Expanded Project Notification Form

Mattapan Station Project
466 River Street
Mattapan, MA

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

Submitted By:
Preservation of Affordable Housing
40 Court Street, Suite 700
Boston, MA 02108

And

Nuestra Comunidad Development Corporation
150 Dudley Street
Roxbury, MA 02119

Prepared By:
Bevco Associates, Inc.
202 West Selden Street
Mattapan, MA 02126

In Association With:
Mass Design Group and The Architectural Team
ClearResult
Feldman Surveyors
Howard Stein Hudson
Klein Hornig LLP
McPhail Associates
Tech Environmental

Submittal Date: September 27, 2017

September 27, 2017

Mr. Brian Golden, Director Boston
Redevelopment Authority Boston
City Hall, 9th Floor
Boston, MA 02201

Attn: Mr. Dana Whiteside, Deputy Director

Re: Mattapan Station Redevelopment ("Proposed Project")
Expanded Project Notification Form

Dear Director Golden:

Preservation of Affordable Housing (POAH) and Nuestra Comunidad Development Corporation (the "Proponents") are pleased to submit this Expanded Project Notification Form ("EPNF"), in accordance with the Article 80B Large Project Review requirements of the Boston Zoning Code for the redevelopment of the Mattapan Station MBTA commuter parking lot. Phase I of the proposed development includes the new construction of 135 residential units, 70 underground garage parking spaces, 10,000 SF of ground floor retail, as well as the replacement of 50 MBTA commuter parking spaces.

As per the Boston Planning and Development Authority ("BPDA") requirements, please find attached 12 copies of the EPNF plus an electronic copy of the filing for upload to the BPDA website for public review.

The Proposed Project will be comprised of over 50,000 GSF of new construction, triggering the preparation of filing(s) under the City of Boston and BPDA Large Project Review, pursuant to Article 80B of the Code. A Letter of Intent to file an EPNF was submitted to the BDPA for the Proposed Project on August 27, 2017 and is attached as Appendix A to the EPNF.

Since being designated developer, the project team has had the opportunity to present and develop its plans for the site alongside the BPDA project and design departments, MBTA staff, Mattapan residents and community organizations, and local elected and appointed officials. This process has influenced and informed the site design proposed in this EPNF. .

The public notice for the EPNF is scheduled to appear in the September 26, 2017 issue of the Boston Herald.

Preservation of Affordable Housing
40 Court Street – Suite 700, Boston, MA 02108
www.poah.org

Nuestra Comunidad Development Corporation
56 Warren Street, Boston, MA 02119
www.NuestraCDC.org

On behalf of the entire project team, we would like to thank you and the BPDA staff assigned to the Mattapan Station project, particularly Dana Whiteside, for their invaluable guidance towards achieving this comprehensive EPNF filing.

We believe that the Proposed Project will be a significant addition to the Mattapan neighborhood, with transit-oriented housing affordable to a range of income levels and meaningful connections to the new Neponset River Greenway.

Sincerely,

Mattapan Station Preservation Associate LLC

Rodger L. Brown
Preservation of Affordable Housing, Inc.
Managing Director, Real Estate

Attachment: Mattapan Station, Expanded Project Notification Form
(20 hard copies and 1 electronic copy)

Cc: Marcia Thornhill, Nuestra Comunidad Development Corporation
Julie Creamer, Preservation of Affordable Housing
Beverley Johnson, Bevco

MATTAPAN STATION
EXPANDED PROJECT NOTIFICATION FORM
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1.0 PROJECT SUMMARY

1.1 Project Identification

Project Name	Mattapan Station Project 466 River Street, Mattapan, MA
Project Location	The project site is located at the MBTA Mattapan Trolley Station. The site is bounded by Blue Hill Avenue, River Street, and the Neponset River Greenway.
Proponent	Preservation of Affordable Housing, 40 Court Street, Suite 700, Boston, MA 02108 – Contact: Roger Brown-(617) 261-9898 Julie Creamer-(617) 261-9898 Nuestra Comunidad Development Corporation, 150 Dudley Street, Roxbury, MA 02119 – Contact: David Price (617) 989-1223 Marcia Thornhill (617) 989-1207
Permitting Consultant	Bevco Associates, Inc. 202 West Selden Street, Boston, MA 02126 – Contact: Beverley Johnson (617) 438-2767
Architect(s)	Mass Design Group, 334 Boylston Street, #400, Boston, MA 02116 Contact: David Saladik- (857) 233-5788 The Architectural Team, 50 Commandants Way, Chelsea, MA 02150 Contact: Michael Liu – (617) 889-4402
Transportation Consultant	Howard Stein Hudson, 11 Beacon Street, #1010, Boston, MA 02108 Contact: Keri Pyke – (617) 482-7080
Zoning Attorney	Klein Hornig, 101 Arch Street, #1101, Boston, MA 02110 Contact: Joseph Lieber – (617) 224-0600
Site Civil	Howard Stein Hudson, 11 Beacon Street, #1010, Boston, MA 02108 Contact: Jay Carroll – (617) 482-7080
Geotechnical & Environmental	McPhail Associates, 2269 Massachusetts Avenue, Cambridge, MA 02140 Contact: Kevin Jordan and Peter DeChaves – (617) 868-1420
Air Quality & Noise	Tech Environmental, 303 Wyman Street, #295, Waltham, MA 02451 Contact: Marc Wallace – (781) 890-2220
LEED Standards	ClearResult, 50 Washington Street, Westborough, MA 01581 Contact: Mike Schofield and Brendan Kavanagh – (508) 365-3204
Cost Consulting	Bilt Rite Construction, 150 Shirley Street, Roxbury, MA Contact: John Sullivan – (617) 541-9777
Surveyors	Feldman Land Surveyors, 112 Shawmut Avenue, Boston, MA 02118 Contact: Jeffrey Dotolo – (617) 367-9740

1.2 PROJECT OVERVIEW

The proposed Mattapan Station project will be comprised of a mixed-use, mixed-income residential, commercial, and retail development program in the Mattapan neighborhood of Boston. The POAH-Nuestra team's development concept was crafted to respond to the expressed needs and goals of the Mattapan community and the MBTA's requirements. The Nuestra Comunidad Development Corporation has been a mainstay in the Mattapan neighborhood for over a decade, providing affordable housing opportunities and working with the neighborhood to provide community services. Preservation of Affordable Housing has a long track record of housing development and neighborhood transformation in Greater Boston and beyond. They have joined forces in an effort to build upon what makes the Mattapan neighborhood so important – its diversity and the strength of its residents.

This proposed mixed-use, mixed-income rental project will help to leverage local opportunities for growth and expansion by adding jobs, creating commercial and retail services, and providing stable affordable and workforce housing.

FIGURE 1-1: LOCUS PLAN

1.2.1 Project Site

The Mattapan Station Project ("the Project") will be located on an existing parking lot at the Massachusetts Bay Transportation Authority (MBTA) Mattapan Station in the Mattapan Square neighborhood of Boston. The project site ("the site") is bordered by Blue Hill Avenue, River Street, and the newly-restored Neponset River Greenway. The project site is also located within one block of the Mattapan Square Commercial District, an important commercial and cultural center of the Mattapan community. The project site has a total area of approximately 120,621 Gross Square Feet.

To the north of the site in Mattapan Square are primarily some commercial/retail establishments and the US Post Office. Additionally, a newly-refurbished City of Boston public parking lot is located at the rear of the Post Office, and can be accessed from Blue Hill Avenue and from River Street. To the west of the site is Cummins Highway, a major thoroughfare in the neighborhood and the location of the planned redevelopment of the former Cote Ford Car Dealership, and the new MBTA Fairmount commuter rail station at Cummins Highway and Woodhaven Street. To the east of the site is multi-family housing, and to the south of the site is the newly-refurbished Neponset River Greenway, a major public open space that provides a connection between the Mattapan and Milton neighborhoods.

FIGURE 1-2: SITE SURVEY PLAN

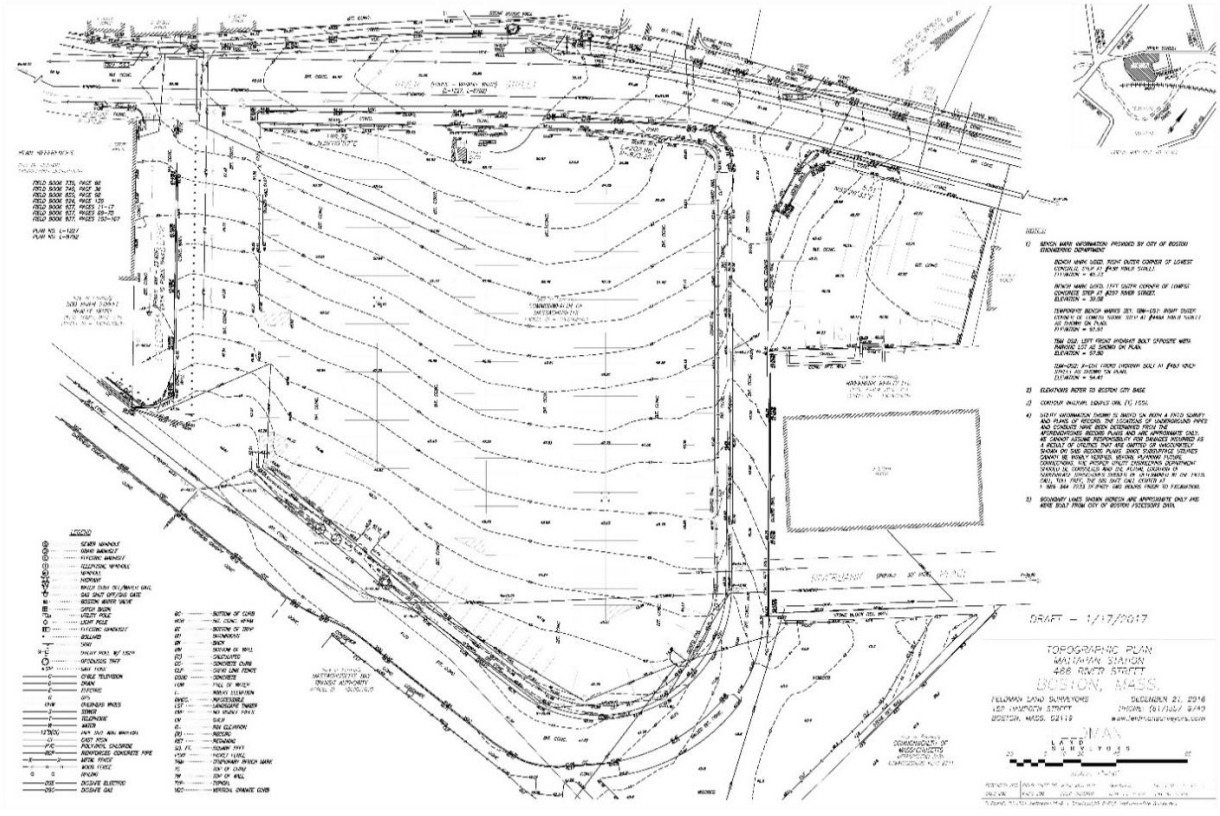


FIGURE 1-3: NEIGHBORHOOD AERIAL

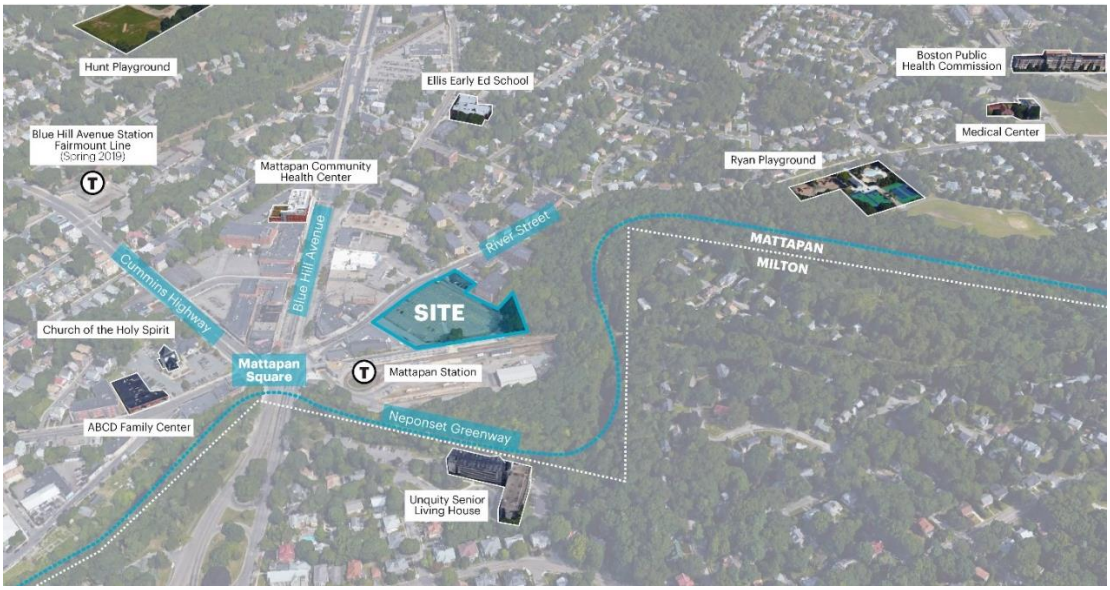


FIGURE 1-4: SITE AERIAL

FIGURE 1-5: SITE PLAN

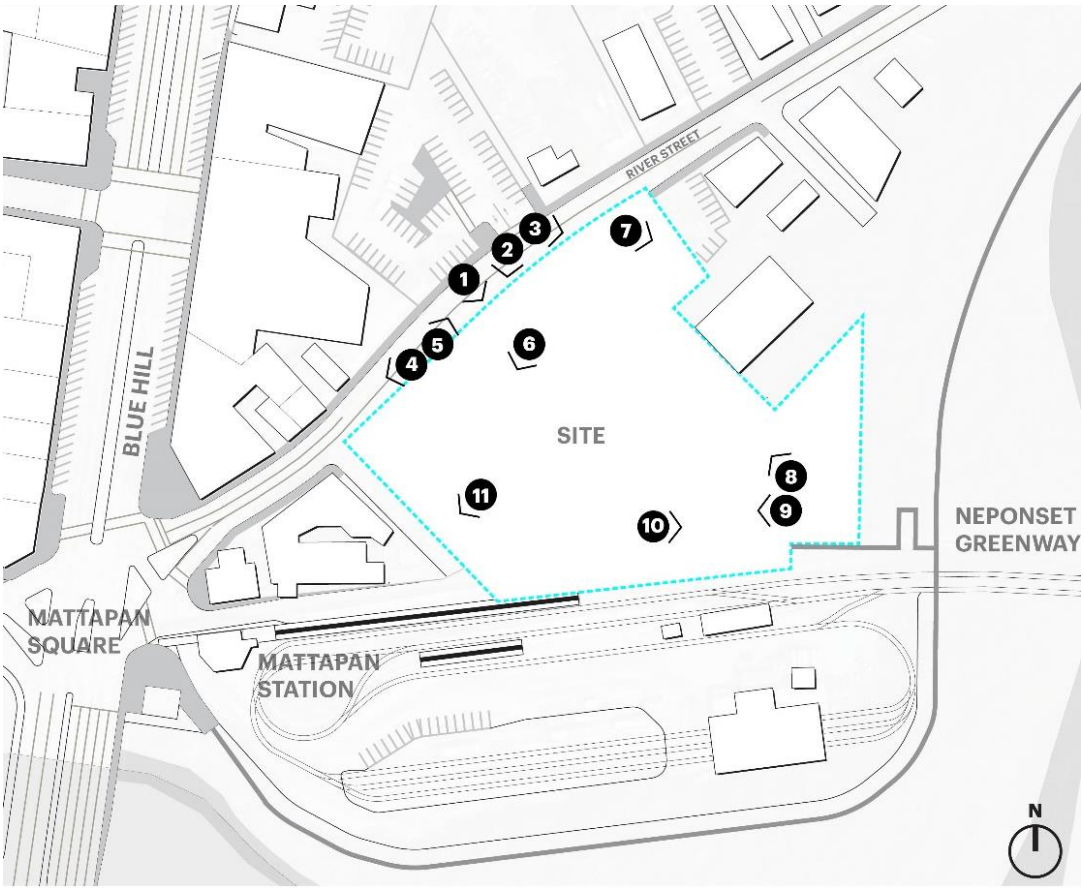
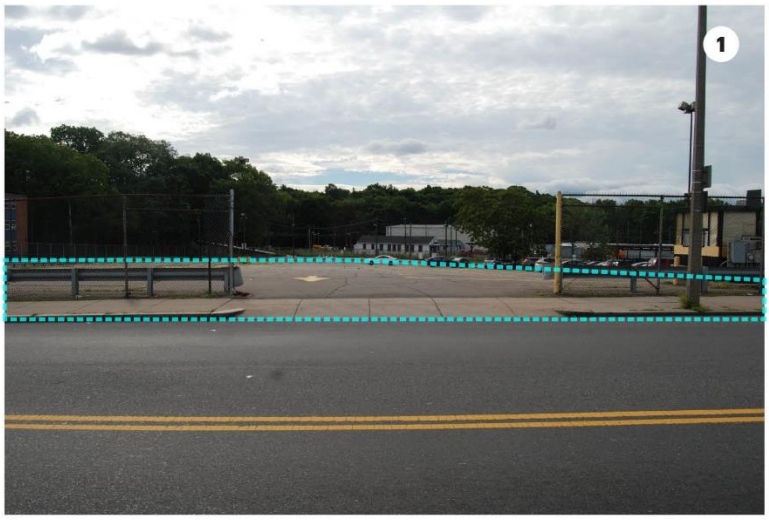


FIGURE 1-6: CONTEXT PHOTOS



Looking southeast towards site from River Street

Looking south down River Street towards the site

Looking northeast towards the site up River Street

Looking southwest down River Street from the site's northern edge

Looking northeast up River Street from the site's northern edge

Looking southwest from the center of site

Looking southeast towards adjacent buildings from the site's northeastern corner

Looking northwest from the site's southeastern corner

Looking west towards Mattapan Station from the site's southeastern corner

Looking east towards Neponset Greenway access from the site's southern edge

Looking southwest towards adjacent buildings from the site's western edge

1.2.2 Project Background

The MBTA closed the Ashmont-Mattapan line on June 24, 2006 to implement modernization improvements, including handicapped accessibility, new platforms, and a new building for MBTA police and bus operations with a community room. Trolley service resumed on December 22, 2007.

As part of its modernization plan, the MBTA began planning for the construction of a mixed-use *transit-oriented development* (TOD) project on the under-utilized Mattapan station parking lot. Based on a Request for Proposals (RFP) issued by the MBTA in November 2015 for the selection of a developer, the winning bidder was the Preservation of Affordable Housing (POAH) and the Nuestra Comunidad Development Corporation. The POAH/Nuestra team will develop a mixed-use project under a 99-year lease agreement with the MBTA. The ultimate goal of the POAH/Nuestra team is to develop a vibrant,

mixed-use, mixed-income transit-oriented development project that will serve as a catalyst for future investment and development in the Mattapan neighborhood, and provide critically-needed affordable and market-rate rental housing, along with retail services. It is also anticipated that the project will generate economic benefits, beyond construction jobs.

1.2.3 Proposed Development Program

The Proponent plans to develop a mixed-use, mixed-income residential, commercial, and retail complex. This transit-oriented development project will be constructed on an existing parking lot located at the Mattapan MBTA Station. The Mattapan Station Project will have a transformative impact in achieving the MBTA's goals of developing a project that facilitates the use of public transit, along with ride-share and bike-share modes of travel. Just as importantly, the project will help to achieve a number of key goals as defined in the BPDA's *Fairmount Indigo Planning Initiative Blue Hill Avenue/Cummins Highway Station Area Plan,* which was published in February 2015. A number of key goals of this critically-important Planning Initiative that will be supported by the Mattapan Station project are:

- Maintain diversity of community
- Reinforce a high quality of life with new housing
- Retain diversity and affordability through the development of mixed-income housing, homeownership, and senior housing
- Improve housing quality and sustainability
- Add neighborhood infill
- Focus on transit-oriented housing
- Increase neighborhood walkability
- Focus on the Neponset River area for recreation, to maximize open space opportunities

Table 1-1 Approximate Project Dimensions

Project Element	Dimensions
Project Lot Area	120,621 G.S.F. (including streets)
Total Residential Space	148,700 G.S.F. (including Phases I & II
Total Commercial Space	10,000 G.S.F.
Community Room	2,000 G.S.F.
Parking Spaces	70 private spaces (Phase I residents underground) 8 on-street parking spaces (Phase I at River Street) to support ground-level commercial establishments 50 MBTA/Public (surface) 9 private spaces (Phase II resident surface parking)
Green Space	20% of site
Total Gross Building Area (Above Grade)	180,585 G.S.F.
Total Gross Square Footage	**211,670 G.S.F. (includes Phases I & II above and below grade**
Building Height (maximum)	74'-6"
Phase I Building	
Total residential units	135
Maximum Building Height	74'-6"
Gross Building Area Above Grade	167,600 G.S.F.
Gross Building Area Below Grade	31,085 G.S.F. (Residential Parking Garage
Total Gross Square Footage	**198,750 G.S.F.**
Phase II Building	
Total residential condominium units	9
Maximum Building Height	44'-0"
Gross Building Area Above Grade	12,985 G.S.F.

Table 1-2 Development Program

Residential Rental Units	Residential Homeownership Units
Studios (500-600 S.F.) 1-BRs (600-700 S.F.) 2-BRs (750-850 S.F.) 3-BRs (1,000-1,100 S.F.)	9 condominium units (two 2 BR)
Total Residential Rental Units: 135	**Total Residential Homeownership Units: 9**

1.2.4 Public Benefits

1.2.4.1 Neighborhood Revitalization

The Mattapan Square area is on the cusp of economic and physical revitalization. The upcoming construction of the MBTA's Blue Hill Avenue/Cummins Highway Commuter Rail Station, coupled with the City of Boston's recent implementation of public improvements in Mattapan Square, reflect commitments by the City of Boston and the Commonwealth of Massachusetts to lay the groundwork for the development of transformative projects in this key commercial hub. Moreover, the MBTA's decision to move forward with the development of a *transit-oriented development project* at Mattapan Station reflects a focused and sustained commitment to establish an environment that will attract future investment. Additionally, the project's mix of residential housing and commercial space will provide additional retail services and support a lively street environment and neighborhood vitality.

1.2.4.2 Project Affordability

The project will help advance the City's housing goals by creating 135 new rental units that will serve Boston residents within a broad range of income levels, and will exceed the City of Boston's Inclusionary Development Policy (IDP) of 13% with a total of 51% affordability. A breakdown of the proposed project affordability is provided below.

Table 1-3 Project Affordability

Total Rental Units	**135**
	54 units (40%) affordable to households earning 60% of AMI or less
	7 units (5%) affordable to households earning 50% of AMI or less
	8 units (6%) affordable to households earning 30% of AMI or less
Total Affordable Units:	**69**
Percentage of Affordable:	**51%**

1.2.4.3 Project Wealth Creation

Phase II of the project will provide 9 mixed-income, two-bedroom condominium units. These units will provide an opportunity for wealth creation and will further anchor Mattapan's base as a neighborhood that has a broad level of single and multi-family homeownership.

1.2.4.4 Smart Growth/Transit-Oriented Development

The redevelopment of the Mattapan Station site into a vibrant mixed-use development will complement the evolving Mattapan Square commercial district with 10,000 square feet of additional commercial space. Just as importantly, residents of the complex will have direct access to public transit right at their doorstep, along with bike-share and ride-share options. These opportunities support sustainable design and *Transit-Oriented Development/Smart Growth* objectives.

1.2.4.5 Economic Benefits

The developers are committed to providing contract opportunities for Minority and Women-Owned Business Enterprises (M/WBEs) during the pre-construction and construction phases of the project. Additionally, the POAH and Nuestra team will work with the selected General Contractor and subcontractors to achieve City of Boston goals for a diverse construction workforce. It's also important to note that the commercial space in the project will contribute to an increase in employment relative to the number of daily workers who will be employed in these additional retail establishments in Mattapan Square.

1.2.4.6 New Property Tax Revenue

The project is expected to contribute a level of tax revenue that is appropriate to the scale and magnitude of the project.

1.2.5 Community Engagement

The POAH and Nuestra development team have hosted a number of meetings with the Mattapan community to keep them informed, and integrate their vision and goals into the project. This process started with the 2015 Visioning Workshop that was hosted before the Massachusetts Bay Transportation Authority (MBTA) announced the successful bidder in the summer of 2016. Subsequent to their selection, the team, as developers, started to host neighborhood meetings every other month that have been well-attended by residents, civic associations, religious groups, and elected officials. Throughout this process, the Proponent's approach has been and continues to be focused on building a strong partnership with the community that will continue after the project is constructed. Based on the Proponent's approach and commitment to transparency and integrity, the project has a broad level of community and political support. A summary of all community engagement activities and letters of support are attached to the EPNF.

1.3 CONSISTENCY WITH ZONING

The project is proposed to be built in two phases. Phase one is expected to have a gross square footage of approximately 198,750 gross square feet. Phase two is far smaller, with approximately 12,985 gross square feet. The project far exceeds the threshold of 50,000 square feet of development, and therefore requires Large Project Review by the Boston Planning & Development Agency (BPDA) pursuant to Article 80B of the Boston Zoning Code.

Figure 1-4 depicts the location of the project site within the Greater Mattapan Neighborhood District (GMND). Article 60 of the Boston Zoning Code is applicable to the GMND. Although phase one and phase two are to be constructed on what is now a single parcel, as shown on Figure 1-3, the parcel straddles two separate zoning sub-districts; phase one is located entirely in a Community Commercial (CC) sub-district of the GMND (which is a sub-category of Neighborhood Business sub-district) and phase two is located entirely in a Multi-Family Residential (MFR) sub-district of the GMND. The project site is not located within any overlay districts.

1.3.1 Phase One

Phase one consists of a single building containing approximately 135 units of rental housing, approximately 10,000 square feet of commercial space and an approximately 2,000 square foot community room to be made available to residents and members of the broader community. Phase one also includes 70 sub-grade parking spaces intended for use by the residents (a 0.52 ratio), along with approximately 8 on-street parking spaces to support the commercial space on River Street, and a 50-space at-grade parking lot intended to be operated by the MBTA on a fee-per-use basis.

1.3.2 Uses

In the CC sub-district, multifamily dwelling use is forbidden on the first story and conditional on the second story and above. Residential units are proposed for the first story and above. Hence, both a variance and a conditional use permit will be required for multifamily dwelling use. Various commercial uses are allowed as of right in the CC sub-district, including restaurants, general retail business and local retail business. The proponent is not planning to seek any zoning relief for commercial uses. Any prospective tenants proposing forbidden or conditional commercial uses would be expected to seek and obtain their own zoning relief. The proposed community room is part of the multifamily residential use and will not require separate relief. Parking lot use is forbidden. Therefore, a variance will be required for the MBTA lot.

Thus, the following use relief will be needed from the ZBA:

- Variance for multifamily dwelling use (first story)
- Conditional use permit for multifamily dwelling use (upper stories)
- Variance for parking lot use

1.3.3 Dimensional Aspects

Table 1-4 below outlines the dimensional regulations for the CC sub-district and the proposed phase one dimensions.

TABLE 1-4 : ZONING CODE DIMENSIONAL REGULATIONS VS. PROPOSED PHASE ONE DIMENSIONS

Dimensional Requirements	CC sub-district (Table F)	Phase One
FAR (max)	4.0 (or higher based on density bonus under Section 60-34)	1.77
Building Height Max (feet)	65 (includes 10 ft height bonus per Section 60-34)	74' 6"
Min. Lot Size	None	94,464
Lot Area (min. sf per dwelling unit)	None	700
Usable Open Space (min. sf per dwelling unit)	50	350
Lot Width (min. feet)	None	332.5
Lot Frontage (min. feet)	None	398
Front Yard (min. depth feet)	None	29 (River Street)
Side Yard (min. depth feet)	10 (per footnote 4, based on requirement in abutting MFR sub-district)	44 (east side) 47.5 (west side)
Rear yard (min. depth feet)	20 (per footnote 6)	133

Thus, the following dimensional relief will be needed from the ZBA:

- Variance for excessive building height

1.3.4 Off-Street Parking and Loading

See Section 2-1 of this PNF, *Transportation Component,* for more detailed information. Pursuant to Article 60, the off-street parking and off-street loading requirements for projects subject to large project review under Article 80 are determined through the Article 80 review process. If phase one were not subject to large project review under Article 80, the off-street parking requirement under Article 60 would be as provided in Table H. Table H requires 1.0 parking spaces per dwelling unit (135 spaces) and 2.0 spaces for each 1,000 square feet of commercial space (assuming it is used as retail space) (20 spaces), or a total of 155 parking spaces. The 70 off-street parking spaces proposed for resident use results in a parking ratio of 0.52 parking spaces per dwelling unit. There are also 8 proposed on-street parking spaces to be provided for the approximately 10,000 square feet of commercial space on River Street.

If phase one were not subject to large project review under Article 80, the off-street loading requirement under Article 60 would be as provided in Table I. Table I requires 1.0 loading space per project in the 15,001 to 49,999 sf size. Because large project review is applicable, Table I does not indicate how many loading spaces would be required for a project the size of the phase one project. Two off-street loading spaces are proposed.

1.3.5 Phase Two

Phase two consists of a single building containing approximately 9 units of mixed-income for-sale housing. Phase two also includes up to 9 at-grade parking spaces intended for use by the residents (a 0.67 ratio). The density bonus provisions of Section 60-34 are not available in the MFR subdistrict.

1.3.6 Uses

Multifamily dwelling use is permitted as of right in the MFR sub-district.

1.3.7 Dimensional Aspects

Table 1-5 below outlines the dimensional regulations for the MFR sub-district and the proposed phase two dimensions.

TABLE 1-5: ZONING CODE DIMENSIONAL REGULATIONS VS. PROPOSED PHASE TWO DIMENSIONS

Dimensional Requirements	MFR sub-district (Table D)	Phase Two
Lot Area (min. sf based on number of dwelling units)	9,000	5,000
Lot Width (min. feet)	30	39
Lot Frontage (min. feet)	30	103
FAR (max)	0.8	2.6
Building Height Max (feet)	35	44
Building Height Max (number of stories)	3	4
Usable Open Space (min. sf per dwelling unit)	300	145
Front Yard (min. depth feet)	15	5
Side Yard (min. depth feet)	10	10
Rear yard (min. depth feet)	30	5

Thus, the following dimensional relief will be needed from the ZBA:

- Variance for insufficient lot area
- Variance for excessive FAR
- Variance for excessive building height
- Variance for insufficient usable open space
- Variance for insufficient front yard
- Variance for insufficient rear yard

1.3.8 Off-Street Parking and Loading

See Section 2.1 of this PNF, *Transportation Component,* for more detailed information. Pursuant to Article 60, the off-street parking and off-street loading requirements for projects subject to large project review under Article 80 are determined through the

Article 80 review process. If phase two were not subject to large project review under Article 80, the off-street parking requirement under Article 60 would be as provided in Table H. Table H requires 1.0 parking space per dwelling unit, or 9 parking spaces. If phase two were viewed on its own (as a proposed project under 50,000 square feet), then footnote 3 to Table H would reduce the number of required spaces to 8.4 based on the plan to include at least two "Affordable Housing" units. The proposed 9 off-street parking spaces results in a parking ratio of 0.67 parking spaces per dwelling unit.

If phase one were not subject to large project review under Article 80, the off-street loading requirement under Article 60 would be as provided in Table I. Table I requires 0 loading spaces per project in the 0 to 15,000 square foot size. No off-street loading spaces are proposed.

1.4 LEGAL INFORMATION: LEGAL JUDGMENTS ADVERSE TO THE PROPOSED PROJECT

There are no legal judgments or actions pending that relate to the proposed project.

1.4.1 History of Tax Arrears on Property Owned by Proponent

There is no history of tax arrears on the property in the City of Boston by the proponent.

1.4.2 Evidence of Site Control/Nature of Public Easements

1.4.2.1 Site Control

On May 31, 2016, the Proponent was awarded Tentative Designation as the site developer by the MBTA. The MBTA letter confirming Tentative Designation is attached to the EPNF. Site acquisition will be achieved through a 99-year ground lease from the MBTA.

1.4.2.2 Public Easements

There is one public easement on the site that is owned and maintained by the Massachusetts Water Resources Authority (MWRA). This easement runs east to west across the southern edge of the Project site, and contains an active sewer 30"x32" sewer line that was installed in 1896. Original drawings showing the location and construction of this line are available from the MWRA. Any work that takes place within, or disturbs the soil requires the filing of an 8(m) permit with the MWRA. Preliminary advice from the MWRA is that a wide variety of major construction could take place within and on top of the easement, as long as civil and structural designs support the continuing use of the sewer. None of this is necessary because the Project as proposed occurs north of the

easement. Sufficient density can be achieved without disturbing the easement, and the portion of the site in which the easement passes through will not change use as it will be used as open space for streets, parking, and landscaping, providing full access to the easement. A site map that delineates the location of the easement is attached to the EPNF.

1.5 Table 1-6: Public Agency Review

Agency Name	Permit/Approval
STATE	
Massachusetts Water Resources Authority	Sewer Use Discharge Permit (By BWSC)
Department of Conservation and Recreation	Review and Approval (Greenway Access)
LOCAL	
Boston Civic Design Commission	Determination to Review
Boston Planning and Development Authority	Article 80 Approval Zoning Variance Recommendations
Boston Water and Sewer Commission	Sewer Use Discharge Permit Site Plan Approval Sewer Extension/Connection Permit Stormwater Connection
City of Boston Inspectional Services Department	Building and Occupancy Permits
Boston Public Improvement Commission	Street and Sidewalk Occupation Permits Specific Repair Plan
Zoning Board of Appeals	Variance Approvals
Boston Parks and Recreation Department	Review and Approval (Greenway Access)
Boston Interagency Green Building Committee	Climate Change Resiliency Checklist
Boston Transportation Department	Transportation Access Plan Agreement Construction Management Plan
Boston Accessibility Commission	Accessibility Checklist

1.6 PROJECT SCHEDULE

If all of the financing, including City and State funds, is secured by the first half of 2018, the construction of the project is expected to begin in the spring of 2019 and will be completed for occupancy within 18 months (Spring/Summer 2020).

1.7 PROJECT DESIGN

1.7.1 Design Objectives

The Mattapan Station design offers a shared commitment with the residents of Mattapan to create a vibrant, mixed-income community and to strengthen the property's connection and contributions to the surrounding community. The project development program calls for 135 rental units, including two townhouses (3 bedrooms). The townhouse units will have ground floor accessibility in the Phase I building. Phase II of the project will be comprised of 9 mixed-income, two-bedroom condominium units in a single building. The project will also feature 10,000 square feet of ground floor commercial space and a 2,000 square foot community room that will have a commanding view of the Neponset River Greenway. There are three key goals that have been identified by the Proponent.

1. Build high-quality, transit-oriented housing that is affordable to a range of incomes
2. Develop retail and commercial spaces to attract new merchants and patrons to the Mattapan Square area and complement the existing business mix
3. Create inviting and meaningful connections to the surrounding community

1.7.2 Design Summary

The project will redevelop a surface parking lot which is an under-utilized asset in the neighborhood. There are 2 townhouse rental units that will be accessed from the ground floor of the building. All other residential rental units will be housed on floors two-five of the property. Additionally, the commercial space and community room will be accessible at the ground-floor level. Phase II of the project will be comprised of 9 mixed-income, two bedroom condominium units. On-site parking will include 70 below-grade parking spaces for the rental units, up to 9 surface parking spaces for the condominium units, and approximately 8 commercial parking spaces on River Street. Additionally, the project will provide direct access to the Neponset River Greenway, along with new sidewalks and other pedestrian amenities.

Figure 1-7: Site Boundaries

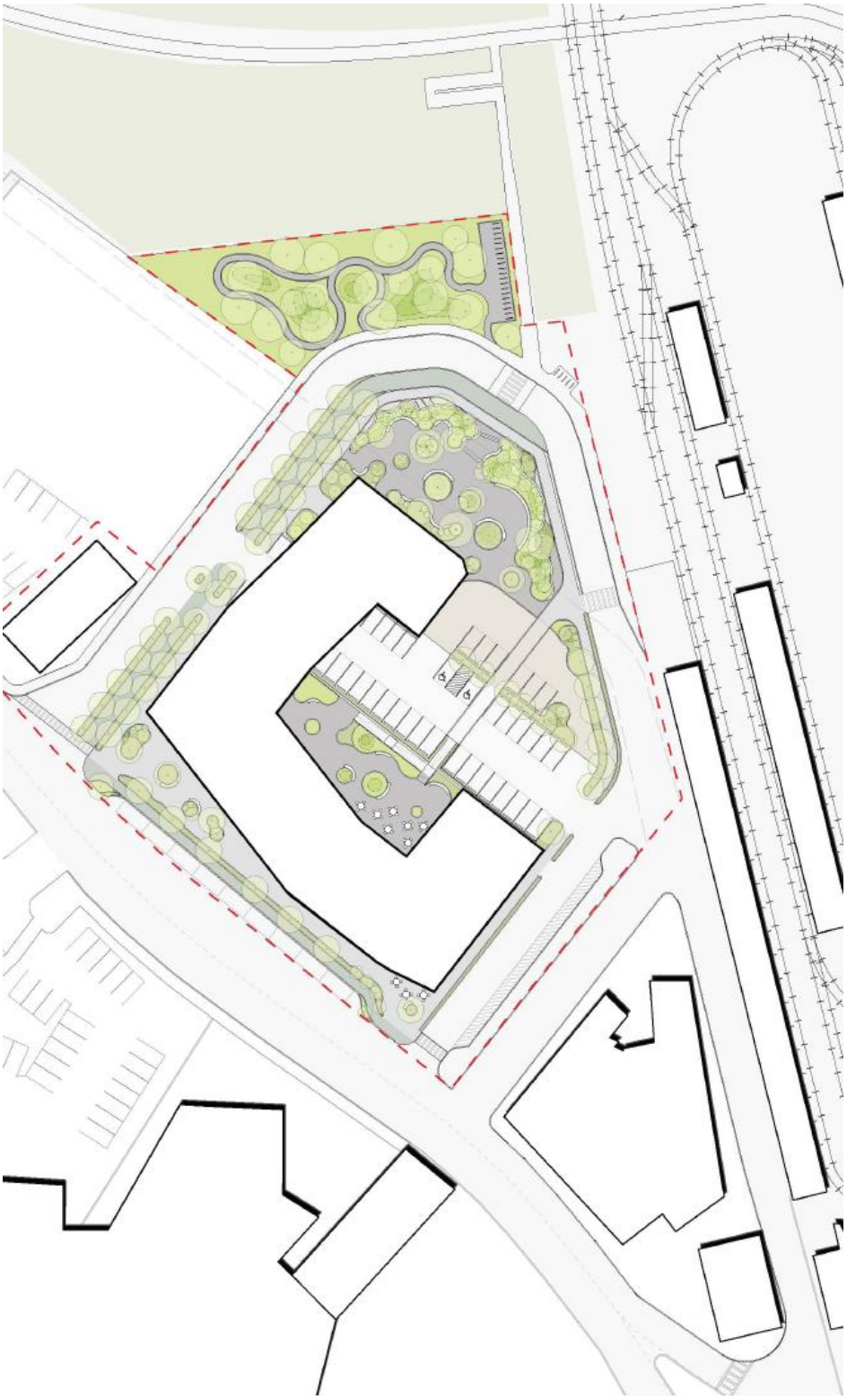


Figure 1-8: Site Parking Plan

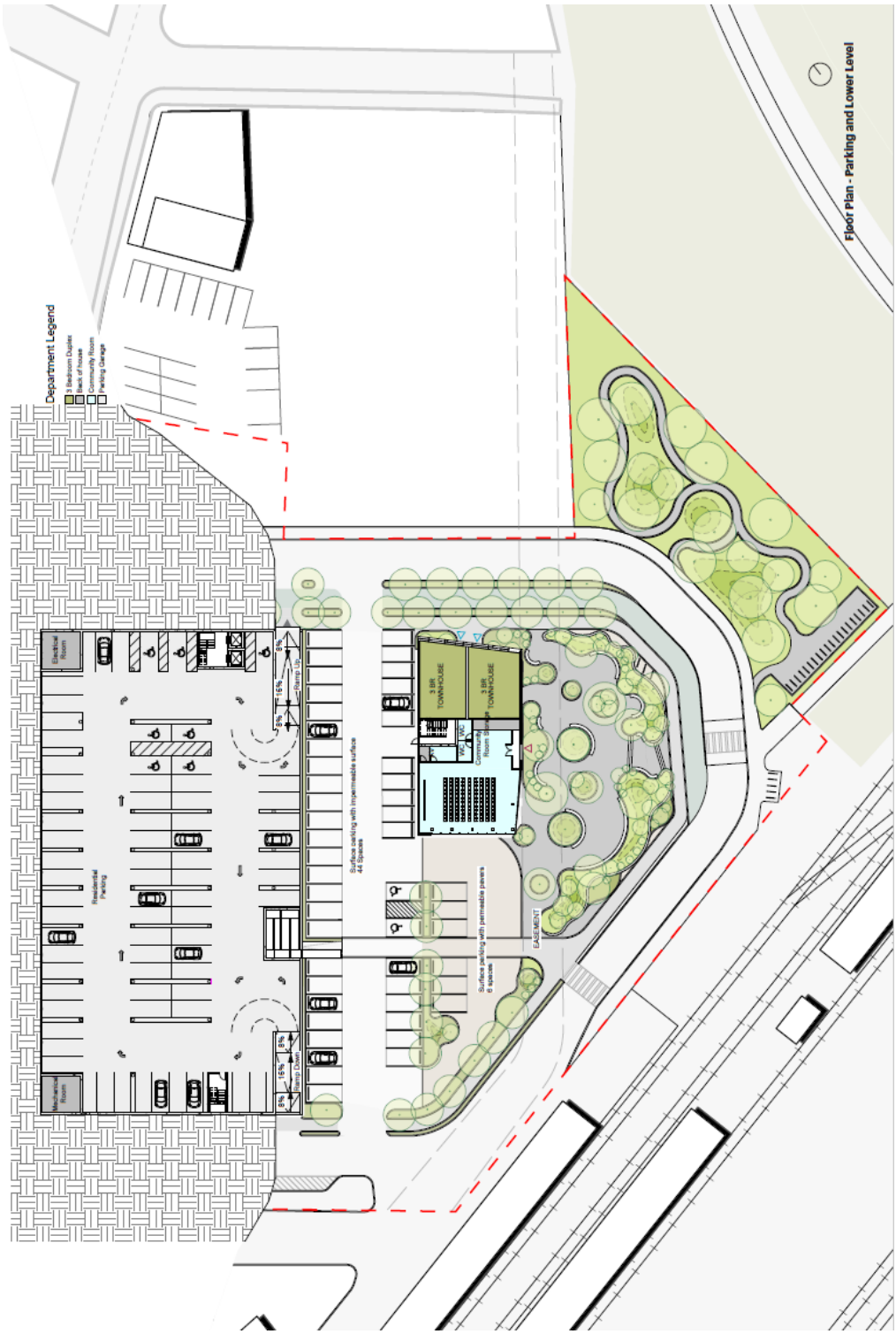


Figure 1-9: Ground Floor Plan

Figure 1-10: Typical Floor Plan 2-5

6th Floor Plan

Figure 1-11: North and South Elevations

Figure 1-12: View From Greenway

Figure 1-13: River Street Perspective

2.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

2.1 Transportation

2.1.1 Transportation Overview

Howard Stein Hudson (HSH) has conducted an evaluation of the transportation impacts of the redevelopment of Mattapan Station. This transportation study adheres to the Boston Transportation Department (BTD) *Transportation Access Plan Guidelines* and Boston Planning and Development Agency (BPDA) Article 80 Large Project Review process. This study includes an evaluation of the existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian and bicycle activity. Based on the evaluation provided in the transportation study, the Project will have minimal impact on the study area intersections and the pedestrian and public transportation facilities in the area.

2.1.2 Project Description & Site Access

The Project is located at 466 River Street in Boston's Mattapan neighborhood. The 466 River Street parcel consists of an approximately 120,621 Gross Square Foot (gsf) surface parking lot. The 466 River Street parking lot is accessed by several curb cuts along River Street and is currently being used as a public parking lot for Mattapan Station.

The Project consists of the redevelopment and construction of two new mixed-use buildings with approximately 135 rental units to be constructed in Phase I, and 9 condominium units, to be constructed in Phase II, 10,000 sf of commercial space, a 2,000 square foot community room, and 70 Phase I residential parking spaces in a below-grade garage and 9 parking spaces in Phase II. A total of 50 parking spaces will also be provided for MBTA commuter use in a surface lot. The Project will include a bicycle storage room on site that will store approximately 135 bicycles. All loading, service, delivery, move-in/move-out, and trash/recycling activity will occur on the Project site.

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

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

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

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

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

The final part of the transportation study identifies measures to mitigate Project-related impacts and to address any traffic, pedestrian, bicycle, transit, safety, or construction related issues that are necessary to accommodate the Project. An evaluation of short-term traffic impacts associated with construction activities is also provided.

A final effort of the BTD permitting process involves the development of the Transportation Access Plan Agreement (TAPA). The TAPA is a legally binding document between the Proponent and the City of Boston that codifies the building program, site access for vehicles and pedestrians, vehicle and bicycle parking, changes to the public way adjoining the site, commitments for off-site mitigation, and a transportation demand management (TDM) program for the Project. The text portion of the TAPA documents the building program, site access for vehicles and pedestrians, any changes to the public way adjoining the site, and a transportation demand management (TDM) program for the Project. The TAPA site plan will document all vehicular and pedestrian access to the site including both existing and proposed curb cuts. This includes vehicle movements through and servicing the site such as passenger car access to on-site parking and service vehicle access to loading and trash pick-up areas.

