development Agency Climate Resiliency Report Summary



**Submitted:** 03/08/2019 11:36:22

## A.1 - Project Information

Project Name:	Taj Hotel Boston		
Project Address:	15 Arlington Street		
Filing Type:	Initial (PNF, EPNF, NPC or other substantial filing)		
Filing Contact:	Fiona Vardy	Epsilon Associates, Inc.	fvardy@epsilonassociates.com 978-461-6243
Is MEPA approval required?	No	MEPA date:	

## A.2 - Project Team

Owner / Developer:	IREP Newbury Hotel, LLC, c/o Highgate Hotels, LLC
Architect:	CBT Architects
Engineer:	Nitsch Engineering
Sustainability / LEED:	CBT Architects
Permitting:	Epsilon Associates, Inc.
Construction Management:	CRJA - IBI Group

## A.3 - Project Description and Design Conditions

List the principal Building Uses:	Hotel, retail, cafe
List the First Floor Uses:	Hotel lobby, cafe, retail, back of house support spaces
List any Critical Site Infrastructure and or Building Uses:	N/A

### Site and Building:

Site Area (SF):	15063	Building Area (SF):	160078
Building Height (Ft):	163.4	Building Height (Stories):	15
Existing Site Elevation – Low (Ft BCB):	15.39	Existing Site Elevation – High (Ft BCB):	20.79
Proposed Site Elevation – Low (Ft BCB):	15.39	Proposed Site Elevation – High (Ft BCB):	20.79
Proposed First Floor Elevation (Ft BCB):	20.75	Below grade spaces/levels (#):	1

### Article 37 Green Building:

LEED Version - Rating System:	LEED v4 BD+C Hospitality	LEED Certification:	No
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# Boston Planning & Development Agency Climate Resiliency Report Summary



Proposed LEED rating: **Certified**      Proposed LEED point score (Pts.): **47**

## 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:	N/A	Exposed Floor:	N/A
Foundation Wall:	N/A	Slab Edge (at or below grade):	N/A
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:	N/A	Wall Value:	N/A
Area of Vision Window:	N/A	Window Glazing Assembly Value:	N/A
		Window Glazing SHGC:	N/A
Area of Doors:	N/A	Door Assembly Value:	N/A

## Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	Carrier HAP Hourly Analysis Program was used to verify typical guest room cooling and heating requirements.		
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?:	No
Energy Use - Below Mass. Code (%):		Energy Use Intensity (kBtu/SF):	

## Back-up / Emergency Power System

Electrical Generation Output (kW):	125	Number of Power Units:	
System Type (kW):	EMG Power	Fuel Source:	Oil

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

Electric (kW):		Heating (MMbtu/hr):	
		Cooling (Tons/hr):	

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**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): [REDACTED]

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

N/A

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

N/A

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

N/A

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:

N/A

**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):

N/A

### **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.):

Temperature Range - High (Deg.):

Annual Heating Degree Days:

Annual Cooling Degree Days:

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

Days - Above 90° (#):

Days - Above 100° (#):

Number of Heatwaves / Year (#):

Average Duration of Heatwave (Days):

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

N/A

#### **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:

N/A

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:

N/A

### **D - Extreme Precipitation Events**

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25”. There is a significant probability that

this will increase to at least 6” by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

**D.1 – Extreme Precipitation - Design Conditions**

What is the project design precipitation level? (In. / 24 Hours)

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

**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?  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](#))?

***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)?

What is the Sea Level Rise -  
Design Flood Elevation for the  
site (Ft BCB)?

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.:

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.:

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:

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.:

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](mailto:John.Dalzell@boston.gov)

**Attachment F**

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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 BPDA 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](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/](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](http://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](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](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.

**Article 80 | ACCESSIBILTY CHECKLIST**

<b>1. Project Information:</b> <i>If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.</i>			
Project Name:	Taj Hotel Boston		
Primary Project Address:	15 Arlington Street		
Total Number of Phases/Buildings:	1 Building / 4 phases –		
Primary Contact (Name / Title / Company / Email / Phone):	Louis Molinini / Senior Vice President / JLL / louis.molinini@am.jll.com / (703) 485-8733		
Owner / Developer:	IREP Newbury Hotel, LLC		
Architect:	CBT Architects		
Civil Engineer:	Nitsch Engineering		
Landscape Architect:	Columbia Construction Company		
Permitting:	Epsilon Associates, Inc.		
Construction Management:	CRJA – IBI Group		
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)? <i>If yes</i> , identify and explain.	N/A		
<b>2. Building Classification and Description:</b> <i>This section identifies preliminary construction information about the project including size and uses.</i>			
What are the dimensions of the project?			
Site Area:	15,063 SF	Building Area:	160,078 GSF
Building Height:	163.4 FT.	Number of Stories:	15 Flrs.
First Floor Elevation:	20.75 BCB	Is there below grade space:	1 story



