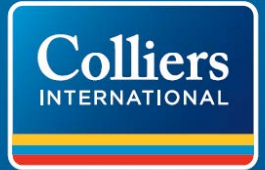


PROJECT NOTIFICATION FORM

Wentworth Institute of Technology
Sweeney Field Athletics Complex
600 Parker Street
Boston, MA 02210



Submitted to:
Boston Redevelopment Authority
City Hall Square, 9th Floor
Boston, MA 02201

Prepared by:
Colliers International
160 Federal Street, 11th Floor
Boston, MA 02210

In Association with:
Wentworth Institute of Technology
CDM Smith Inc.
Vanasse Hangen Brustlin, Inc.

NOVEMBER 12, 2014



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1.0 PROJECT DESCRIPTION

1.1 Introduction

Founded in 1904, Wentworth Institute of Technology (“Wentworth”) is an independent, co-educational, nationally ranked institution offering career-focused education through 19 bachelor’s degree programs in areas such as applied mathematics, architecture, business management, computer science, computer networking, construction management, design, engineering, and engineering technology. The Institute also offers master’s degrees in architecture, construction management, facility management, and technology management. Wentworth is a leader in engineering, technology, design, and management education and is well known for its academic excellence and cooperative education (co-op) program, as well as community service and support for the economic growth of the region.

Wentworth will be relocating its existing 2011 Sweeney Field from 500 Huntington Avenue to 600 Parker Street, in accordance with the BRA approved 2011 Institutional Master Plan. The New Sweeney Field Athletics Complex (the “Proposed Project”) will house a NCAA Division III athletic field on the deck of an at-grade covered parking facility that will hold 330 vehicles. The Proposed Project will include a viewing stand with spectator restrooms and a support structure with team rooms and mechanical/electrical space. The Proposed Project also includes the exterior stabilization of two Boston Landmarked buildings that were part of the historic Vienna Brewery Complex.

1.2 Project Identification

Project Name:	Sweeney Field Athletics Complex
Address/Location:	600 Parker Street Boston, MA

1.3 Project Team

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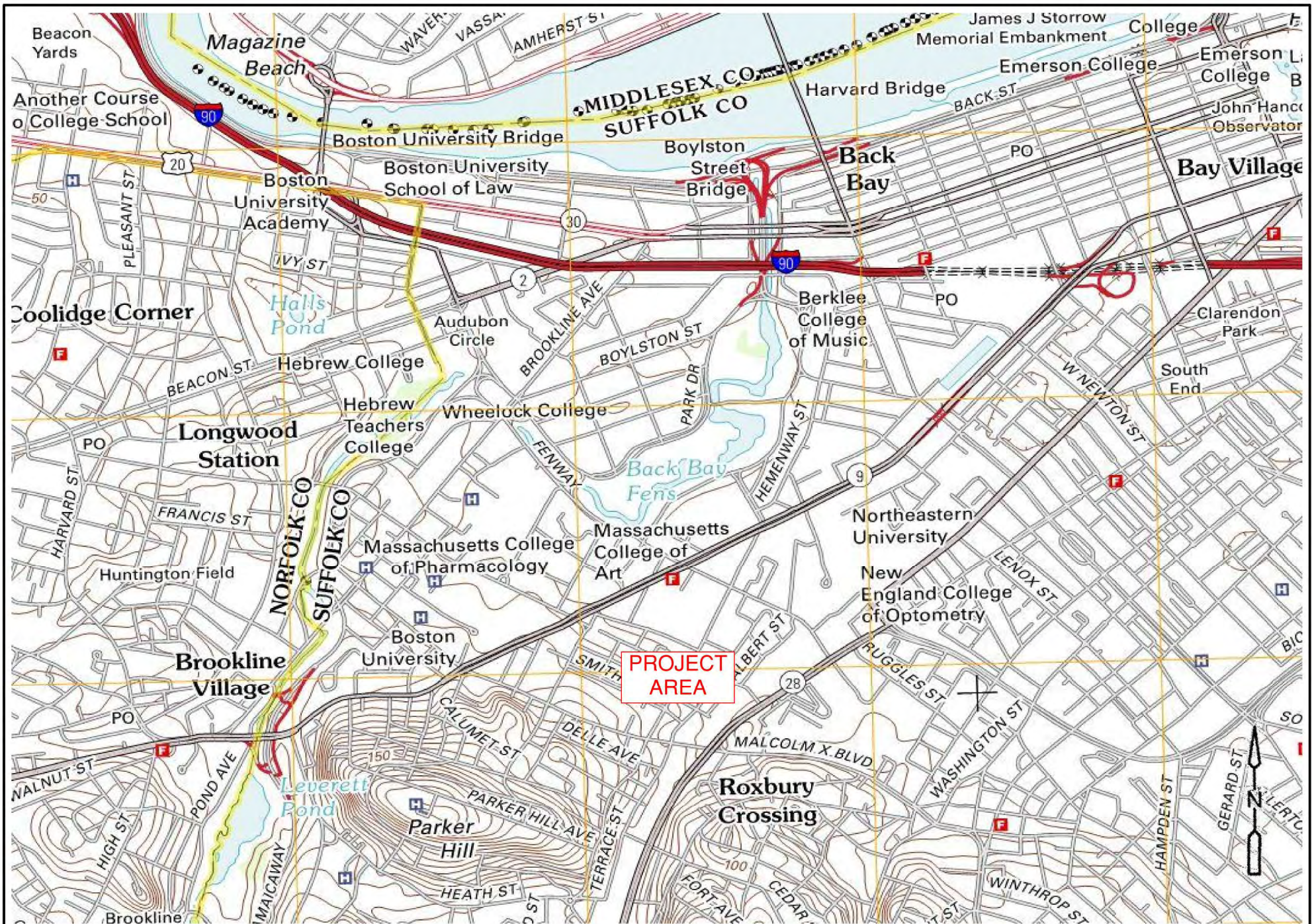
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James Greene

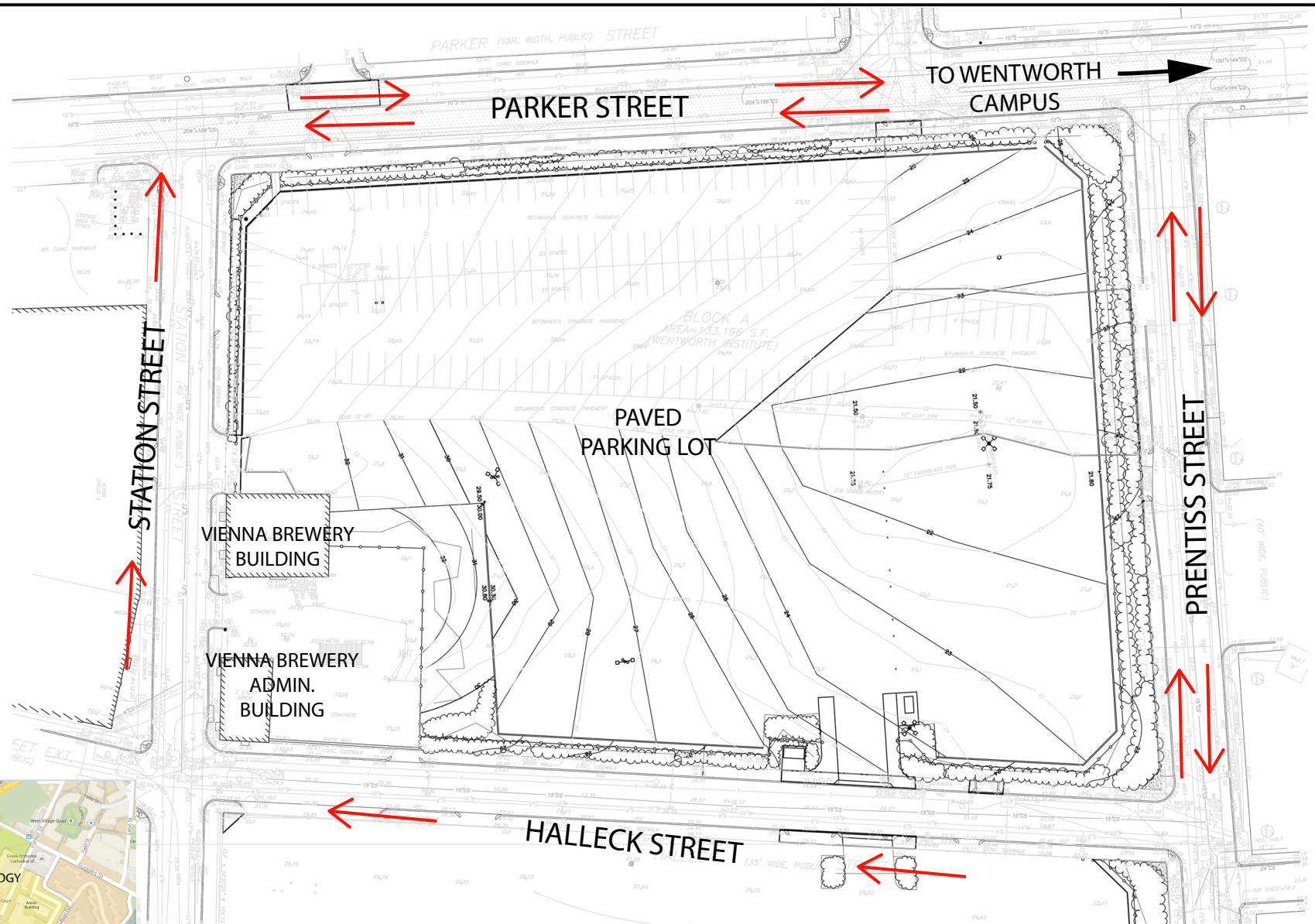
Government Relations: Edward M. King & Associates
19 Beacon Street
Boston, MA 02108
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Edward King

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1.4 Project Description

1.4.1 Project Site

The Project Site is comprised of several Wentworth-owned parcels totaling approximately 3.06 acres, bounded by Prentiss Street to the north, Halleck Street to the east, Station Street to the south and Parker Street to the west as shown in Figure 1-2. The Project Site is located in the Mission Hill neighborhood of Boston. The Proposed Project involves the creation of a state-of-the-art athletic playing field atop a single-story structure that will contain 330 parking spaces accessed from Halleck Street.

The Proposed Project will be constructed at 600 Parker Street on the site of an existing 403-car surface parking lot that Wentworth owns. The proposed athletic field will be generally level with Station Street and will serve the Wentworth athletic programs. The Proposed Project will dramatically improve the urban streetscape on all edges of the project site by depressing and covering the existing on-site parking uses, adding meaningful landscape buffers on all sides of the Proposed Project, and will also create new opportunities for community athletic activities. The Proposed Project represents civic improvement to the Mission Hill neighborhood by transforming a large open-air surface parking lot into a multi-use athletic field that will benefit both Wentworth and the surrounding community.

The Project Site is within walking distance to both the MBTA Orange and Green Lines, several MBTA bus stops and is located adjacent to Wentworth's main campus.

1.4.2 Existing Site Uses

Currently, the Project Site consists of a large open-air surface parking lot containing 403 parking spaces and two unoccupied historically landmarked buildings. The existing buildings remaining from the Vienna Brewery Complex were landmarked in 1998. Both buildings are unoccupied, unserved by interior systems, and in need of significant repair. The Existing Conditions Plan is shown in Figure 1-2.

1.4.3 Detailed Project Description

Consistent with the approved 2011 Wentworth IMP, the Proposed Project will deliver a modern athletic facility on the deck of a one-story parking structure. In addition to the NCAA Division III athletic turf field, the complex will have team rooms along Station Street and bleachers, public restrooms and a viewing stand along Parker Street. The parking facility will hold 330 vehicles with access to and from Halleck Street. It is anticipated that MASCO shuttles and bus drop offs for opposing teams will happen on Halleck Street.

The athletic field will be used by Wentworth for practices and events for varsity and intramural soccer, lacrosse, softball and flag football daily. Field hours of use will vary

throughout the year but generally will fall between 9:00AM and 10:00PM, with occasional use until 11:00PM at lower lighting levels.

The Proponent will improve the pedestrian experience on all four public ways surrounding the site. An “Area Circulation Diagram” is included as Figure 1-3 to demonstrate pedestrian routes from public transportation nodes through the neighborhood. A new linear park with trees, shrubbery and seating areas will be created along Parker Street. New street trees will be incorporated along Prentiss Street to provide shade and a visual buffer for residences across from the parking structure. A generous planting zone will be provided along Halleck Street. In addition to restoring the historical integrity of the existing Vienna Brewery building facades, a new hardscape plaza with planting beds will be created adjacent to the landmarked buildings at the corner of Station and Halleck Streets. The plaza will be a place that Wentworth supporters and alumni can gather for events and competitions held at the complex.

The field lighting will have shields to protect the adjacent neighborhoods from unwanted light pollution. Field lighting will be on a timer and turned off by 11pm each night when the field is in use. The field will only be used for practices after 10pm and the lighting levels will be reduced from 10pm-11pm. Lights will also be added to the structure to help with ambient lighting levels and public safety. Gates and fencing will be secured nightly when the field and garage are not in use. Wentworth will use a portable audio system during games rather than a permanent pole-mounted system to minimize any noise impacts on surrounding residential areas.

The field design at the time of the approved 2011 IMP contemplated the viewing stand and bleachers located along Halleck Street. The softball field was placed in the East corner orienting home plate West-Northwest. By placing the softball diamond in the West corner, the Proposed Project provides the optimum NCAA field orientation of East-Northeast, which is encouraged by current NCAA guidelines. The viewing stand was relocated to Parker Street to prevent observers from looking into the sun, which also reduces the shadow that would have been cast on the public realm by the viewing stand had it remained on Halleck Street (its afternoon shadow will now predominantly occur on the playing field surface). Relocating the bleachers onto the Parker Street side of the field also prevents fans and guests from needing to cross the playing field during games to access the bleachers from the field entries on Parker Street. An additional benefit to relocating the viewing stand and spectator bathrooms onto Parker Street is that it provides more direct connectivity between bleachers, the main axis of pedestrian activity on Parker Street, and the playing field.

The proposed site plan is shown as Figure 1-4. Figures 1-5 through 1-6 show floor plans for the Proposed Project. Figures 1-7 through 1-16 show the elevations and perspective views from the neighborhood.



MBTA
ORANGE
LINE STOP



MBTA GREEN
LINE STOP



MBTA
COMMUTER
RAIL STOP



MBTA BUS/
MASCO SHUTTLE
STOP



WENTWORTH
OWNED
PROPERTIES



FUTURE SITE OF
SWEENEY FIELD



PRIMARY PEDESTRIAN ROUTES



OTHER PEDESTRIAN ROUTES



PRIMARY PEDESTRIAN DESTINATIONS



ONE WAY STREETS

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WENTWORTH INSTITUTE OF TECHNOLOGY
PROPOSED SWEENEY FIELD

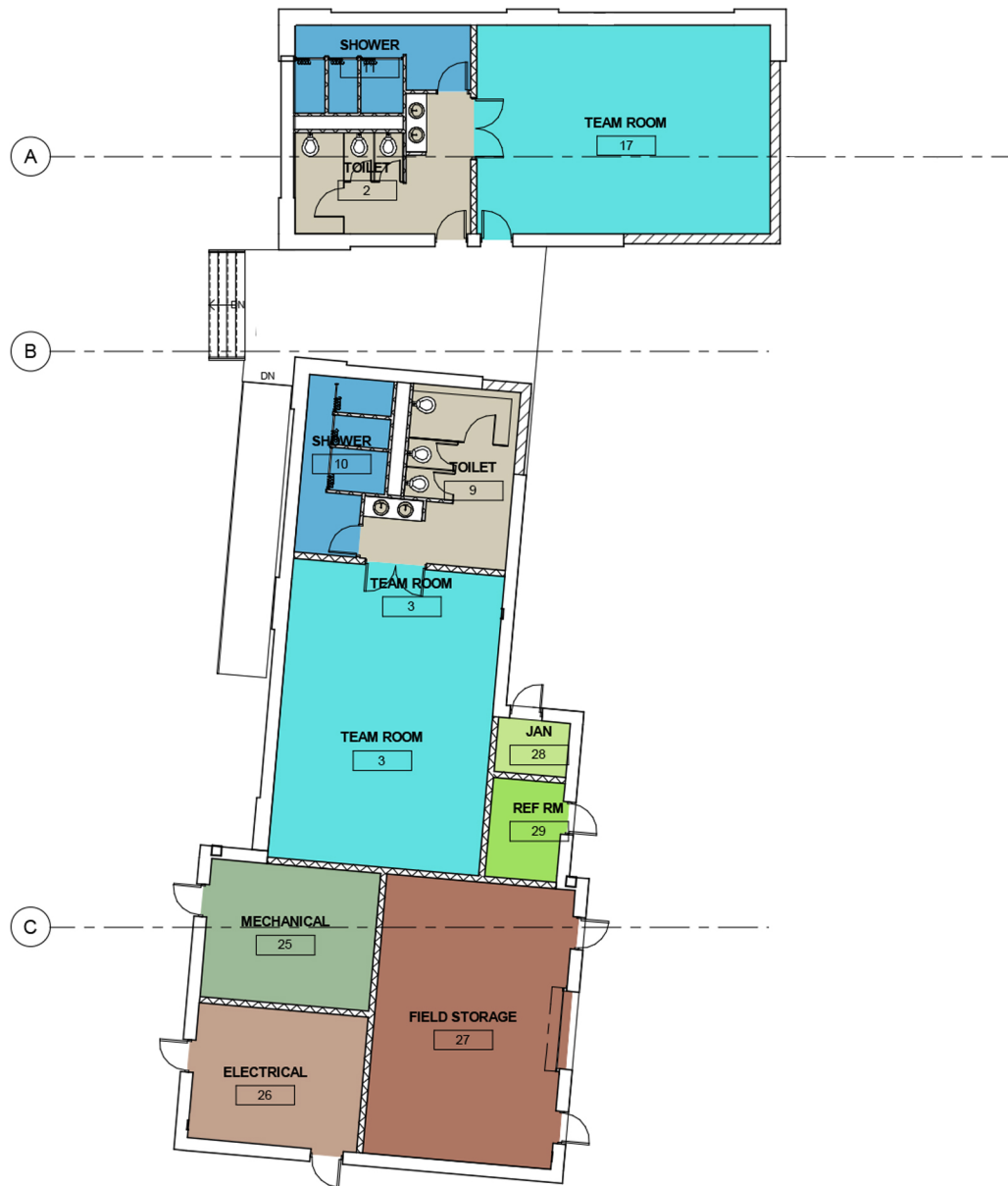
AREA CIRCULATION DIAGRAM

PROJECT NO. 19537-105382
FILE NAME:

FIGURE

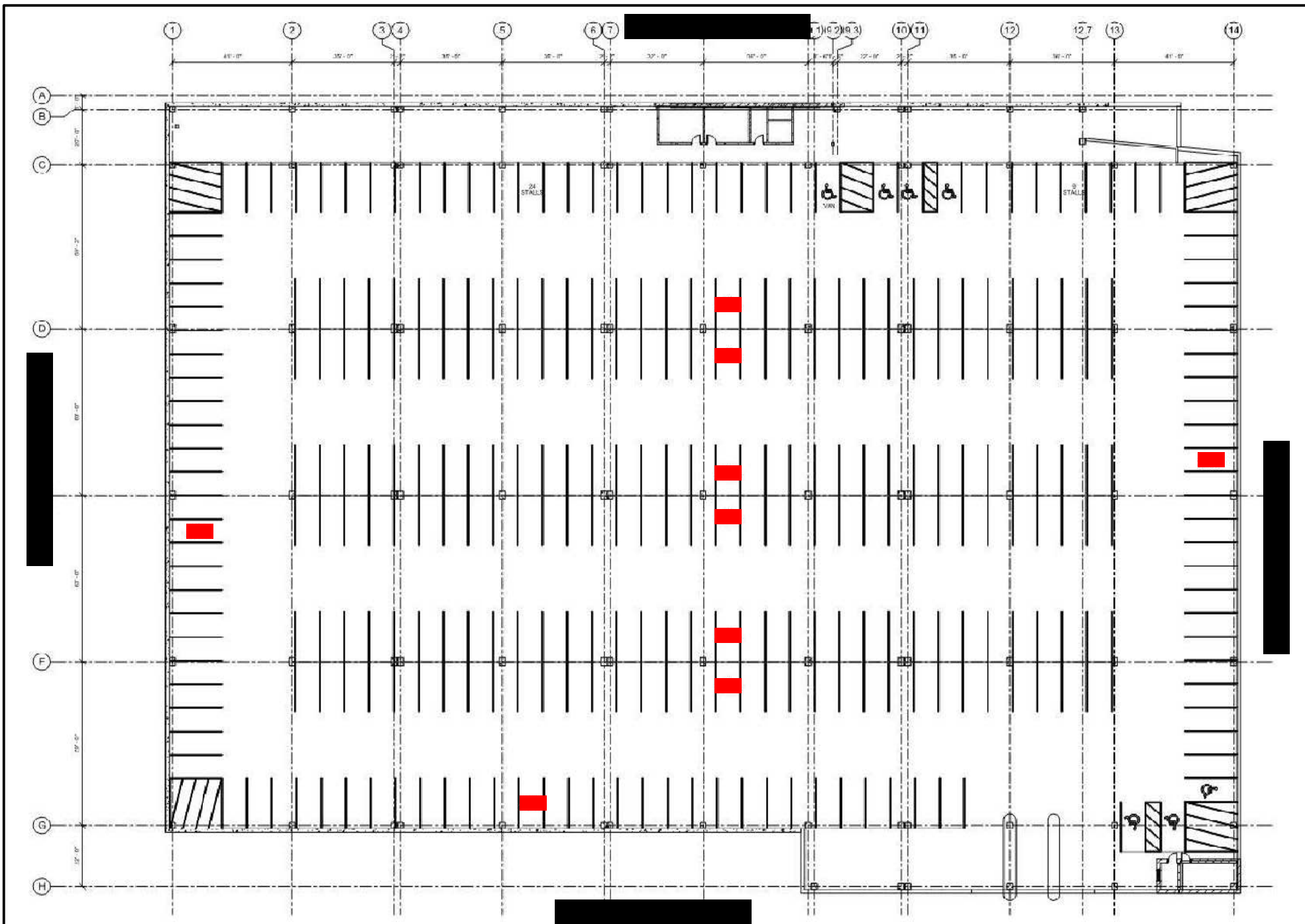
1-3





Room Legend

- ELECTRICAL
- FIELD STORAGE
- JAN
- MECHANICAL
- REF RM
- SHOWER
- TEAM ROOM
- TOILET







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WENTWORTH INSTITUTE OF TECHNOLOGY
PROPOSED SWEENEY FIELD

STATION STREET ELEVATION

PROJECT NO. 19537-105362
FILE NAME:

FIGURE

1-8





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WENTWORTH INSTITUTE OF TECHNOLOGY
PROPOSED SWEENEY FIELD

PRENTISS STREET ELEVATION

PROJECT NO. 19537-105362
FILE NAME:

FIGURE

1-10





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WENTWORTH INSTITUTE OF TECHNOLOGY
PROPOSED SWEENEY FIELD

PARKER STREET PERSPECTIVE

PROJECT NO. 19537-105362
FILE NAME:

FIGURE

1-12







1.4.4 Approximate Dimensions

Site Area	3.06 acres (133,196 SF)
Existing	
Existing Brewery Buildings	10,700 gsf
Total Parking	403 spaces
Proposed Project	
Existing Brewery Buildings	10,700 gsf
Garage (GFA)	50,000 gsf
Team Rooms	3,900 gsf
<u>Viewing Stand</u>	<u>2,400 gsf</u>
Total	67,000 gsf including existing structures
Garage Structure	99,666 sf total: 50,000 gsf (GFA) 49,666 sf (non GFA)
Total Parking	330 spaces

1.4.5 Schedule

Construction of the Proposed Project is estimated to last approximately thirteen months, with initial site work expected to begin in mid-2015 such that the Proposed Project would be completed for occupancy during the Fall 2016 collegiate athletic season.

1.5 Consistency with Zoning Regulations

1.5.1 Zoning District

The Project Site is located entirely within the Mission Hill Neighborhood District, and the Proposed Project was included in the 2011 Wentworth Institute of Technology Institutional Master Plan ("IMP"). The Wentworth IMP was approved by the Boston Redevelopment Authority on December 14, 2010, the Boston Zoning Commission on January 19, 2011 and the Mayor of the City of Boston on January 20, 2011 for a 10 year term. The Wentworth IMP included as a proposed institutional project the Sweeney Field Athletic Complex. Therefore, the project is subject to the 2011 IMP.

1.5.2 Uses

All of the uses that the Proposed Project will include are allowed uses under the applicable Wentworth IMP.