2.1.3 TRANSPORTATION SYSTEM

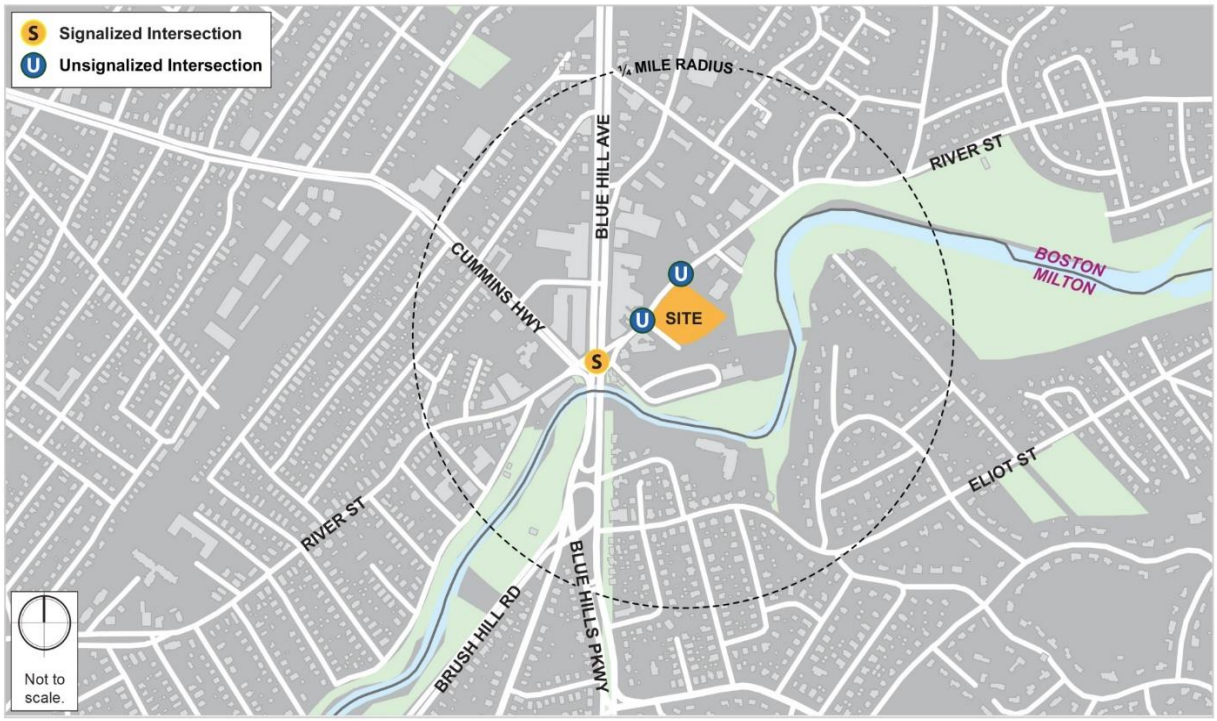
2.1.3.1 Study Area

The transportation study area consists of the following three intersections:

- River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway Entrance (signalized);
- River Street/MBTA Bus Entrance Driveway (unsignalized); and
- River Street/MBTA Bus Exit Driveway/Municipal Parking Lot Driveway (unsignalized).

The study area is shown below in Figure 2-1.

Figure 2.1. *Study Area Intersections*



2.1.4 EXISTING (2017) CONDITIONS

2.1.4.1 Existing Roadway Conditions

This section includes descriptions of existing study area roadway geometries, intersection geometry and traffic control, parking and curbs usage, public transportation services, peak hour traffic volumes for vehicles, bicycles, and pedestrians, and intersection traffic operations.

Blue Hill Avenue is a two-way urban principal arterial roadway under City of Boston jurisdiction running in a north-south direction between Dudley Street to the north in Roxbury and Canton Avenue in Milton to the south. The posted speed limit within the project area is 20 mph. Concrete sidewalks are provided on both sides of Blue Hill Avenue within the study area. On-street parking is allowed on both sides of the road within the study area.

River Street is a two-way urban minor arterial roadway under City of Boston jurisdiction running in an east-west direction between Washington Street to the east in Dorchester and Cedar Street in Dedham to the west. A concrete sidewalk is provided on both sides of the street within the study area. On-street parking is only allowed on the north side of the road within the study area.

Cummins Highway is a two-way urban principal arterial roadway under City of Boston jurisdiction running in a southeast-northwest direction between Blue Hill Avenue to the southeast and Washington Street in Roslindale to the northwest. The posted speed limit on Cummins Highway is 25 mph within the study area. Concrete sidewalks are provided on both sides of the road. On-street parking is allowed on both sides of the road within the study area.

2.1.4.2 Existing Intersection Conditions

River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway Entrance is a signalized intersection with six approaches, owned and maintained by the City of Boston. The River Street eastbound approach consists of a channelized right-turn only lane. The River Street westbound approach consists of a shared left-turn/through lane and a shared through/right-turn lane. The Blue Hill Avenue northbound approach consists of an exclusive left-turn lane, three through lanes, and a channelized right-turn only lane. The Blue Hill Avenue southbound approach consists of two through lanes and a shared through/right-turn lane. The Cummins Highway southeast-bound approach consists of one bear right-turn lane and a shared bear right/right-turn lane. The Mattapan MBTA train station is located adjacent to the intersection and has a MBTA Busway only northwest-bound approach, which consists of a through lane and a channelized right-turn lane. Sidewalks are provided along all approaches. Crosswalks, wheelchair ramps, and pedestrian signal equipment are provided across all approaches to the intersection.

River Street/Gillespie's Lane Private Way (MBTA Bus Entrance Driveway) is an unsignalized intersection with two approaches. The River Street eastbound consists of a shared through/right-turn lane and the River Street westbound consists of a shared left-turn/through lane. The left and right turn into the MBTA driveway are permitted for MBTA buses only. Sidewalks are provided along all approaches. Crosswalks and wheelchair ramps are not provided at this intersection.

River Street/MBTA Bus Exit Driveway is an unsignalized intersection with three approaches. The River Street eastbound and westbound consists of one through lane only. The MBTA Bus Exit driveway northbound approach consists of shared left/right-turn lane for MBTA buses only. Sidewalks are provided along all approaches and wheelchair ramps are only provided on the MBTA Bus Exit driveway leg only. Crosswalks are not provided at this intersection.

2.1.4.3 Existing Parking and Curb Use

An inventory of the on-street and off-street parking was conducted in the vicinity of the Project. On-street parking surrounding the Project site generally consists of residential, metered, and commercial parking. The on-street parking regulations within the study area are shown in Figure 2.2.

More than 300 off-street public parking spaces are available within a five-minute walk from the Project site. A detailed summary of all parking lots are shown in Table 2.1 and are shown in Figure 2.3.

Table 2-1: Off-Street Parking Lots within a Quarter-mile to the Site

Map ID	Facility	Address	Capacity (Parking Spaces)
A	Mattapan MBTA Station	466 River Street	217
B	Municipal Lot #13	451-467 River Street	90
C	Municipal Lot #14	23 Fairway Street	40
Parking Lot Spaces Total			**347**

Figure 2.2. *On-street Parking*

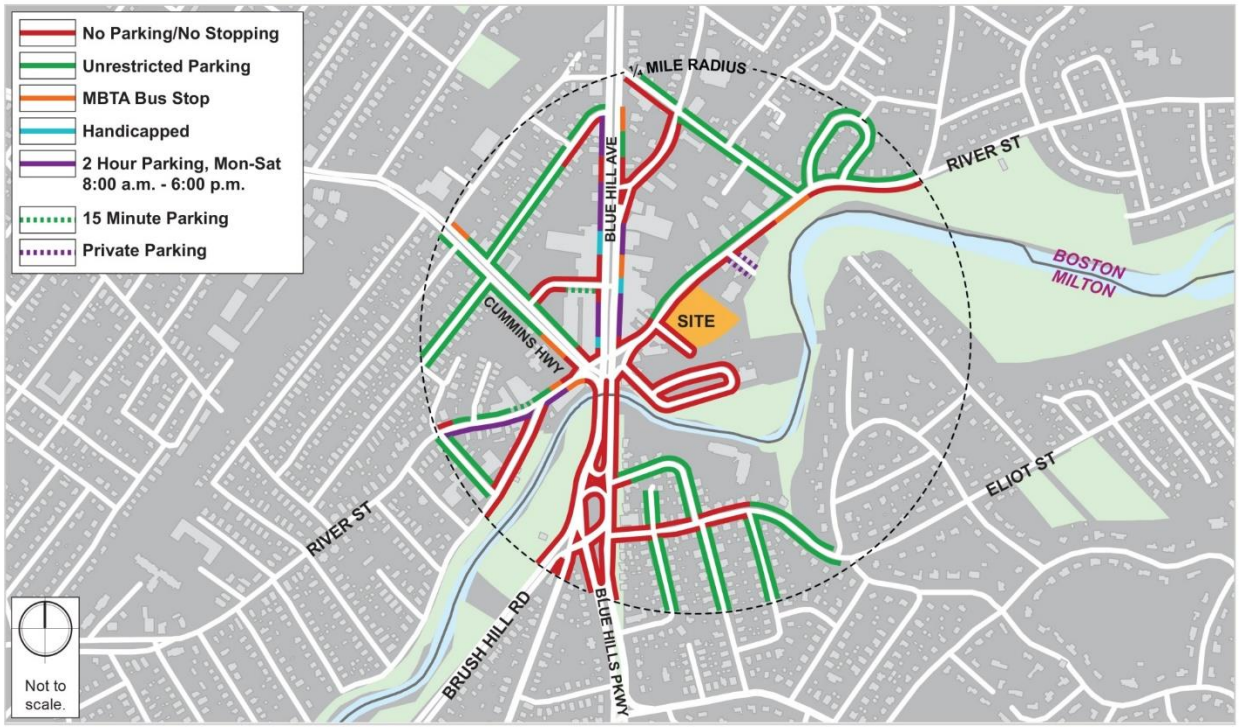


Figure 2.3. *Off-street Parking*

2.1.4.4 Car Sharing Services

Car sharing services enable easy access to short-term vehicular transportation. Vehicles are rented on an hourly or daily basis, and all vehicle costs (gas, maintenance, insurance, and parking) are included in the rental fee. Vehicles are checked out for a specific time period and returned to their designated location. Pick-up/drop-off locations are typically in existing parking lots or other parking areas throughout neighborhoods as a convenience to users of the services. Nearby car sharing services provide an important transportation option and reduce the need for private vehicle ownership.

One major car sharing service with vehicle locations near the Project site is Zipcar CarShare. There are currently two Zipcar locations in the neighborhood. The nearest ZipCar Share facility is located on the Project site at 466 River Street. The car sharing locations within a quarter-mile of the Project site are shown in **Figure 2.4.**

2.1.4.5 Existing Bicycle Conditions

In recent years bicycle use has increased dramatically throughout the City of Boston. The Project site is conveniently located in close proximity to several bicycle facilities. The City of Boston's 2013 "Bike Routes of Boston" map designates Cummins Highway as an advanced route, suitable for experienced and traffic-confident cyclists, while both Blue Hill Avenue and River Street are considered intermediate routes, suitable for riders with some on-road experience.

Bicycle counts were conducted concurrent with the vehicular TMCs and based on the counts, bicycle activity in the area was generally light during the data collection period. It is expected that bicycle activity will be higher during the warmer months.

2.1.4.6 Existing Pedestrian Conditions

Sidewalks are provided along all roadways in the study area and are generally in good condition. Crosswalks and pedestrian signal equipment are provided at the only signalized intersection in the study area.

To determine the amount of pedestrian activity within the study area, pedestrian counts were conducted concurrent with the TMCs at the study area intersections and are presented in **Figure 2.5.**

Figure 2.4. *Car Sharing Locations*

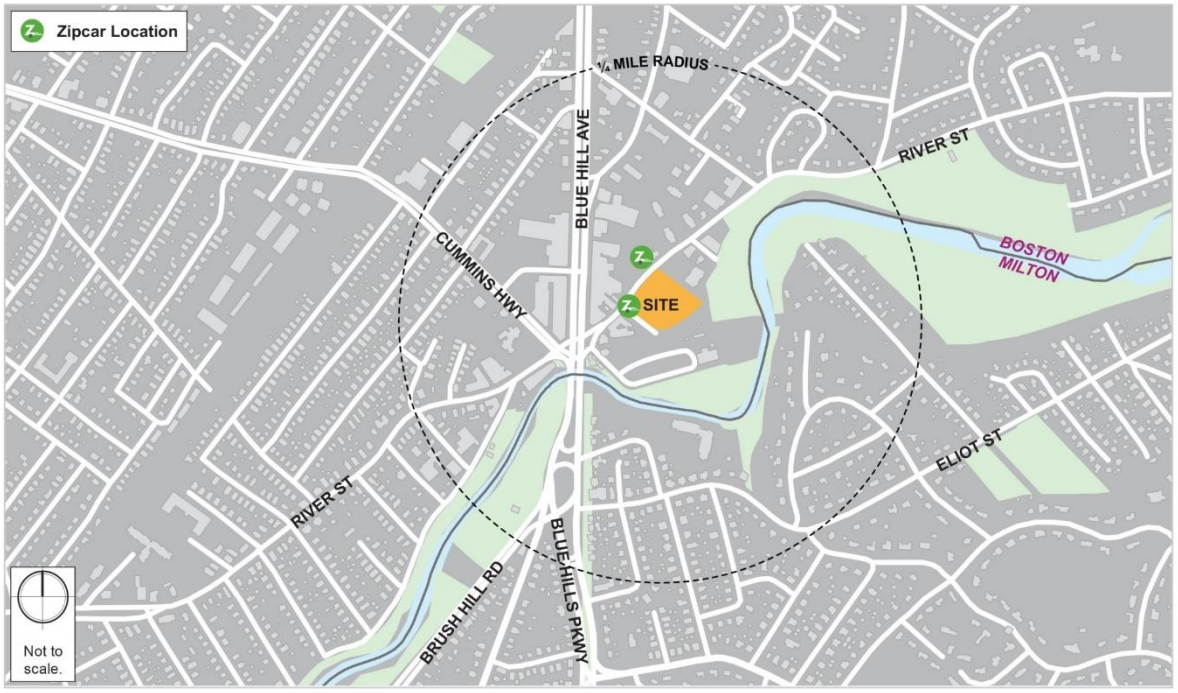
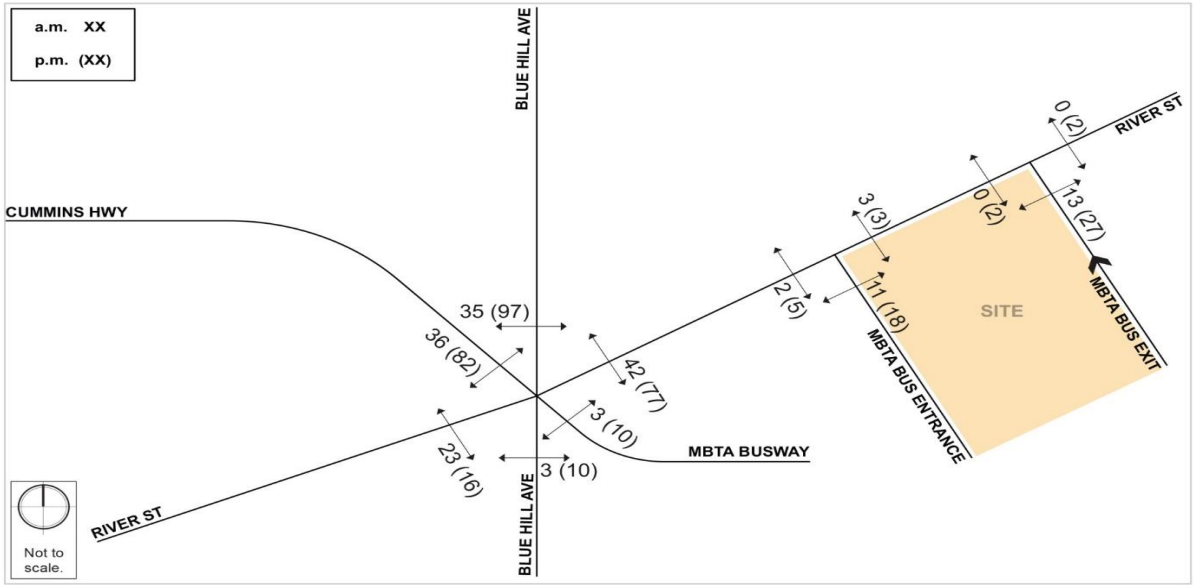


Figure 2.5. *Existing (2017) Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hours*



2.1.4.7 Existing Public Transportation

The Project site area is well-served by public transportation. The MBTA's Red Line Mattapan Trolley and several bus lines are located adjacent to the site. The Mattapan Trolley runs between Mattapan Station and Ashmont Station, connecting passengers to the MBTA's Red Line.

The MBTA Route 27 bus travels along River Street to the east and Routes 33 and 24 buses travel along River Street to the west. The MBTA Route 30 bus travels along Cummins Highway. The MBTA Routes 28, 29, 30, 31, 33, 245, and 716 buses travel along Blue Hill Avenue. All bus routes have stops at the MBTA Mattapan Station, adjacent to the site.

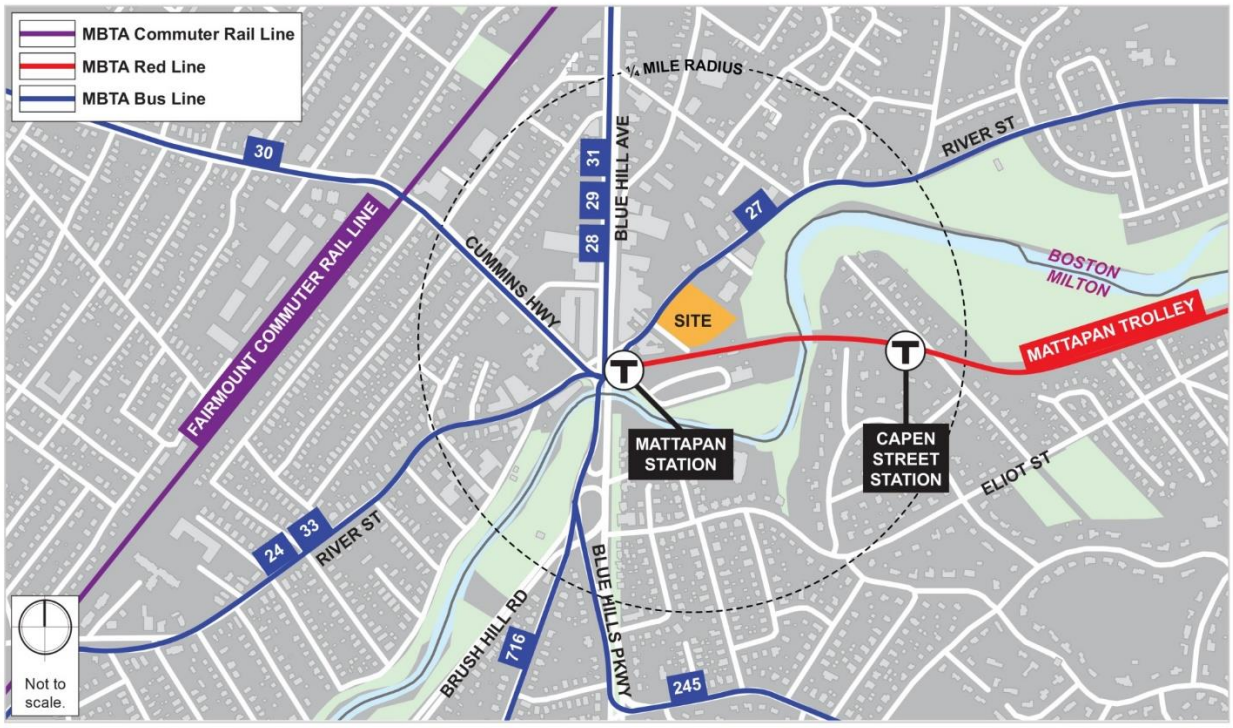
The nearby public transit services are shown in **Figure 2.6** and summarized in **Table 2**.

Table 2-2: Existing Public Transportation

Transit Service	Description	Peak-Hour Headway (minutes)[1]
Subway Lines		
Red Line	Mattapan Trolley – Mattapan Station-Ashmont Station	5-12
Bus Routes		
24	Wakefield Avenue & Truman Highway – Mattapan or Ashmont Station	20
27	Mattapan Station – Ashmont Station via River Street	15-35
28	Mattapan Station – Ruggles Station	7-10
29	Mattapan Station – Jackson Square Station	16
30	Mattapan Station – Forest Hills Station via Cummins Highway & Roslindale Square	25-30
31	Mattapan Station – Forest Hills Station via Morton Street	5-6
33	Dedham Line – Mattapan Station via River Street	20
245	Quincy Center Station – Mattapan Station	40-60
716	Cobbs Corner – Mattapan Station	40-60

1 Headway is the scheduled time between trains or buses. Headways are approximate.
Source: www.mbta.com, July 2017.

Figure 2.6. *Public Transportation*



2.1.5 Existing Traffic Conditions Analysis (2017)

2.1.5.1 Turning Movement Counts

Manual Turning Movement Counts (TMCs) were recorded during the morning peak hour (7:00 – 9:00 a.m.) and evening peak hour (4:00 – 6:00 p.m.), peak traffic periods on April 4, 2017. The TMCs included vehicular counts, which consists of automobiles, heavy vehicles, and MBTA buses, as well as, bicycle, and pedestrian counts at the study area intersections. The results of the counts indicate that the morning peak hour occurs from 7:15 – 8:15 a.m. and the evening peak hour occurs from 4:30 – 5:30 p.m.

Existing traffic volumes were collected to develop the 2017 Existing Condition vehicular traffic volumes. The Existing (2017) Condition weekday a.m. Peak Hour and weekday p.m. Peak Hour traffic volumes are shown in **Figure 2.7** and **Figure 2.8** ,respectively.

Figure 2.7. *Existing (2017) Condition Traffic Volumes, Weekday a.m. Peak Hour*

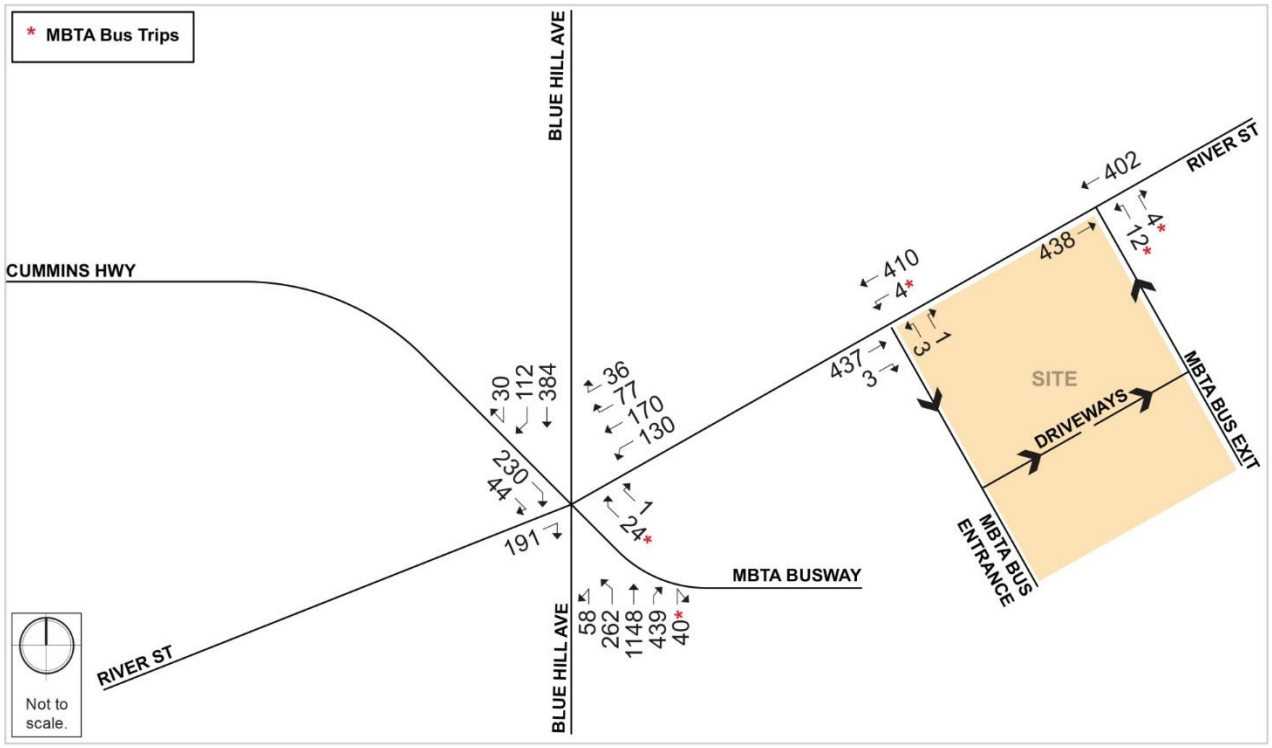
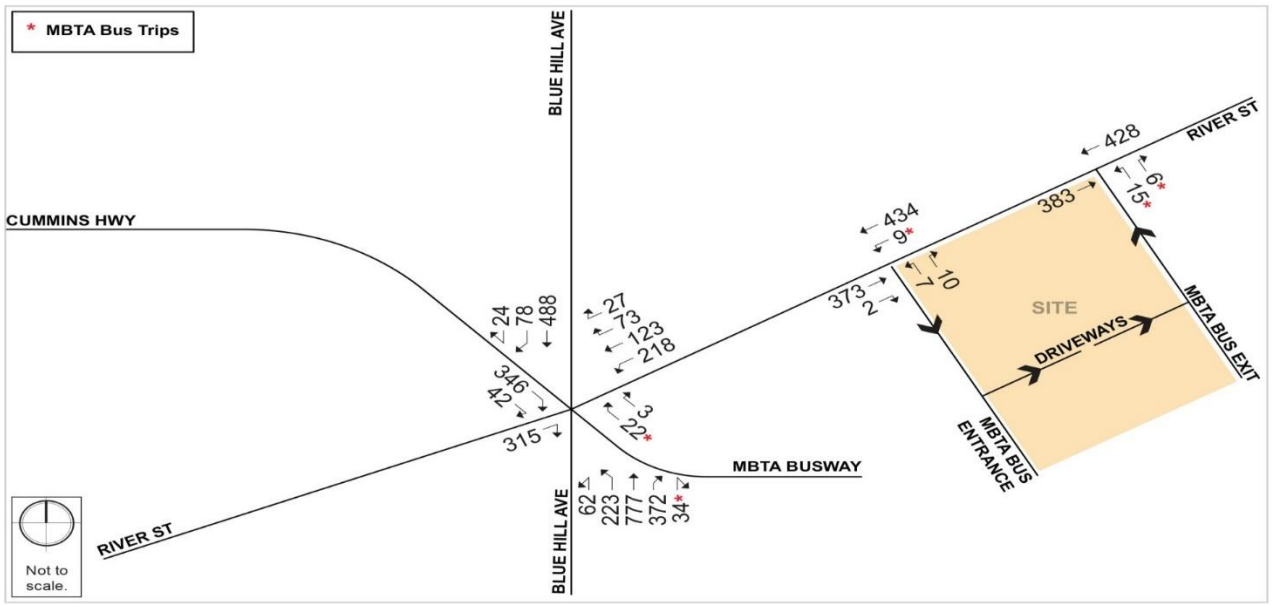


Figure 2.8. *Existing (2017) Condition Traffic Volumes, Weekday p.m. Peak Hour*



2.1.6 Traffic Operations Capacity Analysis

Trafficware's Synchro (version 9) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 Highway Capacity Manual (HCM).

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. Table 2.3 displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. LOS D or better is typically considered acceptable in an urban area. However, LOS E or F is often typical for a stop controlled minor street that intersects a major roadway.

Table 2-3: Vehicle Level of Service Criteria

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

Source: 2000 Highway Capacity Manual, Transportation Research Board

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

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

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

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

2.1.6.1 Existing (2017) Conditions Traffic Operations Analysis

Table 2.4 and Table 2.5 summarize the Existing (2017) Condition capacity analysis for the study area intersection during the weekday a.m. Peak Hour and the weekday p.m. Peak Hour. The detailed analysis sheets are attached to the EPNF.

Table 2-4: Existing (2017) Condition Capacity Analysis Summary, Weekday a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**C**	**29.5**	**-**	**-**	**-**
EB River Street Right	A	8.1	0.38	5	64
WB River Street Left/Thru | Thru/Right	E	71.2	0.90	174	#266
NB Blue Hill Avenue Left/Bear left	D	54.7	0.76	234	#359
NB Blue Hill Avenue Thru | Thru | Thru	B	14.4	0.40	172	204
NB Blue Hill Avenue Bear Right/Right	B	13.8	0.50	166	255
SB Blue Hill Avenue Thru | Thru | Thru/Right	C	34.9	0.39	121	157
SEB Cummins Highway Bear Right/Right	C	27.6	0.66	60	89
NWB MBTA Busway Bear Right	D	49.8	0.14	19	48
NWB MBTA Busway Right	A	0.0	0.00	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.27	-	0
WB River Street Left/Thru	A	0.1	0.00	-	0
NB MBTA Bus Entrance Left/Right	C	15.7	0.02	-	2
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.27	-	0
WB River Street Thru	A	0.0	0.28	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	16.6	0.07	-	6

 # 95th percentile volume exceeds capacity.
Grey shading indicates LOS E or F.

Table 2-5: Existing (2017) Condition Capacity Analysis Summary, Weekday p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**C**	**34.1**	**-**	**-**	**-**
EB River Street Right	C	27.1	0.70	98	207
WB River Street Left/Thru | Thru/Right	E	76.4	0.93	183	#285
NB Blue Hill Avenue Left/Bear left	E	67.2	0.84	228	#376
NB Blue Hill Avenue Thru | Thru | Thru	B	13.2	0.28	112	138
NB Blue Hill Avenue Bear Right/Right	B	12.6	0.45	138	216
SB Blue Hill Avenue Thru | Thru | Thru/Right	D	35.4	0.42	142	181
SEB Cummins Highway Bear Right/Right	C	30.4	0.68	90	152
NWB MBTA Busway Bear Right	D	49.7	0.14	18	45
NWB MBTA Busway Right	A	0.0	0.01	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.23	-	0
WB River Street Left/Thru	A	0.2	0.01	-	1
NB MBTA Bus Entrance Left/Right	B	13.4	0.07	-	6
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.24	-	0
WB River Street Thru	A	0.0	0.26	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	15.7	0.12	-	11

 # 95th percentile volume exceeds capacity.
Grey shading indicates LOS E or F.

The signalized intersection of River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway currently operates at LOS C during both the a.m. and p.m. peak hours. The River Street westbound approach operates at LOS E, but under capacity (v/c is less than 1.0), during the a.m. and p.m. peak hours. The Blue Hill Avenue northbound shared left/bear left movement operates at LOS E during the p.m. peak hour.

All other movements at the study area intersections currently operate under capacity (v/c less than 1.0) during the weekday peak hours.

2.1.7 No-Build (2024) Condition

The No-Build (2024) Condition reflects a future scenario that incorporates anticipated traffic volume changes associated with background traffic growth independent of any specific project, traffic associated with other planned specific developments, and planned infrastructure improvements that will affect travel patterns throughout the study area. These infrastructure improvements include roadway, public transportation, pedestrian and bicycle improvements. The No-Build (2024) Condition does not include the Project-related impacts.

2.1.7.1 Background Traffic Growth

The methodology to account for future background traffic growth, independent of large development projects, that may be affected by changes in demographics, smaller scale development projects, or projects unforeseen at this time. Based on a review of recent traffic studies conducted for nearby projects and historic traffic data, to account for any additional unforeseen traffic growth, a one percent per year annual traffic growth rate was used. The background growth rate is assumed to include traffic volumes for the following nearby small development projects:

The Ice House at Milton – This project is located south of the Project site and consists of replacing the existing buildings with an approximate 8,400 sf of market and café use, about 4,000 sf of office, a small commercial bank of approximately 4,000 sf, and a total of 16,400 sf of tenantable space. This project is being reviewed by the Milton Planning Board.

422 River Street –This project is located to the east of the Project site and consists of 27 new rental units and 22 off-street parking spaces. The impact of this project was considered in the 2024 No-Build condition because it was not fully occupied by the time this traffic study was conducted.

131 Eliot Street (Milton) – This project is located east of the Project site and consists of the total rehabilitation of a former factory, providing 35 residential units with approximately 8,341 square feet (sf) of retail space and 90 parking spaces. This project has been approved by the Milton Planning Board.

245 Highland Street (Milton) – This project is located south of the Project site and consists of a cluster development with approximately seven buildable lots. The new lots will range from 20,007 sf to 46,319 sf. This project has been approved by the Milton Planning Board.

Specific Development Traffic Growth

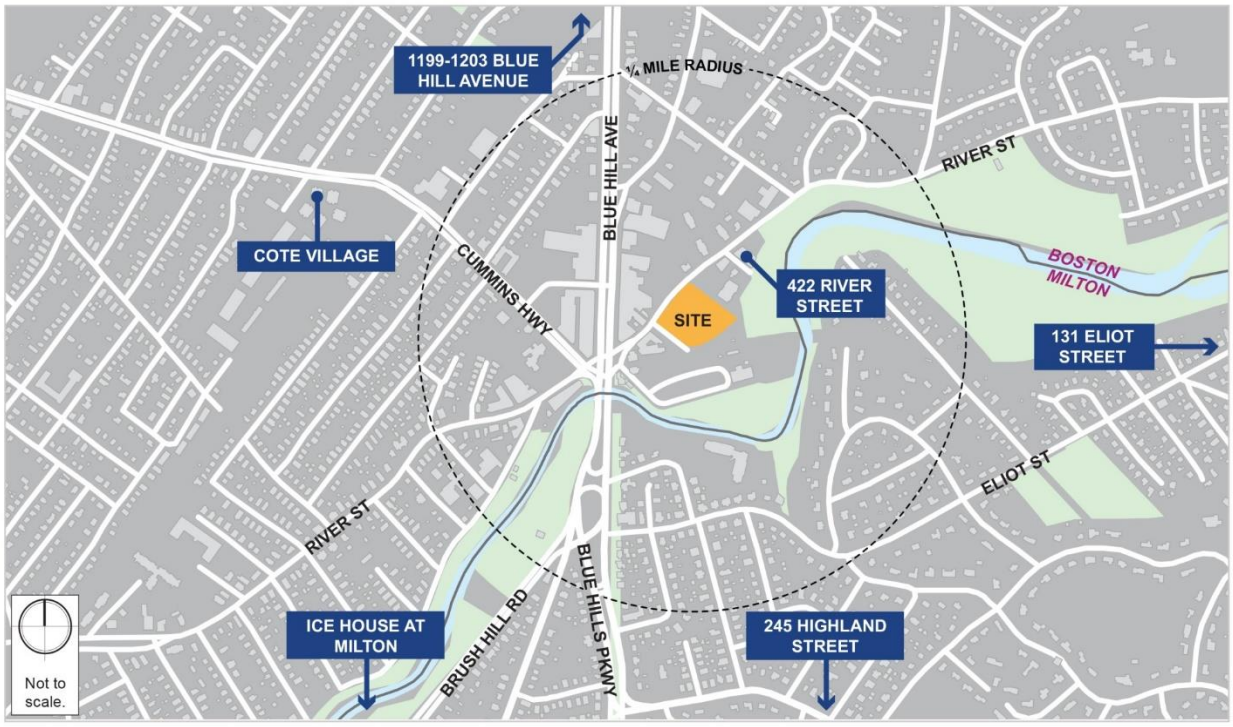
Traffic volumes associated with known, larger or adjacent development projects can affect traffic patterns throughout the study area within the future analysis time horizon. The following nearby development projects were identified in the vicinity of the Project.

1199-1203 Blue Hill Avenue – This mixed-use project is located to the north of the Project site and consists of 21 residential units, approximately 3,000 square feet (sf) of ground-floor retail space, 2,800 sf of ground-floor restaurant space, and an underground parking garage with approximately 22 parking spaces. This project is under review by the BPDA.

Cote Village (Cummins Highway) –This project is located to the west of the Project site and consists of a mixed-use transit-oriented development project (MBTA Fairmount/Cummins Highway Commuter Rail stop under construction). The project development program includes a total of 76 one, two, and three-bedroom units (divided between flats and townhouses), 84 parking spaces, and approximately 4,172 sf of ground floor commercial space, and 12,000 sf of public plaza. This project has been approved by the BPDA.

The nearby development projects and Background Project Trips are shown in **Figure 2.9.**

Figure 2.9. *Area Development Projects*



2.1.7.2 Proposed Infrastructure Improvements and Planning

A review of planned improvements to roadway, transit, bicycle, and pedestrian facilities was conducted to determine if there are any nearby improvement projects or planning initiatives in the vicinity of the study area. Based on this review, the following projects are in the vicinity of the Project:

Harborwalk/Neponset River Parkway – The Harborwalk project consists of a continuous public walkway along the water's edge that is mostly re-established shoreline. The Harborwalk System connects the City's neighborhoods to its Harbor, linking recreational, cultural and historic attractions, as well as access to public transit, including water transportation facilities. Currently 38 miles of Harborwalk have been constructed and when completed, the walkway system will stretch over 47 miles from Dorchester to East Boston. Access to the planned extension of the Harborwalk will be provided east of the site at the Neponset Trail.

Mattapan Economic Development Initiative – This project focuses on improving the business districts of Mattapan Square, Blue Hill Avenue Center and the Morton Street Village Corridor, creating job opportunities within the neighborhood, and increasing capital investment in commercial areas and properties. This project includes the creation of the "Fast Track" Rapid Rail along the Fairmount Commuter Rail line at Cummins Highway, and the renovation of the public parking lot behind Mattapan Square at Blue Hill Avenue and River Street. Possible action steps in the project also include improving the maintenance of existing pedestrian infrastructure and upgrading the alleyway between Blue Hill Avenue northbound and River Street to provide a more direct connection between Mattapan Square and the River Street and MBTA parking lots.

The one percent per year annual growth rate was applied to the Existing (2017) Condition traffic volumes to develop the No-Build (2024) Condition traffic volumes. The No-Build (2024) weekday a.m. Peak Hour and weekday p.m. Peak Hour traffic volumes are shown on Figure 2.10 and Figure 2.11, respectively.

2.1.7.3 No-Build (2024) Condition Traffic Operations Analysis

The No-Build (2024) Condition capacity analysis uses the same methodology as the Existing (2017) Condition capacity analysis. Table 2.6 and Table 2.7 present the No-Build (2024) Condition capacity analysis for the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided as an attachment to the EPNF.

Figure 2.10. ***No-build (2024) Condition Traffic Volumes, Weekday a.m. Peak Hour***

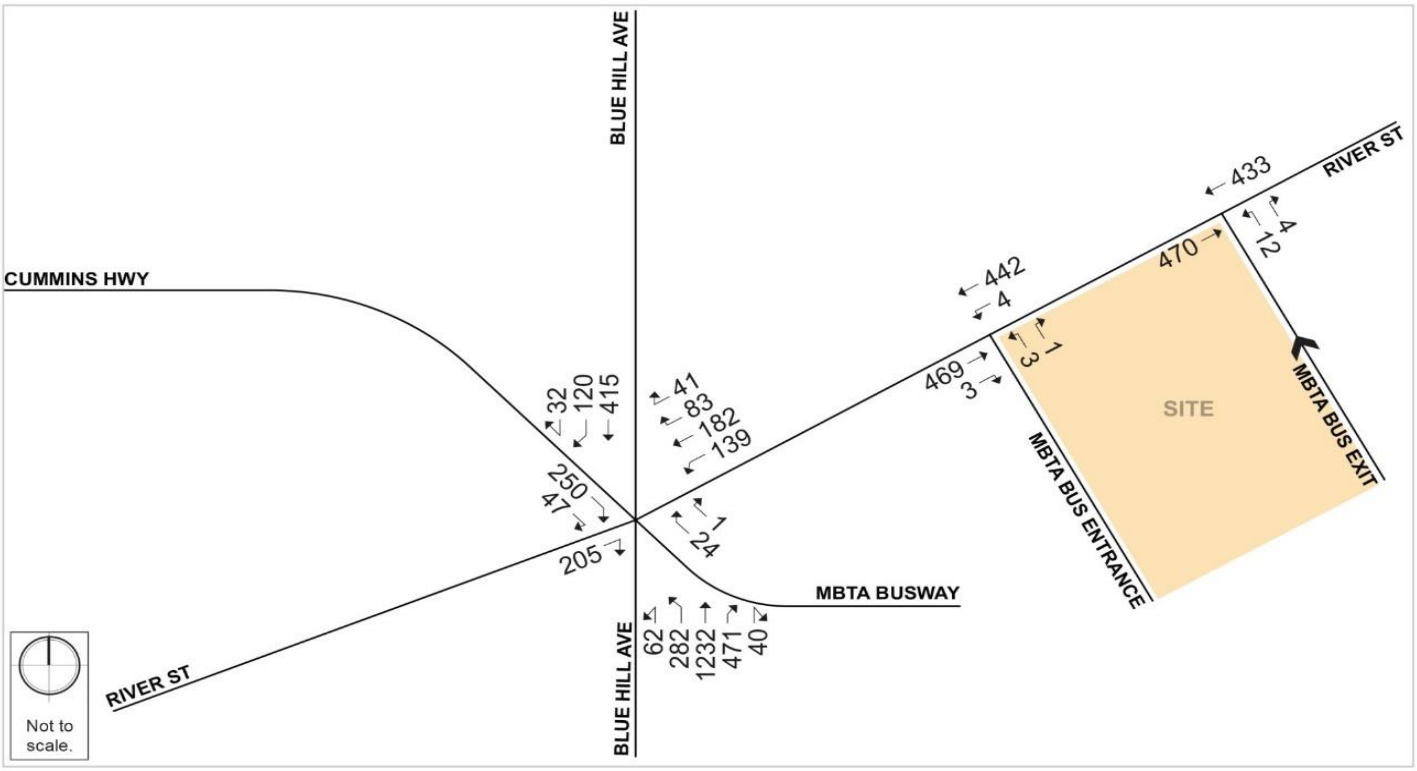


Figure 2.11. ***No-build (2024) Condition Traffic Volumes, Weekday p.m. Peak Hour***

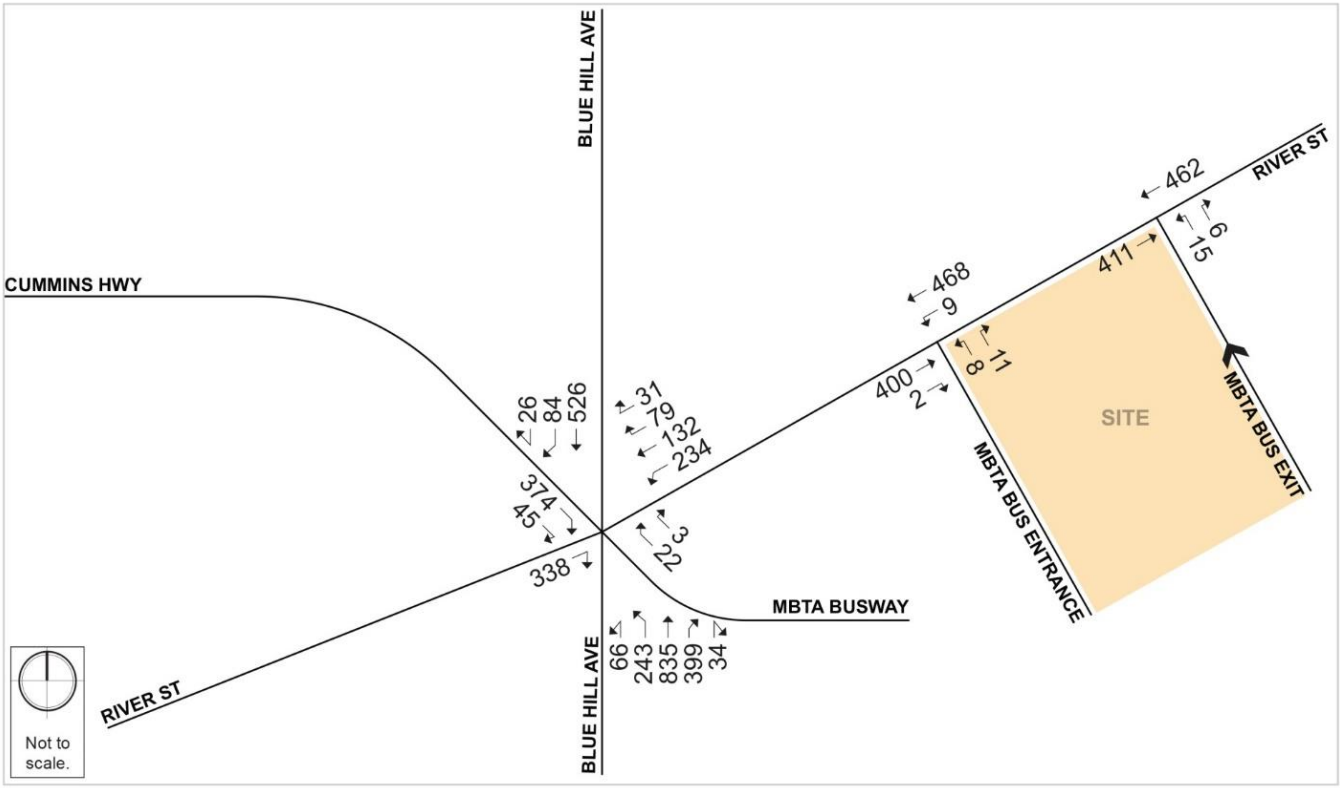


Table 2-6: No-Build (2024) Condition Capacity Analysis Summary, Weekday a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**C**	**32.0**	**-**	**-**	**-**
EB River Street Right	A	9.7	0.41	14	78
WB River Street Left/Thru | Thru/Right	F	80.4	0.95	191	#299
NB Blue Hill Avenue Left/Bear left	E	59.0	0.81	256	#402
NB Blue Hill Avenue Thru | Thru | Thru	B	14.9	0.43	188	222
NB Blue Hill Avenue Bear Right/Right	B	14.8	0.54	187	283
SB Blue Hill Avenue Thru | Thru | Thru/Right	D	35.6	0.42	133	170
SEB Cummins Highway Bear Right/Right	C	31.7	0.72	73	102
NWB MBTA Busway Bear Right	D	49.8	0.14	19	48
NWB MBTA Busway Right	A	0.0	0.12	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.29	-	0
WB River Street Left/Thru	A	0.1	0.00	-	0
NB MBTA Bus Entrance Left/Right	C	16.8	0.03	-	2
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.29	-	0
WB River Street Thru	A	0.0	0.30	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	17.8	0.08	-	6

 # 95th percentile volume exceeds capacity.
Grey shading indicates a decrease to LOS E or F from Existing (2017) Condition.

Table 2-7: No-Build (2024) Condition Capacity Analysis Summary, Weekday p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**D**	**38.2**	**-**	**-**	**-**
EB River Street Right	C	31.4	0.75	119	#236
WB River Street Left/Thru | Thru/Right	F	91.8	1.00	~201	#318
NB Blue Hill Avenue Left/Bear left	E	77.1	0.91	251	#423
NB Blue Hill Avenue Thru | Thru | Thru	B	13.4	0.30	123	149
NB Blue Hill Avenue Bear Right/Right	B	13.2	0.48	152	235
SB Blue Hill Avenue Thru | Thru | Thru/Right	D	36.2	0.46	155	195
SEB Cummins Highway Bear Right/Right	C	33.5	0.72	107	172
NWB MBTA Busway Bear Right	D	49.7	0.14	18	45
NWB MBTA Busway Right	A	0.0	0.01	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.25	-	0
WB River Street Left/Thru	A	0.2	0.01	-	1
NB MBTA Bus Entrance Left/Right	B	14.2	0.09	-	7
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.26	-	0
WB River Street Thru	A	0.0	0.28	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	16.7	0.14	-	12

 # 95th percentile volume exceeds capacity.
Grey shading indicates a decrease to LOS E or F from Existing (2017) Condition.

The signalized intersection of **River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway** continues to operate at LOS C during the a.m. peak hour and decreases to LOS D during the p.m. peak hour under the No-Build Condition. During the a.m. and p.m. peak hours, the River Street westbound approach decreases from LOS E to LOS F. The Blue Hill Avenue northbound shared left/bear left movement decreases from LOS D to LOS E during the a.m. peak hour. All other movements at the intersection continue to operate at LOS D or better.

