

TREMONT CROSSING

WHERE COMMERCE AND CULTURE CONNECT



Draft Project Impact Report

Submitted to:

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1.0 SUMMARY

1.1 Project Identification

Project Name: Tremont Crossing:
Where Commerce and Culture Connect

Location: The Project is located at the southeast corner of Tremont Street and Whittier Street in Roxbury, Massachusetts.

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1.2 Project Summary

1.2.1 Project Site

The Tremont Crossing development (the “Project”) will be located at Parcel P-3 (consisting of Parcel P-3 and a portion of Parcel P3-h in the Campus High School Urban Renewal Area) in Boston’s Roxbury neighborhood. The Project Site consists of approximately 7.25 acres of land area and is bounded by Tremont Street to the northwest, Whittier Street to the northeast, Downing Street to the southeast, the Whittier Street Health Center to the southwest, and the Madison Park Technical Vocational High School and the John D. O’Byrant School of Mathematics and Science to the southwest (the “Project Site”). The Figures 1-1 and 1-2 set forth the location of the Project Site.

Figure 1-1: Arial Locus Map



Figure 1-2: Arial Locus Map



1.2.2 Proposed Development

The Project's mix of uses will include approximately 404,475 square feet of larger retail (which will consist of a mix of large-format retail, medium sized, "junior-anchors" and entertainment and recreational uses), 33,800 square feet of smaller shops and boutiques fronting along Tremont Street, 233,784 square feet of office space, 300 units of multifamily residential (approximately 297,886 square feet) made up of studios, one (1) bedroom and two (2) bedroom rental apartments (of which the requisite affordable units will be provided), a 200 room, "extended-stay" hotel, and 37,520 square feet of cultural facilities that will primarily house a 21,000 square foot new museum for the National Center for Afro-American Artists ("NCAAA") and other artist studio space. The development will also include two public plazas, including a large, central atrium and an adjacent, multi-level parking structure to accommodate the requirements of its tenants. As currently contemplated, the proposed parking structure would consist of approximately 1,502 spaces which include a specific number of parking spaces for the Whittier Street Health Center and the Boston Public Schools.

1.2.3 Design Objectives

The Project, which is being jointly designed by Cambridge Seven Associates and Stull and Lee Incorporated, seeks to harmoniously integrate its mix of uses in a highly-functional, urban context creating a vibrant, pedestrian-friendly

environment that is conducive to the success of its commercial and cultural tenants, as well as enhancing the quality of life in the neighborhood of which it will become a part. The large-format retail portion of the Project will be a departure from the typical, sprawling nature of this use by being designed in a vertical context that stacks large retail footprints over three levels. The museum and cultural space will be at the center of the development by fronting a large public plaza to be adorned with sculptures and outdoor seating space. The office tower will rise above this cultural facility, but maintain its pedestrian access on Tremont Street and offer great, unobstructed views of the City. Additionally, the multifamily, residential tower will sit atop the small retail tenants such as restaurants and service stores whose frontage will be along Tremont Street. The placement of the residential and small retail along Tremont Street will create a sense of transparency and light to the Project's massing. Further, a portion of the residential tower will wrap around to the southeast of the Project Site along a significant portion of Whittier Street. As such, the Project will serve to enhance the residential character of Whittier Street and more seamlessly integrate into the urban density of which it is a part. Additionally, rising above the portion of the residential tower which fronts Tremont Street will be a 10 story, extended stay hotel. The multi-level parking garage, which will be accessible to all of the Project uses, will be situated toward the rear of the Site and thus be hidden from view. The Proponent believes that this design concept will create a lively, user-friendly environment not usually found in large commercial developments.

The Proponent is designing all aspects of the Project with a sense of "transparency" that establishes a connectivity with pedestrians and with the wider, surrounding public realm. Creating a sense of light and openness is a goal incorporated into the design of all of the Project's mix of uses, including the large-format retail.

Further, the Proponent recognizes that due to the Project's density, geographic location and importance to the community that the architecture is of paramount importance. Contributing to that end, are the design elements of the façade, building orientation, urban design and streetscape.

Figure 1-3: Tremont Crossing Project- Overhead View Looking Southwest



Figure 1-4: Project Rendering Looking Southwest at the Corner of Tremont Street and Whittier Street



Figure 1-5: Central Plaza- View from Tremont Street



Figure 1-6: Residential and Hotel Lobbies at Corner of Tremont Street and Whittier Street



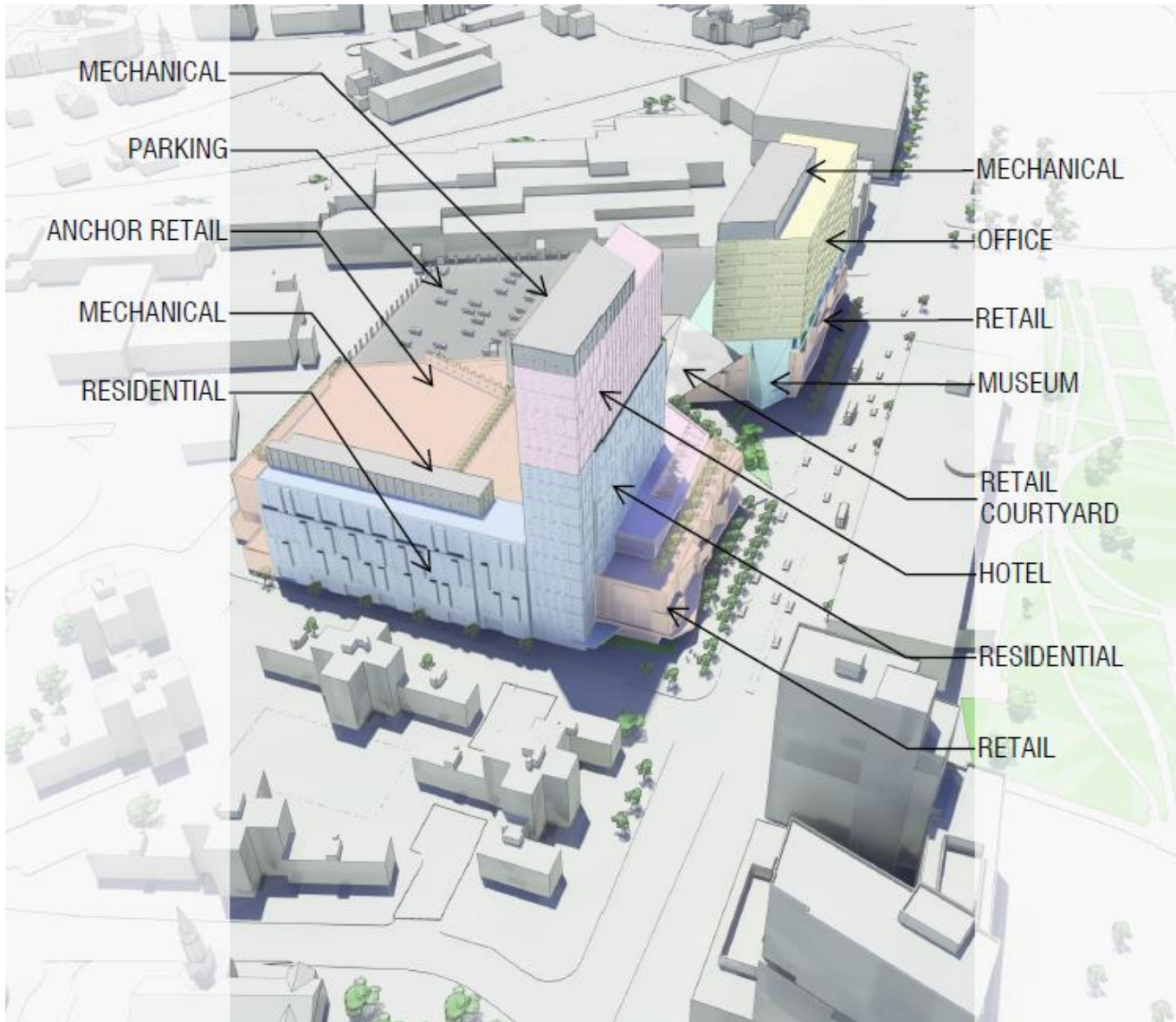
Figure 1-7: Tremont Streetscape Looking Southwest



Figure 1-8: View of Residential / Hotel Tower- Looking South down Ruggles Street



Figure 1-9: Project Uses



1.2.4 Project Proponent

The Project Proponent, P-3 Partners LLC (the “Proponent”), is a collaboration between Elma Lewis Partners, LLC (“ELP”) and Feldco Boston, LLC an affiliate of Feldco Development Corp (“Feldco”).

ELP is an entity created by the NCAAA for the purpose of this development effort. The mission of the NCAAA, a 501 (c) (3) organization, is to preserve and foster the cultural arts heritage of African-Americans worldwide through arts teaching, and the presentation of professional works in all fine arts disciplines. For more than half a century, the NCAAA has striven towards this bold and expansive vision, and remains the largest independent black cultural arts institution in New England. In furtherance of this mission, since 1969 the NCAAA has operated the Museum for the National Center of Afro-American Artists in Roxbury, Massachusetts, which has been its principal operating activity. The Museum presents a wide range of historical and contemporary exhibitions in many media, including painting, sculpture, graphics, photography and decorative arts. It has presented hundreds of exhibitions, including many that it co-presented with the Museum of Fine Arts, an institution with which it has enjoyed a long-standing collaboration.

Feldco has been active in developing, owning and managing realty investments for over forty-two years. Starting in July 1969 on Long Island’s North Shore, the Company has extensive experience in all property types.

In that time frame, Feldco has developed or renovated through acquisition over 100 major shopping centers, aggregating millions of square feet of retail space throughout New York, New Jersey, the six New England states and as far away as Ohio, Michigan, Wisconsin, Illinois, Indiana, Texas and Florida. In the particular niche of supermarket-anchored community centers, it is one of the most respected developers in the Northeast.

Over those years, the Company has also developed many office buildings from New York to Florida for such tenants as the N.Y. Telephone Co., AT&T, the Veteran’s Administration, N.Y. Life Insurance Company and many other major corporations.

In the last decade, Feldco has embarked on the creation of large-scale, urban, mixed-use developments, unifying its years of experience in the retail, office and residential sectors. In this regard, it is widely recognized for its ability to turn challenging locations into popular destinations.

As a family-owned and operated business, Feldco is a hands-on development firm whose principals personally participate in every project. With each one, the Company “builds to own” and forges long-term relationships with communities by including them in the development process and then, upon completion, sponsoring regular events or charitable causes in the spirit of creating a richer environment for its neighbors. Feldco works closely with local leaders to ensure that all projects foster both construction and full/part time jobs for local residents, and designs them for sustainability to achieve healthier, more responsible environments.

1.2.5 Public Review

The Project will exceed 50,000 square feet of gross floor area which is the threshold for developments being subject to Large Project Review under Article 80 of the Boston Zoning Code (the “Code”). As such, the Proponent submitted a Project Notification Form (“PNF”) to the Boston Redevelopment Authority on April 17, 2012. This Draft Project Impact Report (“DPIR”) has been submitted to further that review, and the Proponent expects that it will facilitate a comprehensive, public process.

1.2.6 Public Benefits

Museum/Cultural Facilities

At the “heart” of the Project’s design will be a multi-use cultural center that will primarily consist of the new principal facilities of the Museum of the NCAA (the “Museum”), which currently operates at 300 Walnut Ave in Roxbury, Massachusetts. The new space will greatly enlarge the scope and variety of the Museum’s work, as well as the elegance of presentations and exhibits. The Museum, however, will not just display works of art, but also house educational and performance spaces for the fine and visual arts.

The Museum will continue as a central component of Roxbury’s cultural contribution to the City of Boston. It will serve as the artistic centerpiece of the community, becoming an architectural landmark in the neighborhood and

serving to highlight the important role of the African-American community in the City.

Additionally, the Museum and the adjacent central plaza, which will be adorned with sculptures, park benches and lush landscaping, will command an architectural significance and sense of purpose that will transcend that of a purely commercial project. The Project's tagline, "Where Commerce and Culture Connect", highlights the elevated roll that the Museum will Play in its contribution to the development and underscores the important way in which it will contribute to defining the unique "energy" of the Project and the vital role that the Project will have in the community and within the City at large.

Employment

The Project is estimated to create approximately 1,400 construction jobs and approximately 1,500 permanent jobs. The permanent jobs that will be created will be generated primarily by both the Project's retail and office uses and it is anticipated that they will be split approximately evenly between these uses. The combination of the core office and retail aspects of the development will serve to create a broad mix of jobs for the community with varying skill sets. Many opportunities along the career ladder will be available, from immediate employment needs to long-term job placement, including service industry opportunities in addition to professional-oriented positions that will provide for upward mobility and wealth creation.

Job Training Initiatives / Office of Collaboration and Partnership

A significant factor influencing the original selection of ELP and subsequently the Proponent as Tentative Redeveloper of Parcel P-3 was the continued adherence to Miss Elma Lewis' vision to make the Project Site an engine of broad social change. The Proponent is committed to creating cultural and educational opportunities along with job and career paths that would benefit the whole community and dovetail with the employment needs of potential tenants and/or other institutions and employers. Guiding the formulation of P-3 Partners specific program design and its underlying mission of the development is the belief that through ordinary economic development, significant social and cultural benefits can be achieved.

In order to facilitate the realization of these goals, the Proponent has budgeted for the creation of an Office of Collaboration and Partnership (the "OCP") that

will structure cooperative opportunities between tenants and nearby educational, cultural and medical institutions.

The OCP's near-term goals would be to increase short, intermediate and long-term employment opportunities for individuals and companies in greater Roxbury through programs that match tenant-employee and/or service needs. The OCP may meet this goal by creating career paths, internships, work-study programs and similar vehicles for youth from secondary school upwards, as well as for adults through continuing education. By identifying tenant service needs, the OCP, where feasible, will match them with existing, locally-based business resources. Whereas medical and health-related careers will be the initial focus of the OCP's efforts, the Proponent also anticipates that OCP's efforts will expand over time to address the needs of other industries where it is important to develop human resources in a collaborative fashion.

Over the long term, the OCP hopes to achieve outcomes that reach beyond job placement. The OCP hopes its initiatives will uplift and enhance the entire community by developing an empowered group of residents who have the sustained financial stability, knowledge, relationships, civic support, and commitment to pursue positive changes in the community and the City at large.

Although the aforementioned jobs program currently contemplated by the Proponent is wide ranging, it is anticipated to be weighted more towards opportunities in the fields of healthcare and medicine because of the proximity to the health-related institutions of the Longwood Medical Area (LMA). The emphasis on healthcare and medical careers arise from the recognition that these are expanding fields that will continue to grow in the regional economy, and that the Proponent might play a role in preparing young people and adults for such job opportunities.

In this context, the Proponent hopes to develop collaborative programs between medical and health-related institutions and neighbors, including the Health Careers Academy, John O'Bryant High School for Mathematics and Science, Roxbury Community College, Northeastern University, Whittier Street Health Center and Partners Healthcare. Of particular significance is the manner in which the aforementioned collaborative programs might integrate with the City of Boston's new emphasis on structuring the curriculum of Madison Park High School for Vocational Education to incorporate vocational internships.

Transit Oriented Development

In keeping with the City's objectives of sustainable design and Transit Oriented Development ("TOD"), the Project benefits from its direct proximity to one of the City's busiest transportation hubs. The Project Site is diagonally adjacent to the Ruggles Train Station, which contains an Orange Line subway stop, three Commuter Rail lines (Needham Line, Franklin Line and Providence Line), fourteen bus routes, and is also on the MASCO/LMA shuttle route. Additionally, the Project is within a few minutes walk from both the Northeastern campus and Museum of Fine Arts Green Line MBTA stops.

Due to these multimodal transportation choices that are in direct proximity to the Project Site, it will be able to sustain a development of significant density that would ordinarily be located in a less urban setting where there is less existing traffic and more readily available land. However, as is discussed further in Section 3.9, "Future Build Traffic Conditions", the number of vehicular trips to the Project will be greatly reduced by virtue of the many other transportation choices that are available to its visitors. Many of the attributes of the Tremont Crossing project that are beneficial to the community and the City of Boston, including the aforementioned employment opportunities, job training programs and cultural facilities, are directly related to the Project's size and are only possible as a result of its density. The Proponent believes that it is of great importance that the Project Site's status as a TOD be leveraged in a way to bring the most substantial benefits possible.

Since the Project will draw visitors from all over the City, the Project's direct proximity to mass transit will enable people to easily travel and access the destination without reliance on a motor vehicle.

Additionally, the Project will be located in an area of Boston that is currently underserved by the types of large format retail tenants that will be included in the Project's mix of uses. As such, residents will be less inclined to drive longer distances to patronize these same businesses in other locations once they are open for business at Tremont Crossing.

Furthermore, because of the Project's complementary mix of uses and geographic proximity to the many educational and medical institutions in the area, Tremont Crossing will promote reduced dependency on the automobile and in many cases be conducive to walking as a means of transportation to and from the Project's retail establishments.

With the Project Site across the street from the Southwest Corridor Park, many Bostonians will also be able to visit the Site by bicycle. To promote such a use, the Project will contain approximately 522 bicycle racks, as the Proponent wishes to support alternative means of transportation to offset pollution and traffic congestion.

Improved Street and Pedestrian Environment

With an anticipated 33,800 square feet of small shops, boutiques and restaurants situated along Tremont Street, the Project endeavors to create a vibrant pedestrian experience that will energize the neighborhood and unify it with the activity of Northeastern University and the Longwood Medical Area to the north, the South End to the east and Dudley Square to the southwest.

In addition to the ground-level retail, the Project will include a large public plaza fronting on Tremont Street that will be the center of the development and be adorned with sculptures, park benches and lush landscaping. This outdoor, public space will also be conducive to alfresco dining, art exhibits and community functions when the weather permits. The public plaza will serve as the unifying amenity of the Project, and act as the physical connection of all of the mix of uses by establishing a single, easily-identifiable point of entry for customers and visitors.

Functioning as a vibrant “urban room”, the plaza’s wide mouth at Tremont Street, tapers into the central elements of the project, thereby channeling the pedestrian into the heart of the Project. Visitors will navigate the three floors of retail via a series of escalators and elevators that protrude and zigzag across the vast space, creating an energetic, vibrant dynamic. As visitors traverse the various retail and garage levels, they will be visible to the streetscape below, integrating the ground level and upper level experience into one cohesive environment. The angular, uniquely-shaped plaza will be an architectural feature onto itself besides serving as the hub for all pedestrian activity, wherein those traveling by foot will merge with those traveling by car or bicycle, as all three users navigate into and out of the various stores and buildings.

A smaller plaza will also exist on the southwest corner of Whittier Street and Tremont Street, primarily serving as the entry point for residents of the apartment complex and hotel guests. At this highly-visible corner, the multifamily building will be setback from Tremont Street, creating a

comfortable, open area for the pedestrians accessing these uses, providing them with quieter space set back from the prominent street corner with all of the activity arriving to the Project from Ruggles Station. The residential and hotel uses, which will be used less by the general public, as well as the office component will all have their lobbies fronting on Tremont Street, bringing tenants and visitors to these buildings directly in and out of the urban fabric of the City.

Although the residential tower will have its lobby off of Tremont Street, the first eight levels will run the length of Whittier Street, facing the Whittier Street Housing Project, to further define this residential edge. This is an important step in shaping the residential character of Whittier Street and enlivening another “face” of the Project with pedestrian activity.

The retail stores to the east of the main plaza will be set back nearly thirty (30) feet from the street to allow for a roomy pedestrian experience that can accommodate al fresco dining, a landscape buffer and an uncluttered walking experience. In addition, this setback will allow passersby a clear view of the lobby and vaulted atrium of the NCAA museum, which is being placed on the near western corner of this central, public plaza in a way that boldly announces the cultural component of the Project, and its significance to the Project and Community.

The inviting pedestrian experience is maintained past the main plaza by sidewalks along Tremont Street of a comfortable width. These sidewalks wrap around the Project’s access drive, leading to the rear of its buildings. Thereby, a visitor might walk around the entire perimeter of the Project, even if their main point of entry might be from Tremont Street and/or the main plaza.

Besides the significant improvements along the Project’s frontage along Tremont Street, the Proponent anticipates making similar improvements along the length of Whittier Street. Like Tremont Street, which will gain a widened sidewalk, improved lighting, better landscaping and parallel parking spaces, Whittier Street will also be widened to two lanes, permitting for two way traffic. The Proponent believes that this treatment of Whittier Street will allow it to function more like a true urban thoroughfare and will be what transitions Whittier Street into an important piece of the neighborhood’s transportation and pedestrian network. As such, the sidewalks adjacent to the street will be adorned with new trees and ample decorative street lighting, creating a much

improved aesthetic to what currently exists. Ample landscape setbacks will be incorporated to the design of Whittier Street, whereby the pedestrian experience will connect and feed off of that of Tremont Street.

With improved crosswalks along Tremont Street, which will be more clearly defined and better timed with respect to traffic signalization, pedestrians will be able to safely “cross Tremont”, especially if they are carrying merchandise back to Ruggles Station. In this regard, it is the expectation of the Proponent to create a Project that calms traffic along Tremont Street, and enhances the overall pedestrian experience.

New Revenue for the City of Boston

The Project Site is owned by the BRA and since it has long been a vacant parcel, it does not currently generate any property tax revenue for the City of Boston. Given that the Site will be leased to the Proponent, it is anticipated that Tremont Crossing will generate significant new annual revenue for the City.

1.3 Consistency with Zoning

The Project Site is located in the Roxbury Neighborhood District and is, therefore, subject to Article 50 of the Boston Zoning Code, in addition to the regulations of the Greater Roxbury Economic Development Area and the Campus High School Urban Renewal Plan. Zoning relief (as defined in Article 2A of the Code) will be required by the Boston Zoning Commission and/or the BRA as the Proponent has determined that the Project exceeds current floor area ratio, height and yard parameters set forth in the Code.

The Proponent anticipates that it will enter into an agreement with the City of Boston’s Assessing Department (the “Assessing Department”) relative to Chapter 121A of the General Laws of the Commonwealth of Massachusetts (the “121A Agreement”). In addition to fixing the Project’s future tax obligations at a specific level for an agreed upon period of time, the 121A Agreement can be used as an effective vehicle for zoning relief. In the event that the Proponent enters into a 121A Agreement with the Assessing Department, it will consider using it as a mechanism for zoning conformance. As such, the Proponent will continue to consult and coordinate with the BRA and its counsel as to the most appropriate form of zoning relief to pursue for the Project.

1.4 Preliminary DIP Information

The Project will be a Development Impact Project within the meaning of Section 80B-7 (Development Impact Extractions). In that regard, the approximate, preliminary measurement of the gross floor area (GFA) that is required for calculating Development Impact Extractions is 1,079,372 square feet. This calculation does not include the Project's parking structure. Table 1-1 below sets forth the data used for calculating GFA:

Table 1-1: Gross Floor Area

GROSS FLOOR AREA														
Floor	Floor Height	Residential	Hotel	Office	Museum/ Art Studios	Other Retail	Anchor Retail	Garage Parking	Roof Terrace /Landscape	Mechanical Plant	Loading Area	GSF	GFA Exclusions*	GFA
Basement	15'									12,650		12,650	12,650	0
Ground	22'	2,818	4,800	1,770	1,900	36,496	91,935	102,514		10,755	11,120	264,108	33,987	230,121
1B	11'	860	280	1,169	484	748		102,514				106,055	5,303	100,752
2	22'	13,700	280	1,169	484	155,720		94,046				265,399	13,270	252,129
2B	11'	13,700	280	1,169	484	748		94,046				110,427	5,521	104,906
3	22'	13,700	280	1,169	484	152,628		94,046				262,307	13,115	249,192
3B	11'	13,700	280	1,169	484			94,046				109,679	5,484	104,195
4 AMENITY	15'	24,200	25,800	1,169	33,200			52,317	50,030	33,067		219,783	89,931	129,852
5	11'	20,848	280	25,000								46,128	2,306	43,822
6	11'	29,720	280	25,000								55,000	2,750	52,250
7	11'	29,720	280	25,000								55,000	2,750	52,250
8	11'	29,720	280	25,000								55,000	2,750	52,250
9	11'	13,150	280	25,000						6,615		45,045	8,537	36,509
10	11'	13,150	280	25,000								38,430	1,922	36,509
11	11'	13,150	280	25,000								38,430	1,922	36,509
12	11'	13,150	280	25,000								38,430	1,922	36,509
13	11'	13,150	280	25,000								38,430	1,922	36,509
14	11'	13,150	280							11,224		24,654	11,896	12,759
15	11'	13,150	280									13,430	672	12,759
16 TRANSFER FLOOR	15'	13,150	280									13,430	672	12,759
17	10'		12,670									12,670	634	12,037
18	10'		12,670									12,670	634	12,037
19	10'		12,670									12,670	634	12,037
20	10'		12,670									12,670	634	12,037
21	10'		12,670									12,670	634	12,037
22	10'		12,670									12,670	634	12,037
23	10'		12,670									12,670	634	12,037
24	10'		12,670									12,670	634	12,037
25	10'		12,670									12,670	634	12,037
26	12'		12,670									12,670	634	12,037
Penthouse	22'									8,469		8,469	8,469	0
Parking													633,529	(633,529)
TOTALS BY USE		297,886	162,060	233,784	37,520	346,340	91,935	633,529	50,030	82,780	11,120	1,946,984		1,079,372

* GFA Exclusions are inclusive of the following:
 - Roof Terrace / Landscape
 - Mechanical Plant
 - Loading Area
 - Parking
 - Additional 5% for Misc. Mechanical & Storage

1.5 Legal Information

1.5.1 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.

1.5.2 History of Tax Arrears on Property

The Proponent does not have a history of tax arrears on any property it may have ever owned within the City of Boston.

1.5.3 Evidence of Site Control/Nature of Public Easements

The entire Project Site is owned by the Boston Redevelopment Authority with the Proponent being awarded a Tentative Designation for five (5) months from April 30, 2013. The Proponent is currently in negotiations with the BRA to enter into a conditional Ground Lease Agreement in order that it may attain the necessary site control to embark on the proposed development.

1.6 Project Alternatives

This section discusses previously-considered site planning alternatives, particularly how site planning has been influenced by existing infrastructure, and the financial feasibility of a different program of uses in respect to their scope and size. It also describes an alternative maintaining the existing paper streets, an as-of-right alternative, and a No Build Alternative to provide a baseline against which to compare Project impacts.

1.6.1 Previously-considered Site Planning Alternatives

The Proponent, the BRA and the Roxbury Strategic Master Plan Oversight Committee (RSMPOC) held discussions and working sessions throughout the past two years to create a shared vision for the Tremont Crossing Project. These meetings helped the Proponent, architects and engineers gain a better understanding of the character, role, and wider planning objectives to be considered during the development of Parcel P-3. Previous planning studies for the parcel were referenced to best ensure the Project's consistency with the concepts in these plans.

The Proponent was engaged in an iterative process the Urban Design department of the BRA whereby the Roxbury Strategic Master Plan was used as the guiding document in the initial concept for Parcel P-3. Some of the principles used as guidelines throughout the design process include:

- Ensuring that the development creates wealth and jobs for the Community;
- Creating a mixed-use neighborhood;
- Preserving the paper streets on the site;
- Viewing the site's potential as a transit-oriented development; and
- Building a dense project that takes advantage of the parcel's size and strategic location.

Beyond these guidelines, a number of conditions were influential during the planning of the Tremont Crossing project. A discussion of these conditions and related alternatives is provided below:

Transportation

Through the various planning studies, the transportation system was evaluated and was determined to have capacity for a project of the proposed size and density. The Proponent used these studies as a guide to support its Project design, and made certain decisions such as ingress/egress, road widening, new traffic light installations, and the addition of parallel parking spaces based on these various studies and input from the City's Transportation Department.

The proximity of Ruggles Station to the Project Site has also been integral to the planning of Tremont Crossing. Without this significant transportation hub, the retail and office components of the Project would require even more parking than is currently allocated, and thus might create a level of traffic volume that could not be mitigated. The "front" and most vibrant edge of the Project, along Tremont Street, intentionally faces Ruggles Station to take advantage of this proximity. Most of the retail store entries are along this street edge, as well as the lobbies to all of the commercial, residential and cultural uses. In this way, the Proponent hopes to bring a new vigor and vitality to Tremont Street, with the ultimate goal of linking the pedestrian activity to that of the South End to the northeast and the Hyde Square / Mission Hill area to the southwest.

Inactivity of Project Borders

Besides Tremont Street to the north, and Whittier Street to the east, the Project is bordered by the fields of the Madison Park School to the south and the auto body shops of that same school to the west. Since these western and southern borders have no commercial or pedestrian activity, the Proponent felt it would not be successful if it tried to create the same. Ostensibly, with the western edge being converted into a very busy vehicular access drive for the Project to also be shared by the Boston Public Schools, the Proponent did not view this as a safe pedestrian walkway.

1.6.2 As-of-Right Alternative

Based on the BRA Scoping Determination and further discussions with the BRA, impact studies compare the proposed Project to either existing conditions or to an as-of-right alternative, whichever has greater impacts. Because the Project Site is currently unoccupied and exists as barren land, the existing condition generally provides a less impactful comparison. We have accordingly modeled an as-of-right alternative which assumes the same parcelization of the site as the proposed Project, but with buildings which conform to height and floor area ratio limits of underlying zoning, i.e. allowed by Article 50 of the Boston Zoning Code.

An as-of-right alternative with a FAR of 2.0 and a maximum height of sixty-five (65) feet would allow for very little density on the Parcel. Due to the decrease in program density and height, the resulting project would have decreased traffic and shadow impacts. However, such a development with the reduced scale and program would neither be financially feasible, nor would it meet the expectations of the Community and the Roxbury Master Plan, which again calls for job and wealth creation, along with density on this “gateway” parcel to Roxbury. As detailed below, without this Project as it is proposed, the many benefits associated with Tremont Crossing, including the creation of a 21,000 square foot museum and cultural center for the National Center for the NCAAA, would not be realized.

1.6.3 No Build Alternative

The No Build Alternative would leave the Project Site as it exists currently – approximately 7.25 acres of barren land. The associated population increase, both residential and nonresidential, would not occur, the creation of new market rate housing, the first in years in Roxbury, would not exist, and the

redefinition of this part of Tremont Street would not occur, because the retail would not be developed. The value of this parcel is not only its individual development, but also in its effect on the Community at large. The destination retail envisioned for this site will bring the purchasing dollar of other neighborhoods of Boston to Roxbury, and further enhance the value and wealth of this neighborhood within the City. Moreover, the retail component of this Project will keep more people from leaving Boston to go shopping at traditional suburban stores that are typically larger in size than neighborhood stores and thus more cost efficient. This will keep more money in the pockets of the City's citizens to spend at other establishments within the municipality.

The Project will also provide other benefits to the City of Boston, as described in Section 1.2.6, including development of a vital new neighborhood, increased tax revenues, new linkage funds, construction and permanent jobs, and new civic spaces, including a new museum and cultural center.

1.6.4 Alternative Project Layout —Paper Streets

One of the guidelines in the Roxbury Strategic Master Plan, which was also a recommendation to the Proponent by the BRA directly, was the notion of maintaining the paper streets that currently bisect the Project Site, effectively breaking the site layout into “four quadrants.” Although the Proponent studied this alternative and wanted to support this initiative, it proved physically and economically unfeasible.

As it has been stated via other forms of communication to the City, the Project Site is in somewhat of an untested area for commercial activity. Currently, there is little retail and pedestrian activity surrounding the site. No new market rate housing has yet to emerge, and the office market has previously had not emerged. Taking all of those leasing dynamics into consideration, the Proponent thought that larger retail was the best use group to economically drive the development of the Parcel. Given the project's great size for an urban piece of land, and its unique location on a major thoroughfare that also abuts a large transportation hub, it felt that retailers of a larger variety would see a great opportunity in locating here. Furthermore, the Proponent believes it was necessary to have such a destination anchor retailer in order to attract and support the smaller shops and restaurants envisioned by the City and Community. As such, the large footprints depicted in its design package were necessary to attract these users. Although the Project's design was influenced

by necessity, it evolved into a wholly unique Project unlike any in the City of Boston. This vertical retail concept, accessed by escalators and elevators, through a unifying grand atrium space, will create a special retail environment for the urban shopper. With the other commercial, residential and cultural uses supporting and rising up out of the framework of the retail base, the Project takes on a distinctly urban character in keeping with the density and uses envisioned in the Roxbury Strategic Master Plan.

1.7 Public Agencies

Table 1-2 below sets forth a list of federal, state and city agencies from which permits or other actions are expected to be required:

Table 1-2: Anticipated Permits and Approvals

Agency Name	Permit / Approval
FEDERAL	
Federal Aviation Administration	Determination of No Hazard Navigation
STATE	
Department of Environmental Protection, Division of Water Pollution Control	Sewer Connection and Extension Permit
Department of Environmental Protection, Division of Air Quality Control	Air Plans Approval; Pre-Construction Notice
Massachusetts Water Resources Authority	Sewer Use Discharge Permit; Construction Dewatering Permit
Massachusetts Historical Commission	State Register Review
CITY OF BOSTON	
Boston Civic Design Commission	Review and Approval
Boston Redevelopment Authority	Article 80, Large Project Review
Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Construction Dewatering Permit; Sewer Extension/Connection Permit; Stormwater Connection
City of Boston Committee on Licenses	Parking Garage Permit
City of Boston Inspectional Services Department	Building and Occupancy Permits
Boston Public Improvement Commission	Street and Sidewalk Occupation Permits; Tieback/Earth Retention Permit; Specific Repair Plan; Paper Street Discontinuation Approval
Boston Transportation Department	Transportation Access Plan Agreement Construction Management Plan
Boston Zoning Commission	Zoning Relief

2.0 PROJECT DESCRIPTION

2.1 Existing Site

The Project will be located at Parcel P-3 (consisting of Parcel P-3 and a portion of Parcel P3-h in the Campus High School Urban Renewal Area) in Boston's Lower Roxbury neighborhood. The Project Site consists of approximately 7.25 acres of land area and is bounded by Tremont Street to the northwest, Whittier Street to the northeast, Downing Street to the Southeast, the Whittier Street Health Center to the Southwest, and the Madison Park Technical Vocational High School and the John D. O'Bryant School of Mathematics and Science to the southwest.

The Project Site is currently vacant and is being used as ancillary parking for some of the abutting institutional and City agencies.

2.2 Proposed Development Program

2.2.1 Building Program

The Project's mix of uses will include approximately 404,475 square feet of larger retail (which will consist of a mix of large-format retail, medium sized, "junior-anchors" and entertainment and recreational uses), 33,800 square feet of smaller shops and boutiques fronting along Tremont Street, 233,784 square feet of office space, 300 units of multifamily residential (approximately 297,886 square feet) made up of studios, one (1) bedroom and two (2) bedroom rental apartments (of which any requisite affordable units will be provided), a 200 room, "extended-stay" hotel, and 37,520 square feet of cultural facilities that will primarily house a 21,000 square foot new museum for the NCAAA and other artist studio space. The development will also include two public plazas, including a large, central atrium and an adjacent, multi-level parking structure to accommodate the requirements of its tenants. As currently contemplated, the proposed parking structure would consist of approximately 1,502 spaces which include a specific number of parking spaces for the Whittier Street Health Center and the Boston Public Schools.

Figure 2-1 through 2-8, below, depict the Project's Site Plan, Ground Floor Plan and its upper and basement levels.