**Article 80 | ACCESSIBLTY CHECKLIST**

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	<b>Hospitality</b>
	Laboratory / Medical	Storage, Utility and Other		
List street-level uses of the building:	Hotel lobby, restaurant, retail			
<p><b>3. Assessment of Existing Infrastructure for Accessibility:</b></p> <p><i>This section explores the proximity to accessible transit lines and institutions, such as (but not limited to) hospitals, elderly &amp; 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.</i></p>				
Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:	The Project site is approximately 0.766 acres in size and is located in an urban setting characterized by residential and commercial retail development. The site is essentially level at the same approximate topographic gradient as the surrounding properties. The topography of the area is best described as flat. According to the United States Geological Survey (USGS) Boston South, MA 7.5 Minute Series topographic map, the Project site's elevation is approximately 10 feet above mean sea level (msl).			
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	The Arlington Street Green Line station, the Chinatown Orange Line station, the Park Street Red Line and Green Line station, as well as the bus stops at Boylston Street & Berkeley Street, Arlington Street & Saint James Avenue, St. James and Arlington Street, Boylston Street & Clarendon Street, Charles Street & Beacon Street, Tremont Street opposite Temple Place, Tremont Street & Boylston Station, and St. James & Clarendon Street.			
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	Boston Foundation, Fisher College, Katharine Gibbs School, Tufts Medical Center, Tufts Floating Hospital for Children, Massachusetts General Hospital, Rochester Regional Health, Porter Pediatrics, Partners Healthcare System Inc., Kalaigue, South Cove Apartments, Rogerson Communities – Boston, Career Collaboration, Inc., Park Street School, School the World, Bay State College, New England School of Art & Design, Boston Adult Technical Academy, New England Law, School of Fashion Design, Commonwealth School, Muriel S. Snowden International School, Josiah Quincy Upper School, Boston String Academy, Gibson House Museum, Eating Disorder Center Boston, Berlitz			

**Article 80 | ACCESSIBILITY CHECKLIST**

	<p>Boston Learning Center, Boston Center for Adult Education, ASC English, Stafford House Boston, TALK English Schools – Boston, OISE Boston,</p>
<p>List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:</p>	<p>Massachusetts State House, State Library of Massachusetts, Boston Housing Authority, Massachusetts Housing Partnership, Department of Mental Health, MassParks, Urban Parks &amp; Recreation Division, State Geologist, Consulate of the Dominican Republic, Consulate General of Greece, Consulate of France, Consulate of Columbia, Museum of African American History, Boston Opera House, Boston Public Garden, Boston Common, Boston Public Library, The Puppet Free Library, Boston Center – Youth &amp; Families, Boston Chinatown Neighborhood Center, YMCA, Jonathan Spack Community Center, Community Opportunities Group, Mindful Modern Living, Community Preservation Coalition, JHCC, Blackstone Community Center, Spiritual Assembly of Baha’i, Hall, Nazzaro Community Center, Copley Square, Copley Place, Charles River Esplanade, Esplanade Playground, Dr. Paul Dudley White Bike Path, Rose Kennedy Greenway, Dewey Square, Emmanuel Music, Lincoln Square, Statler Park, Enterprise Community Partners, Arlington Street Church, Park Street Church, Emmanuel Episcopal Church of Boston, Chabad Boston: The Boston and Central Synagogue of Boston, Central Reform Temple, Trinity Church, Old South Church, Boston Sports Clubs, Max Mutchnick Campus Center, Tai Tung Park, Harriet Tubman Square, Phillips Street Park, Boston Blazers.</p>
<p><b>4. Surrounding Site Conditions – Existing:</b>  <i>This section identifies current condition of the sidewalks and pedestrian ramps at the development site.</i></p>	
<p>Is the development site within a historic district? <i>If yes</i>, identify which district:</p>	<p>The Project site is within the Back Bay Historic District and Architectural District, which is bounded by Arlington Street to the east and Massachusetts Avenue and Charlesgate East to the west, Boylston Street to the south and the Charles River Esplanade to the north. Refer to Chapter 6 for more information on historic and archaeological resources in the vicinity of the Project.</p>
<p>Are there sidewalks and pedestrian ramps existing at the development site? <i>If yes</i>, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site:</p>	<p>Yes. There are existing sidewalks on the development site- no pedestrian ramps. The building fronts Newbury street and Arlington Streets. The property line on Newbury extends to within 4’-2” of the edge of the tree pits on Newbury- and the space open to the public is 30’ wide at the widest, The sidewalk facing Arlington is approximately 15’-6” wide. The width of the pedestrian sidewalk facing public alley 437 is 3’-0” wide.</p>
<p>Are the sidewalks and pedestrian ramps existing-to-remain? <i>If yes</i>, have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? <i>If yes</i>,</p>	<p>The scope of work includes replacement of existing sidewalks inclusive of the curb for Newbury and Arlington Streets. We are proposing a new plaza on the Newbury side of the property with accessible ramp and steps to mitigate the existing sloped condition. This is scope is part of the public review process we are working through with various authorities- BBAC, PIC, BPDA, etc.</p>