2.1.8 BUILD (2024) CONDITION

As previously summarized, the Project site is located adjacent to the MBTA Mattapan Station, occupying the current public parking lot. The Project consists of two new buildings with approximately 135 residential units, including 2 townhouse units (3 bedroom) that will have ground floor accessibility, and a future build-out of nine condominium units. Additionally, the project will include 10,000 sf of commercial space, a 2,000 sf community room, 70 Phase I underground residential parking spaces for the rental units, up to 9 parking spaces for the condominium units, approximately 8 commercial parking spaces on River Street, and 50 MBTA commuter parking spaces.

2.1.8.1 Site Access and Vehicle Circulation

Vehicular access to the site will be provided by the existing MBTA Bus Entrance Driveway on River Street, west to the Project site. This entrance will provide access to 70 underground parking spaces for residential use, 50 surface parking spaces for MBTA commuters, and MBTA buses pick-up/drop-offs. All vehicles and buses will exit the site via the existing MBTA Bus Exit Driveway on River Street, east to the Project site. Loading, trash/recycling, service, and delivery activity will also take place on the site. The Project will include a vestibule with standard bicycle storage and condensed bicycle storage for approximately 135 bicycles.

Primary pedestrian access to the site will be from River Street. Pedestrian access will also be provided at the rear of the retail space to provide direct access to Mattapan Station. The site plan is shown in **Figure 2.12.**

2.1.8.2 Parking

The parking goals developed by the BTD for this section of Mattapan are a maximum of 0.75 – 1.25 parking spaces per residential unit. The Project is proposing to construct a total of 70 parking spaces in a below-grade garage under Phase I, and nine parking spaces under Phase II, resulting in a parking ratio of 0.55 parking spaces per residential unit. Additionally, the Project will provide approximately 8 on-street parking spaces on River Street for commercial use by setting back the Phase I building. It is expected that both residents and patrons will take advantage of numerous transit services available at nearby Mattapan Station, along with ride-share and bicycling. All of these travel modes are consistent with state and city transit-oriented development goals.

2.1.8.3 Loading and Service Accommodations

Loading and service operations for the Project will occur on the site and will accommodate up to an SU-36 box truck, which is expected to be the largest vehicle traveling to the site. Trash pick-up will also occur on the site without impacting pedestrian and vehicular movements along River Street.

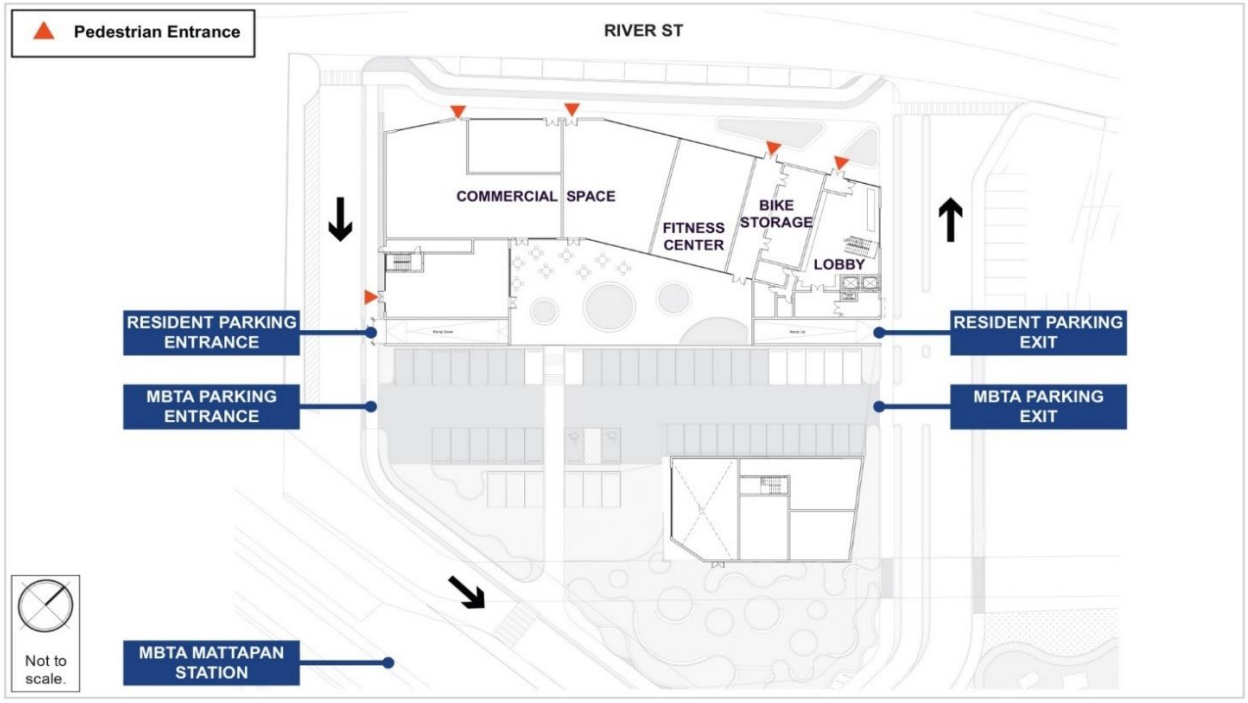
Delivery estimates for the residential element of the Project are based on data provided in the Truck Trip Generation Rates by Land Use in the Central Artery/Tunnel Project Study Area report[1]. Deliveries to the Project site will likely be SU-36 trucks and smaller delivery vehicles. Residential units primarily generate delivery trips related to small packages and prepared food. Based on the CTPS report, the Project is expected to generate one light truck trip per day to the Site.

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

2.1.8.4 Bicycle Accommodations

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure bicycle parking for residents and short-term bicycle racks for visitors. Based on BTD guidelines, the Project will supply a minimum of 135 secure bicycle parking spaces on the Project's ground floor. The Proponent is also proposing to construct a separated bicycle facility along the northern edge of the site to provide connectivity between the Neponset River Greenway and Mattapan Square, River Street, and Blue Hill Avenue.

Figure 2.12. *Site Plan*



2.1.9 TRIP GENERATION METHODOLOGY

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

To estimate the number of trips expected to be generated by the Project, data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*[2] were used. ITE provides data to estimate the total number of unadjusted vehicular trips associated with the Project. In an urban setting well-served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit. To estimate the trip generation for the Project, the following ITE land use code (LUCs) were used:

Land Use Code 220 – Apartment. The apartment land use includes rental dwelling units located within the same building with at least three other dwelling units. Calculations of the number of trips use ITE's average rate per residential unit.

Land Use Code 820 – Shopping Center. The Shopping Center land use code is defined as an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Shopping center trip generation estimates are based on average vehicle rates per square footage of retail space.

1 Trip Generation Manual, 9th Edition; Institute of Transportation Engineers; Washington, D.C.; 2012.
2 Summary of Travel Trends: 2009 National Household Travel Survey; FHWA; Washington, D.C.; June 2011.

2.1.9.1 Project Trip Generation

The mode share percentages shown in **Table 2.8** were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates. The trip generation for the Project by mode is shown in **Table 2.9**. The detailed trip generation information is provided as an attachment to the EPN

2.1.9.2 Mode Share

BTD provides vehicle, transit, and walking mode split rates for different areas of Boston. The project is located within designated Area 14 – Blue Hill Avenue, Dorchester/Mattapan. The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[3]. The person trips were then distributed to different modes according to the mode shares shown in **Table 2.8.**

Table 2-8: Travel Mode Shares

Time Period		Land Use	Vehicle Occupancy Rate[1]	Walk/Bike Share[2]	Transit Share[2]	Vehicle Share[2]
Daily	In	Residential	1.13	18%	14%	68%
	Out		1.13	18%	14%	68%
	In	Retail	1.78	24%	8%	68%
	Out		1.78	24%	8%	68%
a.m. Peak Hour	In	Residential	1.13	27%	11%	62%
	Out		1.13	14%	28%	58%
	In	Retail	1.78	35%	5%	60%
	Out		1.78	22%	15%	63%
p.m. Peak Hour	In	Residential	1.13	14%	28%	58%
	Out		1.13	27%	11%	62%
	In	Retail	1.78	22%	15%	63%
	Out		1.78	35%	5%	60%

1. 2009 National Household Travel Survey.
2. Based on rates published by the Boston Transportation Department for Area 14.

Table 2-9 Project Trip Generation

Time Period		Walk/Bike Trips	Transit Trips	Primary Vehicle Trips
Daily				
Apartment[1]	In	91	71	305
	Out	91	71	305
	Total	**182**	**142**	**610**
Retail[2]	In	91	31	146
	Out	91	31	146
	Total	**182**	**62**	**292**
a.m. Peak Hour				
Apartment[1]	In	4	2	9
	Out	9	17	32
	Total	**13**	**19**	**41**
Retail[2]	In	4	1	3
	Out	2	1	2
	Total	**6**	**2**	**5**
p.m. Peak Hour				
Apartment[1]	In	9	17	31
	Out	9	4	18
	Total	**18**	**21**	**49**
Retail[2]	In	7	5	11
	Out	12	2	11
	Total	**19**	**7**	**22**

1. Based on ITE LUC 220 – 135 Apartment units, average rate.
2. Based on ITE LUC 820 – 10,000 sf Shopping Center, average rate.

As shown in Table 2-9, the Project is expected to generate approximately 46 vehicular trips during the weekday a.m. peak hour and 71 vehicular trips during the weekday p.m. peak hour. Phase II of the project will generate approximately 3 vehicular trips during the p.m. peak hour (2 in and 1 out). These additional new trips are expected to have minimal impacts on traffic operations throughout the study area.

2.1.9.3 Trip Distribution

The trip distribution identifies the various travel paths for vehicles arriving and leaving the Project site. Trip distribution patterns for the Project were based on BTD's origin-destination data and trip distribution patterns presented in traffic studies for nearby projects. The vehicle trips associated with the Project were assigned to the proposed parking garage on site. The trip distribution patterns for the Project are illustrated in Figure 2.13 and Figure 2.14.

2.1.9.4 Build (2024) Traffic Volumes

The vehicle trips were distributed through the study area. The project-generated trips for the weekday a.m. Peak Hour and weekday p.m. Peak Hour are shown in Figure 2.15 and Figure 2.16 , respectively. The trip assignments were added to the No-Build (2024) Condition vehicular traffic volumes to develop the Build (2024) Condition vehicular traffic volumes. The Build (2024) weekday a.m. Peak Hour and weekday p.m. Peak Hour traffic volumes are shown on Figure 2.17 and Figure 2.18 , respectively.

2.1.10 BUILD (2024) CONDITION TRAFFIC OPERATIONS CAPACITY ANALYSIS

The Build (2024) Condition capacity analysis uses the same methodology as the Existing (2017) Condition capacity analysis and the No-Build (2024) Condition capacity analysis. Table 2.10 and Table 2.11 present the Build (2024) Condition capacity analysis for the weekday a.m. Peak Hour and weekday p.m. Peak Hour, respectively. The detailed analysis sheets are provided as an attachment to the EPNF.

Figure 2.13. *Vehicle Trip Distribution - Entering*

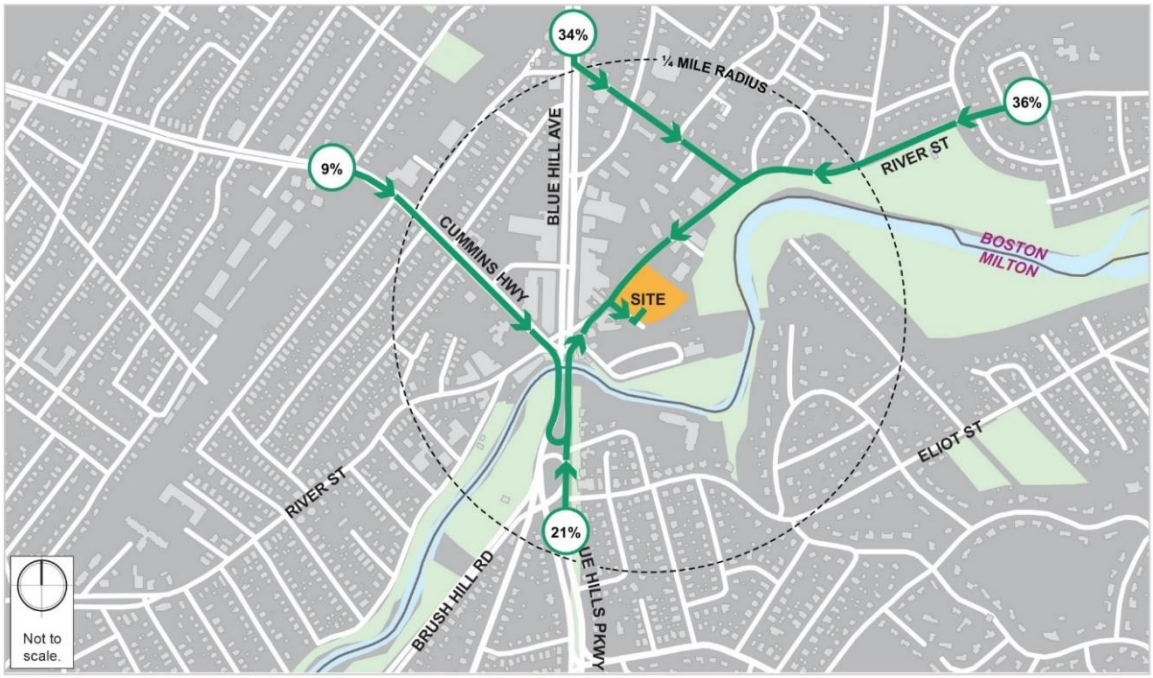


Figure 2.14. *Vehicle Trip Distribution - Exiting*

Figure 2.15. *Project-generated Trips, Weekday a.m. Peak Hour*

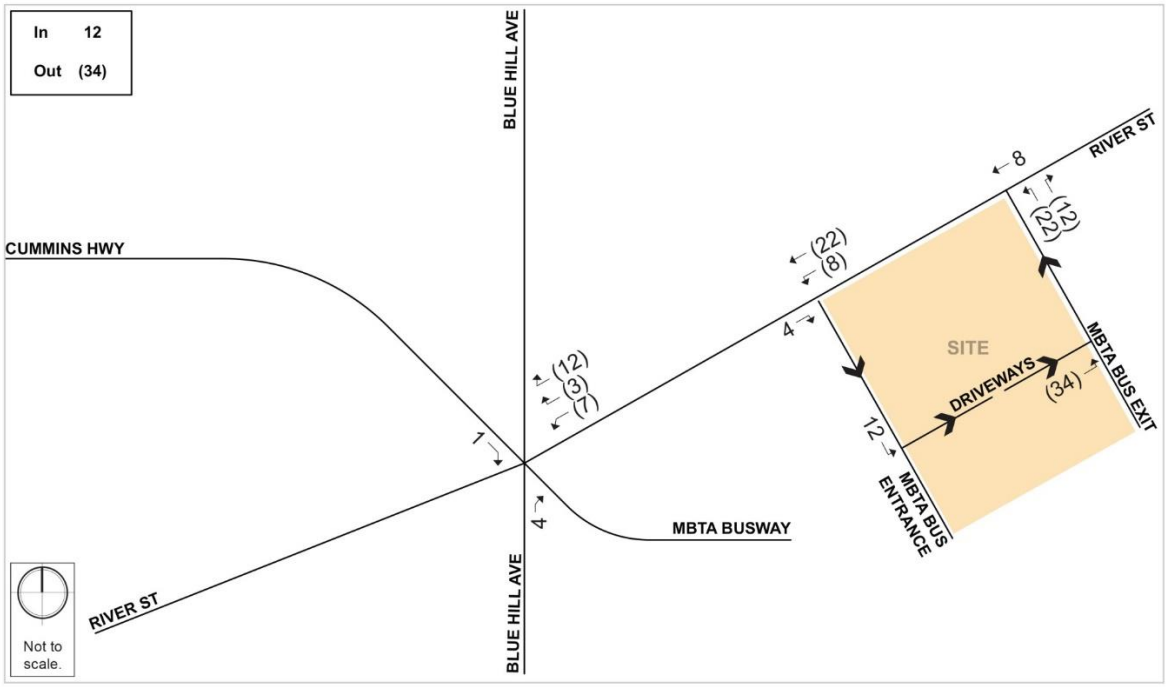


Figure 2.16. *Project-generated Trips, Weekday p.m. Peak Hour*

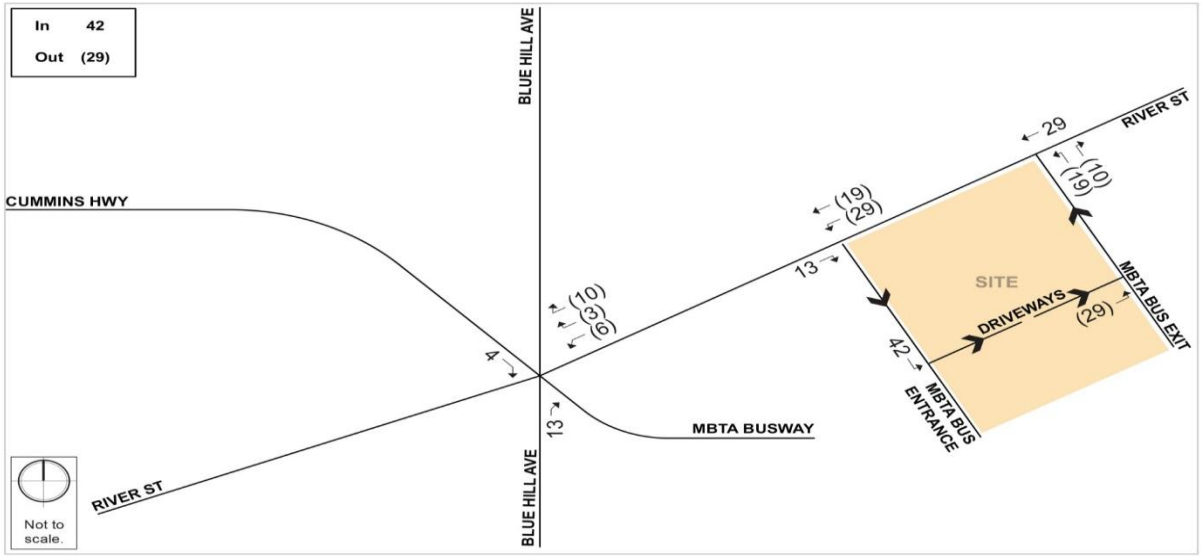


Figure 2.17. *Build (2024) Condition Traffic Volumes, Weekday a.m. Peak Hour*

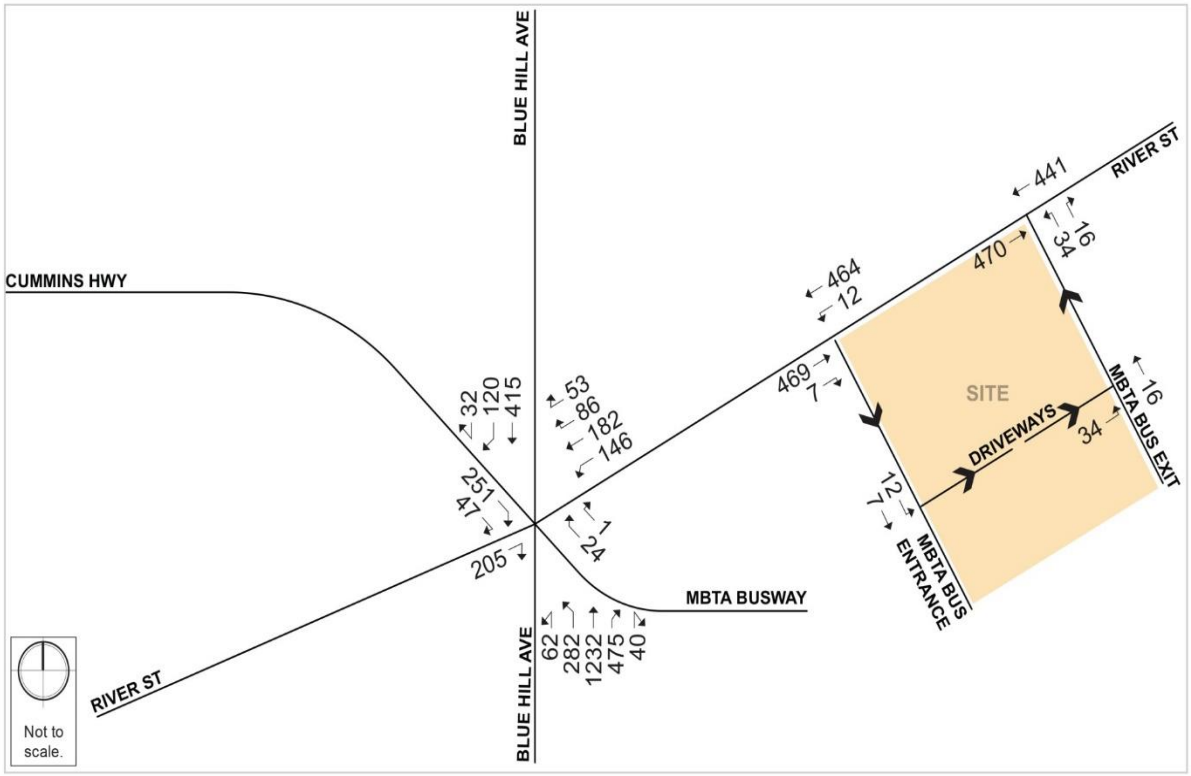


Figure 2.18. *Build (2024) Condition Traffic Volumes, Weekday p.m. Peak Hour*

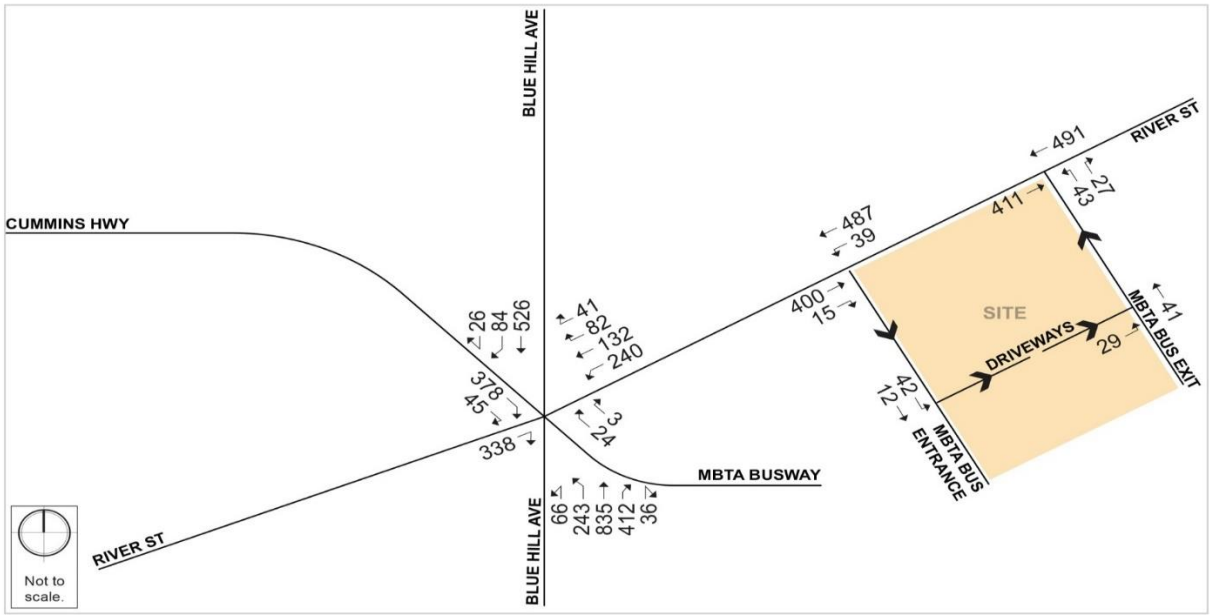


Table 2-10 Build (2024) Condition Capacity Analysis Summary, Weekday a.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**C**	**33.5**	**-**	**-**	**-**
EB River Street Right	A	9.7	0.41	14	78
WB River Street Left/Thru | Thru/Right	F	90.0	1.00	201	#319
NB Blue Hill Avenue Left/Bear left	E	59.0	0.81	256	#402
NB Blue Hill Avenue Thru | Thru | Thru	B	14.9	0.43	188	222
NB Blue Hill Avenue Bear Right/Right	B	14.9	0.55	189	287
SB Blue Hill Avenue Thru | Thru | Thru/Right	D	35.6	0.42	133	170
SEB Cummins Highway Bear Right/Right	C	32.0	0.72	74	103
NWB MBTA Busway Bear Right	D	49.8	0.14	19	48
NWB MBTA Busway Right	A	0.0	0.12	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.29	-	0
WB River Street Left/Thru	A	0.3	0.01	-	1
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.29	-	0
WB River Street Thru	A	0.0	0.31	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	19.9	0.24	-	23

 # 95th percentile volume exceeds capacity.

Table 2-11 Build (2024) Condition Capacity Analysis Summary, Weekday p.m. Peak Hour

Intersection/Approach	LOS	Delay (s)	V/C Ratio	50th Percentile Queue (ft)	95th Percentile Queue (ft)
Signalized					
River Street/Blue Hill Avenue/Cummins Highway/MBTA Busway	**D**	**39.9**	**-**	**-**	**-**
EB River Street Right	C	31.4	0.75	119	#236
WB River Street Left/Thru | Thru/Right	F	102.2	1.05	~223	#337
NB Blue Hill Avenue Left/Bear left	E	77.1	0.91	251	#423
NB Blue Hill Avenue Thru | Thru | Thru	B	13.4	0.30	123	149
NB Blue Hill Avenue Bear Right/Right	B	13.6	0.49	160	246
SB Blue Hill Avenue Thru | Thru | Thru/Right	D	36.4	0.46	155	195
SEB Cummins Highway Bear Right/Right	C	33.7	0.72	109	175
NWB MBTA Busway Bear Right	D	49.7	0.14	18	45
NWB MBTA Busway Right	A	0.0	0.01	0	0
Unsignalized					
River Street/MBTA Bus Entrance Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru/Right	A	0.0	0.26	-	0
WB River Street Left/Thru	A	1.0	0.04	-	3
River Street/MBTA Bus Exit Driveway/Parking Lot Driveway	**-**	**-**	**-**	**-**	**-**
EB River Street Thru	A	0.0	0.26	-	0
WB River Street Thru	A	0.0	0.30	-	0
NB MBTA Bus Exit/Parking Lot Left/Right	C	20.2	0.32	-	34

 # 95th percentile volume exceeds capacity.

As shown in Table 2-10 and Table 2-11, the study area intersections are expected to continue to operate at the same LOS as the No-Build Conditions. The Project is expected to have minimal impact on traffic operations throughout the study area and can be constructed without the need for additional capacity or operational improvements within the study area.

2.1.11 Transportation Demand Management

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

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

The Proponent is prepared to take advantage of good transit access in marketing the site to future residents by working with them to implement the following TDM measures to encourage the use of non-vehicular modes of travel. The TDM measures for the Project may include, but are not limited, to the following:

- TDM will be facilitated by the nature of the Project (which does not generate significant peak hour trips) and its proximity to public transit alternatives.

- The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries, and will work with tenants as they move in to the retail/commercial spaces to raise awareness of public transportation, bicycling, and walking opportunities;

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

- The Proponent will provide an annual (or more frequent) newsletter or bulletin summarizing transit, ridesharing, bicycling, alternative work schedules, and other travel options;

- The Proponent will provide electric vehicle charging stations for five percent of the parking spaces on the site;

- The Proponent will provide information on travel alternatives for employees and visitors via the Internet and in the building lobby;

- The Proponent will explore the feasibility of providing spaces on-site for a car sharing service.

2.1.12 Transportation Mitigation Measures/Access Plan Agreement

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

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

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

2.1.13 Evaluation of Short-Term Construction Impacts

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

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

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

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

2.1.14 Construction Management Plan

A Construction Management Plan (CMP) will address construction-period issues and will be submitted by the General Contractor to the Boston Transportation Department (BTD) in support of the building permit application. The CMP will be filed with BTD in accordance

with the City's Transportation Maintenance Plan requirements. The CMP will cover key construction-related issues including truck routes, occupancy of public ways, noise and dust attenuation, rodent control, and hours of construction activity. The CMP will also detail the work schedule, construction staging, and construction-related parking, and pedestrian access and safety.

As noted above, 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. Also, truck staging and lay-down areas for the project will be carefully planned. Any need for street occupancy (lane closures) along roadways adjacent to the project is not known at this time.

Contractors will be encouraged to devise access plans for their personnel that encourages the use of public transit and off-site parking. During the construction period, pedestrian activity adjacent to the site may be impacted by sidewalk closures. Toward this end, a variety of measures will be developed and implemented to protect the safety of pedestrians, such as temporary walkways, and directional/informational signage to direct the route to be taken by pedestrians around the construction site.

2.2 ENVIRONMENTAL PROTECTION

2.2.1 WIND

The objective of a Wind Assessment is to determine the effect a proposed development would have on the pedestrian level winds in the vicinity of the Project. The primary criteria used to determine impacts are the surrounding terrain and the height and façade treatment of a proposed building.

Given the height, size, massing, and proposed façade treatment of the project, as well as proximity to nearby buildings, and tree canopy to the southeast of the site, the proponent has made a preliminary determination that the Project is not expected to cause any adverse wind impact on the surrounding area at the pedestrian level and no wind analysis is required. Moreover, as a result of the placement of the proposed new building in the existing context, Pedestrian Level Winds along adjacent sidewalks are not anticipated to exceed the BPDA guidelines for wind speeds of 31 miles per hour.

2.2.2 SHADOW

2.2.2.1 Introduction

To assess the shadow impacts associated with the project, a shadow analysis was conducted for the hours of 9:00 a.m., 12 noon, and 3:00 p.m. during the Vernal Equinox (March 21), Summer Solstice (June 21), Autumnal Equinox (September 21), and the Winter Solstice (December 21). Impacts at 6:00 p.m. during the summer and autumn were also examined. The study used the applicable Altitude and Azimuth data for Boston presented in Appendix B of the BPDA's 2006 Development Review Guidelines.

The analysis presents the existing shadow and new shadow that would be created by the Project, illustrating the incremental impact of the Project. The Study focuses on nearby open spaces and the sidewalks adjacent to and in the vicinity of the Project site, along with major pedestrian destinations, and the Mattapan MBTA bus and trolley stops. New shadow will generally be limited to the sidewalk on River Street and the adjacent Municipal Parking Lot #013. Table 2-12, Shadow Study Dates and Times, identifies the dates and times for which shadow conditions have been simulated.

Table 2-12: Shadow Study Dates and Times

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

The following descriptions are to be used in conjunction with the study images in Figures 2-1 to 2-4. For the purposes of clarity, net new shadow on the ground is shown in light blue, while existing shadows are shown in gray. Areas where new shadows overlap with existing shadows are shown in dark blue.

Vernal Equinox — March 21st

At 9:00 a.m. of the Vernal Equinox, new shadow is cast in the northwesterly direction with the majority of the shadow falling in the Municipal Parking Lot #013, located at 451 River Street, directly across from the Project Site. At noon, new shadows largely remain within the project boundary, with some new shadow falling on the northeast edge of the property, across the MBTA bus route, and into the abutting property at 442 River St. At 3:00 p.m., new shadow remains primarily cast in a northeasterly direction within the project boundary, but also falls on the abutting 442 River St. property and its 4 story apartment building.

Summer Solstice — June 21st

At 9:00 a.m. on the Summer Solstice, new shadow is cast in a northwesterly direction with the majority of the new shadow falling within site boundaries approaching River Street. There is a small shadow at noon, all within the site. At 3:00 p.m., new shadows largely remain within the project boundary, with some new shadow falling on the northeast edge of the property, across the MBTA bus route, and into the abutting property at 442 River St. At 6:00 p.m., long shadows are cast easterly across the Neponset River Greenway entrance and across the MBTA trolley tracks.

Autumnal Equinox — September 21st

At 9:00 a.m. of the Autumnal Equinox, new shadow is cast in the northwesterly direction with the majority of the shadow falling in Municipal Parking Lot #013, located at 451 River Street, directly across from the Project Site. At noon, new shadows largely remain within the project boundary, with some new shadow falling on the northeast edge of the property across the MBTA bus route. At 3:00 p.m., new shadow is primarily cast in a northeasterly direction within the project boundary, but also falls on the abutting 442 River St. property and its 4 story apartment building.

Winter Solstice — December 21st

The Winter Solstice produces the longest shadows of the year for analysis. At 9:00 a.m., shadows are cast to the northeast and cover Municipal Parking Lot #013, located at 451 River Street, directly across from the Project Site. At noon, shadows fall north across River Street. At 3:00 p.m., long shadows are cast to the northeast parallel to River Street.

Figure 2-19 Shadow Studies

Vernal Equinox (March 21)

Existing Shadows

New Shadows Within Existing Shadows

Net New Shadows

9:00 AM

12:00 PM

3:00 PM

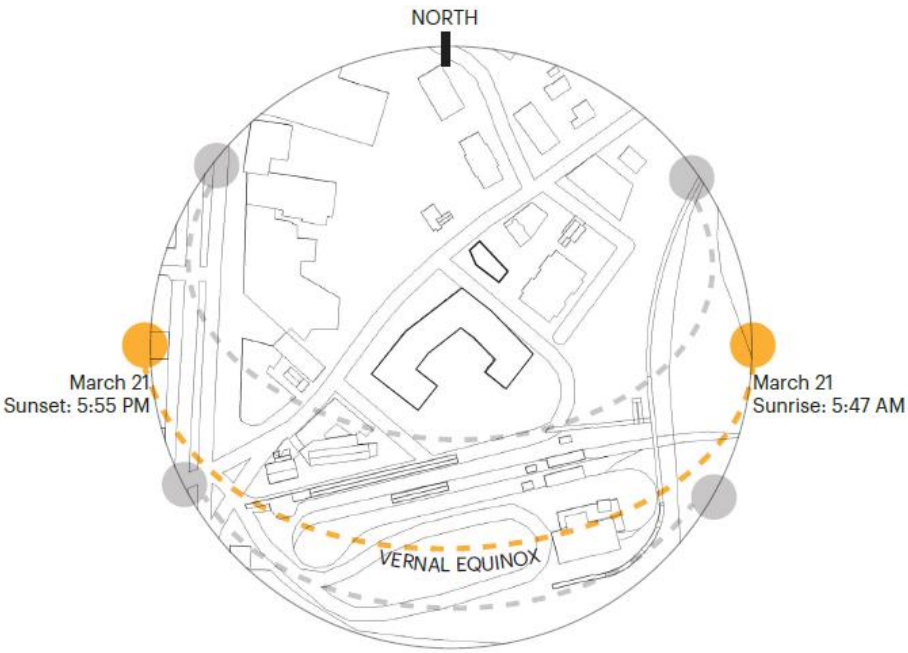

NORTH
March 21
Sunset: 5:55 PM
March 21
Sunrise: 5:47 AM
VERNAL EQUINOX

Figure 2-20 Shadow Studies

Summer Solstice (June 21)

9:00 AM

12:00 PM

3:00 PM

6:00 PM

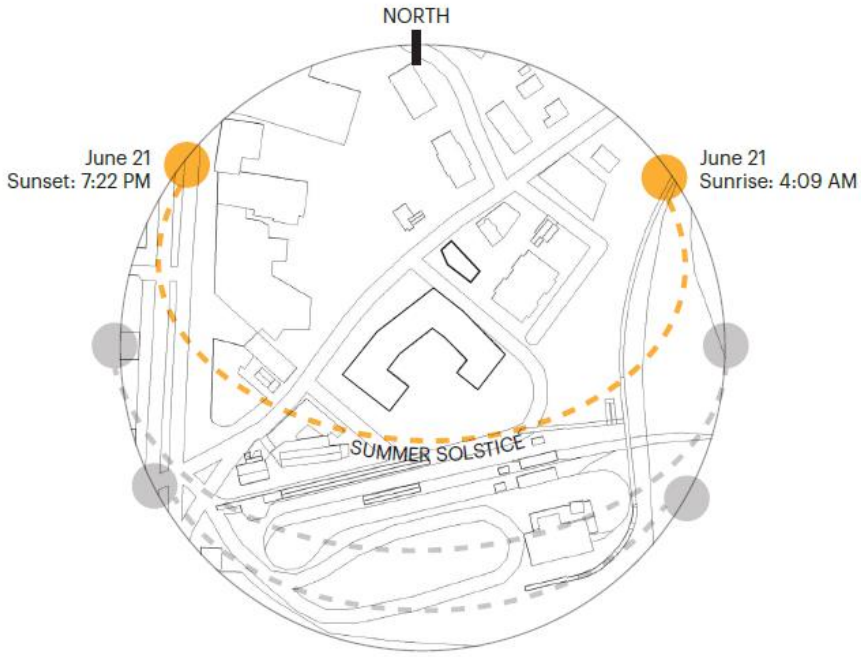

NORTH
June 21
Sunset: 7:22 PM
June 21
Sunrise: 4:09 AM
SUMMER SOLSTICE

Figure 2-21: Shadow Studies

Autumnal Equinox (September 21)

9:00 AM

12:00 PM

3:00 PM

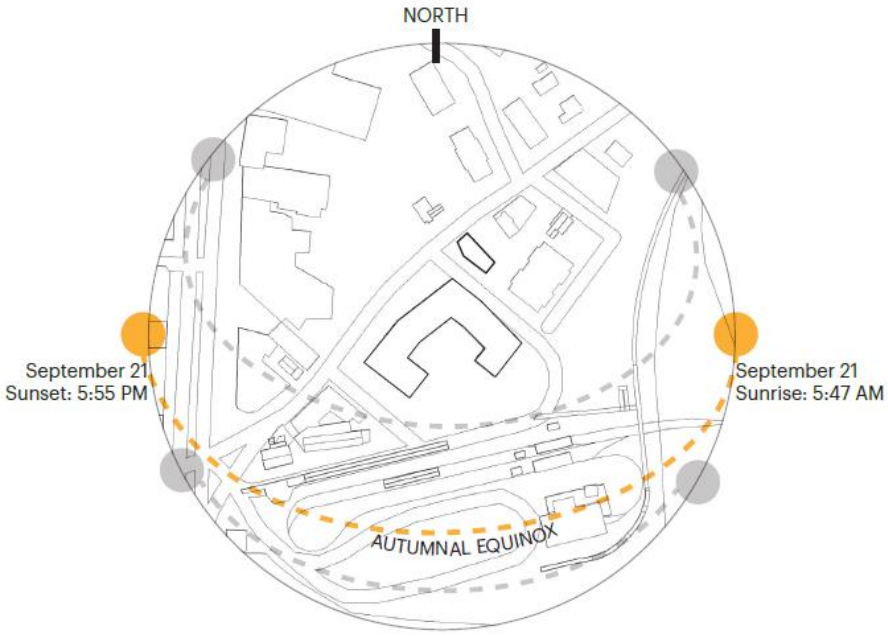

NORTH
September 21
Sunset: 5:55 PM
September 21
Sunrise: 5:47 AM
AUTUMNAL EQUINOX

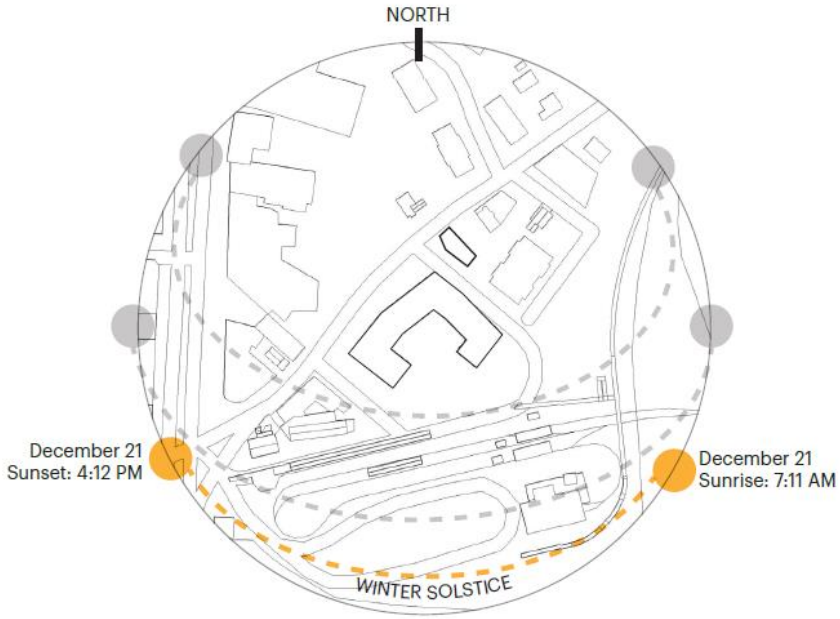
Figure 2-22: Shadow Studies

Winter Solstice (December 21)

9:00 AM

12:00 PM

3:00 PM


NORTH
December 21
Sunset: 4:12 PM
December 21
Sunrise: 7:11 AM
WINTER SOLSTICE

2.2.2.2 Conclusions

Given the fact that the Project consists of structures of a relatively low height, the shadow impacts associated with the Project are minimal. Typical of a densely-populated urban area, some new shadow will be cast on, but primarily limited to, the one-block area along River Street at the Project site, and directly across the street at the Municipal Parking Lot #013.

2.2.3 DAYLIGHT

2.2.3.1 Introduction

The purpose of the daylight analysis is to estimate the extent to which the proposed Project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of the Project site. Given the scale, height, and massing of the Project, the developer has made a preliminary determination that a daylight analysis is not required. Additionally, the absence of a street wall or significant obstructions will ensure adequate daylight for the Project from all directions. Moreover, the building's courtyard is oriented south to maximize daylight on public spaces such as the proposed outdoor seating that will be located adjacent to the River Street commercial space, and MBTA commuter parking, along with public open space adjacent to the Neponset River Greenway entrance.

2.2.4 SOLAR GLARE

A solar glare analysis is intended to measure potential reflective glare from the buildings onto streets, public open spaces, and sidewalks in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. The proposed Project does not include the use of reflective glass or other reflective materials on the building facades that would result in adverse impacts from reflected solar glare generated by the Project.

2.2.5 AIR QUALITY

2.2.5.1 Introduction

Air quality analyses were performed for the proposed Mattapan Station Project (the "Project"). The proposed Project will replace an existing parking lot with Phase I consisting of 135-units of mixed-income rental units, and 70 below-grade parking spaces, and Phase II comprised of 9 mixed-income, two-bedroom condominium units with up to 9 surface parking spaces, in an amenity-rich urban community on a 120,621 Gross Square Foot site. The project also includes a below grade 70-space parking garage for the residential rentals, approximately 8 commercial parking spaces on River Street, and a 50-space surface parking lot that will be owned and operated by the MBTA. These analyses consisted of: 1) an evaluation of existing air quality; 2) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's fuel combustion and parking garage, and 3) a microscale CO analysis for intersections in the Project area that meet the BPDA criteria for requiring such an analysis.

2.2.5.2 Background Concentrations

The City of Boston is currently classified as being in attainment of the Massachusetts and National Ambient Air Quality Standards ("NAAQS") for all of the criteria air pollutants except ozone **(see Table 2-13)**. These air quality standards have been established to protect the public health and welfare in ambient air, with a margin for safety.

The Massachusetts Department of Environmental Protection (MassDEP) currently operates air monitors in various locations throughout the city. The closest, most representative, MassDEP monitors for carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), fine particulate matter ($PM_{2.5}$), coarse particulate matter (PM_{10}), and lead are located at Dudley Square on Harrison Avenue, Boston, MA.

Table 2-14 summarizes the MassDEP air monitoring data, for the most recent available, complete, three-year period (2013-2015), that are considered to be representative of the project area. **Table 2.15** shows that the existing air quality in the Project area is generally much better than the NAAQS. The highest impacts relative to a NAAQS are for ozone and $PM_{2.5}$. Ozone is a regional air pollutant on which the small amount of additional traffic generated by this Project will have an insignificant impact. The Project's operations will not have a significant impact on local $PM_{2.5}$ concentrations.

2.2.5.3 Air Quality Modeling Methodology and Results

Air quality dispersion modeling analyses consisted of: 1) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's fuel combustion and parking garage, and 2) a microscale CO analysis for intersections in the Project area that meet the BPDA criteria for requiring such an analysis. Emissions calculations and modeling approach for both air dispersion modeling analyses are presented below.

TABLE 2-13
MASSACHUSETTS AND
NATIONAL AMBIENT AIR QUALITY STANDARDS (NAAQS)

Llutant	Averaging Time	NAAQS (µg/m3)
Sulfur Dioxide ($SO_{2)}$	1-hour[P] 3-hour[S] Annual[P] (Arithmetic Mean)	196[a] 1,300[b] 80
Carbon Monoxide (CO)	1-hour[P] 8-hour[P]	40,000[b] 10,000[b]
Nitrogen Dioxide ($NO_{2)}$	1-hour[P] Annual[P/S] (Arithmetic Mean)	188[c] 100
Coarse Particulate Matter ($PM_{10)}$	24-hour[P/S]	150
Fine Particulate Matter ($PM_{2.5)}$	24-hour[P/S] Annual[P] (Arithmetic Mean) Annual[S] (Arithmetic Mean)	35[d] 12[e,f] 15
Ozone ($O_{3)}$	8-hour[P/S]	137[g]
Lead (Pb)	Rolling 3-Month Avg.[P/S]	0.15

P = primary standard; S = secondary stand

TABLE 2-14
PEAK HOUR GARAGE TRAFFIC VOLUMES

Time Period	Entering (vehicles/hour)	Exiting (vehicles/hour)	Total (vehicles/hour)
Weekday Morning Peak hour	12	34	46
Weekday Afternoon Peak Hour	42	29	71

Source: Kittelson & Associates, Inc.

[a] 99th percentile 1-hour concentrations in a year (average over three years).

[b] One exceedance per year is allowed.

[c] 98th percentile 1-hour concentrations in a year (average over three years).

[d] 98th percentile 24-hour concentrations in a year (average over three years).

[e] Three-year average of annual arithmetic means.

[f] As of March 18, 2013, the U.S. EPA lowered the $PM_{2.5}$ annual standard from 15 ug/m^3 to 12 ug/m^3.

[g] Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.070 ppm (137 ug/m^3) (effective December 28, 2015); the annual PM_{10} standard was revoked in 2006.

TABLE 2-14
PEAK HOUR GARAGE TRAFFIC VOLUMES

Time Period	Entering (vehicles/hour)	Exiting (vehicles/hour)	Total (vehicles/hour)
Weekday Morning Peak hour	12	34	46
Weekday Afternoon Peak Hour	42	29	71

Source: Kittelson & Associates, Inc.

ard.

[a] 99th percentile 1-hour concentrations in a year (average over three years).

[b] One exceedance per year is allowed.

[c] 98th percentile 1-hour concentrations in a year (average over three years).

[d] 98th percentile 24-hour concentrations in a year (average over three years).

[e] Three-year average of annual arithmetic means.

[f] As of March 18, 2013, the U.S. EPA lowered the $PM_{2.5}$ annual standard from 15 ug/m^3 to 12 ug/m^3.