Figure 2-1: Site Plan

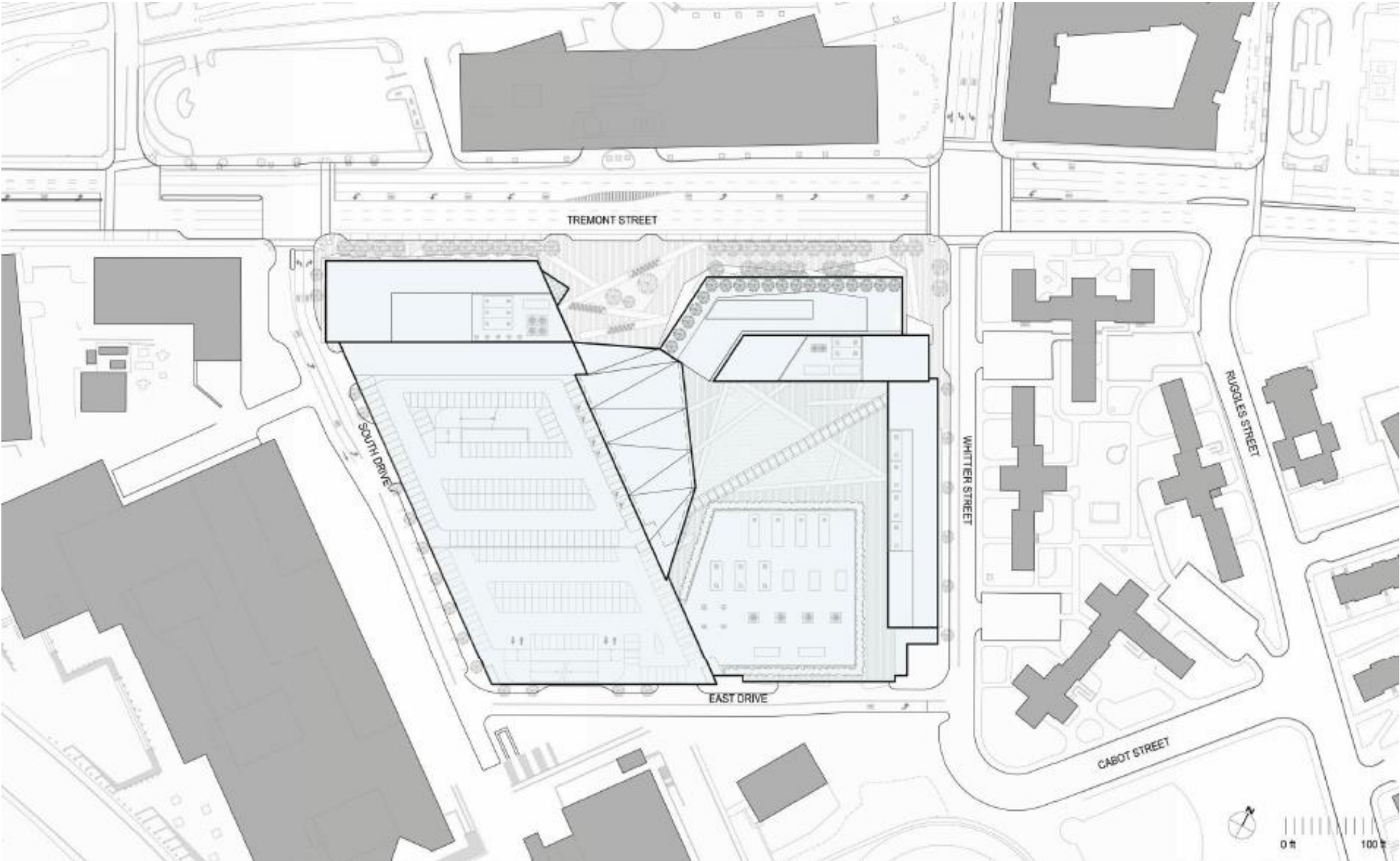


Figure 2-3: Retail Level 2 and Parking Level 2A

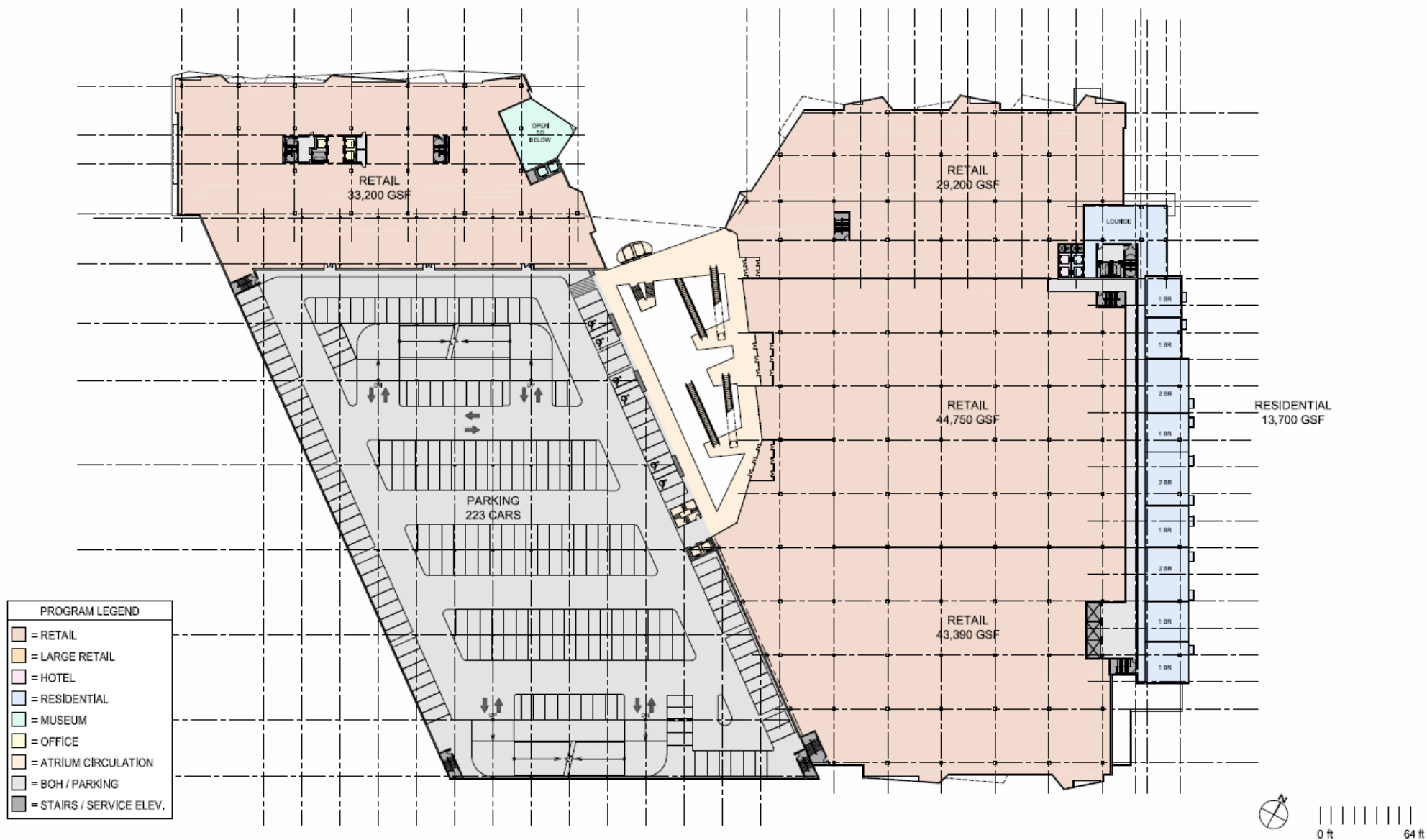


Figure 2-4: Retail Level 3 and Parking Level 3A

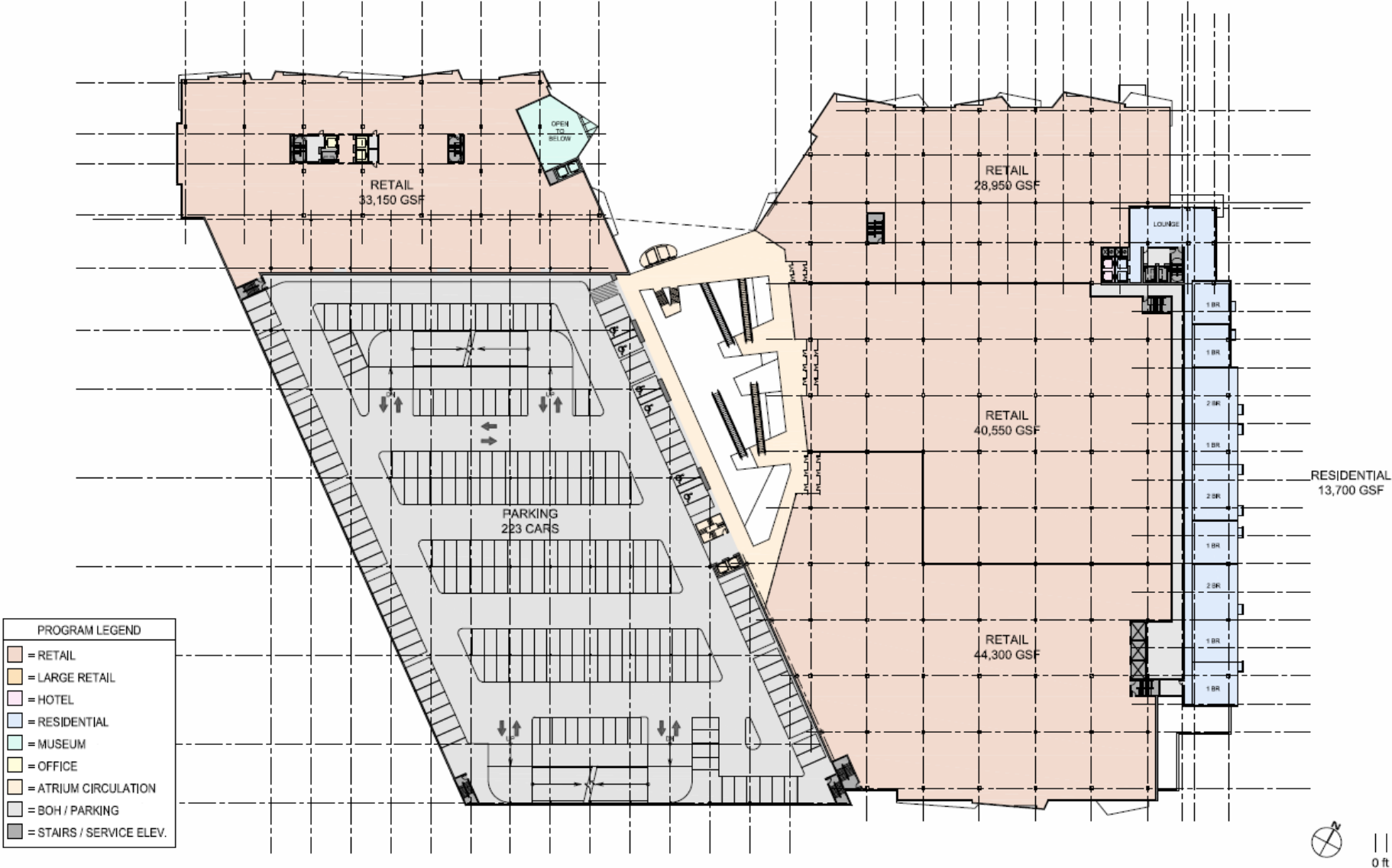


Figure 2-5: Level 4

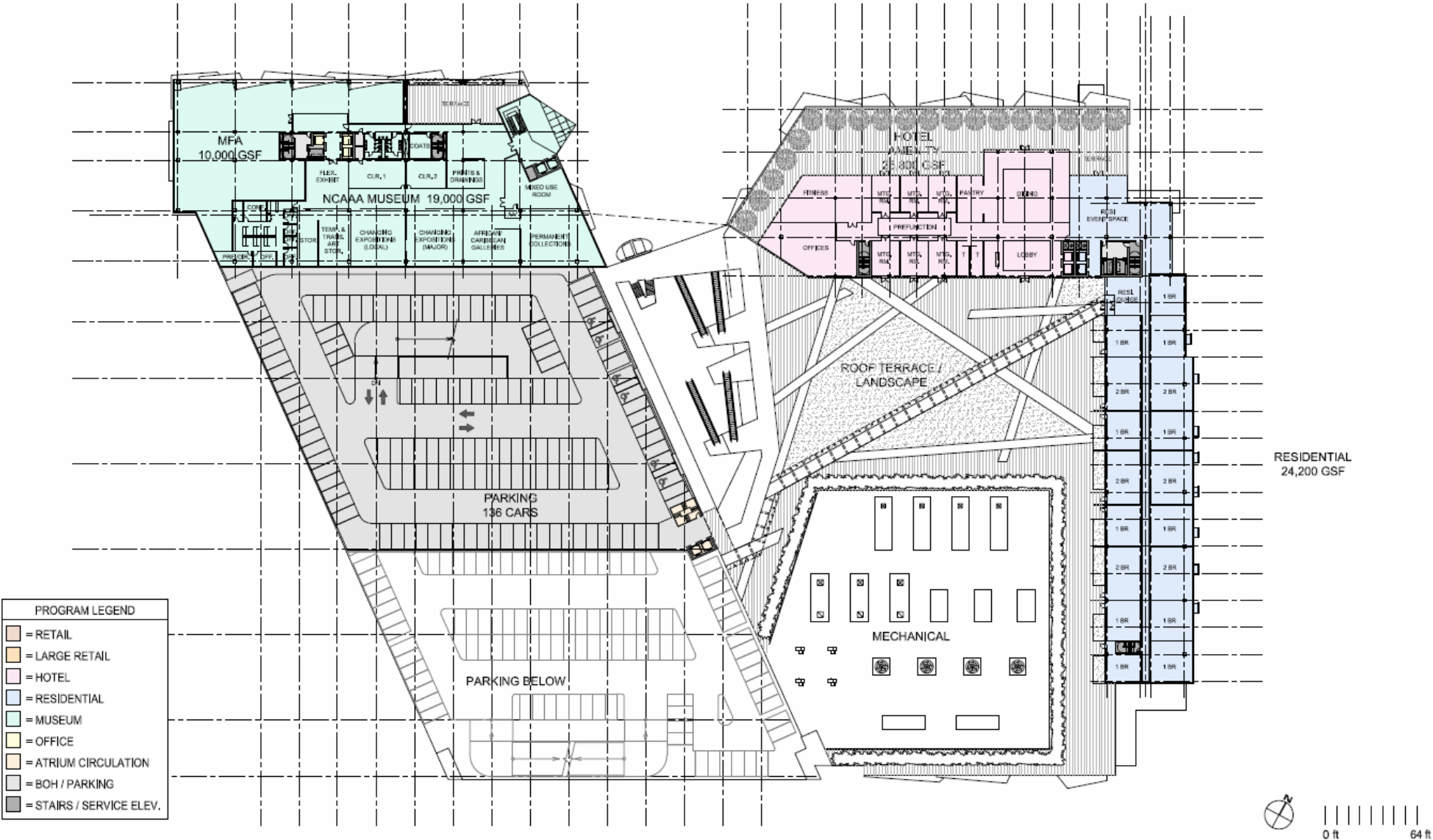


Figure 2-6: Levels 6 - 8

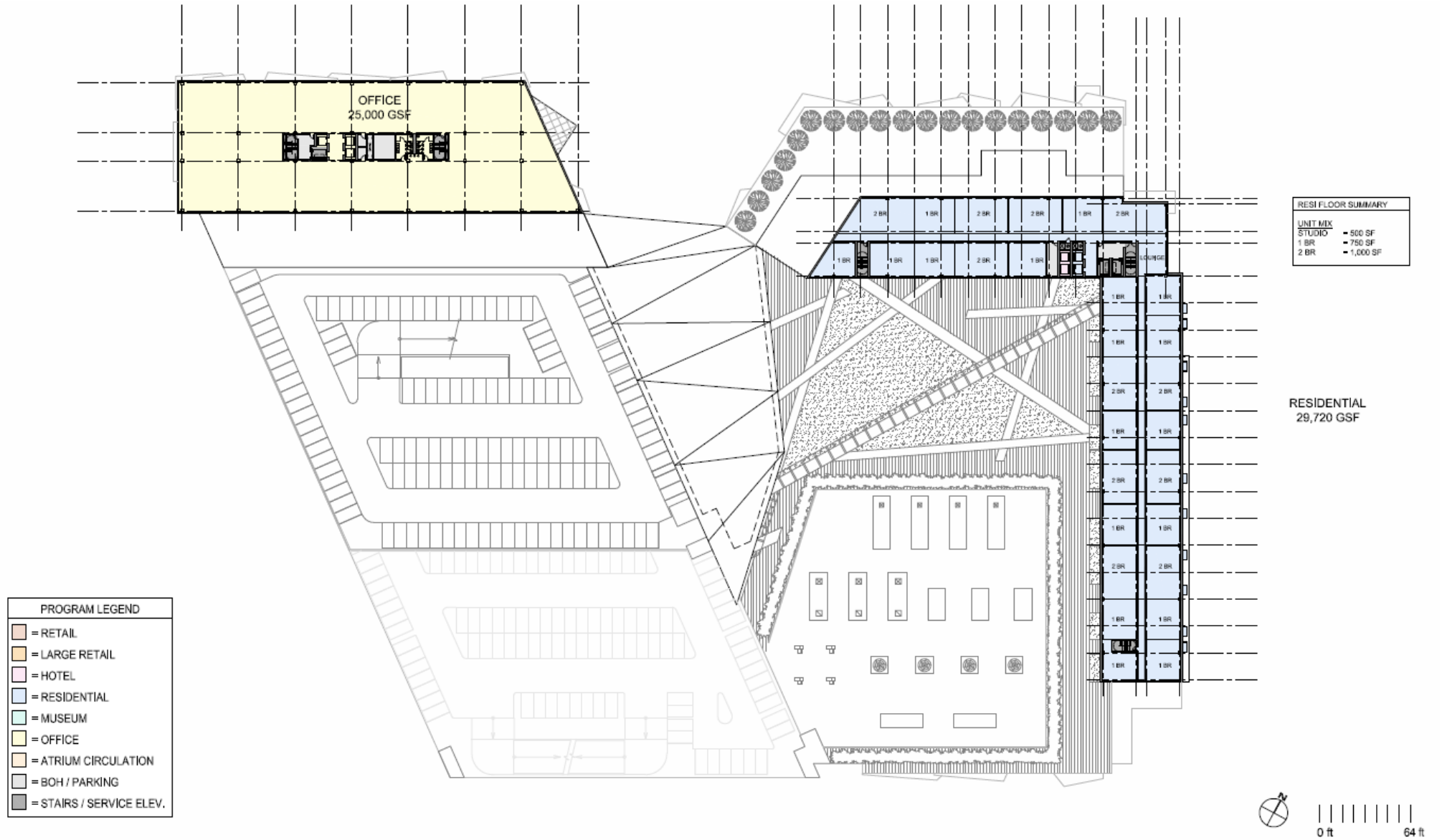


Figure 2-7: Levels 17-26

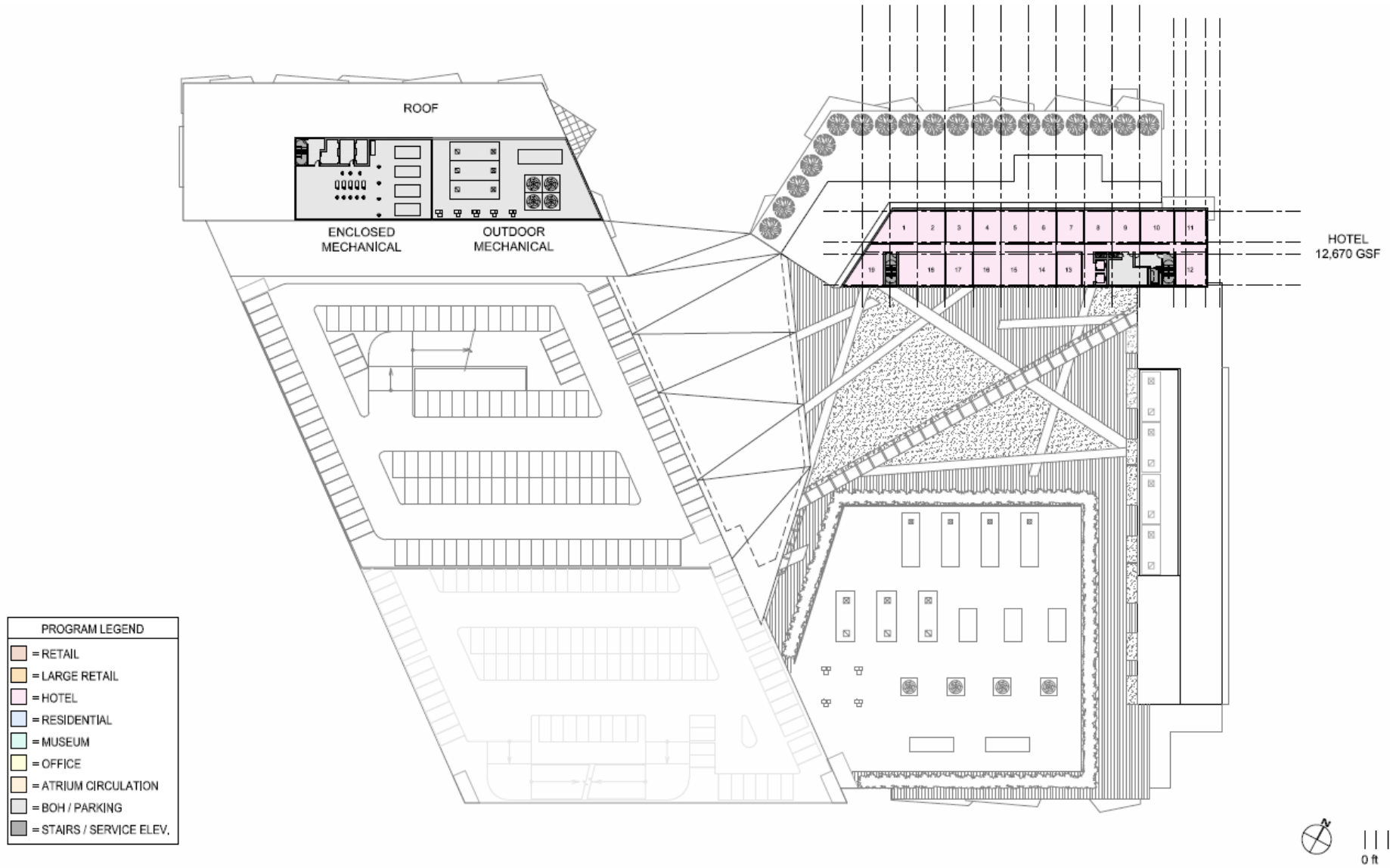
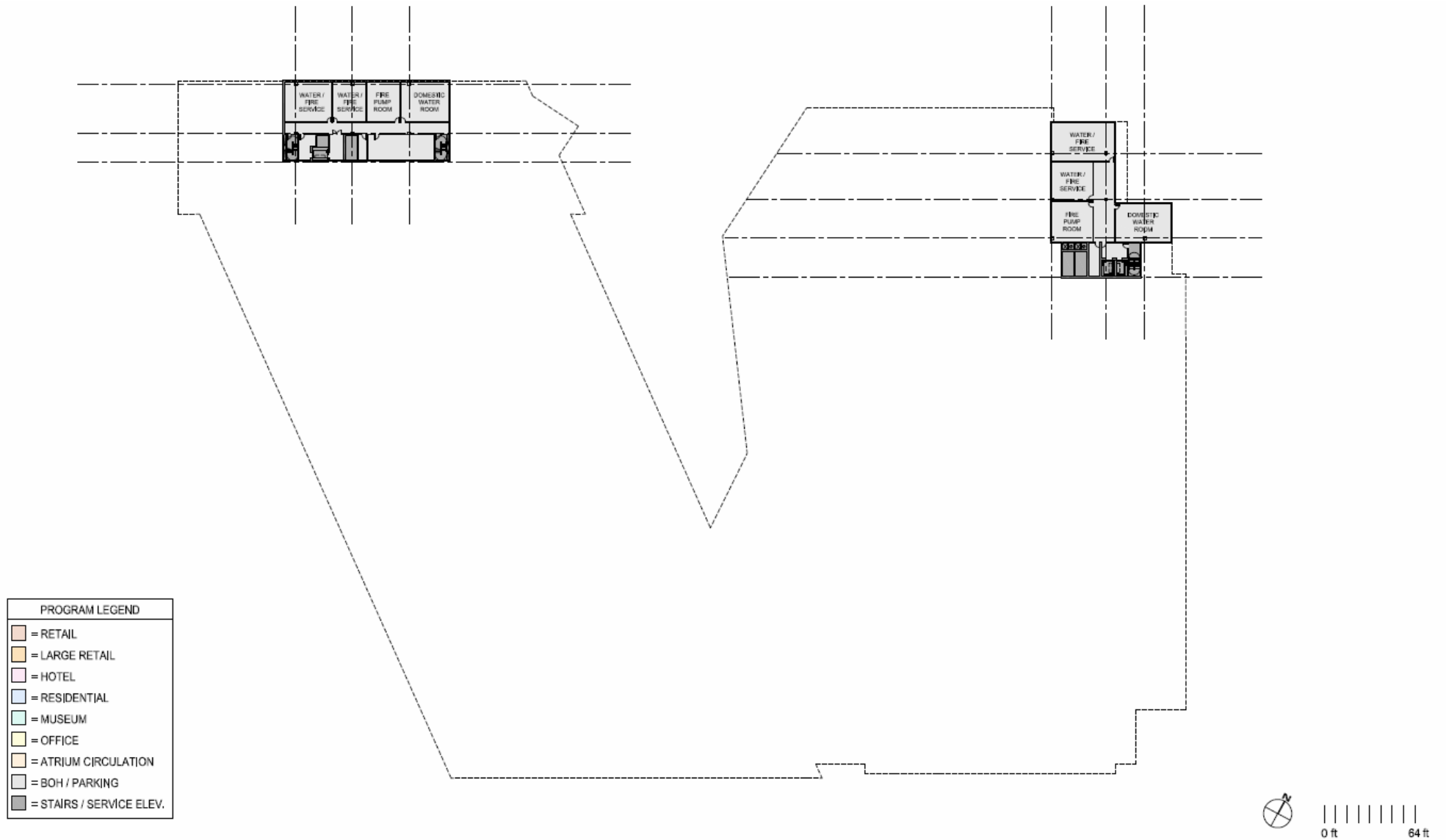


Figure 2-8: Basement Level



2.2.2 Approximate Sizes

Table 2-1 presents the approximate sizes of the Project:

Table 2-1: Approximate Sizes and Uses

Element	Square Feet	Building Levels
Larger Retail	404,475 s/f	3 Levels
Smaller Retail (Fronting Tremont Street)	33,800 s/f	1 Level (two building structures)
Office	233,784 s/f	9 Levels (above 4 levels)
Multifamily, Residential	297,886 s/f (300 units)	19 Levels (above 1 level)
Hotel	162,060 s/f	10 Levels (above 16 levels)
Museum / Cultural Center/ Art Studios	37,520 s/f	1 Levels (above 3 levels of retail)
Parking	633,529 s/f	6 Levels

The layout of the Project's two (2) main building structures will be designed around a large public plaza, which will have significant frontage along Tremont Street. Smaller retail consisting of shops, restaurants and boutiques will be on the ground level of each. The large format retail building will consist of three (3) levels, each of which will be approximately twenty (20) feet from floor to ceiling for a total building use height of sixty-one (61) feet. Sitting adjacent to the large format retail is a multifamily, residential tower which will rise nineteen (19) floors in total from the ground floor, which is at the corner of Whittier Street and Tremont Street. An additional length of the residential tower that will bend down Whittier Street will rise nine (9) levels, starting at the top of the first level of the retail building. The building height of the portion of the retail/residential tower that traverses Whittier Street will be approximately 127 feet in height. Additionally, the hotel will rise above the portion of the retail and residential that fronts Tremont Street. This portion of the building structure will have a total building height of 319 feet.

The Second building structure will consist of three (3) levels of retail, the Museum on the fourth level and nine (9) stories of office above, for a total building height of 209 feet

Additionally, all of the Project's various uses will connect to the parking structure either directly or by a network of walk bridges. The parking structure will be physically connected to the retail/museum/office building and will consist of six levels for a height of fifty (50) feet.

The Section diagrams in Figures 2-9 through 2-13 below set forth the building heights of the Project.

The Project Site consists of approximately 7.25 acres (315,810 square feet) of land area with a GFA (including parking) of approximately 1.7 million square feet. This equates to a proposed project FAR of 5.38.

Figure 2-9: Longitudinal Section through Residential and Parking

PROGRAM LEGEND	
[Light Orange Box]	= RETAIL
[Yellow-Orange Box]	= LARGE RETAIL
[Light Pink Box]	= HOTEL
[Light Blue Box]	= RESIDENTIAL
[Light Green Box]	= MUSEUM
[Light Yellow Box]	= OFFICE
[Light Orange Box]	= ATRIUM CIRCULATION
[Light Grey Box]	= BOH / PARKING
[Dark Grey Box]	= STAIRS / SERVICE ELEV.

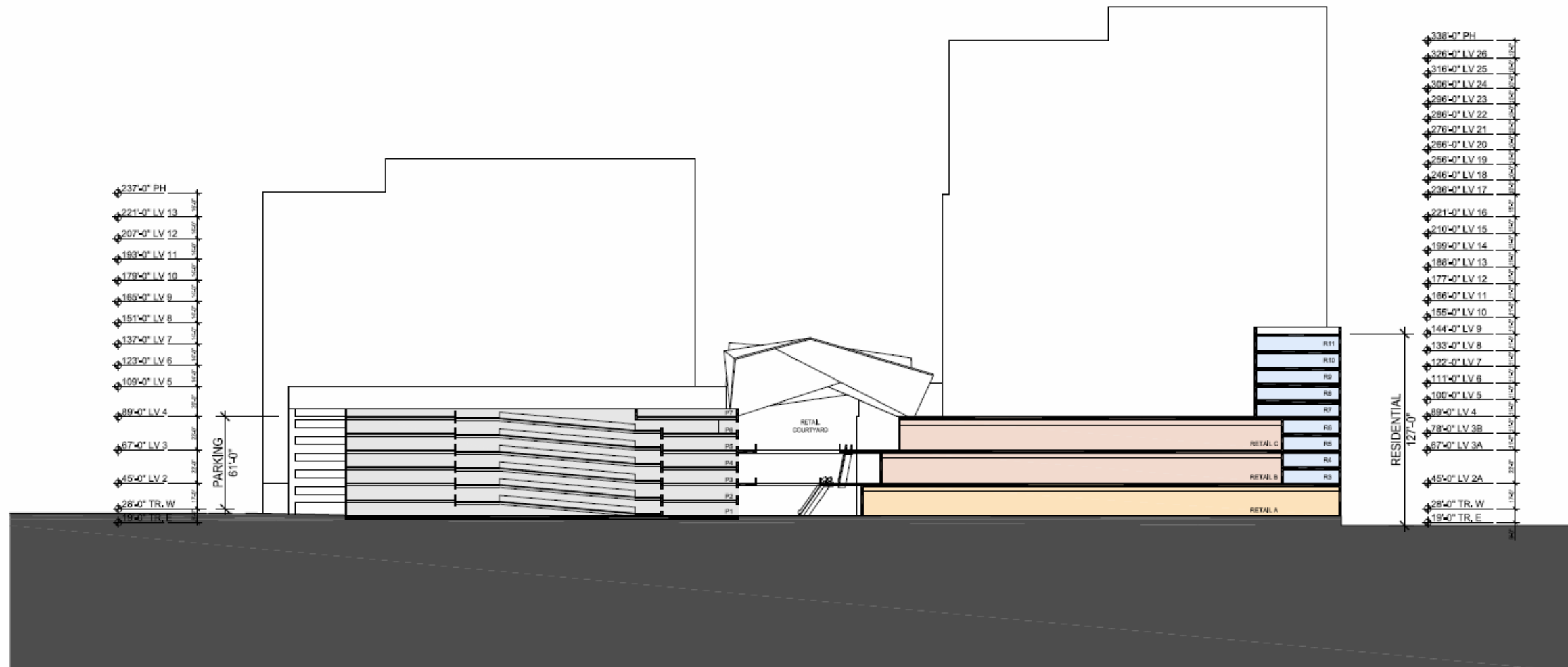


Figure 2-10: Cross Section through Hotel and Residential

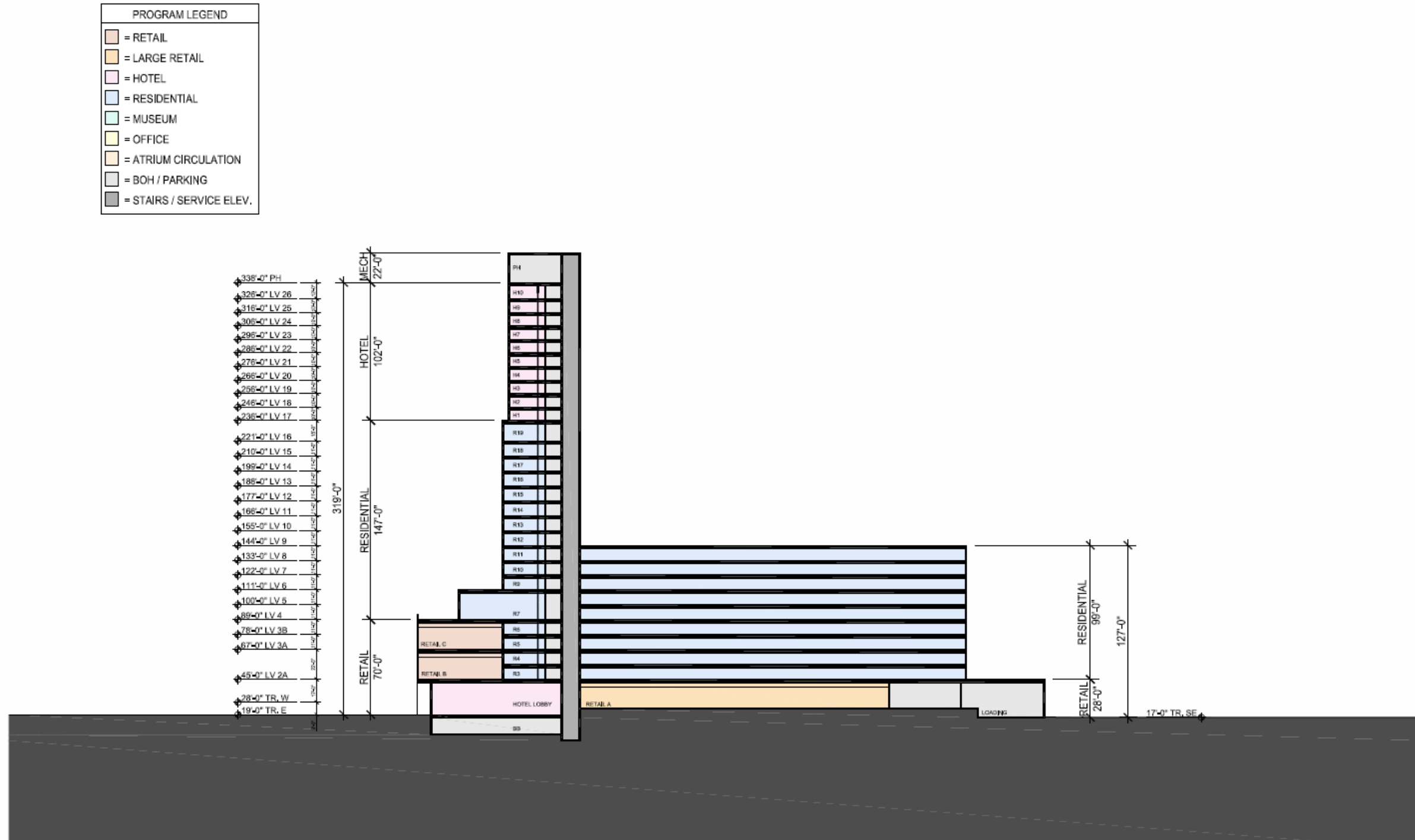


Figure 2-11: Cross Section through Office and Parking

PROGRAM LEGEND	
	= RETAIL
	= LARGE RETAIL
	= HOTEL
	= RESIDENTIAL
	= MUSEUM
	= OFFICE
	= ATRIUM CIRCULATION
	= BOH / PARKING
	= STAIRS / SERVICE ELEV.