**Article 80 | ACCESSIBILITY CHECKLIST**

<p>provide description and photos:</p>	
<p><b>5. Surrounding Site Conditions – Proposed</b>  <i>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.</i></p>	
<p>Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? <i>If yes</i>, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard.</p>	<p>The design will adhere to Boston Complete Street Guidelines. Per provisions, we will apply Downtown Mixed-use typology as Newbury Street is under this category.</p>
<p>What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:</p>	<p>The plaza design on Newbury will mitigate the existing excessively sloped condition. The frontage for the plaza is 120'. The furnished zone within the property line is 13' at the widest. The 5' wide pedestrian sloped sidewalk is within the 13' and be at 1:20 slope. The plaza itself will slope at less than 2% to mitigate precipitation.</p>
<p>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?</p>	<p>Granite and stone pavers, along with durable wood accents and metal suitable for exterior applications. We are also proposing plantings within two new planters at the front of the plaza. All proposed materials will be on private property</p>
<p>Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? <i>If yes</i>, what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?</p>	<p>The Hotel will program seasonal limited outdoor seating on the plaza facing Newbury Street. We will provide 5'-0" minimum access for a raised sidewalk along with steps from 20' wide to 30' wide to allow public access on to the plaza. We are proposing to provide 8'-6" clear on the public way.</p>

**Article 80 | ACCESSIBILITY CHECKLIST**

<p>If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?</p>	<p>An easement is not being proposed at this time. Our design will accommodate the public right of way provisions by allowing the public open access onto our property facing Newbury Street</p>
<p>Will any portion of the Project be going through the PIC? <i>If yes</i>, identify PIC actions and provide details.</p>	<p>The plaza design is being reviewed by the PIC.</p>
<p><b>6. Accessible Parking:</b>  <i>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.</i></p>	
<p>What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage?</p>	<p>There is no parking provided on-site. The Hotel offers a valet parking service for all guests.</p>
<p>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?</p>	<p>There is no parking provided on-site.</p>
<p>Will any on-street accessible parking spaces be required? <i>If yes</i>, has the proponent contacted the Commission for Persons with Disabilities regarding this need?</p>	<p>There is no parking provided on-site.</p>
<p>Where is the accessible visitor parking located?</p>	<p>All parking to support the Project is located off-site. The Hotel offers a valet parking service for all guests.</p>
<p>Has a drop-off area been identified? <i>If yes</i>, will it be accessible?</p>	<p>The Hotel’s main entrance will be located along Newbury Street. The new plaza on Newbury will serve as new compliant entry from edge of plaza to entry doors. We will be seeking a variance with the accessibility board with the public way, as we will have areas that cannot achieve compliant cross slopes.</p>
<p><b>7. Circulation and Accessible Routes:</b>  <i>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.</i></p>	