[g] Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.070 ppm (137 ug/m^3) (effective December 28, 2015); the annual PM_{10} standard was revoked in 2006.

TABLE 2.15
REPRESENTATIVE EXISTING AIR QUALITY IN THE PROJECT AREA

Pollutant, Averaging Period	Monitor Location	Value ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
CO, 1-hour	Harrison Avenue, Boston	2,141	40,000	5%
CO, 8-hour	Harrison Avenue, Boston	1,260	10,000	12%
NO_2, 1-hour	Harrison Avenue, Boston	96.6	188	51%
NO_2, Annual	Harrison Avenue, Boston	32.8	100	33%
Ozone, 8-hour	Harrison Avenue, Boston	110	137	80%
PM_{10}, 24-hour	Harrison Avenue, Boston	61	150	41%
$PM_{2.5}$, 24-hour	Harrison Avenue, Boston	14.7	35	42%
$PM_{2.5}$, Annual	Harrison Avenue, Boston	6.5	12	54%
Lead, Quarterly	Harrison Avenue, Boston	0.0033	1.5	0.2%
SO_2, 1-hour	Harrison Avenue, Boston	28.5	196	15%

Source: MassDEP, http://www.mass.gov/dep/air/priorities/aqreports.htm., downloaded June 20, 2017.

Notes:

(1) Annual averages are highest measured during the most recent three-year period for which data are available (2013 - 2015). Values for periods of 24-hours or less are highest, second-highest over the three-year period unless otherwise noted.

(2) The eight-hour ozone value is the 3-year average of the annual fourth-highest values, the 24-hour $PM_{2.5}$ value is the 3-year average of the 98th percentile values, the annual $PM_{2.5}$ value is the 3-year average of the annual values – these are the values used to determine compliance with the NAAQS for these air pollutants.

(3) The one-hour NO_2 value is the -year average of the 98th percentile values and the one-hour SO_2 value is the -year average of the 99th percentile values

(4) The one-hour ozone standard was revoked by the US EPA in 2005; the annual PM_{10} standard was revoked in 2006 and the 3-hour SO_2 standard was revoked by the US EPA in 2010.

TABLE 2-16
REPRESENTATIVE EXISTING AIR QUALITY IN THE PROJECT AREA

Pollutant, Averaging Period	Monitor Location	Value ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Percent of NAAQS
CO, 1-hour	Harrison Avenue, Boston	2,141	40,000	5%
CO, 8-hour	Harrison Avenue, Boston	1,260	10,000	12%
NO_2, 1-hour	Harrison Avenue, Boston	96.6	188	51%
NO_2, Annual	Harrison Avenue, Boston	32.8	100	33%
Ozone, 8-hour	Harrison Avenue, Boston	110	137	80%
PM_{10}, 24-hour	Harrison Avenue, Boston	61	150	41%
$PM_{2.5}$, 24-hour	Harrison Avenue, Boston	14.7	35	42%
$PM_{2.5}$, Annual	Harrison Avenue, Boston	6.5	12	54%
Lead, Quarterly	Harrison Avenue, Boston	0.0033	1.5	0.2%
SO_2, 1-hour	Harrison Avenue, Boston	28.5	196	15%

Source: MassDEP, http://www.mass.gov/dep/air/priorities/aqreports.htm., downloaded June 20, 2017.

Notes:

(1) Annual averages are highest measured during the most recent three-year period for which data are available (2013 - 2015). Values for periods of 24-hours or less are highest, second-highest over the three-year period unless otherwise noted.

(2) The eight-hour ozone value is the 3-year average of the annual fourth-highest values, the 24-hour $PM_{2.5}$ value is the 3-year average of the 98th percentile values, the annual $PM_{2.5}$ value is the 3-year average of the annual values – these are the values used to determine compliance with the NAAQS for these air pollutants.

(3) The one-hour NO_2 value is the -year average of the 98th percentile values and the one-hour SO_2 value is the -year average of the 99th percentile values

(4) The one-hour ozone standard was revoked by the US EPA in 2005; the annual PM_{10} standard was revoked in 2006 and the 3-hour SO_2 standard was revoked by the US EPA in 2010.

2.2.5.4 Fuel Combustion Equipment and Parking Garage

The Project will include roof-top fuel combustion equipment that will emit air pollutants to the atmosphere when operating. Fuel combustion equipment for the Project will include individual residential gas-fired boilers/hot water heaters. The objective of this analysis was to determine the maximum CO concentrations

2.2.5.5 Fuel Combustion Equipment

The Project will include fuel combustion equipment that will emit air pollutants to the atmosphere when operating. Fuel combustion equipment for the Project will include individual residential gas-fired boilers/hot water heaters (each with a heat input capacity of 0.15 million Btu per hour (MMBtu/hour).

EPA's AP-42 document was used to determine the uncontrolled CO emission rate for the gas-fired boilers. The gas-fired boiler heat input capacity for the project will be approximately 20.3 MMBtu/hour. Assuming a heating value of 1,020 Btu/cubic foot of natural gas this translates to approximately 19,853 cubic feet of natural gas burned per hour. Using a CO emission factor of 0.084 lb/MMBtu,[4] the maximum total CO emissions from the project will be 1.7 lbs/hour (0.21 gram/second). This calculation conservatively assumes that all of the gas-fired fuel combustion equipment is operating simultaneously at its full design capacity.

2.2.5.6 Parking Garage

The proposed parking garage will have mechanical ventilation required for one level of parking. The garage ventilation system will be designed to provide adequate dilution of the motor vehicle emissions before they are vented outside. The design of the garage ventilation system will meet all building code requirements. Full ventilation of the garage will require fans that will supply a maximum flow of approximately 23,869 cubic feet per minute (cfm) of fresh air. This quantity of air is designed to meet the building code and will be more than adequate to dilute the emissions inside the parking garage to safe levels before they are vented outside. The garage ventilation exhausts will likely be located at two vents at 10 feet above ground level.
The peak weekday morning and afternoon one-hour entering and exiting traffic volumes for the parking garage are shown in Table 2-17.

AERMOD predicted that the maximum one-hour CO concentration from the fuel combustion equipment and parking garage exhaust vents will be 0.24 ppm (278.01 µg/m^3). This concentration represents the maximum CO concentration at any location surrounding the Project.

The maximum predicted eight-hour CO concentration at any ambient (outside) location will be significantly smaller than the one-hour prediction. This is because: 1) the average number of vehicles entering and exiting the garage over the peak eight-hour period will be significantly less than the peak one-hour values used to predict the peak one-hour CO impact, 2) all fuel combustion equipment is operating at their maximum load simultaneously, and 3) the worst-case meteorological conditions used to predict the peak one-hour impact will not persist for eight consecutive hours. AERSCREEN guidance allows the maximum eight-hour CO impact to be conservatively estimated by multiplying the

[4] US EPA, "Compilation of Air Pollutant Emission Factors, AP-42, Fifth Edition Volume I: Stationary Point and Area Sources", Table 1.4-1, January 1995 (revised July 1998).

maximum one-hour impact by a factor of 0.9 (i.e. the eight-hour impact is 90% of the one-hour impact). The The maximum predicted eight-hour CO concentration was determined to be approximately 0.22 ppm (0.24 ppm x 0.9).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare in ambient air, with a margin for safety. The NAAQS for CO are 35 ppm for a one-hour average and 9 ppm for an eight-hour average. The Commonwealth of Massachusetts has established the same standards for CO. The CO background values of 1.9 ppm for a one-hour period and 1.1 ppm for an eight-hour period were added to the maximum predicted fuel combustion ambient impacts to represent the CO contribution from other, more distant, sources. With the background concentration added, the peak, total, one-hour and eight-hour CO impacts from the fuel combustion equipment, at any location around the building, will be no larger than 2.1 ppm and 1.3 ppm, respectively. These maximum predicted total CO concentrations (fuel combustion equipment and parking garage plus background) are safely in compliance with the NAAQS. This analysis demonstrates that the operation of the fuel combustion equipment will not have an adverse impact on air quality.

TABLE 2-17
FUEL COMBUSTION EQUIPMENT AND PARKING GARAGE
AIR QUALITY IMPACTS

Location	Peak Predicted One-Hour Impact (ppm)	One-Hour NAAQS (ppm)	Peak Predicted Eight-Hour Impact (ppm)	Eight-Hour NAAQS (ppm)
Ambient Air Along River Street Sidewalk	2.1	35 (NAAQS)	1.3	9 (NAAQS)

NAAQS = Massachusetts and National Ambient Air Quality Standards for CO (ppm = parts per million)

* Representative of maximum CO impact at all nearby residences, buildings, and sidewalks.

2.2.5.7 Microscale CO Analysis for Selected Intersections

The Boston Planning & Development Agency (BPDA) typically requires a microscale air quality analysis for any intersection in the Project study area where the level of service (LOS) is expected to deteriorate to D and the proposed project causes a 10% increase in traffic or where the level of service is E or F and the project contributes to a reduction in LOS. For such intersections, a microscale air quality analysis is required to examine the carbon monoxide (CO) concentrations at sensitive receptors near the intersection.

A microscale air quality analysis was not performed for this Project due to the Project trip generation having minimal impacts on the overall delays at the four intersections. The Project will generate approximately 46 motor vehicle trips during the morning peak traffic hour and approximately 71 motor vehicle trips during the afternoon traffic hour.

The overall LOS will be the same during the morning peak traffic hour for all intersections for the Existing and No-Build scenarios and improve for the Build scenario at the MBTA Bus Entrance/River Street intersection. The overall LOS will be the same during the afternoon peak traffic hour for the MBTA Bus Exit/River Street intersection for the Existing, No-Build and Build scenarios. For the Blue Hill Avenue/MBTA Busway/Cummins Highway/River Street intersection, the overall LOS degrades from C to D in the No-Build and Build scenarios. These degradations are due to increases in future background traffic and project-related traffic. However, the increase in traffic at this intersection is less than 10% and the LOS is better than D. In addition, the afternoon overall LOS improves from C to A at the MBTA Bus Entrance/River Street intersection due to project-related traffic improvements.

Table 2-18 shows a comparison of the Existing (2017) and Build (2024) LOS at the three intersections. The motor vehicle trip generation from the Project will not have a significant impact on motor vehicle delays and air pollutant emissions at the analyzed intersections. Therefore, the motor vehicle traffic generated by the Project will not have a significant impact on air quality at any intersection in the Project area and a microscale air quality analysis is not necessary for this Project.

TABLE 2-18
SUMMARY OF LEVEL OF SERVICE

Intersection	Existing LOS (AM/PM)	No Build LOS (AM/PM)	Build LOS (AM/PM)	Requires Analysis?
Blue Hill Avenue/MBTA Busway/Cummins Highway/River Street – signalized	C/C	C/D	C/D	NO*
MBTA Bus Entrance/River Street – unsignalized	C/B	C/B	A/A	NO
MBTA Bus Exit/River Street – unsignalized	C/C	C/C	C/C	NO

The LOS shown represents the overall delay at each signalized intersection and the worst approach at the unsignalized intersection.

*Less than 10% increase in project-related traffic.

Source: Howard Stein Hudson, Inc.

2.2.5.8 Potential Air Quality Impacts from MBTA Buses

A qualitative evaluation was performed to assess the potential air quality impacts associated with MBTA bus activities focusing on fine particulate matter ($PM_{2.5}$) and diesel particulate matter emissions (DPM).

Existing Regulations of $PM_{2.5}$ and DPM

Over the last several years, the EPA promulgated multiple new vehicle emissions standards including heavy duty diesel buses that will reduce particulate matter emissions by up to 90%.[5] Furthermore, the National Ambient Air Quality Standards (NAAQS) set by EPA are designed to protect public health and the environment. The standards are developed based on a variety of scientific studies, including the results of epidemiologic studies that evaluate how human health has been affected by pollutant concentrations in the past. These standards are periodically reviewed and updated based on recent scientific developments. On December 14, 2012, EPA revised the National Ambient Air Quality Standard (NAAQS) for $PM_{2.5}$ (fine particulate matter) and for the first time included near-roadway monitoring requirements for $PM_{2.5}$. The annual standard was reduced from 15.0 micrograms per cubic meter (ug/m^3) to 12.0 ug/m^3. EPA confirmed that most of the U.S. already meets the new standard, including all of Massachusetts.[6]

As described above, EPA has taken steps in reducing overall particulate matter emissions and increasing $PM_{2.5}$ ambient air quality standards. These regulatory standards have significantly reduced PM emissions, including from diesel buses, in the past decade and will continue to do so in the future for the Project Site. This means that by the time any residents are living near the Project area, emissions will be even further reduced from those existing today in the future.

Currently, there is no progress at the federal or state levels to regulate DPM. EPA's National Scale Assessment uses several types of health hazard information to provide a quantitative "threshold of concern" or a health benchmark concentration at which it is expected that no adverse health effects occur at exposures to that level. Health effects information on carcinogenic, short and long term noncarcinogenic end points are used to establish selective protective health levels to compare to the modeled exposures levels. Unfortunately, the exposure response data in human studies are considered too uncertain to develop a carcinogenic unit risk for EPA's use. There is a Reference Concentration (RFC) that is used as a health benchmark protective of chronic noncarcinogenic health effects but it is for diesel exhaust and not specifically set for diesel particulate matter.

Formation of $PM_{2.5}$ and DPM

PM is a widespread air pollutant, consisting of a mixture of solid and liquid particles suspended in the air. Commonly used indicators describing PM that are relevant to health refer to the mass concentration of particles with a diameter of less than 10 µm (PM_{10}) and of particles with a diameter of less than 2.5 µm ($PM_{2.5}$). $PM_{2.5}$, often called fine PM, also comprises ultrafine particles having a diameter of less than 0.1 µm. Typically, $PM_{2.5}$ constitutes approximately 50 to 70% of PM_{10}.

[5] https://www.arb.ca.gov/msprog/onroadhd/reducstd.htm.

[6] EPA, http://www.epa.gov/airquality/particlepollution/2012/20092011map.pdf.

PM is a mixture with physical and chemical characteristics varying by location. Common chemical constituents of PM include sulfates, nitrates, ammonium, other inorganic ions such as ions of sodium, potassium, calcium, magnesium and chloride, organic and elemental carbon, crustal material, particle-bound water, metals (including cadmium, copper, nickel, vanadium and zinc) and polycyclic aromatic hydrocarbons (PAH). In addition, biological components such as allergens and microbial compounds are found in PM.

Primary PM and the precursor gases can have both man-made (anthropogenic) and natural (non-anthropogenic) sources. Anthropogenic sources include combustion engines (both diesel and gasoline), solid-fuel (coal, lignite, heavy oil and biomass) combustion for energy production in households and industry, other industrial activities (building, mining, manufacture of cement, ceramic and bricks, and smelting), and erosion of the pavement by road traffic and abrasion of brakes and tires. Secondary particles are formed in the air through chemical reactions of gaseous pollutants. They are products of atmospheric transformation of nitrogen oxides (mainly emitted by traffic and some industrial processes) and sulfur dioxide resulting from the combustion of sulfur-containing fuels. Secondary particles are mostly found in $PM_{2.5}$.[7] (World Health Organization Regional Office of Europe, Health Effects of Particulate Matter, 2013).

Diesel particulates form a very complex aerosol system. Despite considerable amount of basic research, neither the formation of PM in the engine cylinder, nor its physical and chemical properties or human health effects are fully understood. Nevertheless, the existing medical research suggests that DPM is one of the major harmful emissions produced by diesel engines.

Diesel exhaust is composed of two phases; either gas or particle and both phases contribute to the risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. The particle phase also has many different types of particles that can be classified by size or composition. The size of diesel particulates that are of greatest health concern are those that are in the categories of fine, and ultra fine particles. The composition of these fine and ultra fine particles may be composed of elemental carbon with adsorbed compounds such as organic compounds, sulfate, nitrate, metals and other trace elements. Diesel exhaust is emitted from a broad range of diesel engines; the on road diesel engines of trucks, buses and cars and the off road diesel engines that include locomotives, marine vessels and heavy duty equipment (https://www3.epa.gov/region1/eco/airtox/diesel.html downloaded May 24, 2017).

[7] World Health Organization Regional Office of Europe, Health Effects of Particulate Matter, 2013

As part of the qualitative analysis a comparison of the size and operations of the proposed Project area to Dudley Square MBTA station was performed. The Dudley Square station also located near the MassDEP Harrison Avenue long-term air monitoring station, which is located adjacent to Dudley Square station.. The Dudley Square station processes up to 200 buses during peak hours. (City of Boston, Dudley Square Vision Initiative Transportation Action Plan Draft Report, 2009). The MBTA Mattapan Busway Station only has up to 87 bus trips during peak hours. The historical $PM_{2.5}$ air concentrations (2005-2015) in the Dudley Square area has been reduced by approximately 45%. (MassDEP, Massachusetts Air Quality Report 2015, August 2016). This is primarily due to more stringent EPA emissions standards for diesel buses. This trend will continue in the future as the MBTA replaces older buses with newer and cleaner emitting buses. With the fewer number of buses at the Mattapan station, $PM_{2.5}$ concentrations should be equivalent or lower than those measured near Dudley Square.

2.2.5.9 Stationary Sources Air Quality Results

The results of the air quality analysis for locations outside and around the buildings are summarized in **Table 2.19.** The results in **Table 2.19** represent all outside locations on and near the Project Site, including nearby building air intakes and nearby residences. **Appendix E** contains the AERMOD model output.

The U.S. Environmental Protection Agency (EPA) MOVES2014 emission factor model was used to calculate single vehicle CO emissions rates, for a vehicle speed of 5 mph. The inputs to the MOVES2014 model followed the latest guidance from the MassDEP and were performed for the Existing year of 2017 consistent with the microscale air quality analysis. This represents the worst case, since the MOVES2014 model predicts decreasing CO emissions rates in future years due to more stringent emission control requirements for new motor vehicles. The CO emission rate calculated by MOVES2014, for a speed of 5 mph, was 2.976 grams per hour (gph) for each entering and exiting vehicle. These emission rates apply to wintertime conditions when motor vehicle CO emissions are greatest due to cold temperatures. MOVES2014 model output is provided as an attachment to the EPNF.

To determine the maximum one-hour CO emissions inside the garage it was necessary to estimate the amount of time each motor vehicle will be in the parking garage with its engine running. To be conservative, it was assumed that every car entering the garage will travel to the farthest parking spot, and that the vehicles leaving the garage will have to travel the same distance from inside the garage to the exit. The calculations in **Appendix E**. show how long each vehicle was calculated to travel in the garage for the weekday afternoon peak hour.

The peak one-hour CO emission rate for the parking garage was calculated to be 0.42 grams per minute (0.0070 grams/second) for the weekday afternoon peak hour. Applying the maximum volumetric garage ventilation flow rate for the parking garage, the peak one-hour CO concentration inside the garage was calculated to be 0.54 parts of CO per million parts of air (ppm) for the weekday afternoon peak hour. This prediction represents conservative estimates of the peak garage CO emissions and concentrations.

TABLE 2-19
PEAK HOUR GARAGE TRAFFIC VOLUMES

Time Period	Entering (vehicles/hour)	Exiting (vehicles/hour)	Total (vehicles/hour)
Weekday Morning Peak hour	12	34	46
Weekday Afternoon Peak Hour	42	29	71

Source: Kittelson & Associates, Inc.

2.2.6 NOISE

2.2.6.1 Introduction

Tech Environmental, Inc., performed a noise study to determine whether the operation of the proposed Project will comply with the City of Boston Noise Regulations, the Massachusetts Department of Environmental Protection (MassDEP) Noise Policy and Housing and Urban Development (HUD) guideline.

2.2.6.2 Noise Terminology

The unit of sound pressure is the decibel (dB). The decibel scale is logarithmic to accommodate the wide range of sound intensities to which the human ear is subjected. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. Thus, every 3 dB increase represents a doubling of sound energy. For broadband sounds, a 3 dB change is the minimum change perceptible to the human ear. Table 2.20 gives the perceived change in loudness of different changes in sound pressure levels.[8]

TABLE 2-20
SUBJECTIVE EFFECTS OF CHANGES IN SOUND PRESSURE LEVELS

Change in Sound Level	Apparent Change in Loudness
3 dB	Just perceptible
5 dB	Noticeable
10 dB	Twice (or half) as loud

[8] American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1989 ASHRAE Handbook--Fundamentals (I-P) Edition, Atlanta, GA, 1989.

Non-steady noise exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting 1 second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. To establish the background ambient sound level in an area, the L_{90} metric, which is the sound level exceeded 90 percent of the time, is typically used. The L_{90} can also be thought of as the level representing the quietest 10 percent of any time period. Similarly, the L_{10} can also be thought of as the level representing the quietest 90 percent of any time period. The L_{10} and L_{90} are broadband sound pressure measures, i.e., they include sounds at all frequencies.

The $L_{eq,}$ or equivalent sound level, is the steady-state sound level over a period of time that has the same acoustic energy as the fluctuating sounds that actually occurred during that same period. Federal noise guidelines are based on the $L_{dn,}$ which is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB imposed on the equivalent sound levels for night time hours of 10 p.m. to 7 am.
Sound level measurements typically include an analysis of the sound spectrum into its various frequency components to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves, and typically the frequency analysis examines 10 octave bands from 32 Hz to 16,000 Hz.

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on local and distant streets, aircraft over-flights, mechanical equipment on nearby buildings, and general city noises such as street sweepers and police/fire sirens. Typical sound levels associated with various activities and environments are presented in Table 2.21.

2.2.6.3 NOISE REGULATIONS AND CRITERIA

2.2.6.3.1Commonwealth Noise Policy

The MassDEP regulates noise through 310 CMR 7.00, “Air Pollution Control.” In these regulations “air contaminant” is defined to include sound and a condition of “air pollution” includes the presence of an air contaminant in such concentration and duration as to “cause a nuisance” or “unreasonably interfere with the comfortable enjoyment of life and property.” Regulation 7.10 prohibits “unnecessary emissions” of noise. The MassDEP DAQC Policy Statement 90-001 (February 1, 1990) interprets a violation of this noise regulation to have occurred if the noise source causes either:

- An increase in the broadband sound pressure level of more than 10 dBA above the ambient level; or
- A “pure tone” condition.

The ambient background level is defined as the L_{90} level as measured during equipment operating hours. A "pure tone" condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more. The MassDEP does not regulate noise from motor vehicles accessing a site or the equipment backup notification alarms. Therefore, the provisions described above only apply to a portion of the sources that may generate sound following construction of the Project.

2.2.6.3.2 Local Regulations

The City of Boston Environment Department regulates noise through the Regulations for the Control of Noise as administered by the Air Pollution Control Commission. The Project is located in an area consisting of commercial and residential uses. The Project will have low-rise residential uses to the north, single family homes to the west, and to the south. The Project must comply with Regulation 2.2 for noise levels in Residential Zoning Districts at these residential locations. Table 2.22 lists the maximum allowable octave band and broadband sound pressure levels for residential and business districts. Daytime is defined by the City of Boston Noise Regulations as occurring between the hours of 7:00 a.m. and 6:00 p.m. daily except Sunday. Compliance with the most restrictive nighttime residential limits will ensure compliance for other land uses with equal or higher noise limits.

2.2.6.3.3 HUD Site Acceptability Standards

Noise monitoring at the Project Site during the morning and afternoon peak traffic period were used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by the Department of Housing and Urban and Development (HUD) for residential development. The purpose of the HUD guidelines is to provide standards for determining the acceptability of residential project locations with regards to existing sound levels. The HUD criteria regarding the day-night average sound level (L_{dn}) are listed below. These standards apply to L_{dn} measurements taken several feet from the building in the direction of the predominant source of noise.

Normally Acceptable – L_{dn} not exceeding 65 dBA

Normally Unacceptable–L_{dn} above 65 dBA, but not exceeding 75 dBA

Unacceptable – L_{dn} above 75 dBA.

These HUD standards do not apply to this Project, but are used as guidance regarding the suitability of the Project area with regard to background sound levels.

2.2.6.4 EXISTING CONDITIONS

2.2.6.4.1 Baseline Noise Environment

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on Blue Hill Avenue to the west, the MBTA Mattapan Station, local and distant streets, aircraft over-flights, mechanical equipment on nearby buildings, and general city noises such as street sweepers and police/fire sirens.

2.2.6.4.2 Noise Measurement Methodology

Existing baseline sound levels in the Project area were measured during the quietest overnight period when human activity and street traffic were at a minimum, and when the Project's mechanical equipment (the principal sound sources) could be operating. Since the Project's mechanical equipment may operate at any time during a 24-hour day, a weekday between 12:00 a.m. and 4:00 a.m. was selected as the worst-case time period, i.e., the time period when Project-related sounds may be most noticeable due to the quieter background sound levels. Establishing an existing background (L_{90}) during the quietest hours of the facility operation is a conservative approach for noise impact assessment and is required by the MassDEP Noise Policy.

TABLE 2-21
COMMON INDOOR AND OUTDOOR SOUND LEVELS

Outdoor Sound Levels	Sound Pressure (μPa)	Sound Level (dBA)	Indoor Sound Levels
	6,324,555	110	Rock Band at 5 m
Jet Over-Flight at 300 m		105	
	2,000,000	100	Inside New York Subway Train
Gas Lawn Mower at 1 m		95	
	632,456	90	Food Blender at 1 m
Diesel Truck at 15 m		85	
Noisy Urban Area—Daytime	200,000	80	Garbage Disposal at 1 m
		75	Shouting at 1 m
Gas Lawn Mower at 30 m	63,246	70	Vacuum Cleaner at 3 m
Suburban Commercial Area		65	Normal Speech at 1 m
	20,000	60	
Quiet Urban Area—Daytime		55	Quiet Conversation at 1m
	6,325	50	Dishwasher Next Room
Quiet Urban Area—Nighttime		45	
	2,000	40	Empty Theater or Library
Quiet Suburb—Nighttime		35	
	632	30	Quiet Bedroom at Night
Quiet Rural Area—Nighttime		25	Empty Concert Hall
Rustling Leaves	200	20	Average Whisper
		15	Broadcast and Recording Studios
	63	10	
		5	Human Breathing
Reference Pressure Level	20	0	Threshold of Hearing

Notes: μPa, or micro-Pascals, describes sound pressure levels (force/area). DBA, or A-weighted decibels, describes sound pressure on a logarithmic scale with respect to 20 μPa (reference pressure level).

TABLE 2-22
CITY OF BOSTON
MAXIMUM ALLOWABLE SOUND PRESSURE LEVELS (dB)

Octave Band (Hz)	Zoning District		
	Residential (Daytime)	Residential (All Other Times)	Business (anytime)
32 Hz	76	68	79
63 Hz	75	67	78
125 Hz	69	61	73
250 Hz	62	52	68
500 Hz	56	46	62
1000 Hz	50	40	56
2000 Hz	45	33	51
4000 Hz	40	28	47
8000 Hz	38	26	44
Broadband (dBA)	**60**	**50**	**65**

The nighttime noise measurement locations are as follows (see the Figure 1 in the **Appendix F**):

- Location #1: 428 River St
- Location #2: 69 Capen St
- Location #3: 28 Curtis Rd

2.2.6.3 Measurement Equipment

Broadband (dBA) and octave band sound level measurements were made with a Larson Davis Type 831 environmental sound level analyzer, at each monitoring location, for a duration of approximately thirty minutes. The full octave band frequency analysis was performed on the frequencies spanning 16 to 16,000 Hertz. A time-integrated statistical analysis of the data used to quantify the sound variation was also performed, including the calculation of the L_{90}, which is used to set the ambient background sound level.

The Larson Davis Type 831 is equipped with a ½" precision condenser microphone and has an operating range of 5 dB to 140 dB and an overall frequency range of 3.5 Hz to 20,000 Hz. This meter meets or exceeds all requirements set forth in the ANSI S1.4-1983 Standards for Type 1 quality and accuracy and the State and City requirements for sound level instrumentation. Prior to any measurements, this sound analyzer was calibrated with an ANSI Type 1 calibrator that has an accuracy traceable to the National Institute of Standards and Technology (NIST). During all measurements, the Larson Davis 831 was tripod mounted at approximately five feet above the ground in open areas away from vertical reflecting surfaces.

2.2.6.4 Baseline Ambient Noise Levels

The daytime sound level monitoring was conducted on Wednesday, June 21, 2017, and the nighttime sound level monitoring was conducted overnight on Thursday, June 22 into Friday morning June 23, 2017. Weather conditions during the sound surveys were conducive to accurate sound level monitoring: the skies were clear, and the winds were light (i.e., less than 12 mph). The microphone of the sound level analyzer was fitted with a 7-inch windscreen to negate any effects of wind-generated noise.

The daytime sound level measurements taken in the vicinity of the Project Site reveal sound levels that are typical for an urban area. A significant source of existing sound at all locations is motor vehicle traffic on nearby highways and local streets, residential and commercial air handling equipment, the MBTA red line and bus station, and aircraft over-flights. Similarly, the nighttime sound level measurements taken in the vicinity of the Project Site reveal sound levels that are typical for an urban area. A significant source of existing sound at all locations is motor vehicle traffic on nearby highways and local streets, residential and commercial air handling equipment, and aircraft over-flights.

Noise monitoring at the Project Site during the morning peak traffic period were used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by HUD for residential development. These sound level measurements were taken to help estimate the L_{dn} for the Project Site. A 30-minute sound level measurement was taken during the morning on Wednesday, June 21th between 10:00 a.m. and 10:30 a.m. at 428 River St (Location #1) representing the closest location to the Project Site. The main source of noise during the peak afternoon traffic period sound level measurement was motor vehicle traffic on River Street, Blue Hill Avenue and local streets, the MBTA station red line and buses, sirens, and aircraft over-flights. The L_{eq} measured during the morning period was 62.4 dBA. The L_{eq} sound level measured during the nighttime at the same location was 57.0 dBA. Using both the daytime and nighttime L_{eq} sound levels, the calculated L_{dn} for the site is 64.7 dBA, which is below the HUD guideline noise limit of 65 dBA.

The results of the nighttime baseline sound level measurements are presented in **Tables 2.22** and the complete measurement printouts are provided in **Appendix F**. The nighttime background L_{90} level range was 35.4 dBA at Location #2 to 47.5 dBA at Location #1. The octave band data in **Table 2.23** show that no pure tone was detected at any locations in the nighttime noise measurements.

Table 2-23
437 RIVER STREET (LOCATION R4)
ESTIMATED FUTURE LEVEL IMPACTS AT ANY TIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	40.2
63 Hz	67	40.1
125 Hz	61	38.5
250 Hz	52	33.5
500 Hz	46	31.7
1000 Hz	40	30.1
2000 Hz	33	24.6
4000 Hz	28	16.7
8000 Hz	26	2.6
Broadband (dBA)	**50**	**34.3**
Compliance with the City of Boston Noise Regulation?		**Yes**

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 2)	47.5
Mattapan Station Project*	34.3
Calculated Combined Future Sound Level	47.7
Calculated Incremental Increase	+0.2
Compliance with MassDEP Noise Policy?	**Yes**

TABLE 2-23

Sound Level Measurement	Location #1 428 River St 11:00 PM- 11:30- PM	Location #2 69 Capen St 11:35 PM- 12:05 AM	Location #3 Curtis Rd 12:08 AM - 12:38 AM
Broadband (dBA)			
Background (L_{90})	47.5	35.4	46.2
Octave Band L_{90} (dB)			
16 Hz	52.7	46.6	49.3
32 Hz	58.3	50.4	55.3
63 Hz	60.6	50.6	55.2
125 Hz	53.3	42.1	52.8
250 Hz	48.6	35.0	46.9
500 Hz	43.9	31.2	43.1
1000 Hz	41.6	29.6	40.5
2000 Hz	35.3	23.5	34.7
4000 Hz	27.5	22.7	26.3
8000 Hz	17.8	16.7	17.5
16000 Hz	16.5	16.8	18.1
Pure Tone?	No	No	No

2.2.6.5 Overview of Potential Project Noise Sources

The mechanical systems for the Proposed Project are in the early design stage. Typical sound power data for the equipment of the expected size and type for the Project have been used in the acoustic model to represent the Project's mechanical equipment. The sound levels from all potential significant Project noise sources are discussed in this section:

The design for the Proposed Project is expected to include the following significant roof-top mechanical equipment:

- 32 (5-ton) condenser units
- 2 (60-ton) cooling units
- Parking garage exhaust vent

The equipment listed above, which will be located on building roof levels, was included in the noise impact analysis. The Project's traffic was not included in the noise analysis because motor vehicles are exempt under both the City of Boston and MassDEP noise regulations.

The sound generation profiles for the mechanical equipment noise sources operating concurrently under full-load conditions were used to determine the maximum possible resultant sound levels from the Project Site as a whole, to define a worst-case scenario. To be in compliance with City and MassDEP regulations, the resultant sound level must not exceed the allowable octave band limits in the City of Boston noise regulation and must be below the allowable incremental noise increase, relative to existing noise levels, as required in the MassDEP Noise Policy. This sound level impact analysis was performed using sound generation data for representative equipment to demonstrate compliance with noise regulations. As the building design evolves, the sound generation for the actual equipment selected may differ from the values that were utilized for the analysis.

2.2.6.6 Modeling Methodology

Future maximum sound levels at the upper floors of all existing residences bordering the Project, and at the nearest residential property lines, were calculated with acoustic modeling software assuming simultaneous operation of all mechanical equipment at their maximum loads.

The Cadna-A computer program, a comprehensive 3-dimensional acoustical modeling software package was used to calculate Project generated sound propagation and attenuation.[9] The model is based on ISO 9613, an internationally recognized standard specifically developed to ensure the highly accurate calculation of environmental noise in an outdoor environment. ISO 9613 standard incorporates the propagation and attenuation of sound energy due to divergence with distance, surface and building reflections, air and ground absorption, and sound wave diffraction and shielding effects caused by barriers, buildings, and ground topography.

The closest/worst-case sensitive (residential) location is to the east of the project area on River Street. This location was selected based on the proximity of the equipment (smaller distances correspond to larger noise impacts) and the amount of shielding by other buildings (taller nearby residential locations will experience less shielding from the Project's rooftop mechanical equipment, which may result in larger potential noise impacts from the Project). This location is expected to receive the largest sound level impacts from the Project's rooftop mechanical equipment. It can be classified as a residential zone.

The sound level impacts from the Project's mechanical equipment were predicted at the closest residential locations to the north, east, and south. The site is bound by commercial uses to the west. Figure 1 in **Appendix F** shows the locations of the modeled noise receptors. Noise impacts at other nearby noise-sensitive locations farther from the Project Site will be less than those predicted for these receptors.

2.2.6.7 Future Sound Level of Project

The City of Boston and MassDEP noise standards apply to the operation of the mechanical equipment at the proposed Project. The details of the noise predictions are presented in **Tables 2.24 through 2.29.** The sound impact analysis includes the simultaneous operation

[9]Cadna-A Computer Aided Noise Abatement Program, Version 2017.

of the Project's rooftop mechanical equipment. The predicted sound levels are worst-case predictions that represent all hours of the day, as the analysis assumes full operation of the mechanical equipment 24-hours a day. The typical sound level impacts from the mechanical equipment will likely be lower than what is presented here, since most of the mechanical equipment will operate at full-load only during certain times of the day and during the warmer months of the year, it is not likely that all of the mechanical equipment will operate at the same time. Sound level impacts at locations farther from the Project (e.g. other residences, etc.) will be lower than those presented in this report.

2.2.6.8 City of Boston Noise Standards

The noise impact analysis results, presented in **Tables 2.24 through 2.29** reveal that the sound level impact at the noise-sensitive receptors will be between 37 and 48 dBA. The smallest sound level impact of 37 dBA is predicted to occur at 82 Cliff Road (Location R12). The largest sound level impact of 48 dBA is predicted to occur at 449 River St (Location R15). Noise impacts predicted at all locations are in compliance with the City of Boston's nighttime noise limit (50 dBA) for a residential area. Note that sound levels from the Project will be below the residential nighttime limits at all times. The results also demonstrate compliance with the City of Boston, residential, non-daytime, octave band noise limits at all locations.

The City of Boston noise limits for business areas are significantly higher than the nighttime noise limits for residential areas (see **Table 2.2.10-3**). The Project will also easily comply with the City of Boston business area noise limits at all surrounding commercial properties.

2.2.6.9 MassDEP Noise Regulations

The predicted sound level impacts at the noise-sensitive locations were added to the measured L_{90} value of the quietest daily hour to test compliance with MassDEP's noise criteria. Assuming the Project's mechanical noise is constant throughout the day, the Project will cause the largest increase in sound levels during the period when the lowest background noise occurs. Minimum background sound levels (diurnal) typically occur between 12:00 a.m. and 4:00 a.m.

As shown in **Tables 2.24 through 2.29**, the Project is predicted to produce a less than 1 dBA change in the background sound levels at all modeled locations. Therefore, the Project's worst-case sound level impacts during the quietest nighttime periods will be in compliance with the MassDEP allowed noise increase of 10 dBA. The noise predictions for each octave band indicate that the mechanical equipment will not create a pure tone condition at any location.

2.2.6.10 HUD Site Acceptability Standards

The maximum predicted sound level impacts from the Project are below 65 dBA and will not increase the existing L_{dn} in the Project area. Therefore, the Project area will still comply with HUD's Site Acceptability Standards without any additional mitigation incorporated into the building design after the Project is completed.

2.2.6.11 Conclusions

Sound levels at all nearby sensitive locations and at all property lines will fully comply with the most stringent City of Boston and MassDEP daytime and nighttime sound level limits, and the HUD design Noise Levels. This acoustic analysis demonstrates that the Project's design will meet the applicable acoustic criteria.

TABLE 2-24
442 RIVER STREET (LOCATION R1)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	48.8
63 Hz	67	48.3
125 Hz	61	46.1
250 Hz	52	40.6
500 Hz	46	37.7
1000 Hz	40	34.5
2000 Hz	33	27.2
4000 Hz	28	18.8
8000 Hz	26	10.2
Broadband (dBA)	**50**	39.6
Compliance with the City of Boston Noise Regulation?		**Yes**

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 1)	47.5
Mattapan Station Project*	39.6
Calculated Combined Future Sound Level	48.2
Calculated Incremental Increase	+0.7
Compliance with MassDEP Noise Policy?	**Yes**

* Assumes full-load operation of all mechanical equipment.

Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

TABLE 2-25
439 RIVER STREET (LOCATION R2)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	44.3
63 Hz	67	44.2
125 Hz	61	42.5
250 Hz	52	37.6
500 Hz	46	35.6
1000 Hz	40	33.9
2000 Hz	33	28.6
4000 Hz	28	21.8
8000 Hz	26	11.4
Broadband (dBA)	**50**	38.2
Compliance with the City of Boston Noise Regulation?		**Yes**

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 2)	47.5
Mattapan Station Project*	38.2
Calculated Combined Future Sound Level	48.0
Calculated Incremental Increase	+0.5
Compliance with MassDEP Noise Policy?	**Yes**

TABLE 2-26
431 RIVER ST (LOCATION R3)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	41.8
63 Hz	67	41.8
125 Hz	61	40.4
250 Hz	52	35.8
500 Hz	46	34.3
1000 Hz	40	33.3
2000 Hz	33	29.4
4000 Hz	28	21.6
8000 Hz	26	8.4
Broadband (dBA)	**50**	**37.5**
Compliance with the City of Boston Noise Regulation?		**Yes**

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 2)	47.5
Mattapan Station Project*	37.5
Calculated Combined Future Sound Level	47.9
Calculated Incremental Increase	+0.4
Compliance with MassDEP Noise Policy?	**Yes**

* Assumes full-load operation of all mechanical equipment.
Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

TABLE 2-27
437 RIVER STREET (LOCATION R4)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	40.1
63 Hz	67	40.5
125 Hz	61	39.5
250 Hz	52	35.3
500 Hz	46	34.4
1000 Hz	40	34.3
2000 Hz	33	29.0
4000 Hz	28	20.9
8000 Hz	26	6.4
Broadband (dBA)	**50**	**37.7**
Compliance with the City of Boston Noise Regulation?		**Yes**
Sound Level Metric		**Maximum Sound Levels* (dBA)**
Existing Nighttime Background, L_{90} (Location # 2)		47.5
Mattapan Station Project*		37.7
Calculated Combined Future Sound Level		47.9
Calculated Incremental Increase		+0.4
Compliance with MassDEP Noise Policy?		**Yes**

TABLE 2-28
430 RIVER STREET (LOCATION R5)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	41.4
63 Hz	67	41.5
125 Hz	61	40.2
250 Hz	52	35.6
500 Hz	46	33.9
1000 Hz	40	32.5
2000 Hz	33	27.4
4000 Hz	28	20.4
8000 Hz	26	10.1
Broadband (dBA)	**50**	**36.6**
Compliance with the City of Boston Noise Regulation?		**Yes**
Sound Level Metric		**Maximum Sound Levels* (dBA)**
Existing Nighttime Background, L_{90} (Location # 2)		47.5
Mattapan Station Project*		36.6
Calculated Combined Future Sound Level		47.8
Calculated Incremental Increase		+0.3
Compliance with MassDEP Noise Policy?		**Yes**

* Assumes full-load operation of all mechanical equipment.
Note: MassDEP Policy allows a sound level increase of up to 10 dBA.

TABLE 2-29
438 RIVER STREET (LOCATION R6)
ESTIMATED FUTURE LEVEL IMPACTS AT ANYTIME

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	44.0
63 Hz	67	43.8
125 Hz	61	42.3
250 Hz	52	37.4
500 Hz	46	35.3
1000 Hz	40	33.4
2000 Hz	33	27.4
4000 Hz	28	19.7
8000 Hz	26	9.5
Broadband (dBA)	**50**	**37.7**
Compliance with the City of Boston Noise Regulation?		**Yes**

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L_{90} (Location # 2)	47.5
Mattapan Station Project*	37.7
Calculated Combined Future Sound Level	47.9
Calculated Incremental Increase	+0.4
Compliance with MassDEP Noise Policy?	**Yes**

2.2.7 GEOTECHNICAL

This section discusses existing geotechnical conditions on the Project Site and potential impacts from development of the Project.

2.2.7.1 Subsurface Soil Conditions

Fill Material

In general, the surface treatments across the site consist of an approximate 3 to 5-inch thickness of asphalt. Directly beneath the asphalt the borings encountered a fill material that extends to depths of approximately 1.5 to 4 feet below the existing ground surface, with the exception of an isolated area where the fill material extends to a depth of 10 feet below ground surface. The fill material generally consists of a loose to dense, light brown to black sand and gravel with some silt varying to a silt and sand with trace gravel.

Glacial Deposits

The glacial soils encountered in the explorations were primarily classified as glacial till and were observed to consist of a dense to very dense, light brown to gray sandy gravel with some trace silt varying to a silt and sand with trace to some gravel. The borings completed on the subject site were terminated at auger refusal on possible bedrock or on possible cobbles or boulders in the glacial till at approximate depths of 2.5 to 15 feet below ground surface corresponding to Elevations +35 to Elevation +52.7.

2.2.7.2 Groundwater Conditions

Groundwater was not encountered upon completion of the explorations. It is anticipated that future groundwater levels across the project site may vary from those reported herein based on such factors as normal seasonal changes, runoff during or following periods of heavy precipitation and alterations to existing drainage patterns. Furthermore, groundwater may be perched at shallow depths on the nearly impervious glacial till deposit.

2.2.7.3 Foundation Design and Construction

Based on the proposed scope of site redevelopment and the subsurface conditions described above, it is recommended that the proposed building(s) be founded on the existing glacial soil deposits or intact bedrock underlying the site. Specifically, it is recommended that the proposed building(s) be founded on a spread footing foundation system with soil-supported slabs-on-grade for the lowest level slabs of the proposed buildings.

Footings should be proportioned utilizing a net allowable design bearing pressure of 3 tons per square-foot (tsf) and bear directly on the undisturbed, natural glacial deposits or intact bedrock underlying the project site. In areas where the design elevation of the bottom of the footing is above the surface of the glacial soil deposit, it is recommended that the existing surface treatments, fill, and subsoil, if present, be over-excavated to the top of the undisturbed glacial soil deposit and be backfilled with compacted structural fill.

Preparation of building pad subgrades should include removal of all existing bituminous pavements, existing building and/or retaining wall foundations, and surficial topsoil from the entire proposed building footprint(s). The existing fill may remain in place beneath the slabs-on-grade. Existing fill material shall be proof-compacted prior to placement of structural fill.

The Project will generate solid waste typical of other residential, retail, and office uses. The project will include facilities for collecting non-recyclable and recyclable waste. Non-recyclable waste and compacted material will be removed by a waste hauler contracted by the Project. With the exception of "household hazardous waste" typical of residential, retail, and office uses (i.e. cleaning fluids, paints), the project is not anticipated to generate hazardous waste.

2.2.7.4 Recycling

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

2.2.7.5 Solid and Hazardous Waste

2.2.7.5.1 Site History and Compliance with MA Contingency Plan

The project site, which is sized at 120,621 Gross Square Feet, is currently occupied by a paved surface MBTA parking area. Historical records indicate that the subject site has historically been occupied by residential buildings, a parking lot, and, on its southeastern border, a coal company identified as City Fuel Co. Our review of historical records did not identify the presence of a Recognized Environmental Condition. A search of information from the offices of the City of Boston did not indicate the historical storage, use, or release of oil and/or hazardous materials at the subject site. No indication of a release of oil and/or hazardous material was observed at the subject site during our site reconnaissance.

Based on the results of laboratory analysis of soil samples obtained from the subject site for the presence of Volatile organic compounds (VOCs), volatile petroleum hydrocarbons VPH), RCRA-8 metals, and/or extractable petroleum hydrocarbons (EPH), concentrations of these constituents were not identified above the applicable RCS-1 Reportable Concentrations, with the exception of total lead, which was detected at a concentration of 240 milligrams per kilogram (mg/kg) in one sample, which exceeds the applicable RCS-1 criteria of 200 mg/kg. However, given that this concentration of lead is considered to be attributable to the presence of ash and cinders in fill material at the subject site, this concentration is considered to be exempt from reporting pursuant to the provisions of the MCP. Should evidence of contaminated soils be discovered

requirements are followed. Soil removed from the site during construction will be managed for off-site disposal in accordance with the current regulations and policies of the Massachusetts DEP.

2.3 CONSTRUCTION IMPACTS AND MITIGATION

2.3.1 Introduction

The Mattapan Station project will not involve the demolition of any existing structures. The project will include the development of 135 units of affordable and market-rate rental housing, with 70 spaces of below-grade parking, 9 condominium units in a single building, with up to 9 surface parking spaces, and approximately 8 commercial parking spaces on River Street. Additionally, the project will include 10,000 square feet of ground-floor commercial space, and a 2,000 square foot community room, along with associated hardscape, infrastructure, and landscaping improvements.

The appropriate pre-planning activities with the City and the neighborhood are essential to the successful construction of the project. Accordingly, the developer will implement the appropriate construction methodologies which will ensure public safety and protect the physical structures of adjacent residences and businesses. Toward this end, measures such as barricades, walkways, and signage will be used.

During the construction phase of the project, the Proponent will provide pertinent contact information to ensure that abutters to the project site can immediately communicate and alert the development team about concerns. Additionally, the Proponent intends to follow the guidelines of the City of Boston and the Mass DEP regarding the evaluation and mitigation of construction impacts.