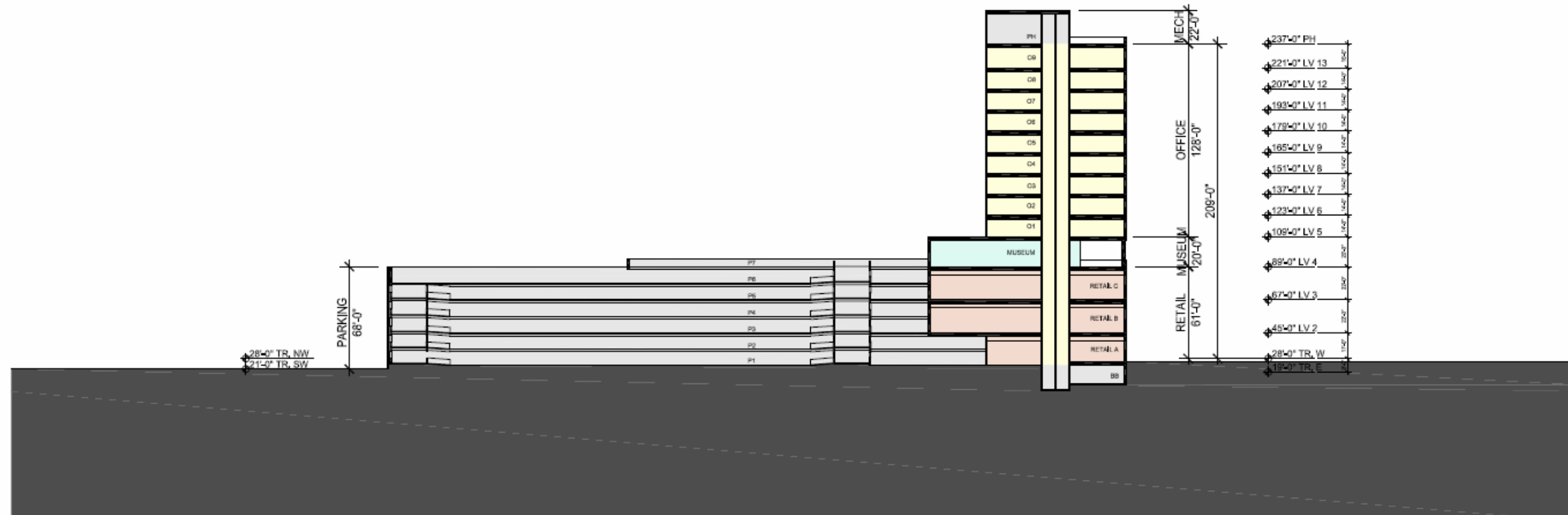


Figure 2-12: Longitudinal Section through Hotel, Residential and Office

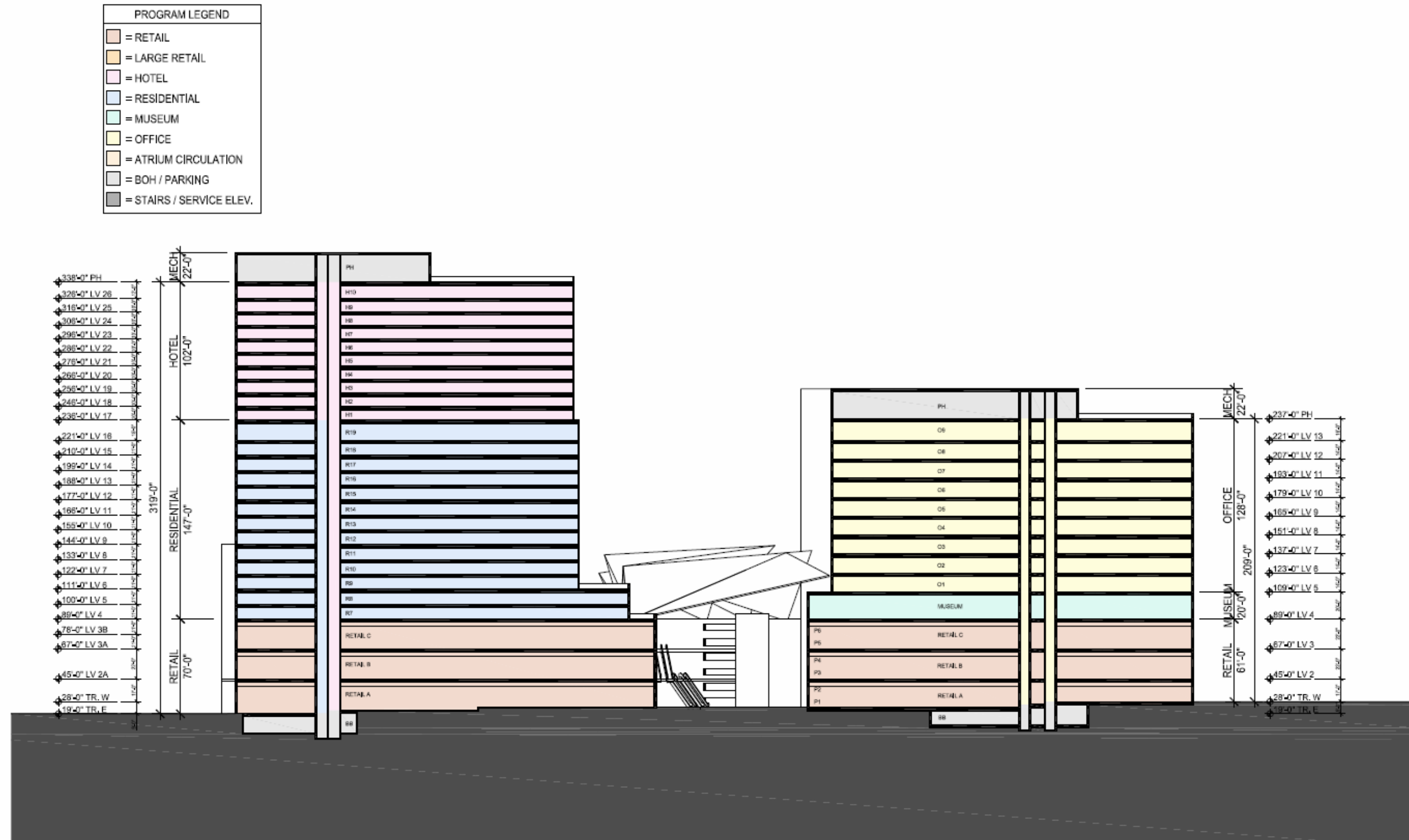
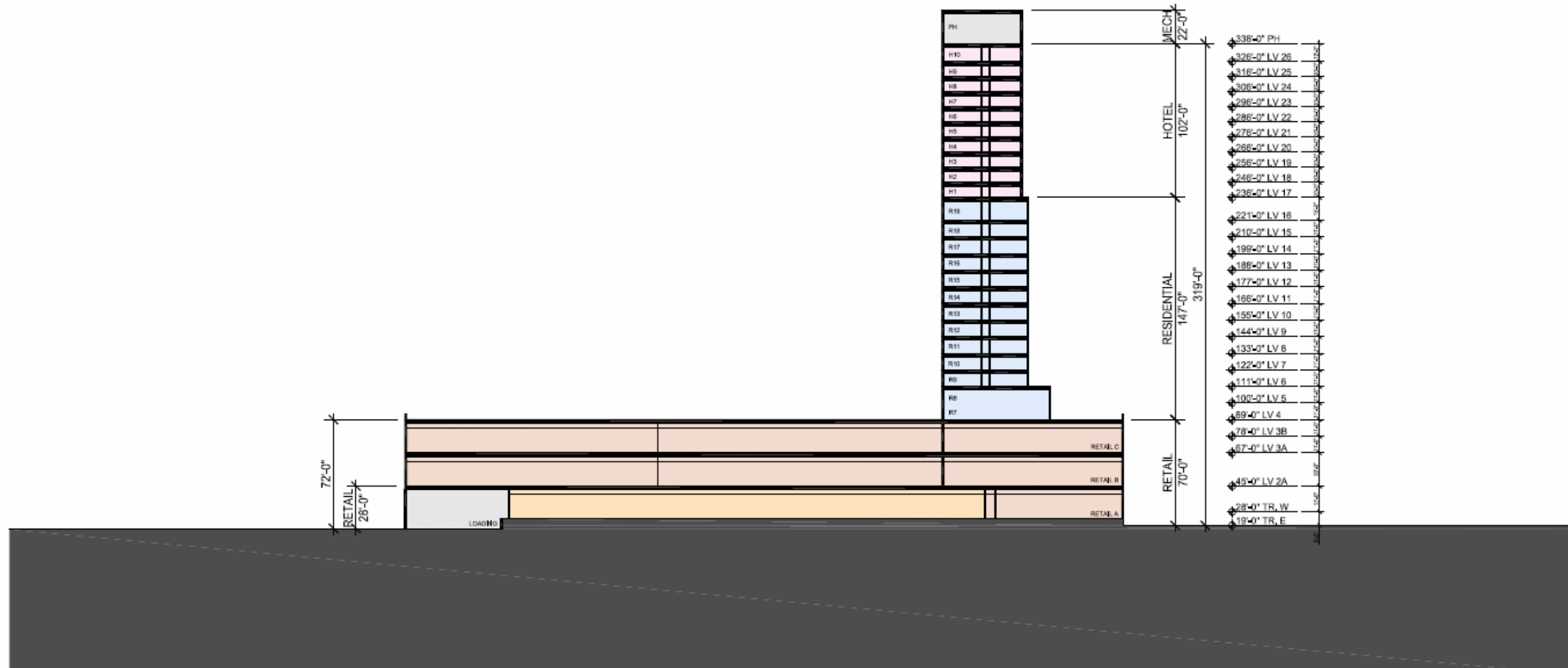


Figure 2-13: Cross Section through Retail, Hotel and Residential

PROGRAM LEGEND	
	= RETAIL
	= LARGE RETAIL
	= HOTEL
	= RESIDENTIAL
	= MUSEUM
	= OFFICE
	= ATRIUM CIRCULATION
	= BOH / PARKING
	= STAIRS / SERVICE ELEV.



2.3 Schedule

The Proponent anticipates that the Article 80 approvals process will last approximately nine (9) months. Construction is expected to last approximately twenty-four (24) months.

3.0 TRANSPORTATION

Article 80 of the Code specifies that the BRA may require in its Scoping Determination that the applicant conduct studies to determine the direct or indirect impact on its surroundings that are reasonably attributed to a proposed project. Where potential for direct or indirect impacts exist, measures may be required to mitigate the impacts. Some of the areas for which studies and mitigation may be required are addressed in this section.

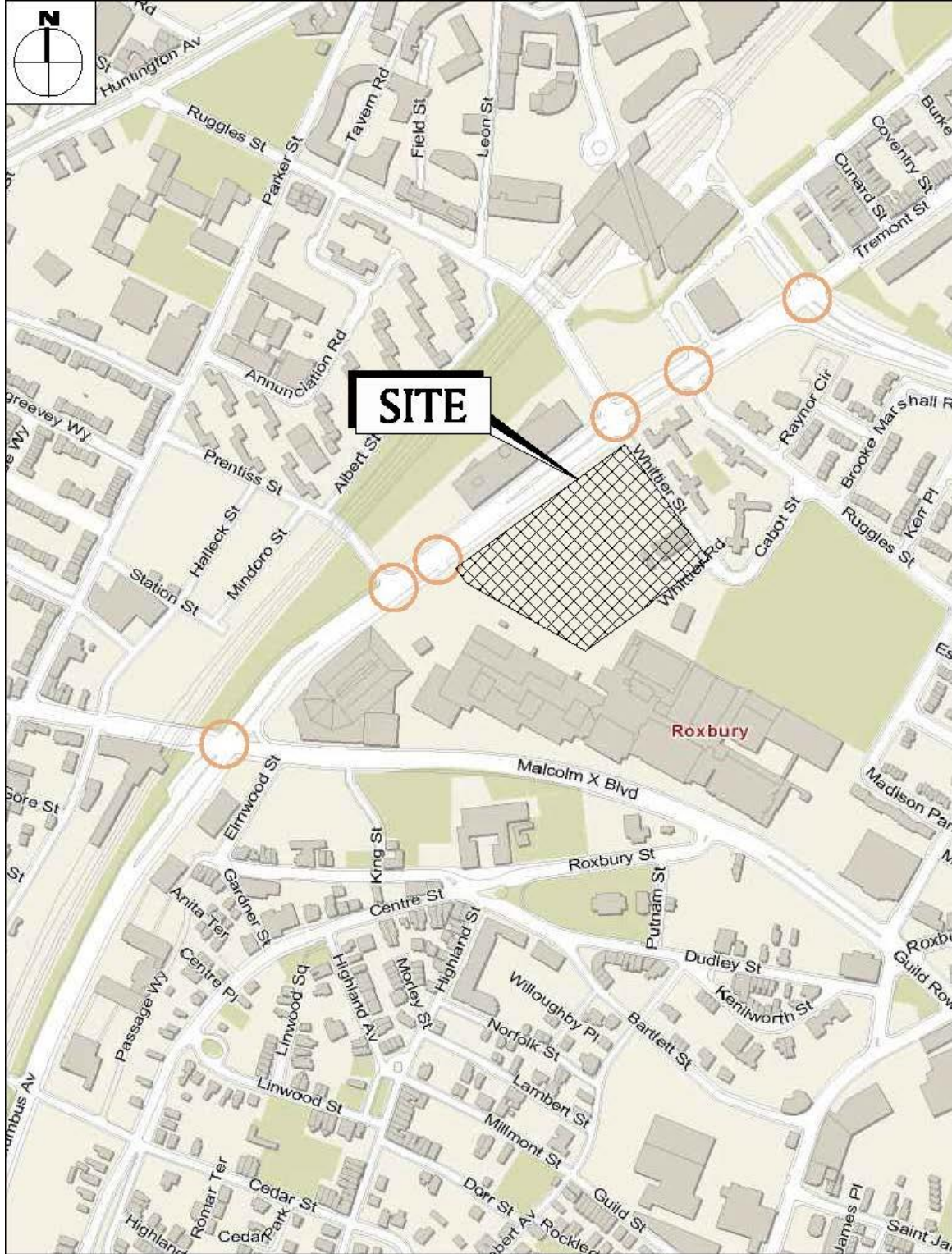
3.1 Introduction

The following sections set forth the transportation considerations that are specific to the Project. Included in these sections are a comprehensive traffic and parking analysis which will examine traffic, parking, public transportation, and pedestrian access and loading activities in the vicinity of the Project. Trip generation estimates, transportation impacts, and transportation demand management measures associated with the Project are also included in these sections. A locus of the Project and Study Area Intersections is displayed in Figure 3-1.

3.2 Project Description

The Project's mix of uses will include approximately 404,475 square feet of larger retail (which will consist of a mix of large-format retail, medium sized, "junior-anchors" and entertainment and recreational uses), 33,800 square feet of smaller shops and boutiques fronting along Tremont Street, 233,784 square feet of office space, 300 units of multifamily residential (approximately 297,886 square feet) made up of studios, one (1) bedroom and two (2) bedroom rental apartments (of which any requisite affordable units will be provided), a 200 room hotel, and 37,520 square feet of cultural facilities that will primarily house a 21,000 square foot new museum for the National Center for the NCAA and other artist studio space. The development will also include two public plazas, including a large, central atrium and an adjacent, multi-level parking structure to accommodate the requirements of its tenants. As currently contemplated, the proposed parking structure would consist of approximately 1,502 spaces which include a specific number of parking spaces for the Whittier Street Health Center and the Boston Public Schools.

Figure 3-1: Project Locus and Study Area Intersections



3.3 Summary of Findings

Although the Project's mix of uses will be as set forth in Section 3-2 above, for purposes of the analysis and findings in Section 3.0: Transportation, a marginally different set of program uses/sizes has been used. This is a result of some minor architectural adjustments that were made subsequent to this analysis. As the differences in program are very minor, the Proponent believes that the findings herein are accurate. The program uses, as utilized for Section 3.0 are as follows:

The Project's mix of uses will include 247,900 square feet of large format retail, 157,963 square feet of medium format retail, 48,758 square feet of small format retail fronting along Tremont Street, 231,500 square feet of office space, 300 units of multifamily residential (230,190 square feet), a 200-room hotel, and 21,000 square feet of museum space. The development will also include a large public pedestrian plaza and an adjacent, 1,543 car multi-level parking structure.

The Project proposes the following roadway and intersection modifications intended to improve the transportation network in the vicinity of the Project:

- Convert Whittier Street from one-way to two-way between Tremont Street and Downing Street.
- Signalize the intersection of the site driveway at Tremont Street. The proposed traffic signal will include a pedestrian signal that will allow pedestrians to cross concurrently with the appropriate traffic signal phase, with crosswalks, accessible ramps, and pedestrian push buttons and signals. This intersection and the adjacent intersection of Prentiss Street at Tremont Street will be operated by one traffic signal controller.
- Remove the jersey barrier dividing Tremont Street from the site drive to Ruggles Street. This will allow left-turns into and out of the Site, as well as provide room for a wider cross-section with one parking lane in front of the Boston Police Department Building, two through lanes and one left-turn lane on Tremont Street southbound, and three through lanes and one left-turn lane on Tremont Street northbound.
- Provide a left-turn pocket on Tremont Street southbound at Whittier Street for access into the Site.

There are four existing off-street parking facilities located within a one-quarter mile radius of the Site. On-street spaces exist in the vicinity of the Site in the form of time restricted, unregulated, police vehicle, taxi, handicapped, and resident parking spaces. The Project proposes to create an additional twenty-four (24) on-street parking spaces on Tremont Street in front of the Project Site, as well as a drop-off area within a

portion of the on-street spaces. Approximately 25 of the existing unregulated spaces on the south side of Whittier Street will be removed due to the conversion of Whittier Street from one-way to two way traffic flow. Parking on the north side of Whittier Street will require a residential parking permit.

In keeping with the Transit-Oriented Development nature of the Project, a large percentage of trips to the Project Site will be made as pedestrian, bicycle, and transit trips. The area is accessible to fourteen (14) bus routes, two MBTA Orange Line stations, and a commuter rail station serving three (3) branches that terminate at South Station or Downtown Boston. In addition, the area is well served by sidewalks measuring 7-10 feet wide in most locations Both the Southwest Corridor Park and the South Bay Harbor Trail are within walking distance and provide pedestrian and bicycle access between the Project Site and surrounding areas, including South End, Roxbury, Back Bay, Chinatown, Jamaica Plain, South Boston, and the Fort Point Channel. The Project proposes to provide bicycle racks and/or indoor bicycle storage on Site, as well.

The proposed Project is expected to generate:

- 6,023 vehicle trips during the average weekday, with 286 vehicle trips occurring during the weekday morning peak hour, 517 vehicle trips occurring during the weekday afternoon peak hour, and 649 vehicle trips occurring during the Saturday midday peak hour;
- 6,979 transit trips during the average weekday, with 339 transit trips occurring during the weekday morning peak hour, 695 transit trips occurring during the weekday afternoon peak hour, and 782 transit trips occurring during the Saturday midday peak hour;
- 732 pedestrian trips occurring during the weekday morning peak hour, 2,106 pedestrian trips occurring during the weekday afternoon peak hour, and 2,571 pedestrian trips occurring during the Saturday midday peak hour.

The results of the traffic analysis indicate that, with the proposed improvements, there will not be a significant increase in delay due to the new vehicle trips generated by the Project.

3.4 Study Methodology

This report revises and updates the traffic data provided in the PNF, and reflects the current development program. This transportation study has been prepared in accordance with the Boston Transportation Department (BTD) Transportation Access Plan guidelines. This study also conforms to guidelines set forth by the Institute of

Transportation Engineers (ITE) and the Massachusetts Environmental Policy Act (MEPA). All analyses are conducted using the Synchro 8 software, based on methods defined in the Highway Capacity Manual 2000 (TRB, 2000).

This study includes a review of existing transportation, roadway, and parking conditions in the vicinity of the Project, as well as an analysis of traffic operations at study area intersections. This study identifies background traffic growth for study area roadways, including traffic associated with other proposed projects in the vicinity of the Project Site. This study estimates additional traffic generated by the proposed development and evaluates impacts on the transportation network due to project-generated trips. Finally, this study proposes mitigation measures, including geometric improvements to the roadway network, signalization improvements, and Traffic Demand Management (TDM).

3.5 Study Area

Based on discussions with BTS, the following intersections are evaluated in this study in order to identify any potential project-related impacts on operating conditions at these locations:

- Tremont Street at Malcolm X Boulevard / Columbus Avenue;
- Tremont Street at Prentiss Street;
- Tremont Street at Whittier Street / Ruggles Street;
- Tremont Street at Ruggles Street;
- Tremont Street at Melnea Cass Boulevard;
- Tremont Street at Site Driveway.

This study evaluates the impacts on the aforementioned study area intersections, based on three conditions:

- 2012 Existing Conditions – to evaluate the traffic conditions that exist today. The 2012 condition was based on the year 2010 Existing Condition Synchro network provided by BTS. Baseline 2012 Existing Condition traffic volumes were obtained by growing the provided 2010 volumes by 0.25 percent annually for two years;
- 2017 Future No Build Conditions – based on a 5-year planning horizon. This condition assumes that the proposed Project has not been built;
- 2017 Future Build Conditions – based on the same 5-year planning horizon, assuming the Project has been built.

3.6 Existing Transportation Conditions

This section presents the existing transportation conditions, including an overview of the roadway network, public transportation system, crash data, pedestrian and bicycle access, and parking supply.

3.6.1 Roadways

Tremont Street

Tremont Street is classified as an Urban Principal Arterial that generally runs in a northeast-southwest direction from Malcolm X Boulevard / Columbus Avenue in the southwest to Charles Street in the northeast. In the vicinity of the study area, Tremont Street has three travel lanes northbound and three travel lanes southbound. Sidewalks exist on both sides of the roadway, with land uses along the corridor composing of a mixture of commercial, residential, institutional, and recreational uses. Parking currently occurs along the west side of Tremont Street in front of the Boston Police Department in the vicinity of the study area, thereby reducing the number of usable travel lanes from three to two in the southbound direction.

Malcolm X Boulevard

Malcolm X Boulevard is classified as an Urban Minor Arterial and generally runs in an east-west direction from Tremont Street / Columbus Avenue in the east to Dudley Square (Dudley Street / Washington Street intersection) in the west. Malcolm X Boulevard generally consists of two travel lanes in each direction with sidewalks on both sides.

Columbus Avenue

Columbus Avenue is classified as an Urban Principal Arterial and generally runs in a north-south direction. Columbus Avenue begins in the north at its intersection with Eliot Street in Park Plaza and continues south beyond Melnea Cass Boulevard and turns east to its intersection with Tremont Street opposite Ruggles Street. There it breaks until it begins again at Tremont Street / Malcolm X Boulevard, continuing south to its intersection with Seaver Street / Walnut Avenue. Columbus Avenue south of its intersection with Tremont Street / Malcolm X Boulevard generally provides three travel lanes in each direction with sidewalks on both sides of the roadway.

Prentiss Street

Prentiss Street is a local roadway that runs in a northwest-southeast direction from Parker Street to its intersection with Tremont Street. There are existing sidewalks along both sides of Prentiss Street. The Parker Street Lot and the Halleck Lot are located on the south side of Prentiss Street just east of Tremont Street and provide parking for area institutions.

Ruggles Street

Ruggles Street is classified as an Urban Minor Arterial that generally runs in a northwest-southeast direction. Ruggles Street begins at Huntington Avenue in the west and travels in the southeasterly direction to Tremont Street. Ruggles Street then shifts one block north on Tremont Street and continues as a one-way street away from Tremont Street until its intersection with Washington Avenue. A sidewalk is provided on both sides of Ruggles Street along its entire length.

Whittier Street

Whittier Street is a local roadway that runs in a northwest-southeast direction from Tremont Street to Cabot Street. Whittier Street is a one-way roadway westbound. A sidewalk is provided on both sides of the roadway. On-street parking is allowed on both sides of Whittier Street along the entire length. These spaces are used mainly by area residents and commuters.

Melnea Cass Boulevard

Melnea Cass Boulevard is classified as an Urban Principal Arterial and generally travels in an east-west direction from Columbus Avenue in the west to Massachusetts Avenue / Mass Ave Connector in the east. Melnea Cass Boulevard is a median divided roadway that generally provides two lanes in each direction. Sidewalks are provided on both sides of the roadway. A section of the South Bay Harbor Trail runs along the north side of Melnea Cass Boulevard.

3.6.2 Intersections

Tremont Street at Malcolm X Boulevard / Columbus Avenue

Malcolm X Boulevard and Columbus Avenue intersect Tremont Street to form a four-way signalized intersection. Tremont Street eastbound provides one wide travel lane, which acts as two lanes, one left-through lane and one through-right lane. Malcolm X Boulevard westbound provides one left-through

lane, one through lane, and one channelized right-turn lane onto Tremont Street. Both Columbus Avenue northbound and Tremont Street southbound provide one left turn storage lane, two through lanes, and one through-right turn lane. An exclusive pedestrian phase is provided at this intersection, with crosswalks across all four legs of the intersection.

Tremont Street at Prentiss Street

Prentiss Street intersects Tremont Street to form a three-legged signalized intersection. Prentiss Street eastbound provides one general purpose travel lane. Tremont Street northbound provides one through-left lane and two through lanes, while Tremont Street southbound provides two through lanes and one through-right lane. Due to the use of the curbside lane for parking on the west side of Tremont Street, Tremont Street southbound acts as a two-lane roadway, providing one through lane and one through-right lane.

An exclusive pedestrian phase is provided at this intersection, with crosswalks across all three legs of the intersection.

Tremont Street at Whittier Street / Ruggles Street

Ruggles Street and Whittier Street intersect Tremont Street to provide a four-legged signalized intersection. Ruggles Street eastbound provides two left-turn lanes and one right-turn lane. Whittier Street, a one-way roadway westbound, provides one general use travel lane. At this intersection, each direction of Tremont Street is divided by a median. Tremont Street northbound provides one left-turn lane and three through lanes. Tremont Street southbound provides two through lanes and one right-turn-only lane. Crosswalks are provided across each leg of the intersection. The pedestrian phase is concurrent with the appropriate vehicular phase.

Tremont Street at Ruggles Street / Renaissance Park Drive

At this signalized intersection, each direction of Tremont Street is divided by a median, and Ruggles Street is a one-way roadway eastbound. Tremont Street provides three travel lanes in each direction. On the west side of Tremont Street, Renaissance Park Drive (Columbus Avenue) approaches the intersection as a one-way eastbound roadway.

Crosswalks are provided across both the Ruggles Street and Columbus Avenue legs, as well as the north leg of Tremont Street. The signalized crosswalk across Tremont Street provides a direct pedestrian access to MBTA Ruggles Station.

Tremont Street at Melnea Cass Boulevard

Melnea Cass Boulevard intersects Tremont Street to form a four-way signalized intersection. Melnea Cass Boulevard eastbound provides one left-through lane and one through-right lane. Melnea Cass Boulevard westbound provides one left-turn lane, one left-through lane, and one through-right lane. Tremont Street northbound provides one left-through lane, one through lane, and one channelized right-turn lane. Tremont Street southbound provides one left-through lane and one through-right lane. Crosswalks are provided across each leg of the intersection.

3.6.3 Data Collection

The Boston Transportation Department (BTD) provided BSC with the most recent Synchro traffic model for the Roxbury area. This model includes weekday morning and evening peak hour traffic data for the Project study area, which was utilized for this study. The provided data includes traffic counts from the year 2010. In order to represent existing traffic volumes for 2012, the 2010 volumes were grown by a rate of 0.25 percent per year for two years.

Per BTD guidelines, Saturday midday analysis is required for projects with a retail component. Therefore, additional turning movement counts were conducted at each of the study area intersections on Saturday January 21, 2012 between 11AM – 1PM. Figure 3-2 displays the 2012 Existing Condition traffic volumes on the roadway network. Traffic count data are contained in the Appendix.

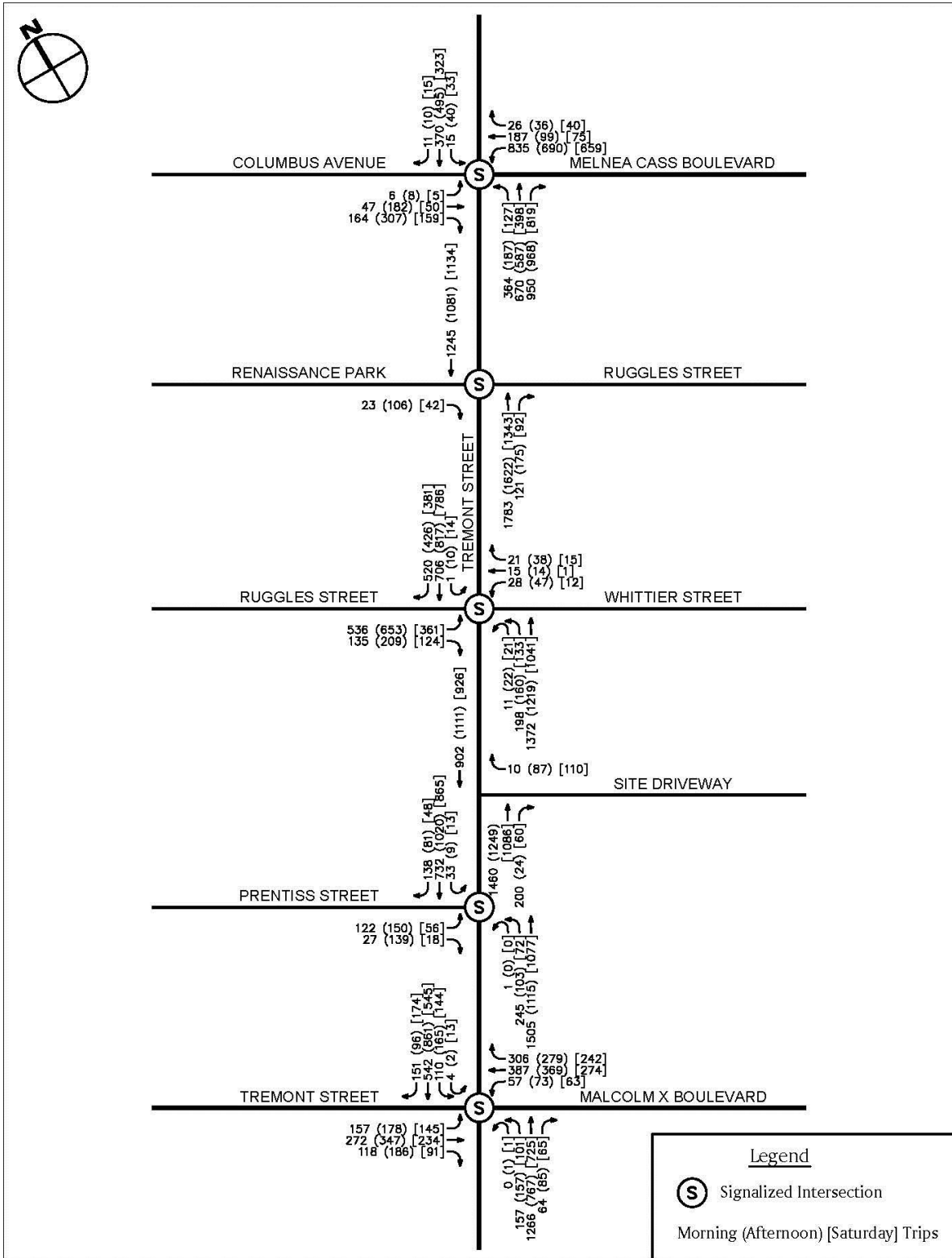
3.6.4 Traffic Operations Analysis

Intersection capacity analyses of study area intersections for the Existing, No-Build, and Build Conditions have been performed. An evaluation of these analyses reveals the impact of the Project on vehicular traffic operations.

Measuring existing traffic volumes and projecting future traffic volumes quantifies traffic flow within a study area. To assess quality of flow, capacity analyses were conducted for study area intersections for the Existing, Future No-Build, and Future Build Conditions. The capacity analyses provide a standardized indication of the ability of the intersections to accommodate traffic demands placed upon them.

Capacity analyses for the weekday morning, weekday afternoon, and Saturday midday peak hours were performed at each of the study area intersections. The Synchro traffic analysis software package (Version 8) was employed to evaluate operating conditions at the study area intersections.

Figure 3-2: 2012 Existing Conditions Peak Hour Traffic Volumes



3.6.5 Levels of Service Criteria

A primary result of capacity analyses is the assignment of Levels of Service (LOS) to traffic facilities under various traffic flow conditions. Analyses were conducted using methods defined in the Highway Capacity Manual 2000 (TRB, 2000) for signalized and unsignalized intersections. The concept of Level of Service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists.

A Level of Service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. In so doing, Level of Service provides an index to quality of traffic flow.

Six Levels of Service are defined for each type of facility. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F representing the worst. Since the Level of Service of a traffic facility is a function of traffic flows placed upon it, an intersection may operate at a wide range of Levels of Service, depending on time of day, day of week, or period of year.

The average delay per vehicle approaching an intersection is used to quantify the Level of Service at a particular intersection. This is discussed briefly below, and LOS designations are defined in Table 3-1. Average delay measures the mean stopped delay experienced by vehicles entering an intersection during the design period. Average delay is measured for each individual turning movement that must yield the right of way, and for the intersection as a whole (including through vehicles that experience no delay).

Table 3-1: Level of Service Designations

Category	Delay (Sec/Veh)	
	Unsignalized	Signalized
LOS A	0.0 - 10.0	0.0 - 10.0
LOS B	10.1 - 15.0	10.1 - 20.0
LOS C	15.1 - 25.0	20.1 - 35.0
LOS D	25.1 - 35.0	35.1 - 55.0
LOS E	35.1 - 50.0	55.1 - 80.0
LOS F	50.1 +	80.1 +

Source: Transportation Research Board, Highway Capacity Manual, National Research

3.6.6 Existing Conditions Capacity Analysis

Existing conditions were analyzed at each of the study area intersections for the year 2012 to determine baseline conditions. Analyses were conducted during weekday morning, weekday afternoon, and Saturday midday peak hours. Table 3-2 below presents a summary of the existing condition capacity analyses. Complete analysis calculations and summaries, including queue length, queue figures, and detailed results for each movement, are contained in Appendix 3.

Table 3-2: Existing Conditions Capacity Analysis Summary

<u>Intersection</u>	<u>Time Period</u>	<u>2012 Existing</u>		
		<u>Delay (sec)</u>	<u>LOS</u>	<u>v/c Ratio</u>
Tremont St / Melnea Cass Blvd	Weekday AM	52.9	D	1.04
	Weekday PM	46.0	D	0.96
	Saturday MID	22.9	C	0.75
Tremont St /Ruggles St / Renaissance Park	Weekday AM	4.9	A	0.51
	Weekday PM	5.2	A	0.49
	Saturday MID	4.7	A	0.42
Tremont St / Ruggles St / Whittier St	Weekday AM	34.2	C	0.78
	Weekday PM	54.8	D	0.85
	Saturday MID	23.7	C	0.66
Tremont St / Prentiss St	Weekday AM	36.7	D	0.86
	Weekday PM	36.1	D	0.80
	Saturday MID	13.7	B	0.59
Tremont St / Malcolm X Blvd / Columbus Ave	Weekday AM	105.1	F	0.95
	Weekday PM	106.1	F	0.85
	Saturday MID	58.4	E	0.71

3.6.7 Existing Parking

Off-Street Parking

Per BTD guidelines, existing off-street parking facilities located within one-quarter mile of the Project Site have been identified. Within this area, four facilities have been identified, as shown below in Table 3-3. The locations of these facilities are shown in Figure 3-3.

Table 3-3: Existing Off-Street Parking within One Quarter-Mile of the Site

Map ID	Facility Name	Public Parking Spaces
A	Parcel P3 Main Lot	235 marked 72 unmarked
B	Madison Park High School	N/A
C	Boston Police Headquarters	93
D	Renaissance Parking Garage	930

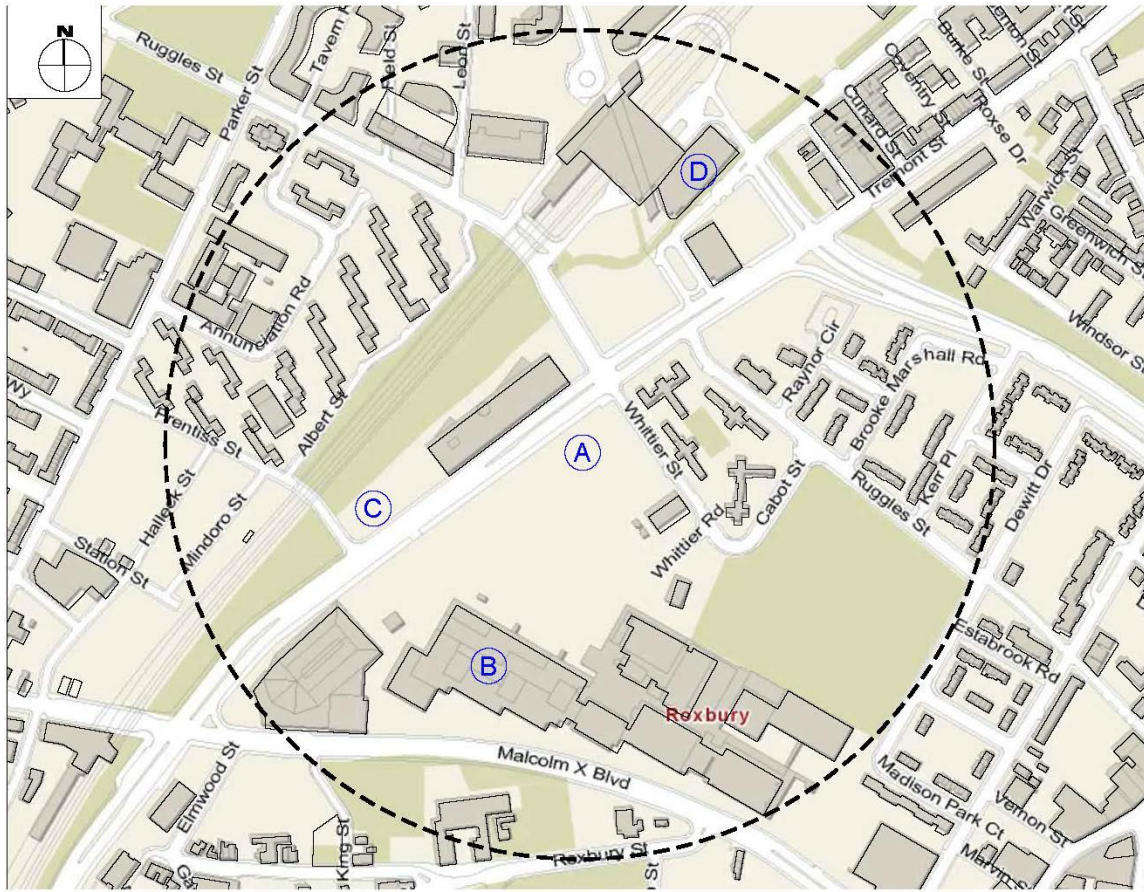
The Project Site is currently utilized as ancillary parking for both the Boston Police Department and the Boston Public Schools, both of which have adjacent facilities. According to information provided by the Boston Redevelopment Authority, the main parking lot of Project Site currently provides 235 marked parking spaces, with an additional 72 informal unmarked parking spaces. The nearby Boston Police Headquarters lot provides 93 parking spaces for the employees of the Boston Police Department. The Renaissance Parking Garage, which is owned by Northeastern University, provides approximately 930 parking spaces.

The Proponent understands that the ancillary police parking will temporarily be moved to a site that is commonly referred to as the “Crescent Parcel”, located at the corner of Tremont Street and Melnea Cass Boulevard, until a more permanent solution is identified.

In addition, the Project Site is utilized by the Whittier Street Health Center (WSHC) for parking at its new facility. As per an existing agreement between the Whittier Street Health Center and the Proponent, during construction of the Project, seventy-five (75) parking spaces will be made available by the Proponent for use by the WSHC facility. Once construction of the Project has

been completed, the Proponent will lease seventy-five (75) permanent parking spaces to the WSHC in the parking structure to be a part of the Project.