**Article 80 | ACCESSIBILITY CHECKLIST**

<p>Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator:</p>	<p>The Newbury entry will be the new address to the hotel and will meet accessibility with sloped sidewalk to the public way and flush condition at the door. It will serve also as the exit for disabled patrons. The Arlington Street door will become exit only. No accessible provisions are being planned at this door. No other public entry ways are on the property.</p>
<p>Are the accessible entrances and standard entrance integrated? <i>If yes, describe. If no, what is the reason?</i></p>	<p>See above. The Arlington Street door cannot be made fully accessible due to re-built conditions.</p>
<p><i>If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.</i></p>	<p>Article 80 large project review is applicable, no institutional master plan applies to the Project. The renovation scope will include new wayfinding package.</p>
<p><b>8. Accessible Units (Group 2) and Guestrooms: (If applicable)</b>  <i>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.</i></p>	
<p>What is the total number of proposed housing units or hotel rooms for the development?</p>	<p>N/A</p>
<p><i>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?</i></p>	<p>N/A</p>
<p><i>If a residential development, how many accessible Group 2 units are being proposed?</i></p>	<p>N/A</p>
<p><i>If a residential development, how many accessible Group 2 units will also be IDP units? If none, describe reason.</i></p>	<p>N/A</p>
<p><i>If a hospitality development, how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? If</i></p>	<p>N/A</p>

**Article 80 | ACCESSIBILITY CHECKLIST**

<p><b>yes</b>, provide amount and location of equipment.</p>	
<p>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. <b>If yes</b>, provide reason.</p>	<p>No</p>
<p>Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? <b>If yes</b>, describe:</p>	<p>Currently, the level 17 event space is not directly accessible from the elevator lobby. We will incorporate necessary elements within our design to convert this space to white box shell for future retail tenant.</p>
<p><b>9. Community Impact:</b>  <i>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.</i></p>	
<p>Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives?</p>	<p>We propose to restore and replant existing street trees facing Newbury and Arlington. Species will match City standards.</p>
<p>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?</p>	<p>Yes</p>
<p>Are any restrooms planned in common public spaces? <b>If yes</b>, will any be single-stall, ADA compliant and designated as “Family”/</p>	<p>Yes. All new bathrooms will have ADA compliant stalls and be fully accessible. However, family or companion restrooms have not been contemplated.</p>

**Article 80 | ACCESSIBILITY CHECKLIST**

<p>“Companion” restrooms? <i>If no</i>, explain why not.</p>	
<p>Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? <i>If yes</i>, did they approve? <i>If no</i>, what were their comments?</p>	<p>Currently in review.</p>
<p>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? <i>If no</i>, what recommendations did the Advisory Board give to make this project more accessible?</p>	<p>Our plan is to review with Accessibility board the Newbury plaza details once we have approval from PIC and seek a variance. We cannot physically achieve 2% slope at all conditions within the public way.</p>
<p><b>10. Attachments</b>  <i>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.</i></p>	
<p>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. <b>See attachments.</b></p>	
<p>Provide a diagram of the accessible route connections through the site, including distances. <b>See attachments.</b></p>	
<p>Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable) <b>See attachments.</b></p>	
<p>Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry. <b>N/A</b></p>	
<p>Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project.</p> <ul style="list-style-type: none"> <li>•</li> <li>•</li> <li>•</li> <li>•</li> </ul>	

## Article 80 | ACCESSIBILITY CHECKLIST

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.