2.3.2 Construction Methodology/Public Safety

The site will be secured around the entire perimeter with a combination of temporary 6' high chain link fence, and/or existing fencing. During the construction work hours, access will be limited to construction deliveries and equipment. During the construction process, cones, barrels, and other pertinent soft barriers will be used to prevent pedestrians from accidentally entering the construction site. Once the construction workday ends, all fences will be secured to prevent public access during the evening and at night.

As the Article 80 review progresses, the Proponent will confer with the BPDA and the BTD about the measures that will be included in the Construction Management Plan (CMP), including, but not limited to, (a) the specific location of barricades; (b) the need, if any, for any lane closures and related traffic safety and mitigation; (c) covered pedestrian walkways and temporary sidewalks; (d) all pedestrian areas will be well lit and clearly marked with directional signage to ensure safety; (e) the construction site will be fully secured with temporary fencing that is at least 6 feet high; and (f) a Boston Police detail will be engaged if is determined necessary by the BTD and the BPD. All of these measures will be included in the CMP for BTD review and approval.

2.3.3 Construction Schedule and Work Hours

It is anticipated that the project will entail approximately 18 months of active construction activity. Currently, its anticipated that construction will get underway in the first quarter of 2019, with an expected project completion in the summer of 2020.

Typical construction work hours will run from approximately 7:00 am to 6:00 pm during the work week (Monday-Friday), with most work shifts typically ending at 3:30p.m. No substantial sound-generating activity will occur before 7:00 a.m. If longer hours, additional work shifts, or Saturday work is required, then the Construction Manager will submit a work permit request to the City of Boston Inspectional Services Department (ISD) to secure approval before the work gets underway. The developer will ensure that construction updates are distributed to neighboring abutters as necessary. It must be noted that some activities such as finishing work could run beyond 6:00 pm to ensure the structural integrity of the finished product, including certain components that must be completed in a single day such as the pour and placement of concrete.

2.3.4 Construction/Access

Access to the site and construction staging areas will be included in the CMP. Although specific construction staging details have not been finalized, the Proponent and the Construction Manager will work to ensure that staging areas will minimize impacts on pedestrian safety, and pedestrian/vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian access. Just as importantly, construction procedures will be designed to meet all Occupational Safety and Health (OSHA) safety standards for all site construction activity.

2.3.5 Construction Mitigation

The Proponent will follow City of Boston 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. In addition to the detailed information regarding mitigation that will be included in the CMP, the Proponent's preliminary approach to construction mitigation is provided in this section of the document.

2.3.6 Mitigation of Construction Worker Impacts on Local Traffic

The number of workers required during the construction period will vary. Based on the fact that construction workers will arrive and depart the site during off-peak traffic periods, they are not expected to significantly impact traffic conditions in the project area. In an effort to further mitigate traffic impacts, no project personnel will be allowed to park vehicles on public streets in the immediate area of the project. If available, the project team will explore the use of off-site parking for construction personnel

2.3.7 Mitigation of Construction Truck Routes on Local Traffic

Construction truck traffic will vary throughout the construction period depending on the various phases of construction. In an effort to minimize the impacts of construction trucks on local traffic conditions, specific truck routes will be defined and included in the CMP. If necessary, a Boston Police detail will be used to minimize the impacts of truck traffic. Finally, all truck deliveries and supplies and equipment will be coordinated to avoid the morning rush hour between 7am to 9am.

2.3.8 Mitigation of Construction Air Quality

Construction activities will potentially generate fugitive dust, which could result in a localized increase in airborne particulate levels, depending upon a variety of factors such as ambient humidity, recent weather patterns, and the phase of construction. Toward that end, the basic measures that will be utilized are outlined below, and will be included in the CMP for BTD review.

- Water sprayers will be used regularly to control and suppress dust that may be generated from exposed excavations, along with chipping, sawing, and other related tasks.

- All trucks transporting construction debris will be secured with a tarp prior to departing the project site. Prior to truck arrival, all on-site construction debris will be stored in dumpsters and secured with tarps. Additionally, if trucks encounter an asphalt surface, a wheel wash process will be used.

- Any cleaning of adjacent streets will be performed on an as-needed basis.

To the extent that any nuisance odors occur during the construction period, the following measures will be taken to control nuisance odor emissions associated with earthwork.

- Pumping collected groundwater to sump locations.
- Covering stockpiles of excavated material with plastic sheeting.
- Maintaining the construction site free of trash, garbage, and debris.
- Turning off construction equipment not in active use for several minutes.

2.3.9 Mitigation of Construction Noise

Every reasonable effort will be made to minimize the noise impact of construction activities. The mitigation measures to be undertaken will include:

- Heavy and/or noisy equipment will not be started or utilized prior to 7:00 am.
- Mufflers will be used as appropriate on all equipment, along with the continuous maintenance of intake and exhaust mufflers.
- Muffling enclosures on continuously running equipment, such air compressors and welding generators.
- Utilizing less noise-specific construction operations and equipment where feasible.
- Scheduling equipment operations to keep average levels low, and also synchronize noise operations with times of highest ambient levels, and working to maintain relatively uniform noise levels.
- Turn off idling equipment.
- Locating noisy equipment as far as possible from sensitive areas.

2.3.10 Mitigation of Construction Vibration

Since the project will not involve the demolition of existing buildings, it is anticipated that vibration impacts will be limited to foundation activities. The measures that will be taken to minimize disruptions to adjacent properties will be included in the CMP for BTD review and all activities will be limited to allowable hours, per City of Boston ordinances.

2.3.11 Mitigation of Construction Waste

The Proponent and Construction team will actively work to minimize construction waste through a combination of methods, including but not limited to:

- Recycling, reusing, or salvaging as much material as possible.
- Source separating waste materials on site to the greatest practical extent.
- All dumpsters will be clearly marked.
- The project will engage with a waste hauler who has a track record in supporting and documenting projects relative to minimizing and managing waste.

A system will be established so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility. As more detail is developed in the project plans, and subcontractors are hired, project-specific waste management plans will be developed by key trades.

The solid waste 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.

2.3.12 Protection of Utilities and Adjacent Infrastructure

All utility work required for the Mattapan Station project will involve a ***Dig-Safe Survey*** prior to excavation, per Mass General Law. Moreover, any excavation in the area containing existing water, sewer, and drain lines will proceed with caution.

The installation of proposed utilities within the public way will be carried out in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. Additionally, all necessary permits will be obtained before the commencement of the specific utility installation. Finally, the Proponent will coordinate with the MBTA to confirm if the structural erection and façade installation of the project will require the presence of MBTA flagmen to ensure safe passage of adjacent buses.

2.3.13 Rodent Control

The Proponent will include a rodent control program in the CMP that will be developed in conjunction with a licensed rodent control vendor, and will conform to the Massachusetts State Sanitary Code, (Chapter 11.05: Section 108.6).

2.3.14 Wildlife Habitat

Given the urban setting of this project, the Proponent does not anticipate that there will be any appreciable impact on wildlife of any sort. Even though the Neponset River Greenway abuts the southern border of the Project site, there will be no construction activity beyond the bus way that runs through the middle of the station area.

2.4 Urban Design

The Mattapan Station Redevelopment (the "Project") is part of a long-term revitalization effort in Mattapan and considered a critical component to several ongoing city efforts - namely the Mattapan Economic Development Initiative (MEDI) and the Go Boston 2030 Vision and Action Plan. Initiated in July 2006 by Mayor Menino, the MEDI effort seeks to improve the economic and quality of life for Mattapan residents by:

(1) Improving the business districts of Mattapan Square, Blue Hill Avenue Center and the Morton Street Village
Corridor;
(2) Creating job opportunities within the neighborhood; and
(3) Increasing capital investment in commercial areas and properties.[10] MEDI also looks to improve access to Mattapan's business and commercial districts by addressing congestion on Mattapan's streets - the busiest in Boston.

[10] Mattapan Economic Development Initiative, BPDA

(4) Creating job opportunities within the neighborhood; and

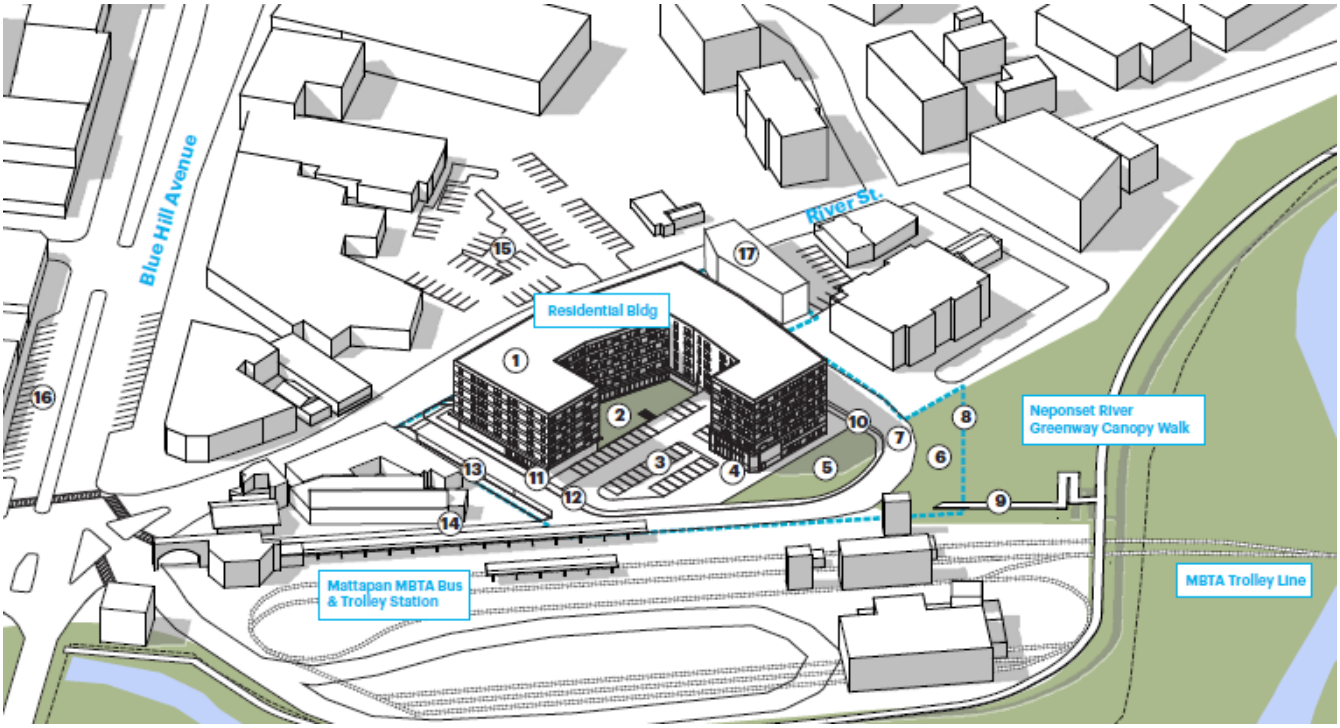
(5) Increasing the Go Boston 2030 Action Plan furthers the goal to reconnect Mattapan to greater Boston with initiatives such as the Fairmount Indigo Line Urban Rail and Rapid Bus Transit from Mattapan to the Longwood Medical Area, noting that Mattapan residents currently have the longest average commute in the City of Boston, with 25% of the residents requiring more than an hour to reach their destination.

The proposed Project will represent a major step in realizing the goals of a vibrant neighborhood with high quality of life and improved access to Boston and Cambridge. The Project envisions transforming the currently underutilized (79% vacancy on weekdays) MBTA commuter parking lot, which has 217 spaces, into a lively, dense, mixed-use community with residential and commercial space, as well as a third gathering space for the broader Mattapan community, with public open space and a multipurpose community room. It is critical that the Project act both at a city-wide scale as a Transit Oriented Development Project, and at a local scale, a neighborhood destination as a cultural hub of community activity.

As conceived, the Project has two main edges - the River Street edge will be urban in character, with commercial/retail space and residential amenities on the ground floor. River Street, as it currently exists, is a two-lane street without significant commercial or residential frontage. It serves as a connector from Mattapan Square to points east. The Project seeks to transform this edge into a vibrant liveable, walkable corridor parallelling the Neponset River Greenway. The River Street edge will also include approximately 8 commercial parking spaces. The rear edge of the site faces the Neponset River, the newly completed Neponset River Greenway ("NRG"), and the Mattapan MBTA Station. This edge preserves green open space for community use, with hard and soft-scaped public areas meant for gathering and to serve as the entrance to the NRG. It will also be home to a new 2,000 square foot multi-purpose community room that will be available for public reservation or rental for events. It will seat 100 people and is meant to complement existing available community space in the neighborhood, such as the community room at the Mattapan branch of the Boston Public Library and the conference room at the Mattapan Community Health Center. Separating these distinct edges of the Project will be 50 MBTA commuter parking spaces at grade to serve the adjacent station. It is anticipated that on off hours (nights and weekends) a portion of this parking lot will be available for community functions, such as a farmer's market or cultural events.

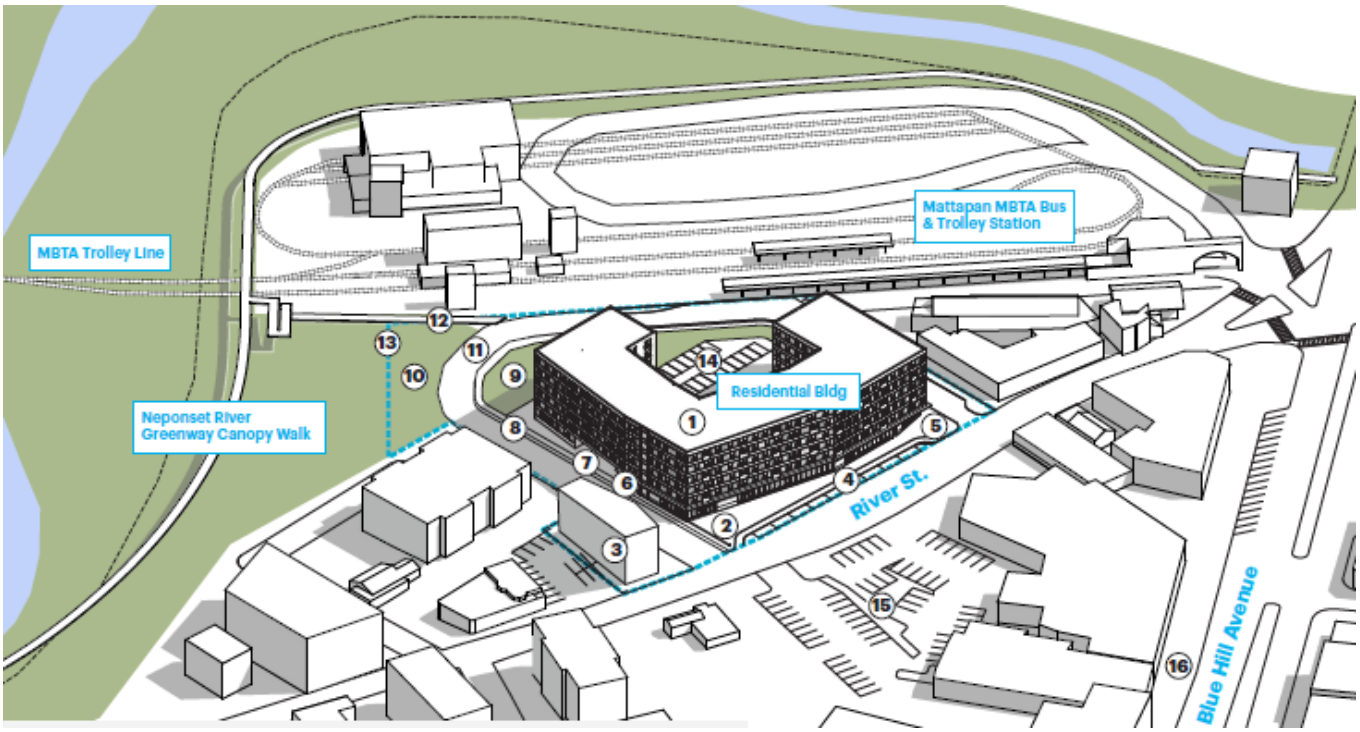
When completed, the Project will establish an improved corridor for the Mattapan community from Blue Hill Avenue and River Street to the MBTA station and NRG by upgrading what is now a poorly maintained busway into a safe, inviting, multi-modal route. New street trees and lighting, landscape plantings, a protected off-road bicycle lane, an upgraded sidewalk, and clear, safe signage will immediately activate the northeast edge of the site and create a true urban connection to the Neponset River and bus and trolley transit. The Project seeks to bring a level of density and activity to Mattapan Square that creates a new sense of place for both residents of the buildings and the greater Mattapan community alike, while making assets such as the NRG and the MBTA station more accessible and highly utilized.

Figure 2-23: Aerial View North Facing



1. New Residential Bldg - Five stories of residential on top of one story of commercial/retail and one story of sub-grade parking
2. Semi-private commercial/retail plinth above parking below
3. MBTA Commuter Parking Lot (50 Spaces)
4. 1500 s.f community space
5. Public open space amenity adjacent community space
6. Public open space adjacent Neponset River Greenway
7. Dedicated MBTA bus lane
8. Site Boundary
10. Protected bicycle and pedestrian paths to Neponset River Greenway
11. Underground residential entrance
12. MBTA commuter parking entrance
13. MBTA Kiss and Ride
14. MBTA Bus Queuing
15. Free Municipal Parking Lot
16. Blue Hill Ave. commercial/retail
17. Site of Phase 2

Figure 2—24: Aerial View South Facing



1. New Residential Bldg - Five stories of residential on top of one story of commercial/retail and one story of sub-grade parking	9. Public open space amenity adjacent community space
2. Primary residential entrance	10. Public open space adjacent Neponset River Greenway
3. Site of future development	11. Dedicated MBTA bus lane
4. New on-street parallel parking for commercial/retail patrons	12. Neponset River Greenway entrance
5. Active street frontage for commercial/retail	13. Site Boundary
6. Underground residential parking exit	14. MBTA Commuter Parking Lot (50 Spaces)
7. MBTA commuter parking exit	15. Free Municipal Parking Lot
8. Protected bicycle and pedestrian paths to Neponset River Greenway	16. Blue Hill Ave. commercial/retail

2.4.1 City Wide Context

The Project site, located at 466 River St. in Mattapan, sits at the terminus of the Red Line above-ground trolley extension from Ashmont Station to Mattapan Square. The Ashmont-Mattapan High Speed Line ("HSL") consists of a separate-grade track that forms a unique branch of the MBTA's Red Line system. Using a car trolley system that is similar to the MBTA's Green Line, riders transfer at Ashmont Station in Dorchester from the Red Line's heavy rail cars to the HSL's trolley cars in order to access the 2.6-mile, 8-stop line.

Mattapan Station is the terminus of the HSL and has been in use since 1929. In 2007, as part of a large-scale rehabilitation of the HSL, the MBTA completed a $10 million improvement program at Mattapan Station which included trolley restoration and a new accessible building platform with overhead canopies and a Transit Police substation. With 4,586 daily riders, the HSL serves as a vital transportation link for the residents of Boston's southern neighborhoods.[11] In February 2017, the MBTA committed $7.9 million to upgrade the trolley system and keep it running into the 2020s.

In 2011, Mattapan Square Main Streets ("MSMS") was incorporated as Boston's twentieth Main Streets to act as the driving force to solidify Mattapan Square as a thriving and robust commercial district. The mission of Mattapan Square Main Streets is *to promote Mattapan Square as a culturally and economically rich commercial district in collaboration with community residents, business owners, property owners, volunteers, and other stakeholders by focusing on design, economic restructuring, organization and promotion.*[12]

2.4.2 Street Level Context

The Project balances the need for density and its role as a community hub with significant site constraints, such as maintaining continuous, unhampered transit operations during and after construction, locating 50 commuter parking spaces at grade, and respecting an existing MWRA sewer easement which cuts through the southern portion of the site. To straddle these diverse constraints, the Project must take full advantage of all available space, being both dense and efficient.

2.4.3 Site Plan

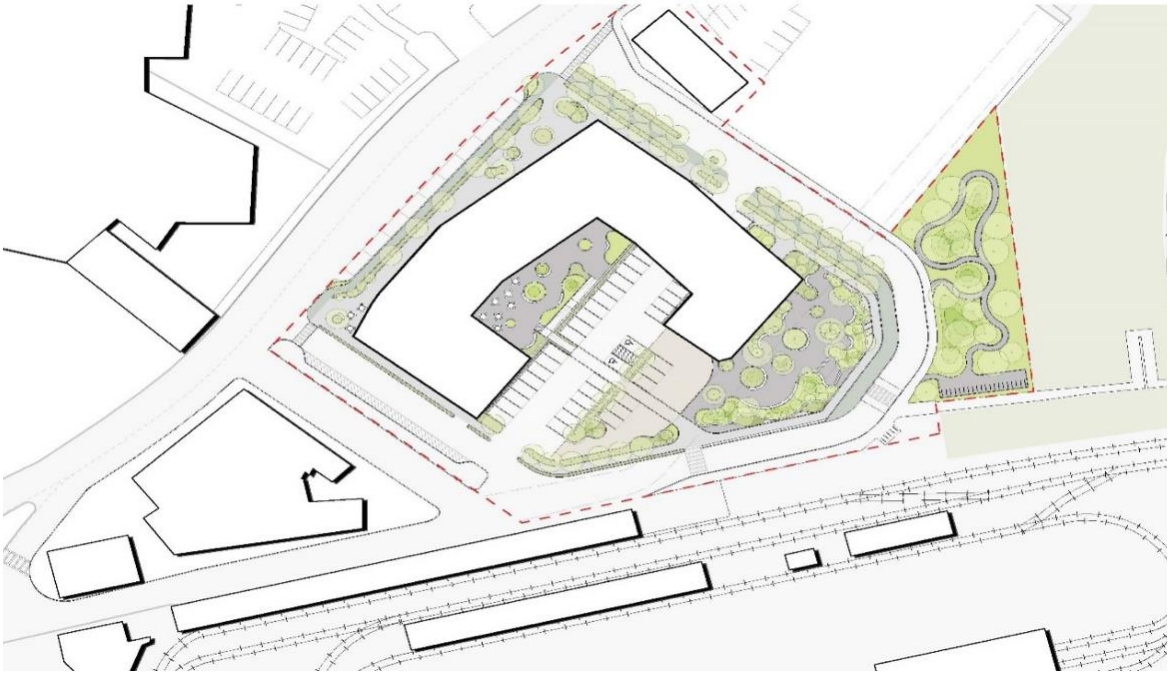
The Project takes advantage of the approximately 13-foot grade change from River Street to the MBTA station by placing residential parking serving the rental units underground while minimizing necessary excavation. Above this parking plinth sits the River Street commercial edge of the Project, made up of 10,000 square feet of commercial/retail space. The project's residential amenities include a fitness center and interior bicycle storage, as well as an inviting residential lobby. It is envisioned that the building housing the Phase I rental units along River Street reflects the urban, commercial character of Blue Hill Avenue,

[11] Mattapan Station RFP. MBTA #14598

[12] Mattapan Square Main Streets

offering high-quality retail amenities that complement, not duplicating what already exists around Mattapan Square. However, the streetscape is designed to promote a range of activities and modalities. For instance, space is allocated for a commercial/retail tenant to provide outdoor seating on River Street, and the landscape design creates a continuous pedestrian and bicycle oriented community corridor. New sidewalks and a dedicated bike lane will create clearly demarcated circulation lanes, and new street trees will be added along the length of the Project to create a consistent green canopy. Lastly, eight new parallel parking spaces are proposed on River Street to support the Project's commercial/retail space. The second phase of the project will involve the construction of 9 mixed-income, two-bedroom condominium units in a single building, and up to nine surface parking spaces.

Figure 2-25: Site Plan



2.4.4 Site Access

As noted in Section 2.4.2, the Project site presents a variety of edge conditions— the active, but unprogrammed River Street corridor on the north side and to the south, the Neponset River Greenway, and the MBTA's bus station and trolley tracks. To the east is a four story rental apartment building at 442 River St., and to the west, along River Street exists a mix of one-story commercial storefronts which abut Mattapan Square and are slated for redevelopment. The main residential lobby for the building is located directly on

River Street, but is also accessible from the south, coming from either the MBTA station or the Greenway, via a clearly demarcated pedestrian path and ramp which connects the commuter parking lot to the commercial level. A vestibule connecting through the building provides two-sided access to the lobby, fitness center, and interior bike parking.

The majority of the Project site is defined by an existing busway used by the MBTA which has both an entrance and exit on River Street. The busway is private and not shared with city vehicular traffic. Pedestrians coming to Mattapan Station from the east and north often walk along this busway out of convenience, despite it's lack of sidewalk or differentiation between bus and pedestrian routes, resulting in a safety hazard. It is important to note that this busway will no longer be solely a private MBTA route, but will also be shared with the public. The busway will become a City of Boston Street. Residents of the Project will access the Site from River Street adjacent to Gillespie's Way before entering seventy (70) underground residential parking spaces. They will exit to the east of the building and use the current busway to reconnect with River Street. MBTA commuters and Kiss-and-Ride users will follow the same route, but will have a dedicated entrance and exit to fifty (50) at-grade parking spaces adjacent to Mattapan Station. It has been a priority of the MBTA to keep public traffic segregated from the bus queueing area and to keep vehicular circulation separate wherever possible.

Safe multimodal transportation is provided around the Site. Pedestrian and bicycle routes begin on River Street and continue along the northeast edge of the Site to the south, accessing both the Neponset River Greenway and the MBTA platform. Landscape paving and buffer plantings differentiate and protect these paths, creating a minimum of three feet of separation between modes of transportation. In addition to these primary access routes around the Site, the entirety of the current busway will feel like a fully public street, with curbs, plantings, and a minimum six-foot sidewalk. On River Street, new crosswalks will connect the Project to adjacent blocks and to Municipal Lot #013 across the street from the Project site, which provides free parking for the commercial businesses on Blue Hill Avenue and around Mattapan Square. At the back of the site, crosswalks will connect across the busway to the MBTA platform and at the Greenway entrance. Together with clear signage and new lighting, navigating the site by pedestrian and cyclists will be much safer and more intentional.

Figure 2-26: Site Access Plan

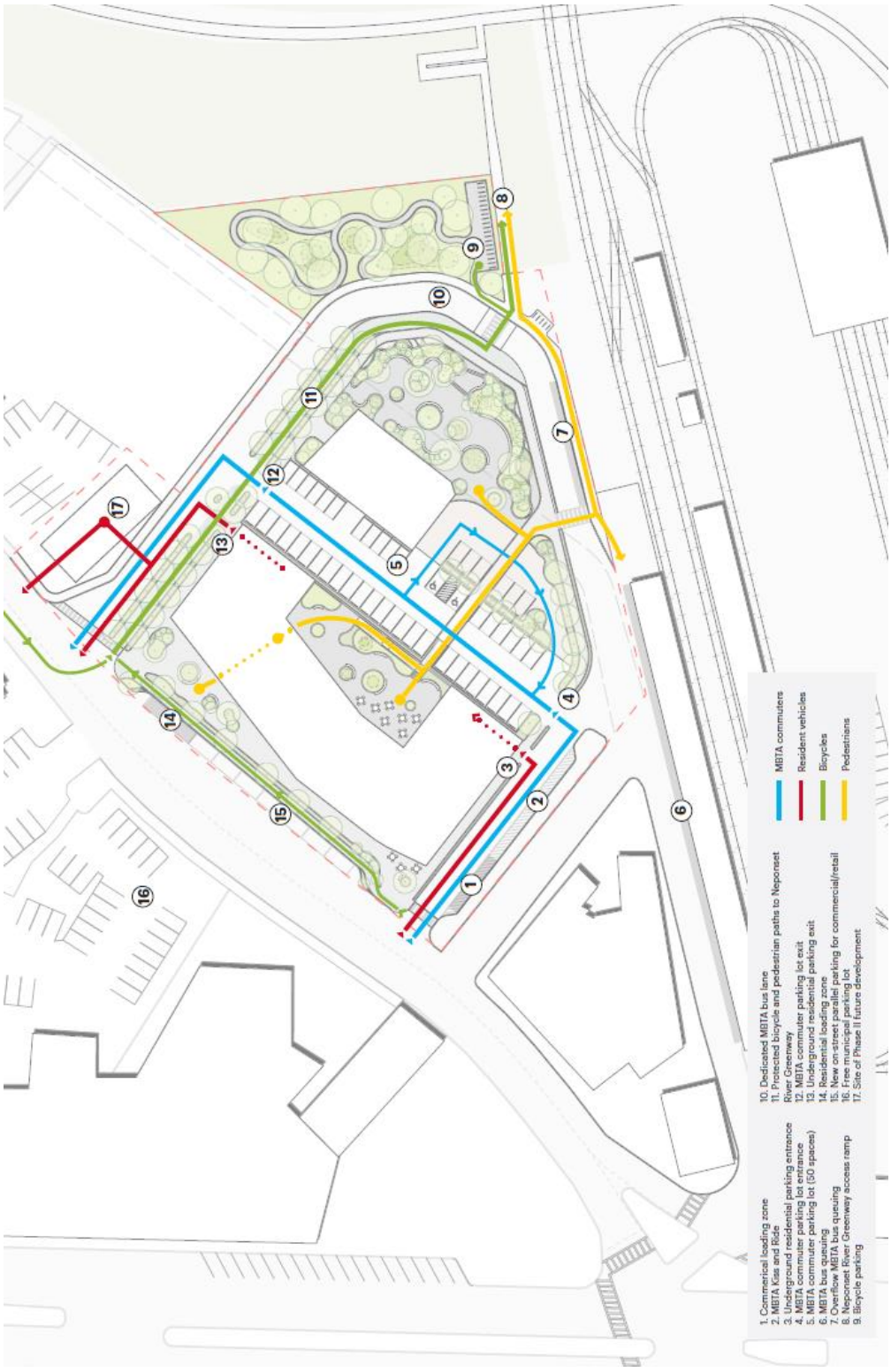


Figure 2-27: View From Greenway

2.4.5 Height, Massing, Facade Treatment

The building massing is consistently six stories to achieve the appropriate density for a prime Transit-Oriented Development site - five stories of residential rental units above one level of commercial/retail, with the exception of two townhouse rental units at ground-floor level. An additional feature is at the southern edge of the site, which can accommodate a double height community space and nine condominium units due to the significant site slope. Due to the complexity of the site and numerous transportation constraints, the massing is a simple south-facing courtyard, seeking to optimize natural daylight for the residential units and landscaped outdoor spaces and maximize views to the Neponset River. At the heart of the courtyard is a flexible outdoor space serving the commercial/retail tenants that could be used by building residents and the Mattapan community alike.

The facade character at ground level is defined by the commercial/retail/amenity elements and residential lobby. These spaces will use classic brick in honor of other historic buildings around the city, made modern with a gray color and the use of glass storefronts and metal frame elements, suitable for an urban public space.

Above the commercial/retail podium, the residential volume has been subdivided into smaller masses to reflect the scale of a city block. Durable, familiar façade materials emphasize the distinct building volumes through slight changes in color and differences in application. Cementitious panel is designed in horizontal and vertical patterns and will vary in width and texture. The variety and arrangement of the facades is meant to be indicative of the multi- family character of the building. Juliette balconies with perforated metal

panels and large windows recognize and celebrate the Neponset River, connecting the residents of the building to the landscape outside and to the dynamic, seasonal nature of the Neponset River Greenway.

Figure 2-28: River Street Facade

Figure 2-29: North and South Elevations

2.5 Historic and Archaeological Resources

The Proponent has determined that there are no historic and archaeological resources located on the Project site, nor within one-half mile of the Project site.

2.5.1 Mattapan History

The Mattapan neighborhood was the original territory of the Neponset Tribe of the Massachusetts confederation of Native Americans, and was originally part of the Dorchester community until it was annexed by the City of Boston in 1870. The name "Mattapan" was selected by the Native American tribes and it means "a good place to be." The neighborhood's demographics are diverse, with a large population of Haitians, Caribbean immigrants, and African-Americans.

For most of the 20th century, Mattapan was inhabited by white ethnic groups, and in the late 1960's and the early 1970's, the community underwent a dramatic demographic change with the influx of a significant amount of African-Americans into the neighborhood.

During the 1980's, an increasing amount of Haitians moved into Mattapan, and eventually the neighborhood became one of the most important centers of Haitian cultural, social, and political life. Currently, approximately 80% of Mattapan Residents are of African descent, and it constitutes the highest concentration of Haitians and Jamaicans in the Commonwealth of Massachusetts.

The Mattapan Square Commercial District is located at the crossroads where Blue Hill Avenue, Cummins Highway, and River Street meet. The street car system connecting downtown Boston to the neighborhoods was completed in 1901, with one branch terminating in Mattapan Square. This connection established Mattapan Square as an important neighborhood commercial hub. One of the first major public buildings in

Mattapan Square was the Mattapan Branch of the Boston Public Library, which opened on May 2, 1854. To this day, it remains the commercial heart of the Mattapan community. In December 2011, the Mattapan Square Main Streets was incorporated as the City of Boston's 20th Main Streets.

The Massachusetts Bay Transportation Authority's (MBTA) Mattapan Station is the southern terminus of the Ashmont-Mattapan High Speed Line, and an important bus transfer station, with ten routes terminating there. The Ashmont-Mattapan Line follows the right-of-way of the Dorchester and Milton Branch Railroad, which opened to Mattapan in December 1847. The line was converted to an interurban-style trolley line in the 1920s, with the final section to Mattapan opening on December 21, 1929. The original stone depot building, now a restaurant, stands adjacent in Mattapan Square.

2.6 INFRASTRUCTURE

The existing infrastructure surrounding the site of 466 River Street in Boston's Mattapan neighborhood appears of adequate capacity to service the needs of the Project. The following sections describe the existing sanitary sewer, water, and storm drain systems surrounding the site and explain how these systems will service the development. The analysis also discusses any anticipated Project-related impacts on the utilities and identifies mitigation measures to address these potential impacts.

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

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

2.6.1 SANITARY SEWER SYSTEM

2.6.1.1 EXISTING SANITARY SEWER SYSTEM

The Boston Water and Sewer Commission ("BWSC") record drawings indicate that the sanitary sewer system in the Project area **(See Figure 2-30, Existing Drain and Sewer System)** is owned and maintained by BWSC. BWSC record drawings indicate an existing 57-inch sanitary sewer line running southwest along River Street to the north of the Project. There's also an existing sewer easement on the Project site for a 36"x37" MWRA sewer line. The MWRA line runs northeast through the southeast corner of the Project.

2.6.1.2 ESTIMATED PROJECT WASTEWATER GENERATION

The Project will generate an estimated 37,364 gallons per day (gpd) based on design sewer flows provided in 310 CMR 15.00-The State Environmental Code, Title 5: Standard Requirements for the Siting, Construction, Inspection, Upgrade and Expansion of On-Site Sewage Treatment and Disposal Systems and for the Transport and Disposal of Septage and the proposed building program as summarized in **Table 2-30.**

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

Table 2-30 Project Wastewater Generation

Use	Number	Sewage Generation Rate	Total gpd
Residential	254 bedrooms	110 gpd/bedroom	25,960
Commercial/Retail	4,354 sf	50 gpd per 1,000 square feet	209
Restaurant/Cafe[1]	277 seats (5,546 sf)	35 gpd per seat	9,695
Community Room[2]	100 seats (2,000 sf)	15 gpd per seat	1,500
Total Estimated Project Sewage Generation			**37,364 gpd**

1 Assuming 20 SF per seat

2 Assuming 15 SF per seat

2.6.2 SANITARY SEWER CONNECTIONS

Proposed sanitary sewer line from the new building will likely connect to the BWSC's sewer line in River Street.

2.6.2.1 WASTEWATER FLOW MITIGATION

To help conserve water and reduce the amount of wastewater generated by the Project, the Proponent will investigate the use of water conservation devices such as low-flow toilets and urinal, flow-restricting faucets, and sensor operated sinks, toilets, and urinals consistent with the Proponent's compliance at the LEED Certifiable threshold and in compliance with all pertinent Code requirements.

Figure 2-30 Existing Drain and Sanitary Sewer System in the Vicinity of 500 River Street (Owned and Maintained by BWSC)

2.6.3 WATER SUPPLY SYSTEM

2.6.3.1 EXISTING WATER SERVICE

The water distribution system near the Project area is owned and maintained by BWSC (see Figure 2-31, Existing Water Distribution System). BWSC record drawings indicate there is a 16-inch ductile iron pipe (DICL) in River Street and an 8-inch pitted cast iron (PCI) in Gillespies Lane. Both water mains are part of the Southern High service network. The 16-inch DICL main was installed in 1974 and the 8-inch PCI main was installed in 1911.

There are four fire hydrants in the vicinity of the Project area. Two hydrants are located on River Street, one hydrant is on Gillespies Lane and one hydrant is on Riverbank Place. It appears that these hydrants will provide sufficient coverage for the Project. The Proponent will design appropriate domestic and fire protection lines and confirm the fire hydrant coverage for the Project with the consultation of BWSC and the Boston Fire Department (BFD) during the detailed design phase.

2.6.4 PROPOSED WATER SERVICE

It is anticipated that the Project will be serviced via the existing 16-inch DICL water main in River Street. Separate new domestic water and fire protection services will be required. The fire protection service will be provided with a backflow prevention device that will be approved though BWSC's Enforcement Section. The location of hydrants and siamese connections will be reviewed by BWSC and BFD during the design development phase of the Project. Water meters will be of a type approved by BWSC and tied into the BWSC's Automatic Meter Reading (AMR) System. Fixture counts and water meter sizing information will be provided and services will be designed and coordinated with the BWSC as part of the Site Plan review process and General Service Application.

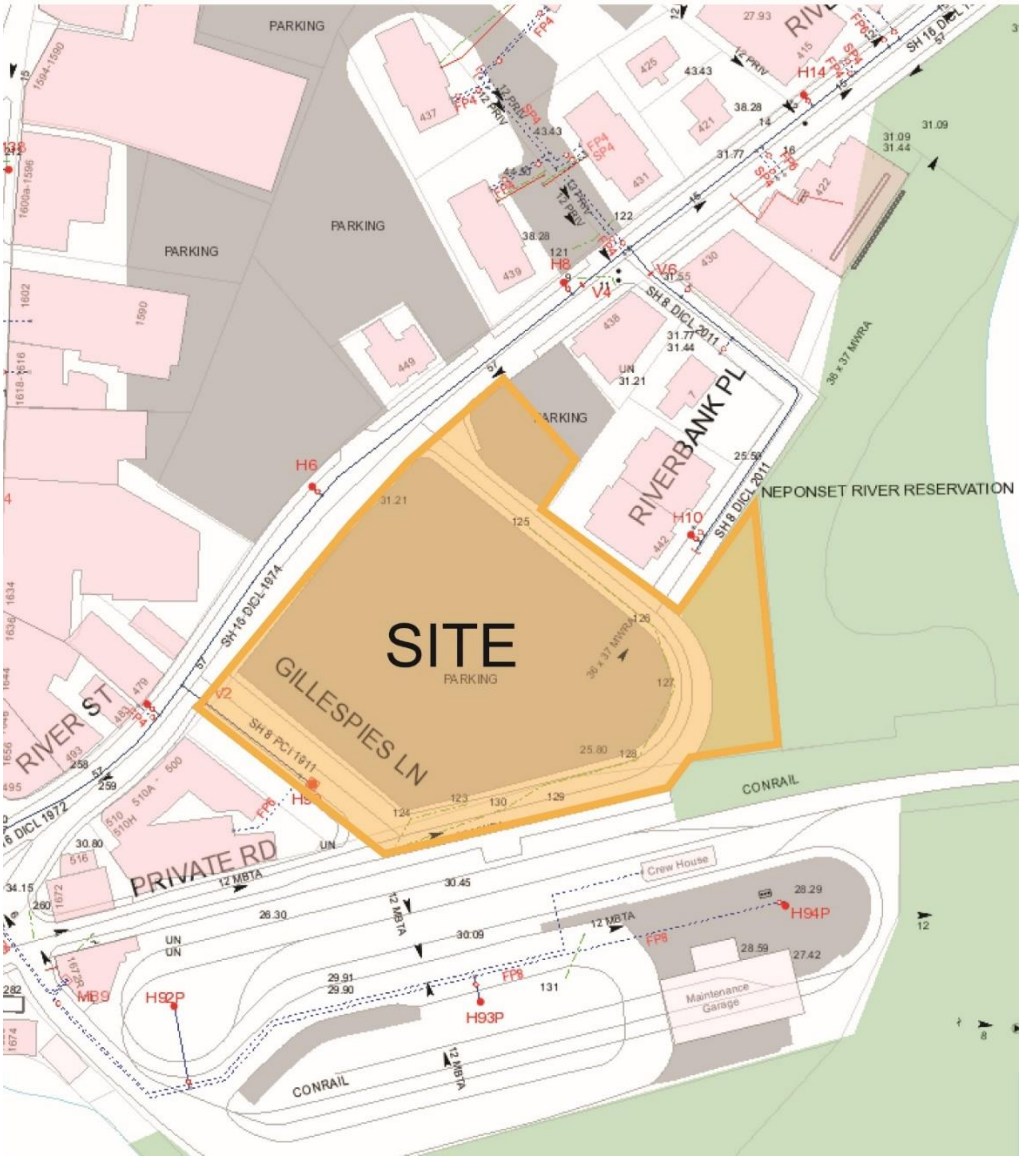
2.6.4.1 ANTICIPATED WATER CONSUMPTION

The Project's estimated water consumption is based on the project's estimated sewage generation, plus a factor to account for consumption, system losses, and other usages to estimate an average water demand. The total estimated water demand is 41,100 gpd. The water for the Project will be supplied by BWSC. More detailed water use and meter sizing calculations will be submitted to BWSC as part of the Site Plan approval process.

2.6.4.2 WATER SUPPLY CONSERVATION AND MITIGATION

To help conserve water used by the Project, the Proponent will investigate the use of water conservation devices such as low-flow toilets and urinal, flow-restricting faucets, and sensor operated sinks, toilets, and urinals consistent with the Proponent's compliance at the LEED Certifiable threshold and in compliance with all pertinent Code requirements.

Figure 2-31 Existing Water Distribution System in the Vicinity of 466 River Street (Owned and Maintained By BWSC)



2.6.5 EXISTING STORMWATER DRAINAGE SYSTEM

The Project site consists entirely of a paved parking lot. The existing storm drainage system adjacent to the Project is owned and maintained by BWSC. The system drains to the Mattapan MBTA Station where the MBTA takes ownership through the station. BWSC picks up ownership again as the system outlets the MBTA station through a 12" clay pipe that ultimately outfalls to the Neponset River. **(see Figure 2-30 – Existing Drain and Sanitary Sewer System).**

2.6.6 PROPOSED STORMWATER DRAINAGE SYSTEM

The proposed stormwater management system will connect to the BWSC owned system and will plan to infiltrate a volume of stormwater equivalent to one inch times the impervious area of the site.

2.6.7 WATER QUALITY AND CONSTRUCTION STORMWATER MANAGEMENT

The Project proposes a stormwater management program, designed in compliance with MassDEP Storm Water Management Standards requirements, which plan to provide pretreatment and infiltration prior to discharging stormwater to the drainage system. An operation and maintenance plan will be developed to support the long-term functionality of the proposed stormwater management system.

A pollution prevention plan will be prepared for use during construction including during demolition activity. Stormwater pollution prevention measures will include good housekeeping such as properly storing materials, spill prevention and response plans, and proper storage and disposal of solid wastes. Erosion and sediment controls will be used during construction to protect adjacent properties, the storm drain system, and the nearby surface waters. The Contractor will be responsible for controlling dust using street sweeping and watering if necessary.

2.6.8 FLOOD ZONES

The existing Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project site indicates that it is not located within the 100-year flood zone (FIRM, Suffolk County, Massachusetts; Panel 0089J, Map Number 25025C0089J), Map Revised March 16, 2016).

2.6.9 ELECTRICAL SYSTEMS

Eversource owns and maintains the electrical transmission system in the vicinity of the Project. The electrical power supply design and loads for the building will be coordinated with Eversource during the design phase. The Proponent is investigating energy conservation measures, including energy efficient lighting and heating and cooling systems for the Project.

2.6.10 TELEPHONE AND CABLE SYSTEM

Verizon, Comcast, and RCN provide cable and telephone services in the Project area. It is anticipated that cable service to the proposed buildings will be underground from River Street.

2.6.11 NATURAL GAS SYSTEM

National Grid provides natural gas in the Project area. National Grid owns and maintains an 18-inch gas main and 8" gas main in River Street. The gas mains run along the north side of the project site. The actual size and location of the building services will be coordinated with National Grid.

2.6.12 UTILITY DURING CONSTRUCTION

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

2.7 STORMWATER MANAGEMENT STANDARDS

2.7.1 NO NEW UNTREATED DISCHARGES

The Project does not propose new stormwater outfalls, but will treat the stormwater runoff from the Site prior to discharging to the municipal storm drain system.

2.7.2 POST DEVELOPMENT PEAK DISCHARGE RATES TO NOT EXCEED PRE-DEVELOPMENT PEAK DISCHARGE RATES

The Project intends to have a stormwater management system that will control peak discharge rates leaving the site. This is expected to be accomplished by providing a subsurface infiltration or detention system on-site.

2.7.3 LOSS OF ANNUAL RECHARGE TO GROUNDWATER SHALL BE ELIMINATED OR MINIMIZED

The stormwater management system will provide the recharge volume required in the Standards for areas not currently covered in impervious surfaces and will provide recharge volume to the maximum extent practicable for areas that are currently impervious. This is expected to be accomplished by infiltrating rooftop runoff through a subsurface infiltration system. Infiltration will be provided to the maximum extent practicable if it is determined that the site is solely comprised of C and D soils or seasonal high groundwater elevations limit the ability to infiltrate.

2.7.4 STORMWATER MANAGEMENT SYSTEMS SHALL BE DESIGNED TO REMOVE 80% OF THE AVERAGE ANNUAL POST-CONSTRUCTION LOAD OF TOTAL SUSPENDED SOLIDS

If feasible, rooftop runoff is expected to be directed to a subsurface infiltration system for treatment and for providing groundwater recharge. Runoff from pavement areas are

anticipated to be captured by deep sump catch basins and routed through a proprietary separator prior to connecting to the municipal storm drain system. Full compliance is required for any component of the Project that is not a redevelopment, although the intent is to comply for the entire Site.

2.7.5 LAND USES WITH HIGHER POTENTIAL POLLUTANT LOADS

The Project is not a land use with higher potential pollutant loads. While there are a high number of vehicle trips, the parking is structured within the building with only limited outdoor parking.

2.7.6 STORMWATER DISCHARGES TO CRITICAL AREAS

The stormwater will discharge to the municipal storm drain system which outfalls to the Neponset River.

2.7.7 REDEVELOPMENT PROJECTS

The Project Site has been previously disturbed with a substantial paved parking area. The project intends to meet the Standards for the portions of the site currently not paved or otherwise degraded. The remainder of the site will meet the requirements of Standard 7 and will improve existing conditions.

2.7.8 CONTROL CONSTRUCTION-RELATED IMPACTS

The Project will include erosion and sediment controls and during construction, a stormwater pollution prevention plan will be developed and implemented.