Figure 3-3: Map of Public Parking Within Quarter-Mile of the Site

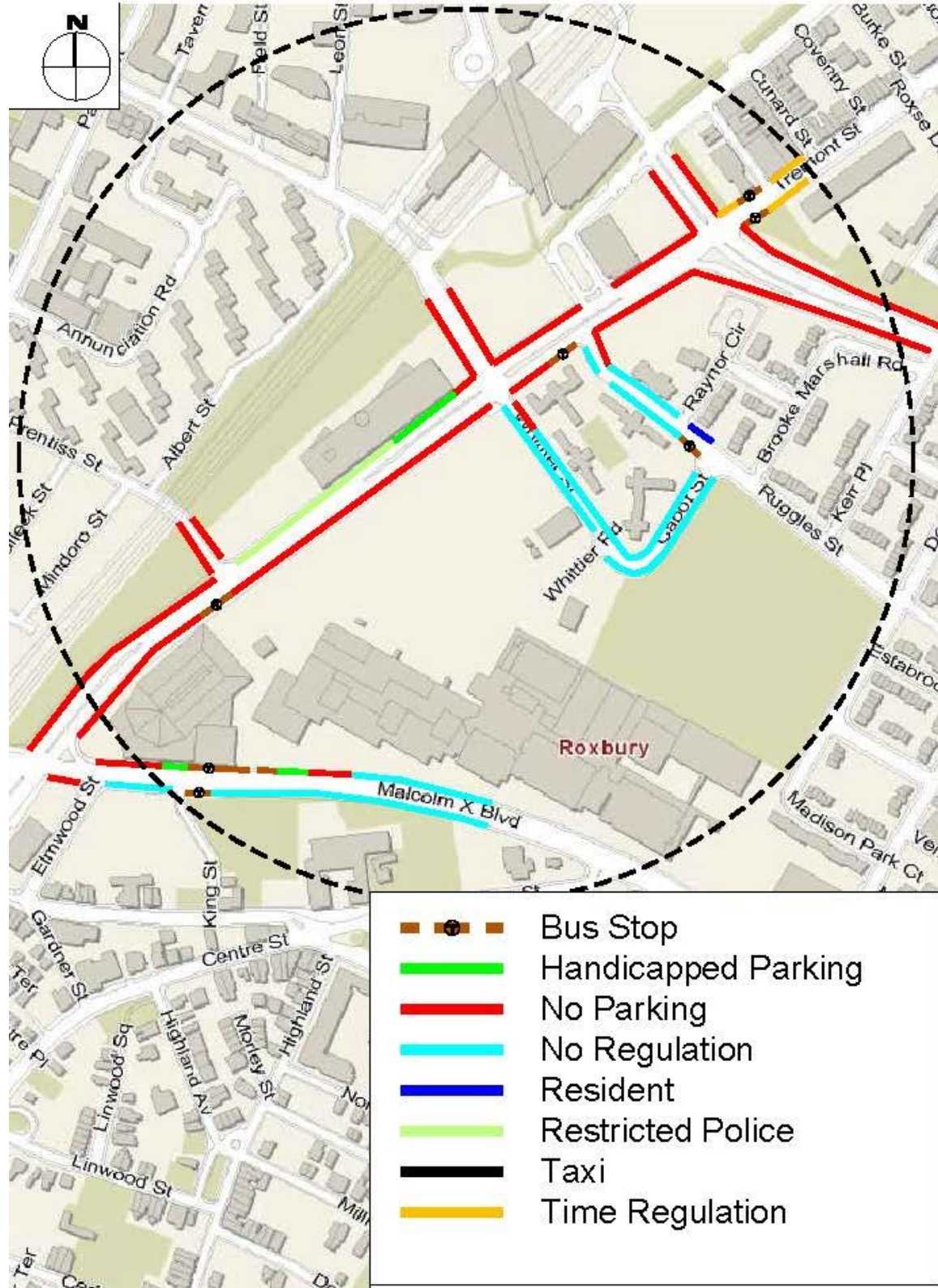


On-Street Parking

Existing on-street parking availability was inventoried in January 2012 to determine the locations and types of on-street parking regulation available on Tremont Street and side streets within the one-quarter mile radius of the Site. The results of the inventory are shown below in Figure 3-4. As can be seen in this figure, parking is restricted along large portions of Tremont Street. The remaining areas are in front of the Boston Police Department headquarters and are used for police vehicles, emergency vehicles, taxi stands, and handicapped spaces. Additional uses within the area include various time regulated areas, resident permit locations, and several areas where parking is not regulated, including most of Whittier Street. In addition, there are seven

(7) bus stops within the quarter-mile radius, including four (4) on Tremont Street, two (2) on Malcolm X Boulevard, and one (1) on the eastern leg of Ruggles Street.

Figure 3-4: Map of On-Street Parking Within Quarter-Mile of the Site



On Tuesday May 21, Thursday May 23, and Saturday June 1, 2013, BSC performed a parking utilization study on a section of Tremont Street in front of the Boston Police Department (BPD).

Parking utilization data were obtained for the area in front of the police station at the request of BTM. The limit of the area was along the western side of Tremont Street from Ruggles Street to Prentiss Street. The parking study, conducted over a 12-hour period from 6 AM to 6 PM, found that a high proportion of the spaces were occupied by vehicles parking long-term, despite the fact that the areas are designated for 30-minute police parking. Also, the overall utilization of the parking spaces was high, with approximately 80% of the parking spaces occupied for most of the weekday study period.

3.6.8 Existing Public Transportation

Public transportation in the form of rapid transit, commuter rail, and bus services is provided by the Massachusetts Bay Transportation Authority (MBTA) in the vicinity of the study area. Ruggles Station and Roxbury Crossing Station, both serving MBTA busses and the MBTA Orange Line, are located within approximately one-third of a mile from the Site. Ruggles Station also serves three (3) Commuter Rail routes: the Needham, Franklin, and Providence / Stoughton Lines. A major bus terminal is located at Dudley Square, approximately one-half mile radius southeast of the Project Site and provides connections to over 15 bus routes and 2 Silver Line routes.

Fourteen bus routes, listed below, are within walking distance from the Project Site. A bus stop located on the east side of Tremont Street, across from Prentiss Street, provides access to eight (8) of these fourteen (14) routes. Table 3-4 and Figure 3-5 show the available public transit routes in more detail.

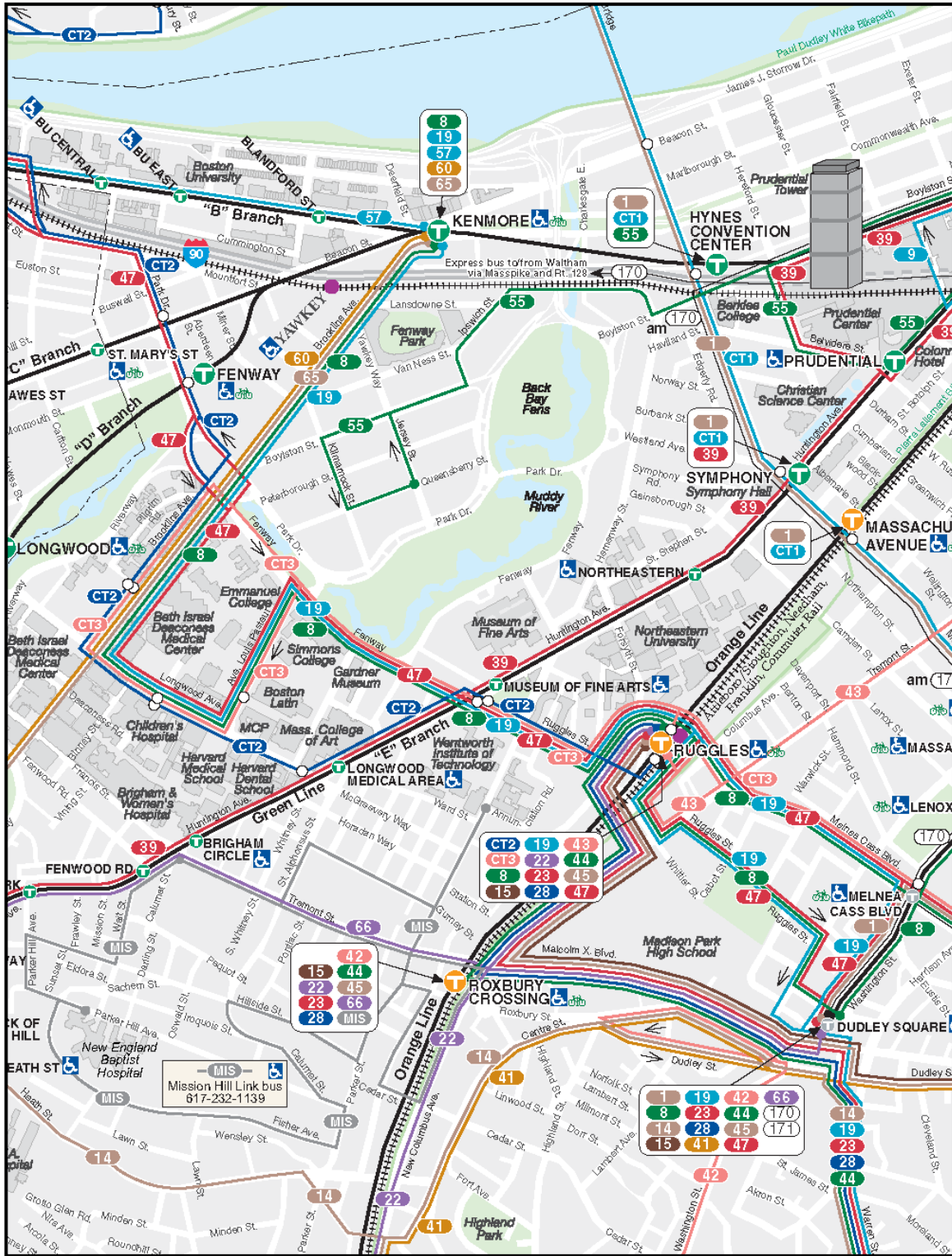
Table 3-4: Bus Routes near the Project Site

Route		Headways^a	Ridership^b
Number	Travel Route		
CT2	Sullivan Station – Ruggles Station	15	2,110
CT3	Beth Israel Deaconess Medical Center – Andrew Station	15	1,086
8	Harbor Point / UMass – Kenmore Station	14	3,217
15	Kane Square or Fields Corner Station – Ruggles Station	6	6,951
19	Fields Corner – Kenmore or Ruggles Station	14	3,376
22	Ashmont Station – Ruggles Station	8	7,047
23	Ashmont Station – Ruggles Station	5	11,142
28	Mattapan Station – Ruggles Station	7	10,607
42	Forest Hills Station – Dudley or Ruggles Station	12	2,818
43	Ruggles Station – Park & Tremont Streets	12	2,217
44	Jackson Square Station – Ruggles Station	12	3,791
45	Franklin Park Zoo – Ruggles Station	10	3,600
47	Central Square, Cambridge – Broadway Station	8	4,341
66	Harvard Square – Dudley Station	7	14,676

^aMinutes between busses during the weekday morning and evening peak hours

^bTypical weekday boarding, based on data provided by the Massachusetts Bay Transportation Authority (MBTA) Ridership and Service Statistics (2010)

Figure 3-5: Public Transportation Map



3.6.9 Existing Pedestrian Access and Bicycle Accommodation

In the vicinity of the Project, sidewalks are provided along both sides of Tremont Street, Columbus Avenue, Malcolm X Boulevard, Ruggles Street, Whittier Street, and Melnea Cass Boulevard. Crosswalks are located across both legs of Tremont Street at the intersections of Malcolm X Boulevard, Prentiss Street, Ruggles Street / Whittier Street, and Melnea Cass Boulevard. A crosswalk is also located across the north leg of Tremont Street at Whittier Street to the pedestrian plaza on Columbus Avenue that leads to the Ruggles MBTA Station. Pedestrian push buttons, pedestrian signals, and accessible ramps are provided with each of the crosswalks across Tremont Street. Along Tremont Street, all sidewalks measure 7-10 feet wide, and are generally in good condition. The existing roadway network provides pedestrian and bicycle connections to Ruggles, Roxbury Crossing, and Dudley Stations, all located within one-half mile.

The existing crosswalks across the intersection of Tremont Street at Malcolm X Boulevard and Columbus Avenue are up to 100 feet long. This length not only requires pedestrians to cross a long distance, but also requires a long exclusive pedestrian phase, which contributes to existing delays and long traffic queues at the approaches to this intersection.

On the west side of Tremont Street, a multi-use path provides pedestrian and bicycle access within Southwest Corridor Park. This 52-acre Park, owned by the Massachusetts Department of Conservation and Recreation (DCR), connects the neighborhoods of South End, Back Bay, Roxbury, and Jamaica Plain. This path provides both pedestrian and bicycle access to the area. Bicycle lanes on Ruggles Street provide a direct connection between the Southwest Corridor Park and Tremont Street.

A section of the South Bay Harbor Trail currently exists on the north side of Melnea Cass Boulevard. This 3.5-mile trail is intended to connect several Boston neighborhoods with Boston Harbor and the Emerald Necklace. Upon completion, the trail will connect five Boston neighborhoods: South End, Roxbury, Chinatown, South Boston, and the Fort Point Channel. This trail will provide access for pedestrians and bicyclists alike.

3.6.10 Crash Data

Crash data for the study area intersections were obtained from MassDOT – Highway Division for the most recent three years on record (2009 – 2011).

Crash rates were calculated for each study area intersection. These rates represent the number of reported crashes per million vehicles entering the intersection and are used as a means to measure the “relative safety at a particular location”. To calculate the crash rates, BSC applied the K-factor based on 2009 MassDOT count stations. Traffic volumes used to calculate crash rates were based on the year 2012 existing crash data, developed from the Synchro files provided by BTB.

MassDOT has determined the average crash rates in 2013 in the State to be 0.80 for signalized intersections and 0.60 for unsignalized intersections. The average crash rates in 2013 in District 6 (which includes the Roxbury neighborhood in the City of Boston) are 0.76 for signalized intersections and 0.58 for unsignalized intersections.

As indicated in Table 3-5, all of the five study area intersections exhibited a crash rates lower than the MassDOT averages. Summaries of the crash data are provided in Table 3-6. Crash rate worksheets are contained in Appendix 3.

Table 3-5: Crash Rate Summary

Intersection	Number of Crashes				Calculated Crash Rate*
	2009	2010	2011	Average	
Tremont St at Malcolm X Blvd / Columbus Ave	6	4	1	3.67	0.19
Tremont St at Prentiss St	0	2	2	1.33	0.09
Tremont St at Whittier St	0	1	0	0.33	0.02
Tremont St at Ruggles St	2	2	3	2.33	0.14
Tremont St at Melnea Cass Blvd	2	3	2	2.33	0.12

**per million entering vehicles, as defined by the Massachusetts Department of Transportation (MassDOT)*

Table 3-6: Summary of Crash Data

	Tremont Street at Malcolm X Boulevard / Columbus Avenue			Tremont Street at Prentiss Street			Tremont Street at Whittier Street		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
<i>Severity</i>									
Property Damage		2			1	1			
Injury	4	1	1						
Hit and Run									
Fatality									
Other	2	1			1	1		1	
<i>Collision Type</i>									
Rear End	1	1			1			1	
Angle			1						
Head On									
Sideswipe									
Other	5	3			1	2			
<i>Time</i>									
6am-10am	3	1			1	1			
10am-4pm	2	1			1	1			
4pm-7pm			1					1	
7pm-6am	1	2							
<i>Road Conditions</i>									
Dry	3	1	1		2	1			
Wet		1						1	
Snow/Ice									
Other	3	2				1			
<i>Season</i>									
Dec-Feb		1							
Mar-May		1			1	1			
Jun-Aug	3	2			1			1	
Sep-Nov	3		1			1			
<i>Light</i>									
Daylight	2		1		2	1		1	
Dawn/Dusk									
Dark (Unlit)									
Dark (Lit)	1	2							
Unknown	3	2				1			
Total	6	4	1	0	2	2	0	1	0
Average No. of Crashes	3.67			1.33			0.33		
Calculated Crash Rate^a	0.19			0.09			0.02		
MassDOT Avg. Statewide / District 6 Crash Rate^b	0.80 / 0.76			0.80 / 0.76			0.80 / 0.76		
^a per million entering vehicles, as defined by the Massachusetts Department of Transportation – Highway Division									
^b crash information queried on January 23, 2013 from www.massdot.state.ma.us									

Table 3-6: Summary of Crash Data (cont'd)

	Tremont Street at Ruggles Street			Tremont Street at Melnea Cass Boulevard		
	2009	2010	2011	2009	2010	2011
<i>Severity</i>						
Property Damage	1	1	2	2	2	
Injury	1	1				1
Hit and Run						
Fatality						
Other			1		1	1
<i>Collision Type</i>						
Rear End	2		2	1		
Angle		1			1	
Head On						
Sideswipe		1	1		1	
Other				1	1	2
<i>Time</i>						
6am-10am	1		1	1		
10am-4pm		2	2	1		2
4pm-7pm					1	
7pm-6am	1				2	
<i>Road Conditions</i>						
Dry	2	2	1	1	3	1
Wet			2			
Snow/Ice						
Other				1		1
<i>Season</i>						
Dec-Feb			2		1	
Mar-May		1		1		1
Jun-Aug	1		1			1
Sep-Nov	1	1		1	2	
<i>Light</i>						
Daylight	2	2	3	2	1	1
Dawn/Dusk					1	
Dark (Unlit)						
Dark (Lit)					1	1
Unknown						
Total	2	2	3	2	3	2
Average No. of Crashes	2.33			2.33		
Calculated Crash Rate ^a	0.14			0.12		
MassDOT Avg. Statewide / District 6 Crash Rate ^b	0.80 / 0.76			0.80 / 0.76		
^a per million entering vehicles, as defined by the Massachusetts Department of Transportation – Highway Division						
^b crash information queried on January 23, 2013 from www.massdot.state.ma.us						

3.7 Long-Term Transportation Impacts

Future traffic conditions within the study area were projected to gain an understanding of the impact on the adjacent transportation network due to the Project. Traffic growth within the study area is a function of the expected land development, economic activity, changes in demographics, and changes in travel patterns.

Two (2) future scenarios were evaluated in order to determine future traffic conditions under a five-year planning time horizon. This timeline is consistent with BTD guidelines for evaluating a project's long-term transportation impacts. The first scenario, the future No Build condition, examines vehicular traffic conditions five (5) years into the future (2017) assuming that the proposed Project is not constructed. The second scenario, the future Build condition, examines the impact that the proposed development will have on all transportation modes within the study area.

3.8 Future No Build Traffic Conditions

In order to evaluate traffic impacts associated with the proposed Project, the future No Build condition is analyzed to provide a baseline condition for comparison. Future No Build condition vehicular traffic volumes are those that are expected to use the roadway network in the future, assuming the proposed Project is not constructed. BTD guidelines recommend the evaluation of traffic conditions five (5) years into the future, resulting in an analysis for the year 2017. Future No Build condition traffic volumes consist of background growth and traffic generated from specific proposed development projects in the study area added to the Existing volumes.

3.8.1 Growth Rate

Typically, background growth is a function of future land development, increased economic activity, and changes in travel patterns. Based on discussions with BTD, a 0.25 percent annual growth rate was used to determine background growth. This growth rate was applied to the 2012 Existing Conditions traffic volumes.

3.8.2 Specific Projects

Based on discussions with BTD and BRA, trips from the following specific developments were included in the No Build volumes.

1480 - 1486 Tremont Street – located in the Mission Hill neighborhood, this project involves the construction of a 75,000 SF residential building for 66 retail housing units (21 studios, 28 one-bedroom, and 17 two-bedroom units) and 6,200 SF of ground-floor commercial space.

2451 Washington Street – this project consists of 37 residential units.

Bartlett Place – located at 2565 Washington Street, the overall Project development will consist of 323 residential units, 31,322 SF of retail, and 22,153 SF of commercial / light industrial space.

Basilica Court – this project consists of 229 residential units and is the re-development of the Mission Hill School.

Dudley Municipal Office Building – located at 2262 Washington Street, this project is the redevelopment of the Ferdinand Building and will involve the construction of 20,000 SF of retail space and 140,000 SF of office space.

Jackson Square Phase 1 – this project involves the redevelopment of land in Jackson Square on Centre Street, Ritchie Street, Amory Street, and Columbus Avenue. The Project will include 438 residential units, 61,200 SF of retail space, 66,500 SF of community and recreational space, and 13,400 SF of a treatment facility for the Department of Youth Facility (DYS).

Parcel 9 – located at the intersection of Melnea Cass Boulevard and Washington Street, this Project proposes the Melnea Hotel and Residences, consisting of a 145-room hotel, 50 residential units, and approximately 8,000 SF of retail space.

Parcel 10 – the proposed Madison Tropical Project involves the rehabilitation of the existing Tropical Foods building into approximately 20,000 SF of supermarket, 30 units of residential housing, 23,000 SF of retail space, and 47,000 SF of office.

Whittier Street Health Center – this project is adjacent to the Project site and has since been completed. The traffic volumes for this project were not included as part of the BTM Synchro model, and therefore are included as background project trips in the analysis.

Trips from the proposed programs were taken from available reports or generated using ITE trip generation rates. The resulting trips were distributed onto the study area roadway network where the reports were not available. No Build vehicular traffic volumes are displayed in Figure 3-6. Background traffic data is contained in Appendix 3.

3.8.3 Background Transportation Studies

BTD is working with the Roxbury community to redesign Melnea Cass Boulevard. The proposed project involves provisions for bicycles, pedestrians, vehicles, and bus rapid transit services. The project is currently at the 25% design stage and therefore is not included in this Project.

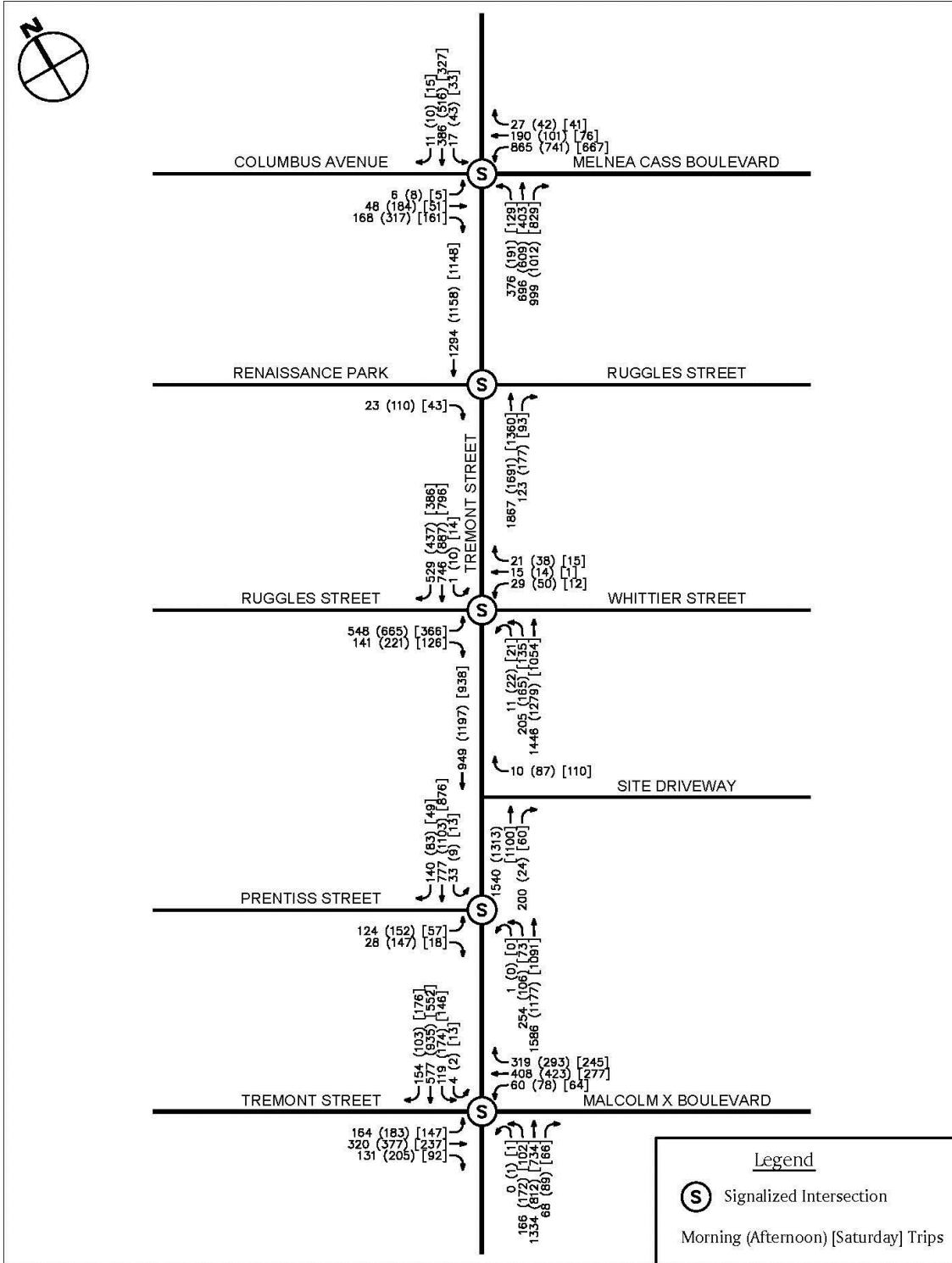
3.8.4 No Build Conditions Capacity Analysis

Table 3-7 below presents a summary of the No Build condition capacity analyses for each of the study area intersections during the three peak hours analyzed. Complete analysis calculations and summaries, including queue length, queue figures, and detailed results for each movement, are contained in Appendix 3.

Table 3-7: No Build Conditions Capacity Analysis Summary

<u>Intersection</u>	<u>Time Period</u>	<u>2012 No Build</u>		
		<u>Delay (sec)</u>	<u>LOS</u>	<u>v/c Ratio</u>
Tremont St / Melnea Cass Blvd	Weekday AM	60.8	E	1.08
	Weekday PM	55.8	E	1.00
	Saturday MID	23.1	C	0.76
Tremont St / Ruggles St / Renaissance Park	Weekday AM	5.1	A	0.53
	Weekday PM	5.3	A	0.51
	Saturday MID	4.8	A	0.42
Tremont St / Ruggles St / Whittier St	Weekday AM	35.3	D	0.81
	Weekday PM	59.1	E	0.89
	Saturday MID	24.0	C	0.67
Tremont St / Prentiss St	Weekday AM	45.2	D	0.91
	Weekday PM	42.5	D	0.85
	Saturday MID	14.7	B	0.60
Tremont St / Malcolm X Blvd / Columbus Ave	Weekday AM	>120	F	1.04
	Weekday PM	>120	F	0.95
	Saturday MID	59.4	E	0.72

Figure 3-6: 2017 Future No Build Conditions Peak Hour Traffic Volumes



3.9 Future Build Traffic Conditions

In order to evaluate the effect of the Project on traffic conditions in the study area, Site-generated trips were projected, distributed, and assigned to the adjacent transportation network. In the case of vehicular traffic, these vehicle-trips are added to future No Build conditions traffic volumes to form the Build condition traffic volume networks for the weekday morning, weekday afternoon, and Saturday midday peak hours.

3.9.1 Trip Generation Analysis

The proposed building program for the Tremont Crossing development involves the construction of a total of 438,275 SF of retail (including 33,800 square feet of small format retail) fronting along Tremont Street, 233,784 square feet of office space, 300 units of multifamily residential (297,886 square feet), a 200-room hotel and 37,520 square feet of museum (21,000 SF) and art studio space. This represents an approximately 15 percent reduction in retail space from the PNF and a decrease of approximately 33,000 SF, or approximately 60%, of museum space.

Although the Project's mix of uses will be as set forth above, for purposes of the analysis and findings, a marginally different set of program uses/sizes has been used. This is a result of some minor architectural adjustments that were made subsequent to this analysis. As the differences in program are very minor, the Proponent believes that the findings herein are accurate.

In order to estimate the number of trips associated with the proposed development, the Institute of Transportation Engineers (ITE) Trip Generation Manual (9th Edition, 2012) was employed. This manual provides vehicle-trip generation projections for a number of land uses. Table 3-8 below outlines the breakdown of the trips associated with the proposed uses on the Site.

Table 3-8: Trip Generation

	Total Daily Trips Weekday	Weekday Morning Peak Hour (vehicle-trips)			Weekday Afternoon Peak Hour (vehicle-trips)			Saturday Midday Peak Hour (vehicle-trips)		
		Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
454,621 SF Retail ^a	18,172	244	149	393	793	859	1,652	1,217	1,122	2,339
231,500 SF Office ^b	2,485	330	45	375	58	280	338	54	46	100
21,000 SF Museum ^c	120	6	0	6	1	3	4	10	4	14
300 Apartment Units ^d	1,942	31	120	151	119	64	183	71	71	142
200 Hotel Rooms ^e	1,634	63	43	106	62	58	120	81	63	144
Total ITE Vehicle-Trips	24,353	674	357	1,031	1,033	1,264	2,297	1,433	1,306	2,739

^abased on ITE Land Use Code 820 – Shopping Center
^bbased on ITE Land Use Code 710 – General Office Building
^cbased on ITE Land Use Code 580 - Museum
^dbased on ITE Land Use Code 220 – Apartments
^ebased on ITE Land Use Code 310 - Hotel

3.9.2 Modal Split / Vehicle Occupancy Ratio

The City of Boston benefits from widely accessible public transportation, bicycle, and pedestrian facilities, and mode split data is used to account for the different modes of travel available in the City. Mode share data was obtained from the Boston Transportation Department (BTD) and has been applied to the total trips. The mode share data was developed as part of the Access Boston Citywide Transportation Study using the Central Transportation Planning Staff’s (CTPS) regional traffic model and Journey-to-Work data.

The area in which the Project is located is along the border between Zone 15 and Zone 4. Given the Project Site’s proximity to Zone 4 and with over 14 bus routes, two Orange line rapid transit stations, and three (3) commuter rail lines in the immediate vicinity of the Site, BTD agreed that the modal split characteristics of the Site were more represented by Zone 4 than by Zone 15. Comments by BTD on the PNF submission for this project suggested a reassessment of the zone used for the analysis. After further discussions with BTD, it was confirmed that the characteristics of Zone 4 were more appropriate for this Project location than those of Zone 15. Table 3-9 displays the modal split percentages based on Zone 4.

Table 3-9: Modal Split

		Daily	Weekday				Saturday	
			Morning Peak		Afternoon Peak		Midday Peak	
			Entering ^a	Exiting ^b	Entering	Exiting	Entering	Exiting
Office	Auto	44%	37%	43%	43%	37%	44%	44%
	Transit	32%	38%	28%	28%	38%	32%	32%
	Walk	24%	25%	29%	29%	25%	24%	24%
Retail	Auto	29%	24%	26%	26%	24%	29%	29%
	Transit	16%	19%	13%	13%	19%	16%	16%
	Walk	55%	57%	61%	61%	57%	55%	55%
Museum	Auto	29%	24%	26%	26%	24%	29%	29%
	Transit	16%	19%	13%	13%	19%	16%	16%
	Walk	55%	57%	61%	61%	57%	55%	55%
Resi- dential	Auto	24%	19%	21%	21%	19%	24%	24%
	Transit	19%	22%	15%	15%	22%	19%	19%
	Walk	57%	59%	64%	64%	59%	57%	57%
Hotel	Auto	29%	24%	26%	26%	24%	29%	29%
	Transit	16%	19%	13%	13%	19%	16%	16%
	Walk	55%	57%	61%	61%	57%	55%	55%

Source: Boston Transportation Department, Policy and Planning Division ^aEntering = trips ending in Zone 4
^bExiting = trips beginning in Zone 4

Average vehicle occupancy rates (VOR) were provided by ITE and local rates were obtained from the Boston Redevelopment Authority (BRA) report entitled “Fenway Neighborhood Transportation Plan” (November 2001). These rates, which have also been used in recent traffic reports in the area, are as follows: a VOR of 1.2 persons per vehicle was used for trips associated with office, residential, and hotel use and a VOR of 1.8 persons per vehicle was used for the retail and museum trips. It must be noted that it is expected that most of the museum would consist of school busses carrying school children. Therefore the VOR for that use may be higher; a rate of 1.8 may be a conservative estimate. Table 3-10 displays the person-trips by mode based on the percentages shown above.

Table 3-10: Total Person-Trips by Mode

		Weekday						
		Daily	Morning Peak		Afternoon Peak		Saturday Peak	
			Entering	Exiting	Entering	Exiting	Entering	Exiting
Office	Auto	1,312	147	23	30	124	29	25
	Transit	954	150	15	20	128	21	18
	Walk	716	99	16	20	84	16	13
Retail	Auto	9,486	106	70	371	371	635	586
	Transit	5,234	84	35	186	294	351	323
	Walk	17,991	251	164	871	882	1,205	1,111
Museum	Auto	63	3	0	1	1	5	2
	Transit	35	2	0	0	1	3	1
	Walk	119	6	0	1	3	10	4
Residential	Auto	559	7	30	30	15	21	21
	Transit	443	8	22	21	17	16	16
	Walk	1,329	22	92	92	45	49	49
Hotel	Auto	569	18	14	20	17	28	22
	Transit	314	14	7	10	13	16	12
	Walk	1,079	43	32	46	40	54	42

Table 3-11, below, displays the combined person-trips generated by automobile, and then converted into vehicle-trips based on the previously mentioned VORs of 1.2 for office, residential, and hotel and 1.8 for retail and museum.

Table 3-11: Total Project Vehicle Trips

	Weekday						
	Daily	Morning Peak		Afternoon Peak		Saturday Peak	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
Office (Person-Trips)	1,312	147	23	30	124	29	25
Retail (Person-Trips)	9,486	106	70	371	371	635	586
Museum (Person-Trips)	63	3	0	1	1	5	2
Residential (Person-Trips)	559	7	30	30	15	21	21
Hotel (Person-Trips)	569	18	14	20	17	28	22
Total Person-Trips by Auto	11,989	280	140	457	532	721	662
Total Vehicle-Trips	7,340	207	97	277	339	422	386

3.9.3 Pass-By Trips

It is expected that a portion of the trips generated by the retail facilities will come from the existing vehicle traffic streams along Tremont Street. These trips are referred to as “Pass-By” trips and do not contribute to the new vehicle trips generated by the development. Per MassDOT guidelines, a 25% pass-by rate was applied to the retail portion of the vehicle trips. Table 3-12 shows the incremental vehicle trips, minus the pass-by trips, to result in the total net new trips generated by the proposed Project.

Table 3-12: Net New Vehicle Trips

	Weekday						
	Daily	Morning Peak		Afternoon Peak		Saturday Peak	
		Entering	Exiting	Entering	Exiting	Entering	Exiting
Office, Museum, Residential, and Hotel Vehicle-Trips	2,070	148	58	70	132	69	60
Retail Vehicle Trips	5,270	59	39	207	207	353	326
LESS Retail Pass-By Vehicle Trips (25%)	1,318	10	10	52	52	82	82
Net New Vehicle-Trips	6,023	197	87	225	287	340	304

As can be seen in Table 3-12, the proposed Tremont Crossing Development is expected to generate 284 net new vehicle-trips during the weekday morning peak hour (197 entering, 87 exiting), 512 net new vehicle-trips during the weekday afternoon peak hour (225 entering, 287 exiting), and 644 net new vehicle-trips during the Saturday midday peak hour (340 entering, 304 exiting). On a weekday daily basis, the Project is expected to generate a total of 5,831 net new vehicle trips.

3.9.4 Vehicle Trip Distribution and Assignment

Trip generation results quantify additional trips associated with a proposed development. In order to assess the impacts related to these additional traffic volumes, trips must be distributed on to the local transportation network. For this analysis, only the vehicle-trips were distributed and assigned to the roadway network.

Vehicle-trips generated to and from the proposed Tremont Crossing project were distributed regionally, based on origin-destination data provided by the

BTD. The data consist of an established distribution of vehicle-trip origins and destinations for vehicle-trips ending and beginning (respectively) in the trip zone in which the project is located (Zone 4, as discussed above). Table 3-13 shows the projected vehicle-trip distribution to and from the Project for the weekday morning, weekday afternoon, and Saturday midday peak periods.