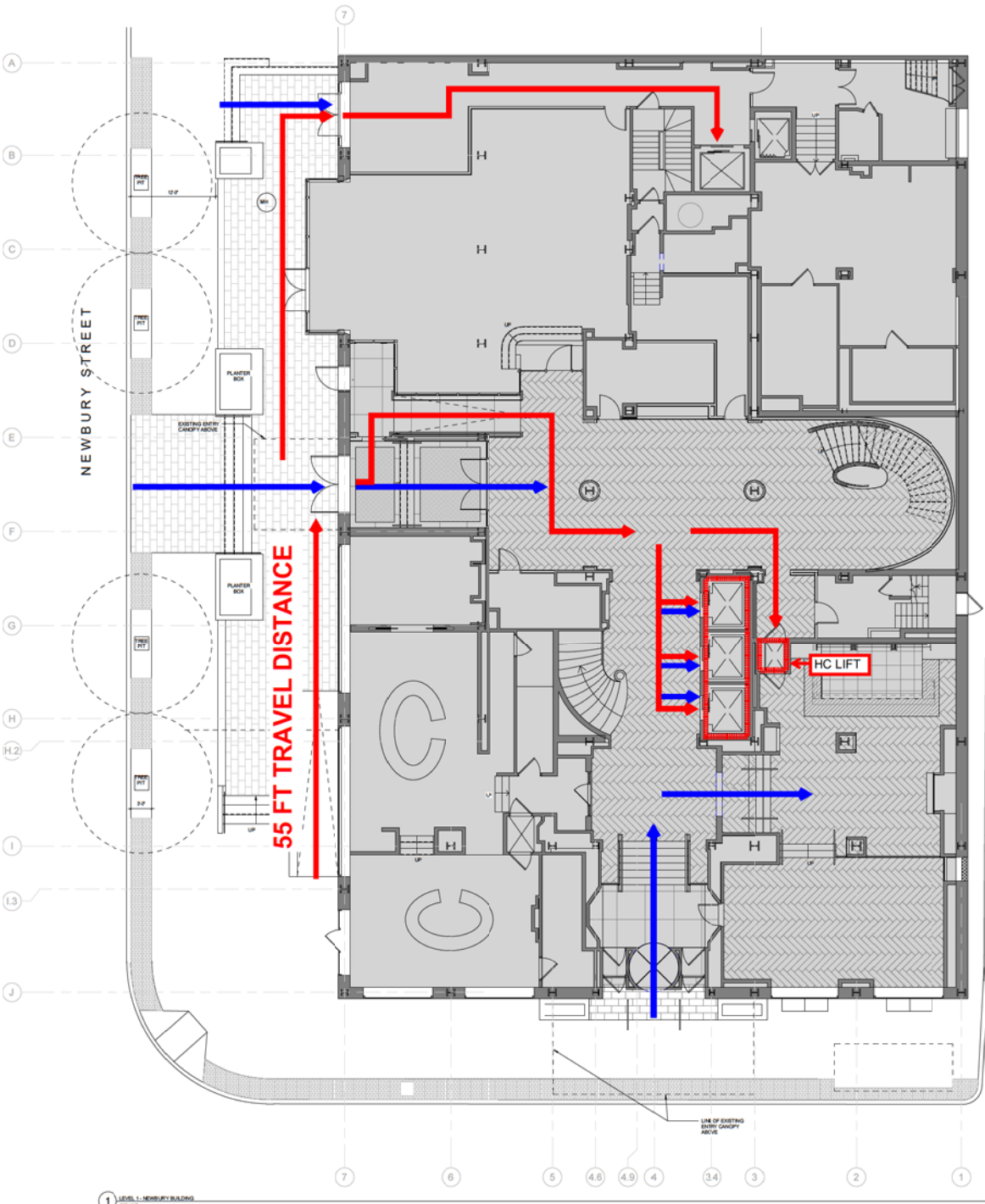
For questions or comments about this checklist, or for more information on best practices for improving accessibility and inclusion, visit [www.boston.gov/disability](http://www.boston.gov/disability), or our office:

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](mailto:accessibility@boston.gov) | [patricia.mendez@boston.gov](mailto:patricia.mendez@boston.gov) | [sarah.leung@boston.gov](mailto:sarah.leung@boston.gov) | 617-635-3682





PLAN LEGEND	
	EXISTING CONSTRUCTION TO REMAIN
	EXISTING CONSTRUCTION TO BE DEMOLISHED
	INDICATES AREA NOT IN SCOPE (OR UNDER SEPARATE COVER)

**ACCESSIBLE ROUTE**

**GENERAL ACCESS ROUTE**

**65 FT TRAVEL DISTANCE FROM NEWBURY ENTRY TO ELEVATORS**

REVISIONS #	DATE	DESCRIPTION

**TAJ BOSTON**  
**TAJ HOTEL - BOSTON**  
**PUBLIC AMENITIES - EXTERIOR**  
 15 Arlington Street Boston, Massachusetts 02116

**cbt** 617 262 4354 cbtarchitects.com  
 110 canal street boston, ma 02114

GROUND FLOOR PLAN

SCALE: AS SHOWN PROJECT # 150817.03 DATE ISSUED 03/07/19

**PLAN LEGEND**

- EXISTING CONSTRUCTION TO REMAIN
- NEW CONSTRUCTION
- INDICATES AREA NOT IN SCOPE (OR UNDER SEPARATE COVER)