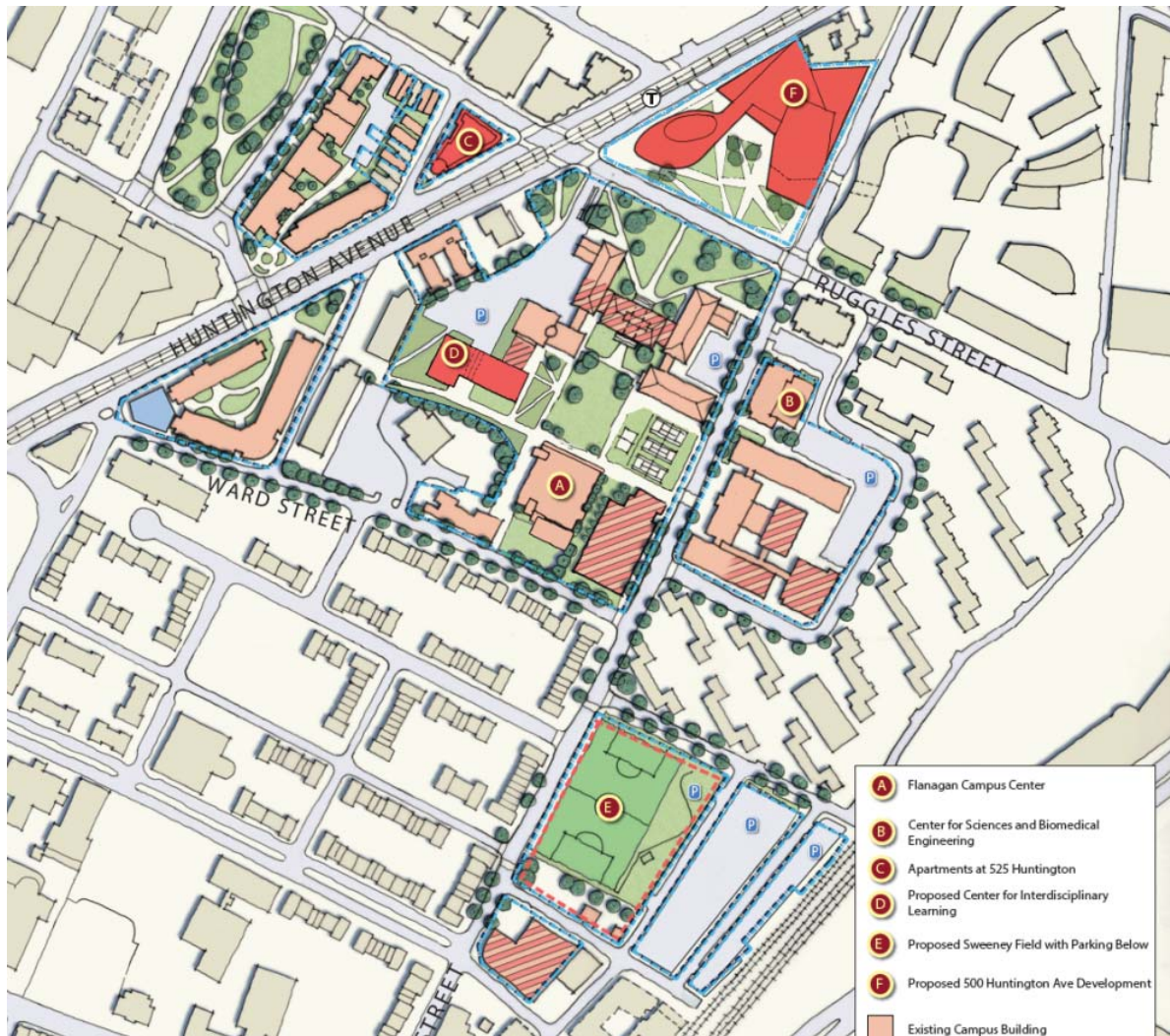


Figure 1-16: Wentworth Institute of Technology IMP, 2011

1.5.3 Building Dimensions

The Proposed Project consists of a playing field located atop a single-level parking structure with a maximum height of 16 feet (to top of parapet wall). The parking level is set 2 feet above the existing Prentiss Street grade; increasing the maximum garage height to 18 feet. Certain accessory structures, such as the team rooms, viewing stand, and spectator restrooms, are located atop the garage structure and range in height above adjacent street grade from 14 feet (team rooms along Parker and Station Street) to 26 feet to the top of the highest open roof structure (open viewing stand roof along Parker Street).

1.5.4 Other Requirements

Because the Proposed Project consists primarily of an open-air parking structure, the USGBC's LEED rating system is not applicable to the Proposed Project and Article 37 compliance is not required. Notwithstanding the inapplicability of Article 37, the Proponent will incorporate sustainable design into the Proposed Project as much as possible.

1.5.5 Historic Preservation Review

The Proposed Project involves the exterior rehabilitation of the remaining intact buildings that were once part of the Vienna Brewery Complex (the "Brewery Buildings"), a City of Boston Landmark. Because the boundaries of the Landmark designation extend beyond the footprints of the extant Brewery Buildings, the Proposed Project will undergo Design Review by the Boston Landmarks Commission. Part of this review will address the proposed removal of the remaining remnant of the so-called Keg Shed Wall on Halleck Street, which is in conflict with the Proposed Project's foundation structure. The proposed Project will not require any state or federal action, licenses, permits, or approvals, so neither MHC nor Section 106 reviews will apply.

1.6 Public Benefits

Through the development of the Sweeney Field Athletic Complex, the Project Site will be transformed from an open-air parking facility into a contributory state-of-the-art athletic field offering a range of public benefits.

The Proposed Project provides numerous public benefits to the City of Boston. The proposed Project will:

- ◆ Create a new recreational amenity that can be used for community programming to the extent feasible in coordination with Wentworth's Athletics Department;
- ◆ Dramatically improve the streetscape quality and pedestrian realm on all sides of the Project Site;
- ◆ Preserve and rehabilitate the historic Vienna Brewery buildings located on Station Street;
- ◆ Promote revitalization of major pedestrian routes and improved pedestrian connectivity in conjunction with other redevelopment projects currently underway or planned for the immediate vicinity;
- ◆ Provide job training opportunities for local residents offered by Wentworth in conjunction with the Proposed project's General Contractor, Gilbane Construction;
- ◆ Promote local employment through good-faith efforts to hire Boston residents for construction jobs;

- ◆ Improve Public Safety in the area by increasing light levels, pedestrian activity, and the presence of Wentworth's public safety personnel and systems in the area; and
- ◆ Generate approximately 200 construction jobs over the thirteen-month construction period.

1.7 Public Review

As noted above, the Proposed Project totals approximately 67,000 gsf, triggering Article 80B, Large Project Review. This expanded Project Notification Form (PNF) is being prepared to initiate that review and the Proponent requests that the requirements for a Draft and Final Project Impact Report be waived.

No state or federal licenses, permits or approvals are required. Table 1-1 lists the local agencies from which permits or other actions may be required.

Table 1-1: Anticipated Permits and Approvals

City Agency	Permit, Review or Approval
Boston Civic Design Commission	Review pursuant to Article 28
Boston Landmarks Commission	Design Review
Boston Inspectional Services Department	Building & Occupancy Permits
Boston Fire Department	Approval of Fire Safety Equipment, Flammable Storage license
Boston Public Improvement Commission / Boston Department of Public Works	Street/Sidewalk Repair Plan Permits for street occupancy and opening permit
Boston Redevelopment Authority	Article 80 Large Project Review
Boston Transportation Department	Construction Management Plan Transportation Access Plan Agreement
Boston Water and Sewer Commission	Temporary Construction Dewatering Permit General Service Application Site Plan Review

1.8 Legal Information

1.8.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments in effect or legal actions pending that are adverse to the Project.

1.8.2 History of Tax Arrears on Property

The Proponent is not in tax arrears on any property owned within the City of Boston. Wentworth pays taxes for certain parcels of land including 133 Halleck Street (Vienna Brewery buildings) and 119 Halleck Street (MASCO Parking lot for 125 cars).

1.8.3 Site Control / Public Easements

The site is owned by Wentworth and there are no public easements which would restrict the development of the site for the Proposed Project.

2.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

2.1 Transportation Overview

This section presents an evaluation and summary of existing and future transportation infrastructure and operations for the Project. The transportation study has been developed to understand and mitigate the transportation impacts of the Project and to develop appropriate transportation infrastructure improvements in Boston's Mission Hill neighborhood.

This study analyzes the following:

- ◆ Vehicle traffic on study area roadways and intersections;
- ◆ Parking conditions;
- ◆ Loading and service activities for the new Sweeney Field;
- ◆ Pedestrian and bicycle operations; and
- ◆ Public transportation services.

In addition, this study quantifies and assesses the transportation impacts that are expected within the Project area under future conditions.

The purposes of these analyses are to:

- ◆ Define and quantify existing transportation conditions in the Project study area;
- ◆ Estimate the transportation impacts that will be generated under future conditions based on the anticipated program for the Project;
- ◆ Develop a set of mitigation strategies and improvement measures which will help to lessen the transportation effects of future growth and provide improvements to the transportation infrastructure in Mission Hill, and
- ◆ Demonstrate that these transportation mitigation efforts will meet or exceed BRA and BTD requirements.

The sections below provide an overview of the Project and a summary of findings of the transportation analysis, including anticipated impacts, proposed mitigation, a discussion of the study methodology, and a description of the study area. Subsequent sections provide detailed discussions of existing and future conditions expected both with and without the Project.

2.1.1 Project Overview

As described previously in greater detail, the Project includes the construction of an approximately 99,666 gross square foot athletic field for Wentworth Institute of

Technology's (Wentworth) sporting events above a single level of ground floor replacement parking. Sweeney Field is currently located on the eastern corner of the intersection of Huntington Avenue and Ruggles Street on the Wentworth campus and is planned to be relocated to this proposed site bounded by Parker Street, Prentiss Street, Station Street and Halleck Street as part of the Wentworth Master Plan. This site is currently a 403 space surface parking lot that is currently operated as a satellite parking facility for Wentworth faculty and staff as well as for employees of the Longwood Medical Area (LMA) who park and ride the MASCO LMA Wentworth Shuttle to work. When the project is complete, the new Field will be relocated above a single level of replacement parking. However, the total number of parking spaces to be provided on site is expected to decrease by 73 spaces to only 330 total spaces. Wentworth will also lose 42 parking spaces in its inventory when the 500 Huntington project (site of the existing Sweeney Field) is developed as contemplated in the 2011 IMP. The relocated Sweeney Field will be accessed on foot via Parker Street, which is only a 5 minute walk from its current location. It is envisioned that the Project will not generate any new trips to the campus (as it already exists and is only being relocated to a different nearby site), however there will be several new walk and bike link trips between the rest of the campus and the new proposed site.

A summary of the Project program is presented in Table 2.1-1.

Table 2.1-1 Wentworth Sweeney Field Athletic Complex Project Program Summary

Project Program	Size
Athletic Field Complex	99,666 sf
Parking Summary	
Existing Surface Parking	403 spaces
Proposed Parking (at-grade)	330 spaces
Net Loss of Parking	(-73) spaces

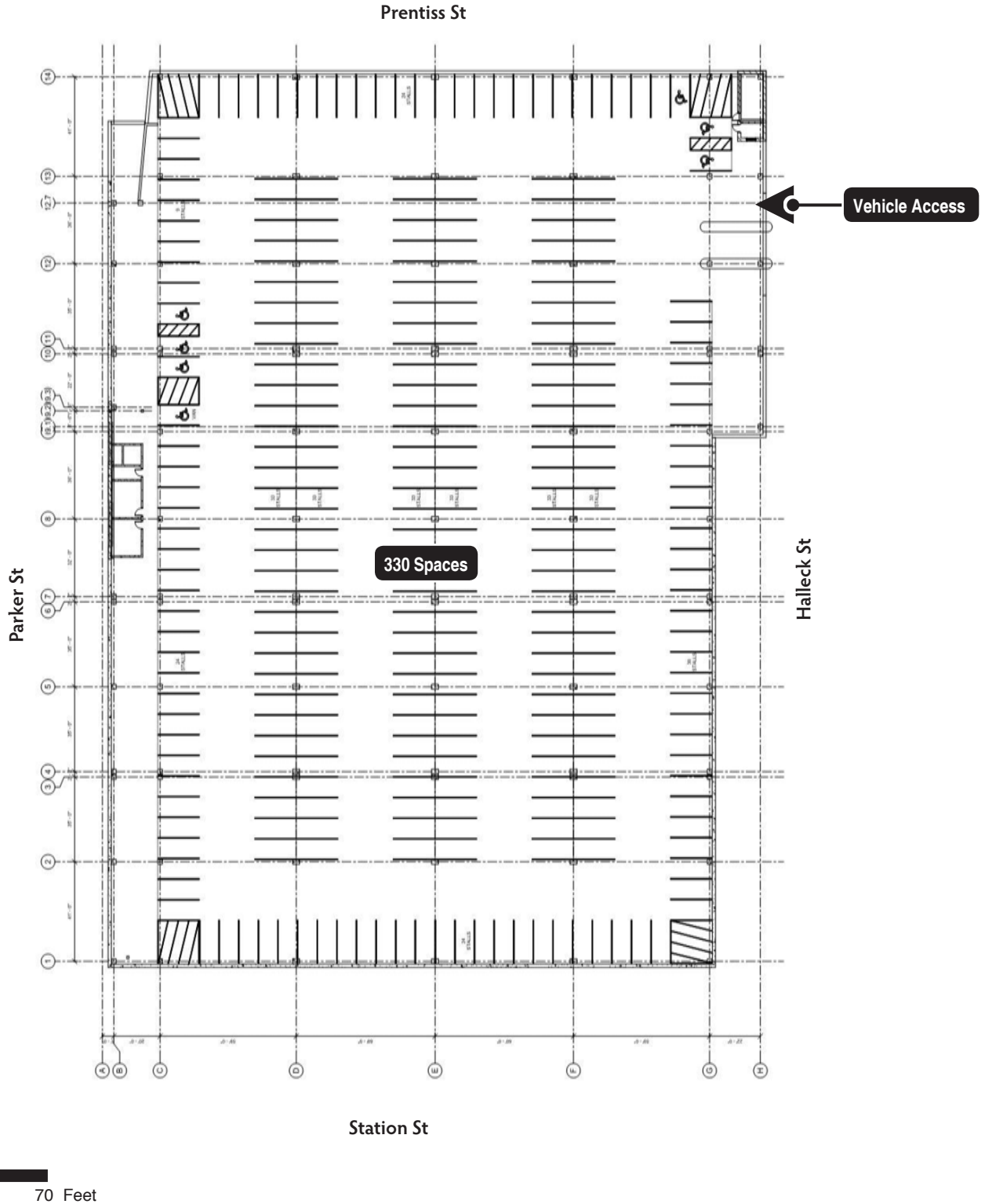
2.1.2 Summary of Findings

The additional traffic generated by the Project will produce no noticeable impacts to the surrounding transportation infrastructure during the evening peak hour analysis. This is due, primarily, to the Project site's central location in the City, which will provide the opportunity for vehicles to make use of multiple access routes to access and egress the site, access to public transit and pedestrian and bicycle amenities, the fact that the field is

being relocated within a five minute walk of the existing field. Most notably, the Project is not expected to generate a measurable amount of new vehicle traffic, and much of that traffic would be offset by the loss of surface parking that is currently being utilized on-site. The Project is not expected to result in any measurable changes to peak hour operating conditions at study area intersections. It is expected that the vast majority of users of the athletic field will travel via walking, biking and public transit. The vehicle trips that would be generated by the Project are merely being rerouted from the existing Sweeney Field site to the proposed site (i.e., there is no regional trip generation created by this Project as these trips are already occurring in the immediate area). Figure 2.1-1 provides an illustrative site plan of the athletic field complex while Figure 2.1-2 presents the layout of the parking level. Key findings and actions include the following:

- ◆ The additional traffic generated by the Project is expected to have no impact on the area's transportation infrastructure.
- ◆ The results of the analysis indicate that there will be no changes in level of service (LOS) in the study area as a result of the Project's development.
- ◆ The Project site is currently well served by transportation infrastructure, including access to Route I-93/I-90 and near public transit (the Orange Line, Green Line and multiple bus routes).
- ◆ A single access/egress driveway to the at-grade replacement parking lot will continue to be provided along Halleck Street in the same location as the existing curb-cut. The gate entrance will contain three lanes including a reversible lane to accommodate peak hour directional flow.
- ◆ Wentworth will provide bicycle parking on site in accordance with the City of Boston Bicycle Guidelines.
- ◆ Wentworth will continue to provide proactive transportation demand management measures to staff and faculty to encourage the use of transit and other alternative forms of transportation.
- ◆ Visiting team buses will drop off and pick up on Halleck Street, and park in the Wentworth West Lot during events, which is their current parking place for events on the existing Sweeney Field.





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WENTWORTH INSTITUTE OF TECHNOLOGY PROPOSED SWEENEY FIELD

Figure 2.1-2
Proposed Parking Level Plan

2.1.2.1 Parking Summary

The Project includes the construction of an at-grade parking lot to replace the existing surface Lot. The new 330-space parking lot will replace the existing 403 surface commuter parking spaces, resulting in a net loss of 73 parking spaces on site. As shown previously in Figure 2.1-2, the parking level will be accessed from a curb cut on Halleck Street at the northeast edge of the site, in a similar fashion as the current parking facility is accessed.

2.1.2.2 Traffic Impacts

A detailed traffic analysis including intersection level of service was conducted at six intersections and the site driveway during morning and evening peak commuter hours. This analysis was conducted both for 2014 Existing Condition and 2019 Future Conditions. The future conditions analyses assumes a five-year planning horizon and considers background growth, growth and improvements attributable to other proposed area projects, and traffic generation estimates associated with the Project. Motorists travelling to the Project will access the facility from Halleck Street. The results of the analysis indicate that there will be no measurable changes in overall intersection LOS in the study area that are directly attributable to the Project.

2.1.2.3 Pedestrian Access

The Wentworth Sweeney Athletic Complex will be accessed by pedestrians via stairs at the northwest and southwest corners of the site, providing for convenient access directly from Parker Street.

2.1.2.4 Loading and Service & Emergency Access

The Project will be fitted with an access driveway from Station Street to provide emergency access directly onto the field. In addition, a rolling dumpster will be provided at this same location to provide for trash removal from Station Street.

2.1.2.5 Transportation Demand Management

Consistent with the City's goals to reduce auto-dependency, Wentworth will continue to provide proactive Transportation Demand Management (TDM) measures to encourage alternative modes of transportation. TDM measures are most often directed at commuter travel; however, due to the nearby public transportation, there are many opportunities to implement TDM measures for the Project's proposed spectators as well.

Section 2.3.2.7 discusses the specific TDM measures that will continue to be implemented. A description of the TDM elements is presented along with information on how those elements aid Project users getting to and from the site. TDM measures will be formalized in the Transportation Access Plan Agreement (TAPA) to be executed with the BTB.

2.1.2.6 Public Transportation

The Project is expected to have no incremental impact on transit operations in the area by 2019.

Because there are so many public transportation options that provide service to and from Mission Hill, no single service is anticipated to be unduly affected by anticipated increases in activity because of the Project under future conditions. Consequently, Project-related transit trips are not expected to affect the transit system in the future 2019 Build Condition.

2.1.3 Methodology

The transportation analysis conforms to the BTD's "Transportation Access Plans Guidelines" and uses standard methodologies as well as custom methodologies, including the Institute of Transportation Engineers' trip generation and local travel characteristics as defined in Access Boston 2000-2010.

The study was conducted in two distinct stages. The first stage (Existing Conditions) involved a survey and compilation of existing transportation conditions within the study area (defined below) including:

- ◆ An inventory of the transportation infrastructure within the defined Project study area;
- ◆ Geometric and operational characteristics of study area roadways and intersections;
- ◆ Existing traffic control at study area intersections (i.e., traffic signalization, stop signs, one-way streets, etc.);
- ◆ Area off-street and on-street parking supply;
- ◆ Pedestrian activity along study area roadways, and at study area intersections;
- ◆ Bicycle activity and accommodations;
- ◆ Public transportation options within the study area, including bus, trolley, commuter rail, and private shuttle bus options; and
- ◆ Existing parking operations currently on site.

In the second stage of the study (Evaluation of Long-Term Transportation Impacts), future transportation conditions were projected within the study area. The future No-Build condition includes an assessment of future transportation including background growth on area roadways and intersections, planned transportation infrastructure improvements, and

growth related to other proposed projects within the study area (without consideration of the Project). The future No-Build Condition takes into consideration many of the projects that are planned and/or under construction within Mission Hill area including those listed in Section 2.3.1.2 below. Future conditions also consider the nearby intersection improvements at the intersection of Tremont Street at Prentiss Street proposed by the Tremont Crossing Development Project. The future Build Condition assesses the No-Build condition plus estimated traffic generated by the Project.

Roadway, pedestrian, and transit capacity for morning and evening peak commuter periods were studied and are summarized for the following conditions:

- ◆ 2014 Existing Condition
- ◆ 2019 No-Build Condition
- ◆ 2019 Build Condition

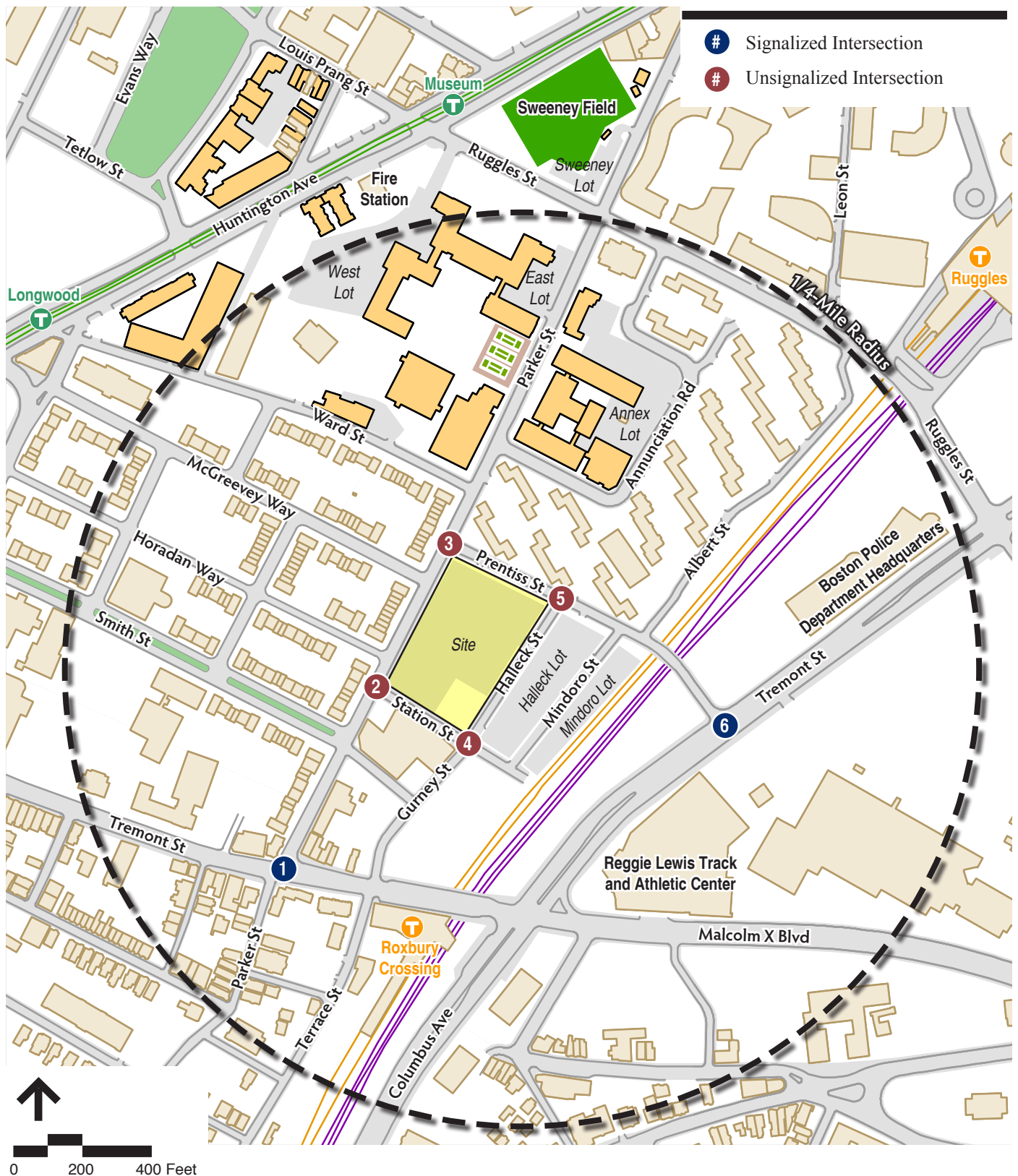
Specific travel demand forecasts for the Project were assessed along with future transportation demands due to background traffic growth and traffic growth from other planned or approved projects within the study area. The year 2019 was selected as the horizon year for the purposes of quantifying and assessing future transportation impacts generated by the Project based on a five-year horizon from the Existing Conditions.

This section also quantifies the proposed mitigation and improvement actions (presented previously) to address Project-related pedestrian, parking, traffic, and public transportation impacts that have been identified. The proposed improvement actions serve as the basis for the forthcoming preparation of a TAPA to be developed and executed with the BTB.

2.1.4 Study Area

The study area is generally bounded by Parker Street to the West, Tremont Street (Route 28) to the East, Prentiss Street to the North, and Tremont Street to the South. The study intersections, as shown in Figure 2.1-3, include the following six locations in addition to the site driveway on Halleck Street:

- ◆ Tremont Street/Parker Street;
- ◆ Parker Street/Station Street;
- ◆ Parker Street/Prentiss Street;
- ◆ Station Street/Gurney Street/Halleck Street;
- ◆ Prentiss Street/Halleck Street; and
- ◆ Tremont Street/Prentiss Street.



2.2 Existing Transportation Conditions

2.2.1 Existing Roadway Network

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

Tremont Street borders the study area to the south as well as the east. It runs in a general east-west direction as an urban minor arterial at the south border of the study area from Brigham Circle to the intersection of Columbus Avenue and Malcolm X Boulevard. Once it reaches this intersection, it merges with Route 28 and is upgraded to an urban major arterial. Tremont Street then runs in a general north-south direction at the east border of the study area until it terminates at Government Center in Downtown Boston.

Within the study area to the south, Tremont Street generally has one travel lane in each direction. However, it functions as having two travel lanes in each direction at some intersections. On street parking is permitted on both sides of the road and sidewalks and wheelchair ramps are provided. The MBTA Bus Route 66 runs along the study area in both directions. Once Tremont Street turns north at the intersection with Malcolm X Boulevard, it functions as three lanes in each direction. Parking is not permitted on either side of the road except on the southbound leg approaching Prentiss Street, but is reserved for the Boston Police Headquarters. Sidewalks and wheelchair ramps are provided on both sides. The MBTA Bus routes 15, 22, 23, 28, 44 and 45 run along the study area in both directions.

Parker Street borders the study area to the West of the site. It is classified as an urban collector road that runs in a general north-south direction. It begins at Heath Square in Roxbury and continues north to Huntington Avenue in Boston. Within the study area, Parker Street is a two way roadway with a single lane in each direction. Parking is provided on both sides of the road with the exception of between McGreevey Way and Prentiss Street, where parking is not permitted. Sidewalks and wheelchair ramps are provided on both sides throughout the study area.

Prentiss Street borders the study area to the north. It is a local road that runs in an east-west direction. It begins on Parker Street and ends on Tremont Street. Parking is only permitted on the south side of the street between Parker Street and Mindoro Street, but it is reserved for the Boston Police Headquarters. Sidewalks and wheelchair ramps are provided on both sides of the road. However, between Parker Street and Halleck Street,

vehicles park on the south sidewalk. Crosswalks are not provided at the intersection of Prentiss Street at Parker Street or Halleck Street. The MASCO Wentworth shuttle to the Longwood Medical Area operates on this street turning onto Halleck Street to access the Parker Street parking lot.