Table 3-13: Vehicle-Trip Distribution Summary

Route	Direction (To/From)	Percent of Site Trips			
		AM Enter	AM Exit	PM/SAT Enter	PM/SAT Exit
Tremont Street	West	19%	14%	17%	20%
Columbus Ave	South	21%	16%	17%	20%
Malcolm X Boulevard	East	6%	5%	5%	5%
Ruggles Street	West	16%	18%	19%	17%
Tremont Street	North	23%	31%	28%	24%
Melnea Cass Boulevard	East	15%	16%	14%	14%
TOTAL		100%	100%	100%	100%

3.9.5 Future Build Condition – Roadway Network

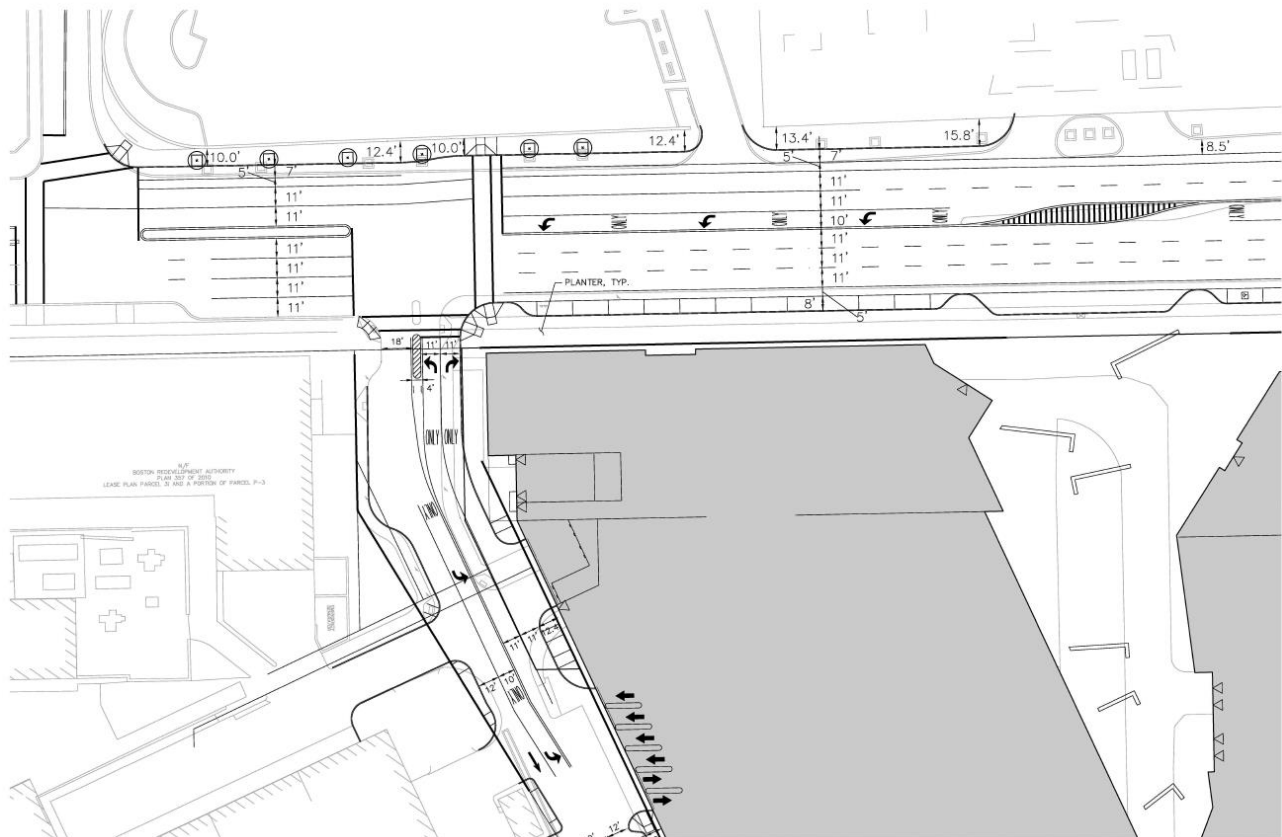
Site Access

The primary vehicular access to the Project will be off of Tremont Street at the northwest corner of the Project Site, adjacent to the office / museum building and will be shared with the Whittier Street Health Center (WSHC). Currently, the WSHC Drive consists of one (1) ingress lane and one (1) right-turn only egress lane. Under future conditions, this drive will be widened to accommodate two (2) egress lanes (one left-turn and one right-turn) and one 18-foot wide ingress lane. The intersection of the Site Drive with Tremont Street will be signalized, and operate as part of the signal at Prentiss Street. The jersey barrier median on Tremont Street between the Site Drive and Ruggles Street will be removed, allowing left turns into and out of the site and providing the width to modify the cross section on Tremont Street. Pedestrian access ramps and pedestrian signals will be provided at the Site Drive intersection to enhance pedestrian access to the site.

The Project Site driveway (South Drive), in addition to being shared with WSHC, will provide access to the parking garage which is currently owned and used by the Boston Public School (BPS).

A secondary means of access/egress to the Project Site is proposed at the end of Whittier Street, where it meets Downing Street (East Drive), to allow for full circulation around the Project Site. This will be accomplished by widening the section of Whittier Street between Tremont Street and Downing Street from one (1) lane to two (2) lanes and making it a two-way street. A left-turn lane with approximately 200 feet of storage will be provided on Tremont Street southbound for vehicles turning onto Whittier Street eastbound. All delivery vehicles, in particular all trucks, will be prohibited from using Whittier Street and will be directed to enter and depart the Site only through the primary site drive (South Drive). Main access to the parking garage will be off of South Drive, while a secondary access will be provided off of East Drive. Figure 3-7 shows the plan view for the proposed driveway layout.

Figure 3-7: Proposed Tremont Street Layout



Using the formulated trip distribution, the new Project vehicle-trips were assigned to the local roadway network based on expected travel patterns. Vehicle trip distribution patterns are illustrated on Figures 3-8 and 3-9. Vehicular traffic volumes expected to be generated by the Project have been distributed and assigned according to the traffic patterns developed in this report and are presented on Figure 3-10.

The traffic patterns reflect the removal of the jersey barrier on Tremont Street between the Site Drive and Ruggles Street to permit full access at the Site Drive intersection, thereby eliminating southbound U-turns at Prentiss Street and reducing northbound U-turns at Ruggles Street. The traffic patterns also reflect the conversion of Whittier Street from one-way to two-way between Tremont Street and Downing Street. It is assumed that 50% of the existing site traffic is associated with the Boston Police Department using the Site for parking. This accounts for approximately 105 trips during the weekday morning peak hour

(100 entering, 5 exiting) and approximately 56 trips during the weekday afternoon peak hour (12 entering, 44 exiting). In the future, these trips will be relocated from the Site to the Crescent Parcel at the corner of Melnea Cass Boulevard / Tremont Street.

The future Build network volumes account for the above changes. Year 2017 Build Condition vehicular traffic volumes, which consist of the addition of project-generated vehicle-trips to previously identified No-Build Condition traffic volumes, are displayed in Figure 3-11. Trip Generation Calculations are contained in the Appendix.

Figure 3-8: Project Trip Distribution – Weekday Morning Peak Hour

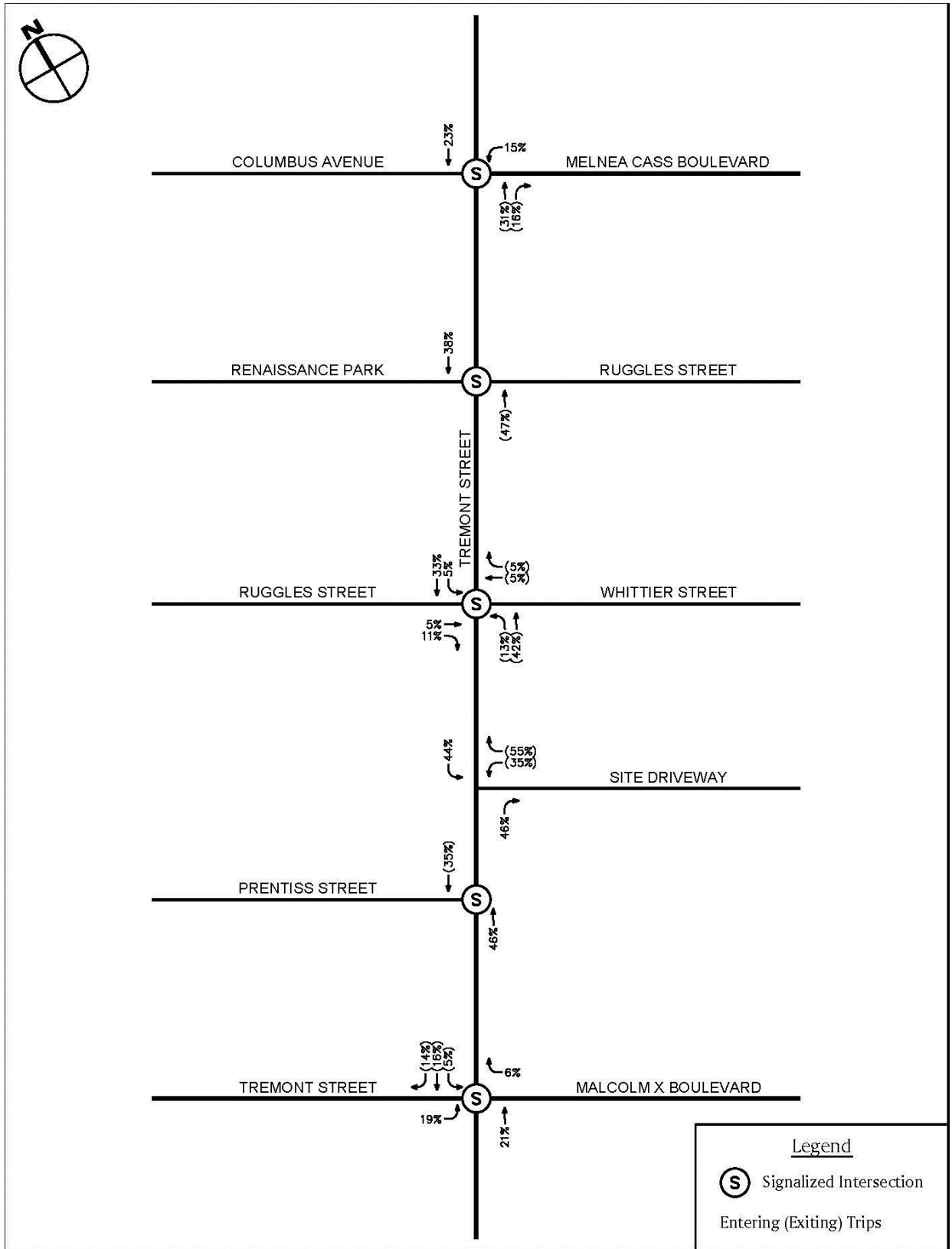


Figure 3-9: Project Trip Distribution – Weekday Afternoon & Saturday Midday Peak Hours

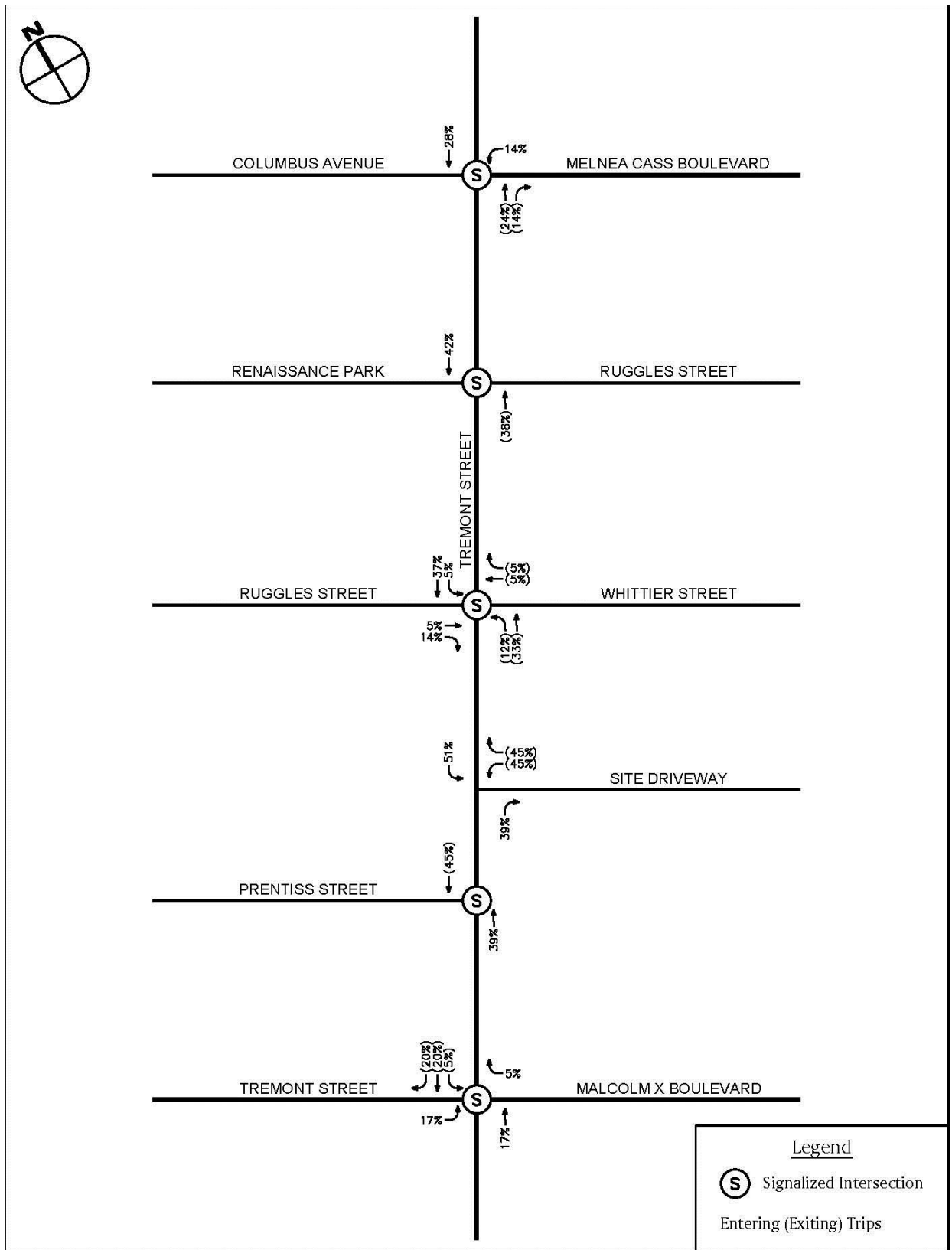


Figure 3-10: Peak Hour Site-Generated Project and Pass-By Trips

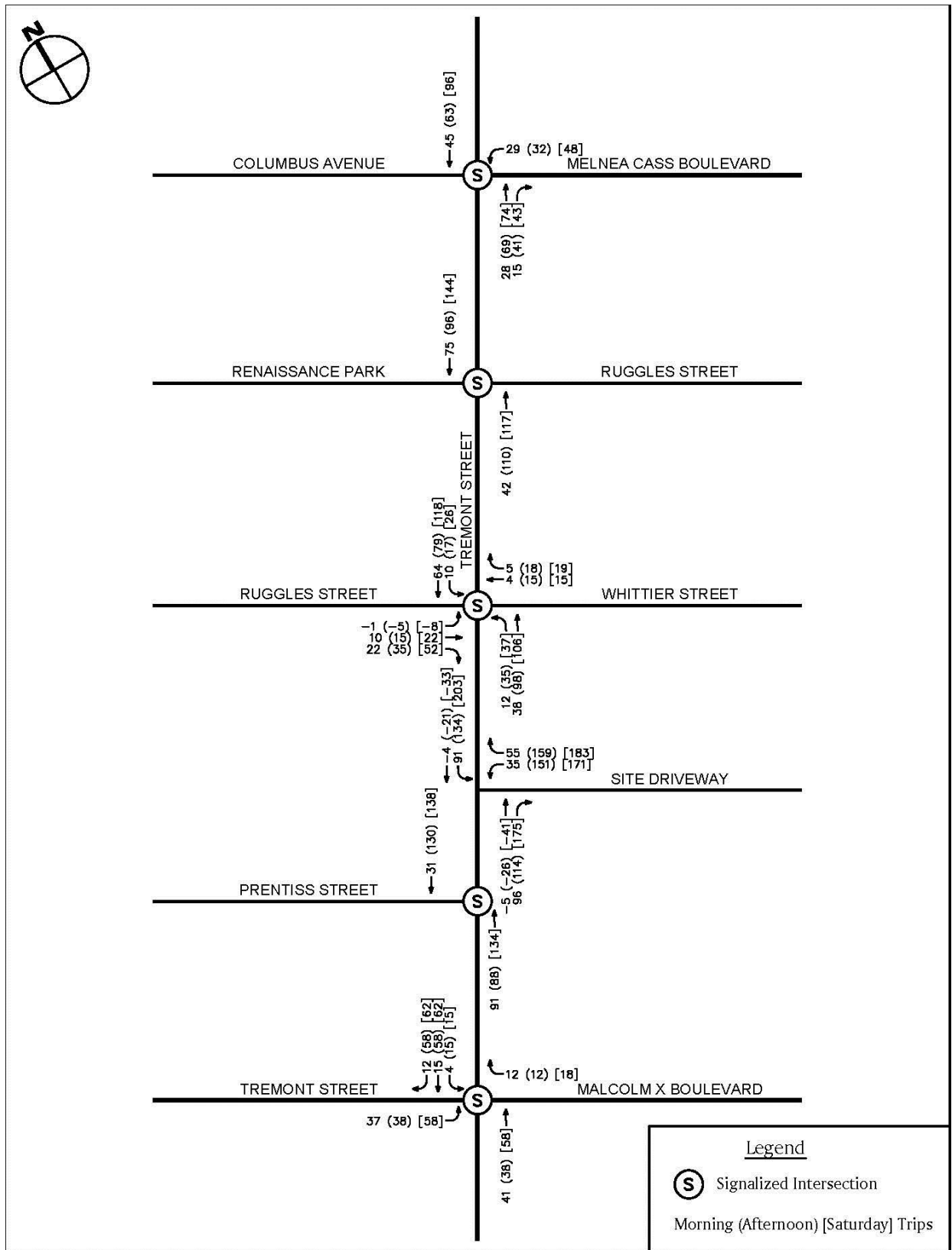
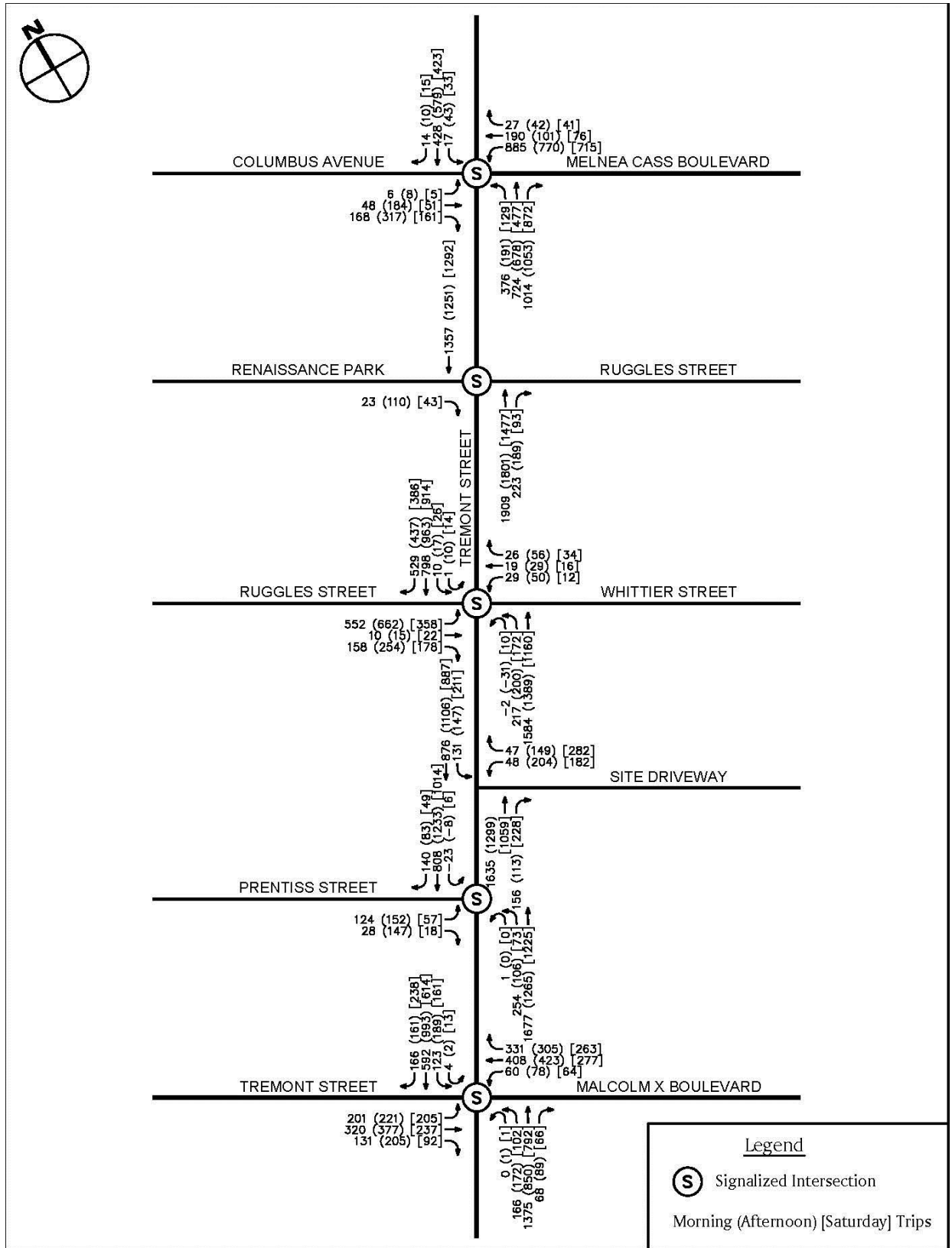


Figure 3-11: 2017 Future Build Conditions Peak Hour Traffic Volumes



3.9.6 Build Condition Operating Conditions

The results of the capacity analysis for the intersections under evaluation are summarized below in Table 3-14. Existing, Future No-Build, and Future Build volume scenarios are evaluated. Complete analysis calculations and summaries, including queue length, queue figures, and detailed results for each movement, are contained in the Appendix.

Table 3-14: Capacity Analysis Summary- Signalized Intersections

<u>Intersection</u>	<u>Time Period</u>	<u>2012 Existing</u>			<u>2017 No Build</u>			<u>2017 Build</u>		
		<u>Delay (sec)</u>	<u>LOS</u>	<u>v/c Ratio</u>	<u>Delay (sec)</u>	<u>LOS</u>	<u>v/c Ratio</u>	<u>Delay (sec)</u>	<u>LOS</u>	<u>v/c Ratio</u>
Tremont St /	Weekday AM	52.9	D	1.04	60.8	E	1.08	69.1	E	1.11
Melnea Cass	Weekday PM	46.0	D	0.96	55.8	E	1.00	74.5	E	1.08
Blvd	Saturday MID	22.9	C	0.75	23.1	C	0.76	25.4	C	0.81
Tremont St	Weekday AM	4.9	A	0.51	5.1	A	0.53	6.1	A	0.58
/Ruggles St /	Weekday PM	5.2	A	0.49	5.3	A	0.51	4.3	A	0.56
Renaissance Park	Saturday MID	4.7	A	0.42	4.8	A	0.42	7.6	A	0.45
Tremont St /	Weekday AM	34.2	C	0.78	35.3	D	0.81	42.4	D	0.87
Ruggles St /	Weekday PM	54.8	D	0.85	59.1	E	0.89	62.7	E	0.97
Whittier St	Saturday MID	23.7	C	0.66	24.0	C	0.67	32.1	C	0.76
Tremont St /	Weekday AM	36.7	D	0.86	45.2	D	0.91	29.6	C	0.90
Prentiss St	Weekday PM	36.1	D	0.80	42.5	D	0.85	34.0	C	0.94
	Saturday MID	13.7	B	0.59	14.7	B	0.60	32.6	C	0.74
Tremont St /	Weekday AM	105.1	F	0.95	>120	F	1.04	>120	F	1.08
Malcolm X Blvd	Weekday PM	106.1	F	0.85	>120	F	0.95	>120	F	1.02
/ Columbus Ave	Saturday MID	58.4	E	0.71	59.4	E	0.72	63.6	E	0.79
Tremont St / Site	Weekday AM							28.6	C	0.62
Drive	Weekday PM	Unsignalized			Unsignalized			31.4	C	0.72
	Saturday MID						19.3	B	0.61	

Under existing conditions, the intersection at Tremont Street / Melnea Cass Boulevard currently operates at LOS D during the weekday morning and afternoon peak hours, and at LOS C during the Saturday midday peak hours. Under both future conditions, the intersection is expected to operate at LOS E during the weekday morning and afternoon peak hours. During the Saturday

midday peak hour, the intersection will operate at LOS C under both the No Build and Build conditions.

The intersection at Tremont Street / Ruggles Street / Renaissance Park currently operates at LOS A during all three peak hours. Under future No Build and Build conditions, this intersection will operate at LOS A during all three (3) peak hours.

Currently, the intersection at Tremont Street / Ruggles Street / Whittier Street operates at LOS C during the weekday morning and Saturday midday peak hours and at LOS D during the weekday afternoon peak hour. Under future No Build conditions, this intersection will operate at LOS D, E, and C during the weekday morning, weekday afternoon, and Saturday midday peak hours, respectively. Under future Build conditions, the intersection will continue to operate at LOS D, E, and C during the weekday morning, weekday afternoon, and Saturday midday peak hours, respectively.

The intersection of Tremont Street / Prentiss Street currently operates at LOS D during both weekday peak hours and at LOS B during the Saturday midday peak hour. Under No Build conditions, the intersection will continue to operate at LOS D during both weekday peak hours and at LOS B during the Saturday midday peak hour. During future Build conditions, the intersection is expected to operate at LOS C during all peak hours.

Currently, the intersection at Tremont Street / Malcolm X Boulevard / Columbus Avenue operates at LOS F during the weekday peak hours and LOS E during the Saturday midday peak hour. Under both the future No Build and Build conditions, this intersection is expected to continue to operate at LOS F during the weekday peak hours and LOS E during the Saturday midday peak hour. These levels of service may be attributed to the time required for the pedestrians to traverse the crosswalks. The use of a concurrent pedestrian phase with Lead Pedestrian Intervals (LPI) was analyzed, and it was determined that this phasing would improve levels of service at this intersection to LOS E during the weekday peak hours and LOS D during the Saturday midday peak hour.

The intersection at Tremont Street / Site Drive is currently unsignalized. Under future Build conditions, the intersection is expected to become signalized, with

the entire intersection operating at LOS C during the weekday peak hours, and at LOS B during the Saturday midday peak hour.

3.10 Future Build Condition – Other Impacts

3.10.1 Tremont Crossing Parking Demand

Tremont Crossing will include a multi-level above-grade parking structure that will accommodate the needs of all of its mix of uses. The parking facility will consist of approximately 1,543 parking spaces, including 26 accessible spaces (4 of which will be van accessible). The users of the facility will include residents, hotel guests and employees, retail customers, office tenants, and museum visitors. A portion of the spaces will provide replacement parking for the Boston Public Schools (31 parking spaces) and Whittier Street Health Center (75 parking spaces).

The Proponent intends to employ parking management strategies that would discourage long-term commuter parking. For example, the Proponent is working with the retail tenants to allow up to 2 hours of parking to be free, but to increase the fees after the initial 2 hours have elapsed.

BTD has provided guidelines for parking ratios within different sections of the City and within proximity to MBTA transit stations. The proposed parking ratios are as follows:

Residential – There are 150 parking spaces provided for 300 residential units, resulting in a parking ratio of 0.50 spaces per unit, which is less than the BTD suggested ratio of 0.75 to 1.25 spaces per unit.

Office – There are 225 parking spaces provided for 231,500 SF of office space, resulting in a parking ratio of 0.97 spaces per thousand square feet. This ratio is within the BTD suggested ratio of 0.75 to 1.25 spaces per thousand square feet.

Hotel – A total of 40 parking spaces are allocated to the 200 room hotel, resulting in a parking ratio of 0.2 spaces per room, which is less than the BTD suggested ratio of 0.4 spaces per room.

Museum – 31 parking spaces are provided for 21,000 SF of museum space. This results in a parking ratio of 1.5 spaces per thousand square feet, which is

comparable to the BTD suggested ratio of 0.75 to 1.25 spaces per thousand square feet.

Retail – A total of 991 parking spaces are provided for 454,621 SF of retail space, resulting in a parking ratio of 2.18 spaces per thousand square feet. This is slightly more than BTD-suggested guideline of 0.75 to 1.25 spaces per thousand square feet. However, typically, large format retail tenants require a significantly higher parking ratio, approximating 5.00 spaces per 1,000 square feet of gross leasable area for both the weekdays and the weekend.

In response to the PNF, BTD commented on the size of the parking garage and stated that the proposed ratio was “substantially above BTD guidelines”. Not including the 106 spaces to be provided for the Whittier Street Health Center and Boston Public Schools, the parking garage will provide 1,437 parking spaces for a total development of 1,099,311 SF. This results in an overall parking ratio of 1.3 spaces per thousand square feet. This ratio is comparable to the 1.25 spaces per thousand square feet, as suggested by BTD in their comments.

Table 3-15 below summarizes the number of spaces allocated to each use, the resulting parking ratio, and the BTD recommended parking ratio.

Table 3-15: Parking Ratio Analysis

Weekday	Allocation of Spaces	Size	Corresponding Parking Ratio	BTB Guidelines Parking Ratio
Residential	150	300 units (230,190 SF)	0.50 spaces per unit	0.75 – 1.25
Office	225	231,500 SF	0.97 spaces per TSF	0.75 – 1.25
Hotel	40	200 rooms (162,000 SF)	0.2 spaces per room	0.4
Museum	31	21,000 SF	1.5 spaces per TSF	0.75 – 1.25
Retail	991	454,621 SF	2.18 spaces per TSF	0.75 – 1.25
Subtotal	1,437	1,099,311 SF	1.3 spaces per TSF	N/A
Whittier Street Health Center	75	N/A	N/A	N/A
Boston Public Schools	31	N/A	N/A	N/A
Total	1,543	N/A	N/A	N/A

3.10.2 Shared Parking Analysis

In response to comments by the BRA, a shared parking analysis was conducted for the Project based on methodologies developed by the Urban Land Institute. Based on these analyses, the estimated shared parking demand for the residential, office, hotel, and retail portions of the development is 1,315 parking spaces during the weekday. This is comparable to the 1,406 spaces being proposed for those same portions, not including parking spaces being provided for the museum, Whittier Street Health Center, or Boston Public Schools. A summary of the shared parking analysis is included in the Appendix.

3.10.3 On-Street Parking

Besides the parking structure, the Project anticipates the inclusion of approximately twenty-four (24), short-term, on-street, parallel parking spaces along Tremont Street. These spaces will be primarily used by patrons of the small format retail that will be part of the Project's mix of uses. It should be noted that these street level spaces will be constructed on the Project Site, and will not impact the existing traffic lanes traveling northbound into downtown Boston.

Several other loading and short-term parking areas will be located adjacent to the Project site. An approximately 100-foot long zone will also be located along Tremont Street to be used as a drop-off area for vehicles, including busses for the museum. The two (2) most northerly spaces on Tremont Street will be used as valet parking for the hotel portion of the Project. The final details regarding the location and operations of the Tremont Street loading areas will be determined with BTM through the Transportation Access Plan Agreement (TAPA) process.

An approximately 60-foot long area will be located on Whittier Street southbound adjacent to the Site to be used as a drop-off area for the residential portion of the project. Additionally, a 120-foot bus layover area will be located in the rear of the Project site, on East Drive.

Currently, Whittier Street is one-way street providing unregulated parking on both sides of the roadway. The Proponent proposes to convert Whittier Street to a two-way roadway between Tremont Street and Downing Street, and eliminate on-street parking on one side of the street. This will result in the loss of approximately 25 unregulated on-street parking spaces on the south side of

Whittier Street. However, according to due diligence done by the Proponent, most of the parking spaces on Whittier Street are being utilized by commuters. The Proponent recommends regulating the parking on the north side of Whittier Street as “Residential Permit Only”. In the comments of the PNF, BTM indicated support for the Residential Parking regulations. The Proponent, through the TAPA process, will work with the BTM to institute these Residential Parking regulations and other on-street parking regulations.

In order to allow for the proposed left/through lane and two (2) exclusive through lanes on Tremont Street southbound at its intersection with the Site Drive, it is proposed that parking be prohibited on the west side of Tremont Street between Prentiss Street and Ruggles Street.

3.10.4 Traffic Signal Warrant Analysis

A traffic signal warrant analysis was conducted in order to justify the installation of a traffic signal at the intersection of Tremont Street and the Site Drive.

Traffic volumes were utilized from the 2017 future Build condition, assuming the construction of the proposed Tremont Crossing. Hourly non-retail traffic volumes were determined by taking the weekday morning and afternoon project trip volumes and extrapolating them based on hourly traffic volume data obtained from a nearby MassDOT count location on Tremont Street. Hourly retail-based traffic volumes were determined by extrapolating weekday morning and afternoon project trip volumes based on “hourly variation in shopping center traffic” data contained in the ITE Trip Generation Manual (8th Edition, 2012).

The current Manual on Uniform Traffic Control Devices (MUTCD) contains nine (9) traffic signal warrants, at least one (1) of which must be satisfied in order to justify the installation of traffic signals at a particular location. Satisfying one (1) or more warrants, however, does not necessarily justify the installation or continuous operation of a traffic signal. The traffic signal warrants are listed below.

- Warrant 1: Eight-Hour Vehicular Volume
- Warrant 2: Four-Hour Vehicular Volume
- Warrant 3: Peak Hour
- Warrant 4: Pedestrian Volume

- Warrant 5: School Crossing
- Warrant 6: Coordinated Signal System
- Warrant 7: Crash Experience
- Warrant 8: Roadway Network
- Warrant 9: Intersection Near a Grade Crossing

Using the procedure contained in the MUTCD, four (4) of the nine (9) warrants that were evaluated were satisfied: Warrants 1, 2, 3, and 6. Therefore, a new traffic signal at the intersection of Tremont Street and the Site Drive would be justified. Signal warrant analysis worksheets are contained in the Appendix.

3.10.5 Transit Impacts

Table 3-16 below summarizes the person-trips that are expected to be generated by the Project that will use transit services.

Table 3-16: Total Person-Trips for Transit Use

	<u>Weekday</u>						
	<u>Daily</u>	<u>Morning Peak</u>		<u>Afternoon Peak</u>		<u>Saturday Peak</u>	
		<u>Entering</u>	<u>Exiting</u>	<u>Entering</u>	<u>Exiting</u>	<u>Entering</u>	<u>Exiting</u>
Office	954	150	15	20	128	21	18
Retail	5,234	84	35	186	294	351	323
Museum	35	2	0	0	1	3	1
Residential	443	8	22	21	17	16	16
Hotel	314	14	7	10	13	16	12
TOTAL	6,979	259	78	237	453	406	371

As can be seen Table 3-16 above, the number of person-trips expected to use public transit is 337 during the weekday morning peak hour (259 entering, 78 exiting), 690 during the weekday afternoon peak hour (237 entering, 453 exiting), and 777 during the Saturday midday peak hour (406 entering, 371 exiting). On a daily basis, the Project is expected to generate 6,979 person-trips using transit services.

As outlined in the section entitled “Public Transit”, there are a large number of MBTA transit facilities and services in the vicinity of the site, including 14 bus routes, two subway stations, and three Commuter Rail lines. Based on information provided in the 2010 MBTA Ridership and Service Statistics, the

breakdown of public transit services, it is assumed that approximately 30 percent of the public transit trips will occur via MBTA busses, 59 percent will occur via MBTA rapid transit (subway), and 11 percent will occur via MBTA commuter rail. Table 3-17 below displays the breakdown of trips per each type of transit use, based on these percentages, followed by further discussions for each option.

Table 3-17: Breakdown of Person-Trips for Transit Use

	<u>Weekday</u>						
	<u>Daily</u>	<u>Morning Peak</u>		<u>Afternoon Peak</u>		<u>Saturday Peak</u>	
		<u>Entering</u>	<u>Exiting</u>	<u>Entering</u>	<u>Exiting</u>	<u>Entering</u>	<u>Exiting</u>
Total Transit Trips	6,979	259	78	237	453	406	371
Bus (30%)	2,094	78	24	71	136	122	111
Rapid Transit (59%)	4,118	153	46	140	267	240	219
Commuter Rail (11%)	768	28	9	26	50	45	41

MBTA Bus

The Project is expected to generate approximately 2,094 trips on the MBTA bus system on a daily basis, with 102 bus trips during the weekday morning peak hour (78 entering, 24 exiting), 207 bus trips during the weekday afternoon peak hour (71 entering, 136 exiting), and 233 bus trips during the Saturday midday peak hour (122 entering, 111 exiting). These trips are distributed over the fourteen (14) bus routes that service the study area, eight (8) of which have routes that travel on Tremont Street. A bus stop is located on the east side of Tremont Street across from Prentiss Street, within a short walk to the Project site.

Rapid Transit (Subway)

Based on the data outlined above in Table 3-17, it is expected that the Project will generate 4,118 person-trips on a daily basis that will use the MBTA rapid transit system (subway). The Project will generate 199 rapid transit trips (153 entering, 46 exiting) during the weekday morning peak hour, 407 rapid transit trips (140 entering, 267 exiting) during the weekday afternoon peak hour, and 459 rapid transit trips (240 entering, 219 exiting) during the Saturday midday peak hour.

During the weekday morning and afternoon peak hours, the headways between trains are 4 to 5 minutes, resulting in approximately 12 trains per hour. This results in an additional project-related ridership of up to 12 persons per train during the weekday morning peak hour, and 24 persons per train during the weekday afternoon peak hour. During the Saturday midday peak hour, the headway on the Orange line is approximately 8 minutes, resulting in approximately 8 trains per hour. This results in an additional project-related ridership of up to 31 persons per train on a Saturday midday peak hour.

Commuter Rail

On a daily basis, the Project will generate 768 person-trips that are expected to use the commuter rail lines available near the Project site. The Project will generate 37 commuter rail trips (28 entering, 9 exiting) during the weekday morning peak hour, 76 commuter rail trips (26 entering, 50 exiting) during the weekday afternoon peak hour, and 86 commuter rail trips (45 entering, 41 exiting) during the Saturday midday peak hour.

It is anticipated that the additional transit trips could be accommodated by the existing public transportation network.

3.10.6 Pedestrian Impacts

As shown in Table 3-10, it is expected that the Project will generate 725 pedestrian trips during the weekday morning peak hour, 2,084 pedestrian trips during the weekday afternoon peak hour, and 2,553 pedestrian trips during the Saturday midday peak hour.