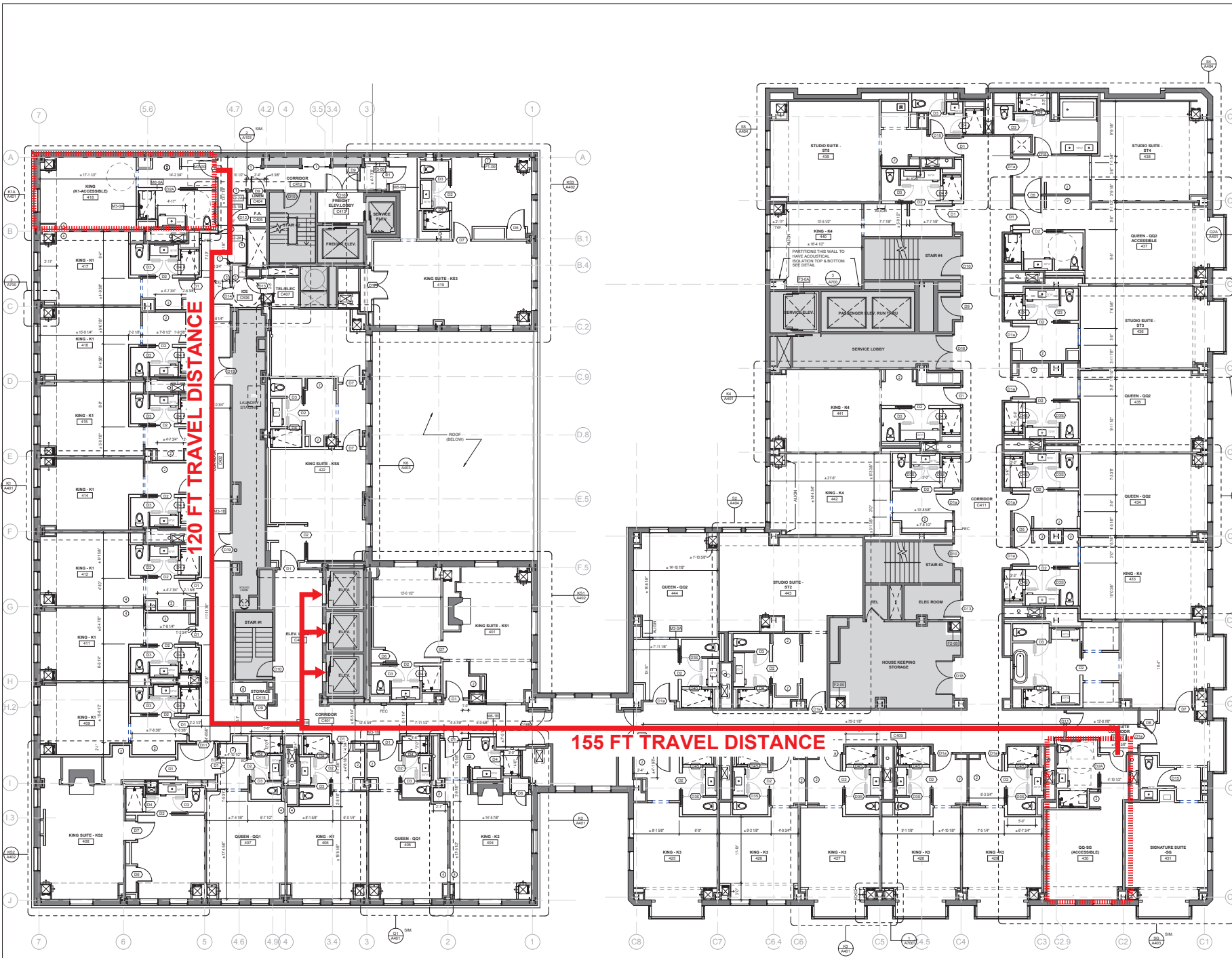
**GENERAL NOTES**

1. AT ALL NEW FAN COIL UNIT LOCATIONS LIMIT PARTITIONS TO BE CONSTRUCTED AS LIGHT AS POSSIBLE PER 10' FRESH FACE OF FCH UNLESS OTHERWISE NOTED
2. ALL EXISTING FIRE PROOFING AND/OR TERRA CUTTING POLYMER BLOCK TO REMAIN AT ALL STEEL COLUMN AND BEAMS IF DAMAGED OR MISSING. PROVIDE NEW ON INFLY FIREPROOFING AS REQUIRED BY CODE. COORDINATE WITH STRUCTURAL DRAWINGS.
3. ALL NEW STEEL TO BE FIREPROOFED AS REQUIRED BY CODE. COORDINATE WITH STRUCTURAL DRAWINGS.
4. EXISTING BATHROOMS MUST REMAIN. TOILET NICHES AND/OR SHOWER NICHES TO BE FILLED IN AS REQUIRED BY CONSTRUCTOR TO MATCH NEW AND TO MAINTAIN NEW FLUSH CONDITION.
5. ALL DOORS TO BE LOCATED 4" FROM HINGE SIDE TO ADJACENT WALL UNLESS OTHERWISE NOTED.