Station Street is a local road that runs in an east-west direction. It begins on Parker Street and ends just after Mindoro Street. It is a one-way westbound road for the block between Parker Street and Halleck Street and a two-way road after Halleck Street. Parking is allowed on both sides of the street except on the south side of the block between Parker Street and Halleck Street. Sidewalks are provided however, crosswalks are not provided at the intersection of Station Street and Halleck Street.

Gurney Street is a local road that runs one way northbound between Tremont Street and Halleck Street and one way westbound between Halleck Street and Parker Street with vehicles allowed to travel eastbound halfway through the block in order to access the parking lot for the market. Between Gurney Street and Station Street (also known as the Gurney Street Extension, privately owned by the MBTA/Parcel 25) it is generally a two way road but functions as a one way northbound road since pavement markings and signage is not provided and motorists assume it is one way. Parking is allowed on both sides of the street. Sidewalks and wheelchair ramps are provided.

Halleck Street is a local road that runs in a one way southbound direction. It begins at Prentiss Street and ends at Station Street. Parking is allowed on the east side of the road and is reserved for the Boston Police Headquarters. Sidewalks and wheelchair ramps are provided on both sides of the road. The MASCO bus to the Longwood Medical Area stops at the bus shelter on the west side of the road.

Mindoro Street is a local road that runs in a north-south direction. Parking is allowed on the west side but is reserved for the Police Headquarters. Even though it is not permitted, vehicles also park on the east side of the road. Sidewalks and wheelchair ramps are provided on both sides of the road but since vehicles park on the east side sidewalk, it is generally inaccessible.

2.2.2 Existing Intersection Conditions

Tremont Street/Parker Street is a four-leg signalized intersection with three approaches. The Tremont Street eastbound approach consists of a 16-foot combined left/through/right lane and an adjacent 8-foot parking lane. The Tremont Street westbound approach consists of a 14-foot left/through lane, a 14-foot through/right lane and an adjacent 8-foot parking lane. Right Turn on Red is prohibited on this approach. The

Parker Street southbound approach consists of a 10-foot combined right/through/left lane and an adjacent 8-foot parking lane. Sidewalks and wheelchair ramps are provided on all corners and crosswalks are provided on all legs of the intersection. The traffic signal operates in three phases, including a pushbutton actuated, exclusive pedestrian phase.

Parker Street/Station Street is an unsignalized intersection with three approaches. The Parker Street northbound and southbound approach consists of a 12-foot through lane and an adjacent 8-foot parking lane. The Station Street westbound approach, which is stop controlled, consists of a 16-foot left/right turn lane and an adjacent 8-foot parking lane on the north side curb. Sidewalks are provided on both sides of the road and wheelchair ramps and crosswalks are provided to cross Station Street but not Parker Street.

Parker Street/Prentiss Street is an unsignalized three legged intersection with three approaches. The Parker Street northbound approach consists of an 18-foot through/right lane. The Parker Street southbound approach consists of an 18-foot left/through lane. The westbound Prentiss Street approach is stop-controlled. Sidewalks are provided on both sides of the street and wheelchair ramps are provided to cross Prentiss Street. No crosswalks are provided at this intersection.

Station Street/Gurney Street/Halleck Street is a four legged unsignalized intersection with three approaches. The Halleck Street southbound approach, which is stop controlled, consists of a 15-foot left/through/right lane and an adjacent 8-foot parking lane along the east curb. The Gurney Street northbound approach, which is also stop controlled, consists of a 10-foot left/right turn travel lane with adjacent 8-foot parking lanes on both sides. The Station Street westbound approach consists of a 10-foot through/right lane and adjacent 8-foot parking lanes on both curbs. Sidewalks and wheelchair ramps are provided on all corners. No crosswalks are provided.

Prentiss Street/Halleck Street is an unsignalized three legged intersection with two approaches. The Prentiss Street eastbound approach consists of a 9-foot through/right turn lane and an adjacent 8-foot parking lane that is reserved for the Boston Police Headquarters. However, since vehicles park on the sidewalk, the parking lane is effectively narrower, making the travel lane wider. The Prentiss Street westbound through/left approach consists of a 9-foot travel lane.

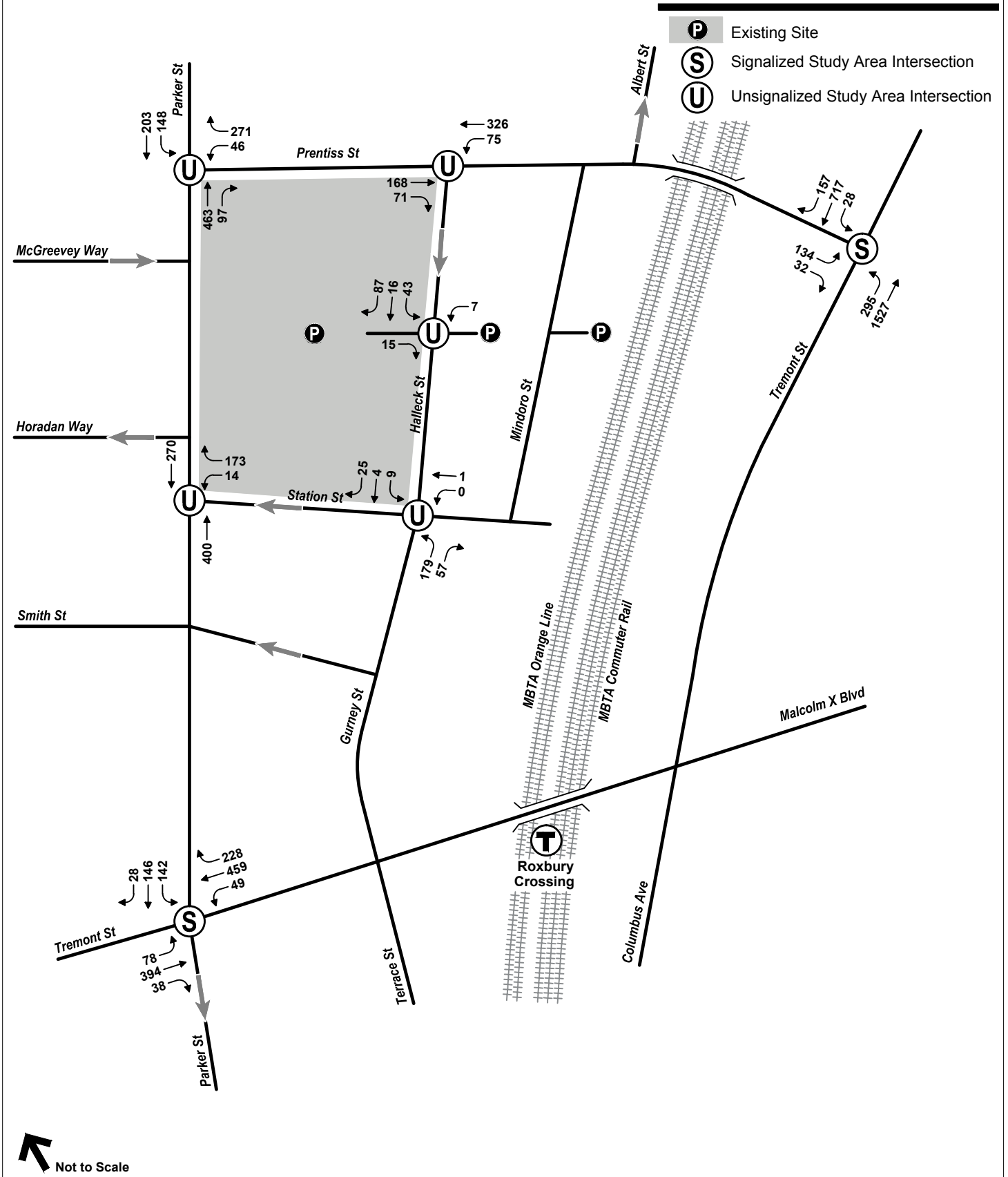
Tremont Street/Prentiss Street is a signalized T intersection with three approaches. The northbound Tremont Street approach consists of one left/through lane and two through lanes, each 11-feet wide. The southbound Tremont Street approach consists of one through/right lane and two through lanes, each 11-feet wide. However, Boston Police Headquarters vehicles are permitted to park on the west side curb north of Prentiss Street, making the right most lane function as a parking lane. The Prentiss Street eastbound approach consists of a 13-foot left/right turn lane. Sidewalks and wheelchair

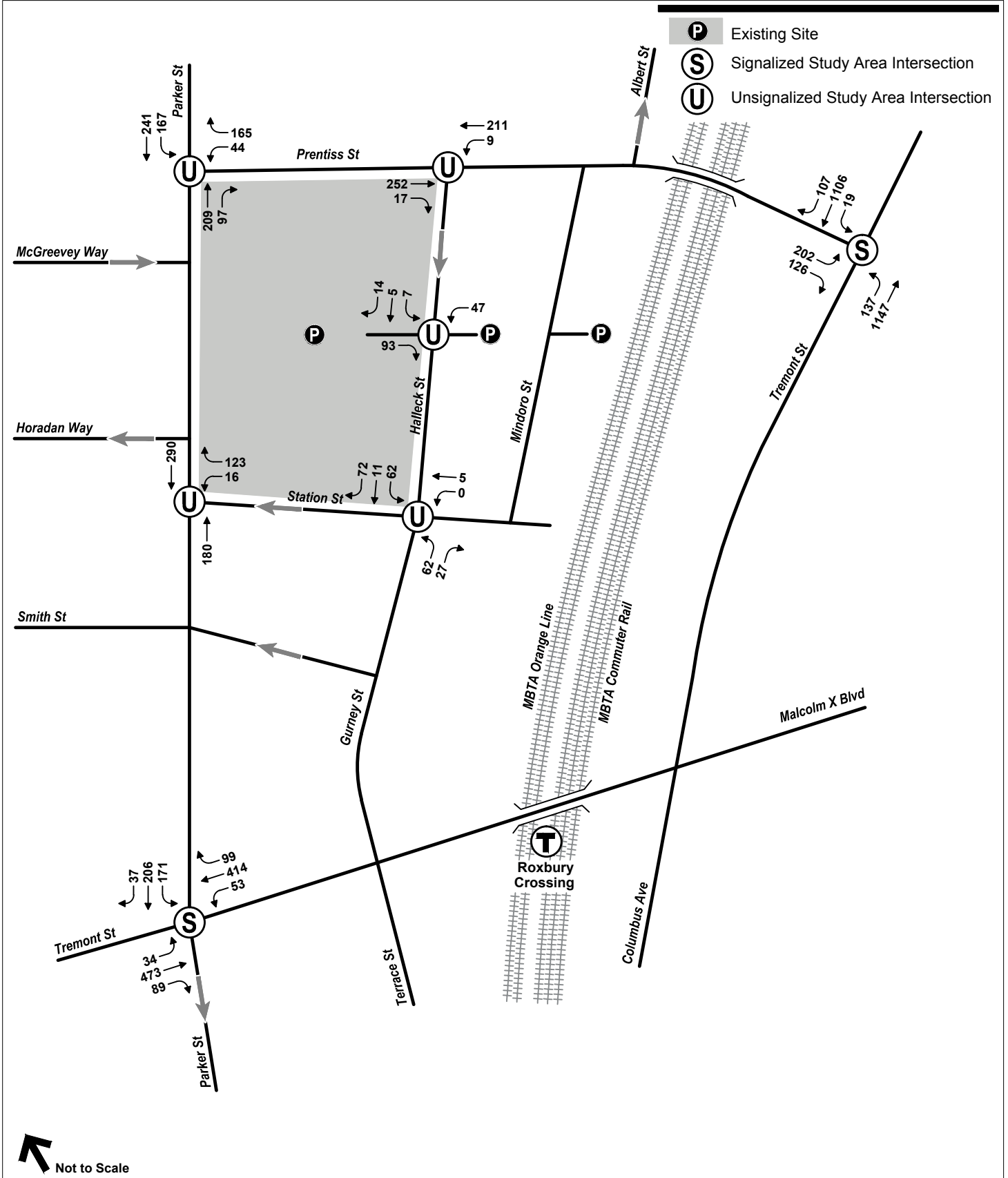
ramps are provided on all sides and crosswalks are provided on each leg of the intersection. The traffic signal operates in four phases, including a lead left turn phase and an exclusive pedestrian phase. The MBTA bus routes 15, 22, 23, 28, 44, 45 stop at this intersection.

These study area intersections were evaluated in detail using standard traffic engineering analysis techniques following BTG guidelines to identify incremental impacts of future traffic growth and site-generated traffic.

2.2.3 Traffic Data Collection

To estimate the existing traffic flow at the study area intersections, turning movement counts (TMCs) were conducted in October, 2014. The TMCs collected vehicle (passenger and heavy vehicles), bicycle, and pedestrian volumes at the study area intersections. The morning (7:15 - 8:15 AM) and evening (4:30 - 5:30 PM) peak hour vehicle volumes are presented in Figure 2.2-4 through 2.2-5.





2.2.4 Pedestrians

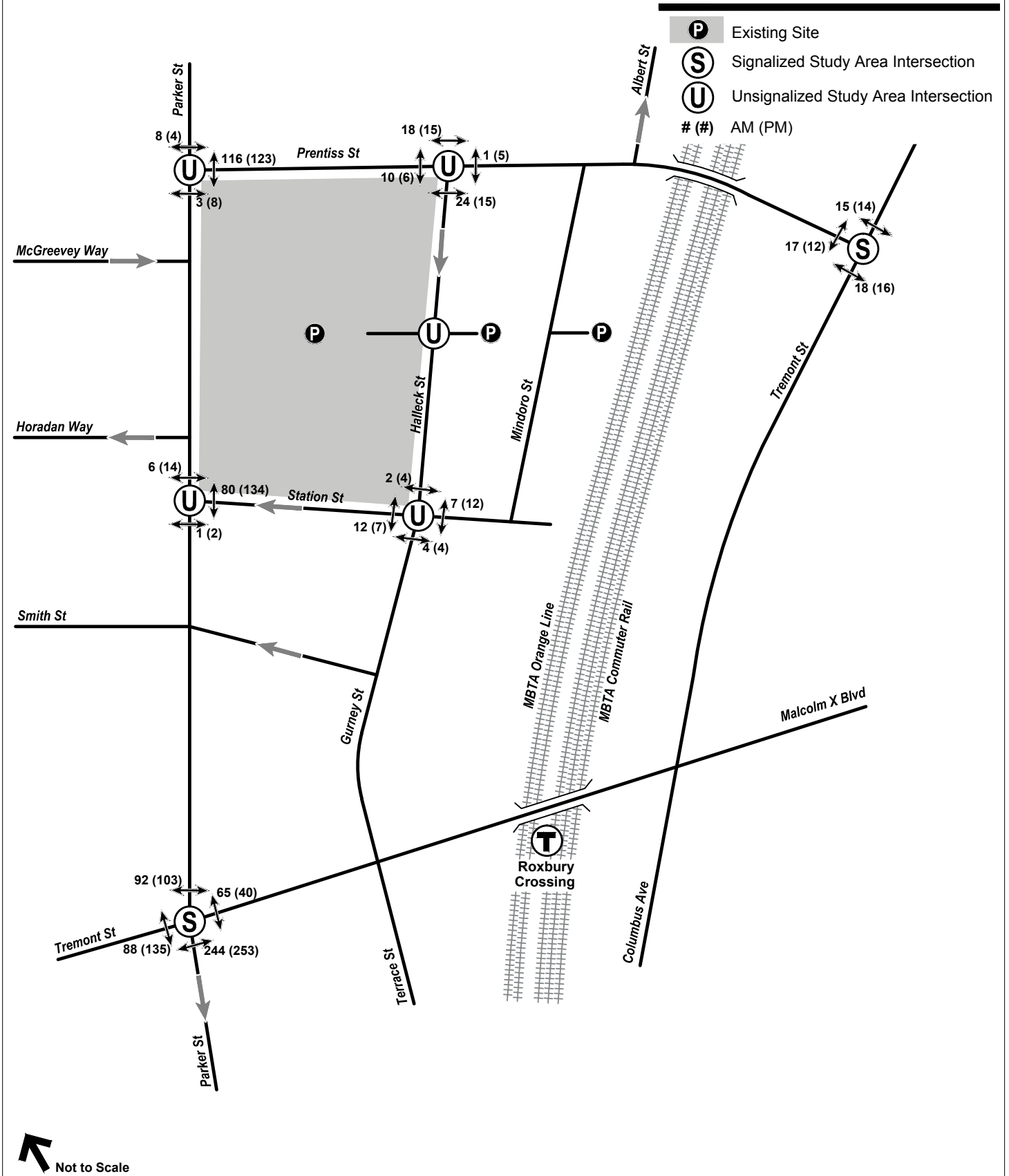
Sidewalks along the roadway network near the Project site are in varying condition with striped crosswalks and pedestrian signals provided at the signalized intersections. Low to moderate levels of pedestrians were observed throughout the study area. Figure 2.2-6 shows the pedestrian volumes at the study area intersections for the morning and evening peak hours.

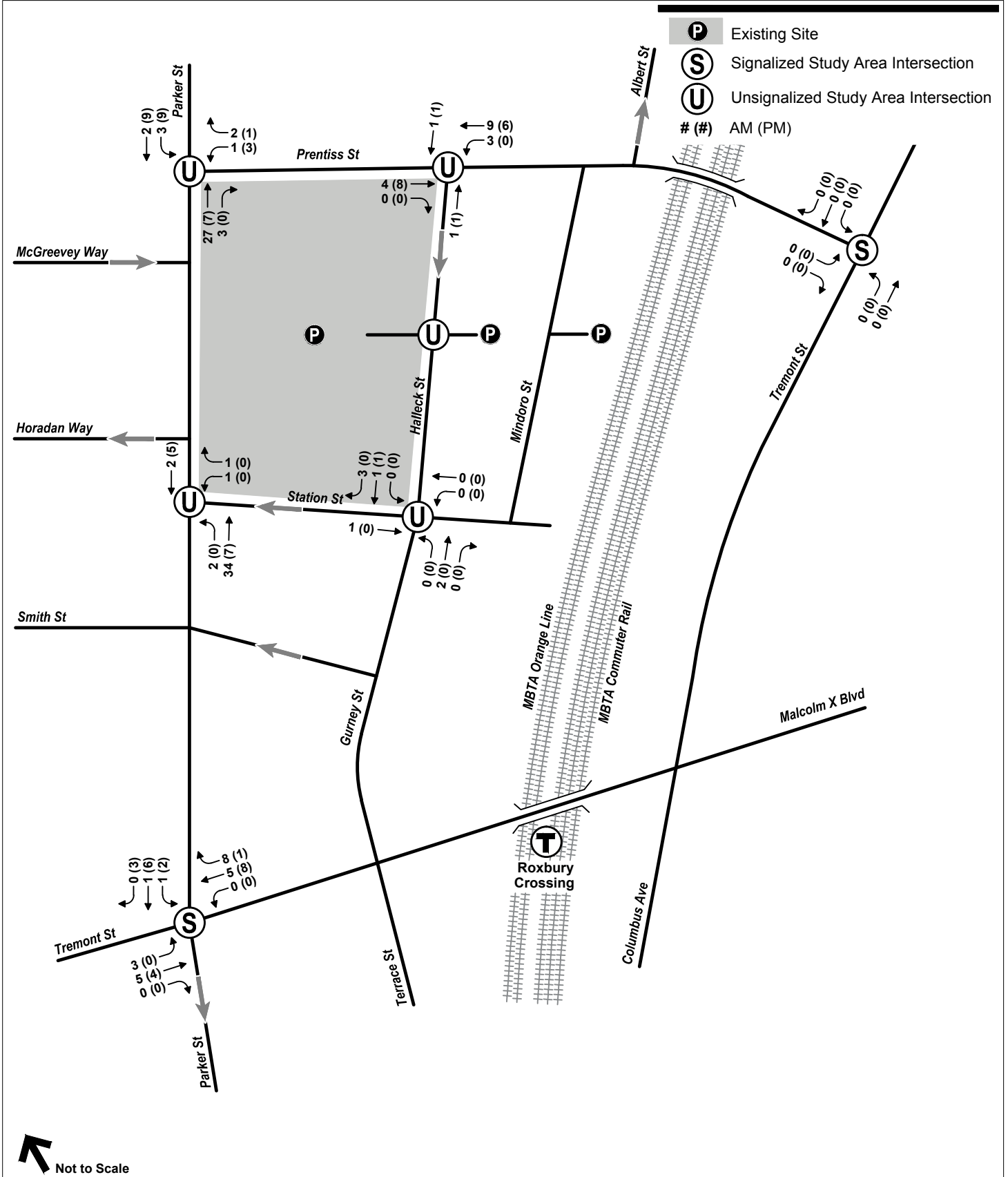
Adjacent to the Project site, pedestrian volumes along Parker Street were observed to be approximately 100 walkers during the morning peak hour and 125 during the evening peak hour. Considerably higher pedestrian volumes were observed at the intersection of Parker Street/Tremont Street. During the morning and evening peak hour respectively, approximately 244 and 253 pedestrians traveled across the south crosswalk along Tremont Street.

2.2.5 Bicycles

Bicycle volumes were collected throughout the study area during the morning and evening peak hours. Figure 2.2-7 highlights the morning bicycle volumes with on average, 30 bicyclists traveling northbound along Parker Street adjacent to the site. Approximately 10 or fewer bicycles travel southbound on Parker Street adjacent to the site during the evening peak hour.

The Southwest Corridor, which is a 4.7 mile linear park, runs through the study area and provides access from the South End through Jamaica Plain via off-street pathways for bicyclists and walkers.





2.2.6 Public Transportation

The Project site is currently served by several Massachusetts Bay Transportation Authority's (MBTA) public transportation services as shown in Figure 2.2-8. MBTA bus routes and the MBTA Orange Line Roxbury Crossing Station are the most accessible forms of transit service in walking distance of the Project site. The Green Line's Longwood Medical Area Station is located a third of a mile northwest from the project site. Eight local bus routes serve the project site. In addition to the MBTA, The Medical Academic and Scientific Community Organization (MASCO) and the Mission Hill LINK run private buses on or near the project site. Peak period frequencies/headways for MBTA services are summarized in Table 2.2-2.

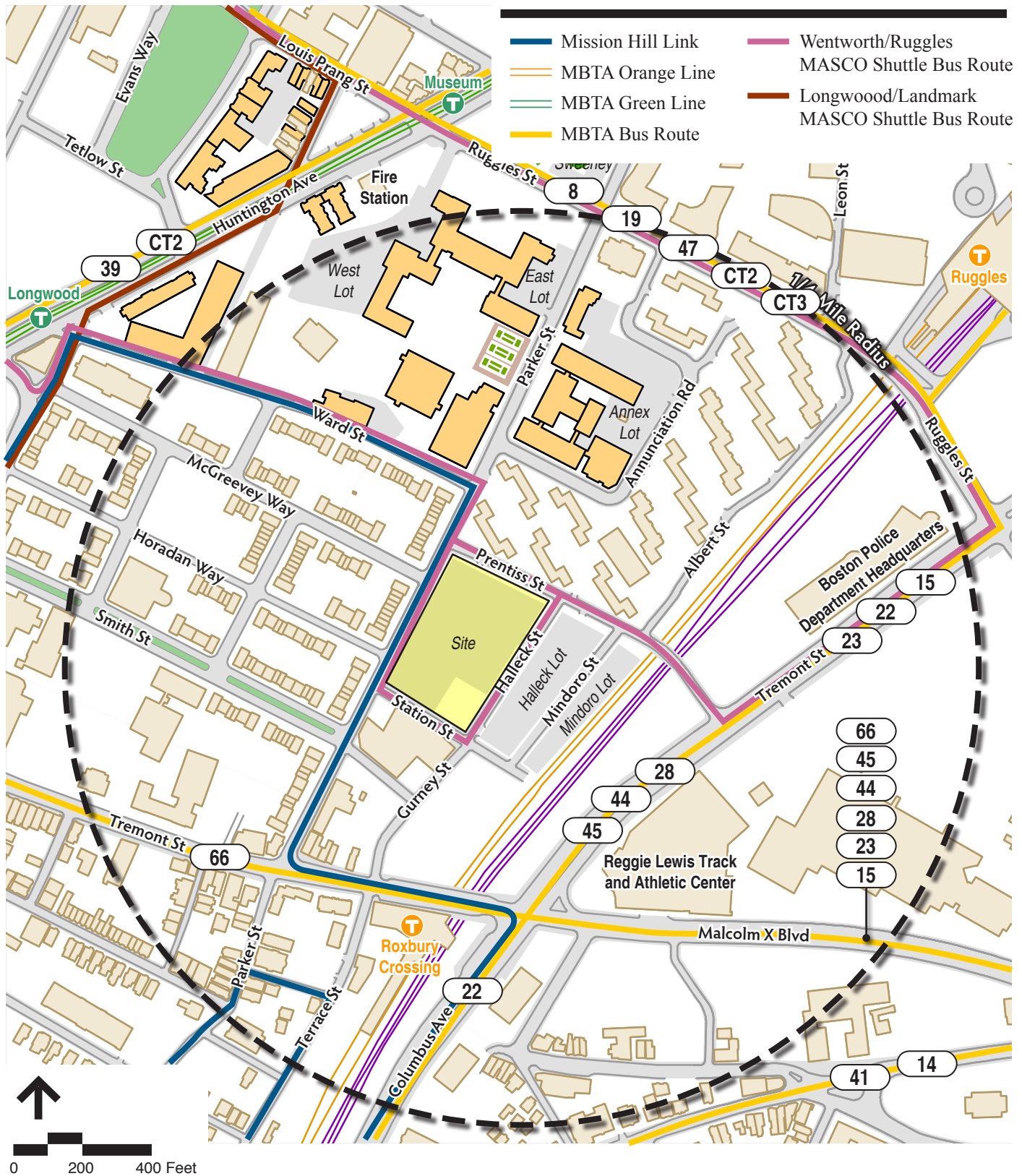


Table 2.2-2 MBTA Service

Transit Line/Route	Origin/Destination	Rush-Hour Frequency (minutes)
MBTA Orange Line – Roxbury Crossing Station	Oak Grove – Forest Hills	6
MBTA Green Line E – Longwood Medical Area Station	Heath Street – Lechmere	6
MBTA Bus Route 15	Kane Square or Fields Corner – Ruggles Station	6-7
MBTA Bus Route 22	Ashmont Station – Ruggles Station via Talbot Avenue	≤8
MBTA Bus Route 23	Ashmont Station – Ruggles Station via Washington Street	≤6
MBTA Bus Route 28	Mattapan Station – Ruggles Station	≤7
MBTA Bus Route 29	Mattapan Station – Jackson Square Station	17
MBTA Bus Route 44	Jackson Square Station – Ruggles Station	12
MBTA Bus Route 45	Franklin Park Zoo – Ruggles Station	10
MBTA Bus Route 66	Harvard Square – Dudley Station	≤9
MASCO Longwood-Wentworth Shuttle	Longwood Medical Area – Wentworth Parking Lot	6
Mission Hill LINK	Circular Route Beginning and Ending at Brigham Circle	30

Source: MBTA website October 2014

A description of each transportation option that services the Project Site is provided below:

Route 15 – Kane Square or Fields Corner Station – Ruggles Station

This route provides service from Kane Square (weekdays) or Fields Corner (weekends) in Dorchester to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street.