2.7.9 LONG-TERM OPERATION AND MAINTENANCE

A long-term operation and maintenance plan will be developed and implemented for the stormwater management system.

2.7.10 NO ILLICIT DISCHARGES

The Project will not result in illicit connections or discharges.

2.7.11 FLOOD HAZARD ZONES/WETLANDS

No wetland resource areas are located on the Project Site.

2.8 SUSTAINABLE DESIGN

2.8.1 City of Boston Article 37

TO: City of Boston:

CLEAResult conducted a LEED for Homes V4 preliminary meeting with the project team of the Mattapan MBTA development to create a LEED for Homes checklist. The checklist reflects Phase A of the development project, which consists of two phases. The first phase consists of 135 rental units, with 70 below grade parking spaces, 10,000 square feet of ground floor retail/commercial space, with approximately 8 on-street parking spaces, and a 2,000 square foot community room. Phase II of the project will be comprised of 9 mixed-income, two-bedroom condominium units in a single building, and up to 9 surface parking spaces. CLEAResult has confirmed that all the applicable prerequisite items in LEED for Homes will be met. Sufficient credits allow the project to achieve the LEED Silver threshold. The prerequisite and credit specific information can be seen in Section 1. The finalized LEED for Homes checklist is shown in Section 2. The 144-unit development will comply with the LEED for Homes Midrise checklist. The project is currently slated to achieve 53 points + 5 maybe points and plans to meet the LEED Silver Certification.

Integrative Process (IP)	[0 points] + [1 maybe point]
Location & Transportation (LT)	[15 points]
Sustainable Sites (SS)	[2 points] + [2 maybe points]
Water Efficiency (WE)	[8 points] + [1 maybe point]
Energy & Atmosphere (EA)	[15 points]
Materials & Resources (MR)	[1 point]
Indoor Environmental Quality (EQ)	[10 points]
Innovation (IN)	[1 point] + [1 maybe point]
Regional Priority (RP)	[1 point]
Total Points	[53 points] + [5 maybe points]

CLEAResult is one of the 38 Provider organizations of the United States Green Building Council's LEED for Homes program and has served in this capacity since the program's first pilot in late 2005.

Sincerely,

Mike Schofield | Senior Project Manager | Consulting and Construction Services

CLEAResult | 50 Washington Street, Suite 3000 | Westborough, MA 01581 | Fax: 508.366.2214

Cell: 508.365.3204 | LEED AP Homes #10645372 | mike.schofield@clearesult.com

2.8.2 SUSTAINABILITY NARRATIVE

2.8.2.1 Integrative Process

These credits are not being pursued at this time. The project may pursue 1 point through Option 3 – Trades Training. The project team will work with the contractor and the trades, but the training may not reach the 8-hour threshold required to achieve this credit.

2.8.2.2 Location and Transportation

The building is located at 466 River Street Mattapan, adjacent to the MBTA Mattapan Station, just a short walk away from the Mattapan Square/Blue Hill Avenue business district. It will be within sight of the Neponset River, but the location is not designated as a FEMA flood hazard area, satisfying the Floodplain Avoidance prerequisite.

This project can reasonably be expected to achieve maximum credits in this category. The building will be constructed on the site of an existing MBTA parking lot, qualifying it as a Previously Developed Site. This project should achieve Exemplary Performance with respect to Compact Development, with a density of over 50 units/acre. The neighborhood provides a multitude of Open Space opportunities, including the Neponset River Greenway, as well as the Gladeside Urban Wild and several playgrounds within a ½-mile walking distance. Mattapan Square is a vibrant commercial area with a sufficiently dense existing Street Network, well surpassing the required 90 intersections per square mile, with access to a Bicycle Network that includes the Neponset River Greenway. The neighborhood offers numerous Community Resources, and the MBTA Trolley, along with the current eight bus routes to Mattapan Square provide excellent Access to Transit.

2.8.2.3 Sustainable Sites

The project team for the Mattapan Station project will develop an Erosion and Sedimentation Control plan to meet the LEED prerequisite for Construction Activity Pollution Prevention, and will develop a landscape plan and plant list that contains no invasive plants, as recognized by the Massachusetts Invasive Plant Advisory Group.

This project is currently pursuing 2 out of a total 7 possible points in this category, with potential for 2 or more additional points as design progresses. The goal will be to achieve 100% on-site rainwater infiltration, and the design team will use guidance from the BWSC's Stormwater Best Management Practices. Design options being considered include permeable paving; however, as no Civil plans have been drawn up to date, the project is not taking credit for these points, but is considering them a maybe. The design will incorporate Nontoxic Pest Control strategies, including but not limited to: minimum 6" inspection space between grade and nonmasonry siding, sealing of all external cracks and penetrations, rodent-proof screens on openings greater than ¼", moisture discharge >24" from foundation, and landscape features >18" from exterior wall. In order to earn points under this credit, the project will also develop an integrated pest management policy.

2.8.2.4 Water Efficiency

The building will be equipped with a central water meter, and the project team is committed to water conservation. Following the Prescriptive Path, 8 out of 10 possible points are expected to be achieved. Reductions in Indoor Water Use will be achieved through the installation of low-flow, WaterSense labeled bathroom fixtures (1.0 gpm lavatory faucets, 1.5-gpm showerheads, 0.8-gpf toilets) and Energy Star qualified washing machines. This project will seek to limit turf grass to less than 20% of the landscaped area, and specify native or adapted plants for at least 60% of landscaped area, in order to reduce Outdoor Water Use.

2.8.2.5 Energy and Atmosphere

Preservation of Affordable Housing (POAH), and Nuestra Comunidad, the developers of Mattapan Station, have a longstanding organizational commitment to energy efficiency at their properties. The project will be designed to exceed the LEED prerequisite Energy Simulation target of 5% improvement over baseline, per ASHRAE Standard 90.1-2010, with a goal of at least 15% improvement. This performance level would award 15 points in this category, exceeding the minimum required threshold of 8 points.

Utility metering will comprise a whole-building gas meter and individual unit electric submeters; this strategy helps engage tenants in an understanding of their usage patterns. Further Education of Tenants will include a one-hour walkthrough to familiarize occupants with their energy systems and how to operate them. The project team will engage a Commissioning Agent to perform functional testing of all mechanical systems, to ensure they are operating to design specifications, and identify opportunities to maximize efficiency. The Facility Manager will be provided with an operations and maintenance manual.

2.8.2.6 Materials and Resources

In order to comply with LEED prerequisites in this category, this project will specify that any tropical hardwoods used in the building are FSC-certified. The construction team will comply with the Water Management System builder requirements, and the Green Rater will provide verification for an additional point.

2.8.2.7 Indoor Environmental Quality

Ventilation strategies will be finalized later on in the Design Development process, but this project is committed to balancing indoor air quality and occupant comfort with energy efficiency. The project hopes to achieve 10 out of a possible 18 points in this category, exceeding the minimum point threshold of 3. A balanced ventilation system will be installed to supply fresh air to the units, as well as common spaces, and exhaust stale air. The system will be designed to meet ASHRAE Standard 62.2-2010 for unit ventilation and ASHRAE Standard 62.1-2010 for common areas, but not to exceed the ASHRAE ventilation rates by more than 10%. In addition to whole-building mechanical ventilation, ASHRAE-compliant local exhaust systems will be installed in all kitchens and baths.

Each unit will have a fully sealed air barrier to limit transfer of conditioned air, as well as odors and pests, between dwelling units. Units will be blower door tested to document compliance with the LEED Compartmentalization prerequisite. In order to promote even distribution of conditioned air within the living space, bedrooms will be pressure balanced with respect to the main living area.

In order to limit exposure to harmful combustion gases, only closed combustion heating and domestic hot water systems will be installed, and there will be no fireplaces. Additionally, all air transfer pathways between the garage and the building interior will be sealed, and carbon monoxide detectors will be installed in all units, as well as any common areas adjacent to the garage. Smoking will be prohibited in all areas of the building as well as within 25 feet of any doors and windows.

Only Low-VOC paints and sealants will be specified, and any composite wood products will use ultra-low-emitting formaldehyde or no-added formaldehyde resins.

2.8.3 Innovation in Design

Mattapan Station will earn one additional Exemplary Performance point for Location and Transportation Community Resources, due to the site's proximity to multiple public transportation options.

2.8.4 Regional Priorities

USGBC's Regional Priority credits allow for an additional point for Access to Transit.

2.9 CLIMATE CHANGE RESILIENCE

Subject to Article 80, Large Project Review, an Accessibility Checklist has been prepared for this project that addresses changes in sea level, temperatures, heat events, droughts, rainfall events, and wind events. A Climate Change Preparedness and Resiliency Checklist is given in the appendix. The project design will incorporate measures such as street trees, additional landscaped areas, installation of operable windows, and us of high-albedo roofing material to minimize the impact of high temperatures.

2.10 ACCESSIBILITY

Subject to Article 80 Large Project Review, an Accessibility Checklist has been prepared for this project that addresses compliance with the Americans for Disabilities Act and standards established by the Architectural Access Board and is included in the Appendix. The design will continue to advance post submission of the Expanded Project Notification Form (EPNF). The Proponent will at the earliest opportunity schedule a review with the Accessibilities Commission staff.

3.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

3.1 Massachusetts Environmental Protection Act

This project does not meet discretionary thresholds for review under the Massachusetts Environmental Policy Act (MEPA).

3.2 Massachusetts Historical Commission

The Project site is not located adjacent to any National Register listed property. Therefore, it does not require review by the Massachusetts Historical Commission (MHC).

3.3 Boston Landmarks Commission

The Project site is not located in a designated historic district or Historic Protection Area. Therefore, Boston Landmarks Commission (BLC) review is not required. Based upon the City of Boston Environment Department review of this EPNF, the developer will comply with any determination made regarding review by the BLC.

3.4 Architectural Access Board

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

3.5 Boston Civic Design Commission

Article 28 of the Boston Zoning Code stipulates that projects over 100,000 square feet shall be subject to review by the Boston Civic Design Commission (BCDC). The project will be presented to the BCDC as part of the BPDA's Article 80 review.

3.6 Other Permits and Approvals

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

4.0 PROJECT CERTIFICATION

This form has been circulated to the Boston Planning and Development Agency (former BRA) as required by the Boston Zoning Code, Article 80.

Signature of Proponent's Representative

Rodger L. Brown Jr.
Mattapan Station Preservation Associates LLC

September 25, 2017

Signature of Preparer

Beverley Johnson
Bevco

September 25, 2017

APPENDICES

Appendix A – LEED Checklist
Appendix B – Climate Change Preparedness Checklist
Appendix C – Disclosure Statement (under separate cover)
Appendix D – Site Map RE: MWRA Easement
Appendix E – Noise Analysis Back-Up Data
Appendix F – Air Quality Analysis Back-Up Data
Appendix G – Transportation Analysis Back-Up Data
Appendix H – MBTA Letter Awarding Tentative Designation
Appendix I – Community Engagement and Letters of Support
Appendix J – Accessiblity Checklist

Appendix A – LEED Checklist

LEED BD+C: Multifamily Midrise v4 - LEED v4

Mattapan Station - River Street Scorecard

Note: The information on this tab is READ-ONLY. To edit this information, see the Credit Category tabs.

Integrative Process		**Preliminary**	Y	0 of 2	↓	*0*	**Verified**	0
IPc	**Integrative Process**			0 of 2		*0*		
Location and Transportation		**Preliminary**	Y	15 of 15	↓	*0*	**Verified**	0
LTp	Floodplain Avoidance			Required				Not Verified
Performance Path								
LTc	LEED for Neighborhood Development			0 of 15		*0*		
Prescriptive Path								
LTc	Site Selection			8 of 8		*0*		
LTc	Compact Development			3 of 3		*0*		
LTc	Community Resources			2 of 2		*0*		
LTc	Access to Transit			2 of 2		*0*		
Sustainable Sites		**Preliminary**	Y	2 of 7	↓	*2*	**Verified**	0
SSp	Construction Activity Pollution Prevention			Required				Not Verified
SSp	No Invasive Plants			Required				Not Verified
SSc	Heat Island Reduction			0 of 2		*0*		
SSc	Rainwater Management			0 of 3		*2*		
SSc	Nontoxic Pest Control			2 of 2		*0*		
Water Efficiency		**Preliminary**	Y	8 of 12	↓	*1*	**Verified**	0
WEp	Water Metering			Required				Not Verified
Performance Path								
WEc	Total Water Use			0 of 12		*0*		
Prescriptive Path								
WEc	Indoor Water Use			6 of 6		*0*		
WEc	Outdoor Water Use			2 of 4		*1*		
Energy and Atmosphere		**Preliminary**	Y	15 of 37	↓	*0*	**Verified**	0
EAp	Minimum Energy Performance			Required				Not Verified
EAp	Energy Metering			Required				Not Verified
EAp	Education of the Homeowner, Tenant or Building Manager			Required				Not Verified
EAc	Annual Energy Use			15 of 30		*0*		
EAc	Efficient Hot Water Distribution System			0 of 5		*0*		
EAc	Advanced Utility Tracking			0 of 2		*0*		
Materials and Resources		**Preliminary**	Y	1 of 9	↓	*0*	**Verified**	0
MRp	Certified Tropical Wood			Required				Not Verified
MRp	Durability Management			Required				Not Verified
MRc	Durability Management Verification			1 of 1		*0*		
MRc	Environmentally Preferable Products			0 of 5		*0*		
MRc	Construction Waste Management			0 of 3		*0*		

Indoor Environmental Quality		**Preliminary**	Y	10 of 18	⩘	*0*	**Verified**	0
EQp	Ventilation			Required				Not Verified
EQp	Combustion Venting			Required				Not Verified
EQp	Garage Pollutant Protection			Required				Not Verified
EQp	Radon-Resistant Construction			Required				Not Verified
EQp	Air Filtering			Required				Not Verified
EQp	Environmental Tobacco Smoke			Required				Not Verified
EQp	Compartmentalization			Required				Not Verified
EQc	Enhanced Ventilation			3 of 3		*0*		
EQc	Contaminant Control			0.5 of 2		*0*		
EQc	Balancing of Heating and Cooling Distribution Systems			1 of 3		*0*		
EQc	Enhanced Compartmentalization			0 of 3		*0*		
EQc	Combustion Venting			2 of 2		*0*		
EQc	Enhanced Garage Pollutant Protection			1 of 1		*0*		
EQc	Low-Emitting Products			1.5 of 3		*0*		
EQc	No Environmental Tobacco Smoke			1 of 1		*0*		
Innovation		**Preliminary**	Y	1 of 6	⩘	*1*	**Verified**	0
INp	Preliminary Rating			Required				Not Verified
INc	Innovation			1 of 5		*1*		
INc	LEED Accredited Professional			0 of 1		*0*		
Regional Priority		**Preliminary**	Y	1 of 4	⩘	*0*	**Verified**	0
RPc	Regional Priority			1 of 4		*0*		

Point Floors	
The project earned at least 8 points total in Location and Transportation and Energy and Atmosphere	No
The project earned at least 3 points in Water Efficiency	No
The project earned at least 3 points in Indoor Environmental Quality	No

Total		**Preliminary**	Y	53 of 110	⩘	4	**Verified**	0

Certification Thresholds Certified: 40-49, Silver: 50-59, Gold: 60-79, Platinum: 80-110

Appendix B – Climate Change Preparedness Checklist

Climate Change Preparedness and Resiliency Checklist for New Construction

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

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

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

Climate Change Analysis and Information Sources:

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

Checklist

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

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

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

A.1 - Project Information

Project Name:	**Mattapan Station**
Project Address Primary:	**490 River Street**
Project Address Additional:	**Mattapan, MA 02126**
Project Contact (name / Title / Company / email / phone):	**Beverley Johnson/Principal/Bevco/ bjohnson@bevcoassociates.comcastbiz.net/617-296-7003**

A.2 - Team Description

Owner / Developer:	**Nuestra Communidad/Preservation of Affordable Housing**
Architect:	**The Architectural Team/ MA Design**
Engineer (building systems):	**TBD**
Sustainability / LEED:	**Clearesult**
Permitting:	**Bevco Associates**
Construction Management:	**TBD**
Climate Change Expert:	**Clearesult**

A.3 - Project Permitting and Phase

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

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

A.4 - Building Classification and Description

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

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

Wood Frame	Masonry	Steel Frame	Concrete

Describe the building?

Site Area:	*112,020 SF*	Building Area:	*156,250 SF*
Building Height:	*65ft River St/ 74 Ft at rear.*	Number of Stories:	*6 Flrs River St./ 7 Flrs rear of building.*
First Floor Elevation (reference Boston City Base):	0' *Elev.*	Are there below grade spaces/levels, if yes how many:	*1 Level*

A.5 - Green Building

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

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

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

Registered:	*No*	Certified:	*No*

A.6 - Building Energy

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

Electric:	*TBD (kW)*	Heating:	*TBD (MMBtu/hr)*
What is the planned building Energy Use Intensity:	*TBD (kbut/SF or kWh/SF)*	Cooling:	*TBD (Tons/hr)*

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

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

What is nature and source of your back-up / emergency generators?

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

B - Extreme Weather and Heat Events

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

B.1 - Analysis

What is the full expected life of the project?

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

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

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

What time span of future Climate Conditions was considered?

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

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

7 F/ 89F Deg.

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

95 Deg.	*3 Days*	*2 Events / yr.*

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

15 Days	*1 Events / yr.*

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

46 Inches / yr.	*2 Inches*	*.5 Events / yr.*

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

65 mph Peak Wind	*6Hours*	*.5Events / yr.*

B.2 - Mitigation Strategies

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

Building energy use below code:	*TBD %*
How is performance determined:	ASHRAE 90.1 Energy Model

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

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

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

Roof:	*R = 49*	Walls / Curtain Wall Assembly:	*R = 30*
Foundation:	*R = 20*	Basement / Slab:	*R = 10*
Windows:	*R = 3.5/ U =.28*	Doors:	*R = 5 / U = .2*

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

	On-site clean energy / CHP system(s)	Building-wide power dimming	Thermal energy storage systems	**Ground source heat pump**
	On-site Solar PV	On-site Solar Thermal	Wind power	None
Describe any added measures:				

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems?

Select all appropriate:	Connected to local	Building will be	Connected to	Distributed

distributed electrical	Smart Grid ready	distributed steam, hot, chilled water	thermal energy ready

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

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

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

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

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

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

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

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

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

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

C - Sea-Level Rise and Storms

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

C.1 - Location Description and Classification:

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

No

Describe site conditions?

Site Elevation – Low/High Points:	*Boston City Base 55'/44' Elev.(Ft.)*
Building Proximity to Water:	*335 Ft.*

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

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

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

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

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

300 Ft.

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

C - Sea-Level Rise and Storms

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

C.2 - Analysis

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

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

C.3 - Building Flood Proofing

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

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

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

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

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

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

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

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

Yes / No

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

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

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

Yes / No	
If Yes, describe:	

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

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

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

C.4 - Building Resilience and Adaptability

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

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

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

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

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

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

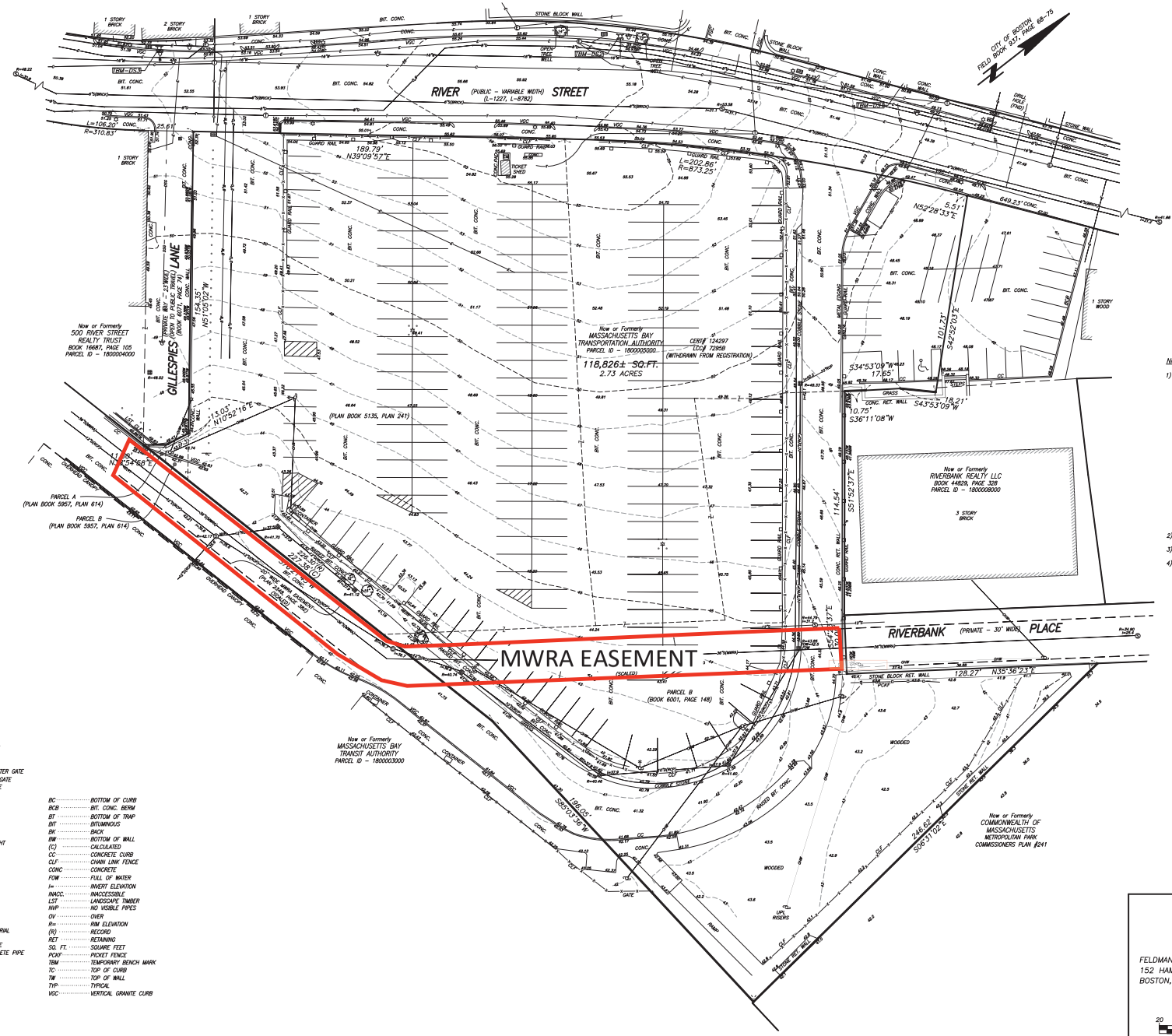
Select appropriate:	*Yes / No*	Solar PV	Solar Thermal	Clean Energy / CHP System(s)
		Potable water storage	Wastewater storage	Back up energy systems & fuel
Describe any specific or additional strategies:				

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

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

Appendix C – Disclosure Statement (under separate cover)

Appendix D – Site Map RE: MWRA Easement



PLAN REFERENCES

CITY OF BOSTON
ENGINEERING DEPARTMENT

FIELD BOOK 730, PAGE 68
FIELD BOOK 740, PAGE 36
FIELD BOOK 855, PAGE 68
FIELD BOOK 924, PAGE 130
FIELD BOOK 937, PAGES 11–17
FIELD BOOK 937, PAGES 68–75
FIELD BOOK 937, PAGES 103–107

PLAN NO. L–1227
PLAN NO. L–8782

MASSACHUSETTS LAND COURT

LCC 7295–B
(WITHDRAWN FROM REGISTRATION)

COUNTY REGISTRY OF DEEDS
PLAN BOOK 3474, PAGE 601
PLAN BOOK 3743, PAGE 45
PLAN BOOK 3803, PAGE 99
PLAN BOOK 5957, PAGE 614
PLAN BOOK 6001, PAGE 148

DEPARTMENT OF CONSERVATION
AND RECREATION

PLAN NO. MPC# 241
PLAN NO. MPC# 335

LEGEND

- SEWER MANHOLE
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- TELEPHONE MANHOLE
- MANHOLE
- HYDRANT
- WATER SHUT OFF/WATER GATE
- GAS SHUT OFF/GAS GATE
- BOSTON WATER VALVE
- CATCH BASIN
- UTILITY POLE
- LIGHT POLE
- ELECTRIC HANDHOLE
- BOLLARD
- SIGN
- UTILITY POLE W/ LIGHT
- DECIDUOUS TREE
- GATE POST
- C — CABLE TELEVISION
- D — DRAIN
- E — ELECTRIC
- G — GAS
- OHW — OVERHEAD WIRES
- S — SEWER
- T — TELEPHONE
- W — WATER
- 12"D(CI) — PIPE SIZE AND MATERIAL
- CI — CAST IRON
- PVC — POLYVINYL CHLORIDE
- RCP — REINFORCED CONCRETE PIPE
- X — X — METAL FENCE
- WOOD FENCE
- RAILING
- DSE — DIGSAFE ELECTRIC
- DSG — DIGSAFE GAS

- BC — BOTTOM OF CURB
- BCB — BIT. CONC. BERM
- BT — BOTTOM OF TRAP
- BIT — BITUMINOUS
- BK — BACK
- BW — BOTTOM OF WALL
- (C) — CALCULATED
- CC — CONCRETE CURB
- CLF — CHAIN LINK FENCE
- CONC — CONCRETE
- FOW — FULL OF WATER
- Iw — INVERT ELEVATION
- INACC. — INACCESSIBLE
- LST — LANDSCAPE TIMBER
- NVP — NO VISIBLE PIPES
- OV — OVER
- R= — RIM ELEVATION
- (R) — RECORD
- RET — RETAINING
- SQ. FT. — SQUARE FEET
- PCKT — PICKET FENCE
- TBM — TEMPORARY BENCH MARK
- TC — TOP OF CURB
- TW — TOP OF WALL
- TYP — TYPICAL
- VGC — VERTICAL GRANITE CURB

NOTES:

1) BENCH MARK INFORMATION: PROVIDED BY CITY OF BOSTON ENGINEERING DEPARTMENT

BENCH MARK USED: RIGHT OUTER CORNER OF LOWEST CONCRETE STEP AT #438 RIVER STREET.
ELEVATION = 45.73

BENCH MARK USED: LEFT OUTER CORNER OF LOWEST CONCRETE STEP AT #397 RIVER STREET.
ELEVATION = 39.08

TEMPORARY BENCH MARKS SET: TBM–DS1: RIGHT OUTER CORNER OF LOWEST STONE STEP AT #449A RIVER STREET AS SHOWN ON PLAN.
ELEVATION = 51.51

TBM–DS2: LEFT FRONT HYDRANT BOLT OPPOSITE MBTA PARKING LOT AS SHOWN ON PLAN.
ELEVATION = 57.80

TBM–DS2: X–CUT FRONT HYDRANT BOLT AT #483 RIVER STREET AS SHOWN ON PLAN.
ELEVATION = 54.41

2) ELEVATIONS REFER TO BOSTON CITY BASE

3) CONTOUR INTERVAL EQUALS ONE (1) FOOT.

4) UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUBSURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUBSURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL TOLL FREE, THE DIG SAFE CALL CENTER AT 1–888–344–7233 SEVENTY–TWO HOURS PRIOR TO EXCAVATION.

EXISTING CONDITIONS PLAN
MATTAPAN STATION
466 RIVER STREET
BOSTON, MASS.

FELDMAN LAND SURVEYORS
152 HAMPDEN STREET
BOSTON, MASS. 02119
PHONE: (617)357–9740
www.feldmansurveyors.com

DECEMBER 21, 2016

FELDMAN LAND SURVEYORS

20 0 10 20 40 80

SCALE: 1"=20'

RESEARCH JBD	FIELD CHIEF DS	PROJ MGR DJR	APPROVED	SHEET NO. 1 OF 1
CALC JBD	CADD JBD	FIELD CHECKED	CRD FILE 15454	JOB NO. 15454

FILENAME: S:\PROJECTS\15400s\15454\DWG\15454–EX.dwg

Appendix E – Air Quality Backup Data

APPENDIX E
AIR QUALITY

MATTAPAN STATION
PROJECT NOTIFICATION FORM

*** MODELOPTs: NonDFAULT CONC FLAT NOCHKD SCREEN NODRYDPLT NOWETDPLT URBAN NoUrbTran

*** MODEL SETUP OPTIONS SUMMARY ***

**Model Is Setup For Calculation of Average CONCentration Values.

-- DEPOSITION LOGIC --
**NO GAS DEPOSITION Data Provided.
**NO PARTICLE DEPOSITION Data Provided.
**Model Uses NO DRY DEPLETION. DRYDPLT = F
**Model Uses NO WET DEPLETION. WETDPLT = F

**Model Uses URBAN Dispersion Algorithm for the SBL for 2 Source(s),
for Total of 1 Urban Area(s):
Urban Population = 10318.0 ; Urban Roughness Length = 1.000 m
**Non-DFAULT option to ignore morning transition from nighttime urban boundary layer (NoUrbTran) selected.

**Model Allows User-Specified Options:
1. Stack-tip Downwash.
2. Model Assumes Receptors on FLAT Terrain.
3. Use Calms Processing Routine.
4. Use Missing Data Processing Routine.
5. No Exponential Decay.
6. Urban Roughness Length of 1.0 Meter Used.

**Other Options Specified:
NOCHKD - Suppresses checking of date sequence in meteorology files
SCREEN - Use screening option
which forces calculation of centerline values

**Model Assumes No FLAGPOLE Receptor Heights.

**The User Specified a Pollutant Type of: CO

**Model Calculates 1 Short Term Average(s) of: 1-HR

**This Run Includes: 2 Source(s); 1 Source Group(s); and 677 Receptor(s)

with: 0 POINT(s), including
0 POINTCAP(s) and 0 POINTHOR(s)
and: 2 VOLUME source(s)
and: 0 AREA type source(s)
and: 0 LINE source(s)
and: 0 OPENPIT source(s)
and: 0 BUOYANT LINE source(s) with 0 line(s)

**Model Set To Continue RUNning After the Setup Testing.

**The AERMET Input Meteorological Data Version Date: 16126

**Output Options Selected:
Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

**NOTE: The Following Flags May Appear Following CONC Values: c for Calm Hours
m for Missing Hours
b for Both Calm and Missing Hours

```
**Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =      5.00 ;  Decay Coef. =     0.000      ;  Rot. Angle =      0.0
                 Emission Units = GRAMS/SEC                                  ;  Emission Rate Unit Factor =   0.10000E+07
                 Output Units   = MICROGRAMS/M**3

**Approximate Storage Requirements of Model =      3.6 MB of RAM.

**Input Runstream File:          CO_5yrs_CO.DTA
**Output Print File:             CO_5yrs_CO.LST

**File for Summary of Results:   W:\Apps\aermod\4231\CO_5yrs_CO.SUM
*** AERMOD - VERSION 16216r ***   *** Mattapan Station Redevelopment Project                                ***        07/13/17
*** AERMET - VERSION 16126  ***   *** CO 1-Hour Screening Modeling                                          ***        18:11:09
                                                                                                                       PAGE   2
*** MODELOPTs:     NonDFAULT  CONC  FLAT  NOCHKD  SCREEN  NODRYDPLT  NOWETDPLT  URBAN  NoUrbTran

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                         (1=YES; 0=NO)

          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1

             NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


                                  *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                         (METERS/SEC)

                                               1.54,    3.09,    5.14,    8.23,   10.80,
*** AERMOD - VERSION 16216r ***   *** Mattapan Station Redevelopment Project                                ***        07/13/17
*** AERMET - VERSION 16126  ***   *** CO 1-Hour Screening Modeling                                          ***        18:11:09
                                                                                                                       PAGE   3
*** MODELOPTs:     NonDFAULT  CONC  FLAT  NOCHKD  SCREEN  NODRYDPLT  NOWETDPLT  URBAN  NoUrbTran

                                  *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

 Surface file:    Urban.sfc                                                                   Met Version: 16126
 Profile file:    Urban.PFL
 Surface format:  FREE
 Profile format:  FREE
 Surface station no.:     11111                   Upper air station no.:     22222
                  Name: UNKNOWN                                     Name: UNKNOWN
                  Year:    2010                                     Year:    2010

 First 24 hours of scalar data
```

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
10	01	01	1	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	10.	10.0	255.2	2.0
10	01	02	2	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	20.	10.0	255.2	2.0
10	01	03	3	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	30.	10.0	255.2	2.0
10	01	04	4	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	40.	10.0	255.2	2.0
10	01	05	5	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	50.	10.0	255.2	2.0
10	01	06	6	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	60.	10.0	255.2	2.0
10	01	07	7	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	70.	10.0	255.2	2.0
10	01	08	8	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	80.	10.0	255.2	2.0
10	01	09	9	01	-1.2	0.043	-9.000	0.020	-999.	21.	5.5	1.00	1.62	0.21	0.50	90.	10.0	255.2	2.0

```
 10 01 10   10 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  100.   10.0  255.2   2.0
 10 01 11   11 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  110.   10.0  255.2   2.0
 10 01 12   12 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  120.   10.0  255.2   2.0
 10 01 13   13 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  130.   10.0  255.2   2.0
 10 01 14   14 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  140.   10.0  255.2   2.0
 10 01 15   15 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  150.   10.0  255.2   2.0
 10 01 16   16 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  160.   10.0  255.2   2.0
 10 01 17   17 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  170.   10.0  255.2   2.0
 10 01 18   18 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  180.   10.0  255.2   2.0
 10 01 19   19 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  190.   10.0  255.2   2.0
 10 01 20   20 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  200.   10.0  255.2   2.0
 10 01 21   21 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  210.   10.0  255.2   2.0
 10 01 22   22 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  220.   10.0  255.2   2.0
 10 01 23   23 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  230.   10.0  255.2   2.0
 10 01 24   24 01   -1.2  0.043 -9.000  0.020 -999.   21.      5.5  1.00   1.62   0.21   0.50  240.   10.0  255.2   2.0

 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 10 01 01 01   10.0 1   10.    0.50   255.3   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
 *** AERMOD - VERSION 16216r ***   *** Mattapan Station Redevelopment Project                          ***       07/13/17
 *** AERMET - VERSION 16126  ***   *** CO 1-Hour Screening Modeling                                    ***       18:11:09
                                                                                                                PAGE    4
 *** MODELOPTs:    NonDFAULT  CONC  FLAT  NOCHKD  SCREEN  NODRYDPLT  NOWETDPLT  URBAN  NoUrbTran

                                        *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***

                                    ** CONC OF CO       IN MICROGRAMS/M**3                      **

                                                          DATE                                                    NETWORK
 GROUP ID                          AVERAGE CONC      (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF TYPE  GRID-ID
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

 ALL      HIGH   1ST HIGH VALUE IS     278.00759  ON 10011306: AT (  233615.90,   890963.50,     5.00,     5.00,    0.00)  DC


  *** RECEPTOR TYPES:  GC = GRIDCART
                       GP = GRIDPOLR
                       DC = DISCCART
                       DP = DISCPOLR
  *** AERMOD - VERSION 16216r ***   *** Mattapan Station Redevelopment Project                          ***       07/13/17
  *** AERMET - VERSION 16126  ***   *** CO 1-Hour Screening Modeling                                    ***       18:11:09
                                                                                                                PAGE    5
  *** MODELOPTs:    NonDFAULT  CONC  FLAT  NOCHKD  SCREEN  NODRYDPLT  NOWETDPLT  URBAN  NoUrbTran

  *** Message Summary : AERMOD Model Execution ***

   --------- Summary of Total Messages --------

  A Total of            0 Fatal Error Message(s)
  A Total of            3 Warning Message(s)
  A Total of            0 Informational Message(s)

  A Total of        18504 Hours Were Processed

  A Total of            0 Calm Hours Identified

  A Total of            0 Missing Hours Identified (  0.00 Percent)
```

******** FATAL ERROR MESSAGES ********
*** NONE ***

INDOOR GARAGE ANALYSIS PROGRAM

PROJECT: MATTAPAN STATION GARAGE PEAK PM HOUR - YEAR: 2017

DISTANCE IN:	192 METERS
DISTANCE OUT:	192 METERS
NUMBER OF EXIT LANES:	1 LANE(S)
TOTAL EXIT VOLUME:	29 VEH/HOUR
CO RATE:	2.976 GRAMS CO/MILE
SPEED IN GARAGE:	5.0 M.P.H.
VENT CFM:	23,869 CFM

TOTAL CO EMISSIONS =	0.42 GRAMS/MIN = 0.0070 GRAMS/SEC
TOTAL VENTILATION =	676 CU. M/MIN

PEAK 1-HOUR CO CONCENTRATION FROM VEHICLES: 0.54 PPM

MOVES2014 OUTPUT

Road Type ID	Link Length (miles)	Link Volume (Vehicles/Hr)	Link Avg Speed (Miles/Hr)	Pollutant	Emission Factor (Grams/veh-mi)
5	0.07	19	5	CO	2.976
5	0.07	32	5	CO	2.976

Appendix F – Air Quality Analysis Back-Up Data

APPENDIX F
NOISE

MATTAPAN STATION
PROJECT NOTIFICATION FORM

Page **Contents**

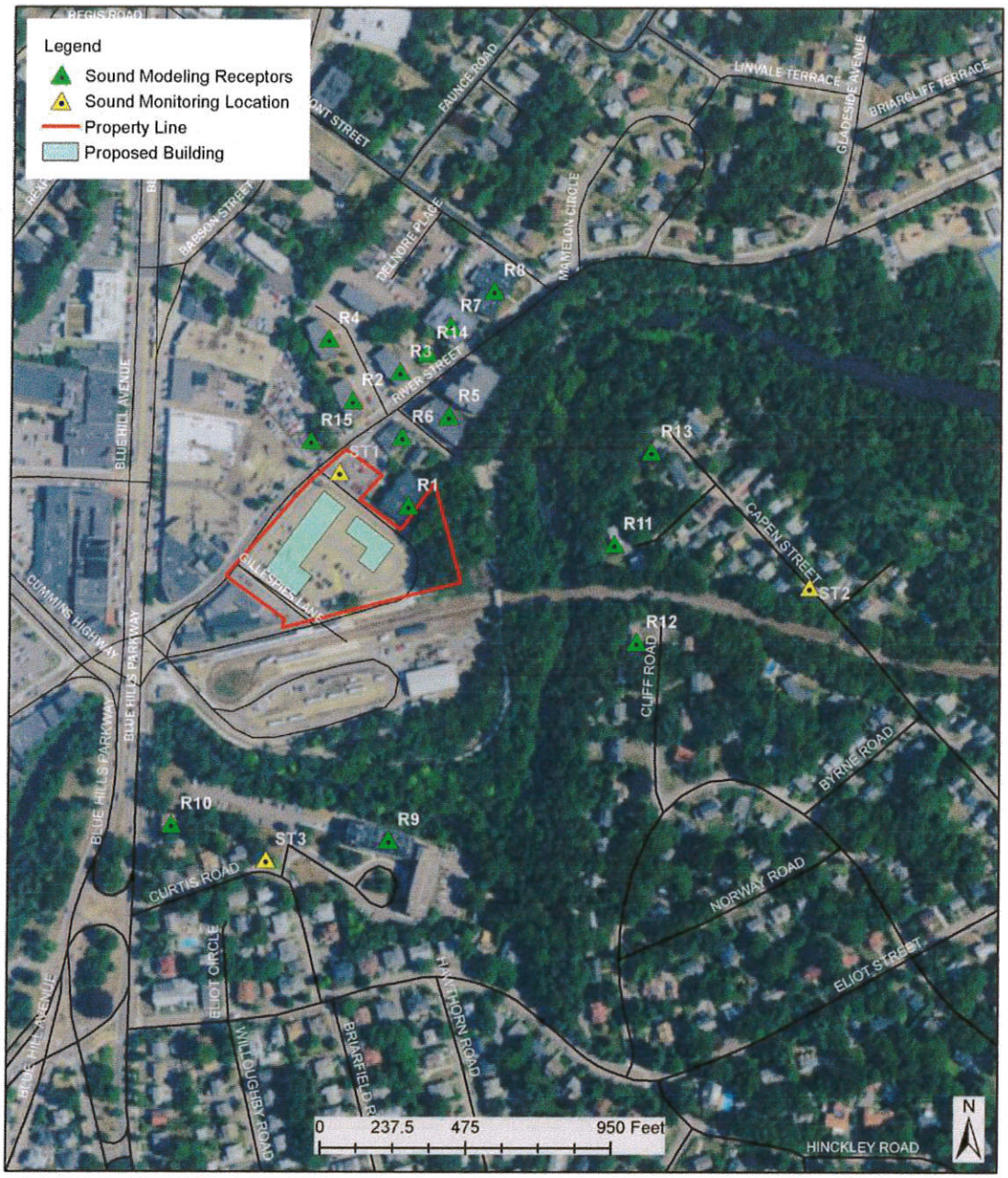


FIGURE 1
Sound Monitoring & Modeling Locations
Mattapan Station
Boston, MA

TECH environmental
FOCUSED KNOWLEDGE. REAL SOLUTIONS.