The expected new pedestrian trips will be well served by the existing 7-10 foot sidewalks along Tremont Street, as well as by the two multi-use paths in the area (Southwest Corridor Park and South Bay Harbor Trail). The sidewalks along the project frontage will be rebuilt and widened to support street-level retail.

In addition, several crosswalks exist across Tremont Street in the vicinity of the Project, all of which provide pedestrian signals, push buttons, and accessible ramps. Particularly of note is the pedestrian crossing located on Tremont Street between Ruggles Street and Renaissance Park. This mid-block pedestrian crossing provides access to Ruggles Station with the newly constructed promenade, expected to encourage pedestrian activity in the area

and provide a safer route across Tremont Street. In addition, the proposed traffic signal at the project site drive (South Drive) will provide crosswalks, pedestrian signals, and push buttons, with a concurrent pedestrian signal phase.

3.10.7 Accommodations

The Project proposes to install bicycle racks on the site for use of trips made by bicyclists, with a total of 522 spaces being provided. As stated previously, bicycle lanes currently exist in both directions on the north leg of Ruggles Street. In addition, the two (2) multi use paths in the area – Southwest Corridor Park and South Bay Harbor Trail – provide bicycle access to the Project site from the surrounding areas, including South End, Roxbury, Back Bay, Chinatown, Jamaica Plain, South Boston, and the Fort Point Channel. The project proposes to provide five-foot bicycle lanes both northbound and southbound on Tremont Street between Ruggles Street and Prentiss Street. These bicycle lanes will be the starting point as the City decides how to provide bicycle accommodation along the length of Tremont Street. The lanes will improve access to both the Southwest Corridor Park and South Bay Harbor Trail. To further improve access, this Project will install shared lane markings (sharrows) on Prentiss Street, which will connect to the new crosswalks across Tremont Street, providing connections to both the Ruggles and Roxbury Crossing MBTA stations. Bicyclists also have access to local roadways, such as Whittier Street, in the vicinity of the site.

3.10.8 Services and Loading

All delivery vehicles will both enter and exit the site via the Site Drive (South Drive) on Tremont Street. There will be no loading or delivery circulation on Whittier Street. Further, all loading bays for the Project's retail tenants will be located in the rear of the Project off of East Drive, enclosed in the retail building, and shielded from view without noise to the local environment.

As mentioned previously, a 100-foot long zone will be located along Tremont Street to be used as a drop-off area for vehicles, including busses. The two (2) most northerly spaces on Tremont Street will be used as valet parking for the hotel portion of the Project. A 60-foot long area will be located on Whittier Street southbound adjacent to the Site to be used as a drop-off area for the residential portion of the project. Additionally, a 120-foot bus layover area will be located in the rear of the Project site, on East Drive.

Figure 3-12: Enclosed Loading



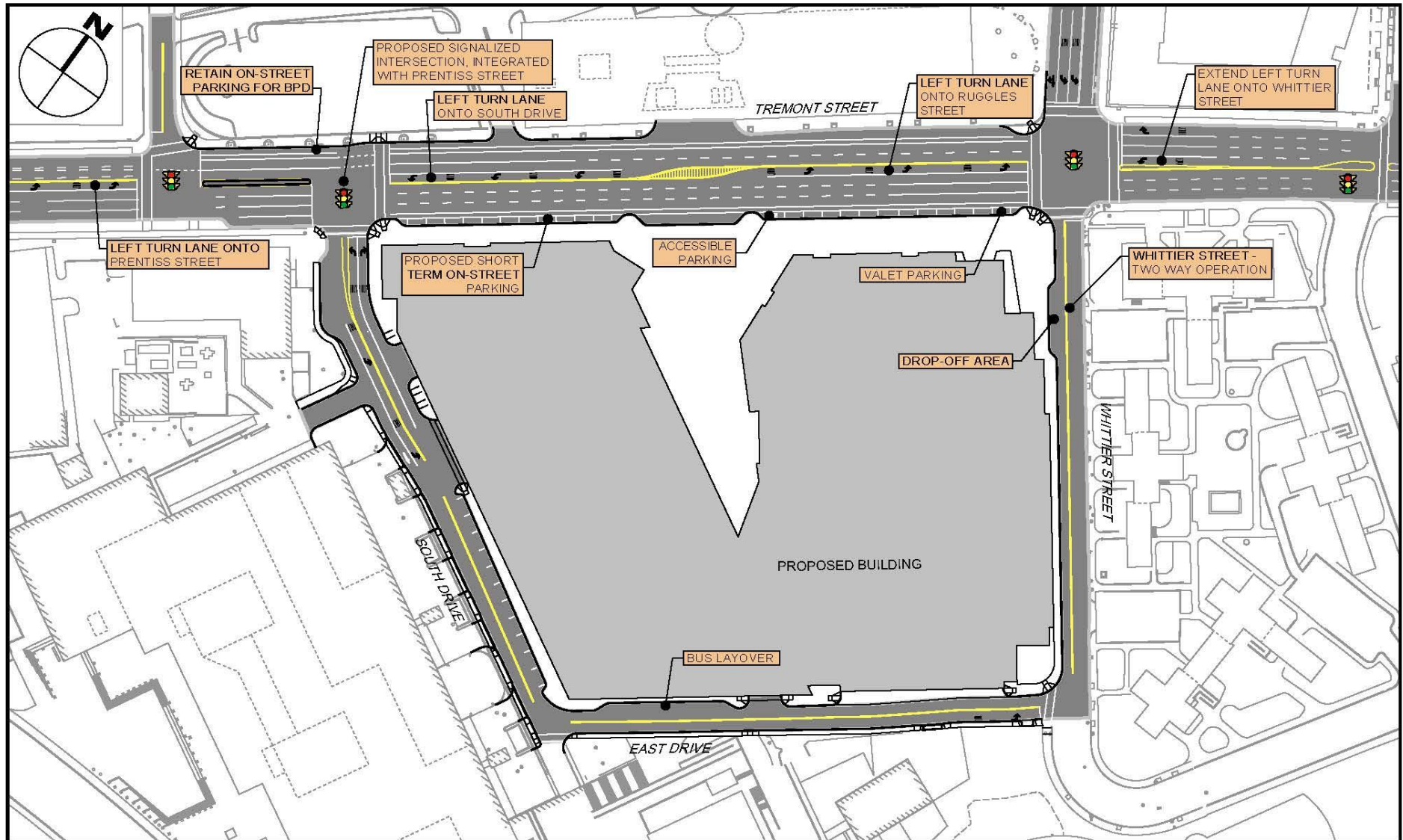
3.11 Recommended Improvements

As part of this study, several improvements are being proposed along the Tremont Street corridor. These improvements are intended to improve traffic operations and help improve pedestrian safety at the study area intersections and throughout the corridor. The improvements are outlined below.

Tremont Street Improvements

Based on discussions with BTM, the proposed roadway cross section on Tremont Street adjacent to the Project site drive consists of, from west to east: a crosswalk with a minimum 10-foot width, a 7-foot parking lane, a 5-foot bicycle lane, two (2) 11-foot through lanes, one (1) 10-foot left-turn lane, three (3) 11-foot travel lanes, a 5-foot bicycle lane, and an 8-foot parking lane. Adjacent to Ruggles Street, the cross-section remains largely the same, with the Tremont Street northbound left-turn lane measuring 11 feet in width, and the parking lane on the east side of the roadway varies, with a minimum 8.5 foot width. The 5-foot bicycle lanes will not be marked until BTM is ready to introduce bicycle lanes in the Tremont Street corridor. Figure 3-13 shows the proposed Tremont Street layout.

Figure 3-13: Proposed Tremont Street Layout



The alignment of the right lane on Tremont Street southbound between Melnea Cass Boulevard and the Renaissance Park Drive pedestrian plaza currently is confusing to motorists. The width of this lane measures 18-20 feet between Melnea Cass Boulevard and Renaissance Park Drive. This alignment may give some drivers the impression that there is a fourth travel lane, or a parking lane, while this area is posted for No Parking. The Proponent recommends re-striping Tremont Street to define the right travel lane and to restrict parking and driving in the area adjacent to the curb.

On-Street Parking

During the PNF submission, the Proponent had requested the removal of parking along the frontage of BPD in order to restore the full three (3) through lanes on Tremont Street southbound. However, based on comments from BTM and parking turnover studies that were conducted by the Proponent's traffic engineer, the cross-section of Tremont Street has been changed in order to retain the police parking. Tremont Street has been widened in front of the police station to provide one (1) parking lane, two (2) southbound through lanes, and one (1) left-turn lane.

The Proponent recommends regulating the parking on the north side of Whittier Street as "Residential Permit Only". The Proponent also recommends that the existing on-street parking regulations on Tremont Street southbound, including the "No Stopping 4:30 – 6:00 PM", be retained and enforced.

Whittier Street Two-Way Operation

Currently, Whittier Street is one-way westbound, providing one general use lane and parking on both sides of the roadway. Under future conditions, Whittier Street would be widened between Tremont Street and Downing Street to provide two 11-foot wide travel lanes for travel in both directions. An 8-foot parking lane would be provided on the north side of Whittier Street, with an approximately 8-foot sidewalk on the south side (on the project site). The existing 7.5 foot sidewalk on the north side would remain. The eastern section of Whittier Street from Downing Street to Ruggles Street will remain one-way south-westbound to prevent cut-through traffic on Whittier Street.

Left-Turn Lane on Tremont Street Southbound at Whittier Street / Ruggles Street

An exclusive left-turn lane will be provided on Tremont Street southbound at the intersection of Tremont Street at Whittier Street / Ruggles Street. This lane will

provide approximately 200 feet of storage for vehicles turning left onto Whittier Street eastbound.

Pedestrian Accommodations

Minimum 10-foot wide sidewalks will be provided along Tremont Street, with crosswalks at the intersection of Tremont Street and the Site Drive: one across the Tremont Street north leg, another across the Site Drive east leg. Pedestrian signals, push buttons, and accessible ramps will be provided at the newly-signalized intersection.

The Project will include a pedestrian plaza on site, which will provide a walking route between buildings on the site, as well as provide a potential area for restaurant outdoor seating or additional outdoor space for the small retail shops.

Other Mitigation Measures

Based on discussions with BTM, the controllers in the corridor will need to be upgraded. Therefore, the Proponent will provide four (4) new controllers at the intersections of Tremont Street with the Site Drive / Prentiss Street, Ruggles Street, Malcolm X Boulevard, and Melnea Cass Boulevard.

A concurrent pedestrian phase with a Lead Pedestrian Interval (LPI) will be provided at the intersection of Tremont Street and the Site Drive / Prentiss Street.

Comments from the BRA on the PNF requested the Proponent to “closely analyze the Tremont/Malcolm X intersection and incorporate geometric and signal operations improvements to mitigate the project’s impacts”. Based on this comment, the use of a concurrent pedestrian phase with LPI was analyzed at this location as well. As discussed in Section 3.9.6, a concurrent pedestrian phase would improve overall LOS at this location during all three peak periods.

The Appendix contains cross section and plan figures showing the proposed improvements outlined above.

3.12 Transportation Demand Management (TDM)

In line with the City’s commitment to reduce auto-dependent trips, especially single occupancy vehicles (SOV), the Proponent will implement the Transportation Demand Management (TDM) measures listed below. These measures will be codified between the City and the Proponent through the TAPA process.

- Public Transportation Information - Provide information on public transportation options including bus, rapid transit (subway), and commuter rail schedules and pricing. This information should be posted in an easily accessible area for all residents, tenants, employees, and visitors.
- Car Sharing & Ridesharing - Allocate a designated number of preferred parking spaces for carpooling, vanpooling, and car sharing programs, such as Zipcar™. Provide information and services for Guaranteed Ride Home.
- MassRIDES / TripMATCH – Provide information about and coordinate rides with MassRIDES / TripMATCH.
- Transportation Coordinator - Designate an on-site Transportation Coordinator to manage all TDM matters and serve as a liaison with the City.
- Transit Pass - Encourage employees (and tenants) to offer subsidized transit-pass programs, potentially with pre-tax incentives
- Transit Scheduling Information – Provide real-time transit scheduling information online, via mobile device, and/or on large screens in lobbies or other common areas.
- Parking Fees - Charge the market rate for parking garage fees.
- Electric Vehicles - Provide dedicated parking spaces and charging stations for electric vehicles.
- Bicycle Storage - Provide secure bicycle storage, to be located in the form of outdoor bicycle racks or indoor storage facilities.

3.13 Conclusions

The proposed Tremont Crossing project is expected to provide a lively and diverse mix of uses along Tremont Street in the Roxbury neighborhood of Boston. The Project will construct a mixed-use facility including retail, office, residential, hotel and museum space that will attract a number of users to the area.

The proposed project is expected to generate:

- 6,023 vehicle trips during the average weekday, with 284 vehicle trips occurring during the weekday morning peak hour, 512 vehicle trips occurring during the

- weekday afternoon peak hour, and 344 vehicle trips occurring during the Saturday midday peak hour;
- 6,979 transit trips during the average weekday, with 337 transit trips occurring during the weekday morning peak hour, 690 transit trips occurring during the weekday afternoon peak hour, and 777 transit trips occurring during the Saturday midday peak hour;
 - 725 pedestrian trips occurring during the weekday morning peak hour, 2,084 pedestrian trips occurring during the weekday afternoon peak hour, and 2,553 pedestrian trips occurring during the Saturday midday peak hour.

The additional traffic generated by the Project is not expected to have a significant impact on the nearby transportation infrastructure, assuming the proposed improvements are implemented. In addition, this project is expected to generate a larger portion of bicycle, pedestrian, and transit trips, in comparison to vehicle trips.

The results of the analysis indicate that, for the majority of the intersections, the average delay and overall LOS will not significantly reduce under the future Build condition. Traffic operations will improve at the intersections of Tremont Street with the Project Site Drive and Prentiss Street due to the proposed implementation of three full lanes on Tremont Street southbound, the proposed redistribution of trips, geometric and intersection modifications, and signal timing changes.

In summary, the project will seek to complete the following actions:

- Implement Traffic Demand Management (TDM) measures;
- Convert Whittier Street from one-way to two-way between Tremont Street and Downing Street;
- Implement “Residential Permit Only” parking on Whittier Street between Tremont Street and East Drive;
- Modify current traffic signal timings at the study area intersections to improve traffic flow and safety;
- Provide two (2) through lanes and one (1) left-turn lane on Tremont Street southbound;
- Provide a right-turn pocket on Tremont Street northbound at the Site Drive into the Project site;
- Provide a left-turn pocket on Tremont Street southbound at Whittier Street into the Project Site;

- Signalize the intersection of Tremont Street with the Site Drive, and allow left-turns into and out of the site. Provide crosswalks, pedestrian push buttons, accessible ramps, and a concurrent pedestrian phase at this intersection.

4.0 URBAN DESIGN

4.1 Building Design

The Project's mix of uses will include approximately 404,475 square feet of larger retail (which will consist of a mix of large-format retail, medium sized, "junior-anchors" and entertainment and recreational uses), 33,800 square feet of smaller shops and boutiques fronting along Tremont Street, 233,784 square feet of office space, 300 units of multifamily residential (approximately 297,886 square feet) made up of studios, one (1) bedroom and two (2) bedroom rental apartments (of which any requisite affordable units will be provided), a 200 room, "extended stay" hotel, and 37,520 square feet of cultural facilities that will primarily house a 21,000 square foot new museum for the NCAAA and other artist studio space. The development will also include two public plazas, including a large, central atrium and an adjacent, multi-level parking structure to accommodate the requirements of its tenants. As currently contemplated, the proposed parking structure would consist of approximately 1,502 spaces which include a specific number of parking spaces for the Whittier Street Health Center and the Boston Public Schools.

4.1.1 Urban Design Concept

The Tremont Crossing project presents the City of Boston with a transformative opportunity that will continue the dramatic urban changes both anticipated and ongoing from Dudley Square north towards the Longwood Medical Area to the Fenway Development and west to Jackson Square. As such, this location becomes an important crossroads along the development of the Tremont Street corridor of Boston, one that has the opportunity to become a destination for both the neighborhood and the entire City.

The site is located along Tremont Street bordered to the east by Whittier Street and the west by the Whittier Health Center and the Reggie Lewis Track Facility. To the southwest of the site sits the Madison Park Technical Vocational High School and O'Bryant School and south of the site sits the school's combined play fields and track. To the north is the Boston Police Headquarters building, Wentworth Institute and Northeastern University. Site vehicular access is primarily from Tremont Street with limited access from Whittier Street. The site is served by the Orange Line Ruggles Street MBTA stop and several bus lines.

From an urban design perspective, the site at 7.25 acres in the aggregate, is large enough and should be used to accommodate a variety of uses and activities. With a combination of destination retail, office, residential, the NCAA Museum and a hotel, this location will inevitably become a vital and vibrant urban center.

The current selection of programmatic elements as depicted in this DPIR which include: street front retail, large format retail, office, residential, hotel and parking, and the Museum are the very elements which have the potential draw and the cache to attract residents and visitors alike to this new urban center of commerce and culture. Because the site is bounded by large volume and large foot-printed buildings, it is ideally suited to accommodate the large square foot requirements necessary to support the large format retail and parking. These volumes in turn can be located in such a way that they are shielded and screened from the neighboring residential areas. Program elements such as housing, hotel, street front retail the NCAA Museum and other uses can be strategically located to create harmonious edges with abutting neighborhoods that are more residential and smaller in scale. Conversely, where the site abuts large institutions with little or no associated pedestrian activity, such as the adjoining high school, uses such as the garage and building services seem appropriate.

This site is ideally suited for density and height. Shadow paths are reasonably contained. There is an ability to utilize height in this location based upon recent precedents to gain density and take advantage of views. In general, the parcel offers a rare opportunity to build a true mixed use development catering to a local and a citywide audience, while establishing new physical forms that create exciting street edges and add architectural character and vitality to this part of Boston.

4.1.2 Architectural Design Concept

The architectural expression for the Project, first and foremost, must be reflective of the various uses contained within this mixed use facility. Secondly, those expressions themselves must be accurately scaled to reflect the intensity of those uses contained within and the desired porosity of each element within that use. Finally, the overall design expression of the facility must be engaging to the public while being reflective of the surrounding urban environmental context.

To these ends, the architectural design has evolved to create a unique urban destination. Each of the building components supports the whole while its architectural expression is distinctive unto itself. The various components are best described individually.

4.1.2.1 Overall Planning Concept

The site is viewed as a destination for five (5) distinct user groups. The first is retail, second residential, third hotel, fourth office and fifth the NCAA Museum. These uses are integrated into a cohesively planned development that uses a large public open space at the heart of the Project Site and project to create clarity of entry, purpose and destination. This unique space, which soars upwards of 80', sits under an iconic fabric tensile roof structure. Planned as a gathering place, it is truly a "marketplace within the City" that serves to anchor street front retailers and large format retails alike. This central open space is an orienting device for the project and is a circulation spine for users to gain access to three levels of open air retail venues. The three (3) public floors of retail are correlated to the adjoining parking garage floors in such a way that users park and then use bridges and vertical transportation to arrive at their intended destinations, all the while viewing those same destinations while in the central space. This same open space courtyard is used as the orienting device for those using the smaller scale Tremont Street retail as well as office users, residential and hotel patrons and Museum visitors.

The open courtyard stylistically is an exciting, active and visually stimulating space with vertical transportation elements of glazed elevators and escalators operating in the open air and acting as animators of the movements thru the space itself. The retail venues and entries are of course all glazed and highly illuminated to make the retailers wares beautiful and enticing from all points in the central space. The retail "walkways" that front each retailer are not stacked one on top of the other, but are instead stepped back from one to the other above the courtyard thus expanding the visual interest and increasing the width of the open space as it rises skyward. The roof structure is envisioned as a tensioned structured of translucent fabric, allowing daylight into the space while providing cover from the elements yet maintaining a light airy feel overhead. Lighting

integrated with the roof, graphic elements of signage and artwork, interesting ground plan landscaping and integrated lighting combined with the movements of shoppers, makes this place an exciting and beautiful open air market environment unique to the City. Figures 4-1 and Figure 4-2 set forth the Central Plaza and interior atrium area respectively.

Figure 4-1: Central Plaza- View from Tremont Street



Figure 4-2: View of Atrium from the Central Plaza



4.1.2.2 *Retail Expression*

The retail components of the project occupy the first three (3) levels within the courtyard and then again along Tremont Street. While the courtyard may be the exciting arrivals destination for the facility, it is the Tremont Street retail edge that anchors the project as a retail destination. Three (3) floors of glass integrated with “show cases”, essentially bay windows, composed of metal panel and glass integrated with retail signage in such a way that the entire façade becomes a rhythm of projections, glass, colored glass, metal panel and graphics. This same expression continues on to either side of the court on Tremont Street and also extends to the interior retail facades as well. The intent is to create visual excitement of seeing into store fronts on multiple levels. Where the retail continues and extends to the south of the site, facing the running track, again the expression of bays, glass and metal panels, sans signage, continues to create visual interest overlooking the schools and the neighborhood, yet with a quieter, less illuminated feel that is more appropriate for abutting a neighborhood environment.

4.1.2.3 *Hotel and Residential*

Perhaps the most visually impactful component of the Project is the mixed use, high rise on the corner of Whittier and Tremont Streets that contains the residential and hotel portion of the development. This building element rises twenty-six (26) floors above street level along the Tremont Street edge and turns the corner and runs along Whittier Street where the building presents itself at ten (10) stories. The objective is to maintain the feel of the residential environment along Whittier Street so that both sides of Whittier Street are residential in nature, and to use the form of the building to let the scale increase from the 5 and 6 stories of the existing Whittier Street Housing to a denser and taller new residential component. The residential units themselves are placed in the lower register of the both the high rise and the Whittier Street low rise portion of the development. The hotel is placed above the residential in the tallest part of the building overlooking Tremont Street.

The architecture of the residential and hotel high rise is based on verticality and movement. The façade, composed of glass, metal

panel, and cast concrete panels accentuated with color achieves a sense of playfulness by using seemingly random patterns of two and three (3) story vertical fenestration elements. These elements become transparent as they approach the Whittier Street corner signifying the importance of this corner in the development while also establishing this corner as the entry point of the residential and hotel lobbies.

This playful movement in turn is continued, albeit at a reduced scale, along Whittier Street. The difference however is that on this lowest register of housing the vertical fenestration takes on the added complexity of becoming vertical bay windows. The Proponent believes that this small change transforms this portion of the building such that it is reminiscent of the way in which Roxbury and the South End complement existing and historic residential architecture of row housing with projecting bay windows. Further, the Whittier Street side of the development receives an additional change in scale by setting a portion of the building back from the street edge above the seventh level. This change in form, which is both horizontal and vertical, also is accentuated by a color change of the primary façade material, as one additional scaling device.

4.1.2.4 Office

The office component, located on the western Project Site boundary along Tremont Street, rises above the retail and museum. Unlike the residential and hotel, this component is designed to accentuate horizontality. Using a similar palette of materials, but not similar in color, the office presents itself in a straightforward expression of its function. The one unique feature of the office, like the residential and hotel component, is that its exterior envelope becomes more transparent as it approaches the central courtyard. The fenestration is increased in this location in celebration of the court and the plaza fronting the Project along Tremont Street.

4.1.2.5 Museum

The NCAA Museum is located on the fourth level of the western portion of the project, also facing Tremont Street, between the retail and office uses. A focal feature for the museum is a four (4) story entry pavilion located just outside of the central court and within the

Tremont Street plaza area. This becomes a beacon for the museum, showcasing the vertical transportation elements contained within and providing a showcase for a large scale graphic representation of the museum's content for all to see. The location of the museum, with its lobby and circulation as a feature, highlights its importance within the Project and becomes an architectural "draw" for museum patrons, pedestrians and motorists alike. Moreover, the expression of the museum is slightly different in character from the retail below or the office above. It maintains a cohesive yet independent look that is all its own, using a saw tooth glazed geometry at the exterior accompanied by a roof terrace that is undercut below the office.

4.1.2.6 *Parking*

The parking structure is located behind the primary elements of the project along South Drive. As such, the parking is shielded from primary view across from the workshops of the Madison Park Technical Vocational High School. The garage architectural treatment continues the Project's aesthetic of utilizing cast concrete panels in ways that are expressive both horizontally and vertically. Color is also introduced to provide interest and the panels are designed to cast shadows onto themselves to further add dimension and interest to the facades.

Figure 4-3: North Elevation- Tremont Street



Figure 4-4: West Elevation- "South Drive"



Figure 4-5: East Elevation- Whittier Street



Figure 4-6: South Elevation



4.1.3 Height and Massing

Table 4-1: Approximate Sizes and Uses

Element	Square Feet	Building Levels
Larger Retail	404,475 s/f	3 Levels
Smaller Retail (Fronting Tremont Street)	33,800 s/f	1 Level (two building structures)
Office	233,784 s/f	9 Levels (above 4 levels)
Multifamily, Residential	297,886 s/f (300 units)	19 Levels (above 1 level)
Hotel	162,060 s/f	10 Levels (above 16 levels)
Museum / Cultural Center/ Art Studios	37,520 s/f	1 Levels (above 3 levels of retail)
Parking	633,529 s/f	6 Levels

The layout of the Project’s two (2) main building structures will be designed around a large public plaza, which will have significant frontage along Tremont Street. Smaller retail consisting of shops, restaurants and boutiques will be on the ground level of each. The large format retail building will consist of three (3) levels, each of which will be approximately twenty-feet (24) from floor to ceiling for a total building use height of sixty-one (61) feet. Sitting adjacent to the large format retail is a multifamily, residential tower which will rise nineteen (19) floors in total from the ground floor which is at the corner of Whittier Street and Tremont Street. An additional length of the residential tower that will bend down Whittier Street will rise nine (9) levels, starting at the top of the first level of the retail building. The building height of the portion of the retail/residential tower that traverses Whittier Street will be approximately 127 feet in height. Additionally, the hotel will rise above the portion of the retail and residential that fronts Tremont Street. This portion of the building structure will have a total building height of 319 feet.

The Second building structure will consist of three (3) levels of retail, the Museum on the fourth level and nine (9) stories of office above, for a total building height of 209 feet

Additionally, all of the Project’s various uses will connect to the parking structure either directly or by a network of walk bridges. The parking structure

will be physically connected to the retail/museum/office building and will consist of six (6) levels for a height of fifty (50) feet.

4.1.4 Façade Design, Fenestration and Building Materials

Each of the building elements is sheathed, using a palette of materials that are used in unique patterns to create distinction between uses and to enrich the overall urban scale of the Project. The materials currently under consideration include the following:

- Cast stone panels used in a variety of ways including vertical 2 and 3 story panels, horizontal panels, horizontal with vertical accents and as decorative panels in a variety of colors and textures in various locations;
- Glass window wall with operable sash at the residential components and glass window wall with fixed glazing at the hotel;
- Fixed glass panels at the office building and within the retail components;
- Store front glass at the street level retail and within the courtyard levels of the retail and along the Whittier Street retail;
- Metal panels in a variety of colors and textures, with and without punched windows, along Tremont Street within the retail façade;
- Color is also a distinctive element of the design palette. It is envisioned that color will be introduced in many elements including window mullions, glass, cast stone panels, metal panels and as accents throughout the project.

4.1.5 Landscape Plan

The ground plane of the Project is tremendously important, as it sets the “stage” for how the buildings are organized and pedestrian movement is orchestrated on and around the Project Site. The landscape and hard-scape designs together form a memorable urban experience, combining surface patterning of the walkable surfaces intermixed with raised and flush planters and areas of low lawns and vegetation. The streets are all lined with appropriately scaled street trees in single and double rows depending upon the setback and sidewalk widths. The desire is to create a pedestrian street experience, reminiscent of other shopping and residential streets throughout Boston, where the trees define the pedestrian edge while providing overhead tree cover all of which equates to a positive qualitative urban experience.

The surfaces of the sidewalks are anticipated to be concrete. The surface texture and coloration of the concrete will vary to create defined patterns. It is anticipated that for a small portion of the central courtyard and the Tremont Plaza and sidewalks that other paving materials may be introduced to create some of the sharper defined patterns seen in the site plan.

Street trees are anticipated to be London Plane Trees with several additional special specimen trees at areas of high interest, such as the residential hotel entry and as an accent at the central court. These may include Magnolia and or Columnar Oak Trees. Ground covers will include grassed lawn areas as well as tree and planter areas of Lariope Muscari, ornamental grasses and seasonal perennials and annuals.

The sidewalks vary in width from 10' along Whittier Street to 40' along Tremont Street at the eastern edge of the site to 20' at the western end of Tremont Street. All of the sidewalks along Tremont use the street trees and their associated planters to provide protection from the street and to also provide a measure of safety for motorists parked along the street to exit cars without interfering with pedestrian movements. The wider sidewalk along Tremont provides a double row of trees and opens up the views towards the central courtyard. Sidewalk restaurant dining is anticipated within this pedestrian zone. The Whittier Street sidewalk is of particular importance as it connects the Ruggles and Tremont Street areas easily to Dudley Square. Here street trees, low plantings within the planters of the trees combined with retail entries will make this street an enjoyable pedestrian way.

The central court "market place" continues the use of the paving materials noted above and integrates lighting elements as well into the landscape as a feature for this special space. It is anticipated that the central court will also contain areas for art, public events and general seating.

Figure 4-7: Landscape Plan



4.1.6 Pedestrian Circulation

4.1.6.1 Infrastructure

The Project is proposing to widen the east sidewalk of Tremont Street along the site and the full distance between South Drive and Whittier Street. The Proponent worked extensively with Boston Transportation Department (BTD) to determine the most appropriate roadway layout cross-section for Tremont Street to accommodate travel lanes, bicycle lanes and expansive ADA/AAB-compliant sidewalks. The Project provides bump-outs to reduce pedestrian crossing distances with new ADA/AAB-compliant accessible wheelchair ramps at the Tremont Street/South Drive, Tremont Street/Ruggles Street and Tremont Street/Whittier Street intersections. The project will also provide signal timing improvements at all six (6) study area intersections, including pedestrian signal clearance timings that meet current MUTCD standards.

The Project is proposing to widen the south sidewalk of Whittier Street along the site between Tremont Street and East Drive. Additional Whittier Street streetscape improvements will include the planting of new street trees, improved street lighting, and a pedestrian-friendly plaza entrance at the intersection of Whittier Street and Tremont Street.

The Project will construct East Drive to provide a roadway layout or easement of forty (40) feet, which will allow for one (1) travel lane in each direction and ADA/AAB-compliant pedestrian sidewalks and wheelchair ramps on both sides of the roadway. At the intersection of Whittier Street and East Drive, a new pedestrian crosswalk with ADA/AAB-compliant accessible wheelchair ramps is proposed.

The Project will construct South Drive to provide a roadway layout or easement with a minimum width of forty (40) feet, which will allow for one (1) travel lane in each direction and ADA/AAB-compliant pedestrian sidewalks and wheelchair ramps on both sides of the roadway. A new pedestrian push-button signal will be installed at the intersection of South Drive and Tremont Street, which will provide a concurrent pedestrian signal phase. Additionally, the Project intends to re-grade the existing entry driveway, currently sloping at

approximately 10%, to reduce the slope of the roadway and adjacent sidewalk network to meet the ADA/AAB requirements of a maximum longitudinal slope of 5%. The sidewalks will also be rebuilt to meet the maximum cross slope requirement of 2%.

Further pedestrian mitigation is proposed at the adjacent Tremont Street/Prentiss Street intersection. The Project will rebuild an existing accessible ramp at the northwest corner of the intersection and, as stated previously, adjust pedestrian signal clearance timings at this location to meet current MUTCD standards.

4.1.6.2 Pedestrian Experience

With an anticipated 33,800 square feet of small shops, boutiques and restaurants situated along Tremont Street, the Project endeavors to create a vibrant pedestrian experience that will energize the neighborhood and unify it with the activity of Northeastern and the LMA to the north, the South End to the east and Dudley Square to the southwest.

In addition to the ground-level retail, the Project will include a large public plaza fronting on Tremont Street that will be the center of the development and be adorned with sculptures, park benches and lush landscaping. This outdoor, public space will also be conducive to alfresco dining, art exhibits and community functions when the weather permits. The public plaza will serve as the unifying amenity of the Project, and act as the physical connection of all of the mix of uses by establishing a single, easily-identifiable point of entry for customers and visitors.

Functioning as a vibrant “urban room”, the plaza’s wide mouth at Tremont Street, tapers into the central elements of the project, thereby channeling the pedestrian into the heart of the Project. Visitors will navigate the three floors of retail via a series of escalators and elevators that protrude and zigzag across the vast space, creating an energetic, vibrant dynamic. As visitors traverse the various retail and garage levels, they will be visible to the streetscape below, integrating the ground level and upper level experience into one cohesive environment. The angular, uniquely-shaped plaza will be an architectural feature unto itself besides serving as the hub for all

pedestrian activity, wherein those traveling by foot will merge with those traveling by car or bicycle, as all three users navigate into and out of the various stores and buildings.

A smaller plaza will also exist on the southwest corner of Whittier Street and Tremont Street, primarily serving as the entry point for residents of the apartment complex and hotel guests. At this highly-visible corner, the multifamily building will be setback from Tremont Street, creating a comfortable, open area for the pedestrians accessing these uses, providing them with some form of private space from the energy we envision occurring on that prominent street corner as a result of all of the activity arriving to the Project from Ruggles Station. The residential and hotel uses, which will be used less by the general public, as well as the office component will all have their lobbies fronting on Tremont Street, bringing tenants and visitors to these buildings directly in and out of the urban fabric of the City.

Although the residential tower will have its lobby off of Tremont Street, the first eight (8) levels will run the length of Whittier Street, facing the Whittier Street Housing Project, to further define this residential edge. This is an important step in shaping the residential character of Whittier Street and enlivening another “face” of the Project with pedestrian activity.

The retail stores to the east of the main plaza will be set back nearly thirty (30) feet from the street to allow for a roomy pedestrian experience that can accommodate al fresco dining, a landscape buffer and an uncluttered walking experience. In addition, this setback will allow passersby a clear view of the lobby and vaulted atrium of the NCAA museum, which is being placed on the near western corner of this central, public plaza in a way that boldly announces the cultural component of the Project, and its significance to the Project and Community.

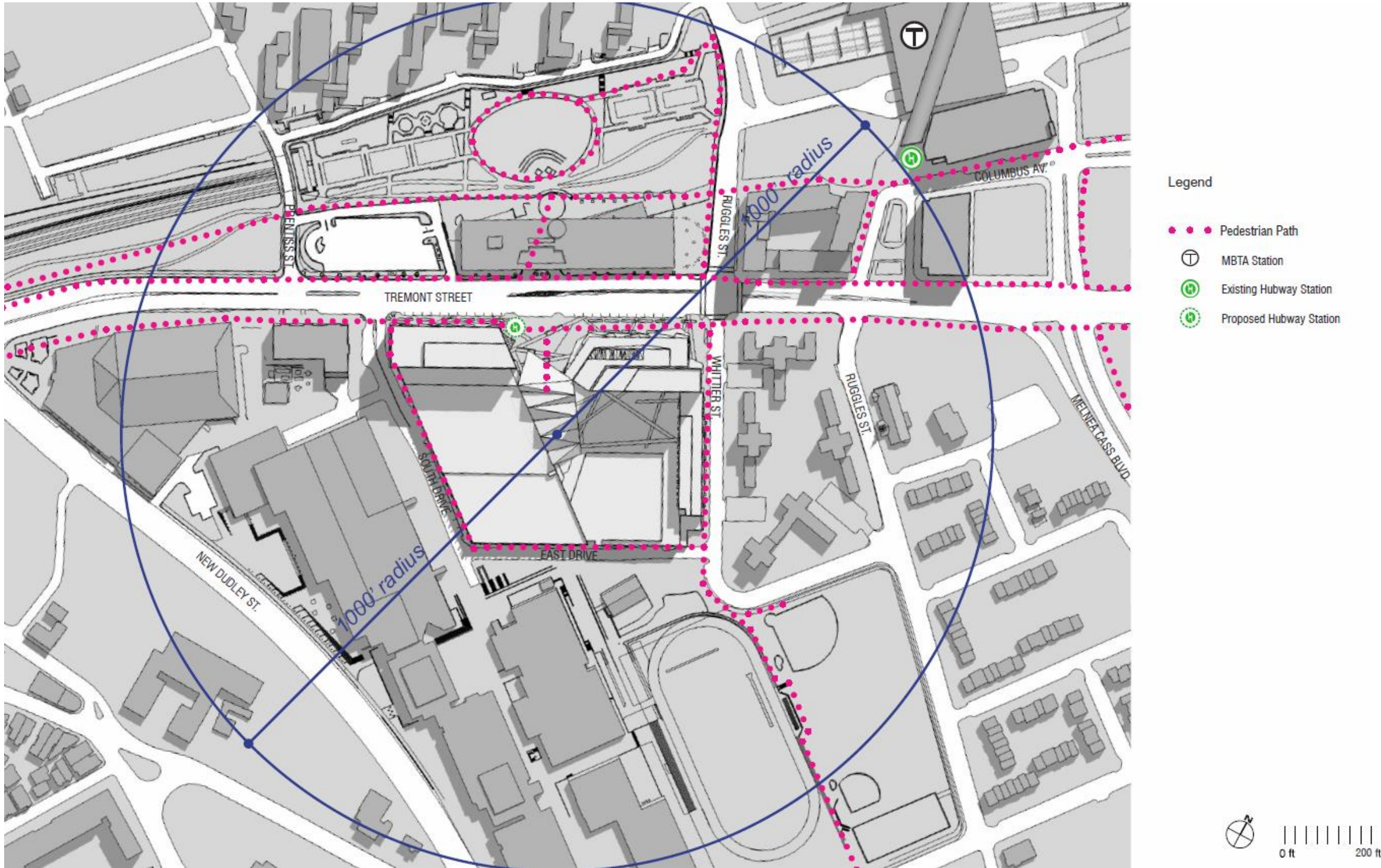
The inviting pedestrian experience is maintained past the main plaza by sidewalks along Tremont Street of a comfortable width. These sidewalks wrap around the Project’s access drive, leading to the rear of its buildings. Thereby, a visitor might walk around the entire perimeter

of the Project, even if their main point of entry might be from Tremont Street and/or the main plaza.