Route 22 – Ashmont Station – Ruggles Station via Talbot Avenue

This route provides service from Ashmont Station in Dorchester to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and also stops at the intersection with Prentiss Street.

Route 23 – Ashmont Station – Ruggles Station via Washington Street

This route provides service from Ashmont Station in Dorchester to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and then stops on Malcolm X Boulevard.

Route 28 – Mattapan Station – Ruggles Station via Dudley Station

This route provides service from Mattapan Station in Mattapan to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and then stops on Malcolm X Boulevard.

Route 29 – Mattapan Station – Jackson Square Station via Seaver Street and Columbus Avenue

This route provides service from Mattapan Station in Mattapan to Jackson Square in Jamaica Plain. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and also stops at the intersection with Prentiss Street.

Route 44 – Jackson Square Station – Ruggles Station via Seaver Street and Humboldt Avenue

This route provides service from Jackson Square in Jamaica Plain to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and makes a stop on Malcolm X Boulevard.

Route 45 – Franklin Park Zoo – Ruggles Station via Blue Hill Avenue

This route provides service from the Franklin Park Zoo in Dorchester to Ruggles Station in Roxbury. Within the study area, the inbound path of this route runs northbound on Tremont Street stopping at the intersection with Prentiss Street. The outbound path of this route runs southbound on Tremont Street and then stops on Malcolm X Boulevard.

Route 66 – Harvard Square – Dudley Station via Allston and Brookline Village

This route provides service from Harvard Square in Cambridge to Dudley Station in Roxbury. Within the study area, the inbound path of this route runs eastbound on Tremont Street and the outbound path runs westbound. The closest inbound stop is Tremont Street at Seawall Street and the closest outbound stop is at Roxbury Crossing.

MBTA Orange Line – Forest Hills – Oak Grove

The Orange line provides service from Forest Hills in Roxbury to Oak Grove in Malden. The closest station is the Roxbury Crossing Station which is located on Tremont Street, less than a quarter of a mile from the project site.

MBTA Green Line “E” Branch – Lechmere – Heath Street

The “E” branch of the Green Line provides service from Lechmere in East Cambridge to Heath Street in Jamaica Plain. The closest station is the Longwood Medical Area Station located on Huntington Avenue a third of a mile from the project site.

Medical Academic and Scientific Community Organization (MASCO) – Wentworth Lot – Longwood Medical Area

MASCO provides service for employees of the Longwood Medical Area who park in the MASCO operated parking lots located on Prentiss Street and Halleck Street. This bus provides ongoing service throughout the day and stops in front of the project site on Halleck Street from approximately 5:30 A.M. until 9:15 P.M.

Mission Hill LINK

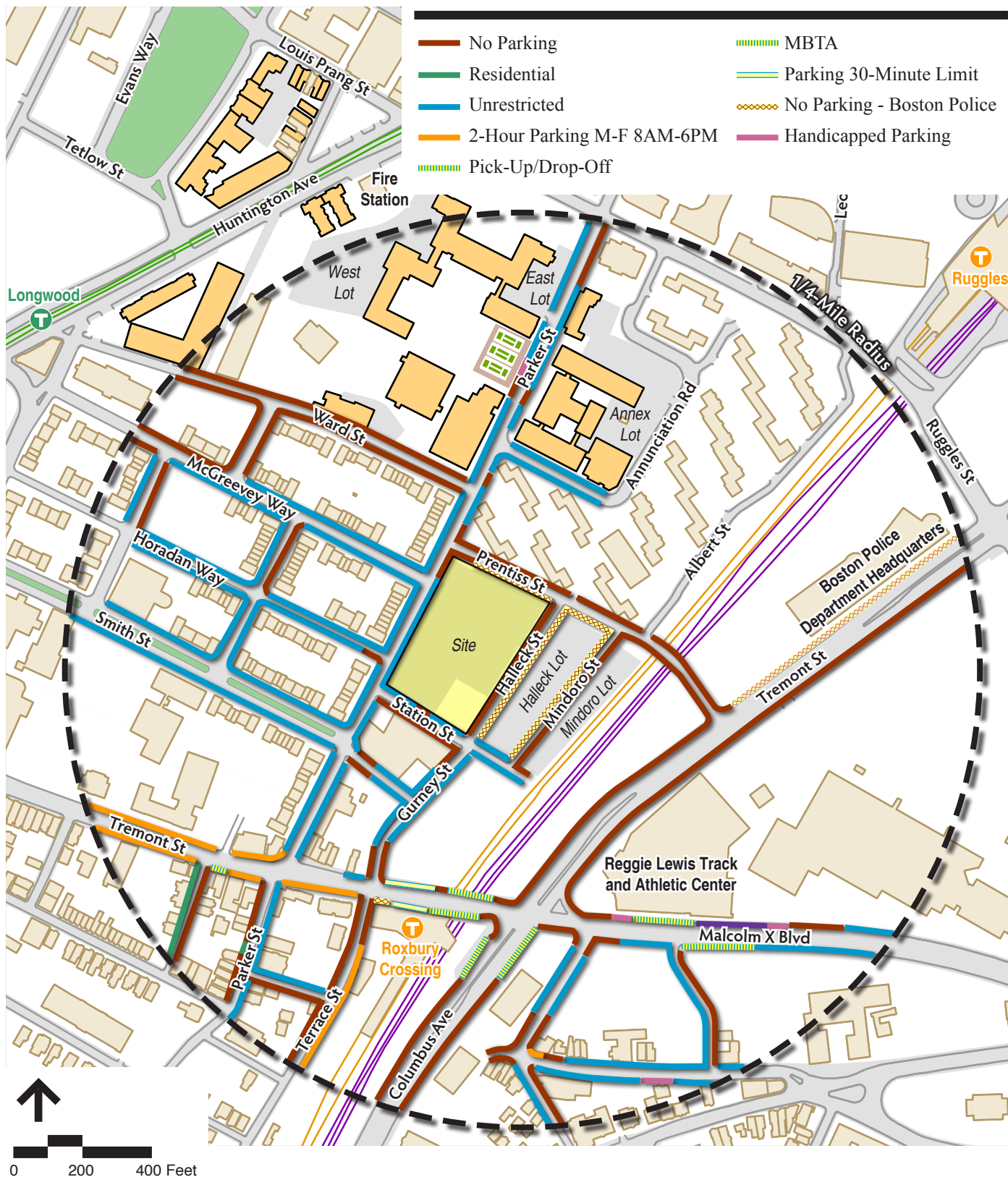
The Mission Hill LINK is a privately owned shuttle that serves a circular route beginning and ending at Brigham Circle.

2.2.7 Existing Parking

The Project site currently contains a 403-space surface parking lot used by some Wentworth faculty and staff and LMA commuters via a third party lease with MASCO. MASCO currently uses 125 spaces in lot, leaving the remaining 278 spaces available for Wentworth's use. The parking spaces in the lot were observed to be highly utilized during weekdays.

Existing curb regulations in the vicinity of the Project site primarily include a mix of Boston Police parking, unrestricted parking and no parking. These and the surrounding on-street parking regulations within a one-quarter mile of the site are presented in Figure 2.2-9.

Two additional off-street surface parking lots owned by Wentworth are located just to the east of the Project site and are bounded by Halleck Street and Mindoro Street. The Mindoro lot contains approximately 67 parking spaces while the Halleck Lot contains approximately 211 parking spaces. The Mindoro Lot is leased by Wentworth to MassART through the Spring of 2016, while the Halleck Street lot is leased to MASCO.



2.2.8 Crash Analysis

A detailed crash analysis was conducted to identify potential vehicle accident trends and/or roadway deficiencies in the traffic study area. The most current vehicle accident data for the traffic study area intersections were obtained from the Massachusetts Department of Transportation for the years 2009 to 2011. A summary of the study area intersections vehicle accident history is presented in Table 2.2-3.

Crash rates are calculated based on the number of accidents at an intersection and the average volume of traffic traveling through the intersection on a daily basis. These rates are compared to the MassDOT District averages to identify if certain intersections have safety issues that should be looked into further. The Project Study Area is located in District 6 which has a crash rate of 0.76 for signalized intersections and 0.58 for unsignalized intersections. This means that an average 0.76 accidents occur per million vehicles entering a signalized intersection and an average of 0.58 accidents occur per million vehicles entering an unsignalized intersection in District 6. From the crash analysis it was determined that none of the study intersections exceeds the MassDOT District 6 average.

Of the reported accidents, 50 percent occurred on the weekend outside the traditional peak Saturday travel period of 11:00 AM – 2:00 PM. The other crashes occurred either during the morning weekday period from 7:00 AM – 9:00 AM or during off peak weekday periods. The majority of accidents occurred during dry pavement conditions. The severity of accidents ranged from non-fatal injuries to property damage, with no fatalities recorded.

Table 2.2-3 Vehicular Crash Summary

	Parker Street at			Halleck Street at		Tremont at
	Tremont St	Station Street	Prentiss St	Prentiss St	Station / Gurney St	Prentiss St
Currently Signalized?	Yes	No	No	No	No	Yes
MassHighway ACR	0.76	0.58	0.58	0.58	0.58	0.76
MassHighway CCR	0.05	0.13	0	0	0	0.12
Exceeds?	No	No	No	No	No	No
Year						
2009	0	0	0	0	0	0
2010	0	1	0	0	0	2
2011	1	0	0	0	0	2
Total	1	1	0	0	0	4
Collision Type						
Angle	0	0	0	0	0	0
Head-on	1	0	0	0	0	0
Rear-end	0	0	0	0	0	1
Rear-to-Rear	0	0	0	0	0	0
Sideswipe, opposite direction	0	0	0	0	0	0
Sideswipe, same direction	0	0	0	0	0	0
Single vehicle crash	0	0	0	0	0	2
Not reported/Unknown	0	1	0	0	0	1
Total	1	1	0	0	0	4
Crash Severity						
Fatal injury	0	0	0	0	0	0
Non-fatal injury	1	0	0	0	0	1
Property damage only	0	1	0	0	0	2
Not reported/Unknown	0	0	0	0	0	1
Total	1	1	0	0	0	4
Time of Day						
Weekday, 7:00 AM - 9:00 AM	0	0	0	0	0	2
Weekday, 4:00 PM - 6:00 PM	0	0	0	0	0	0
Saturday, 11:00 AM - 2:00 PM	0	0	0	0	0	0
Weekday, other time	0	0	0	0	0	1
Weekend, other time	1	1	0	0	0	1
Total	1	1	0	0	0	4
Pavement Conditions						
Dry	1	1	0	0	0	3
Wet	0	0	0	0	0	0
Snow	0	0	0	0	0	0
Ice	0	0	0	0	0	0
Not reported/Unknown	0	0	0	0	0	1
Total	0	0	0	0	0	4
Non Motorist (Bike, Pedestrian)						
Total	1	0	0	0	0	1

Source: MassDOT Crash Data

2.3 Future Transportation Conditions

Two future conditions scenarios were evaluated for a future five-year time horizon (2019) to assess the potential Project-related traffic impacts: the No-Build and Build Condition. These future conditions are summarized in the sections below.

2.3.1 2019 No-Build Condition

The 2019 No-Build Condition was developed to evaluate future transportation conditions in the traffic study area without consideration of the Project. In accordance with BTG guidelines, this future analysis year represents a five-year horizon (2019) from existing conditions (2014). The No-Build Condition provides insight into future traffic conditions resulting from regional growth and traffic generated by specific planned projects that are expected to affect the local roadway network.

2.3.1.1 Background Growth

A background growth rate of half a percent per year was applied to the traffic volumes during the morning and evening peak hours. This growth rate accounts for regional growth outside of the Mission Hill neighborhood and is consistent with recent traffic studies for other developments within the area.

In addition to the background growth rate, traffic projections for several specific projects were incorporated in the development of the No-Build Condition. These include the following development projects:

- ◆ **Mission Hill Parcel 25** – The PDA-approved mixed use development program includes 305,750 sf to be developed over three phases. Under full-build, this program includes 98,000sf of residential (88 units), 10,000 sf of retail, 1,250 sf of community space, and up to 196,500 sf of office. Surface and below grade parking will provide the development with 201 parking spaces.
- ◆ **Tremont Crossing (Parcel 3)** – The Draft Project Impact Report analyzed 404,475 sf of larger retail, 33,800 sf of smaller shops and boutiques, 233,784 sf of office space, 300 multifamily residential units, a 200 room extended stay hotel and 37,520 sf of cultural facilities that will primarily house a 21,000 sf new museum for the National Center for Afro-American Artists and other artist studio space. The development will include two public plazas, and a multi-level parking structure consisting of 1,052 parking spaces.
- ◆ **Madison Tropical Parcel 10** – This is a mixed use development, currently under construction, that includes a 44,308 sf Tropical Foods Supermarket, a new 60,000 sf mixed use building housing retail and office space, and rehabilitation of 2101 Washington Street, the existing Tropical Foods supermarket for 44,000 sf of residential and retail uses. A 173 off-street surface and below grade parking lot will be provided.

- ◆ **1486 Tremont Street** – The Notice of Project Change indicates the project has been amended to include 75,000 sf (66 rental units) of residential building with 6,200 sf of ground floor commercial. A garage will provide the tenants with 60 parking spaces.
- ◆ **Bartlett Place** – The Expanded Project Notification Form presents an innovative mixed use residential, retail, commercial development totaling 233,490 sf in Phase 1. Phase 1 includes 60 affordable residential units, 42 market rate units and 72 residential parking spaces. Forty-two additional parking spaces will be provided to the commercial/retail users under Phase 1. The full build Master Plan includes 323 residential units, 22,000 sf of commercial development and 31,000 sf of retail.
- ◆ Additional projects that have no or little impact on the study area intersections included in background growth but are mentioned:
 - ◆ Parcel 9
 - ◆ Dudley Municipal Building
 - ◆ Roxbury Crossing Senior Building
 - ◆ 44-64 Terrace Street
 - ◆ The Parker and Terrace Street Development
 - ◆ 1467 Tremont Street

2.3.1.2 Background Transportation Improvements

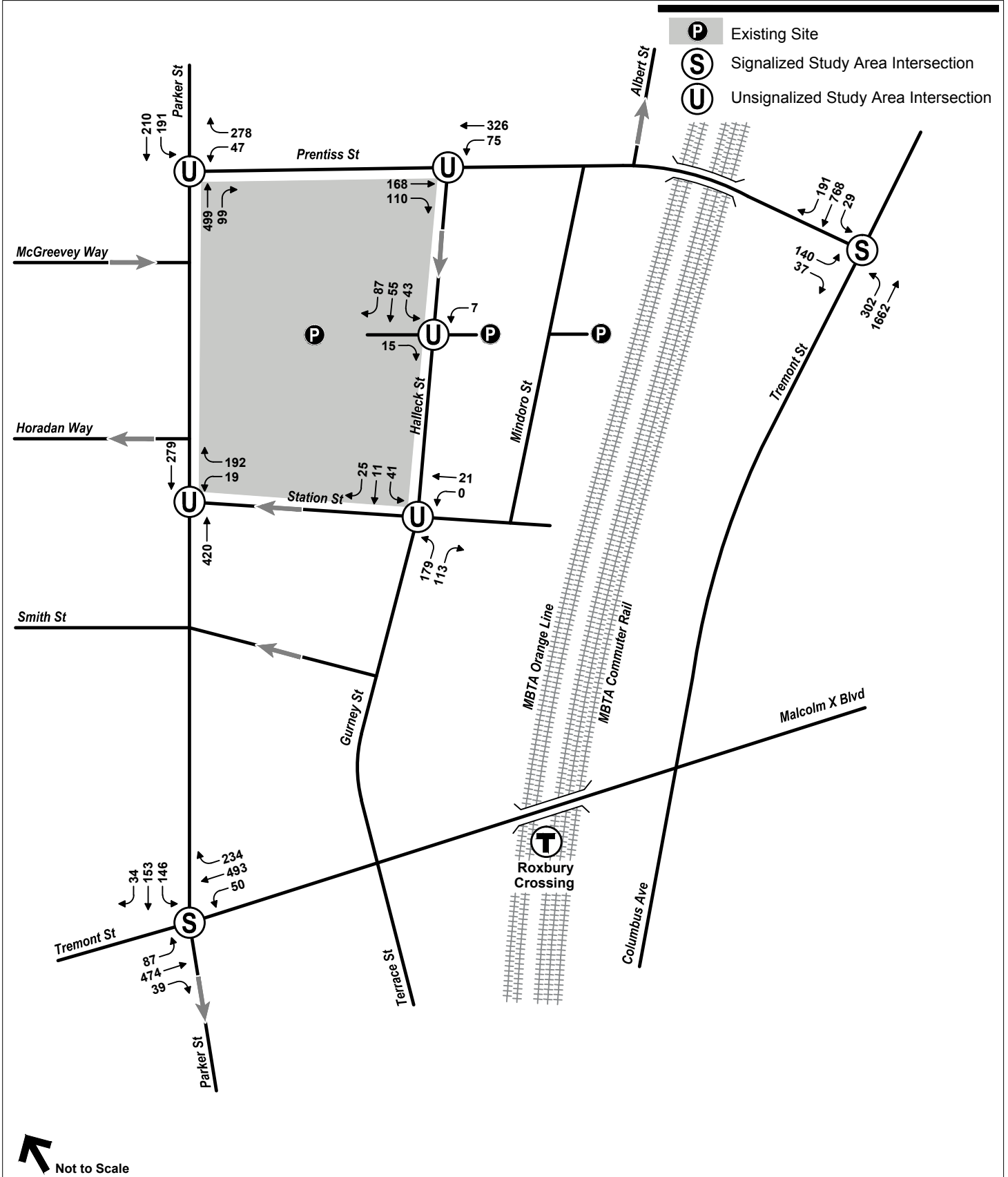
As presented in the Tremont Crossing (Parcel 3) Draft Project Impact Report, the proponent for the Project proposes the following improvements at the Intersection of Tremont Street/Prentiss Street:

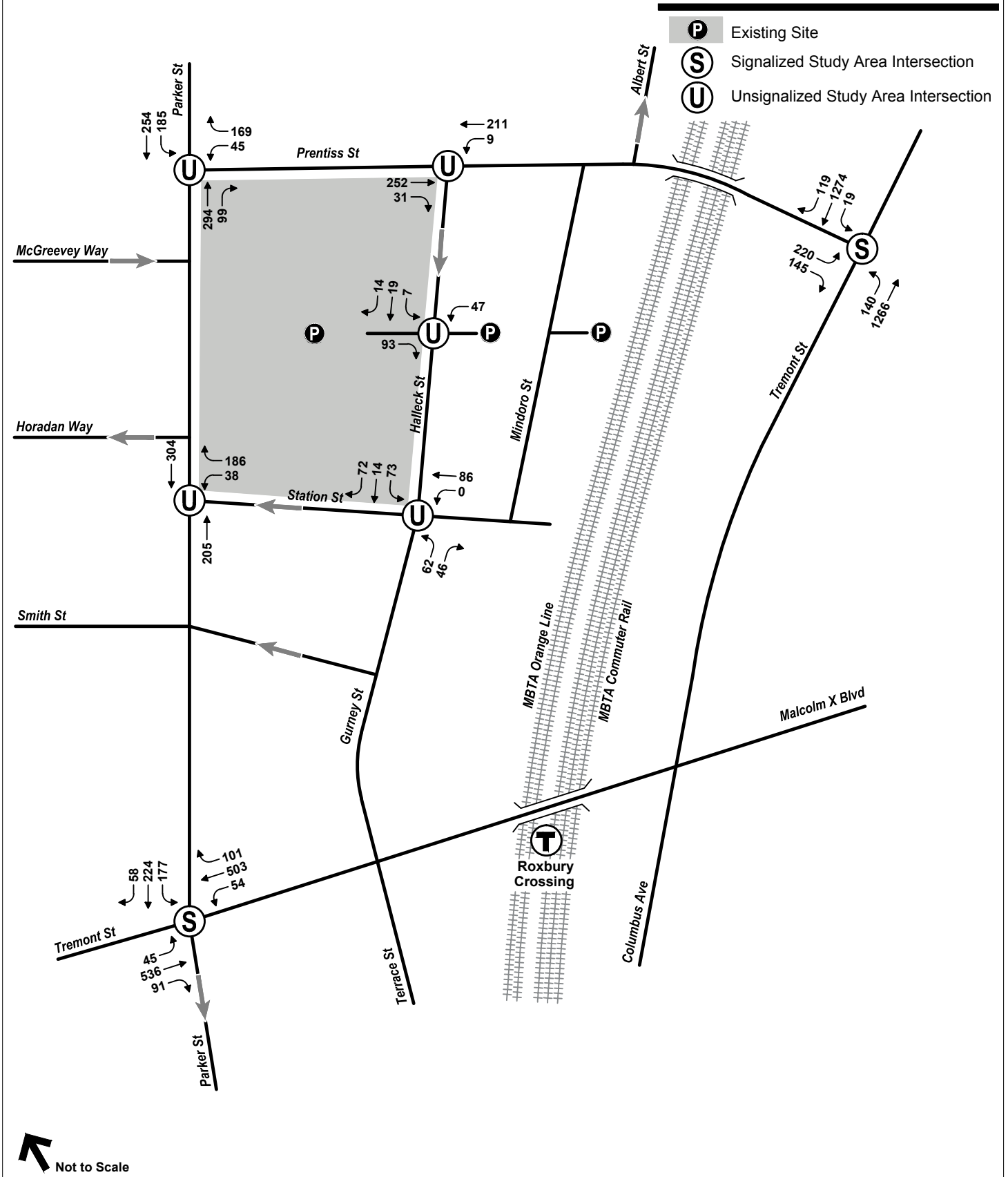
- ◆ Addition of an exclusive left-turn lane in the northbound approach from Tremont Street onto Prentiss Street. This will require the removal of the median at this location.
- ◆ The intersection signal timings will be integrated with the proposed project site driveway just to the north. The controller at this intersection will be upgraded as part of corridor improvements. Signal timings will be modified along Tremont Street between Melnea Cass Boulevard and Malcom X Boulevard.
- ◆ A concurrent pedestrian phase with a Lead Pedestrian Interval will be provided at the intersection as well to improve pedestrian crossing conditions.

The Parcel 25 Project Notification Form proposes the following mitigation measures at the intersection of Tremont Street/Parker Street:

- ◆ Retiming of the signal to provide a 90 second cycle length and adjusted splits.
- ◆ Removal of the exclusive pedestrian phase from the cycle and addition of concurrent pedestrian crossings. Addition of a lead pedestrian interval of 4 seconds to the intersection.
- ◆ Restriping of the Tremont Street eastbound approach to allow for one exclusive left-turn lane and a shared through/right turn lane.
- ◆ Restriping of the Tremont Street westbound approach to allow for one shared left-turn/through lane and one exclusive right turn-lane.

The No-Build Condition includes the roadway and infrastructure changes that will be put into place by 2019 as described above. The No-Build Condition vehicle volumes are presented in Figure 2.2-10 through 2.2-11 for the morning and evening peak hours.





2.3.2 2019 Build Condition

The 2019 Build Condition includes construction of the following project components:

- ◆ 99,666 square foot synthetic field Athletic Complex; and
- ◆ 330 at-grade parking spaces (-73 net spaces).

Since the existing parking on the site will be reduced by 73 parking spaces, this change in parking has been accounted for in the 2019 Build Condition as described in Section 2.3.2.2.