**PLAN KEYNOTES**

- INSTALL CORRIDOR CORNER GUARD REFER TO S1 FOR SPEC.
- ALL CLOSET OPENING TO BE COORDINATED AND VERIFIED BY G.C. BY FIRE PLANS AND SPECIFICATIONS.
- HANGER GYPSUM REFER TO MEP DRAWINGS FOR ADDITIONAL INFO.
- NEW WALL BASE. SEE A11.
- STAIR AND HALLWAY OPENINGS AT EXISTING DRAINWATER MANHOLE PER FLOORING.
- EXISTING CORRIDOR CLOSET WALLS AND CEILING TO BE PATCHED DRAWING AS SHOWN. NEW FINISHES AS SPECIFIED. SEE FLOOR AND REFLECTED CEILING PLANS.
- APPLY PROTECTED FILM TO EXISTING WINDOW GLAZING. FILM WITH PARTITION AS SPECIFIED TO ALIGN WITH GLAZING WALLS.

**NOTE:**  
 POST-TENSION SHUT-OFF ACCESS. PROVIDE AT LEVEL 4 ONLY 12" X 16" ACCESS PANEL. FINAL LOCATION TBD IN FIELD WITH ARCHITECT.  
 FLOOR AND FLOOR DRAINAGE ACCESS. PROVIDE AT LEVEL 4 ONLY 12" X 16" ACCESS PANEL. FINAL LOCATION TBD IN FIELD WITH ARCHITECT.



1 LEVEL 4 - GUEST ROOMS

REVISIONS	DATE	DESCRIPTION

**TAJ BOSTON**  
**TAJ HOTEL - BOSTON**  
**GUESTROOM RENOVATIONS**  
 15 Arlington Street Boston, Massachusetts 02116




**cbt** 617 262 4354 cbtarchitects.com  
 110 canal street boston, ma 02114

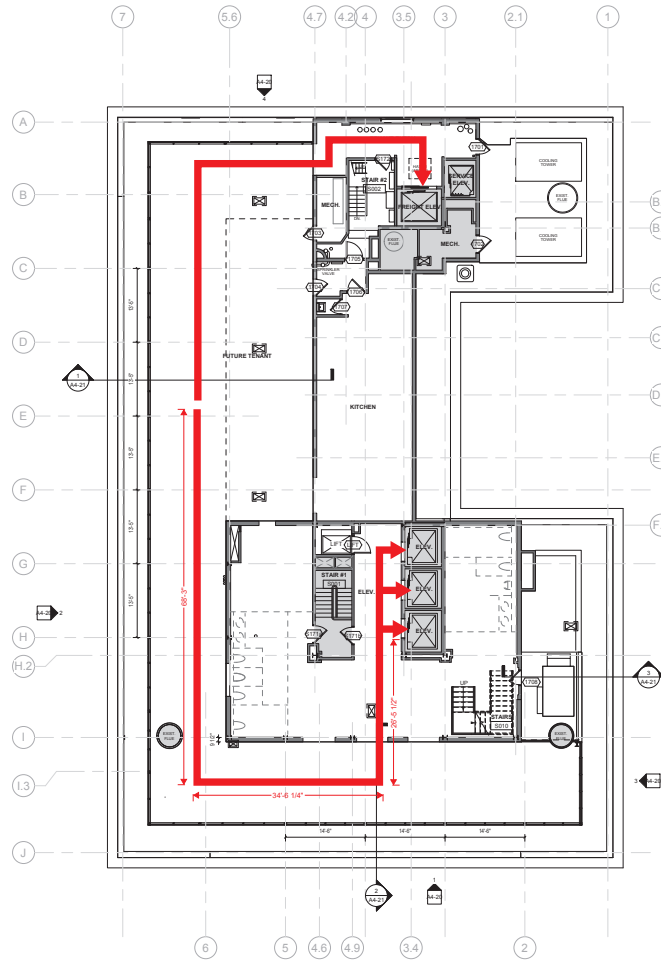
**ACCESSIBLE ROUTE** (solid red line)  
**GROUP 2 UNITS** (dashed red line)

CONSTRUCTION DOCUMENTS

4TH FLOOR PLAN

•Travel distance requirement from the most remote guestroom to the egress stairs satisfied through building connection to building on adjacent property as shown on this diagram

PLAN LEGEND	
	EXISTING CONSTRUCTION TO REMAIN
	EXISTING CONSTRUCTION TO BE DEMOLISHED
	INDICATES AREA NOT IN SCOPE (OR UNDER SEPARATE COVER)