Besides the significant improvements along the Project's frontage along Tremont Street, the Proponent anticipates making similar improvements along the length of Whittier Street. Like Tremont Street, which will gain a widened sidewalk, improved lighting, better landscaping and parallel parking spaces, Whittier Street will also be widened to two (2) lanes, permitting for two-way traffic. The Proponent believes that this treatment of Whittier Street will allow it to function more like a true urban thoroughfare and will be what transitions Whittier Street into an important piece of the neighborhood's transportation and pedestrian network. As such, the sidewalks adjacent to the street will be adorned with new trees and ample decorative street lighting, creating a much improved aesthetic to what currently exists. Ample landscape setbacks will be incorporated to the design of Whittier Street, whereby the pedestrian experience will connect and feed off of that of Tremont Street.

With improved crosswalks along Tremont Street, which will be more clearly defined and better timed with respect to traffic signalization, pedestrians will be able to safely "cross Tremont", especially if they are carrying merchandise back to Ruggles Station. In this regard, it is the expectation of the Proponent to create a Project that calms traffic along Tremont Street, and enhances the overall pedestrian experience.

Figure 4-8: Pedestrian Circulation



4.2 Neighborhood Context

Tremont Crossing will be a substantial addition to the Lower Roxbury neighborhood of the City of Boston. The Project's mix of uses will be a catalyst for further economic growth and its architectural expression will invigorate a long decadent parcel of land. However, of equal importance, the Project is cognizant of the realm in which it will be built. As such, Tremont Crossing's use and urban planning programs have been engineered in a manner that not only realize and fill need, but also seek to weave the Project into the urban fabric of which it will become a part.

As can be seen in Figure 4-13: Neighborhood Building Uses, the Project Site is adjacent to multifamily, residential (Whittier Apartments) to the northeast and institutional uses on its other periphery edges. However, missing from this urban dynamic is both a pedestrian vitality and broader connection to other neighborhoods in the City. The Proponent believes that by adding a significant amount of retail to the existing balance, a new vitality will emerge. Both wealth creation for Roxbury residents and access to the goods and services that make for a true urban experience will be the result of a combination of regional and local retail tenants of the Project. The Project will bring smaller, shops, restaurants and boutiques to the edge of Tremont Street, running from its southwesterly edge at the Whittier Health Center and continue its entire length to a pedestrian focused plaza at the corner of Whittier Street. These establishments will serve the residents of the Whittier Street Apartments, the Madison Park communities and the many intuitions in the vicinity. Additionally, the larger-format retail not only will fill an existing void in value/price oriented shopping, they will also serve to rebalance the expenditure of capital to this area of Boston.

Although the Project will create the aforementioned retail vitality, it will also do so in a way that transitions this focus in a thoughtful and integrated manner. The larger retail building will have atop its base a combination of multifamily residential and hotel uses that will also wrap around a significant portion of Whittier Street. This continuation of residential uses will project to the northeast of the Project Site and maintain the character of a long established community. The intention of adding multifamily residential to the Project's side of Whittier Street is to activate and enliven the street and to also create an inviting integration that connects with the community.

The institutional uses that abut the Project Site include the Madison Park and O'Bryant High Schools, The Reggie Lewis Track, The Whittier Street Health Center, the Boston Police Department Headquarters and Northeastern University's International Village, residence hall. As mentioned above, the Proponent believes that its retail and commercial uses will serve and invigorate these existing and established institutions.

However, great care was taken in orientating the Project's massing in a manner that is consistent with the footprint and massing of the adjacent institutional buildings. For example, the footprint and height of the Project's parking structure is very similar to that of the Madison Park High School, which it abuts. Thus, as is illustrated in figure 4-11: Site Context Section ("Section C"), the Project follows the low, broad massing of the educational cluster that runs the length of Malcolm X / New Dudley Street.

In contrast to the cascading rear elements to the Project's southeast, the Proponent has oriented its vertical expression to the Project Site's outer edges. At the corner of Tremont Street and Whittier Street is the aforementioned multifamily residential / hotel tower. Additionally, adjacent to the Whittier Street Health Center is the office and museum tower, which is at the southwesterly edge of the Project Site. The residential / hotel tower will rise atop the large-format retail building with a height of approximately 319 feet. As is set forth in Figure: 4.11 (Section "B"), the Northeastern International Village building, which is diagonally across Tremont Street is approximately 214 feet tall. Thus, the prominence of the Tremont Street / Ruggles Street intersection will be augmented and a balance to both sides of Tremont Street will be created. Likewise, the Project's office tower will further the vertical transition which flows from the educational facilities along Malcolm X Street and then steps up to the Whittier Street Health Center. Thus, the focal, vertical "energy" of the Project's massing is both spatially and functionally aware of its surroundings and seeks to harmoniously integrate into its environs. Both the neighborhood building use context and relative building heights are set forth in Figures 4-9 through 4-13 below. Additionally, Figures 4-14 and 4-15, set forth aerial views of the Project and its relationship to its surrounding.

Figure 4-9: Neighborhood Plan

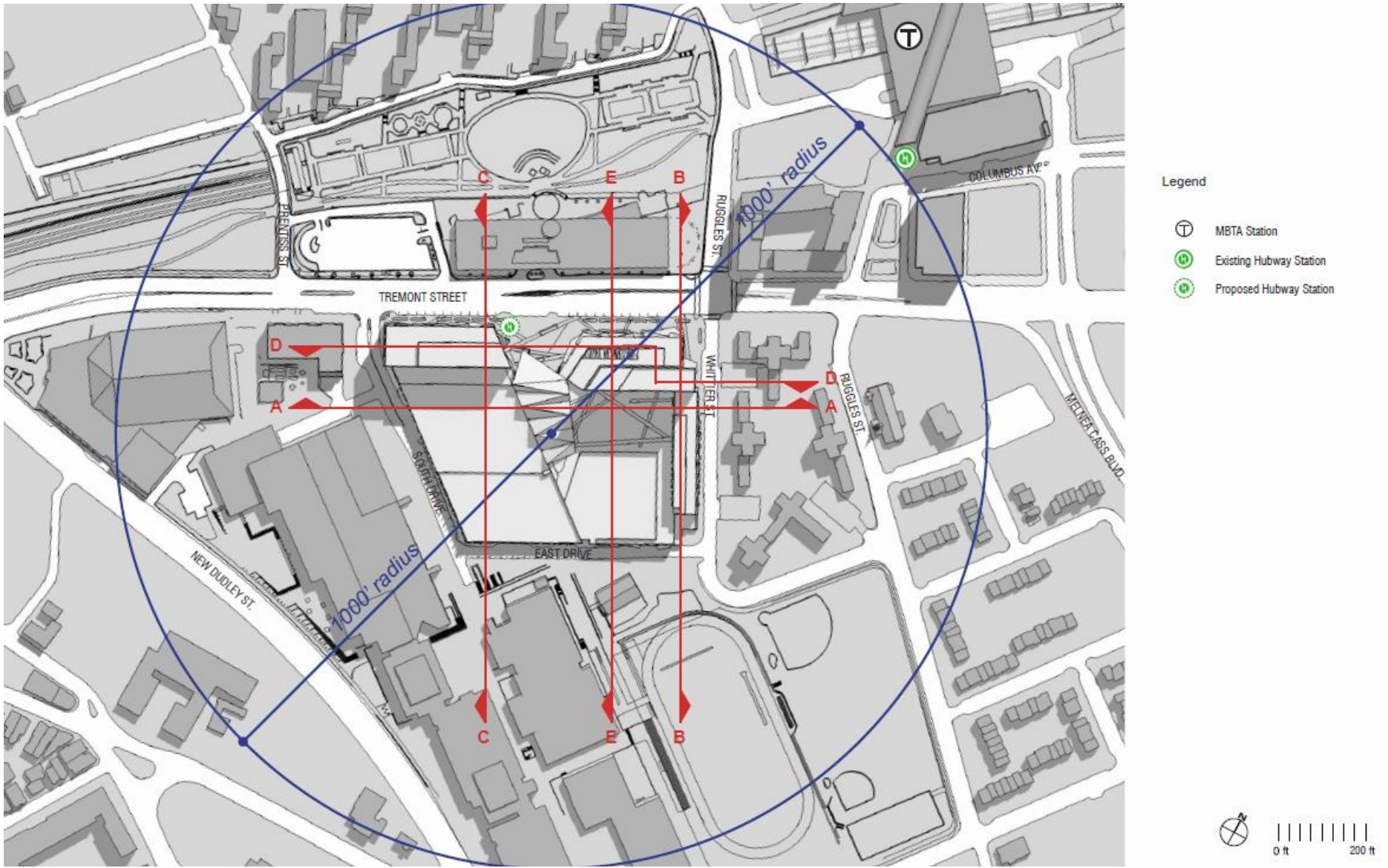
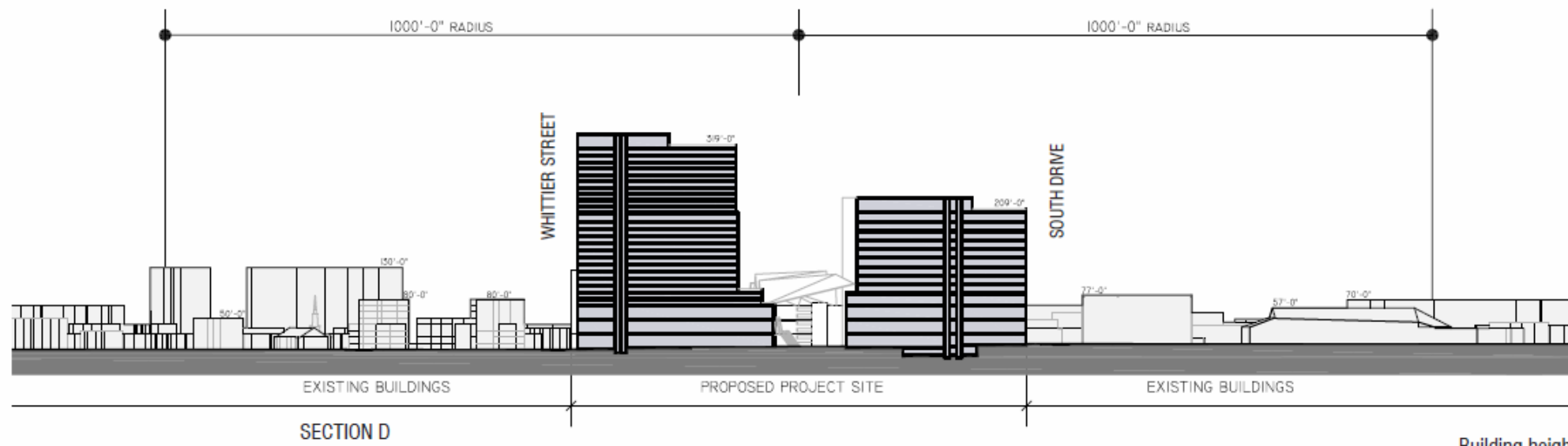
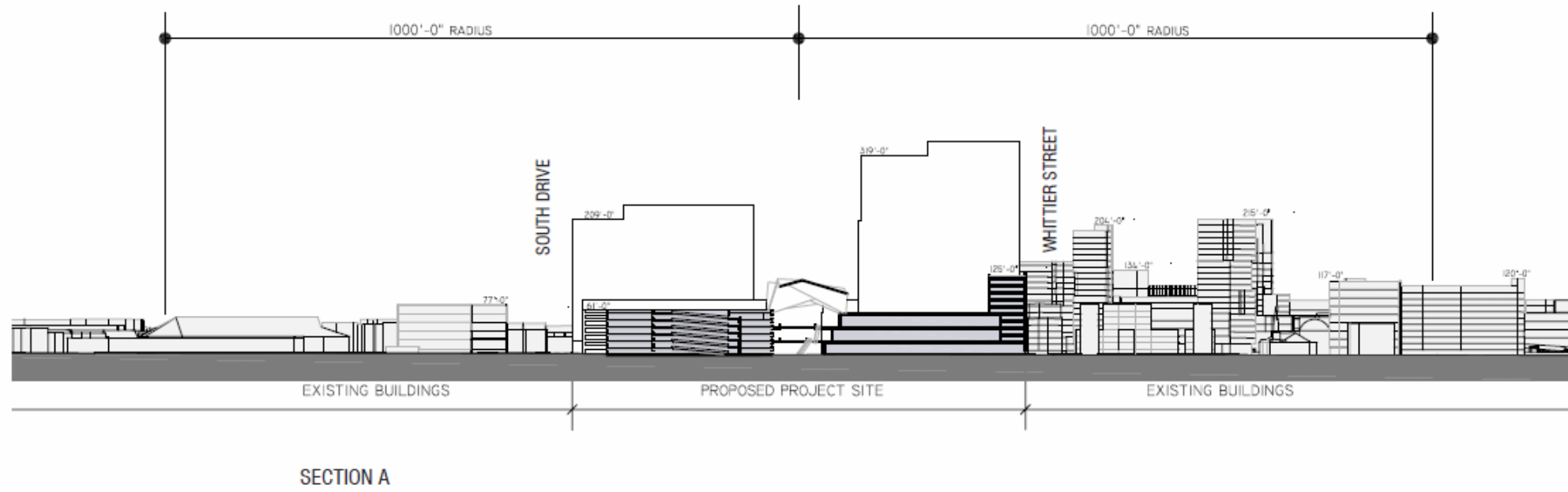


Figure 4-10: Site Context Sections



Building heights as indicated are dimensioned from the ground plane.

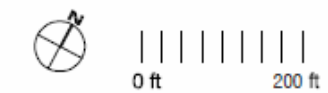
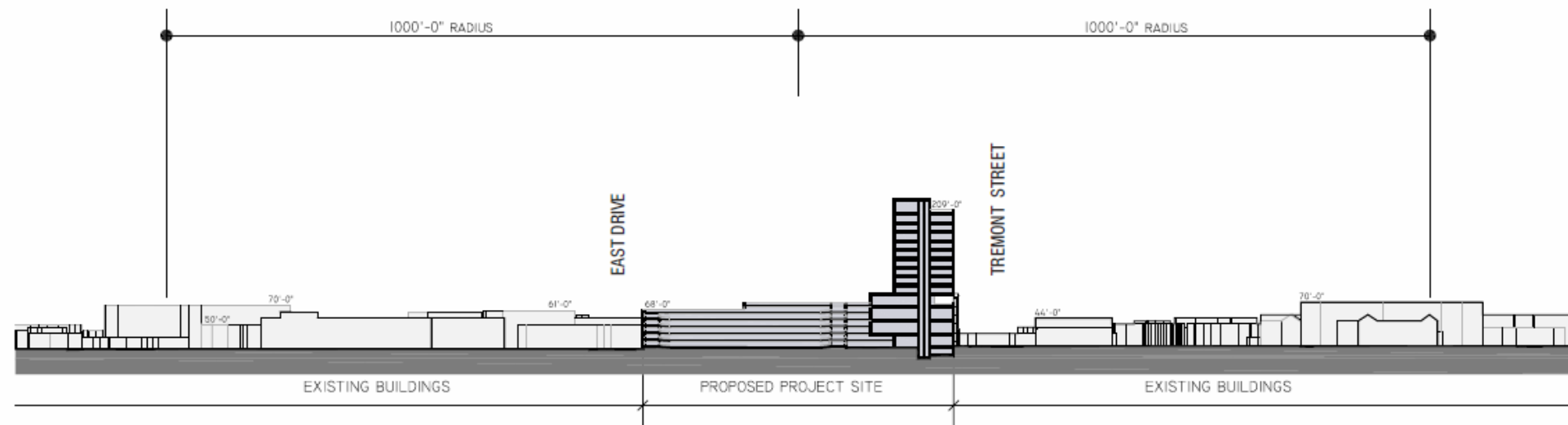
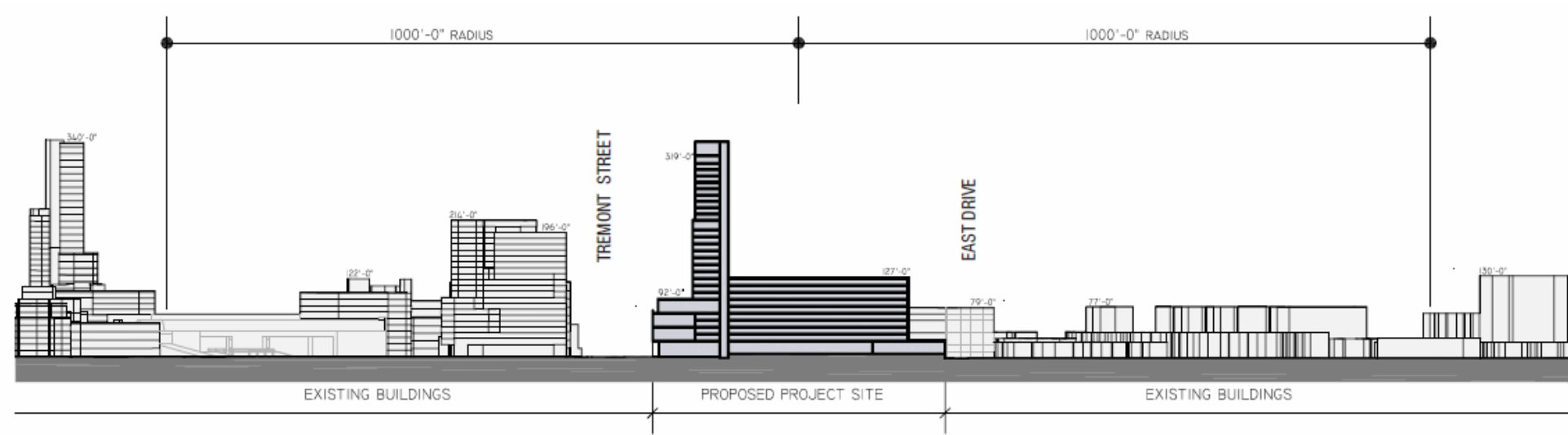


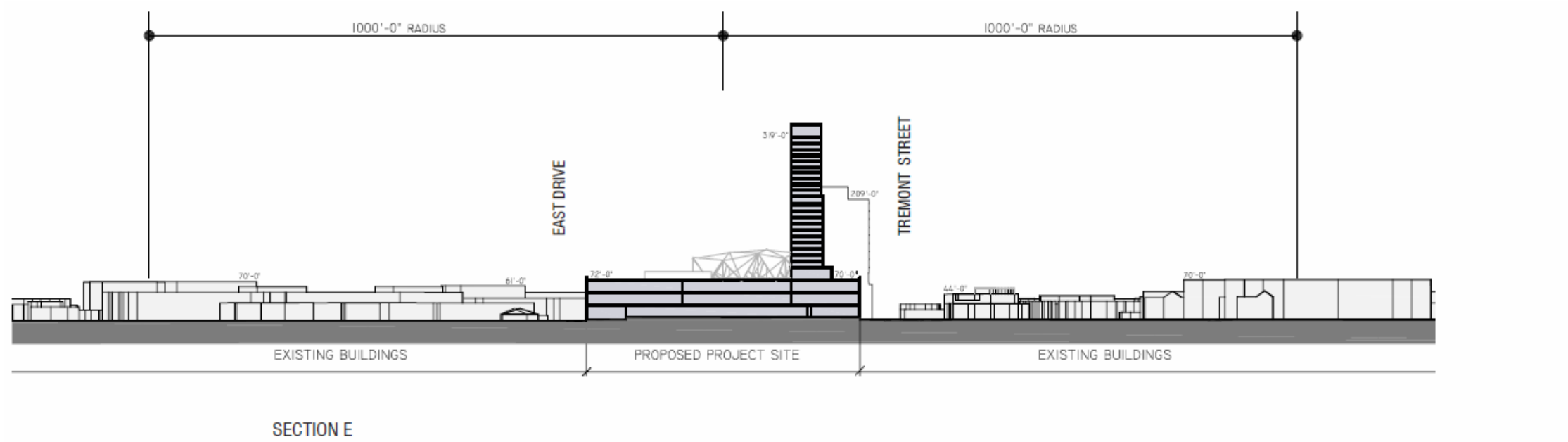
Figure 4-11: Site Context Sections



Building heights as indicated are dimensioned from the ground plane.



Figure 4-12: Site Context Sections



Building heights as indicated are dimensioned from the ground plane.



Figure 4-13: Neighborhood Building Uses



Figure 4-14: Neighborhood Context Looking Southwest

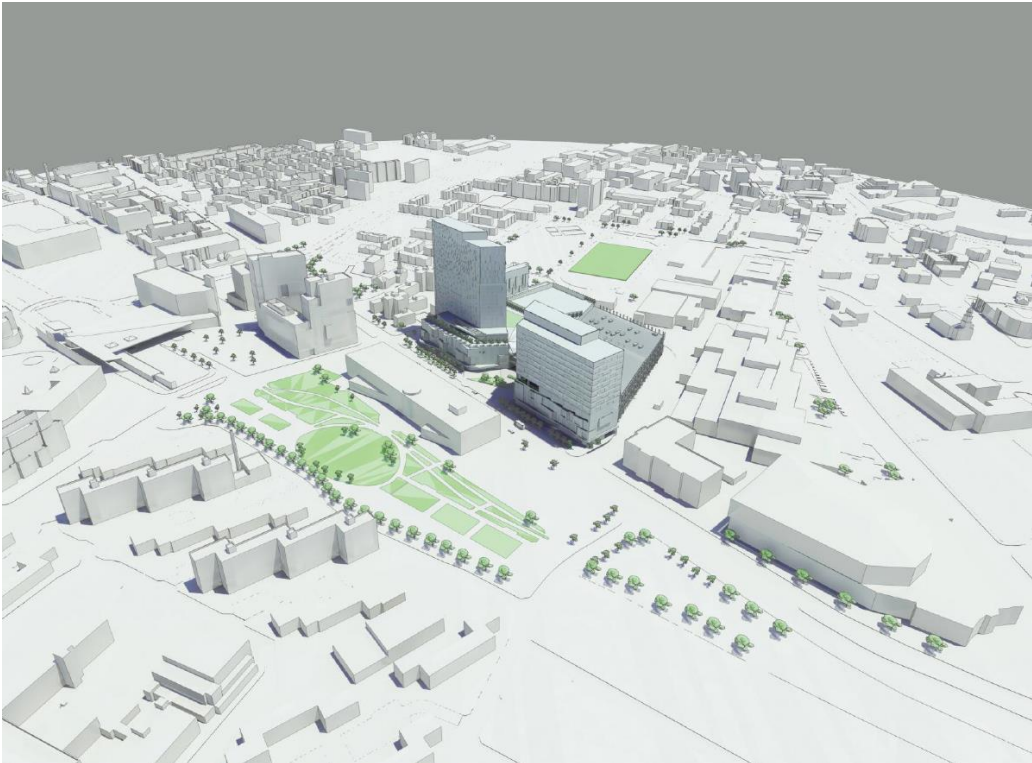
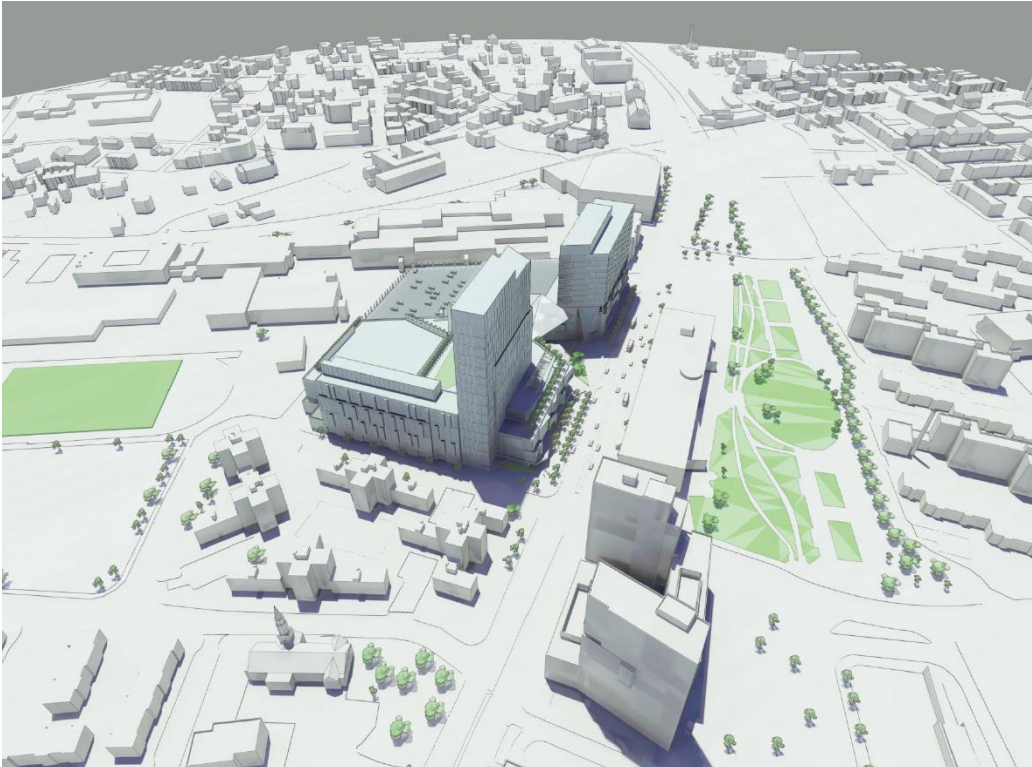


Figure 4-15: Neighborhood Context Looking East



4.3 Signage

The Proponent believes that the Project's balance of uses will be the catalyst for a dynamic and vibrant energy that permeates throughout the Roxbury community. As such, a necessary metric in the ongoing success of the Project is that its tenants have the means to establish a presence and create a necessary "sense of place" that could further extend to a larger revitalization along Tremont Street. In order to do so, a well thought out signage program that balances the aforementioned considerations with sensible urban design parameters is essential.

With regard to the office building and Museum, the Proponent envisions signage prototypical of these uses that allow for distinct but appropriate recognition of these institutions on the façade of their respective facilities. The office building would recognize anchor and/or key tenants with lighted signage above the entryway at an appropriate height on the building, which could be seen by passing vehicles to provide an emanating and clear presence onto Tremont Street.

In order to further enhance the presence and vitality of the cultural facilities, the Proponent would like to include an LCD screen in the interior areas of the central, public plaza. Such a screen could display slideshows of art, as well as tastefully promote the goods and services being offered by the various retail stores. Additionally, the Proponent would like the ability to have such a screen or series of smaller screens displayed in a setback manner from the interior of the Museum's ground floor or the ground floor or upper floors of the interior atrium space visible to passersby. This has proven to be an effective means of creating energy and vitality in other locations in the Greater Boston area, such as the Museum at the Broad Institute which faces Main Street in Kendall Square, Cambridge. Such a display would create interest and excitement relative to the important cultural uses of the Project and do so in a manner unobtrusive to the Project's neighbors.

Relative to the large-format retail building, the Proponent hopes to offer potential tenants a comprehensive signage package that includes tenant name recognition in various places along the retail façade and within the atrium space. These colorful and playful signage bands would be integrated and mixed with the materials of the building themselves, and thus function as architectural elements. Having such signage be visible for both inbound and outbound traffic would be critical, so that motorists and pedestrians alike can become aware all of their shopping options while approaching the Project. Integrated into this retail signage and also at the intersection

of Whittier Street and Tremont Street (at its lobby) would also be the name of the hotel.

The Proponent also believes that having much of this signage as back-lit is vital, so that it may be seen at night. Not only will this signage provide further vibrancy and a sense-of-place to the Project, but many of these retail tenants will stay open after dark and it would be crucial for them to maintain visibility during these hours. The Proponent will design and orient the “lit” signage in a manner that is cognizant of the urban sensibilities in which it will be located and anticipates coordinating with the BRA in this regard.

In addition, as is typical and necessary for visitor navigation to the Site, the Proponent foresees including a pylon sign at the primary vehicular access point, listing all the major tenants of the Project, as well as providing for parking structure signage to help organize traffic along Tremont Street. Additionally, tasteful monument signage located at the corner of Whittier Street and Tremont Street and at a “pedestrian scale” would be an effective means of way finding for passersby’s of the residential and hotel uses. Further, the lobby of the residential component of the Project would be demarcated by an elegant awning either made of fabric or metal.

Figure 4-16: Signage along Tremont Street



4.4 Project Phasing

At this time, the Proponent does not anticipate that it will need to construct the Project in multiple phases and currently intends to build all of the constituent uses in a single, simultaneous construction process. However, in the future, market and/or other prevailing conditions may dictate that the construction of certain uses be started and possibly completed before others. If the Proponent deems that such a scenario is likely, it will present an appropriate plan of construction phasing in a subsequent Article 80 filing (“Phasing Plan”). If needed, the Phasing Plan will set forth the sequence and timing for constructing the Project’s building structures and the specific associated uses and the manner in which the phasing will integrate with the Project’s infrastructure, traffic circulation and parking program.

5.0 ENVIRONMENTAL PROTECTION

5.1 Shadow

A shadow impact analysis was conducted to identify net shadow impacts from the proposed Project as well as identifying the existing shadows at the Project Site. The analysis considers four time periods (9:00 am, 12:00 noon, 3:00 pm, and 6:00 pm) for the vernal equinox, summer solstice and autumnal equinox and three time periods for the winter solstice (9:00 am, 12:00 noon, and 3:00 pm). For purposes of this analysis the vernal equinox and autumnal equinox have been combined, as they yield identical results. The shadow analysis is depicted in figures 5-1 through 5-11 below.

The analysis is focused on the impact to public open spaces, major pedestrian areas and sidewalks. Additionally, the analysis notes the shadow impact on the surrounding building's rooftops, including the educational, residential, houses of worship and institutional uses in the vicinity. It should be noted, that the analysis was completed using a general massing of the Project and as the design of the buildings has evolved, it is anticipated that the additional architectural features that have been incorporated, such as setbacks and tactile facades, will result in a decrease in the net new shadows as they are presented in the analysis.

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

Currently, the Project Site consists primarily of open space, comprised of parking lots and over-grown fields. Therefore, the Project will result in net new shadow in excess of the existing conditions. However, in most cases, the Project's shadow impact to the surrounding public realm is marginal. Of note, is that in all cases of the analysis, there is no net shadow impact on the Whittier Street Health Center and the Madison Park High School educational facilities. The Whittier Street Apartments are marginally impacted as is a small portion of the Madison Park High School playing fields. Overall, the majority of the shadow impact falls on the Project Site and on Tremont Street in front of the Project, including portions of the front façade of the Boston Police Headquarters. The Project has been designed so that its public and pedestrian open space provides both sun and shade. In conclusion, impacts to surrounding areas outside the Project site and to existing public space are minor. Existing public space primarily consist of the Madison Park High School playing fields (the "Playing Fields"), which are to the southeast of the Project.

5.1.1 Vernal Equinox and Autumnal Equinox (March 21 and September 21)

New shadow created on March 21 and September 21 is illustrated in Figures 5.1 through 5.4.

At 9:00 am on both March 21 and September 21, the only net new shadow impact will be to the north and northwest of the Project. New shadow will be cast onto the sidewalk in front of the Project and onto Tremont Street. Additionally, shadow will be cast onto a portion of the sidewalk in front of the Boston Police Department and onto the parking lot to its east. A very small portion of the rooftop of the Police Department will have a marginal amount of shadow cast onto it. The pedestrian plaza in front of the Project will be partially impacted by shadow and will consist of a mixture of sun and shade. The public plaza on the corner of Tremont Street and Whittier Street will be primarily free of any shadow impact. There will not be any net new shadow impact to any of the Project's other abutters. There will be no shadows cast onto the Whittier Street Apartments, the Whittier Street Health Center, The Madison Park High School nor the Good Sheppard Church. The Playing Fields to the southeast of the project will not be impacted by any net new shadow at this time.

At 12:00 noon, new shadow will be cast to the north and northeast of the Project. New shadow will be cast onto the sidewalk and onto Tremont Street in front of the project Site. A small portion of the sidewalk in front of the Boston Police Headquarters will also have new shadow. The intersection of Tremont Street and Whittier Street will have new shadows cast, as will Whittier Street and the sidewalks on both sides. The rooftops of the building structures of the Whittier Street Apartments will remain free of new shadow and will consist of sun. The Project's other abutters will also remain free of any new shadow as will the Playing Fields.

At 3:00 pm, new shadow will be cast primarily to the east of the Project. Net new shadow will be cast onto Whittier Street and onto both sides of the sidewalk. New shadow will extend onto a portion of the open space of the Whittier Street Apartments and onto a marginal portion of the rooftops of the complex. The public plaza at the corner of Tremont Street and Whittier Street will be cast in shade as will the main pedestrian plaza in front of the Project. All of Tremont Street and the sidewalks in front of the Project will remain free of shadow and consist of sun at this time. The Playing Fields, the Madison Park

High School, the Church and the Whittier Street Health Center will not have any new shadow cast by the Project at this time.

At 6:00 pm the sun will have set on both the Vernal Equinox and the Autumnal Equinox. As such, the incremental shadow cast by the Project will be marginal to non-existent at this time.