2.3.2.1 Site Access, Circulation, and Parking

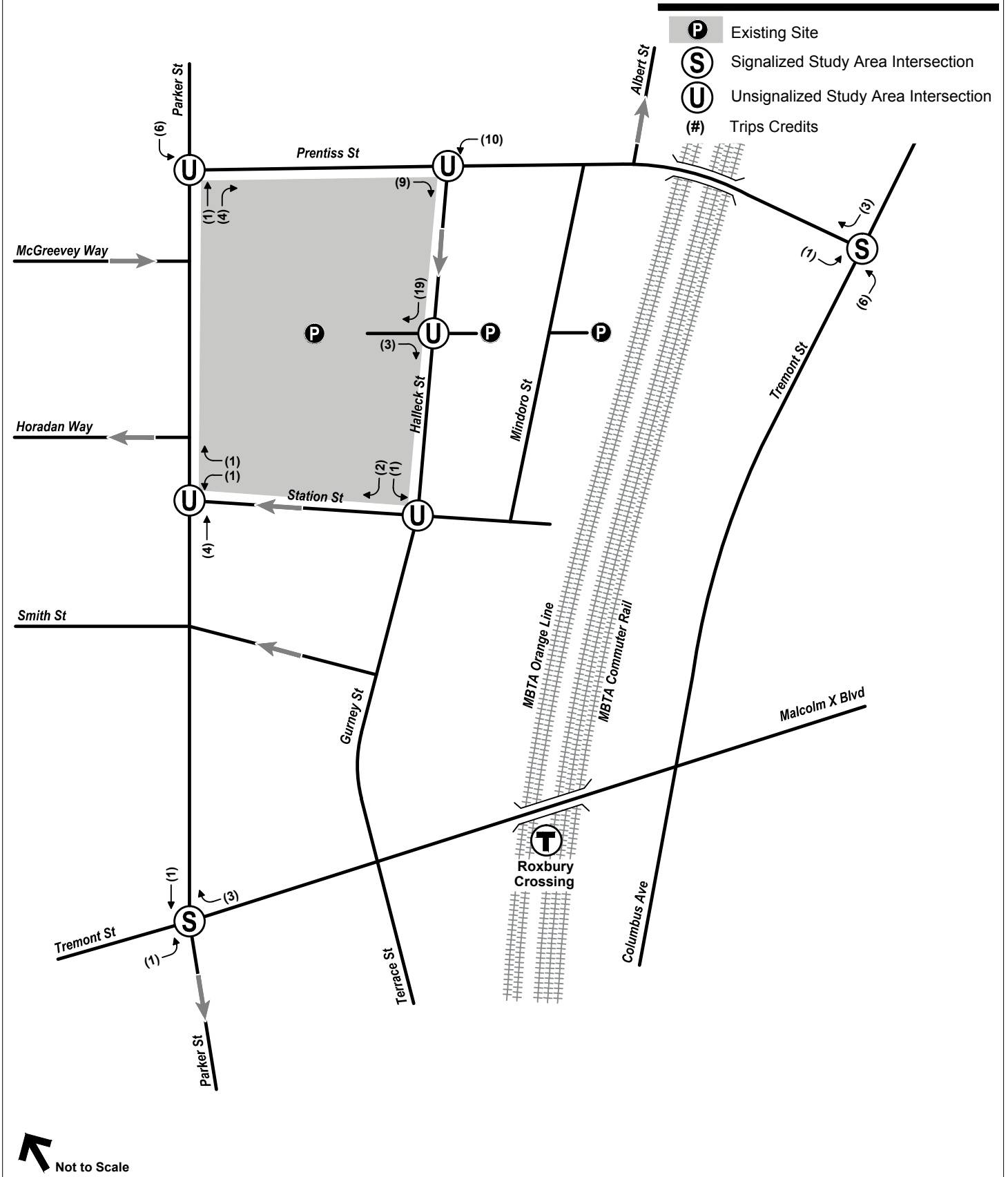
The proposed replacement parking lot will be accessed via the existing curb-cut along Halleck Street. Halleck Street is one-way in the southbound direction with access to the parcel closer to the Prentiss Street end. Currently, a MASCO LMA Shuttle bus stop is located on the west side of Halleck Street south of the driveway that services the shuttle riders parking in the lot. Pedestrian access to the field will be provided on the corner of Parker Street at Prentiss Street in the northwest portion of the site to provide pedestrians with direct access from the Wentworth Campus. An emergency ramp and trash access will be provided via Station Street along the Southern edge of the site. The Project includes a 330 space single-level, at-grade parking lot to replace the 403 space surface parking lot resulting in a net loss of 73 parking spaces. In addition, parking along Halleck Street will continue to be prohibited to provide space for bus parking and pick-up/drop-off as well as the MASCO LMA shuttle bus stop. Team buses will park in the Wentworth West Lot during events.

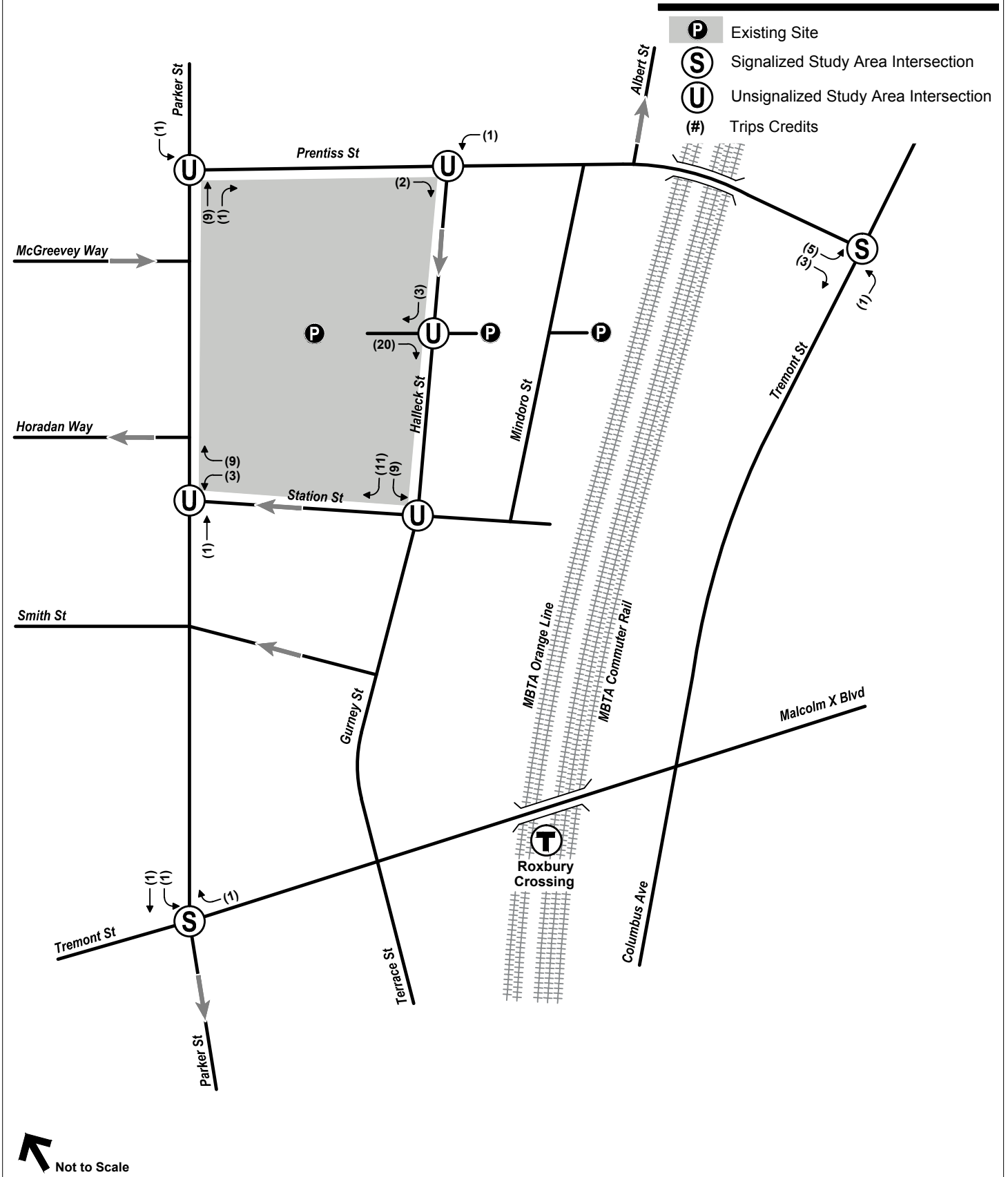
The Proponent will also provide bicycle parking on site in accordance with the City of Boston Bicycle Guidelines. The Proponent will continue to provide transportation demand management measures to its students and staff/faculty to encourage the use of transit and other alternative forms of transportation to the athletic complex.

2.3.2.2 Vehicle Trip Credit for Parking Reduction

As previously mentioned, the Project will result in a net loss of 73 parking spaces at the Parker Street Lot. Since these parking spaces are not being replaced on site or in the vicinity of the study area, a commensurate reduction in peak hour vehicle trips generated by these eliminated spaces were credited from the analysis for the 2019 Build Condition. Based on existing traffic counts, it is estimated that approximately 22 percent of the parking spaces at the Parker Street Lot enter/exit during the peak hours. The 22 percent was applied to the net change in parking to determine the trip credits for both the morning and evening peak hour analyses. During the morning peak hour, approximately 19 vehicle trips have been removed from the 2019 Build condition in the inbound direction. During the evening peak hour, approximately 20 vehicle trips have been removed from the 2019

Build condition in the outbound direction. The parking trip credit was distributed based on existing traffic patterns in the study area as shown in Figures 2.3-12 through 2.3-13.





2.3.2.3 Project-Generated Trips

It is envisioned that the Athletic Complex will provide field space for games and practices for varsity and intramural soccer, lacrosse, softball and flag football. It is assumed that the proposed Athletic Complex will only be in high use during the evening peak hour of the study area traffic. For purposes of this traffic analysis, it is assumed that the start of an athletic event would coincide with the study area evening peak hour. Therefore, vehicle trips have only been added to the 2019 Build condition during the evening peak hour in the inbound direction. A custom trip generation estimate for the Project was calculated using the projected demand of the site. A summary of unadjusted person trip generation for the Project is presented below in Table 2.3-4.

Table 2.3-4 Unadjusted Evening Peak Hour In-bound Person Trips

Trip Type	Unadjusted Person Trips Evening Peak Hour (Inbound)
Bleachers (Spectators)	200
Athletes Coaches/Referees (Home Team)	50
Athletes/Coaches (Away Team)	50
Alumni (Sidelines)	100
Total	400

As quantified in Table 2.3-4, the Project is anticipated to generate an absolute maximum of 400 unadjusted inbound person trips based on projected demand of the Athletic Complex (as a worst case condition – most typical field activities will have considerably less people in attendance). It is important to note that these person trips are being redistributed from the existing site to the proposed site on Halleck Street and are not new to the Wentworth Campus. The City of Boston’s guidelines for Article 80 submittals include the use of the BTM Mode Share for the particular Boston neighborhood to determine the vehicle, pedestrian, and transit trips to be generated by the Project during the morning and evening peak hours. In addition, site specific mode share and vehicle occupancy data has been used in addition to standard BTM Mode Share. The evening peak hour trip generation, mode share, distribution, and subsequent analyses were completed following the City’s guidelines as well as site specific information. A summary of adjusted trip generation estimates follows in this section.

2.3.2.4 Mode Share and Vehicle Occupancy Rates

Adjustments were made to the evening peak hour person trip estimate to account for local mode shares following guidelines by the BTG for individual City zones as well as site specific data. This mode-share calculation is critical to the evaluation of overall Project-related traffic impacts at study area intersections as there will be a mixture of automobile travel, public transit, and walk/bike trips to the Project site. Given the Project is part of Wentworth, the walk mode share is the most predominant due to urban environment and campus location. It is envisioned that Wentworth athletes, coaches and spectators will either walk from the campus and/or already be parked in the lots owned by Wentworth and therefore will not be generating a high number of vehicle trips. The Project site falls within Zone 5 of the BTG Guidelines which has a typical mode share as shown in Table 2.3-5. In addition, the mode shares for students have been assumed from the 2010 Wentworth Transportation Plan. For purposes of the trip generation analysis, it is assumed that away team coaches and referees would likely drive to the site and that the away team would share a bus or two to the athletic event. It is assumed that spectators would arrive at the site based on the blended Wentworth Transportation Plan & BTG Mode Share resulting in 20 percent of the spectators driving to the Sweeney Field. The Wentworth athletes are expected to commute to the field based on the Wentworth Transportation Plan while the alumni sideline spectators are expected to travel to the site based on the BTG Area 5 mode shares.

Table 2.3-5 Mode Split by Land Use Category

Mode	BTG Area 5 (Other)	Wentworth Transportation Plan	Blended Wentworth Transportation Plan & BTG Mode Shares
Automobile	27%	10%	20%
Public Transit	26%	20%	20%
Walk/Bike/Other	47%	70%	60%

Vehicle trips were further evaluated by considering vehicle occupancy rates (VOR) derived from observations at the existing Sweeney Field. The observations indicate that a typical VOR for this type of land use is 2 persons per vehicle.

Table 2.3-6 Total Evening Peak Hour Inbound Project Generated Trips

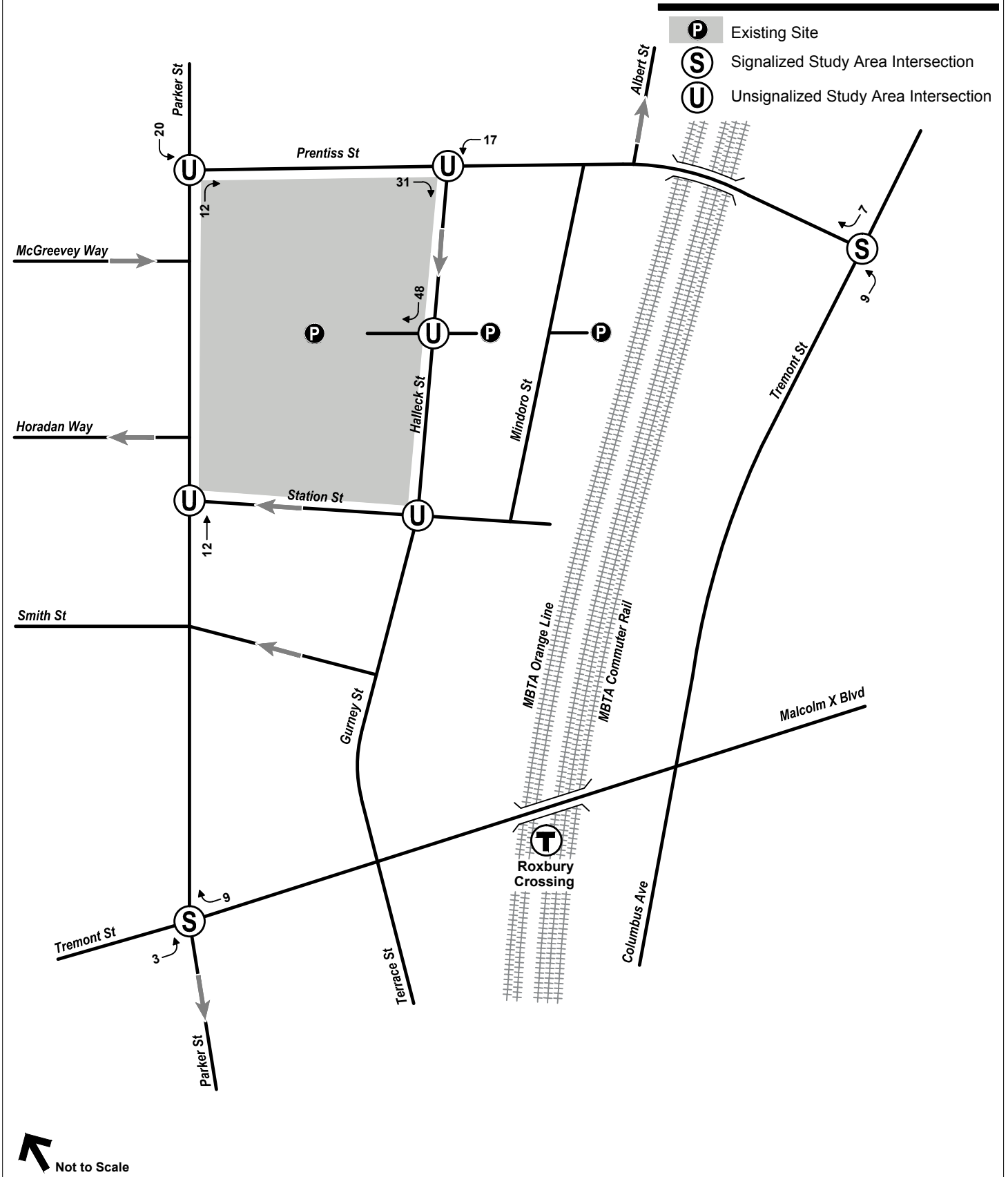
	Transit	Walk/Bike/Other	Vehicle*	Less Existing Trips	Net-New Vehicle Trips
IN	75	198	48	(-3)	45
OUT	0	0	0	(-20)	(-20)
Total:	75	198	48	(-23)	25

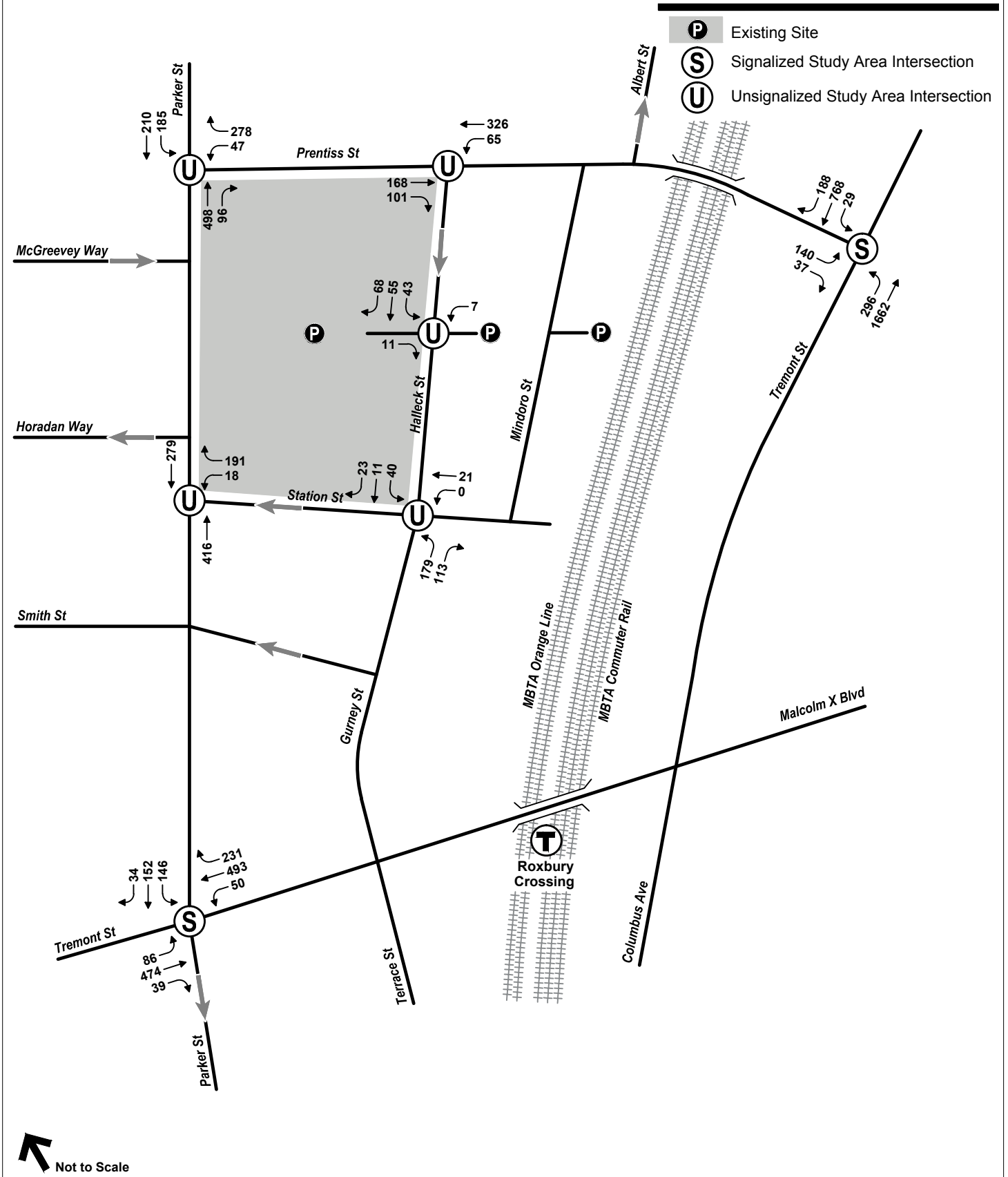
* Assumes Away Team Shares 1-2 buses and coaches drive

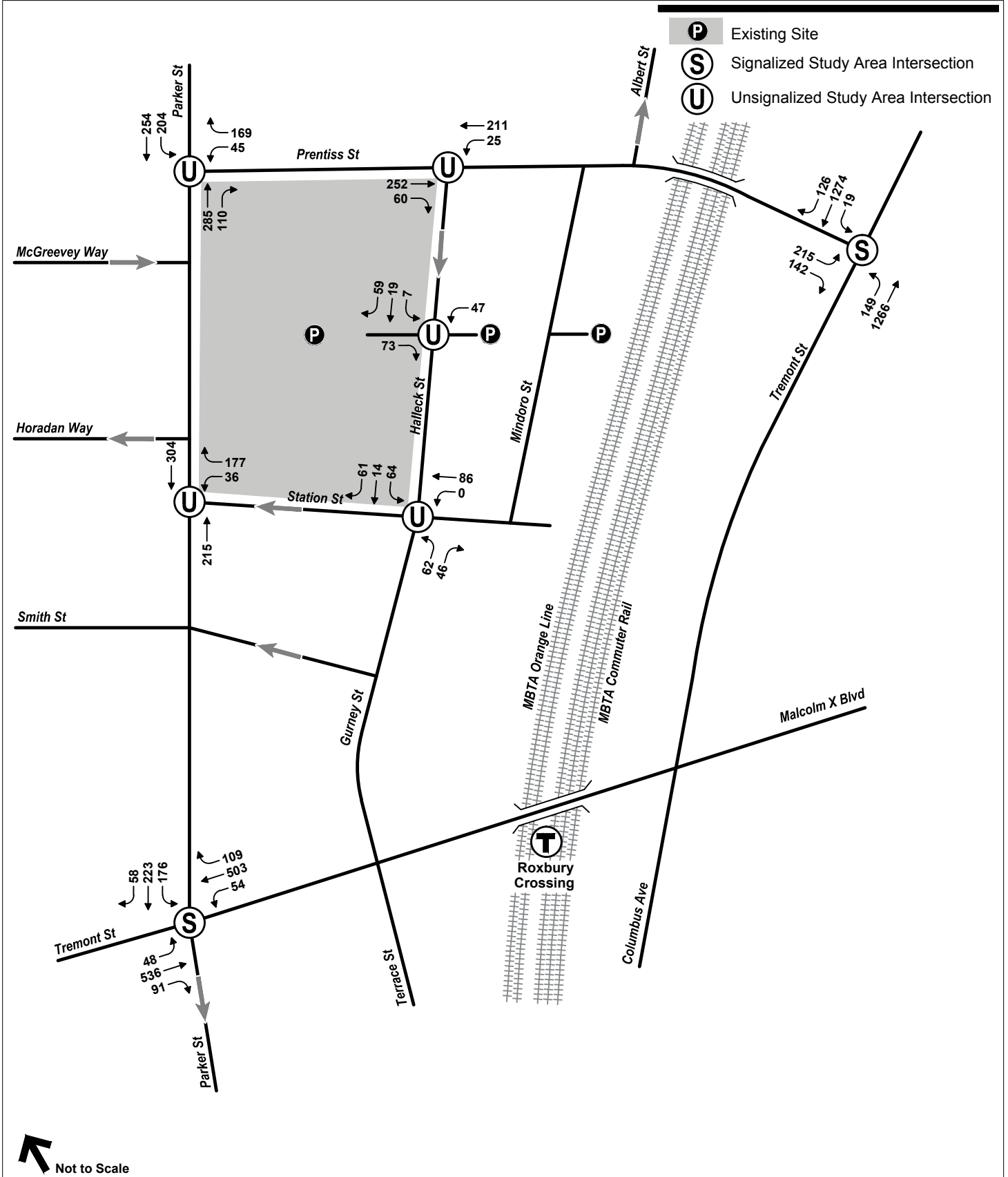
As shown in Table 2.3-6, the Project-generated trips are estimated to be 25 net-new trips (45 entering and -20 exiting) during the evening peak hour. It is important to note that these net-new vehicle trips are being redistributed in the study area from the existing Sweeney Field site location to the proposed location on Prentiss Street. Although these vehicle trips will be new to the six study area intersections, they are not new to the Wentworth campus.

2.3.2.5 Auto Trip Distribution

Trip distribution was based on existing traffic patterns for the study area. The net-new evening peak hour project generated trips were then assigned to the Project's driveway and study area. The resulting project generated trips for the evening peak hour are illustrated in Figure 2.3-14. Net-new project-generated trips and vehicle parking trip credits were then added to the 2019 No-Build Condition traffic networks. The resulting 2019 Build Condition networks are shown in Figure 2.3-15 through 2.3-16 for both the morning and evening peak hours. A comprehensive operational and level of service (LOS) analysis of all study area intersections is presented below.







2.3.2.6 Pedestrians/Bicycles

Approximately 198 pedestrians and bicyclists are expected to access the site during the evening peak hour during an athletic event at the relocated Sweeney Field. This is the most predominate method of travel to and from the site. The main stairway to the field will be located at the corner of Prentiss Street and Parker Street in the direction of the Wentworth Campus. There will also be pedestrian access to the field via stairs at the corner of Station Street and Parker Street, and accessible access through the garage elevator mid-block on Parker Street.

2.3.2.7 Transportation Demand Management

Consistent with the City's goals to reduce auto-dependency, Wentworth will continue to offer proactive TDM measures to encourage alternative modes of transportation to and from its main campus, including the new Sweeney Field Athletic Complex. TDM measures are most often directed at commuter travel; however, due to the nearby public transportation there are many opportunities to continue to provide TDM measures for the Project's proposed athletic complex land use.

A description of the existing and continued TDM elements is presented in this section along with information on how those elements aid Project users getting to and from the site. Measures being considered as part of the Project include:

- ◆ Bike racks will be provided at select, highly-visible locations within the site. The racks will be securely mounted and feature current designs to properly secure bikes of all kinds.
- ◆ A \$72 per month MBTA Charlie Card subsidy to Wentworth employees.
- ◆ Participation in the MBTA Corporate Pass Program, providing tax-free withholding from employees' pay for transit passes.
- ◆ Participation in MBTA Student Semester Pass program.
- ◆ Membership in the MASCO Transportation Management Association (TMA).
- ◆ Carpool/vanpool matching through MASCO TMA.
- ◆ Preferential parking for carpools/vanpools.
- ◆ Fees for parking for staff, faculty and students.
- ◆ Bicycle spaces at racks scattered throughout the campus.
- ◆ Participation in the Bike Week Commuter Challenge with MASCO.

- ◆ Provisions for motorcycle parking.
- ◆ Emergency Ride Home with MASCO.
- ◆ Additional 305 on-campus residential beds.
- ◆ Although there are no car sharing spaces on campus, there are four Zipcars near the campus: two at the Museum of Fine Arts and two at Vancouver and Ward streets at MassART.

The provision of bicycle racks and the site's proximity to public transportation including several bus lines, and the MBTA Orange Line/Green Line should help to reduce the amount of Project generated vehicular travel.

All TDM measures will be formalized in the TAPA to be executed with BTM.

2.4 Traffic Operations Analysis

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

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

Table 2.4-7 below presents the level of service threshold criteria as defined in the 2010 Highway Capacity Manual (HCM).