REVISIONS	DATE	DESCRIPTION

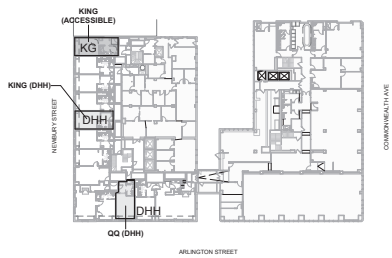
**TAJ BOSTON**  
**TAJ HOTEL - BOSTON**  
**PUBLIC AMENITIES - ROOFTOP**  
 15 Arlington Street Boston, Massachusetts 02116

**cbt** 617 262 4354 cbtarchitects.com  
 110 canal street boston, ma 02114

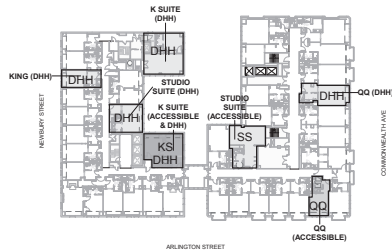
 **ACCESSIBLE ROUTE**

**ROOF LEVEL PLAN**  
**(17TH FLOOR)**

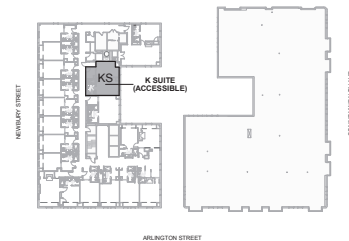
SCALE: AS SHOWN PROJECT # 150207.00 DATE ISSUED: 01/15/19



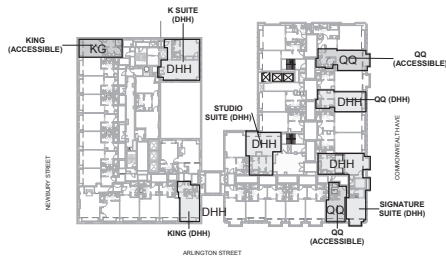
3 LEVEL 3 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



6 LEVEL 6 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



10 LEVEL 10 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



4 LEVEL 4 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



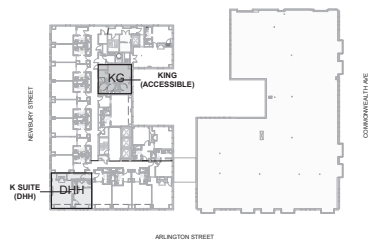
7 LEVEL 7 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



15 LEVEL 15 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



5 LEVEL 5 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"



9 LEVEL 9 - ACCESSIBLE/DHH ROOMS  
107'-11" x 112'-0"

**ACCESSIBLE/DHH ROOM TYPE LEGEND**

- KG ACCESSIBLE KING
- QQ ACCESSIBLE QQ
- SG ACCESSIBLE SIGNATURE SUITE
- SS ACCESSIBLE STUDIO SUITE
- ACCESSIBLE K SUITE
- DHH DHH GUEST ROOMS

\*PER CODE CONSULTANT FOR 205 GUEST ROOMS, S21 CMR REQUIRES A MINIMUM OF 14 ACCESSIBLE ROOMS (ROUNDED DOWN WHEN DECIMAL IS LESS THAN 0.5) FOR DHH DISPERSION. ADAAG IS FOLLOWED AS IT IS MORE STRINGENT THAN S21 CMR SPECIFYING 17 ROOMS MUST HAVE DHH INTEGRATED EQUIPMENT. ALL OTHER REQUIRED EQUIPMENT CAN BE PROVIDED ON AS-NEEDED BASIS. S21 CMR ALSO REQUIRES A MINIMUM OF 3 ROLL-IN SHOWERS.

**ACCESSIBLE ROOM DISPERSION**

**DHH ROOM DISPERSION**

5	ACCESSIBLE KING	5	DHH KING
4	ACCESSIBLE QQ	5	DHH QQ
1	ACCESSIBLE SIGNATURE SUITE	1	DHH SIGNATURE SUITE
1	ACCESSIBLE STUDIO SUITE	3	DHH STUDIO SUITE
3	ACCESSIBLE K SUITE	3	DHH K SUITE
<b>14 TOTAL ACCESSIBLE ROOMS</b>		<b>17 TOTAL DHH ROOMS</b>	

REVISIONS	DATE	DESCRIPTION