Cadna Noise Modeling Results

City of Boston Noise Ordinance Analysis

Name	M.	ID	Level Lr		Limit. Value		Octave Band Day									Land Use			Height		Coordinates		
			Day	Night	Day	Night	31	63	125	250	500	1000	2000	4000	8000	Type	Auto	Noise Type			X	Y	Z
			(dBA)	(dBA)	(dBA)	(dBA)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)				(m)		(m)	(m)	(m)
442 River St		Receptors	39.6	39.6	0	0	48.8	48.3	46.1	40.6	37.7	34.5	27.2	18.8	10.2		x	Total	10	r	233713.33	890976.14	21.15
439 River St		Receptors	38.2	38.2	0	0	44.3	44.2	42.5	37.6	35.6	33.9	28.6	21.8	11.4		x	Total	10	r	233671.29	891053.15	23.56
431 River St		Receptors	37.5	37.5	0	0	41.8	41.8	40.4	35.8	34.3	33.3	29.4	21.6	8.4		x	Total	10	r	233706.22	891074.32	22.51
437 River St		Receptors	37.7	37.7	0	0	40.1	40.5	39.5	35.3	34.4	34.3	29.1	20.9	6.4		x	Total	10	r	233653.3	891098.13	28.25
430 River St		Receptors	36.6	36.6	0	0	41.4	41.5	40.2	35.6	33.9	32.5	27.4	20.4	10.1		x	Total	10	r	233742.2	891042.04	18.95
438 River St		Receptors	37.7	37.7	0	0	44	43.8	42.3	37.4	35.3	33.4	27.4	19.7	9.5		x	Total	5	r	233708.34	891026.69	16.01
415 River St		Receptors	36.1	36.1	0	0	39.1	39.1	37.9	33.7	32.9	32.8	27	18	1.1		x	Total	11	r	233743.1	891108.27	23.05
405 River St		Receptors	34.3	34.3	0	0	36.9	37.1	36	31.9	31.3	31	24.9	15.1	-4.9		x	Total	9	r	233775.1	891134.27	20.91
38 Curtis Rd		Receptors	34	34	0	0	36.1	36.9	36	31.9	30.9	30.4	25.5	15.2	-6.8		x	Total	17	r	233701.77	890730.9	25.77
20 Blue Hill Ave		Receptors	32.7	32.7	0	0	37.3	37	35.3	30.9	29.8	29.3	23	12.2	-10.7		x	Total	5	r	233541.09	890741.57	16.47
102 Capen St		Receptors	32.3	32.3	0	0	37.3	37.3	35.9	31.5	29.9	28.3	22.4	12.8	-5.5		x	Total	6	r	233865.78	890948.92	17.88
82 Cliff Rd		Receptors	32.3	32.3	0	0	37.4	37.8	36.1	31.9	30.2	28.2	21.9	11.5	-10.1		x	Total	6	r	233883.11	890876.92	20.87
102 Capen St		Receptors	33.2	33.2	0	0	35.2	35.6	34.8	30.6	29.9	30.1	23.9	13.7	-8.1		x	Total	9.5	r	233892.45	891016.93	22.63
421 River St		Receptors	34.3	34.3	0	0	40.2	40.1	38.5	33.5	31.7	30.1	24.6	16.7	2.6		x	Total	1.52	r	233725.91	891088.23	13.67
449 River St		Receptors	40.3	40.3	0	0	50.1	49.4	46.4	40.7	38.1	35.5	29	21.2	13.5		x	Total	10	r	233641.06	891023.55	24.12

MassDEP Noise Policy Analysis

Nighttime

	Name	ID	Project Level (dBA)	Background Level (dBA)	Total New Level (dBA)	Increase Over Existing (dBA)
R1	442 River St	Top_Floor	39.6	47.5	48.2	0.7
R2	439 River St	Top_Floor	38.2	47.5	48.0	0.5
R3	431 River St	Top_Floor	37.5	47.5	47.9	0.4
R4	437 River St	Top_Floor	37.7	47.5	47.9	0.4
R5	430 River St	Top_Floor	36.6	47.5	47.8	0.3
R6	438 River St	Top_Floor	37.7	47.5	47.9	0.4
R7	415 River St	Top_Floor	36.1	47.5	47.8	0.3
R8	405 River St	Top_Floor	34.3	47.5	47.7	0.2
R9	38 Curtis Rd	Top_Floor	34	46.2	46.5	0.3
R10	20 Blue Hill Ave	Top_Floor	32.7	46.2	46.4	0.2
R11	102 Capen St	Top_Floor	32.3	35.4	37.1	1.7
R12	82 Cliff Rd	Top_Floor	32.3	35.4	37.1	1.7
R13	102 Capen St	Top_Floor	33.2	35.4	37.4	2.0
R14	421 River St	Top_Floor	34.3	47.5	47.7	0.2
R15	449 River St	Top_Floor	40.3	47.5	48.3	0.8

Daytime

	Name	ID	Project Level (dBA)	Background Level (dBA)	Total New Level (dBA)	Increase Over Existing (dBA)
R1	442 River St	Top_Floor	37	53.6	53.7	0.1
R2	439 River St	Top_Floor	36.1	53.6	53.7	0.1
R3	431 River St	Top_Floor	34.7	53.6	53.7	0.1
R4	437 River St	Top_Floor	34.9	53.6	53.7	0.1
R5	430 River St	Top_Floor	34.2	53.6	53.6	0.0
R6	438 River St	Top_Floor	34.9	53.6	53.7	0.1
R7	415 River St	Top_Floor	33.1	53.6	53.6	0.0
R8	405 River St	Top_Floor	31.3	53.6	53.6	0.0
R9	38 Curtis Rd	Top_Floor	31.4	48.5	48.6	0.1
R10	20 Blue Hill Ave	Top_Floor	30.1	48.5	48.6	0.1
R11	102 Capen St	Top_Floor	29.8	42.6	42.8	0.2
R12	82 Cliff Rd	Top_Floor	29	42.6	42.8	0.2
R13	102 Capen St	Top_Floor	30.2	42.6	42.8	0.2
R14	421 River St	Top_Floor	31.6	53.6	53.6	0.0
R15	449 River St	Top_Floor	38.3	53.6	53.7	0.1

Appendix G – Transportation Analysis Back-Up Data

Appendix – Transportation

Vehicle, Pedestrian, and Bicycle Counts
Trip Generation
Synchro Intersection Level of Service Reports

- Existing (2017) Condition
- No-Build (2024) Condition
- Build (2024) Condition

Vehicle, Pedestrian, and Bicycle Counts

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 1
Location:	Mattapan (Boston), MA
Street 1:	River Street & Blue Hill Avenue
Street 2:	Cummins Highway & MBTA Busway Entrance
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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TOTAL (CARS & TRUCKS)

	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
7:00 AM	13	63	226	94	11	0	0	63	23	4	0	0	0	0	40	0	36	38	18	4	0	0	0	6	0	0	0	0	49	9
7:15 AM	12	70	257	107	10	0	0	98	27	7	0	0	0	0	47	0	39	42	25	4	0	0	0	5	0	0	0	0	52	8
7:30 AM	10	71	283	104	8	0	0	95	29	6	0	0	0	0	59	0	45	45	22	3	0	0	0	6	1	0	0	0	55	8
7:45 AM	13	66	290	108	8	0	0	90	30	7	0	0	0	0	44	0	34	48	18	4	0	0	0	7	0	0	0	0	54	7
8:00 AM	16	63	292	106	7	0	0	96	29	8	0	0	0	0	48	0	31	42	18	5	0	0	0	5	1	0	0	0	52	6
8:15 AM	15	65	288	110	11	0	0	101	27	8	0	0	0	0	49	0	30	40	19	8	0	0	0	6	0	0	0	0	55	13
8:30 AM	14	68	278	115	14	0	0	97	26	7	0	0	0	0	50	0	28	37	16	11	0	0	0	6	0	0	0	0	69	18
8:45 AM	12	63	273	109	12	0	0	92	25	7	0	0	0	0	46	0	25	35	16	9	0	0	0	5	1	0	0	0	57	11

	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
4:00 PM	21	48	168	87	6	0	0	105	21	4	0	0	0	0	59	0	51	33	15	5	0	0	0	4	1	0	0	0	86	18
4:15 PM	16	51	169	96	7	0	0	110	23	4	0	0	0	0	65	0	53	35	16	6	0	0	0	6	0	0	0	0	87	14
4:30 PM	12	57	166	90	7	0	0	114	20	6	0	0	0	0	78	0	56	34	17	7	0	0	0	7	2	0	0	0	91	11
4:45 PM	14	58	190	91	8	0	0	116	17	7	0	0	0	0	82	0	55	36	16	6	0	0	0	6	1	0	0	0	85	12
5:00 PM	15	60	211	90	9	0	0	123	20	6	0	0	0	0	80	0	57	32	18	7	0	0	0	5	0	0	0	0	81	12
5:15 PM	17	54	197	89	9	0	0	128	22	5	0	0	0	0	78	0	54	29	20	8	0	0	0	5	0	0	0	0	83	10
5:30 PM	16	51	179	87	8	0	0	121	19	6	0	0	0	0	75	0	52	26	19	6	0	0	0	6	1	0	0	0	97	8
5:45 PM	13	47	174	75	8	0	0	112	16	5	0	0	0	0	71	0	51	25	17	6	0	0	0	6	0	0	0	0	89	7

AM PEAK HOUR	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
7:45 AM to 8:45 AM	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
	58	**262**	**1148**	**439**	**40**	**0**	**0**	**384**	**112**	**30**	**0**	**0**	**0**	**0**	**191**	**0**	**123**	**167**	**71**	**28**	**0**	**0**	**0**	**24**	**1**	**0**	**0**	**0**	**230**	**44**
PHF			**0.99**					**0.97**					**0.96**					**0.94**					**0.89**					**0.79**		
HV %	**0.0%**	**2.3%**	**1.7%**	**1.8%**	**0.0%**	**0.0%**	**0.0%**	**2.1%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**3.7%**	**0.0%**	**4.9%**	**0.0%**	**1.4%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**2.3%**

PM PEAK HOUR	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
4:45 PM to 5:45 PM	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
	62	**223**	**777**	**357**	**34**	**0**	**0**	**488**	**78**	**24**	**0**	**0**	**0**	**0**	**315**	**0**	**218**	**123**	**73**	**27**	**0**	**0**	**0**	**22**	**2**	**0**	**0**	**0**	**346**	**42**
PHF			**0.94**					**0.95**					**0.96**					**0.97**					**0.86**					**0.92**		
HV %	**0.0%**	**0.4%**	**0.8%**	**0.6%**	**0.0%**	**0.0%**	**0.0%**	**0.2%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.3%**	**0.0%**

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 1
Location:	Mattapan (Boston), MA
Street 1:	River Street & Blue Hill Avenue
Street 2:	Cummins Highway & MBTA Busway Entrance
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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TRUCKS

	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
7:00 AM	0	4	6	1	0	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
7:15 AM	0	2	4	2	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	3	1	0	0	0	1	0	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0	1	0
7:45 AM	0	2	4	1	0	0	0	3	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	0
8:00 AM	0	2	5	2	0	0	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	1	6	3	0	0	0	1	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	1	1
8:30 AM	0	1	5	2	0	0	0	2	0	0	0	0	0	0	2	0	2	0	1	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	2	4	1	0	0	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	0

	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0
4:45 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:30 PM	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
7:45 AM																													
to	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
8:45 AM	**0**	**6**	**20**	**8**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**0**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**	**1**
PHF			**0.85**					**0.67**					**0.88**					**0.58**					**0.00**					**0.63**		

PM PEAK HOUR	Blue Hill Avenue Northbound					Blue Hill Avenue Southbound					River Street Northeastbound					River Street Southwestbound					MBTA Busway Entrance Northwestbound					Cummins Highway Southeastbound				
4:30 PM																													
to	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Hard Left	Soft Left	Thru	Soft Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Left	Soft Left	Thru	Right	Hard Right	Hard Left	Left	Thru	Soft Right	Right	Hard Left	Left	Thru	Soft Right	Right
5:30 PM	**0**	**1**	**5**	**1**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**
PHF			**0.88**					**0.50**					**0.25**					**0.25**					**0.00**					**0.38**		

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 1
Location:	Mattapan (Boston), MA
Street 1:	River Street & Blue Hill Avenue
Street 2:	Cummins Highway & MBTA Busway Entrance
Count Date:	42829
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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PEDESTRIANS & BICYCLES

	Blue Hill Avenue Northbound						Blue Hill Avenue Southbound						River Street Northeastbound						River Street Southwestbound						MBTA Busway Entrance Northwestbound						Cummins Highway Southeastbound					
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED
7:00 AM	0	0	0	0	0	8	0	0	0	0	0	14	0	0	0	0	0	3	0	0	0	0	0	12	0	0	0	0	0	8	0	0	0	0	0	8
7:15 AM	0	0	0	0	0	5	0	0	0	0	0	12	0	0	0	0	0	5	0	0	0	0	0	10	0	0	0	0	0	5	0	0	0	0	0	9
7:30 AM	0	0	0	0	0	2	0	0	0	0	0	9	0	0	0	0	0	8	0	0	0	0	0	9	0	0	0	0	0	2	0	0	0	0	0	11
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	10	0	0	0	0	0	7	0	0	0	0	0	11	0	0	0	0	0	2	0	0	0	0	0	8
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	8	0	0	0	0	0	5	0	0	0	0	0	10	0	0	0	0	0	1	0	0	0	0	0	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	5	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	7
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	6	0	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	15
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	7	0	0	0	0	0	4	0	0	0	0	0	8	0	0	0	0	0	1	0	0	0	0	0	11

	Blue Hill Avenue Northbound						Blue Hill Avenue Southbound						River Street Northeastbound						River Street Southwestbound						MBTA Busway Entrance Northwestbound						Cummins Highway Southeastbound					
Start Time	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED
4:00 PM	0	0	0	0	0	9	0	0	0	0	0	24	0	0	1	0	0	9	0	0	0	0	0	38	0	0	0	0	0	9	0	0	0	0	0	33
4:15 PM	0	0	0	0	0	7	0	0	0	0	0	27	0	0	0	0	0	7	0	0	0	0	0	21	0	0	0	0	0	7	0	0	0	0	0	28
4:30 PM	0	0	0	0	0	5	0	0	0	0	0	33	0	0	0	0	0	5	0	0	0	0	0	16	0	0	0	0	0	5	0	0	0	0	0	31
4:45 PM	0	0	0	0	0	3	0	0	0	0	0	22	0	0	0	0	0	4	0	0	0	0	0	18	0	0	0	0	0	3	0	0	0	0	0	27
5:00 PM	0	0	0	0	0	2	0	0	0	0	0	15	0	0	0	0	0	3	0	0	0	0	0	17	0	0	0	0	0	2	0	0	0	0	0	21
5:15 PM	0	0	0	0	0	3	0	0	0	0	0	24	0	0	0	0	0	5	0	0	0	0	0	20	0	0	0	0	0	3	0	0	0	0	0	18
5:30 PM	0	0	0	0	0	2	0	0	0	0	0	36	0	0	0	0	0	4	0	0	0	0	0	22	0	0	0	0	0	2	0	0	0	0	0	16
5:45 PM	0	0	0	0	0	3	0	0	0	0	0	21	0	0	0	0	0	3	0	0	0	0	0	19	0	0	0	0	0	3	0	0	0	0	0	15

AM PEAK HOUR[1]	Blue Hill Avenue Northbound						Blue Hill Avenue Southbound						River Street Northeastbound						River Street Southwestbound						MBTA Busway Entrance Northwestbound						Cummins Highway Southeastbound					
7:45 AM to 8:45 AM	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED
	0	0	0	0	0	3	0	0	0	0	0	35	0	0	0	0	0	23	0	0	0	0	0	42	0	0	0	0	0	3	0	0	0	0	0	36

PM PEAK HOUR[1]	Blue Hill Avenue Northbound						Blue Hill Avenue Southbound						River Street Northeastbound						River Street Southwestbound						MBTA Busway Entrance Northwestbound						Cummins Highway Southeastbound					
4:45 PM to 5:45 PM	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Hard Left	Soft Left	Thru	Soft Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Left	Soft Left	Thru	Right	Hard Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED	Hard Left	Left	Thru	Soft Right	Right	PED
	0	0	0	0	0	10	0	0	0	0	0	97	0	0	0	0	0	16	0	0	0	0	0	77	0	0	0	0	0	10	0	0	0	0	0	82

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 2
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Entrance Driveway
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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Office: 978-746-1259
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TOTAL (CARS & TRUCKS)

	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	96	1	0	0	89	0	0	2	0	0	0	0	0	0
7:15 AM	1	0	109	0	0	2	102	0	0	2	0	0	0	0	0	0
7:30 AM	0	0	103	2	0	0	116	0	0	0	0	1	0	0	0	0
7:45 AM	1	0	102	0	1	2	100	0	0	1	0	0	0	0	0	0
8:00 AM	0	0	105	1	0	0	92	0	0	0	0	0	0	0	0	0
8:15 AM	4	0	118	1	0	2	85	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	111	3	0	0	84	0	0	1	0	1	0	0	0	0
8:45 AM	0	0	107	2	0	1	78	0	0	0	0	2	0	0	0	0

	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	91	1	0	2	98	0	0	1	0	0	0	0	0	0
4:15 PM	0	0	98	1	0	3	101	0	0	1	0	1	0	0	0	0
4:30 PM	0	0	97	1	0	1	103	0	0	2	0	0	0	0	0	0
4:45 PM	0	0	89	0	1	2	106	0	0	1	0	0	0	0	0	0
5:00 PM	0	0	86	0	0	3	107	0	0	3	0	2	0	0	0	0
5:15 PM	0	0	87	1	0	0	106	0	0	1	0	0	0	0	0	0
5:30 PM	0	0	79	2	0	0	103	0	0	1	0	0	0	0	0	0
5:45 PM	0	0	70	0	0	2	92	0	0	3	0	0	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	2	**0**	**419**	**3**	**1**	**4**	**410**	**0**	**0**	**3**	**0**	**1**	**0**	**0**	**0**	**0**
PHF	**0.96**				**0.89**				**0.50**				**0.00**			
HV %	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:15 PM to 5:15 PM	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**370**	**2**	**1**	**9**	**417**	**0**	**0**	**7**	**0**	**3**	**0**	**0**	**0**	**0**
PHF	**0.94**				**0.97**				**0.50**				**0.00**			
HV %	**0.0%**	**0.0%**	**0.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Note: Southwestbound Thru traffic backup from time to time from 7:00 AM to 9 AM & 4:00 PM to 6:00 PM.

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 2
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Entrance Driveway
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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TRUCKS

	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**9**	**0**	**0**	**0**	**9**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.75**				**0.00**				**0.00**			

PM PEAK HOUR 4:45 PM to 5:45 PM	River Street Northeastbound				River Street Southwestbound				MBTA Bus Entrance Driveway Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.00**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 2
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Entrance Driveway
Count Date:	42829
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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PEDESTRIANS & BICYCLES

	River Street Northeastbound					River Street Southwestbound					MBTA Bus Entrance Driveway Northwestbound					Southeastbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	0		0	0	0	1		0	0	0	5		0	0	0	0	
7:15 AM	0	0	0	0		0	0	0	0		0	0	0	3		0	0	0	0	
7:30 AM	0	0	0	0		0	0	0	1		0	0	0	3		0	0	0	0	
7:45 AM	0	0	0	1		0	0	0	0		0	0	0	2		0	0	0	0	
8:00 AM	0	0	0	1		0	0	0	2		0	0	0	3		0	0	0	0	
8:15 AM	0	0	0	2		0	0	0	0		0	0	0	2		0	0	0	0	
8:30 AM	0	0	0	2		0	0	0	0		0	0	0	1		0	0	0	0	
8:45 AM	0	0	0	4		0	0	0	1		0	0	0	3		0	0	0	0	

	River Street Northeastbound					River Street Southwestbound					MBTA Bus Entrance Driveway Northwestbound					Southeastbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	1		0	0	0	4		0	0	0	0	
4:15 PM	0	0	0	1		0	0	0	1		0	0	0	5		0	0	0	0	
4:30 PM	0	0	0	2		0	0	0	0		0	0	0	6		0	0	0	0	
4:45 PM	0	0	0	1		0	0	0	1		0	0	0	4		0	0	0	0	
5:00 PM	0	0	0	1		0	0	0	1		0	0	0	3		0	0	0	0	
5:15 PM	0	0	0	1		0	0	0	2		0	0	0	6		0	0	0	0	
5:30 PM	0	0	0	0		0	0	0	1		0	0	0	5		0	0	0	0	
5:45 PM	0	0	0	1		0	0	0	2		0	0	0	3		0	0	0	0	

AM PEAK HOUR[1]	River Street Northeastbound					River Street Southwestbound					MBTA Bus Entrance Driveway Northwestbound					Southeastbound				
7:15 AM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
to 8:15 AM	0	0	0	2		0	0	0	3		0	0	0	11		0	0	0	0	

PM PEAK HOUR[1]	River Street Northeastbound					River Street Southwestbound					MBTA Bus Entrance Driveway Northwestbound					Southeastbound				
4:15 PM	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
to 5:15 PM	0	0	0	5		0	0	0	3		0	0	0	18		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 3
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Exit Driveway/ Municipal Parking Lot
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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TOTAL (CARS & TRUCKS)

	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	96	0	1	0	86	0	0	3	0	0	0	0	0	0
7:15 AM	1	0	108	0	0	0	98	0	0	5	0	1	0	0	0	0
7:30 AM	0	0	104	0	0	0	117	0	0	2	0	0	0	0	0	0
7:45 AM	0	0	102	0	0	0	98	0	0	4	0	1	0	0	0	0
8:00 AM	0	0	105	0	0	0	84	0	0	1	0	2	0	0	0	0
8:15 AM	0	0	118	0	0	0	79	0	0	3	0	1	0	0	0	0
8:30 AM	0	0	112	0	0	0	78	0	0	2	0	0	0	0	0	0
8:45 AM	0	0	109	0	0	0	74	0	0	2	0	1	0	0	0	0

	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	94	0	0	0	95	0	0	3	0	5	0	0	0	0
4:15 PM	0	0	103	0	0	0	96	0	0	2	0	0	0	0	0	0
4:30 PM	0	0	97	0	0	0	98	0	0	2	0	1	0	0	0	0
4:45 PM	0	0	89	0	0	0	102	0	0	1	0	0	0	0	0	0
5:00 PM	0	0	86	0	0	0	106	0	0	4	0	0	0	0	0	0
5:15 PM	0	0	87	0	0	0	101	0	0	2	0	2	0	0	0	0
5:30 PM	0	0	75	0	0	0	99	0	0	4	0	0	0	0	0	0
5:45 PM	0	0	67	0	0	0	94	0	0	0	0	1	0	0	0	0

AM PEAK HOUR 7:15 AM to 8:15 AM	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	1	**0**	**419**	**0**	**0**	**0**	**397**	**0**	**0**	**12**	**0**	**4**	**0**	**0**	**0**	**0**
PHF		**0.96**				**0.85**				**0.67**				**0.00**		
HV %	**0.0%**	**0.0%**	**1.7%**	**0.0%**	**0.0%**	**0.0%**	**1.3%**	**0.0%**	**0.0%**	**8.3%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

PM PEAK HOUR 4:00 PM to 5:00 PM	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**383**	**0**	**0**	**0**	**391**	**0**	**0**	**8**	**0**	**6**	**0**	**0**	**0**	**0**
PHF		**0.93**				**0.96**				**0.44**				**0.00**		
HV %	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.5%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**

Note: Southwestbound Thru traffic backup from time to time from 4:00 PM to 6:00 PM.

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 3
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Exit Driveway/ Municipal Parking Lot
Count Date:	4/4/2017
Day of Week:	Tuesday
Weather:	Rainy, 45°F

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TRUCKS

	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	2	0	0	0	3	0	0	1	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0

	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
Start Time	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**9**	**0**	**0**	**0**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.75**				**0.50**				**0.00**				**0.00**			

PM PEAK HOUR 4:45 PM to 5:45 PM	River Street Northeastbound				River Street Southwestbound				Bus Exit Driveway/ Municipal Parking Lot Northwestbound				Southeastbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	**0**	**2**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PHF	**0.50**				**0.50**				**0.00**				**0.00**			

Client:	Melissa Restrepo
Project #:	60_019_HSH_Mattapan
BTD #:	Location 3
Location:	Mattapan (Boston), MA
Street 1:	River Street
Street 2:	MBTA Bus Exit Driveway/ Municipal Parking Lot
Count Date:	42829
Day of Week:	Tuesday
Weather:	Rainy, 45°F

BOSTON TRAFFIC DATA
PO BOX 1723, Framingham, MA 01701
Office: 978-746-1259
DataRequest@BostonTrafficData.com
www.BostonTrafficData.com

PEDESTRIANS & BICYCLES

	River Street Northeastbound					River Street Southwestbound					Bus Exit Driveway/ Municipal Parking Lot Northwestbound					Southeastbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
7:00 AM	0	0	0	1		0	0	0	0		0	0	0	7		0	0	0	0	
7:15 AM	0	0	0	0		0	0	0	0		0	0	0	3		0	0	0	0	
7:30 AM	0	0	0	0		0	0	0	0		0	0	0	4		0	0	0	0	
7:45 AM	0	0	0	0		0	0	0	0		0	0	0	3		0	0	0	0	
8:00 AM	0	0	0	0		0	0	0	0		0	0	0	3		0	0	0	0	
8:15 AM	0	0	0	3		0	0	0	1		0	0	0	2		0	0	0	0	
8:30 AM	0	0	0	0		0	0	0	2		0	0	0	1		0	0	0	0	
8:45 AM	0	0	0	0		0	0	0	0		0	0	0	2		0	0	0	0	

	River Street Northeastbound					River Street Southwestbound					Bus Exit Driveway/ Municipal Parking Lot Northwestbound					Southeastbound				
Start Time	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
4:00 PM	0	0	0	0		0	0	0	1		0	0	0	4		0	0	0	0	
4:15 PM	0	0	0	0		0	0	0	1		0	0	0	7		0	0	0	0	
4:30 PM	0	0	0	1		0	0	0	0		0	0	0	10		0	0	0	0	
4:45 PM	0	0	0	1		0	0	0	0		0	0	0	6		0	0	0	0	
5:00 PM	0	0	0	2		0	0	0	0		0	0	0	3		0	0	0	0	
5:15 PM	0	0	0	1		0	0	0	0		0	0	0	7		0	0	0	0	
5:30 PM	0	0	0	2		0	0	0	0		0	0	0	10		0	0	0	0	
5:45 PM	0	0	0	1		0	0	0	0		0	0	0	6		0	0	0	0	

AM PEAK HOUR[1] 7:15 AM to 8:15 AM	River Street Northeastbound					River Street Southwestbound					Bus Exit Driveway/ Municipal Parking Lot Northwestbound					Southeastbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	0		0	0	0	0		0	0	0	13		0	0	0	0	

PM PEAK HOUR[1] 4:00 PM to 5:00 PM	River Street Northeastbound					River Street Southwestbound					Bus Exit Driveway/ Municipal Parking Lot Northwestbound					Southeastbound				
	Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED		Left	Thru	Right	PED	
	0	0	0	2		0	0	0	2		0	0	0	27		0	0	0	0	

[1] *Peak hours corresponds to vehicular peak hours.*

Trip Generation - Proposed Program

2016028 - MBTA Mattapan Station Redevelopment

Trip Generation Assessment

HOWARD STEIN HUDSON
12-Apr-2017

xx HARD CODED TO BALANCE (Manually change formatting)

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Assumed National Vehicle Occupancy Rate[1]	Unadjusted Person-Trips	Primary Person-Trips	Transit Share[3]	Transit Person-Trips	Walk/Bike/ Other Share[3]	Walk/ Bike/ Other Trips	Auto Share[3]	Auto Person-Trips	Assumed Local Auto Occupancy Rate[4]	Total Adjusted Auto Trips
Daily Peak Hour																
Apartment[5]	135	Total		6.650	898	1.13	**1,014**	**1,014**	14%	**142**	18%	**182**	68%	**690**	1.13	**610**
	units	In	50%	3.325	449	1.13	**507**	**507**	14%	**71**	18%	**91**	68%	**345**	1.13	**305**
		Out	50%	3.325	449	1.13	**507**	**507**	14%	**71**	18%	**91**	68%	**345**	1.13	**305**
Shopping Center[9]	10	Total		42.700	428	1.78	**762**	**762**	8%	**62**	24%	**182**	68%	**518**	1.78	**292**
	KSF	In	50%	21.350	214	1.78	**381**	**381**	8%	**31**	24%	**91**	68%	**259**	1.78	**146**
		Out	50%	21.350	214	1.78	**381**	**381**	8%	**31**	24%	**91**	68%	**259**	1.78	**146**
Total		Total			**1,326**		**1,776**	**1,776**		**204**		**364**		**1,208**		**902**
		In			**663**		**888**	**888**		**102**		**182**		**604**		**451**
		Out			**663**		**888**	**888**		**102**		**182**		**604**		**451**
AM Peak Hour																
Apartment[5]	135	Total		0.51	69	1.13	**78**	**78**		**19**		**13**		**46**	1.13	**41**
	units	In	20%	0.102	14	1.13	**16**	**16**	11%	**2**	27%	**4**	62%	**10**	1.13	**9**
		Out	80%	0.408	55	1.13	**62**	**62**	28%	**17**	14%	**9**	58%	**36**	1.13	**32**
Shopping Center[9]	10	Total		0.96	10	1.78	**18**	**18**		**2**		**6**		**10**	1.78	**5**
	KSF	In	62%	0.595	6	1.78	**11**	**11**	5%	**1**	35%	**4**	60%	**6**	1.78	**3**
		Out	38%	0.365	4	1.78	**7**	**7**	15%	**1**	22%	**2**	63%	**4**	1.78	**2**
Total		Total			**79**		**96**	**96**		**21**		**19**		**56**		**46**
		In			**20**		**27**	**27**		**3**		**8**		**16**		**12**
		Out			**59**		**69**	**69**		**18**		**11**		**40**		**34**
PM Peak Hour																
Apartment[5]	135	Total		0.62	83	1.13	**94**	**94**		**21**		**18**		**55**	1.13	**49**
	units	In	65%	0.403	54	1.13	**61**	**61**	28%	**17**	14%	**9**	58%	**35**	1.13	**31**
		Out	35%	0.217	29	1.13	**33**	**33**	11%	**4**	27%	**9**	62%	**20**	1.13	**18**
Shopping Center[9]	10	Total		3.71	37	1.78	**66**	**66**		**7**		**19**		**40**	1.78	**22**
	KSF	In	48%	1.781	18	1.78	**32**	**32**	15%	**5**	22%	**7**	63%	**20**	1.78	**11**
		Out	52%	1.929	19	1.78	**34**	**34**	5%	**2**	35%	**12**	60%	**20**	1.78	**11**
Total		Total			**120**		**160**	**160**		**28**		**37**		**95**		**71**
		In			**72**		**93**	**93**		**22**		**16**		**55**		**42**
		Out			**48**		**67**	**67**		**6**		**21**		**40**		**29**

1. 2009 National vehicle occupancy rates - 1.13:home to work; 1.84: family/personal business; 1.78: shopping; 2.2 social/recreational
2. Based on ITE Trip Generation Handbook, 3rd Edition method
3. Mode shares based on peak-hour BTD Data for Area 14
4. Local vehicle occupancy rates based on 2009 National vehicle occupancy rates
5. ITE Trip Generation Manual, 9th Edition, LUC 220 (Apartment), average rate
9. ITE Trip Generation Manual, 9th Edition, LUC 820 (Shopping Center), average rate

Synchro Intersection Level of Service Reports

- Existing (2017) Condition

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	191	130	170	77	36	58	262	1148	439	40	384	112	30	230	44	24	1	
Future Volume (vph)	191	130	170	77	36	58	262	1148	439	40	384	112	30	230	44	24	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.98															
Frt	0.865		0.959						0.850		0.960			0.850		0.850	0.850	
Flt Protected			0.985				0.950											
Satd. Flow (prot)	1580	0	3274	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Flt Permitted			0.985				0.950											
Satd. Flow (perm)	1580	0	3274	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		7						100		8			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					35										23			
Peak Hour Factor	0.96	0.94	0.94	0.94	0.94	0.99	0.99	0.99	0.99	0.99	0.97	0.97	0.97	0.79	0.79	0.89	0.89	
Heavy Vehicles (%)	4%	5%	0%	1%	0%	0%	2%	2%	2%	0%	2%	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	199	138	181	82	38	59	265	1160	443	40	396	115	31	291	56	27	1	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	199	0	439	0	0	0	324	1160	483	0	542	0	0	347	0	27	1	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	35.0	26.0	26.0			35.0	35.0							20.0		20.0	20.0	19.0
Total Split (%)	29.2%	21.7%	21.7%			29.2%	29.2%							16.7%		16.7%	16.7%	16%
Maximum Green (s)	29.0	18.0	18.0			29.0	29.0							15.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	29.0		17.8				29.0	69.2	69.2		34.2			15.0		14.0	14.0	
Actuated g/C Ratio	0.24		0.15				0.24	0.58	0.58		0.28			0.12		0.12	0.12	
v/c Ratio	0.38		0.90				0.76	0.40	0.50		0.39			0.66		0.14	0.00	
Control Delay	8.1		71.2				54.7	14.4	13.8		34.9			27.6		49.8	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	8.1		71.2				54.7	14.4	13.8		34.9			27.6		49.8	0.0	
LOS	A		E				D	B	B		C			C		D	A	
Approach Delay			71.2					20.9			34.9							
Approach LOS			E					C			C							
Queue Length 50th (ft)	5		174				234	172	166		121			60		19	0	
Queue Length 95th (ft)	64		#266				#359	204	255		157			89		48	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	526		497				429	2933	957		1406			523		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.38		0.88				0.76	0.40	0.50		0.39			0.66		0.14	0.00	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.90
Intersection Signal Delay: 29.5 Intersection LOS: C
Intersection Capacity Utilization 72.4% ICU Level of Service C
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	437	3	4	410	3	1
Future Volume (Veh/h)	437	3	4	410	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	455	3	4	461	6	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			458		926	456
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			458		926	456
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1114		300	608

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	458	465	8
Volume Left	0	4	6
Volume Right	3	0	2
cSH	1700	1114	343
Volume to Capacity	0.27	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	15.7
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	15.7
Approach LOS			C

Intersection Summary				
Average Delay			0.2	
Intersection Capacity Utilization			34.8%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	438	0	0	402	12	4
Future Volume (Veh/h)	438	0	0	402	12	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.85	0.85	0.67	0.67
Hourly flow rate (vph)	456	0	0	473	18	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			456		929	456
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			456		929	456
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		94	99
cM capacity (veh/h)			1115		290	609

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	456	473	24
Volume Left	0	0	18
Volume Right	0	0	6
cSH	1700	1700	333
Volume to Capacity	0.27	0.28	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	16.6
Lane LOS			C
Approach Delay (s)	0.0	0.0	16.6
Approach LOS			C

Intersection Summary				
Average Delay			0.4	
Intersection Capacity Utilization			33.1%	ICU Level of Service A
Analysis Period (min)			15	

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	315	218	123	73	27	62	223	777	372	34	488	78	24	346	42	22	3	
Future Volume (vph)	315	218	123	73	27	62	223	777	372	34	488	78	24	346	42	22	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.95															
Frt	0.865		0.966						0.850		0.974			0.850		0.850	0.850	
Flt Protected			0.976				0.950											
Satd. Flow (prot)	1580	0	3239	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Flt Permitted			0.976				0.950											
Satd. Flow (perm)	1580	0	3239	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		5						100		5			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					97										16			
Peak Hour Factor	0.96	0.97	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.86	0.86	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	328	225	127	75	28	66	237	827	396	36	514	82	25	376	46	26	3	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	328	0	455	0	0	0	303	827	432	0	621	0	0	422	0	26	3	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	30.0	26.0	26.0			30.0	30.0							25.0		20.0	20.0	19.0
Total Split (%)	25.0%	21.7%	21.7%			25.0%	25.0%							20.8%		16.7%	16.7%	16%
Maximum Green (s)	24.0	18.0	18.0			24.0	24.0							20.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	24.0		18.0				24.0	69.0	69.0		34.9			19.1		14.0	14.0	
Actuated g/C Ratio	0.20		0.15				0.20	0.58	0.58		0.29			0.16		0.12	0.12	
v/c Ratio	0.70		0.93				0.84	0.28	0.45		0.42			0.68		0.14	0.01	
Control Delay	27.1		76.4				67.2	13.2	12.6		35.4			30.4		49.7	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	27.1		76.4				67.2	13.2	12.6		35.4			30.4		49.7	0.0	
LOS	C		E				E	B	B		D			C		D	A	
Approach Delay			76.4					23.5			35.4							
Approach LOS			E					C			D							
Queue Length 50th (ft)	98		183				228	112	136		142			90		18	0	
Queue Length 95th (ft)	207		#285				#376	138	213		181			152		45	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	468		490				361	2947	960		1470			640		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.70		0.93				0.84	0.28	0.45		0.42			0.66		0.14	0.01	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.93
Intersection Signal Delay: 34.1 Intersection LOS: C
Intersection Capacity Utilization 79.1% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	373	2	9	434	7	10
Future Volume (Veh/h)	373	2	9	434	7	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.97	0.97	0.50	0.50
Hourly flow rate (vph)	397	2	9	447	14	20
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			399		863	398
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			399		863	398
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		96	97
cM capacity (veh/h)			1171		325	656

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	399	456	34
Volume Left	0	9	14
Volume Right	2	0	20
cSH	1700	1171	462
Volume to Capacity	0.23	0.01	0.07
Queue Length 95th (ft)	0	1	6
Control Delay (s)	0.0	0.2	13.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	13.4
Approach LOS			B

Intersection Summary				
Average Delay			0.6	
Intersection Capacity Utilization			40.1%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	383	0	0	428	15	6
Future Volume (Veh/h)	383	0	0	428	15	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.96	0.96	0.44	0.44
Hourly flow rate (vph)	412	0	0	446	34	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			412		858	412
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			412		858	412
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		90	98
cM capacity (veh/h)			1158		330	644

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	412	446	48
Volume Left	0	0	34
Volume Right	0	0	14
cSH	1700	1700	385
Volume to Capacity	0.24	0.26	0.12
Queue Length 95th (ft)	0	0	11
Control Delay (s)	0.0	0.0	15.7
Lane LOS			C
Approach Delay (s)	0.0	0.0	15.7
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

- No-Build (2024) Condition

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	205	139	182	83	41	62	282	1232	471	40	415	120	32	250	47	24	1	
Future Volume (vph)	205	139	182	83	41	62	282	1232	471	40	415	120	32	250	47	24	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.98															
Frt	0.865		0.958						0.850		0.960			0.850		0.850	0.850	
Flt Protected			0.985				0.950											
Satd. Flow (prot)	1580	0	3269	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Flt Permitted			0.985				0.950											
Satd. Flow (perm)	1580	0	3269	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		8						100		8			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					35										23			
Peak Hour Factor	0.96	0.94	0.94	0.94	0.94	0.99	0.99	0.99	0.99	0.99	0.97	0.97	0.97	0.79	0.79	0.89	0.89	
Heavy Vehicles (%)	4%	5%	0%	1%	0%	0%	2%	2%	2%	0%	2%	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	214	148	194	88	44	63	285	1244	476	40	428	124	33	316	59	27	1	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	214	0	474	0	0	0	348	1244	516	0	585	0	0	375	0	27	1	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	35.0	26.0	26.0			35.0	35.0							20.0		20.0	20.0	19.0
Total Split (%)	29.2%	21.7%	21.7%			29.2%	29.2%							16.7%		16.7%	16.7%	16%
Maximum Green (s)	29.0	18.0	18.0			29.0	29.0							15.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	29.0		18.0				29.0	69.0	69.0		34.0			15.0		14.0	14.0	
Actuated g/C Ratio	0.24		0.15				0.24	0.58	0.58		0.28			0.12		0.12	0.12	
v/c Ratio	0.41		0.95				0.81	0.43	0.54		0.42			0.72		0.14	0.00	
Control Delay	9.7		80.4				59.0	14.9	14.8		35.6			31.7		49.8	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	9.7		80.4				59.0	14.9	14.8		35.6			31.7		49.8	0.0	
LOS	A		F				E	B	B		D			C		D	A	
Approach Delay			80.4					22.2			35.6							
Approach LOS			F					C			D							
Queue Length 50th (ft)	14		191				256	188	187		133			73		19	0	
Queue Length 95th (ft)	78		#299				#402	222	283		170			102		48	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	526		497				429	2923	954		1396			523		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.41		0.95				0.81	0.43	0.54		0.42			0.72		0.14	0.00	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 32.0 Intersection LOS: C
Intersection Capacity Utilization 75.2% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	469	3	4	442	3	1
Future Volume (Veh/h)	469	3	4	442	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	489	3	4	497	6	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			492		996	490
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			492		996	490
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1082		272	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	492	501	8
Volume Left	0	4	6
Volume Right	3	0	2
cSH	1700	1082	314
Volume to Capacity	0.29	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	16.8
Lane LOS		A	C
Approach Delay (s)	0.0	0.1	16.8
Approach LOS			C

Intersection Summary				
Average Delay			0.2	
Intersection Capacity Utilization			36.4%	ICU Level of Service A
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	470	0	0	433	12	4
Future Volume (Veh/h)	470	0	0	433	12	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.85	0.85	0.67	0.67
Hourly flow rate (vph)	490	0	0	509	18	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			490		999	490
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			490		999	490
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		93	99
cM capacity (veh/h)			1084		263	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	490	509	24
Volume Left	0	0	18
Volume Right	0	0	6
cSH	1700	1700	305
Volume to Capacity	0.29	0.30	0.08
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.0	17.8
Lane LOS			C
Approach Delay (s)	0.0	0.0	17.8
Approach LOS			C

Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	34.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	338	234	132	79	31	66	243	835	399	34	526	84	26	374	45	22	3	
Future Volume (vph)	338	234	132	79	31	66	243	835	399	34	526	84	26	374	45	22	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.95															
Frt	0.865		0.965						0.850		0.974			0.850		0.850	0.850	
Flt Protected			0.976				0.950											
Satd. Flow (prot)	1580	0	3233	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Flt Permitted			0.976				0.950											
Satd. Flow (perm)	1580	0	3233	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		5						100		5			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					97										16			
Peak Hour Factor	0.96	0.97	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.86	0.86	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	352	241	136	81	32	70	259	888	424	36	554	88	27	407	49	26	3	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	352	0	490	0	0	0	329	888	460	0	669	0	0	456	0	26	3	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	30.0	26.0	26.0			30.0	30.0							25.0		20.0	20.0	19.0
Total Split (%)	25.0%	21.7%	21.7%			25.0%	25.0%							20.8%		16.7%	16.7%	16%
Maximum Green (s)	24.0	18.0	18.0			24.0	24.0							20.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	24.0		18.0				24.0	69.0	69.0		34.4			19.6		14.0	14.0	
Actuated g/C Ratio	0.20		0.15				0.20	0.58	0.58		0.29			0.16		0.12	0.12	
v/c Ratio	0.75		1.00				0.91	0.30	0.48		0.46			0.72		0.14	0.01	
Control Delay	31.4		91.8				77.1	13.4	13.2		36.2			33.5		49.7	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	31.4		91.8				77.1	13.4	13.2		36.2			33.5		49.7	0.0	
LOS	C		F				E	B	B		D			C		D	A	
Approach Delay			91.8					25.9			36.2							
Approach LOS			F					C			D							
Queue Length 50th (ft)	119		~201				251	123	152		155			107		18	0	
Queue Length 95th (ft)	#236		#318				#423	149	235		195			172		45	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	468		489				361	2929	955		1453			640		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.75		1.00				0.91	0.30	0.48		0.46			0.71		0.14	0.01	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 38.2 Intersection LOS: D
Intersection Capacity Utilization 83.5% ICU Level of Service E
Analysis Period (min) 15
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	400	2	9	468	8	11
Future Volume (Veh/h)	400	2	9	468	8	11
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.97	0.97	0.50	0.50
Hourly flow rate (vph)	426	2	9	482	16	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			428		927	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			428		927	427
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		95	97
cM capacity (veh/h)			1142		298	632

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	428	491	38
Volume Left	0	9	16
Volume Right	2	0	22
cSH	1700	1142	429
Volume to Capacity	0.25	0.01	0.09
Queue Length 95th (ft)	0	1	7
Control Delay (s)	0.0	0.2	14.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	14.2
Approach LOS			B

Intersection Summary				
Average Delay			0.7	
Intersection Capacity Utilization			41.8%	ICU Level of Service
Analysis Period (min)			15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	411	0	0	462	15	6
Future Volume (Veh/h)	411	0	0	462	15	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.96	0.96	0.44	0.44
Hourly flow rate (vph)	442	0	0	481	34	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			442		923	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		923	442
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		89	98
cM capacity (veh/h)			1129		302	620

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	442	481	48
Volume Left	0	0	34
Volume Right	0	0	14
cSH	1700	1700	355
Volume to Capacity	0.26	0.28	0.14
Queue Length 95th (ft)	0	0	12
Control Delay (s)	0.0	0.0	16.7
Lane LOS			C
Approach Delay (s)	0.0	0.0	16.7
Approach LOS			C

Intersection Summary				
Average Delay			0.8	
Intersection Capacity Utilization			34.3%	ICU Level of Service A
Analysis Period (min)			15	

- Build (2024) Condition

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	205	146	182	86	53	62	282	1232	475	40	415	120	32	251	47	24	1	
Future Volume (vph)	205	146	182	86	53	62	282	1232	475	40	415	120	32	251	47	24	1	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.97															
Frt	0.865		0.956						0.850		0.960			0.850		0.850	0.850	
Flt Protected			0.985				0.950											
Satd. Flow (prot)	1580	0	3257	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Flt Permitted			0.985				0.950											
Satd. Flow (perm)	1580	0	3257	0	0	0	1776	5085	1586	0	4908	0	0	2787	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		10						100		8			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					35										23			
Peak Hour Factor	0.96	0.94	0.94	0.94	0.94	0.99	0.99	0.99	0.99	0.99	0.97	0.97	0.97	0.79	0.79	0.89	0.89	
Heavy Vehicles (%)	4%	5%	0%	1%	0%	0%	2%	2%	2%	0%	2%	0%	0%	2%	2%	0%	0%	
Adj. Flow (vph)	214	155	194	91	56	63	285	1244	480	40	428	124	33	318	59	27	1	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	214	0	496	0	0	0	348	1244	520	0	585	0	0	377	0	27	1	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	35.0	26.0	26.0			35.0	35.0							20.0		20.0	20.0	19.0
Total Split (%)	29.2%	21.7%	21.7%			29.2%	29.2%							16.7%		16.7%	16.7%	16%
Maximum Green (s)	29.0	18.0	18.0			29.0	29.0							15.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	29.0		18.0				29.0	69.0	69.0		34.0			15.0		14.0	14.0	
Actuated g/C Ratio	0.24		0.15				0.24	0.58	0.58		0.28			0.12		0.12	0.12	
v/c Ratio	0.41		1.00				0.81	0.43	0.55		0.42			0.72		0.14	0.00	
Control Delay	9.7		90.0				59.0	14.9	14.9		35.6			32.0		49.8	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	9.7		90.0				59.0	14.9	14.9		35.6			32.0		49.8	0.0	
LOS	A		F				E	B	B		D			C		D	A	
Approach Delay			90.0					22.2			35.6							
Approach LOS			F					C			D							
Queue Length 50th (ft)	14		201				256	188	189		133			74		19	0	
Queue Length 95th (ft)	78		#319				#402	222	287		170			103		48	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	526		497				429	2923	954		1396			523		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.41		1.00				0.81	0.43	0.55		0.42			0.72		0.14	0.00	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.00
Intersection Signal Delay: 33.5 Intersection LOS: C
Intersection Capacity Utilization 75.8% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	469	7	12	464	0	0
Future Volume (Veh/h)	469	7	12	464	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.89	0.89	0.50	0.50
Hourly flow rate (vph)	489	7	13	521	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			496		1040	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			496		1040	492
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		100	100
cM capacity (veh/h)			1078		254	580

Direction, Lane #	EB 1	WB 1
Volume Total	496	534
Volume Left	0	13
Volume Right	7	0
cSH	1700	1078
Volume to Capacity	0.29	0.01
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	0.3
Lane LOS		A
Approach Delay (s)	0.0	0.3
Approach LOS		

Intersection Summary				
Average Delay		0.2		
Intersection Capacity Utilization		37.4%	ICU Level of Service	A
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	470	0	0	441	34	16
Future Volume (Veh/h)	470	0	0	441	34	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.96	0.96	0.85	0.85	0.67	0.67
Hourly flow rate (vph)	490	0	0	519	51	24
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			490		1009	490
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			490		1009	490
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		80	96
cM capacity (veh/h)			1084		259	582

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	490	519	75
Volume Left	0	0	51
Volume Right	0	0	24
cSH	1700	1700	315
Volume to Capacity	0.29	0.31	0.24
Queue Length 95th (ft)	0	0	23
Control Delay (s)	0.0	0.0	19.9
Lane LOS			C
Approach Delay (s)	0.0	0.0	19.9
Approach LOS			C

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	34.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBR2	WBL	WBT	WBR	WBR2	NBL2	NBL	NBT	NBR	NBR2	SBT	SBR	SBR2	SER	SER2	NWR	NWR2	Ø1
Lane Configurations																		
Traffic Volume (vph)	338	240	132	82	41	66	243	835	412	34	526	84	26	378	45	22	3	
Future Volume (vph)	338	240	132	82	41	66	243	835	412	34	526	84	26	378	45	22	3	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		0		100			0		0			0		0		0		
Storage Lanes		0		1			1		1			0		2		2		
Taper Length (ft)		25					25											
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	0.91	1.00	0.91	1.00	0.91	0.91	0.91	0.91	0.88	1.00	1.00	1.00	
Ped Bike Factor			0.95															
Frt	0.865		0.963						0.850		0.974			0.850		0.850	0.850	
Flt Protected			0.976				0.950											
Satd. Flow (prot)	1580	0	3213	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Flt Permitted			0.976				0.950											
Satd. Flow (perm)	1580	0	3213	0	0	0	1805	5136	1600	0	5052	0	0	2842	0	1615	1615	
Right Turn on Red	Yes				Yes					Yes			Yes		Yes		Yes	
Satd. Flow (RTOR)	191		7						100		5			200			191	
Link Speed (mph)			30					30			30							
Link Distance (ft)			333					450			334							
Travel Time (s)			7.6					10.2			7.6							
Confl. Peds. (#/hr)					97										16			
Peak Hour Factor	0.96	0.97	0.97	0.97	0.97	0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.92	0.92	0.86	0.86	
Heavy Vehicles (%)	4%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	
Adj. Flow (vph)	352	247	136	85	42	70	259	888	438	36	554	88	27	411	49	26	3	
Shared Lane Traffic (%)																		
Lane Group Flow (vph)	352	0	510	0	0	0	329	888	474	0	669	0	0	460	0	26	3	
Turn Type	Over	Split	NA			Prot	Prot	NA	Prot		NA			Prot		Prot	Prot	
Protected Phases	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	1
Permitted Phases																		
Detector Phase	4	3	3			4	4	1 4 5	1 4 5		1 2			5		2	2	
Switch Phase																		
Minimum Initial (s)	12.0	10.0	10.0			12.0	12.0							10.0		13.0	13.0	12.0
Minimum Split (s)	18.0	25.0	25.0			18.0	18.0							18.0		19.0	19.0	19.0
Total Split (s)	30.0	26.0	26.0			30.0	30.0							25.0		20.0	20.0	19.0
Total Split (%)	25.0%	21.7%	21.7%			25.0%	25.0%							20.8%		16.7%	16.7%	16%
Maximum Green (s)	24.0	18.0	18.0			24.0	24.0							20.0		14.0	14.0	14.0
Yellow Time (s)	3.0	4.0	4.0			3.0	3.0							3.0		3.0	3.0	3.0
All-Red Time (s)	3.0	4.0	4.0			3.0	3.0							2.0		3.0	3.0	2.0
Lost Time Adjust (s)	0.0		0.0				0.0							0.0		0.0	0.0	
Total Lost Time (s)	6.0		8.0				6.0							5.0		6.0	6.0	
Lead/Lag	Lead					Lead	Lead							Lag				
Lead-Lag Optimize?	Yes					Yes	Yes							Yes				
Vehicle Extension (s)	3.0	3.0	3.0			3.0	3.0							3.0		3.0	3.0	3.0
Recall Mode	None	None	None			None	None							None		Max	Max	C-Max
Walk Time (s)		4.0	4.0											4.0				8.0
Flash Dont Walk (s)		13.0	13.0											9.0				6.0
Pedestrian Calls (#/hr)		0	0											0				0
Act Effct Green (s)	24.0		18.0				24.0	69.0	69.0		34.2			19.8		14.0	14.0	
Actuated g/C Ratio	0.20		0.15				0.20	0.58	0.58		0.28			0.16		0.12	0.12	
v/c Ratio	0.75		1.05				0.91	0.30	0.49		0.46			0.72		0.14	0.01	
Control Delay	31.4		102.2				77.1	13.4	13.6		36.4			33.7		49.7	0.0	
Queue Delay	0.0		0.0				0.0	0.0	0.0		0.0			0.0		0.0	0.0	
Total Delay	31.4		102.2				77.1	13.4	13.6		36.4			33.7		49.7	0.0	
LOS	C		F				E	B	B		D			C		D	A	
Approach Delay			102.2					25.9			36.4							
Approach LOS			F					C			D							
Queue Length 50th (ft)	119		~223				251	123	160		155			109		18	0	
Queue Length 95th (ft)	#236		#337				#423	149	246		195			175		45	0	
Internal Link Dist (ft)			253					370			254							
Turn Bay Length (ft)																		
Base Capacity (vph)	468		487				361	2920	952		1443			640		188	357	
Starvation Cap Reductn	0		0				0	0	0		0			0		0	0	
Spillback Cap Reductn	0		0				0	0	0		0			0		0	0	
Storage Cap Reductn	0		0				0	0	0		0			0		0	0	
Reduced v/c Ratio	0.75		1.05				0.91	0.30	0.50		0.46			0.72		0.14	0.01	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 1:NBSB, Start of Green
Natural Cycle: 100
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 39.9 — Intersection LOS: D
Intersection Capacity Utilization 84.4% — ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Blue Hill Avenue & MBTA Busway/Cummins Highway & River Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	400	15	38	487	0	0
Future Volume (Veh/h)	400	15	38	487	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.94	0.97	0.97	0.50	0.50
Hourly flow rate (vph)	426	16	39	502	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	333					
pX, platoon unblocked						
vC, conflicting volume			442		1014	434
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		1014	434
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		100	100
cM capacity (veh/h)			1129		257	626

Direction, Lane #	EB 1	WB 1
Volume Total	442	541
Volume Left	0	39
Volume Right	16	0
cSH	1700	1129
Volume to Capacity	0.26	0.03
Queue Length 95th (ft)	0	3
Control Delay (s)	0.0	1.0
Lane LOS		A
Approach Delay (s)	0.0	1.0
Approach LOS		

Intersection Summary				
Average Delay		0.5		
Intersection Capacity Utilization		56.4%	ICU Level of Service	B
Analysis Period (min)		15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	411	0	0	491	34	16
Future Volume (Veh/h)	411	0	0	491	34	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.96	0.96	0.44	0.44
Hourly flow rate (vph)	442	0	0	511	77	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	632					
pX, platoon unblocked						
vC, conflicting volume			442		953	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			442		953	442
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		73	94
cM capacity (veh/h)			1129		290	620

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	442	511	113
Volume Left	0	0	77
Volume Right	0	0	36
cSH	1700	1700	349
Volume to Capacity	0.26	0.30	0.32
Queue Length 95th (ft)	0	0	34
Control Delay (s)	0.0	0.0	20.2
Lane LOS			C
Approach Delay (s)	0.0	0.0	20.2
Approach LOS			C

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Appendix H – MBTA Letter Awarding Tentative Designation

VIA ELECTRONIC MAIL AND FIRST-CLASS MAIL

May 31, 2016

Ms. Julie Creamer
Vice President
Preservation of Affordable Housing, Inc.
40 Court Street Suite 700
Boston, MA 02108
jcreamer@poah.org

Re: Notification of successful bidder for ground lease of land at Mattapan Station, 466 River Street, Mattapan, MA 02126 (the "Property")

Dear Ms. Creamer:

The joint-venture of Preservation of Affordable Housing, Inc. and Nuestra Comunidad Development Corporation ("POAH/Nuestra") is hereby notified of its designation as the successful bidder for the lease of the Property in accordance with that certain Invitation to Bid dated November 18, 2015 (the "ITB"). POAH/Nuestra may accept this designation by countersigning this letter where indicated below, thereby agreeing to comply with all terms and conditions stated in this letter and the ITB.