Table 2.4-7 Level of Service Criteria

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

Source: 2010 HCM

Adjustments were made to the Synchro model to include characteristics of each intersection, such as geometry, signal timings, heavy vehicles, bus operations, parking activity, and pedestrian crossings. The LOS results of the analyses are summarized for each intersection in Table 2.4-8 for the Existing, No-Build, and Build conditions. Detailed results including delay by movement, queuing and volume-to-capacity ratio are presented below in Tables 2.4-9 through 2.4-14 and the detailed Synchro results are presented in Appendix C.

The traffic model includes a conservative approach to future traffic trends by forecasting an increase in background traffic and assigning specific known development projects to the study area as required by the BTM. The model also includes the infrastructure and roadway improvements as planned in the mitigation proposed as part of the Tremont Crossing Project as discussed previously. Incorporating these changes to the roadways generates differences in level of service results from the Existing Condition to the No-Build condition that would not be seen due to vehicle volume increases alone.

Under the Build Condition, the Proponent intends to replace a surface lot with a single level of parking and an Athletic Complex above grade. The access and egress to the parking will be provided in the same approximate location as parking is accessed under existing conditions. Emergency vehicle and trash removal access will be provided a ramp off of Station Street to the south of the site.

Level of service analyses for the 2019 Build Condition, as shown in Table 2.4-8, indicate that the redevelopment of the Project site and its associated traffic cause no decline in overall LOS at the signalized intersections analyzed. As can be expected in an urban area, several of the study area intersections operate with long delays either on some of their individual approaches or for the entire intersection, with or without the Proposed Project.

Table 2.4-8 Intersection Level of Service (LOS) Summary

Intersection	AM Peak Hour Operations			PM Peak Hour Operations		
	2014 Existing	2019 No-Build	2019 Build	2014 Existing	2019 No-Build	2019 Build
Tremont Street / Parker Street	D	C	C	E	E	E
Parker Street / Station Street*	C	C	C	B	C	C
Parker Street / Prentiss Street*	F	F	F	F	F	F
Station Street / Halleck Street / Gurney Street*	B	B	B	B	B	B
Prentiss Street / Halleck Street*	A	A	A	A	A	A
Tremont Street / Prentiss Street	E	D	D	F	F	F
Halleck Street / Driveway*	A	B	A	B	B	B

*assumes critical movement for unsignalized intersections

2.4.1 Existing Conditions

The signalized intersection of Tremont Street/Parker Street operates at LOS D during the AM peak hour and LOS E during the PM Peak hour.

The signalized intersection of Tremont Street/Prentiss Street operates at LOS E during the AM peak hour and LOS F during the PM peak hour.

The unsignalized intersection of Parker Street/Station Street operates at LOS C in the Station Street approach during the morning peak hour. During the evening peak hour, the Station Street approach operates at a LOS B.

The unsignalized intersection of Parker Street/Prentiss Street operates at LOS F during both AM and PM peak hours in the Prentiss Street westbound approach.

The unsignalized intersection of Gurney Street at Halleck Street/Station Street operates at LOS B during both peak hours in the Gurney Street northbound approach.

The unsignalized intersection of Halleck Street/Prentiss Street operates at LOS A during both peak hours in the east and westbound direction along Prentiss Street.

The Site driveway operates at a LOS A during the morning peak hour and LOS B during the evening peak hour in the westbound approach.

Table 2.4-9 Existing Condition (2014) Intersection LOS Summary – AM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street – Overall	D	48.4	0.98	-
EB Tremont Left/Thru/Right	F	≥80.0	≥1.00	826
WB Tremont Left/Thru/Right	C	20.2	0.56	313
SB Parker Left/Thru/Right	D	45.1	0.74	382
Tremont Street at Prentiss Street – Overall	E	60.0	0.91	-
EB Prentiss Left/Right	E	79.6	0.85	299
NB Tremont Left/Through	D	43.1	0.99	662
SB Tremont Thru/Right/U-Turn	F	≥80.0	≥1.00	620
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	C	19.7	0.47	62
NB Parker Thru	A	0.0	0.29	0
SB Parker Thru	A	0.0	0.17	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	≥80.0	≥1.00	456
NB Parker Thru/Right	A	0.0	0.35	0
SB Parker Left/Thru	A	6.3	0.23	22
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	10.9	0.30	32
SB Halleck Left/Thru/Right	A	9.2	0.08	7
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.17	0
WB Prentiss Left/Thru	A	2.1	0.07	5
Halleck Street at Driveway				
EB Driveway Right	A	8.7	0.02	1
WB Driveway Left	A	9.8	0.01	1
SB Halleck Left/Thru/Right	A	2.3	0.03	2

Table 2.4-10 Existing Condition (2014) Intersection LOS Summary – PM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street	E	60.9	0.97	-
EB Tremont Left/Thru/Right	F	≥80.0	≥1.00	905
WB Tremont Left/Thru/Right	C	27.6	0.55	271
SB Parker Left/Thru/Right	D	36.0	0.74	469
Tremont Street at Prentiss Street	F	≥80.0	≥1.00	-
EB Prentiss Left/Right	F	≥80.0	0.94	454
NB Tremont Left/Through	C	29.2	0.79	428
SB Tremont Thru/Right/U-Turn	F	≥80.0	≥1.00	960
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	B	14.6	0.33	37
NB Parker Thru	A	0	0.13	0
SB Parker Thru	A	0	0.20	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	59.3	0.83	167
NB Parker Thru/Right	A	0.0	0.21	0
SB Parker Left/Thru	A	5.7	0.23	22
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	10.2	0.14	12
SB Halleck Left/Thru/Right	A	9.7	0.21	19
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.18	0
WB Prentiss Left/Thru	A	0.4	0.01	1
Halleck Street at Driveway				
EB Driveway Right	A	8.7	0.09	8
WB Driveway Left	B	10.1	0.07	5
SB Halleck Left/Thru/Right	A	2.0	0.00	0

2.4.2 No-Build Conditions

Under No-Build conditions, all intersections continue to operate at the same level of service as under Existing Conditions, with the following exceptions:

- ◆ Tremont Street/Parker Street – the overall intersection operations improve from a LOS D to LOS C during the AM peak hour due to the proposed mitigation at this intersection as part of the Parcel 25 Development Project.
- ◆ Tremont Street/Prentiss Street – the overall intersection operations improve from a LOS E to LOS D. This is due to proposed mitigation at this intersection as part of the Tremont Crossing Development Project.
- ◆ Halleck Street/Site Driveway – the intersection experiences a slight increase in delay at the westbound driveway due to the additional traffic added as part of the background growth along Halleck Street during the morning peak hour.

Table 2.4-11 No Build Condition (2019) Intersection LOS Summary – AM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street	C	29.0	0.87	-
EB Tremont Left	B	18.2	0.44	94
EB Tremont Thru/Right	C	29.9	0.85	557
WB Tremont Left/Thru	C	30.2	0.86	579
WB Tremont Right	B	13.9	0.41	177
SB Parker Left/Thru/Right	D	39.5	0.84	250
Tremont Street at Prentiss Street	D	49.9	≥1.00	-
EB Prentiss Left/Right	F	≥80.0	0.87	254
NB Tremont Left	F	≥80.0	0.91	488
NB Tremont Through	B	19.8	0.69	451
SB Tremont Thru/Right/U-Turn	F	≥80.0	≥1.00	1100
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	C	23.0	0.55	82
NB Parker Thru	A	0	0.30	0
SB Parker Thru	A	0	0.18	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	≥80.0	≥1.00	562
NB Parker Thru/Right	A	0	0.38	0
SB Parker Left/Thru	A	7.9	0.30	32
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	12.3	0.40	49
SB Halleck Left/Thru/Right	B	11.4	0.21	20
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.20	0
WB Prentiss Left/Thru	A	2.1	0.07	5
Halleck Street at Driveway				
EB Driveway Right	A	8.9	0.02	1
WB Driveway Left	B	10.1	0.01	1
SB Halleck Left/Thru/Right	A	1.9	0.03	2

Table 2.4-12 No-Build Condition (2019) Intersection LOS Summary – PM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street	E	76.1	≥1.00	-
EB Tremont Left	A	8.9	0.19	28
EB Tremont Thru/Right	C	34.0	0.92	573
WB Tremont	B	18.9	0.76	388
WB Tremont Right	A	7.7	0.16	48
SB Parker Left/Thru/Right	F	≥80.0	≥1.00	572
Tremont Street at Prentiss Street	F	≥80.0	≥1.00	-
EB Prentiss Left/Right	F	≥80.0	≥1.00	732
NB Tremont Left	F	≥80.0	≥1.00	305
NB Tremont Through	C	26.0	0.61	352
SB Tremont Thru/Right/U-Turn	C	30.3	0.93	844
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	C	21.2	0.58	92
NB Parker Thru	A	0.0	0.15	0
SB Parker Thru	A	0.0	0.21	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	≥80.0	1.05	250
NB Parker Thru/Right	A	0.0	0.28	0
SB Parker Left/Thru	A	6.6	0.27	28
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	11.6	0.20	18
SB Halleck Left/Thru/Right	B	12.3	0.31	32
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.19	0
WB Prentiss Left/Thru	A	0.4	0.01	1
Halleck Street at Driveway				
EB Driveway Right	A	8.8	0.10	8
WB Driveway Left	B	10.2	0.07	6
SB Halleck Left/Thru/Right	A	1.3	0.00	0

2.4.3 Build Conditions

During the morning peak hour, the 2019 Build Condition traffic operations show slight improvement at the study area intersections due to the trip credit taken by the reduction in parking on the site. The morning peak hour analysis does not experience an increase in trips due to the project because the site generated trips are only expected to impact the evening peak hour conditions. The overall and critical movements are expected to remain at the same LOS as the 2019 No-Build conditions for the evening peak hour analysis. The intersection of Halleck Street at Site Driveway will experience a slight improvement from a LOS B to LOS A in the westbound driveway due to the slight decrease in traffic along Halleck Street during the morning peak hour. The impacts of the site generated trips during the evening peak hour 2019 Build condition are not expected to impact the operations of the study area intersections.

Table 2.4-13 Build Condition (2019) Intersection LOS Summary – AM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street	C	29.0	0.87	-
EB Tremont Left	B	18.1	0.43	93
EB Tremont Thru/Right	C	29.9	0.85	557
WB Tremont Left/Thru	C	30.2	0.86	579
WB Tremont Right	B	13.8	0.41	175
SB Parker Left/Thru/Right	D	39.3	0.83	249
Tremont Street at Prentiss Street	D	49.2	≥1.00	-
EB Prentiss Left/Right	F	≥80.0	0.87	254
NB Tremont Left	E	77.5	0.89	473
NB Tremont Through	B	19.8	0.69	451
SB Tremont Thru/Right/U-Turn	F	≥80.0	≥1.00	691
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	C	22.5	0.54	79
NB Parker Thru	A	0.0	0.30	0
SB Parker Thru	A	0.0	0.18	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	≥60.0	≥1.00	551
NB Parker Thru/Right	A	0.0	0.38	0
SB Parker Left/Thru	A	7.7	0.29	31
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	12.2	0.40	49
SB Halleck Left/Thru/Right	B	11.3	0.21	19
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.19	0
WB Prentiss Left/Thru	A	1.9	0.06	5
Halleck Street at Driveway				
EB Driveway Right	A	8.8	0.01	1
WB Driveway Left	A	10.0	0.01	1
SB Halleck Left/Thru/Right	A	2.1	0.03	2

Table 2.4-14 Build Condition (2019) Intersection LOS Summary – PM Peak Hour

Intersection	LOS	Delay (sec.)	V/C Ratio	95th % Queue (feet)
Signalized Intersections				
Tremont Street at Parker Street	E	74.9	≥1.00	-
EB Tremont Left	A	9.0	0.20	30
EB Tremont Thru/Right	C	34.0	0.92	573
WB Tremont Left/Thru	B	18.9	0.76	388
WB Tremont Right	A	7.8	0.18	51
SB Parker Left/Thru/Right	F	≥80.0	≥1.00	569
Tremont Street at Prentiss Street	F	≥80.0	≥1.00	-
EB Prentiss Left/Right	F	≥80.0	≥1.00	711
NB Tremont Left	F	≥80.0	≥1.00	328
NB Tremont Through	C	26.0	0.61	352
SB Tremont Thru/Right/U-Turn	C	31.1	0.93	852
Unsignalized Intersections				
Parker Street at Station Street				
WB Station Left/Right	C	20.7	0.56	86
NB Parker Thru	A	0	0.15	0
SB Parker Thru	A	0	0.21	0
Parker Street at Prentiss Street				
WB Prentiss Left/Right	F	≥80.0	≥1.00	271
NB Parker Thru/Right	A	0	0.28	0
SB Parker Left/Thru	A	7.1	0.30	32
Gurney Street at Halleck Street and Station Street				
WB Station Left/Thru	A	0.0	0.00	0
NB Gurney Left/Right	B	11.4	0.19	17
SB Halleck Left/Thru/Right	B	11.9	0.27	27
Halleck Street at Prentiss Street				
EB Prentiss Thru/Right	A	0.0	0.21	0
WB Prentiss Left/Thru	A	1.0	0.02	2
Halleck Street at Driveway				
EB Driveway Right	A	8.8	0.08	6
WB Driveway Left	B	10.1	0.07	5
SB Halleck Left/Thru/Right	A	0.6	0.00	0

2.4.4 Short term Impacts and Construction Management

Development on tight sites in the City of Boston, combined with concerns for avoiding traffic congestion and hazards to pedestrian and vehicular traffic, has led to increasing

requirements for sophisticated construction period traffic management plans, known as Construction Management Plans (CMPs), which need to be approved by Boston Transportation Department (BTD) as a precondition to the issuance of a building permit for the development. The CMP will discuss and address the following in detail:

- ◆ Construction activity schedule;
- ◆ Construction staging area;
- ◆ Delivery schedule;
- ◆ Pedestrian and public safety;
- ◆ Perimeter protection;
- ◆ Employee parking;
- ◆ Material handling;
- ◆ Truck routes;
- ◆ Police details;
- ◆ Utilities;
- ◆ Construction noise;
- ◆ Construction air quality;
- ◆ Street cleaning and snow removal;
- ◆ Rodent control; and
- ◆ Site dewatering

The CMP will also address the need for pedestrian detours, lane closures, and/or parking restrictions, if necessary, to accommodate a safe and secure work zone.

To minimize transportation impacts during the construction period, the following measures will be incorporated into the CMP:

- ◆ Construction workers will be encouraged to use public transportation and/or carpool;
- ◆ A subsidy for MBTA passes will be considered for full-time employees; and

- ◆ Secure spaces will be provided on-site for workers' supplies and tools so they do not have to be brought to the site each day.

2.5 Environmental Protection

2.5.1 Wind

The Project is not expected to cause impacts to pedestrian level winds. No new streetwall construction is proposed, and no construction is proposed that would tend to increase the downwash of wind along either of the public ways that bound the Project Site.

As a result of the Proposed Project's small scale and at-grade or near-grade configuration with minimal new construction, no wind tunnel analysis was conducted because no wind impacts will result from the construction of the Proposed Project. Wind conditions in the vicinity of the Proposed Project are expected to be similar in the "Build" and "No-build" (existing) conditions.

2.5.2 Shadow

The Proposed Project will not have any meaningful shadow impacts on the surrounding public realm due to its small scale and predominantly at-grade or near-grade configuration. No public parkland or other public amenities would be cast in shadow at any time by the Proposed Project. Minor net new shadows on surrounding public sidewalks, particularly along Prentiss Street at the northern edge of the Project Site, where the parapet wall of the Proposed Project will rise approximately 18' above the adjacent sidewalk, will be transient in nature and mitigated by the significant improvements in landscape treatment being proposed on all sides of the Project Site as part of the Proposed Project. As a result of the Proposed Project's short stature and lack of shadow impacts, no shadow studies were conducted as part of this submission.

2.5.3 Daylight

The purpose of a daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the streets and the sidewalks in the immediate vicinity of the project site. The daylight analysis for the Proposed Project considers the existing and proposed conditions.

The Proposed Project is a single-story structure that is never more than one and one-half stories above existing street grade (at the mid-point of Parker Street where the viewing stand sits atop a partially-exposed portion of the garage structure). As a result of the Proposed Project's limited streetwall height at all points, the Proposed Project's construction is not anticipated to have any material impact on visible skydome along the public ways adjacent to the Project Site and therefore, no impact on the available daylight on these adjacent public ways.

2.5.4 Solar 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 from the Project.

2.5.5 Air Quality

Potential long-term air quality impacts will be limited to pollutant emissions from vehicular traffic generated by the Project. The transportation impacts of the Project are limited due to the reduction of on-site parking that will result from the Proposed Project's construction. The net change in Proposed Project traffic is not expected to generate adverse effects to the air quality in and around the Project Site. Furthermore, because an existing 3-acre bituminous area will be transformed into a playing field surface and additional landscaping areas, the Proposed Project is anticipated to significantly reduce the heat island effect currently caused by the existing surface parking area.

2.5.6 Emergency Generator

The Proposed Project will not have an emergency generator and on-site space heating will be minimal in nature; the Proposed Project will have no meaningful air quality impacts as a result of fossil-fuel fired space heating and domestic hot water production for locker rooms and spectator restrooms.

2.5.7 Water Quality / Stormwater

Please see Section 2.8.4.3 for a discussion of stormwater conditions at the Project Site.

2.5.8 Flood Hazard Zone / Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicates the FEMA Flood Zone Designations for the Project Site (Suffolk County, Massachusetts, Map Number 25025C 0078G, dated 9/25/2009). The map for the Project Site shows the Project is located in Zone X, areas determined to be outside the 0.2% annual chance floodplain. The Project Site is not located near any wetlands.

2.5.9 Geotechnical / Groundwater

2.5.9.1 Subsurface Soil and Bedrock Conditions

Three subsurface explorations programs have been conducted within or adjacent to the proposed project site. A program was conducted on behalf of the MBTA in 1977 and 1978 that included test borings and was performed at locations adjacent to the site; Goldberg-Zoino & Associates (GZA) conducted eight test borings and 11 test pits within the site boundary in 1989; and CDM Smith conducted seven test borings within the site boundary in 2014.

Based on the subsurface information available from explorations conducted within the site, test borings and test pits conducted by GZA (1989) and the test borings conducted by CDM Smith (2014), the subsurface conditions at the Project Site consist of:

- ◆ Miscellaneous Fill - The fill layer was encountered at all of the GZA and CDM Smith test boring locations. This layer generally consisted of moist to wet, loose to very dense, brown to black, fine to coarse sand, with variable amounts of fine to coarse gravel, silt, clay, and building debris (ash, brick, concrete, styrofoam, wood). The layer thickness ranges from 7 ft to 20 ft across the Project Site.
- ◆ Peat - A peat layer was encountered at one of the eight GZA test boring locations and one of the seven CDM Smith test boring locations. This layer consists of moist, dark brown to black, Highly Organic Silty peat to peat. This layer ranged from 3.8 to 4.5 feet thick.
- ◆ Clay - A Clay layer was encountered at two of the seven CDM Smith test boring locations. This layer generally consisted of moist to wet, medium stiff to hard, light gray to black clay, with various amounts of fine to coarse sand, fine gravel, and silt. Where encountered, the thickness of this layer ranged from 6 ft to 17 ft at the test boring locations.
- ◆ Sand and Gravel - The Sand and Gravel layer was encountered at seven of the eight GZA test boring locations and all of the CDM Smith test boring locations. This layer generally consists of moist to wet, medium dense to very dense, tan to dark brown, fine to coarse sand, with variable amounts of silt, and fine to coarse gravel. In some instances gravel was observed as the primary component of a sample. Where encountered, the thickness of this layer ranged from 4.5 ft to 81 ft at the test boring locations.
- ◆ Glacial Till - The Glacial Till layer was encountered at six of the eight GZA test boring locations and all of the CDM Smith test boring locations. This layer generally consists of wet, medium dense to very dense, gray to brown fine to coarse sand or gravel , with variable amounts of sand, gravel, clay and silt. The thickness of the layer ranged from at least 6.5 ft to 22 ft.
- ◆ Bedrock - Bedrock was encountered and cored at two of the eight GZA test boring locations, and was encountered at three of the seven CDM Smith test boring locations. Top of bedrock was identified by split spoon refusal or slow hard penetration with a roller bit. Where cored, bedrock was observed to consist of gray conglomerate. The top of the bedrock was encountered at depths ranging from approximately 12.5 to 80 feet below ground surface at the previous and recent test boring locations. Where cored, the recovery value of the rock core was measured to be from 75 to 100 percent; and the RQD value of the rock core was measured to be from 52 to 68 percent.

2.5.9.2 Groundwater

The groundwater level within a recently installed observation well was recorded 10 days and 26 days after installation; water levels ranged from El. 6.8 to 7.8 (Boston City Base, BCB) or approximately 10 feet below the lowest anticipated excavation for this project. Water levels vary with season, rainfall, construction activities, proximity to underground utilities, and other factors.

2.5.9.3 Existing Building Foundations

The site is currently a paved parking lot with the exception of approximately 5% of the site at the southern corner where two vacant brick buildings are located. The two vacant buildings were once the office and brew house for the Vienna Brewery. The office is located on the corner of Halleck Street and Station Street, it is a two story brick building with utility crawl space below; the foundation depth and bearing soils are unknown. The first floor of the structure is generally at to slightly above the surrounding grade, as street elevation decreases around the structure. Along Halleck Street there is an existing freestanding remnant brick and mortar wall approximately 73 feet long and 15 feet high, the wall was once the exterior wall of the Brewery Keg Shed. The wall is currently supported by rakers located within the footprint of the former Keg Shed building. The foundation depth and bearing soils are unknown; this wall is proposed for removal in its entirety in connection with the Proposed Project's construction due to conflicts with the proposed foundations for the new garage and playing field structure.

The brew house building is located on Station Street, adjacent to the office building; it is a brick building with four stories above existing grade and one story below, the foundation depth and bearing soils are unknown. The first floor level is approximately 12 to 18-inches above the surrounding grade.

2.5.9.4 Impacts on Foundations and Groundwater Levels

No changes to the administration building or brew house building foundation loads are proposed for this work. No raise in grade is planned around existing buildings that would result in added loads to the existing foundation walls. Additionally, excavations for the Proposed Project are not expected to extend within the zone of influence of the existing structures (other than the remnant Keg Shed wall, which is proposed for removal); therefore, no undermining of the existing building structure foundations is anticipated.

The existing groundwater level is 8 to 10 feet below the lowest level of the proposed facility's ground floor slab and the construction of the Proposed Project is not expected to impact the site's groundwater level at all. The Proposed Project's permanent drainage will be routed to a subsurface detention/infiltration system as described in Section 2.8.4.2.

The Project Site is not located in the Groundwater Conservation Overlay District.

2.5.10 Solid and Hazardous Waste

2.5.10.1 Solid Waste Generation during Operation

The Project will generate very little solid waste and no hazardous waste. Solid waste will be limited to refuse generated due to on-field athletic activities and will be subject to Wentworth's comprehensive campus-wide recycling program.

The Proposed Project will provide ample space for waste storage and removal adjacent to the team rooms. Recyclable materials will be stored in designated recycling areas for pick-up. A private trash collector contracted to Wentworth will pick up trash as needed.

Loading and service to the Proposed Project will be very limited in nature and will occur over the hardscape plaza fronting on Station Street; no loading activity will occur on Parker Street. All recycling, trash collection, and loading will occur on-site and services from Station Street or internally to the garage through the Halleck Street entrance.

2.5.10.1.1 Recycling

Recycling will be encouraged and coordinated. To encourage recycling, Wentworth will expand its campus-wide recycling program to include the Proposed Project.

2.5.10.2 Solid Waste Generation during Construction

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

2.5.10.3 Hazardous Waste

The Project Site has a varied history of uses and contains several historical conditions known to require closure under the Massachusetts Contingency Plan (MCP). All soils excavated from the Project Site will be handled and managed in accordance with the MCP and other applicable federal, state, and local regulations. These soils will be disposed of in appropriately-designated disposal facilities depending on the classification of each batch of soil leaving the Project Site. No hazards to public health or nearby residents will be created during construction of the Proposed Project. No hazardous waste will be generated by the construction of the Proposed Project.

2.5.10.4 Noise

All efforts will be made to work within the preferred work hours of 7:00am to 6:00 pm to avoid undue impacts on residential neighbors to the Project Site. Activities outside this time frame will be performed under special permit which will be limited in nature. All activities will comply with the requirements of the City of Boston Noise ordinance. Every effort will be used to minimize noise impacts of construction activities by selecting means and methods that are designed to minimize noise.

The preparation for placement of foundation systems, as well as the placement of piles to support the Proposed Project structure will involve the use of noise-producing equipment such as hoe-rams and pile-driving equipment. These activities will be scheduled within the normal work hours whenever possible and done efficiently to minimize the overall duration of each activity. In addition, Wentworth will provide advance notification to the surrounding residential communities of Mission Main and Alice Haywood Taylor Homes to ensure that nearby residents are aware of the Proposed Project's working schedule and have an opportunity to ask questions of Wentworth's general contractor in advance of the start of work activities on site.

2.5.11 Construction Impacts

The Proponent will submit a plan in compliance with the City's Construction Management Program (CMP) to the Boston Transportation Department once the design has developed and the construction schedule is determined. The CMP will include detailed information about construction activities, construction material delivery plans, staging plans and mitigation measures specific to each to minimize impact on the abutters who reside in the neighborhood. The construction contractor will be required to comply with the details and conditions of the approved CMP.

2.5.11.1 Construction Schedule

The overall construction duration is approximately 56 weeks and is anticipated to commence in the second quarter of 2015. Since the Project Site is currently a surface parking lot, the mobilization activities will be immediate once permitting is complete. The Proposed Project consists of a new parking structure with an artificial turf field on the top deck. The Proposed Project also includes the stabilization and restoration of the existing masonry structures on the Project Site. Construction activities will commence on the parking structure first and then progress to stabilization activities in the summer of 2016.

It is anticipated that construction activities will be limited to weekdays between 7:00 am and 6:00 pm, which is the preferred duration allowed by the city without special permit. Due to the nature of the project there may be limited requests for special permit to work outside these hours. In the event that it is necessary to work by special permit the General Contractor will obtain the required permits on a case by case basis.

All coordination efforts related to construction activities will be through the General Contractor, Gilbane Building Company, which has been engaged to construct the Proposed

Project. The General Contractor will be responsible for coordinating construction activities during all phases of construction with City of Boston agencies in order to minimize potential scheduling and construction conflicts with other ongoing construction projects in the area.

2.5.11.2 Construction Staging / Public Safety / Access

The Proponent will ensure that staging areas will be located to minimize impact to pedestrian and vehicular flow. All construction access and staging will be consistent with the approved CMP that is to be filed with the City of Boston prior to construction start. BTM will have jurisdiction to approve the trucking routes and mitigation measures related to traffic and parking. It is anticipated that the sidewalks immediately abutting the existing parking lot will be impacted by construction. The current pedestrian access will be redirected across the street from the site on Parker Street, Station Street, Halleck Street and Prentiss Street as required during construction.

All sidewalk closures will be signed sufficiently to allow the public to be safely redirected. In addition the site will be posted with construction updates to inform the public of upcoming changes to the access and safety plans dependent on the activities that are anticipated for the following month. Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities.

2.5.11.3 Construction Air Quality

The Proposed Project's construction will require the removal of existing materials across the entire site. A dust control program will be prepared to address control measures that are mandated by Massachusetts DEP and or recommended by the LSP of record and General Contractor. The mitigation measures that could be anticipated for the anticipated site characteristics could include the following:

- ◆ Using wetting agents to control exposed soils
- ◆ Transporting materials using covered trucks
- ◆ Temporary cover of stockpiled materials
- ◆ Air Monitoring at site perimeter and at loading/discharge areas
- ◆ Periodic street cleaning

2.5.11.4 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Proposed Project. Increased community sound levels, however, are an inherent consequence of construction activities, especially in light of the type of excavation and pile driving activities that will be required to construct the Proposed Project. Construction

work will comply with the requirements of the City of Boston noise ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

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

2.5.11.5 Construction Period Transportation Issues

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 Construction Management Plan to be filed with BTM.

The number of workers required during the construction period will vary, depending on the phase of construction. Because the construction workers will arrive and depart prior to peak traffic periods, the construction trips are not expected to impact local traffic conditions.

To reduce vehicle trips to and from the construction site, all workers will be strongly encouraged to use public transportation. Secure space on-site will be made available for workers' supplies and tools so they do not have to be brought to the site each day.

Specific delivery truck access routes will be established in consultation with the BTM through its approval of the CMP required for the Proposed Project. Construction

contracts will include clauses restricting truck travel to primary roads. Enforcement of truck routes will be accomplished through clauses in the subcontractors' agreements.

2.5.11.6 Protection of Utilities

Protection of BWSC water, sewer, and drain lines will begin before commencement of site work. The Proponent will request that the locations of all existing water, sewer, and drainage lines be marked by BWSC. Excavation in the area of existing water, sewer and drain lines will proceed with caution. Hand excavation will take place when excavation in the immediate area of pipe walls is required. BWSC will require additional protection measures if new pipes are to cross existing pipes.

The BWSC will require the Proponent to submit a General Service Application and a site plan for review prior to construction. The site plan must include existing water mains, sanitary sewers, storm drains, and proposed service connections.

2.5.11.7 Disposal and Recycling of Construction Debris

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the sufficient space for the necessary segregation, reprocessing, reuse and recycling of materials. Asphalt pavement, brick, and concrete (ABC) rubble generated from demolition of site roadways, and structures will be handled in accordance with applicable DEP solid waste policies. The Proponent will obtain a Beneficial Use Determination (BUD) permit in order to re-use processed ABC rubble that is void of rebar (metal reinforcing) for reuse as compacted aggregate in site filling activities. The Proposed Project's disposal contracts will include specific provisions for the segregation, reprocessing, reuse, and/or recycling of building materials and demolition debris. Those materials that cannot be reused on-site will be transported in covered trucks to an approved solid waste facility per applicable DEP solid waste policies.

Removal of any hazardous materials encountered during excavation will be treated as special waste in accordance with Massachusetts DEP guidelines and addressed and disposed of accordingly. Lead- and asbestos-containing excavated materials, if any, will be removed in accordance with applicable regulations.

2.5.11.8 Rodent Control during Construction

A preconstruction rodent inspection will be performed and documented. A rodent control program will be developed for the site and maintained during the entire construction operation in compliance with the applicable City of Boston ordinance.

2.5.11.9 Construction Water Quality

While dewatering is not anticipated to be required in connection with the Proposed Project's construction, local dewatering may be required to construct utilities and facilitate

other deeper excavations (if determined to be applicable). On-site recharge in accordance with the Massachusetts Contingency Plan at 310 CMR 50.0055 will be the primary approach for construction dewatering discharge – if determined to be required. If required, discharge to municipal storm drains under a NPDES Remediation General Permit (RGP) will be implemented in the event that subsurface geology cannot accept dewatering flows. Effluent from dewatering efforts may include groundwater, precipitation, and surface water runoff. If needed, a dewatering effluent treatment system will be designed and operated by the contractor. Discharge water quality sampling and analysis will be conducted to monitor compliance with the NPDES RGP.

2.5.12 Wildlife Habitat

The Project Site consists of an existing building and surface parking lots in an established, dense urban neighborhood. As such, the Proposed Project will not have impacts on wildlife habitats.

2.6 Urban Design

2.6.1 Design Approach

The scope of the Proposed Project consists of incorporating an artificial turf athletic facility into a parcel that is currently used as an open-air parking lot through the development of a one story parking structure that allows for the use of the portion within the structure for parking and the portion above for the athletic facility. The design approach is to create a project that improves the streetscape of the neighborhood and that provides an athletic facility for Wentworth that is visually and physically accessible to the adjacent residential areas and the surrounding public sidewalks.

The facility provides both safe and easily accessible parking as well as a field that conforms to NCAA standards for Division III play. Additionally, the development preserves the two existing buildings on the site – stabilizing and restoring them for future reuse. The approach is to create a structure that presents itself to the neighborhood as an athletic field, minimizing the visual impact of the parking portion of the facility.

The Project Site has a gradual slope upward along the alignment of Parker Street and the design approach takes advantage of this existing topography by cutting into the hill and pushing the parking components of the project into the hillside as much as possible and locating the playing field at grade on the southern end of the site and elevated at the northern end.

Buildings necessary for the usage of the field, such as team rooms and equipment storage and support utilities are massed at the southern end along with the existing buildings to create a continuous streetscape along Station Street. Along Parker Street, which is anticipated to have the largest amount of pedestrian traffic, the design approach involves pushing the edge of the structure and the field as far back from the back of sidewalk as possible to create a linear park along Parker Street for plantings and streetscape elements

such as benches and small “parklets” that encourage passersby to make active use of the new landscaped and hardscaped areas to foster an active streetscape environment, rather than simply treating this linear park as a passive landscape buffer.

2.6.2 Proposed Design

The field/parking structure is approximately 368 feet in length along the north-south axis and approximately 262 feet on the east-west axis. It will be approximately 12 feet in height from the parking level located at elevation 24 feet (Boston City Base, BCB) to the level of the playing field located at elevation 36 feet (BCB). The parking structure is visible above grade at the following locations: along Parker Street tapering from 14 feet at the corner of Prentiss to 2 feet at Station Street, 14 feet above grade on Prentiss Street, and again tapering from 14 feet at the corner of Prentiss to 2 feet along Halleck Street. The structure will be of pre-cast construction and the columns and the spandrel beams at the field level will be clad in panelized brick elements to create an attractive, traditional architectural motif.

At the corner of Prentiss and Parker Streets there will be a monumental open staircase connecting the street to the field level. Along the Parker Street side there is a structure at the mid-point of the field that provides an elevator from the garage to the field, and from the field to the viewing stand. At the field elevation, spectator restrooms for men and women will be provided. The masonry-based architectural cladding concepts will be carried through the viewing stand/elevator building. At the Station Street end of Parker Street the new team room buildings wrap this important urban corner to create a continuous streetwall punctuated only by pedestrian accessways to the playing field. Access from Parker Street to the field is directly available adjacent to the northern team room structure.

The team rooms, team restrooms/showers, team storage, and the electrical and a mechanical room are sited along Station Street. The proposed design masses these functional spaces into two structures, each one 12 foot high story in height. An open but covered entryway is located between the two buildings that leads to the team rooms as well as directly to the field. The entryway includes a ramp that provides an accessible entrance to the buildings and the field. The structures’ façades will be broken up architecturally with durable brick or brick inlaid pre-cast panels from the sidewalk up approximately four feet and a wooden or ribbed metal finish above. Because these buildings are used as locker rooms and bath/shower facilities there will not be windows on the façade facing the public ways. Immediately inside the covered entry way is the backstop for the softball diamond. The area immediately to the left and right, inside the entry way, is typical of an athletic facility with team benches.

As part of the Proposed Project, the two existing brewery buildings, both of which are currently boarded up and in a deteriorated state, are having their exterior brickwork repointed as necessary, roofs replaced or repaired as necessary and new architecturally

appropriate windows and doors installed. The intent is to stabilize and restore the exteriors and secure these buildings for future re-use.

2.6.3 Conclusion

The Proposed Project involves the relocation of Wentworth's athletic field to the site of the existing visually unappealing surface parking lot and to transform the parcel into a visually attractive, accessible athletic field and accessory structures. The structure's exterior finishes and the landscaping along the sidewalk setback areas around the facility on the South and West, in particular, will serve as pedestrian-friendly connections from the Roxbury Crossing Orange Line station through the Parcel 25 development and to the adjacent neighborhoods. From the North, the development encourages members of the Wentworth community onto the field via the monumental open stairway entry at the corner of Parker and Prentiss. The facility will create a human-scale border along the streets around the Project Site where none exists today.

2.7 Historic Resources and Archaeological Resources

This section describes the historic and archaeological resources on, and within the vicinity of the Project site and describes the potential project-related impacts to these resources.

2.7.1 Historic Resources on the Project Site

The Project site is an approximately 3.06 acre parcel bounded by Halleck Street to the east, Station Street to the south, Parker Street to the west and Prentiss Street to the north. Located in the Mission Hill neighborhood, the Project site currently consists of a paved surface parking lot and contains two brick masonry buildings and a remnant brick wall associated with the former Vienna Brewery Complex. Occupying the southeast corner of the site is the Vienna Brewery Brew House, Office Building and the surviving remnant of the Keg Shed wall.

The Brewery was originally built as a U-shaped industrial complex that consisted of four buildings: the surviving four-story Brew House (1876) and two and a half story Office Building (1884), as well as the no longer extant L-shaped Fermentation House (1876) and three-story Keg Shed (1890). The Complex was designated a City of Boston landmark in January 1999. In 1999, the Fermentation House and the vast majority of the Keg Shed were demolished.

The Vienna Brewery Complex was built on a parcel previously occupied by the Jutz Brewery. Situated on an L-shaped parcel near the corner of Station and Halleck Streets, the Jutz Brewery consisted of a two and a half story Brewery, two-story Ice House, a Dwelling, Stable and delivery yard, all built between 1866 and 1870. The buildings were razed in 1875 and the existing Brew House and Fermentation House (demolished) were built on the footprint of the former brewery by Andrew Jackson Houghton and John A. Kohl of A. J. Houghton and Company. After acquiring the small adjacent parcel at the

northeast corner of Station and Halleck Streets, Houghton and Kohl erected the existing Office Building in 1884. By 1890 the complex had reached its final U-shaped configuration with the construction of the Keg Shed connecting the Office Building to the Fermentation House. Additional buildings were later added for cold storage and support sheds. Following the 1918 ratification of Prohibition, the Vienna Brewing Complex was forced to close. The complex was later acquired by the Gatti Paper Stock Corporation and converted for waste paper storage and processing in 1929 before being sold to the Great Eastern Packing and Paper Stock Company in 1934. This Boston-based firm remained in operation at the former brewing site through the early 1980s. In 1984, the buildings were purchased by Wentworth Institute of Technology and were leased to Northeastern University for its book depository. More recent tenants have included Habitat for Humanity, housed in the Office Building, and the City of Boston Youth Corps, occupying the Brew House.

The Brew House rests on a granite and Roxbury pudding-stone foundation and originally rose five stories with its façade culminating in a gabled parapet. The fifth story was lost during the second quarter of the 20th century. Today's truncated, flat-roofed structure features segmentally-arched window openings trimmed with hooded brick lintels and granite sills throughout. Wide, segmental-arched delivery bays with granite piers and keystones mark the ground-floor level. The original entrance, located in the first bay of the courtyard wall, contains brick infill. A later entrance was punched through the southeast corner of the primary façade. The Brew House's paneled brick ornamentation is concentrated on the Station Street elevation. This flat façade spans five bays in width and is enlivened by paneled pilasters, rising from the second story to the roof line at the corners and up the central bay. Bands of corbelled brick segregate each story horizontally. In addition to the decorative brick work, the façade is trimmed with granite shoulder stones, key stones, sills and string courses.

The Office Building measures three-by-five bays and rests on a granite sill. Its slate-tiled hipped roof is punctuated by pedimented dormers embellished with fluted pilasters. The building's primary elevation fronts onto Halleck Street, with the entry located in a recessed, side-passage bay. The long Station Street façade is symmetrically fenestrated with elongated, segmental-arched openings. In contrast, the courtyard façade is irregularly fenestrated with arched openings of various sizes.

The surviving Vienna Brewery structures represent the second oldest brewery in Boston and the city's oldest lager brewery. Additionally, they represent the oldest brewery in the Stoney Brook Valley, the locus of beer production during Boston's golden age of brewing. The Brew House, Office Building and remnant Keg Shed wall are the only remaining elements of the Vienna Brewery's post-Civil War complex, reflecting the traditional mill construction characteristic of early Stoney Brook breweries.

2.7.2 Historic Resources in the Project Vicinity

Numerous properties and districts included in the State and National Registers of Historic Places are located within the Project's vicinity. In addition, there are properties within the vicinity that are included in the Massachusetts Historical Commission's Inventory of Historic and Archaeological Assets of the Commonwealth (the Inventory). The following includes descriptions of the State and National Register-listed properties and districts, and properties included in the Inventory, within a quarter mile of the Project site.

2.7.2.1 Properties listed in the State and National Registers of Historic Places

Greek Orthodox Cathedral of New England, 520 Parker Street

The Greek Orthodox Cathedral of New England was built between 1922 and 1924 in the Classical Revival style. Dominated by a massive dome, the buff brick, limestone, concrete and steel building features a projecting center pavilion with a pedimented porch supported by Ionic columns and pilasters. Designed by Worcester architect Hachason S. Demorgian, with Ralph Adams Cram as consultant for the interior design, the Greek Orthodox Cathedral of New England played a significant role in the life of the church in New England and beyond, initiating the unification of the Greek Church in America. The Cathedral was individually listed in the National Register in 1988.

Mission Church Complex

The Mission Church Complex is a group of six buildings including the Basilica of Our Lady of Perpetual Help commonly known as Mission Church. Constructed between 1878 and 1910, the complex includes the Basilica, a rectory, convent, two schools, and a men's club.

The Basilica was designed by the New York City based architectural firm of Schickel & Ditmars. The two towers were added in 1910. Constructed on Roxbury puddingstone and trimmed with Quincy granite, the large Romanesque Revival Basilica has a main façade with a blind arcade, large rose window, tripartite entrance set in round arches. The Mission Church Complex was designated a Boston City Landmark in August 2004.

Roxbury Highlands Historic District

The Roxbury Highlands Historic District is bounded by Roxbury Street, Anita Terrace, Centre, Highland, Marcella and Washington Streets, Guild Row and New Dudley Street. Occupying an area of approximately 170 acres, the district rises above the lowlands of Boston and Back Bay and the flats of northern Roxbury. The district is significant for its associations with the Revolutionary War, housing Continental Army defenses in the Siege of Boston at the Roxbury High Fort, now Highland Park. The area is further significant for its development as a residential community in the late 19th century, associated with Boston's streetcar suburbs, as well as for its cross-section of late 18th, 19th and early 20th century building types and styles. The historic district was listed in the National Register in 1989.

2.7.2.2 Properties included in the Inventory

Parker Hill / Mission Hill North Slope District

The Parker Hill / Mission Hill North Slope District consists of mostly residential structures dating from 1845-1910, which employ a variety of vernacular architectural styles and building materials. Among the housing types are modest worker's cottages, larger single family and double family homes, bow and octagonal front row houses, triple-deckers, and apartment buildings. The area also has notable religious structures executed in the Italianate, Gothic, and Victorian Gothic styles, among others employing wood, brick, and stone materials.

Jeremiah S. Healy Three-Family House, 15 Carmel Street

The Jeremiah S. Healy Three-Family House is a red brick building with white stone trim built in 1914. Executed in the Georgian Revival style, the primary façade is characterized by a narrow arched main entrance with a Gibbs-inspired surround. Adjacent to the entrance is a three-story octagonal bay. Designed by the prolific late 19th century architect Samuel J. Rantin, the building's first owner was Jeremiah S. Healy, a police officer employed at Station 10 in Roxbury.

Tremont Street District, 1500-1542 Tremont Street

The Tremont Street District consists of a series of four buildings from 1508-1542 Tremont Street, representing one of the few remaining intact late 19th and early 20th century streetscapes on Tremont Street. The C.A. Russell designed commercial and residential block at 1508-1518 Tremont Street at the corner of Burney Street was constructed in 1897. The Queen Anne, Georgian Revival three story orange brick building stands out with white stone trim. The neighboring S.J. Rantin and Son designed commercial and residential block at 1520-1526 Tremont Street was constructed one year later in 1898. The buff brick building retains original fluted Corinthian pilasters and metal oriels. S.J. Rantin is also attributed to 1528-1530 Tremont Street, also a Queen Anne and Georgian Revival commercial and residential building. Constructed in 1912 the building retains similar details as its neighbor. The building at 1536-1542 Tremont Street is an eclectic Queen Anne commercial and residential block constructed in 1899 and designed by architect Robert A. Watson. The streetscape maintains the traditional streetcar commercial/ residential feel and association of its day.

Boston Public Library – Mission Hill Branch, 1497 Tremont Street

The Parker Hill Branch of the Boston Public Library was completed in 1931 at the height of the Great Depression from designs provided by the nationally renowned Boston-based architecture firm of Cram and Ferguson. Constructed in the Jacobethan style employing stone and brick, the building features fluted pilasters flanking the arched main entrance on Tremont Street; multi-pane windows set high on the façade are trimmed with white stone.

Cook – Hanley and Casey Brewery Stable, 105 Ward Street

The utilitarian Cook – Hanley and Casey Brewery Stable was built in ca. 1890 and features minimal ornamentation. The Ward Street façade has segmental arched openings with brick infill and a corbelled brick cornice crowns the roofline. Windows are restricted to the second story and feature segmental arched openings. Considered a rare example of a late 19th century brewery stable Boston, the building survived in an area of early-to-mid 20th century institutional buildings and later public housing developments.

Joseph Green Three-Family House, 7 Vancouver Street

The Joseph Green Three-Family House was built in 1900 by James J.H. Parker. Designed in the Renaissance Revival style, the row house features a rusticated concrete base with the main entrance framed by pilasters and topped by a false metal balcony. Brick work is laid in a Flemish bond pattern.

Huntington Avenue District #5 Fire Station, 560 Huntington Avenue

The red brick Georgian Revival style Huntington Avenue District #5 Fire Station was designed by Krokyn, Brown and Rosenstein in 1933. The primary façade features three garage door bays enframed by white cast stone moldings with keystones. Four Doric pilasters span the second and third floors, supporting the entablature which bears the inscription “City of Boston Fire Department.”

Wentworth Institute Power House, 550 Huntington Avenue

The red brick Power House was built in 1910. Designed in the Georgian Revival style by the Boston architectural firm of Kilham and Hopkins, the building features a five-bay main façade with a center entrance, arched openings, white limestone sills and prominent keystones. Today the Power House houses Wentworth’s electrical generating facility.

Williston & Wentworth Hall, Wentworth, 550 Huntington Avenue

Encompassing Williston Hall, Wentworth Hall and Dobbs Hall, the prominently situated group of U-shaped tapestry brick and Classical Revival style buildings were constructed between 1910 and 1916 by the Boston architectural firm of Kilham and Hopkins.

Watson Hall, Wentworth, 550 Huntington Avenue

Watson Hall is a Georgian Revival style college auditorium building. Designed by Kilham, Hopkins and Greely in 1927, the buff brick building features a three-bay main façade with a projecting, pedimented center pavilion of rusticated brick, a central pedimented entrance and tall multi-paned windows with limestone surrounds. The building was named in honor of Wentworth’s first treasurer, Paul Barron Watson, from 1904 to 1948.

Ira Allen Public School, 540 Parker Street

The Ira Allen Public School was built in 1901 by Wilson and Webber. Considered a fine example of Renaissance Revival Boston public school architecture, the red brick building features entrances at either end of the primary façade set within console keystone arches. Brick work quoins accent corners and windows feature cast stone sills with wedge-shaped lintels. The building was acquired by Wentworth in 1980 and today houses the Center for Science and Biomedical Engineering.

Boston Trade School, 550 Parker Street

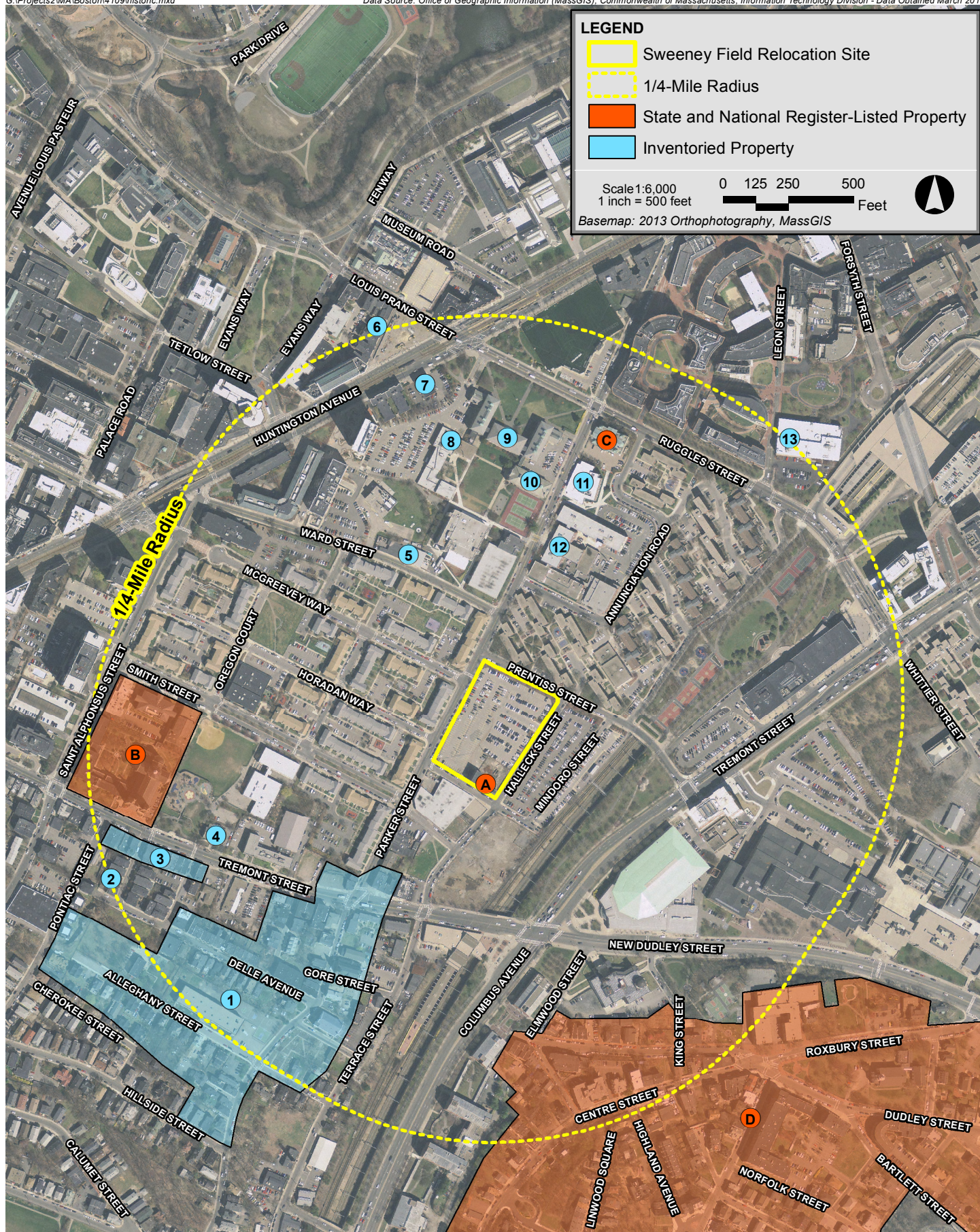
The three-story Boston Trade School was built in 1917 by Boston-based architect James E. McLaughlin. Exhibiting restrained notes of the Jacobethan style, the red brick building features an E-shaped plan. The primary façade along Parker Street has a projecting cast stone center pavilion with Gothic entrance surrounds. A cast stone belt course separates the basement from the first story and the windows feature cast stone sills.

The School was originally organized into trade departments that included auto and airplane mechanics, electrical work, metal and wood working and printing. The Trade School closed in 1980 and was acquired by the Wentworth for the Architecture, Civil Engineering, Construction Management, Interior Design and Facilities Management programs.

Ryder Hall (United Drug Co. – Dept. of Research and Technology), 11 Leon Street

Ryder Hall was created in 1976 when three existing buildings at 11 Leon, 15 Leon and 145-149 Forsyth Streets were combined for warehouse, office and light manufacturing uses. The current combined structure rises three stories from a concrete foundation to a flat roof. The building now presents a unified appearance with red brick walls, cast stone window sills and lintels and a parapet. Built in 1913, the present Ryder Hall was built to house research and development laboratories.

Table 2.7-1 lists the historic resources within a one-quarter mile radius of the Project site; the locations of these resources are depicted on Figure 2.7-1.