POAH/Nuestra acknowledges and agrees as follows:

a) POAH/Nuestra has submitted a bid deposit in the amount of Ten Thousand Dollars ($10,000.00) (the "Bid Deposit"), in the form of a bank check payable to the Massachusetts Bay Transportation Authority ("MBTA"). The Bid Deposit is non-refundable and shall be retained by the MBTA unless the MBTA fails to consummate the lease transaction for reasons that are not the fault of POAH/Nuestra, in which case the Bid Deposit will be refunded to POAH/Nuestra. All interest earned on the Bid Deposit shall be the property of the MBTA. The Bid Deposit is subject to forfeiture should POAH/Nuestra default on any obligation herein or in the ITB. The Bid Deposit will be credited to the rent obligations first coming due under the lease agreement between MBTA and POAH/Nuestra regarding the Property (the "Lease").

b) POAH/Nuestra agrees to accept all material terms of the License for Entry for the Property, in the form attached to and incorporated in the ITB. Accordingly, POAH/Nuestra agrees to execute a License for Entry in substantially the form attached to the ITB by no later than Monday, June 27, 2016.

c) POAH/Nuestra acknowledges that time is of the essence to this transaction. POAH/Nuestra agrees to complete its due diligence by no later than eight (8) months after the execution of the License for Entry (the "Diligence Deadline"). Prior to the Due

Diligence Deadline, the MBTA will use reasonable efforts to resolve the parking lot encroachment by the owner of 442 River Street and will provide POAH/Nuestra with information about such efforts. By no later than the Diligence Deadline, POAH/Nuestra shall provide the MBTA with an ALTA survey, in form and substance acceptable to the MBTA, documenting the Property boundaries. POAH/Nuestra further agrees that the execution of the Lease shall occur by no later than three (3) months following the Diligence Deadline.

d) Within thirty (30) days of the execution date of this designation letter, POAH/Nuestra shall contact Peter Paravalos (PParavalos@MBTA.com) and Leslie Drayton-Oliver (LDrayton-Oliver@MBTA.com) of the MBTA Design and Construction Department to establish an engineering force account to ensure reimbursement of MBTA expenses directly related to MBTA engineering review, safety and other services in connection with POAH/Nuestra's proposed development of the Property. Funding of the engineering force account in the amount required by the MBTA Design and Construction Department shall occur no later than upon the first submittal of plans for review to the MBTA.

e) POAH/Nuestra's rent obligations under the Lease shall include, without limitation:

1) Annual lease rent of Two Hundred Ten Thousand Dollars ($210,000.00) per year beginning upon the earlier of May 1, 2017 or receipt of the final certificate of occupancy for POAH/Nuestra's project at the Property (the "Rent Commencement Date") and continuing until the twentieth (20th) anniversary of the Rent Commencement Date, subject to annual increases equal to one and one-half percent (1.5%); and

2) Transfer fees, due upon each transfer of any portion of POAH/Nuestra's interest under the Lease or of a controlling interest in POAH/Nuestra, equal to one percent (1%) of the value of such transfer. Notwithstanding the foregoing, no transfer fees shall be due on (i) tax credit syndication or re-syndication transactions or (ii) exercise of a right of first refusal held by Preservation of Affordable Housing, Inc. and/or Nuestra Comunidad Development Corporation.

f) POAH/Nuestra, at its sole cost and expense, shall design and construct to MBTA specifications a surface parking facility at the Property which contains not less than fifty (50) parking spaces to be dedicated to the exclusive use of the MBTA and its patrons during peak MBTA commuter parking hours. POAH/Nuestra shall complete construction of such parking facility prior to obtaining a certificate of occupancy for any component of the POAH/Nuestra's project at the Property. MBTA shall retain all revenues generated from the use of this parking facility during peak MBTA commuter parking hours.

g) Throughout the term of the Lease, POAH/Nuestra shall provide and maintain a busway at the Property that provides circulation and passenger pick-up/drop-off areas that are, in the

MBTA's judgment, adequate to support safe and convenient MBTA bus operations at Mattapan Station.

h) Upon receipt of the final certificate of occupancy for POAH/Nuestra's project at the Property, POAH/Nuestra must provide and maintain a walkway (measuring at least ten (10) feet in width) to provide safe and convenient pedestrian and bike access from River Street across the Property to Mattapan Station. This walkway must also be designed to serve as access to the Neponset Recreation Path.

i) POAH/Nuestra agrees to participate in status meetings with the MBTA's designated representative, Massachusetts Realty Group, approximately once every two (2) weeks, commencing upon POAH/Nuestra's acceptance of this designation and continuing until full execution of the Lease.

Kindly return a countersigned original counterpart of this letter to Massachusetts Realty Group, the designated representative of the MBTA, at 20 Park Plaza, Suite 1120, Boston, MA 02116, by no later than Friday, June 3, 2016.

If you have any questions, please contact me, or your attorney may contact Laura Kaplan at (617) 316-1661 or laura.kaplan@greyco.com.

We look forward to working with you to complete this transaction as expeditiously as possible.

Sincerely,

Mark E. Boyle
Assistant General Manager
Real Estate and Asset Development

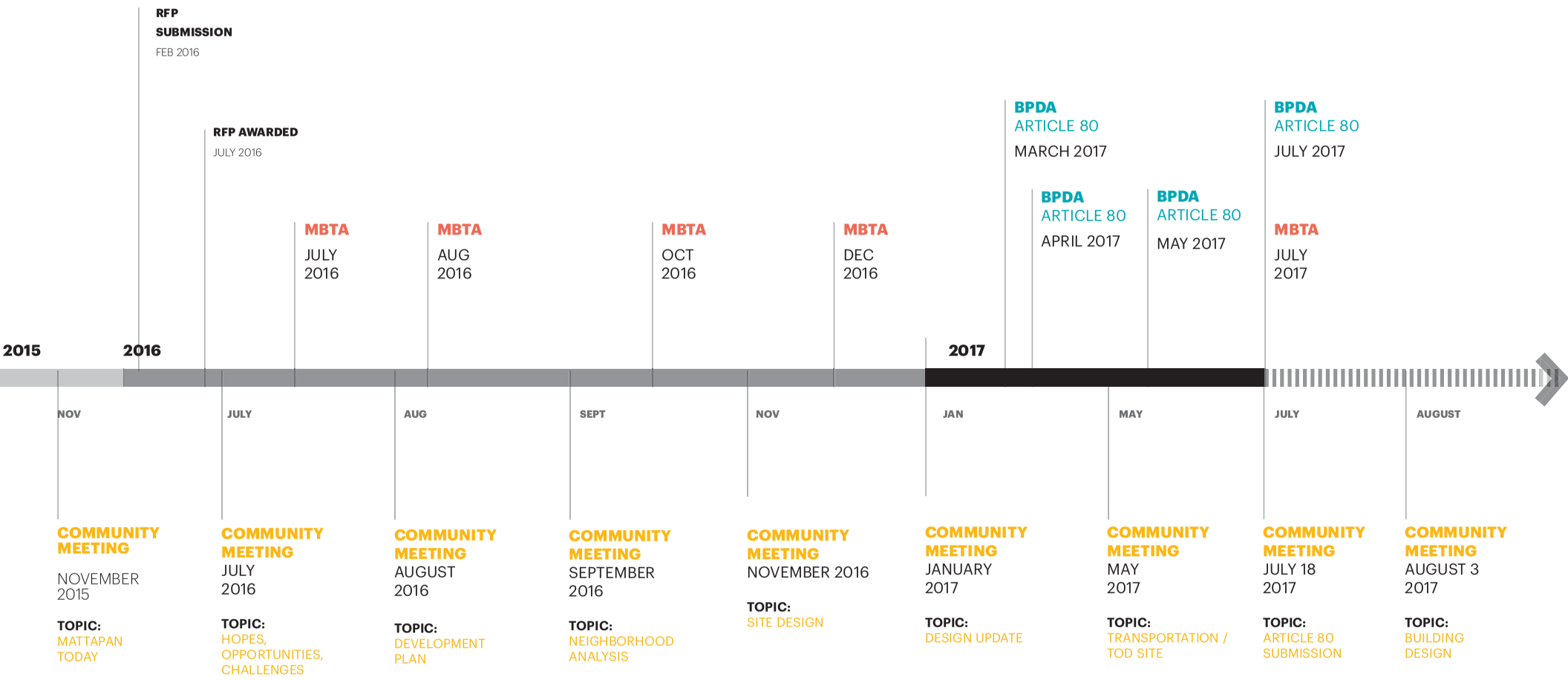
Acknowledged and Agreed:

PRESERVATION OF AFFORDABLE HOUSING, INC.

By: _____
Name: Aaron Gornstein
Title: President & CEO
Hereunto Duly Authorized

Appendix I – Community Engagement & Letters of Support

Meetings Timeline



COMMUNITY MEETING
NOVEMBER 2015
TOPIC: MATTAPAN TODAY

COMMUNITY MEETING
JULY 2016
TOPIC: HOPES, OPPORTUNITIES, CHALLENGES

COMMUNITY MEETING
AUGUST 2016
TOPIC: DEVELOPMENT PLAN

COMMUNITY MEETING
SEPTEMBER 2016
TOPIC: NEIGHBORHOOD ANALYSIS

COMMUNITY MEETING
NOVEMBER 2016
TOPIC: SITE DESIGN

COMMUNITY MEETING
JANUARY 2017
TOPIC: DESIGN UPDATE

COMMUNITY MEETING
MAY 2017
TOPIC: TRANSPORTATION / TOD SITE

COMMUNITY MEETING
JULY 18 2017
TOPIC: ARTICLE 80 SUBMISSION

COMMUNITY MEETING
AUGUST 3 2017
TOPIC: BUILDING DESIGN

August 22, 2017

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

RE: Mattapan Station
Massachusetts Bay Transportation Authority ("MBTA") Letter of Support

Dear Mr. Golden:

I am writing to express the MBTA's strong support for the joint proposal of Preservation of Affordable Housing, Inc. ("POAH") and Nuestra Comunidad Development Corporation ("Nuestra") to redevelop the MBTA-owned parking lot at Mattapan Station into an inclusive, mixed-use, transit-oriented site. The proposed project will be constructed pursuant to a long-term ground lease between the MBTA, as landlord, and a POAH/Nuestra entity, as tenant. The MBTA and POAH/Nuestra have engaged in a series of constructive meetings to form a design and program that meets the needs of both the MBTA and the Mattapan neighborhood. We look forward to continuing this productive dialogue with the POAH/Nuestra team and the community.

The MBTA is committed to identifying and encouraging transit-oriented development on MBTA-owned land that is currently under-utilized. The Mattapan Station redevelopment will succeed in this mission, leveraging an existing parking lot at a key location to build 135 new units of affordable and market-rate housing, 10,000 square feet of commercial space, 2,000 additional square feet of community space, 70 below-grade parking spaces, and 50 at-grade commuter parking spaces. Importantly, the site also accommodates multi-modal transit to and from the MBTA station to serve commuters, pedestrians, cyclists, and abutters.

I am confident that the POAH-Nuestra team will provide strong stewardship of the Mattapan Station site and ensure high-quality housing and commercial space for Mattapan and the greater Boston community. I look forward to working further with the Boston Planning and Development Agency and its team on the successful development of this site.

Sincerely,

Janelle Chan
Chief of Real Estate
MBTA

ANNISSA ESSAIBI-GEORGE
BOSTON CITY COUNCILOR
AT-LARGE

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

RE: Mattapan Trolley Station Project:

Dear Director Golden:

I am writing in support for the proposed Mattapan Station mixed-use, mixed-income project. This innovative, transit-oriented development project will replace an underutilized MBTA parking lot next to the trolley and bus station with a development that will provide critically-needed affordable and market-rate housing in the neighborhood, and support the ongoing efforts to revitalize Mattapan Square. I am thrilled that this project substantially exceeds the BPDA's Inclusionary Development Policy (IDP), with 50% of the 126 rental units targeted to households earning 60% of AMI or less. Just as importantly, future residents of the complex will have a variety of transportation options, including public transit, ride-share and bike share facilities, along with direct access to the Neponset River Greenway. It's also anticipated that the commercial and retail space along River Street will create an active street environment.

Over the past 14 months, the Preservation of Affordable Housing (POAH) and the Nuestra Comunidad Development Corporation have implemented a broad and comprehensive community engagement process with a focus on keeping the neighborhood informed about the project and the upcoming Article 80 public process. During this engagement process, they have worked side-by-side with residents, institutions, Mattapan Square business enterprises, elected officials, and other key stakeholders to obtain a broad spectrum of ideas and feedback about the proposed project.

Based on the critical importance of this project to the greater Mattapan community, I urge the BPDA to approve the Mattapan Station Trolley project as quickly as possible, so that the community and the development team can continue working collaboratively to further advance the project to construction.

Sincerely,

Annissa Essaibi-George
Boston City Councilor At Large

BOSTON CITY HALL, ONE CITY HALL SQUARE, BOSTON, MASSACHUSETTS, 02201
617-635-4376 • FAX: 617-635-4203 • A.E.GEORGE@BOSTON.GOV

The Commonwealth of Massachusetts
MASSACHUSETTS SENATE

SENATOR LINDA DORCENA FORRY
First Suffolk District

LINDA.DORCENAFORRY@MASENATE.GOV
WWW.MASENATE.GOV

STATE HOUSE, ROOM 410
BOSTON, MA 02133-1053
TEL. (617) 722-1150
FAX (617) 722-2191

September 22, 2017

Brian Golden
Director
Boston Planning and Development Agency
One City Hall Square, 9th Floor
Boston, MA 02201
RE: Mattapan Trolley Station Project

Dear Director Golden:

The purpose of this letter is to express my support for the proposed Mattapan Station mixed-use, mixed-income project. Throughout my years in office, I have fought to make sure this site was developed into a thriving section of Mattapan.

This innovative, transit-oriented development project will replace an underutilized MBTA parking lot next to the trolley and bus station with a development that will provide critically-needed affordable and market-rate housing in the neighborhood, and support the ongoing efforts to revitalize Mattapan Square. The broader Mattapan community is thrilled that this project substantially exceeds the BPDA's Inclusionary Development Policy (IDP), with 50% of the 126 rental units targeted for households earning 60% of AMI or less. Just as importantly, future residents of the complex will have a variety of transportation options, including public transit, ride-share and bike share facilities, along with direct access to the Neponset River Greenway. It's also anticipated that the commercial and retail space along River Street will create an active street environment.

Over the past several months, the Preservation of Affordable Housing (POAH) and the Nuestra Comunidad Development Corporation have implemented a broad and comprehensive community engagement process with a focus on keeping the neighborhood informed about the project and the upcoming Article 80 public process. During this engagement process, they have worked side-by-side with residents, institutions, Mattapan Square business enterprises, elected officials, and other key stakeholders to obtain a broad spectrum of ideas and feedback about the proposed project.

Based on the critical importance of this project to the greater Mattapan community, I urge the BPDA to approve the Mattapan Station Trolley project as quickly as possible, so that the community and the development team can continue working collaboratively to further advance the project to construction.

Sincerely,

Linda Dorcena Forry

Linda Dorcena Forry
Assistant Majority Whip

The Commonwealth of Massachusetts
House of Representatives
State House, Boston 02133-1054

RUSSELL E. HOLMES
STATE REPRESENTATIVE
REPRESENTING THE PEOPLE OF THE
6TH SUFFOLK DISTRICT
DORCHESTER • HYDE PARK • JAMAICA PLAIN
MATTAPAN • ROSLINDALE

VICE CHAIR
HOUSE COMMITTEE ON HOUSING
JOINT COMMITTEE ON WAYS AND MEANS
JOINT COMMITTEE ON FINANCIAL SERVICES
JOINT COMMITTEE ON PUBLIC SERVICE

STATE HOUSE, ROOM 254
TEL. (617) 722-2220
Russell.Holmes@MAhouse.gov

September 22, 2017

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

RE: Mattapan Trolley Station Project:

Dear Brian Golden:

The purpose of this letter is to express my strong support for the proposed Mattapan Station mixed-use, mixed-income project. This innovative, transit-oriented development project will replace an underutilized MBTA parking lot next to the trolley and bus station with a development that will provide critically-needed affordable and market-rate housing in the neighborhood. Many in the Mattapan community are thrilled that this project substantially exceeds the BPDA's Inclusionary Development Policy (IDP), with 50% of the 126 rental units targeted to households earning 60% of AMI or less. Just as important, future residents of the complex will have a variety of transportation options, including public transit, ride-share and bike share facilities, they will also have direct access to the Neponset River Greenway and commercial and retail space along River Street will create an active street environment.

Over the past 14 months, the Preservation of Affordable Housing (POAH) and the Nuestra Comunidad Development Corporation have implemented a broad and comprehensive community engagement process with a focus on keeping the neighborhood informed about the project and the upcoming Article 80 public process. During this engagement process, they have worked side-by-side with residents, institutions, Mattapan Square business enterprises, elected officials, and other key stakeholders to obtain a broad spectrum of ideas and feedback about the proposed project.

Based on the critical importance of this project to the greater Mattapan community, I urge the BPDA to approve the Mattapan Station Trolley project as quickly as possible. Let's get another crane up in the neighborhood.

Sincerely,

Russell E. Holmes
State Representative, 6th Suffolk District

Mattapan Food and Fitness Coalition
1613 Blue Hill Avenue, Suite 303
Mattapan, MA 02126
617 696-2900
www.mattapanfoodandfitness.org
mffcweb@gmail.com

August 18, 2017

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

Dear Mr. Golden:

As Chairperson of the Mattapan Food and Fitness Coalition and on behalf of my organization, I am very pleased to support the planned redevelopment of the MBTA-owned parking lot at Mattapan Station by Preservation of Affordable Housing (POAH) and Nuestra Comunidad Development Corporation (Nuestra). POAH and Nuestra propose to redevelop this site into an inclusive, mixed-use, transit-oriented site.

Our organization has been working for the past eleven years to improve the health of the Mattapan community by increasing access to healthy affordable food and opportunities for active living. These efforts have included among others managing the Mattapan Square Farmers Market, advocating for the completion of the Neponset River Greenway, providing opportunities for biking and other forms of physical activity, building gardens and encouraging the revitalization of parks and greenspaces. Over time we have become acutely aware of the intersection of our efforts with other social determinants of health, including affordable housing. We thus have joined with others in Mattapan in welcoming projects to increase the availability of affordable housing, with special support for transit-oriented developments that encourage walking and biking. Since 2015 we have joined with Nuestra-POAH and other community organization to help shape the design and program of this proposal in order to ensure that it meets the needs of Mattapan.

We share the excitement of many Mattapan community members for the Nuestra-POAH vision of 135 new units of affordable and market-rate housing and commend them for their intention to exceed the minimum requirement of only 15% affordable units. Within the commercial space the intention to have a sit down restaurant addresses a long standing desire of Mattapan residents and encourages healthy food consumption. We also fully support their intention to utilize the planned community room and outdoor space for cultural, health promoting, and community-building activities. As an organization that has been engaged for many years in efforts to complete the Mattapan section of the Neponset River Greenway (which abuts this property), we are especially

supportive of aspects of the design which encourage the community at large as well as site residents to take advantage of the Greenway and the MBTA.

In every step of this process we have found POAH and Nuestra to not only be open to community input, but encouraging of it. We lend our full support to their proposal.

Sincerely,

Vivien Morris
Chairperson
Mattapan Food and Fitness Coalition

Mattapan United
Weaving our Bonds; Fostering Pride; Finding Joy and Strength in Diversity
535 River Street Mattapan, MA 02126

August 16, 2017

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

Re: Mattapan Trolley Station Development

Dear Mr. Golden,

On behalf of the Mattapan United Steering Committee, I am writing to express our support for the project proposed by Preservation of Affordable Housing (POAH) and Nuestra Comunidad Development Corporation for the redevelopment of the MBTA parking lot next to the Mattapan Trolley Station. To our knowledge, this project will provide 135 new housing units, 50% affordable; 10,000 SF of commercial space; 2,000 SF of community space; 50 parking spaces for the MBTA commuters; and 70 parking spaces for the residents of the building.

As an organization, we celebrate that POAH and Nuestra have decided to allocate 50% of the units to families earning 60% AMI or less since we are extremely concerned about the impact that rising housing costs have in the community. Some features of the proposed development include the following: 10,000 square feet of commercial space that can bring new retail desired by the community, such as a sit down restaurant; a community room of 2,000 square feet to help meet the demand for comfortable meeting space especially on nights and weekends when other locations are unavailable; a new sidewalk and bike track along the eastern edge that will create a safe, attractive, welcoming corridor for the public to access the site, the adjoining trolley and bus station and the new Neponset Greenway; and a generous, attractive open space plan to attract neighbors and visitors to on-site green space, just steps from the Neponset Greenway.

Traditionally, Mattapan has been an underserved community, and we are pleased that POAH and Nuestra have undertaken this development project.

Sincerely,

Yusuf Ali, Lead Organizer

Lincoln Larmond, Co-chair

Cornelius Prioleau, Co-chair

LITTLE SCHOLARS LEARNING ACADEMY

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

August 16, 2017

Dear Mr. Golden,

I am the owner of a newly renovated Early Childhood Education program located in the same block as the Mattapan MBTA parking lot. I am writing to support of the plan to redevelop the MBTA – owned parking lot at Mattapan Station by Preservation of Affordable Housing ("POAH") and Nuestra Communidad Development Corporation ("Nueatra"). They propose to redevelop this site into an inclusive, mixed-use, transit oriented site.

Our Learning Academy is in association with 4 other Licensed Early Childhood Education programs serving Brockton, Dorchester, Mattapan and Roslindale, for over 15 years. We are dedicated to serving families in our communities and providing quality care.

Strength of the Nuestra-POAH proposal is that since 2015, they have engaged regularly with community organizations and residents to form a design and program that meets the needs of Mattapan.

The Mattapan station redevelopment will transform an under-used parking lot into a mixed-use, transit-oriented development that will bring needed housing, economic opportunity and welcoming public space to the site. Nuestra and POAH propose to build 135 new units of affordable and market –rate housing, with half affordable, well beyond the minimum 15% required for developers. The planned 10,000 square feet of commercial space can bring new retail desired by the community, such as a sit down restaurant. A community room of 2,000 square feet will help meet the demand for comfortable meeting space especially at nights and weekends when other locations are unavailable. A new sidewalk and bike trail along the eastern edge will create safe attractive, welcoming corridor for the public to access the site, and adjoining trolley and bus station and the new Neponset Greenway. The MBTA has agreed to make its commuter parking area on the site available for place making activity during off-hours, such as a farmer's market, art festival, community celebration or biking meet-up. To accommodate the new building's residents there will be 70 below -grade parking spaces, and 50 above grade commuter parking space.

I ask for the approval of this proposal by the Boston Planing and Development Agency so that we can begin successful development of this important site.

Sincerely,

Ashley Jones
Proprietor

438 B RIVER STREET, MATTAPAN, MA 02126 – OFFICE 617.322.1115 - FAX: 617.690.2031
LITTLESCHOLARS438@YAHOO.COM

Golden Krust
CARIBBEAN BAKERY & GRILL
Bakers of Superior Quality * Hardough Bread * Buns * Patties * Etc.
399 Knollwood Road, Suite 117 White Plains New York 10603 (914) 250-9124

August 16, 2017

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

Re: Mattapan Station

Dear Mr. Golden:

I am the Vice President of Real Estate Development and Legal for Golden Krust Caribbean Bakery & Grill. I am writing to support the planned redevelopment of the MBTA-owned parking lot at Mattapan Station by Preservation of Affordable Housing ("POAH") and Nuestra Comunidad Development Corporation ("Nuestra"). They propose to redevelop this site into an inclusive, mixed-use, transit-oriented site.

Golden Krust is the largest Caribbean food franchise in the United States with over 120 locations in 9 States including Massachusetts. Our distribution channels include over 20,000 supermarkets, NYC penal system, NYC Education system, and the Military. Staying true to our vision to be a socially responsible company, we continue to support the community by providing sponsorships for high school seniors entering college, and food donations to non- for-profit organizations, and other community projects.

A strength of the Nuestra-POAH proposal is that since 2015, they have engaged regularly with community organizations and residents to form a design and program that meets the needs of Mattapan.

The Mattapan Station redevelopment will transform an under-used parking lot into a mixed-use, transit-oriented development that will bring needed housing, economic opportunity and welcoming public space to the site. Nuestra and POAH propose to build 135 new units of affordable and market-rate housing, with half affordable, well beyond the minimum 15% required of developers. The planned 10,000 square feet of commercial space can bring new retail desired by the community. A community room of 2,000 square feet will help meet the demand for comfortable meeting space

especially at nights and weekends when other locations are unavailable. A new sidewalk and bike track along the eastern edge will create a safe, attractive, welcoming corridor for the public to access the site, the adjoining trolley and bus station and the new Neponset Greenway. A generous, attractive open space plan will attract neighbors and visitors to on-site green space, just steps from the Neponset Greenway. The MBTA has agreed t to make its commuter parking area on the site available for placemaking activity during off-hours, such as a farmers market, art festival, community celebration or biking meet-up. To accommodate the new residents in the building, there will be 70 below-grade parking spaces, and 50 at-grade commuter parking spaces.

I ask for approval of this proposal by the Boston Planning and Development Agency so that we can begin the successful development of this important site.

Sincerely,

Lorraine Hawthorne-Morrison
Vice President Real Estate Development & Legal

GREATER BOSTON NAZARENE COMPASSIONATE CENTER, INC.

130 River Street Mattapan MA 02126

Rev DR. Pierre-Louis Zephir
Executive Director

August 14, 2017

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

Re: Mattapan Station

Dear Mr. Golden:

I am Pierre-Louis Zephir, Executive Director, President & CEO of Greater Boston Nazarene Compassionate Center (GBNCC). I am writing to support the planned redevelopment of the MBTA-owned parking lot at Mattapan Station by Preservation of Affordable Housing ("POAH") and Nuestra Comunidad Development Corporation ("Nuestra"). They propose to redevelop this site into an inclusive, mixed-use, transit-oriented site.

GBNCC has 20+ years addressing the social needs of local Boston residents. GBNCC offers an array of educational and social service programs to improve the lives of young people, adults, elderly, and low-income families living in the Greater Boston area regardless their ethnic origin, faith, and gender.

A strength of the Nuestra-POAH proposal is that since 2015, they have engaged regularly with community organizations and residents s to form a design and program that meets the needs of Mattapan.

The Mattapan Station redevelopment will transform an under-used parking lot into a mixed-use, transit-oriented development that will bring needed housing, economic opportunity and welcoming public space to the site. Nuestra and POAH propose to build 135 new units of affordable and market-rate housing, with half affordable, well beyond the minimum 15% required of developers. The planned 10,000 square feet of commercial space can bring new retail desired by the community, such as a sit down restaurant. A community room of 2,000 square feet will help meet the demand for comfortable meeting space especially at nights and weekends when other locations are unavailable. A new sidewalk and bike track along the eastern edge will create a safe, attractive, welcoming corridor for the public to access the site, the adjoining trolley and bus station and the new Neponset Greenway. A generous, attractive open space plan will attract neighbors and visitors to on-site green space, just steps from the Neponset Greenway. The MBTA has agreed t to make its commuter parking area on the site available for placemaking activity during off-hours, such as a farmers market, art festival, community celebration or biking meet-up. To accommodate the new building's residents there will be 70 below-grade parking spaces, and 50 at-grade commuter parking spaces.

I ask for approval of this proposal by the Boston Planning and Development Agency so that we can begin the successful development of this important site.

Sincerely,

Rev. Pierre Zephir, Executive Director

Phone: 617/296-7450

Fax: 617/296-7453

E-mail: Pierrezephir@dcncc.org

September 19, 2017

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

Re: Mattapan Trolley Station Development

Please accept my signature as evidence of my strong support for the application submitted by Preservation of Affordable Housing (POAH) and Nuestra Comunidad Development Corporation. The proposed project will replace an underutilized MBTA parking lot next to the trolley and bus station with a development that would provide 135 housing units, 50% of which will target families earning 60% AMI or less, and 10,000 sf of commercial space. Furthermore, it will also provide 50 parking spaces for the MBTA commuters and 70 parking spaces for the residents of the building. The developers have included an inviting entrance to the new Neponset River Greenway. Additionally, POAH and Nuestra have committed to providing jobs and business opportunities to local and minority owners and workers of color.

Traditionally, Mattapan has been an underserved community, and I am pleased that POAH and Nuestra have undertaken this development project.

Sincerely: Vivian R. Ortiz

August 21, 2017

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

Re: Mattapan Trolley Station Development

Please accept my signature as evidence of my strong support for the application submitted by Preservation of Affordable Housing (POAH) and Nuestra Comunidad Development Corporation. The proposed project will replace an underutilized MBTA parking lot next to the trolley and bus station with a development that would provide 135 housing units, 50% of which will target families earning 60% AMI or less, and 10,000 sf of commercial space. Furthermore, it will also provide 50 parking spaces for the MBTA commuters and 70 parking spaces for the residents of the building. The developers have included an inviting entrance to the new Neponset River Greenway. Additionally, POAH and Nuestra have committed to providing jobs and business opportunities to local and minority owners and workers of color.

Traditionally, Mattapan has been an underserved community, and I am pleased that POAH and Nuestra have undertaken this development project.

Sincerely:

Name	Address	Phone
Winnie Thomas	415 River St Apt 109	617-696-1009
Marlene Chamberlain	431 River St Apt 308	857-266-9601
MARCia WOLFF	439 River St G3	6179606087

August 17, 2017

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

Re: Mattapan Trolley Station Development

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Sincerely:

Name	Address	Phone
Rachel Baptiste	12 Inwood St 02125	857 261 2302
[illegible]	60 Andria dr	6035787[illegible]
Jean Montel	Mattapan 0212[illegible]	8572474812
Oscar Rivera	630 Dudley St	857 237 6556
Patrick Smitherman	79 Topaliam St	617-615-5287
Maria Ange	20 thorn St	339-204-3614
MARIE PIERRE	37 Fenway rd	857-298-1937
Carrie Leatherwood	12 Rector Rd	617 296 9585

August 17, 2017

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

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Sincerely:

Name	Address	Phone
Ralph Ambroise	8 Mattapan	857 258 6339
Edouard Charles	APT 410 River St. Mattapan	617. 383-1786
Delia Orivarez	555 Mattapan	617-615-2844
Bertha Lamothe	Mattapan	857-318-4325
Nadege Charlotin	10 MALTA St Malden	617-657-1731
Ivy M. Dupuis	104 C-A Field Ave	401-545-2236
Andre Cain	Mattapan	781-652-1072
Elton Bonze	688 WALK HILL	827 417 0510

August 17, 2017

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Sincerely:

Name	Address	Phone
Kelly Moore	226 Woodrow Ave	857 243 3989
Candice Morgan	437 River St	857-736-0305
Ruth Joseph	415 River	
Peter Morgan	447 River	617-291-4780
Andrea Lafortune	47 River St	857 334 0977
Christina Rigaud	431 River	781 308 8629
Frantz Massena	439 River St Mattapan 02	617-652-1678
Elisaint Esther	296 Norfolk St Dorch	401 219 0141

August 17, 2017

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Sincerely:

Name	Address	Phone
Marie M. Loyma	439 River ST Apt 101	857-244-3565
Jocelyne B. Chery	437 River st Apt 202	8454991467
Lucienne	431 River St Apt G1	(857) 312-3391
Jelayna	439 River St., Apt 202	617-510-0731
Fredlyne Guirand	415 River St. Apt. 201	617-980-4422
Nesly Onwuka	415 River St Apt 101	857 207 8554
Tanisha Washington	415 River St #309	6173126236
	415 River St # 205	774 615 5110

August 17, 2017

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Sincerely:

Name	Address	Phone
Vanessa Daniels	415 River St.	857-266-204
Jessaline Guillaume	415 River st	617 296 614
Jn Robert Guillaume	St.	6176072449
Kimberly Blair	7 Vernell St. Mattapan, MA 02126	617 708 6568
	437 River St #G2 MATTAPAN 02126	617-637-9895
	435 River St Apt 203 Matt	857-212-4895
Claudette Voraire	437 River st #301	857-247-8994
Edelyne Joseph Vincent	415 River St Apt 301	617-909-8801

August 15, 2017
Business

Brian Golden
Director
Boston Planning and Development Agency
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Boston, MA 02201

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Sincerely:

Name	Address	Phone
[illegible]	534 Cleveland St.	(617) 296 6200
[illegible]	536 River Street	617-285-4382
Angel Rodriguez (Camilo Lugo)	542 River ST.	617-298-0707
[illegible]	530 Mattapan St	617-615-8823
MAZE	1643 Blue Hill	401-368-464[illegible]
Josefa Jarquin Fernandez	1633 Blue Hill Ave	617-2984444
Francisco Fernandez	1633 Blue Hill Ave	617-212-8590
Jose Maria Cristobal	1637 Blue Hill AVE	6178941778

August 15, 2017

Business

Brian Golden
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Boston Planning and Development Agency
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Sincerely:

Name	Address	Phone
ROY FLEMING	46 MESSINGER ST Mattapan MA-0226	857-251-5152
Kelotthe Pierre	1612 Blue Hill Ave	617 298-2067
Golden Krust	1614 Blue Hill Ave	6176966200
Helei dAi	1618 BLUE HILL AVE	617-698-8888
John Papatonstantino	1638 Blue Hill Ave	617 298-5224
Lourdes Wallace	1646 Blue Hill Ave	6172968058
Mason Diaz	483 River St	617.296.8061
Sams Market	500 River ST Mattapan	6176088092

August 15, 2017

Business

Brian Golden
Director
Boston Planning and Development Agency
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Boston, MA 02201

Re: Mattapan Trolley Staion Development

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Sincerely:

Name	Address	Phone
Marie Honoré	645 Mattapan	781-632-4685
Mark Mize	1631 BHA	617-298-5810
Martine Cesmir	1603 Blue Hill Ave	617 298 8076 (HAPI
Chloe Dri (BSW)	1595 Blue Hill Ave.	617 298 6661
Mattapan Family Laundry mat	1591 Blue Hill Ave	617-322-9368
Mr. Lee Super Dollar	1588 Blue Hill Ave	617 698 8888
Pt Mattapan Sq	1596 Blue Hill Ave	617-296-6800
PANEL ARMAND	1600 Blue Hill	781-449-7506

August 3, 2017

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

Re: Mattapan Troley Staion Development

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Sincerely:

Name	Address	Phone
H.M. Owens	20 Sprague St. Hyde Park, Mass	917-401-3440
Betty M. Padmore	58 Fairfax St Matt	617-696-0898

August 3, 2017

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

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Sincerely:

Name	Address	Phone
Mary Williams	145 Blue Hill Ave	857-333-1769
Yves Cantave	8 Glenmore St	617-249-8990
Sharon Joshua Lynch	84 Jaxton St (2)	(617) 817 7281
Shavelle Olivier	7 Mameon Circle Apt 1	857-277-4258
Jovan J. Lacet	30 Cedar St., Mattapan	617-593-5593
Ann Rice	81 Greenwood St	617 296 8922
Jenny Clark	70 Fairlawn Ave Bc Mattapan	617-296-0156

July 18, 2017

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

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Sincerely:

Name	Address	Phone
Sheila Jones	79 Rosewood St Matt	617-298-7069
Olga Jones	79 Rosewood St Matt	6172987069
Mary Baker	91 Rosewood St. Matt	617-298-3[illegible]
Vivien Morris	39 Mompono St. Hyde	617 361-20[illegible]

Appendix J – Accessibility Checklist

Article 80 – Accessibility Checklist

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

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

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

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

Accessibility Analysis Information Sources:

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

Glossary of Terms:

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

1. Project Information:

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

Project Name:	**Mattapan Station**
Primary Project Address:	**466 River Street, Boston, MA 02126**
Total Number of Phases/Buildings:	**2**
Primary Contact (Name / Title / Company / Email / Phone):	**Michael Liu** **The Architectural Team**
Owner / Developer:	**Preservation of Affordable Housing and** **Nuestra Comunidad Development Corporation**
Architect:	**MASS Design Group, 334 Boylston St, 400, Boston, MA** **The Architectural Team, 50 Commandants Way, Chelsea, MA**
Civil Engineer:	**Howard Stein Hudson, 11 Beacon St, Boston, MA**
Landscape Architect:	**MASS Design Group,**
Permitting:	**Klein Hornig, 101 Arch St, 1101, Boston, MA**
Construction Management:	**TBD**

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

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

Do you anticipate filing for any variances with the Massachusetts Architectural Access Board (MAAB)? ***If yes,*** identify and explain.	

2. Building Classification and Description:

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

What are the dimensions of the project?

Site Area:	*120,621 SF*	Building Area:	*211,670 GSF*

Building Height:	*74'-6" FT.*	Number of Stories:		*5 Flrs.*
First Floor Elevation:	+/- 55 Ft. Elev.	Is there below grade space:		*Yes / Parking*
What is the Construction Type? (Select most appropriate type)				
	Wood Frame	Masonry	Steel Frame	Concrete
What are the principal building uses? (IBC definitions are below – select all appropriate that apply)				
	Residential – One - Three Unit	**Residential - Multi-unit, Four +**	Institutional	Educational
	Business	Mercantile	Factory	Hospitality
	Laboratory / Medical	Storage, Utility and Other		
List street-level uses of the building:	*Retail – Community Space – Residential Lobby*			

3. Assessment of Existing Infrastructure for Accessibility:

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

Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:	The Proposed Site is within the Mattapan Neighborhood near Mattapan Square, the Mattapan Station bus and trolley hub, and the Neponset River. The immediate area is currently the commuter parking lot for Mattapan Station. To the north and west of the site is retail and commercial space on River Street and Blue Hill Ave., with a residential neighborhood to the east consisting of a mix of single and multi-family residential buildings. To the south of the site is the Neponset River and the newly completed Neponset River Greenway.
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	The Mattapan T Station is directly adjacent to the Proposed Site. MBTA Bus Routes #24, 27, 28, 29, 30, 31, 33, 245, and 716 run along River St., Blue Hill Ave., and Cummins Highway and have a stop within 50 yards of the site.
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	Within a quarter mile of the Proposed Site is the Unquity House Senior Living Center to the south and the Mattapan Community Health Center to the north. Slightly further is St. Angela Elementary, 0.5 miles to the north, and the St. Mary of the Hills School, 0.75 miles to the south in Milton.

List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	There is a United States Postal Service location in Mattapan Square, less than 0.25 miles north of the site. The Mattapan Branch of the Boston Public Library is also located 0.75 miles north on Blue Hill Avenue and Ryan playground is 0.5 miles east along River St.
4. Surrounding Site Conditions – Existing: *This section identifies current condition of the sidewalks and pedestrian ramps at the development site.*	
Is the development site within a historic district? ***If yes,*** identify which district:	The Proposed Site is not within a historic district.
Are there sidewalks and pedestrian ramps existing at the development site? ***If yes***, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site:	At present, there is a sidewalk along River St., but the road surrounding the Proposed Site is a bus route only, not a City of Boston street, so no sidewalks or ramps exist for the majority of the site.
Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? ***If yes,*** provide description and photos:	The sidewalks adjacent to the site are not existing-to-remain. The Proposed Development will be reconstructing the sidewalks on River Street and adjacent to the site, creating new sidewalks connecting the MBTA station and Neponset River Greenway. Sidewalks will comply with the City's Complete Street Guidelines.
5. Surrounding Site Conditions – Proposed *This section identifies the proposed condition of the walkways and pedestrian ramps around the development site. Sidewalk width contributes to the degree of comfort walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Wider sidewalks allow people to walk side by side and pass each other comfortably walking alone, walking in pairs, or using a wheelchair.*	
Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard.	Yes, they are consistent with the Neighborhood Connector street typology.

What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	Sidewalks are a maximum 1:20 slope and a minimum 7' in width for the Pedestrian zone. Furnishing Zone are a minimum 6' wide.
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?	Concrete curb cuts and concrete sidewalks with concrete bike lanes. New materials will be on private property.
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?	A sidewalk café is being considered on the pedestrian right of way. The planned café space is between 6' and 10' in width and will not impede the remaining right-of-way which is a minimum 7'.
If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	Currently the project is not considering seeking a pedestrian easement. Land will continued to be owned by the MBTA – proponent will enter a 99 year lease with MBTA.
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	Currently no portion of the land will be going through a PIC.
6. Accessible Parking: *See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability – Disabled Parking Regulations*.	
What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage?	70 residential spaces will be located in an underground parking lot, accessible by elevator. 50 surface spaces will also be provided for commuters and MBTA customers, accessible at-grade.

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?	10% of the total spaces will be accessible. 7 accessible spaces will be provided in the underground residential parking and 5 accessible spaces at grade. 7 underground and 2 surface spaces are "Van Accessible"
Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need?	No
Where is the accessible visitor parking located?	Accessible visitor parking is located behind the building in the courtyard.
Has a drop-off area been identified? ***If yes,*** will it be accessible?	Drop off areas are still being designed but will be accessible.
7. Circulation and Accessible Routes: *The primary objective in designing smooth and continuous paths of travel is to create universal access to entryways and common spaces, which accommodates persons of all abilities and allows for visitability with neighbors.*	
Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator:	All building entrances and unit entrances will be accessible via a Flush Condition, with the exception of courtyard plaza, which will be accessible via both Flush Condition from River Street and ramp from the surface parking. All upper floors of the building will be accessible via Elevator.
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	The standard lobby entrance to the residential building is accessible as a flush condition at grade, as is the retail and commercial space on River Street. All upper floors consisting of residential units are accessible by elevator and all units are designed to be visitable.
If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	The signage package remains to be designed.
8. Accessible Units (Group 2) and Guestrooms: (If applicable)	

In order to facilitate access to housing and hospitality, this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing and hotel rooms.

What is the total number of proposed housing units or hotel rooms for the development?	135 in Phase I and an additional 9 units in Phase II.
If a residential development, how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units?	All 135 Phase I units are rental and the 9 units in Phase II are for sale. 49% of the units in Phase I are market rate and 51% will be income restricted to residents with incomes 60% or lower AMI, while 80% of Phase II units are for sale and 20% are IDP.
If a residential development, how many accessible Group 2 units are being proposed?	7 units (5%) will be accessible Group 2 units
If a residential development, how many accessible Group 2 units will also be IDP units? ***If none***, describe reason.	We are proposing all of the Group 2 units to be affordable units (IDP).
If a hospitality development, how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? ***If yes,*** provide amount and location of equipment.	N/A
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs / thresholds at entry, step to balcony, others. ***If yes,*** provide reason.	No
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes,*** describe:	N/A

9. Community Impact:

Accessibility and inclusion extend past required compliance with building codes. Providing an overall scheme that allows full and equal participation of persons with disabilities makes the development an asset to the surrounding community.	
Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives?	This project is providing multiple significant improvements to the surrounding neighborhood, including upgrading of sidewalks and pedestrian space, building multi-modal routes including bike lanes, providing accessible access to the MBTA Station, planting street trees, building a 2000 s.f. community space to be reserved by the Mattapan community, and creating a public park at the entrance to the Neponset River Greenway.
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?	All common spaces will be equip with ADA compliant equipment / furnishings. As an example, the community kitchen will be ADA compliant as will all common area laundry equipment and seating.
Are any restrooms planned in common public spaces? ***If yes,*** will any be single-stall, ADA compliant and designated as "Family"/ "Companion" restrooms? ***If no***, explain why not.	Yes, restrooms are planned for the common public space including one single stall ADA compliant and designated "Family / Companion".
Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? ***If yes,*** did they approve? ***If no,*** what were their comments?	No
Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? ***If no,*** what recommendations did	It was not yet presented.

the Advisory Board give to make this project more accessible?	

10. Attachments

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

Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances.
Provide a diagram of the accessible route connections through the site, including distances.
Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable)
Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry.
Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. • • • •

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

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

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

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