Wentworth Institute of Technology - Sweeney Field Relocation Boston, Massachusetts

Table 2.7-1: Historic Resources

No.	State and National Register-Listed Properties	Address
A	Vienna Brewery Complex*	133 Halleck St. and 37 Station St.
B	Mission Church Complex*	1525 and 1545 Tremont Street, 100 St. Alphonsus Street, and 80, 90 and 100 Smith Street
C	Greek Orthodox Cathedral of New England	520 Parker Street
D	Roxbury Highlands Historic District	Roxbury Street, Anita Terrace, Centre, Highland, Marcella and Washington Streets, Guild Row and New Dudley Street
Properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth		
1	Parker Hill / Mission Hill North Slope District	Parker, Tremont, Burney, Alleghany, and Hillside Streets, Delle and Folsom Avenues, and Terrace Place/Terrace Street
2	Jeremiah S. Healy Three-Family House	15 Carmel Street
3	Tremont Street District	1500 to 1542 Tremont Street
4	Boston Public Library – Mission Hill Branch	1497 Tremont Street
5	Cook – Hanley and Casey Brewery Stable	105 Ward Street
6	Joseph Green Three-Family House	7 Vancouver Street
7	Huntington Avenue District #5 Fire Station	560 Huntington Avenue
8	Wentworth Institute Power House	550 Huntington Avenue
9	Williston & Wentworth Hall	550 Huntington Avenue
10	Watson Hall	550 Huntington Avenue
11	Ira Allen Public School	540 Parker Street
12	Boston Trade School	550 Parker Street
13	Ryder Hall (United Drug Co. – Dept. of Research and Technology)	11 Leon Street

* City of Boston landmark

2.7.3 Impacts to Historic Resources

2.7.3.1 Existing Buildings on the Project Site

The Project will include the retention, stabilization and rehabilitation of Vienna Brewery Brew House and Office Building. The two vacant buildings currently have their window and door openings boarded over and exhibit significant masonry deterioration and water infiltration. Proposed stabilization and rehabilitation efforts will include masonry repointing and repairs, roof repairs and/or replacement and the installation of new architecturally appropriate windows and doors. While new uses have yet to be identified for the two buildings, the goal is to stabilize the structures and make the necessary repairs and secure the exteriors for future re-use.

The Project will include the removal of the remaining remnant of the Keg Shed wall. Despite efforts to stabilize the remnant wall following the removal of the Keg Shed, the masonry wall exhibits extensive deterioration in the form of structural cracks and deteriorated and missing masonry components. The location of the wall is in conflict with the Project's proposed foundation structure; thereby, further necessitating its removal.

As discussed below, proposed repairs and stabilization efforts of the Brew House and Office Building, as well as the removal of the Keg Shed wall, will be submitted for review and approval by the Boston Landmarks Commission (BLC).

2.7.3.2 Design and Visual Impacts

The Project has been designed to take advantage of the site's natural topography in a manner that minimizes its visual impacts to the historic resources on the site. Specifically, the Project will utilize the Parker Street slope to locate the parking component of the Project into the hillside and locate the playing field at grade on the southern end of the site. In addition, the support buildings necessary for the functioning of the field, such as team rooms, equipment storage and support utilities will be massed at the southern end of the site adjacent to the existing historic buildings in an effort to create a continuous streetscape along Station Street. The new structures, massed into two structures, will feature facades incorporating brick or brick inlaid precast panels consistent in character, while not mimicking the existing historic masonry buildings.

Because the landmark designation for the Vienna Brewery buildings extends beyond the building footprints, the new construction components of the Project will also be subject to design review by the BLC.

2.7.4 Archaeological Resources

The Project site consists of a previously developed urban parcel. No archaeological resources have been identified on the Project site. Due to previous development activities and disturbances, including the construction of the Jutz and Vienna breweries and the current surface parking lot, the Project site is unlikely to contain significant archaeological

resources. No impacts to archaeological resources are anticipated as a result of the Project.

2.7.5 Status of Project Reviews with Historical Agencies

2.7.5.1 Boston Landmarks Commission Review

As noted above, the Vienna Brewery Complex was designated a City of Boston landmark in 1999. As such, the stabilization and rehabilitation of the Brew House and Office Building, as well as the removal of the remnant Keg Shed wall will be subject to review and approval by the BLC. Because the landmark designation extends beyond the footprints of the historic buildings, the new construction components of the Proposed Project will also be subject to design review by the BLC.

In the early stages of the Project's development, members of the Project team met with BLC staff to review the conceptual designs and discuss the anticipated scope of work for the historic buildings. A formal Design Review application has been filed with the BLC for review of the Proposed Project.

2.8 Infrastructure Systems

2.8.1 Introduction

The Project Site for the relocated Sweeney Field is located in the Mission Hill neighborhood of Boston and is currently a parking lot bounded by Parker Street, Station Street, Halleck Street and Prentiss Street in the Boston neighborhood of Mission Hill. The proposed entrance to the field will be 600 Parker Street and the proposed entrance to the parking garage will be 100 Halleck Street.

The Proposed Project involves the construction of an artificial turf athletic field with an at-grading parking garage structure beneath. New buildings included as part of the redevelopment project include an accessory athletic facility building equipped with team locker rooms and storage for the athletic equipment as well as mechanical and electrical rooms. A Viewing Stand Structure is also included to house spectator toilet rooms and the proposed elevator. The Project Site has adequate infrastructure capacity to serve this proposed redevelopment. The Proponent has begun meetings with BWSC to coordinate any potential future BWSC projects to maximize resources and reduce construction impacts. The Proponent will file a General Service Application with BWSC that will provide detail on proposed water, sewer, and stormwater conditions.

The following sections describe the existing water, sanitary sewer, and drainage systems and energy needs in the Project area.

2.8.2 Water System

2.8.2.1 Water Infrastructure

Water for the Proposed Project will be provided by the Boston Water and Sewer Commission (BWSC). There are five water systems within the City of Boston, and these provide service to portions of the City based on ground surface elevation. The five systems are: Southern Low (commonly known as low service), Southern High (commonly known as high service), Southern Extra High, Northern Low, and Northern High.

The water mains located within Parker, Prentiss, Halleck and Station Street are owned and operated by BWSC and are located as follows (see Figure 2.8-1 - Existing Water System):

- ◆ Parker Street - 48" Water Main (1940) and a 12" Ductile Iron water main (1981) with 2 hydrants branching into the proposed site.
- ◆ Prentiss Street - 48" Cast Iron Water Main (1917, rehabilitated in 1982) and a 12" Ductile Iron water main (2007) with 1 hydrant branching into the proposed site.
- ◆ Halleck Street - 10" Cast Iron Water Main (1914) with 2 hydrants branching

away from the proposed site.

- ◆ Station Street - 12" Cast Iron Water Main (1914) with 1 hydrant branching to the proposed site.

2.8.2.2 Water Consumption

The water consumption on the site is expected to be approximately 4,500 gallons per day (gpd), based on the Project's estimated sewage generation. A conservative factor of 1.2 was applied to the estimated average daily wastewater flows. The estimated net new water usage is 4,500 gallons per day when the field is in use between March and November.

The water service to the Proposed Project will be provided through new connections into the existing water main under Station Street. The size of the proposed service and location of the connection to the existing mains will be determined in consultation with BWSC.

Efforts to reduce water consumption will be made. Aeration fixtures will be installed and appliances will be chosen for water conservation qualities. In public areas, sensor operated faucets and toilets will be installed.

A double check valve assembly backflow preventer will also be required. New water service connections to the BWSC water mains will be installed in accordance with the latest BWSC, City of Boston, state, and federal codes and standards. Backflow preventers will be installed at both domestic and fire protection service connections. New domestic water meters will be installed with Meter Transmitter Units (MTU's) as part of the BWSC's Automatic Meter Reading (AMR) system.

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

2.8.2.3 Proposed Impacts

Water capacity problems are not anticipated within the BWSC water system as a result of the Proposed Project's construction.

2.8.3 Sanitary Sewage

2.8.3.1 Sewer Infrastructure

The existing BWSC sewer infrastructure exists of the following (see Figure 2.8-2 - Existing Sanitary System):

- ◆ Prentiss Street - 15" sewer that decreases to a 12" sewer heading eastbound.
- ◆ Halleck Street - 15" combined sewer flowing north towards sewer in the intersection of Prentiss Street.
- ◆ Station Street - 12" sewer flowing eastbound and discharging to the 15" combined sewer on Halleck Street.

2.8.3.2 Wastewater Generation

Estimated sewer flow rates for the Proposed Project are based on the design flow standards of the Massachusetts Department of Environmental Protection (DEP) Title V 310 CMR 15.203: System Sewage Flow Design Criteria. The existing site is a parking lot with no sanitary sewage.

The proposed redevelopment will consist of a NCAA athletic field approximately 99,666 sf for soccer, softball and lacrosse. Ancillary structures for the athletic field will be an athletic facility building as well as a Viewing Stand structure, which will house spectator restroom facilities and an elevator. The estimated daily sewage flows for the proposed redevelopment is 3,500 gpd, as shown in Table 2.5-2. The total daily discharge for the Proposed Project is greater than the existing sewage discharge.

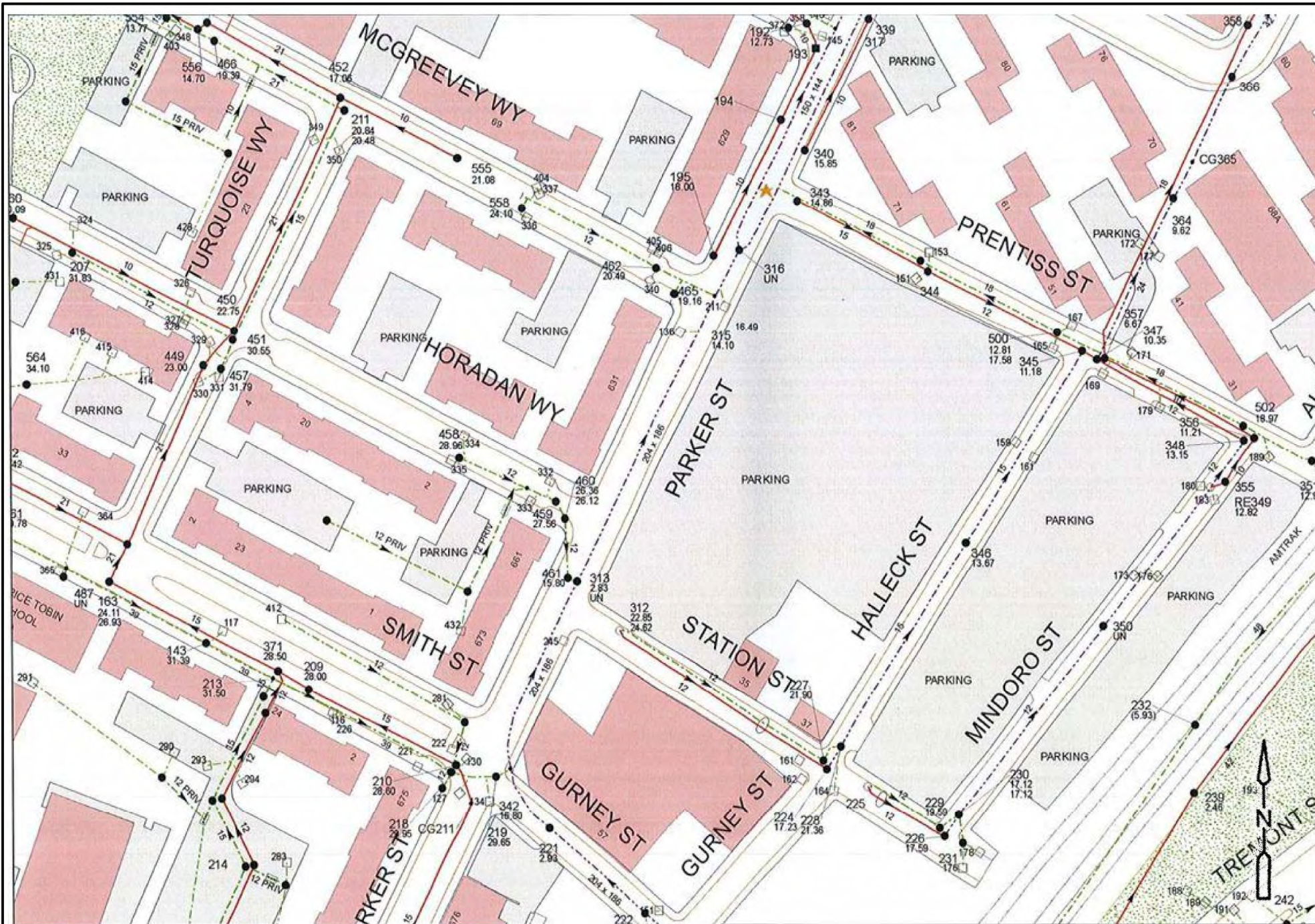


Table 2.8-1 Existing Estimated Daily Sewage Discharges

Existing Use	Unit	Unit Flow	Sewage Flow (gpd)
Parking Lot	-	0	0
Total Existing Flow:			0

Table 2.8-2 Proposed Estimated Daily Sewage Discharges

Proposed Use	Unit (persons)	Unit Flow (GPD/Person)	Sewage Flow (gpd)
Team Rooms with Toilets and Showers (Gymnasium, Per Participant)	100	25	2,500
Spectator Toilet Rooms (Gymnasium, Per Spectator)	300	3	900
Lower Level Parking Drainage (248 CMR10.09 (b) 1, requires parking garage lower levels to be connected to municipal sanitary sewer)		100 GPD	100
Total Proposed Flow:			3,500
Proposed Increase in Flow:			3,500

2.8.3.3 Proposed Conditions

The proposed sewer service for the proposed development will be determined in consultation with BWSC. Preliminary analysis of the existing BWSC infrastructure indicates that the existing system is adequate for this development.

Improvements and building connections to BWSC infrastructure will be reviewed as part of the BWSC's site plan review process for the Proposed Project. This process will include a comprehensive design review of the proposed service connections, an

assessment of Project demands and system capacity, and the establishment of service accounts.

2.8.4 Stormwater

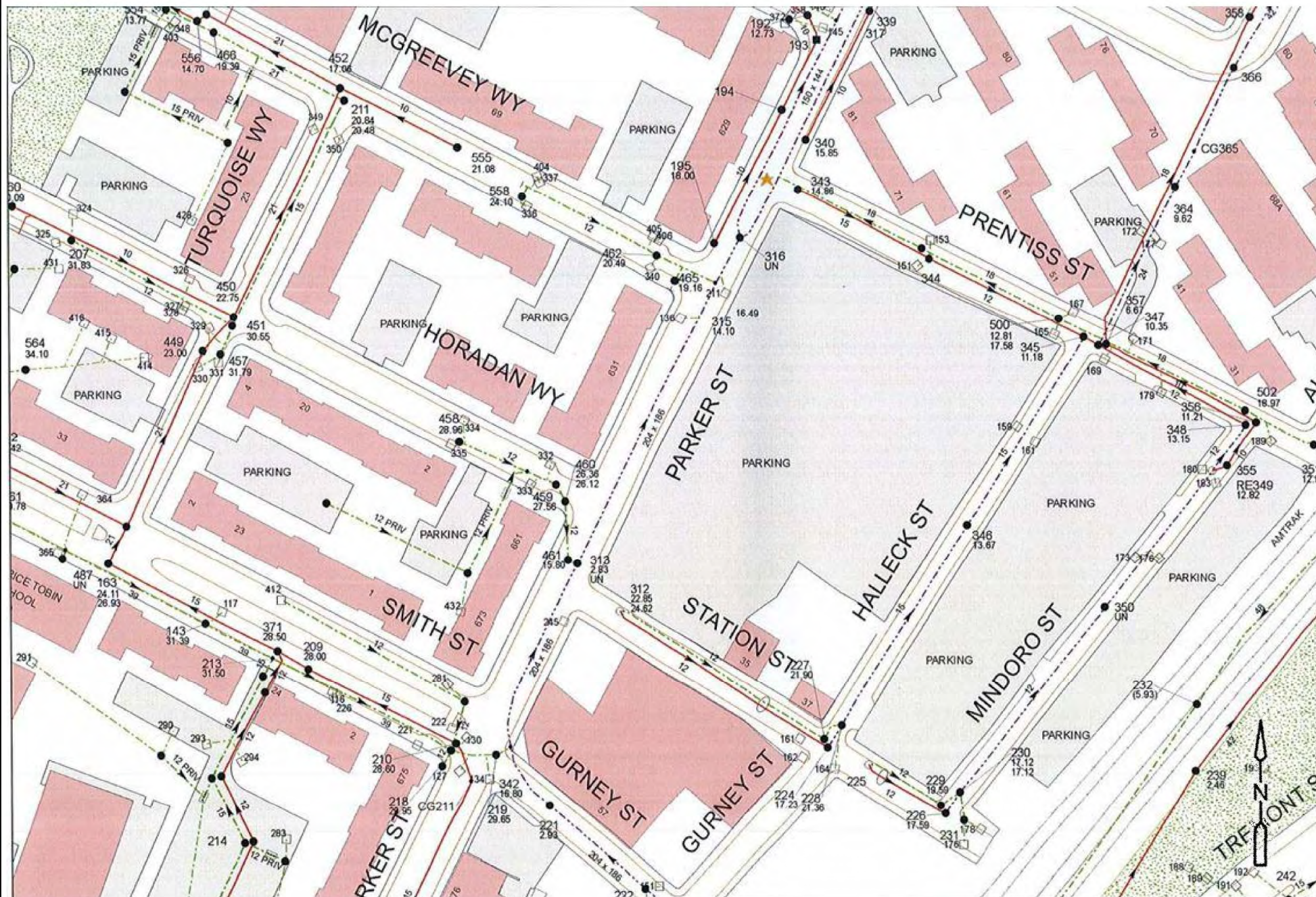
Stormwater management controls for the Proposed Project will be designed to be in compliance with both the BWSC standards, which are administered through submission of the Site Plan Application to BWSC, and the MassDEP's Stormwater Management Standards, which are administered through submission of a Notice of Intent to the Boston Conservation Commission. The intent of the BWSC standards is to reduce phosphorus and bacteria loads to the Charles River in accordance with Boston's anticipated EPA National Pollutant Discharge Elimination System (NPDES) permit.

Stormwater runoff from the Project Site is tributary to the Charles River; thus, it will be subject to Total Maximum Daily Load (TMDL) requirements for phosphorous and bacteria under Boston's EPA NPDES permit. BWSC expects that, in the long run, the City will be required to reduce phosphorous to the Charles River by 65 percent. Accordingly, BWSC now requires treatment of one inch of runoff from the proposed impervious area of a development to meet EPA NPDES permit requirements. For this project, this reduction in phosphorus will be met by treating the inch of runoff from the artificial turf field and any other impervious areas from the site through subsurface detention system. The development of the project site is also an opportunity to reduce peak rates and volumes of runoff to BWSC drainage systems.

2.8.4.1 Existing Drainage Conditions

The existing site is 133,196 sf in area of which approximately 125,000 sf is impervious. Stormwater runoff generated from the parking lot is captured in an on-site catch basin system that drains to Prentiss Street. Prentiss Street storm drainage system is owned and operated by BWSC as follows (see Figure 2.8-3 - Existing Drain System):

- ◆ Parker Street - 204" x 186" drain (Stoney Brook Conduit) and splits to a 150" x 144" line.
- ◆ Prentiss Street - 18" drain heading westbound that discharges into the Stony Brook Conduit.
- ◆ Halleck Street - 15" combined sewer flowing north towards sewer in the intersection of Prentiss Street.
- ◆ Station Street - 12" drain flowing eastbound discharging to Halleck Street combined sewer.



2.8.4.2 Proposed Drainage Conditions

Improvements and connections to BWSC storm drain infrastructure will be reviewed as part of the BWSC's site plan review process. The process will include a comprehensive design review of the proposed service connections, and assessment of project demands and system capacity.

Since all stormwater runoff from the artificial turf field will be collected, it will be viewed as an impervious surface for design purposes. The Proposed Project will result in a decrease in impervious area by approximately 6,600 SF. As a result, there will be a reduction in the peak flow rates and runoff volumes of stormwater discharge from the Project Site. Stormwater runoff will not be retained in the artificial turf field; stormwater runoff from the artificial turf field will be collected in the field underdrain system and directed down through the structure into the subsurface detention system underneath the at-grade parking slab. Water collected in this system will infiltrate into the subsurface to meet the BWSC standards, with the overflow being conveyed to the BWSC drainage system in Prentiss Street.

2.8.4.3 Water Quality Impact

The Project Site is not located near any water bodies. The proposed stormwater management systems are designed to provide water quality treatment. As a result no new untreated stormwater will be discharged to waters of the Commonwealth as a result of the Proposed Project.

Any necessary dewatering will be conducted in accordance with applicable MWRA and/or BWSC discharge permits. Once construction is complete, the Proposed Project will be in compliance with current local and state stormwater management policies, as described below.

2.8.4.4 MassDEP Stormwater Management Policy Standards

Under the Massachusetts Stormwater Management Standards, the Proposed Project is considered a redevelopment project because there is no increase in impervious area. Hence, stormwater management standards addressing peak flow attenuation, groundwater recharge, and total suspended solids (TSS) removal must be met only to the maximum extent practicable; the remaining standards must be fully met. The following summarizes each of the stormwater standards as it relates to the proposed Project:

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

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

Compliance: The Proposed Project will meet the requirements of this standard as there will be no new untreated discharges. Stormwater runoff from the field will be conveyed

to the subsurface detention system, where it will receive treatment prior to discharge to the BWSC drainage system.

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

Compliance: The Proposed Project will meet the requirements of this standard as preliminary modeling indicates that the combination of a reduced impervious area and subsurface storage system results in a reduction of peak rates for the 2-, 10-, and 100-year storm events.

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

Compliance: The Proposed Project will fully meet the requirements this standard as the subsurface storage system will be designed to infiltrate one inch of runoff from impervious surfaces and the artificial turf field.

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

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

Compliance: The Proposed Project will meet the requirements of this standard as water quality treatment will be achieved by conveying stormwater runoff through a particle

separator prior to discharge to the subsurface detention system, where the first inch of runoff from impervious areas and the artificial turf field will be infiltrated.

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

Compliance: This standard is not applicable to this project.

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

Compliance: This standard is not applicable to this project.

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

Compliance: This standard is applicable as the Proposed Project is considered a redevelopment project because it is an existing developed site that will have a reduction in impervious area under redeveloped conditions. All of the requirements of this standard have been applied and will be met including improvement of existing conditions.

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

Compliance: The Proposed Project will be subject to a NPDES General Construction Permit, which will be obtained prior to construction. A Stormwater Pollution Prevention Plan (SWPPP) will be prepared and followed during construction.

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

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

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

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

2.8.5 Energy Needs

The Proposed Team Rooms building will be heated with gas. The gas will be routed from Station Street. Fractional horsepower fans will be used to ventilate the restrooms, janitor's closets, shower rooms, field storage and electrical rooms. Split system air conditioning units will be provided for the team room(s), referee room and lobby. Domestic hot water will be generated by 95% + efficient direct vent/ sealed combustion water heaters.

The proposed Viewing Stand building will be heated with electricity. Fractional horsepower fans will be used to ventilate the toilets, utility rooms, electrical rooms, storage rooms and mechanical rooms. Split system air conditioning units will be provided for the Viewing Stand. Domestic hot water will be generated by instantaneous electric hot water heaters at the two (2) lavatories in the toilet rooms.

The Proposed Project will be serviced by underground electric primary to a new pad-mounted utility transformer on Parker Street. Underground secondary service will originate from the new utility transformer to a new service-entrance rated distribution

panel. The estimated electric service size for the new facility is 400amps at 480Y/277 Volt, 3-Phase, 4-Wire.

The Proposed Project will be serviced by underground communication duct bank. One (1) 4" c telephone and one (1) 4" c CATV services will be extended from the nearest utility manhole and installed in the duct bank and will terminate in the main electric room. All proposed connections will be coordinated with the utility provider.

2.8.6 Protection Proposed During Construction

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

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

3.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES / PUBLIC REVIEW PROCESS

3.1 Community Outreach

As a longstanding member of the Mission Hill community, Wentworth is committed to effective community outreach and has already begun to engage the surrounding community to ensure public input on the Proposed Project. Wentworth has held an initial meeting of the BRA-convened Wentworth Task Force and also met with individual surrounding stakeholders. Wentworth will continue this pattern of outreach and communication with nearby residential neighbors, local elected officials, and other stakeholders throughout the public review process for the Proposed Project.

3.2 Architectural Access Board Requirements

The Proposed Project will comply with the requirements of the Massachusetts Architectural Access Board (MAAB) and will be designed to comply with the standards of the Americans with Disabilities Act.

3.3 Massachusetts Environmental Policy Act (MEPA)

The Proposed Project will not exceed any review thresholds requiring environmental impact review by the Massachusetts Environmental Policy Act (MEPA) Office of the Massachusetts Executive Office of Environmental Affairs.

3.4 Massachusetts Historical Commission

The Proposed Project does not require any state and/or federal funding, licensing, permitting and/or approvals, therefore the Project is not subject to review by the Massachusetts Historical Commission (MHC) under State Register or Section 106 Review.

3.5 Other Permits and Approvals

Boston Civic Design Commission

The Proposed Project will comply with the applicable provisions of Article 28 of the Boston Zoning Code. The Proposed Project has been submitted to the Boston Civic Design Commission (BCDC) for review and is currently undergoing review by the BCDC.

Boston Landmarks Commission

The Proposed Project is subject to Design Review by the Boston Landmarks Commission as a result of the Brewery Buildings' designation as Boston Landmarks. A Design Review application has been submitted to the Boston Landmarks Commission.

Other Permits

Section 1.7, Table 1-1, provides a list of agencies from which permits and approvals for the Proposed Project may be sought.

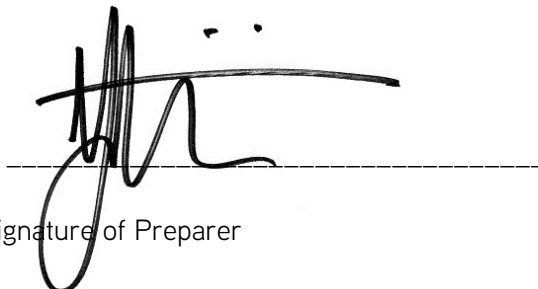
PROJECT CERTIFICATION

This form has been submitted to the Boston Redevelopment Authority as required by the Boston Zoning Code, Article 80.

A blue ink signature of David Wahlstrom, written in a cursive style, positioned above a horizontal line.

Signature of Proponent's Representative

David Wahlstrom
Wentworth Institute of Technology
550 Huntington Avenue
Boston, MA 02115

A black ink signature of Yanni Tsipis, written in a cursive style, positioned above a horizontal line.

Signature of Preparer

Yanni Tsipis
Colliers International
160 Federal Street
Boston, MA 02110

November 12, 2014
Date

November 12, 2014
Date



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