Figure 5-1: Shadow Study for March 21 and September 21 at 9:00 am



Figure 5-2: Shadow Study for March 21 and September 21 at 12:00 noon

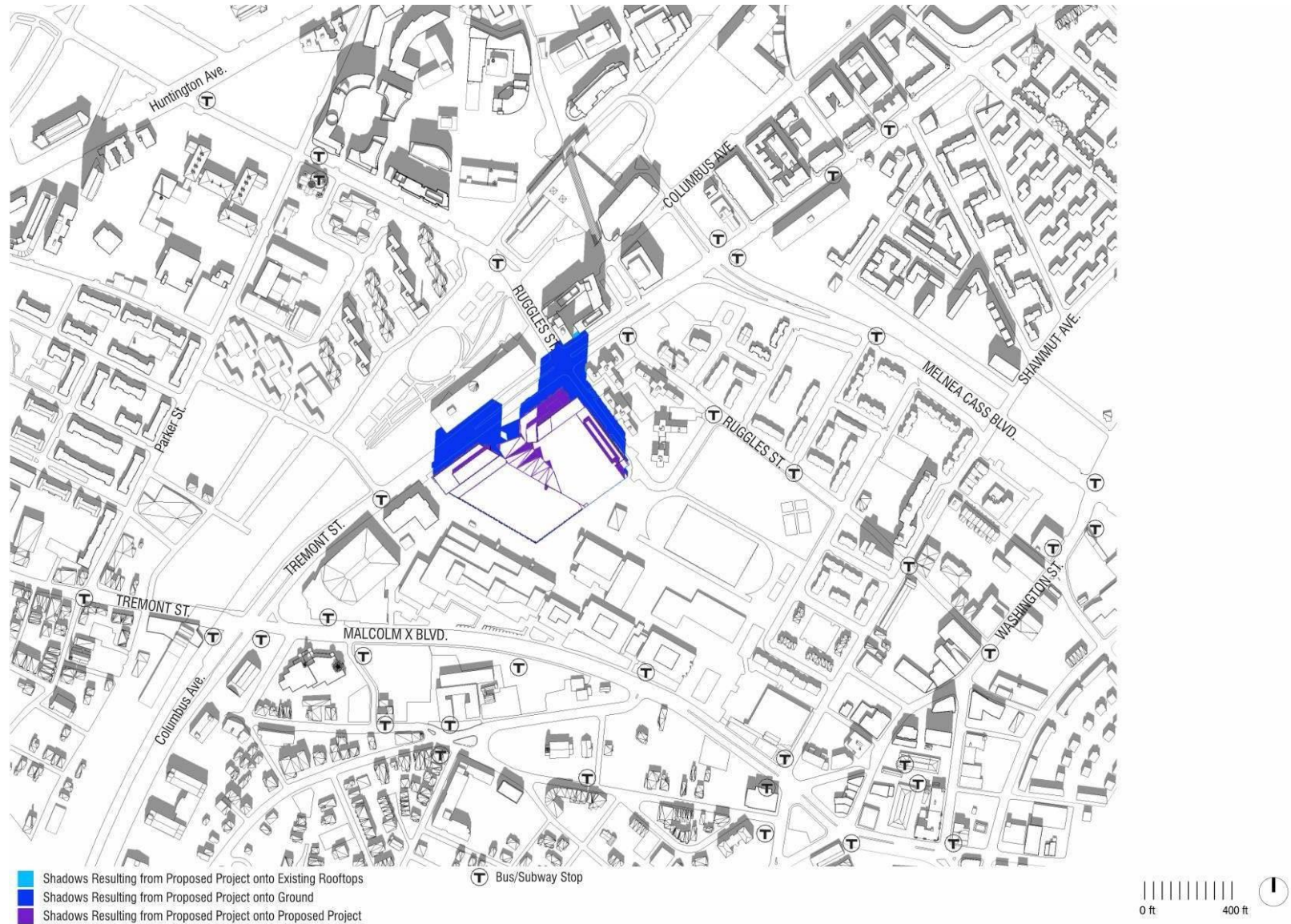
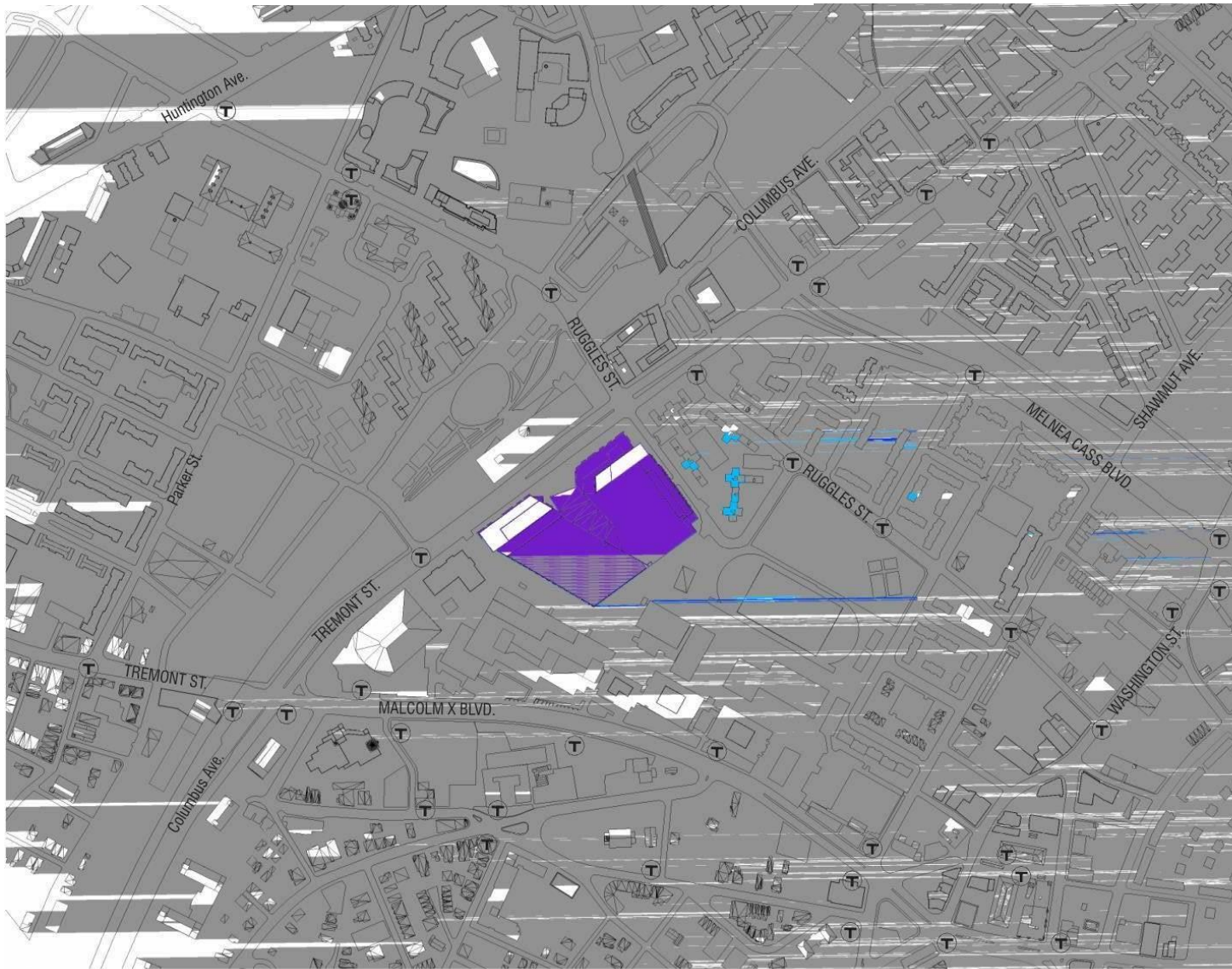


Figure 5-3: Shadow Study for March 21 and September 21 at 3:00 pm



Figure 5-4: Shadow Study for March 21 and September 21 at 6:00 pm



- Shadows Resulting from Proposed Project onto Existing Rooftops
- Shadows Resulting from Proposed Project onto Ground
- Shadows Resulting from Proposed Project onto Proposed Project

T Bus/Subway Stop



5.1.1 Summer Solstice (June 21)

New shadow created on June 21 is illustrated in Figures 5.5 through 5.8.

At 9:00 am on July 21, the vast majority of the net new shadow impact will be to the north and northwest of the Project. New shadow will be cast onto the sidewalk in front of the Project and onto Tremont Street. Additionally, shadow will be cast onto a portion of the sidewalk to the east of the Boston Police Department. The pedestrian plaza in front of the Project will be marginally impacted by shadow and will consist mostly of sun. The public plaza on the corner of Tremont Street and Whittier Street will be free of any shadow impact. There will be a marginal impact to the sidewalk to the east of the Project running along the parking structure, although the street to its east will not be impacted by shadow. There will not be any net new shadow impact to any of the Project's other abutters. There will be no shadows cast onto the Whittier Street Apartments, the Whittier Street Health Center, The Madison Park High School nor the Good Sheppard Church. The Playing Fields to the southeast of the project will not be impacted by any net new shadow at this time.

At 12:00 noon, new shadow will be cast to the north and northeast of the Project. New shadow will be cast onto the sidewalk in front of the Project Site. A narrow section of Tremont Street in front of the Project's office tower will be cast in a marginal amount of shadow. The sidewalk running down the western side of Whittier Street will have new shadows cast, as will the western half of Whittier Street. None of the rooftops of the building structures of the Whittier Street Apartments will be impacted by new shadow and will consist of sun. The Projects other abutters will also remain free of any new shadow as will the Playing Fields.

At 3:00 pm, new shadow will be cast primarily to the east of the Project. Net new shadow will be cast onto Whittier Street and onto both sides of the sidewalk. New shadow will extend onto a portion of the open space of the Whittier Street Apartments and onto a margin portion of the rooftops of the complex. The public plaza at the corner of Tremont Street and Whittier Street will be partially cast in shade, but will be predominantly sun at this time. Only a small portion on the westerly side of the main pedestrian plaza in front of the Project will be impacted by new shade. All of Tremont Street and the

sidewalks in front of the Project will remain free of shadow and predominantly consist of sun. The sidewalk abutting the rear of the Project, by the back of the loading facilities and the parking structure, will be shaded at this time. The Playing Fields, the Madison Park High School, the Church and the Whittier Street Health Center will not have any new shadow cast by the Project at this time.

At 6:00 pm the net new shadow impact will be to the south and southeast of the Project. The easterly portion of the grounds in front of and to the south of the Whittier Street Apartments will be shaded as will a portion of the rooftops of that complex. Additionally, the Good Sheppard Church grounds and building will be fully shaded at this time. The portions of the Playing Fields, furthest to the north will be impacted by shadows. However, it should be noted, that this is the only time and date in the shadow analysis where the Playing Fields are impacted by the shadows cast by the Project. None of the Project's other abutters are impacted at this time, including the Madison park High School's building facilities nor the Whittier Street Health Center.

Figure 5-5: Shadow Study for June 21 at 9:00 am

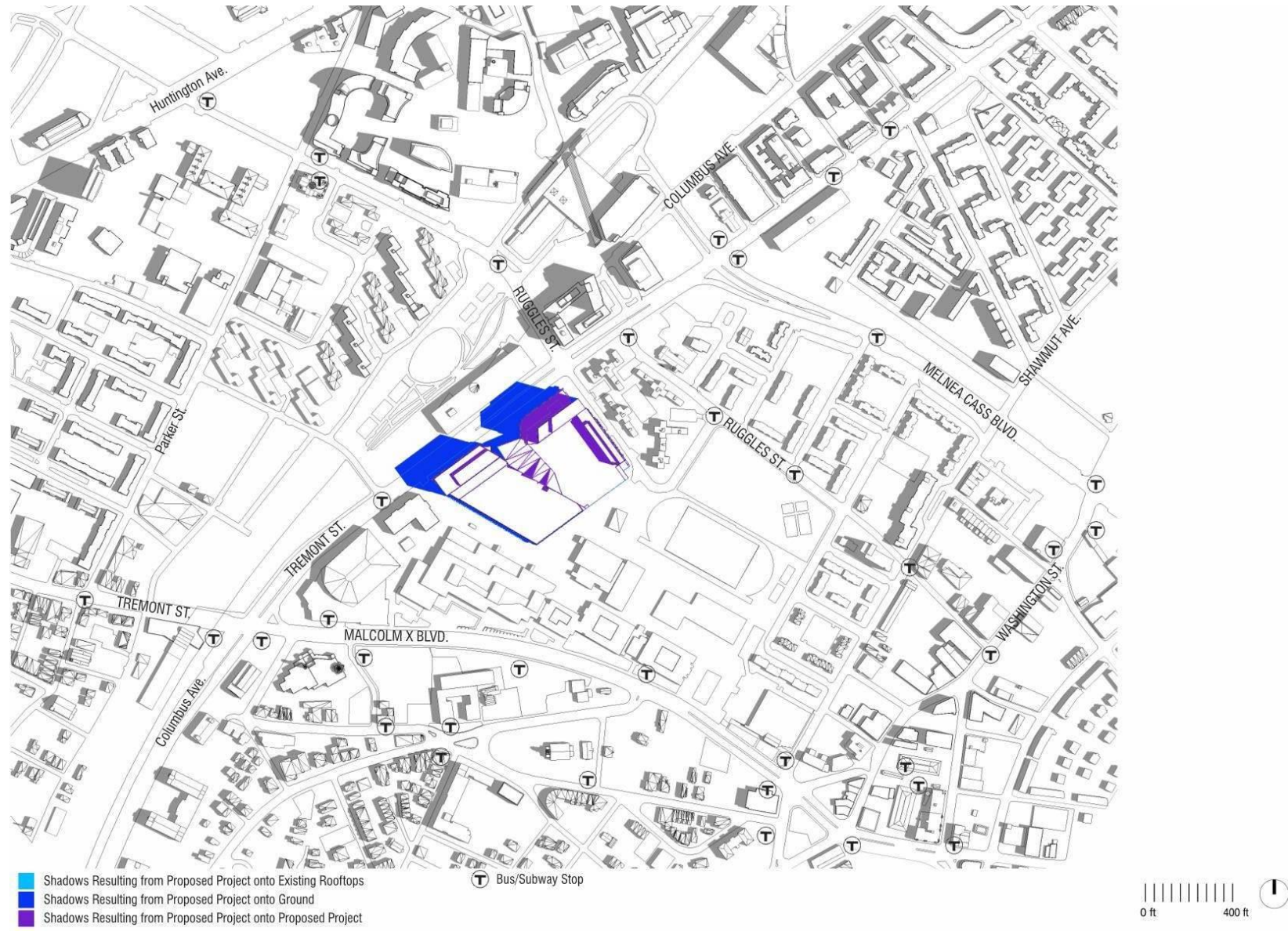


Figure 5-6: Shadow Study for June 21 at 12:00 noon

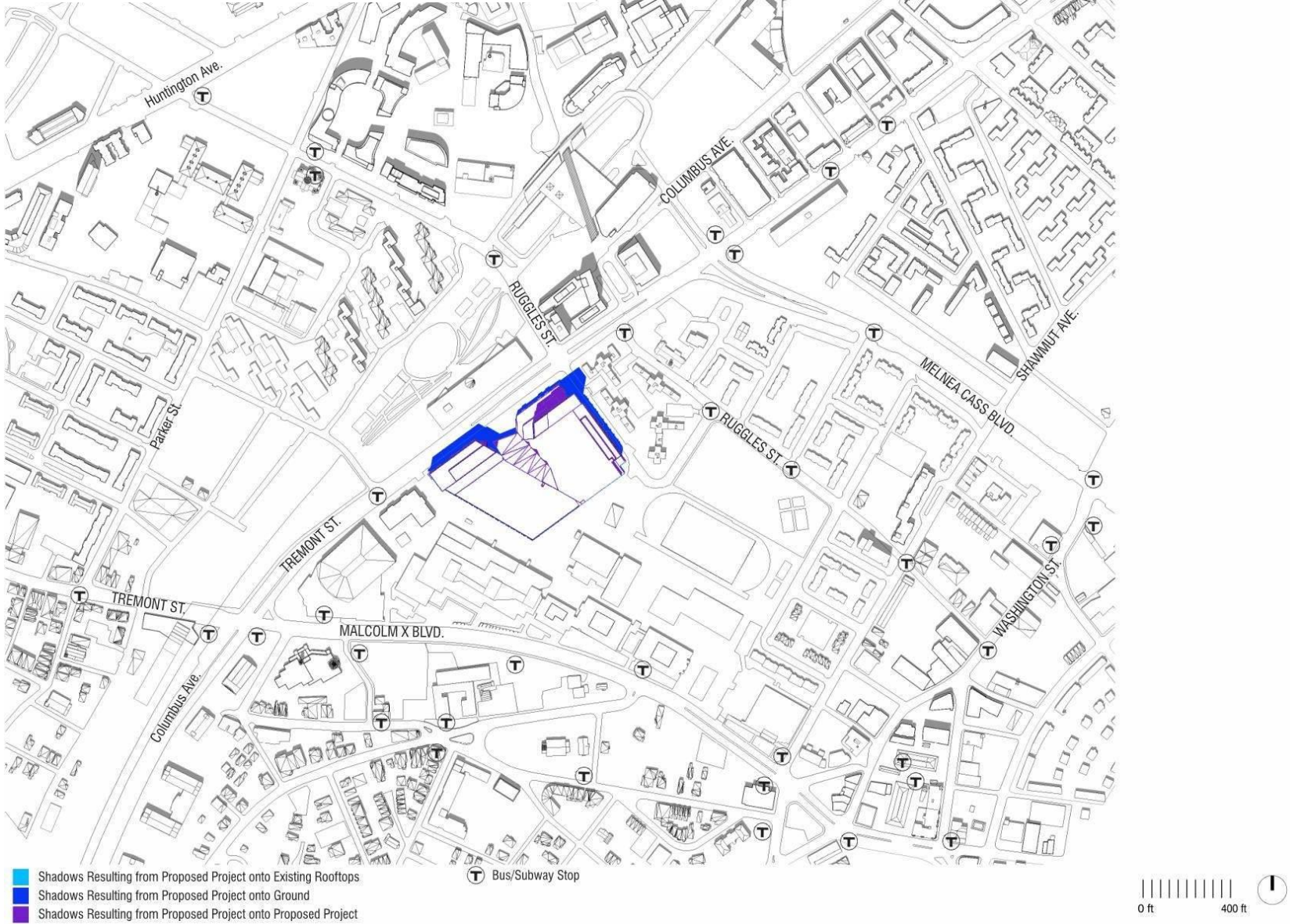
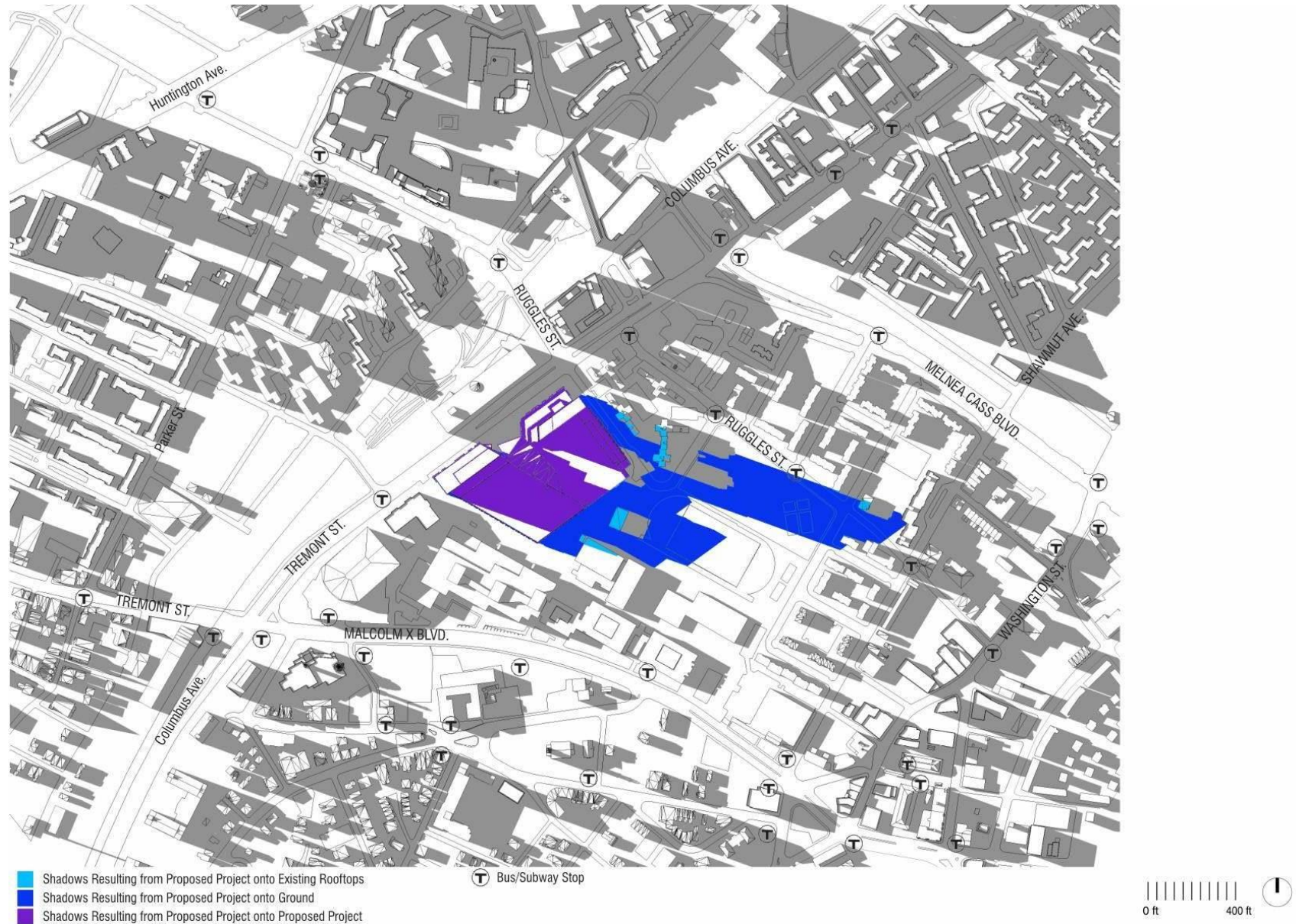


Figure 5-7: Shadow Study for June 21 at 3:00 pm



Figure 5-8: Shadow Study for June 21 at 6:00 pm



5.1.2 Winter Solstice (December 21)

New shadow created on December 21 is illustrated in Figures 5.9 through 5.11.

At 9:00 am on December 21, the vast majority of the net new shadow impact will be to the north and northwest of the Project. New shadow will be cast onto the sidewalk in front of the Project and onto Tremont Street. Additionally, shadow will be cast onto the sidewalk and rooftop of the Boston Police Department. Additionally, the public, open space behind the Police Department will be shaded, but not directly by the Project as it is impacted by the Police Headquarters building. The pedestrian plaza in front of the Project will be fully impacted by shadow and will not consist of sun at this time as will the public plaza on the corner of Tremont Street and Whittier Street. There will not be any net new shadow impact to any of the Project's other abutters. There will be no shadows cast onto the Whittier Street Apartments, the Whittier Street Health Center, The Madison Park High School nor the Good Sheppard Church. The Playing Fields to the southeast of the project will not be impacted by any net new shadow at this time.

At 12:00 noon, new shadow will be cast to the north and northeast of the Project. New shadow will be cast onto the sidewalk in front of the Project Site and onto Tremont Street. The shadow impact will extend to impact the sidewalk and rooftop of the westerly half of the Boston Police Headquarters. Additionally, the intersection of Tremont Street and Whittier Street will be cast in shadow at this time, with the shadow impact extending to the sidewalk in front of the Northeastern University dormitory. A very small portion of the dormitory's rooftop will be impacted by shadow. However, it should be noted that this is the only shadow study date and time where the dormitory is ever impacted. The sidewalks running down Whittier Street will have new shadows cast, as will Whittier Street. A small portion of the grounds of the Whittier Street Apartments will be cast in shadow, as will a marginal portion of the rooftops. The Project's other abutters, including the Whittier Street Health Center, the Madison Park High School building facilities and the Good Sheppard Church, will remain free of any new shadow as will the Playing Fields.

At 3:00 pm, new shadow will be cast primarily to the east of the Project. Net new shadow will be cast down to the east on Tremont Street and extend through the intersection of Melnea Cass Blvd. There will be new shadow onto the majority of the rooftops of the Whittier Street Apartments. However, of note is that this is the only study period with such a significant impact.

Further, the public plaza at the corner of Tremont Street and Whittier Street will be cast in shade. Only a small portion on the westerly side of the main pedestrian plaza in front of the Project will be sun at this time. The Playing Fields, the Madison Park High School, the Good Sheppard Church, the Boston Police Headquarters and the Whittier Street Health Center will not have any new shadow cast by the Project at this time.

Figure 5-9: Shadow Study for December 21 at 9:00 am

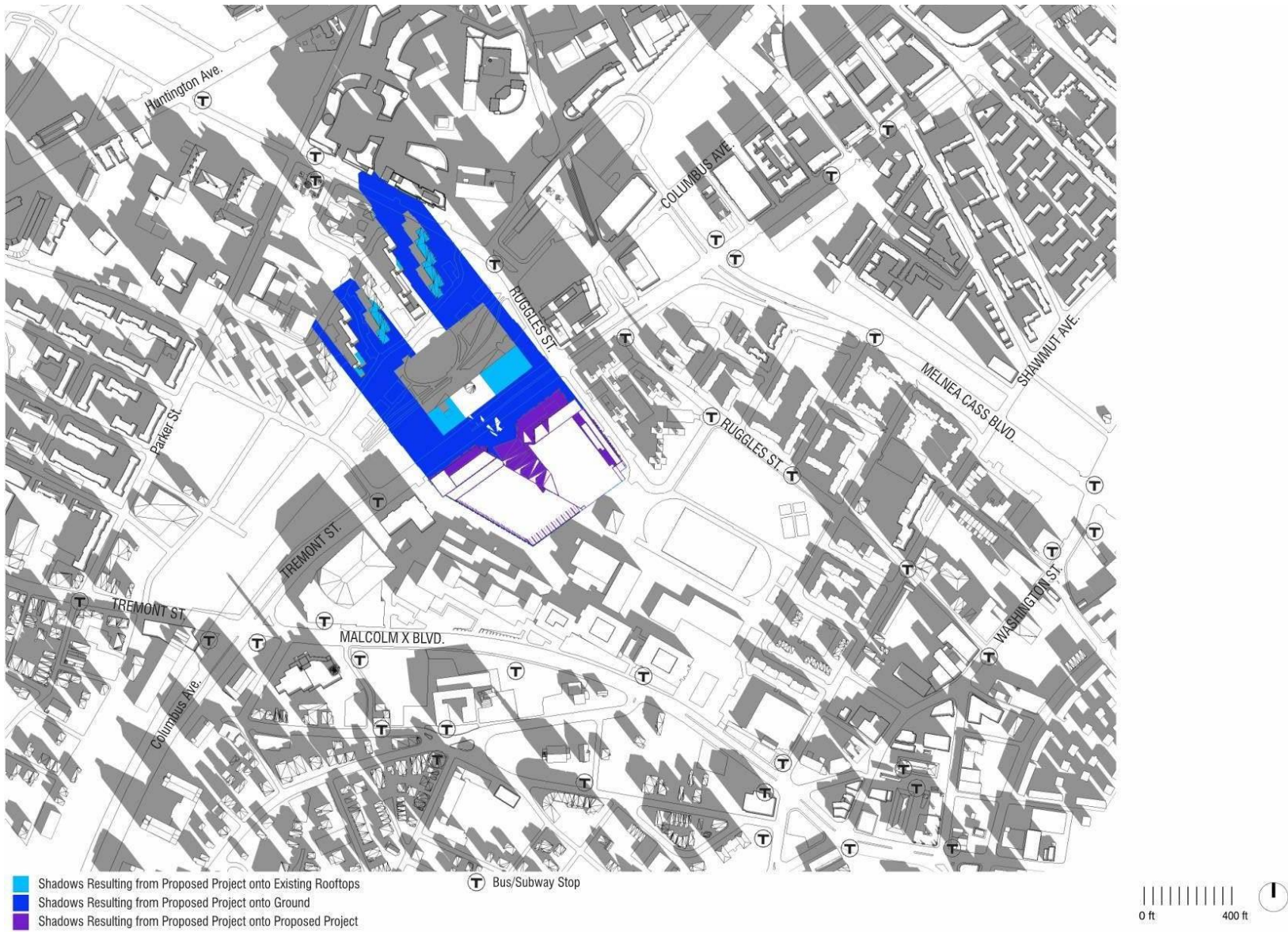
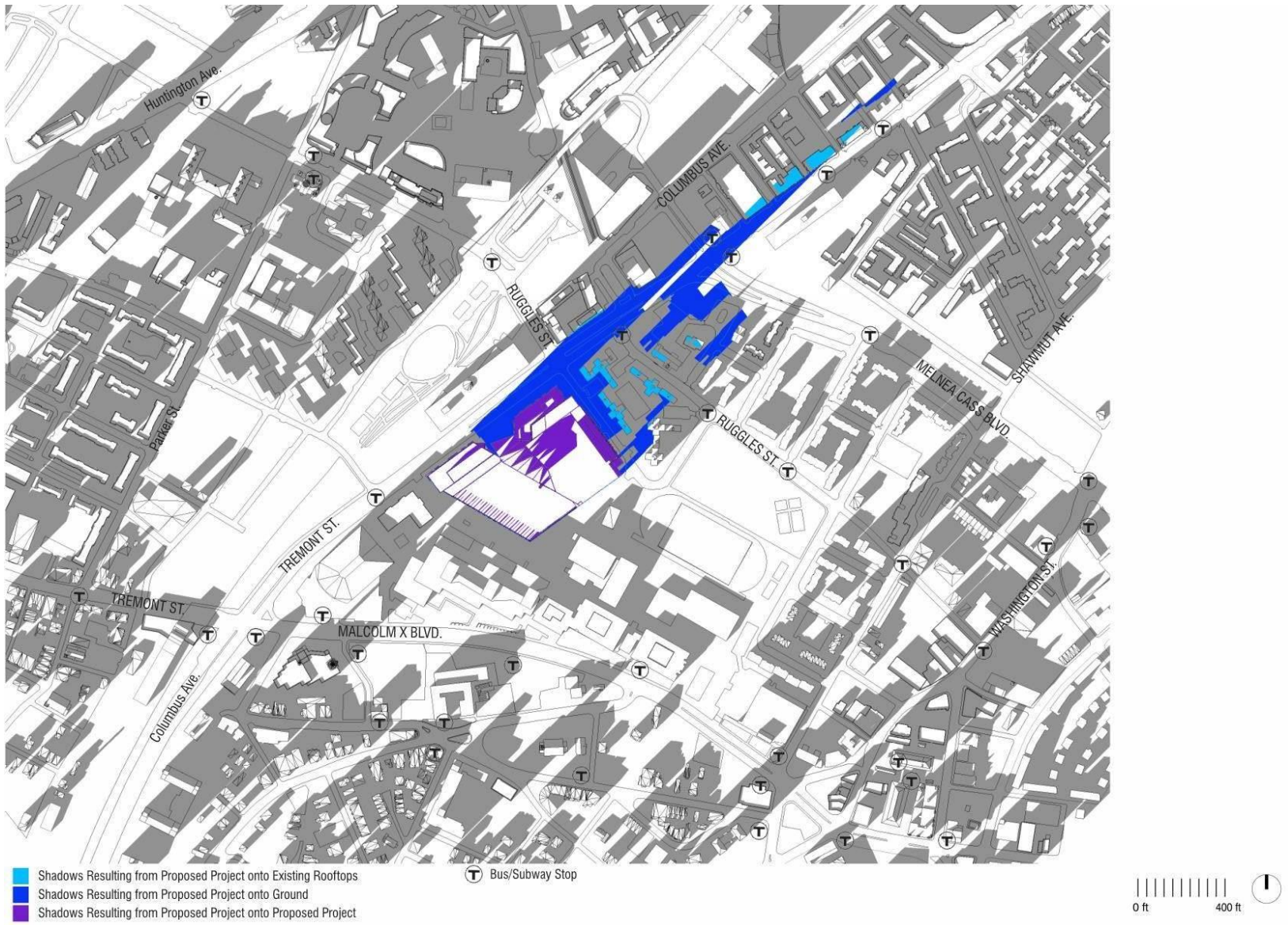


Figure 5-10: Shadow Study for December 21 at 12:00 noon



Figure 5-11: Shadow Study for December 21 at 3:00 pm



5.1.3 Conclusions

In conclusion, the majority of the net new shadow will fall on the Project Site and to portions of Tremont and Whittier Streets. The only significant, public open space is the Playing Fields and they are only partially impacted during one (1) study date and time. Further, the Project does not have an undo shadow impact on its abutters with the majority of the shadows being cast of the Boston Police Headquarters. However, even in this case, in only two (2) of the study periods, was its rooftop cast in shadow. Further, at no time was there a material impact to the open space or rooftops of the Madison Park High School or the Whittier Street Health Center. In sum, the Project does not appear to have a negative impact on its surroundings by way of an excess in net new shadows.

5.2 Air Quality

5.2.1 Introduction

Tech Environmental, Inc. performed air quality analyses for the Project. These analyses consisted of: 1) an evaluation of existing air quality; 2) an evaluation of potential carbon monoxide (CO) impacts from the operation of the Project's fuel combustion and parking garage; and 3) a microscale CO analysis for intersections in the Project area that meet the BRA criteria for requiring such an analysis.

5.2.2 Background Concentrations

The City of Boston is currently classified as being in attainment of the Massachusetts and National Ambient Air Quality Standards ("NAAQS") for all of the criteria air pollutants except ozone (see **Table 5-1**). These air quality standards have been established to protect the public health and welfare in ambient air, with a margin for safety.

The Massachusetts Department of Environmental Protection ("DEP") currently operates air monitors in various locations throughout the city. The closest, most representative, DEP monitors for carbon monoxide (CO), sulfur dioxide (SO₂), nitrogen dioxide (NO₂), fine particulate matter (PM_{2.5}), coarse particulate matter (PM₁₀), and lead are located at Dudley Square on Harrison Avenue, Boston, MA.

Table 5-2 summarizes the DEP air monitoring data, for the most recent available, complete, three-year period (2010-2012), that are considered to be representative of the project area. **Table 5-2** shows that the existing air quality in the Project area is generally much better than the NAAQS. The highest impacts relative to a NAAQS are for ozone and PM_{2.5}. Ozone is a regional air pollutant on which the small amount of additional traffic generated by this Project will have an insignificant impact. The Project's operations will not have a significant impact on local PM_{2.5} concentrations.

5.2.3 Air Quality Modeling Methodology and Results

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

Table 5-1: Massachusetts and National Ambient Air Standards (NAAQS)

Pollutant	Averaging Time	NAAQS ($\mu\text{g}/\text{m}^3$)
SO ₂	1-hour ^P	196 ^a
CO	1-hour ^P	40,000 ^b
	8-hour ^P	10,000 ^b
NO ₂	1-hour ^P	188 ^c
	Annual ^{P/S} (Arithmetic Mean)	100
PM ₁₀	24-hour ^{P/S}	150
PM _{2.5}	24-hour ^{P/S}	35 ^d
	Annual ^{P/S} (Arithmetic Mean)	12 ^{e,f}
O ₃	8-hour ^{P/S}	147 ^g
Pb	Rolling 3-Month Avg.P/S	0.15
	Calendar QuarterP/S (Arithmetic Mean)	1.5

P = primary standard; S = secondary standard.

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

^b One exceedance per year is allowed.

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

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

^e Three-year average of annual arithmetic means.

^f As of March 18, 2012, the U.S. EPA lowered the PM_{2.5} annual standard from 15 $\mu\text{g}/\text{m}^3$ to 12 $\mu\text{g}/\text{m}^3$.

^g Three-year average of the annual 4th-highest daily maximum 8-hour ozone concentration must not exceed 0.075 ppm (147 $\mu\text{g}/\text{m}^3$) (effective May 27, 2008) and the annual PM₁₀ standard was revoked in 2006.

Table 5-2: Representative Existing Air Quality in the Project Area

Pollutant, Averaging Period	Monitor Location	Value ($\mu\text{g}/\text{m}^3$)	NAAQS ($\mu\text{g}/\text{m}^3$)	Percent of NAAQS
CO, 1-hour	Harrison Avenue, Boston	2,863	40,000	7%
CO, 8-hour	Harrison Avenue, Boston	2,061	10,000	21%
NO ₂ , 1-hour	Harrison Avenue, Boston	93.4	188	50%
NO ₂ , Annual	Harrison Avenue, Boston	34.8	100	35%
Ozone, 8-hour	Harrison Avenue, Boston	131	147	89%
PM ₁₀ , 24-hour	Harrison Avenue, Boston	41	150	27%
PM _{2.5} , 24-hour	Harrison Avenue, Boston	21.3	35	59%
PM _{2.5} , Annual	Harrison Avenue, Boston	8.4	12	69%
Lead, Quarterly	Harrison Avenue, Boston	0.017	1.5	1.1%
SO ₂ , 1-hour	Harrison Avenue, Boston	47.4	196	24%

Source: MassDEP, <http://www.mass.gov/dep/air/priorities/aqreports.htm>., downloaded July 22, 2012.

Notes:

- (1) Annual averages are highest measured during the most recent three-year period for which data are available (2010 - 2012). Values for periods of 24-hours or less are highest, second-highest over the three-year period unless otherwise noted.
- (2) The eight-hour ozone value is the 3-year average of the annual fourth-highest values, the 24-hour PM_{2.5} value is the 3-year average of the 98th percentile values, the annual PM_{2.5} value is the 3-year average of the annual values – these are the values used to determine compliance with the NAAQS for these air pollutants.
- (3) The one-hour NO₂ value is the -year average of the 98th percentile values and the one-hour SO₂ value is the -year average of the 99th percentile values
- (4) The one-hour ozone standard was revoked by the US EPA in 2005; the annual PM₁₀ standard was revoked in 2006 and the 3-hour SO₂ standard was revoked by the US EPA in 2010.

5.2.3.1 Fuel Combustion Equipment and Parking Garage

The Project will include roof-top fuel combustion equipment that will emit air pollutants to the atmosphere when operating. Fuel combustion equipment for the Project will include gas-fired boilers and gas-fired emergency generators. The objective of this analysis was to determine the maximum CO concentrations from fuel combustion equipment inside the garage and at the closest sensitive receptors surrounding the Project. These closest sensitive receptors include: air

intakes located on the proposed buildings and nearby existing buildings, and pedestrians at ground level anywhere near the Project. CO emissions from motor vehicles operating inside the garage were calculated and the CO concentrations inside the garage and surrounding the Project were based on Saturday morning peak traffic periods. CO emissions from fuel combustion equipment and garage exhaust vents were modeled using an U.S. EPA-approved air model.

Worst-case concentrations of CO from the fuel combustion equipment and parking garage vent were predicted for locations around the building with using AERMOD model (Version 12345) in screening-mode. The AERMOD model in screening-mode was used to predict the maximum concentration of CO by modeling the fuel combustion equipment emissions as a volume sources and the parking garage exhaust vents as a point sources with aerodynamic building downwash using worst-case meteorological conditions for an urban area. The screening-mode option simulates modeling results predicted by AERSCREEN. The predicted concentrations presented here represent the worst-case air quality impacts from the fuel combustion equipment and garage at all locations on and around the Project. AERMOD predicted one-hour average concentrations of air pollutants.

Fuel Combustion Equipment

The Project will include fuel combustion equipment that will emit air pollutants to the atmosphere when operating. Fuel combustion equipment for the Project will include 13 gas-fired boilers (each with a heat input capacity of 2.9 million Btu per hour (MMBtu/hour) and five 1,000 kilowatt (kW) diesel-fired emergency generators to provide power during a power failure.

EPA's AP-42 document was used to determine the uncontrolled CO emission rate for the gas-fired boilers. The gas-fired boiler heat input capacity will be approximately 2.9 MMBtu/hour. Assuming a heating value of 1,020 Btu/cubic foot of natural gas this translates to approximately 2,958 cubic feet of natural gas burned per hour. Using a CO emission factor of 0.084 lb/MMBtu,¹ the maximum total CO

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

emissions from each boiler will be 0.31 lb/hour (0.039 gram/second). This calculation conservatively assumes that all of the gas-fired fuel combustion equipment is operating simultaneously at its full design capacity.

Emissions from the standby generator may occur for brief periods during periodic testing (maximum 20 – 30 minutes per week) and whenever a break in electrical power necessitates their use. Using emissions data from an equivalent Caterpillar diesel-fired standby generator, the manufacturer’s emission factor for CO is 1.18 lbs/hr. Therefore, the maximum CO emission rate for the 1,000-kW generators will be 0.15 grams/second.

Parking Garage

The garage ventilation system will be designed to provide adequate dilution of the motor vehicle emissions before they are vented outside. The design of the garage ventilation system will meet all building code requirements. Full ventilation of the garage will require fans that will supply a maximum flow of approximately 50,000 cubic feet per minute (cfm) of fresh air. This quantity of air is designed to meet the building code and will be more than adequate to dilute the emissions inside the parking garage to safe levels before they are vented outside. The garage ventilation exhausts will likely be located at two vents at 10 feet above ground level.

The garage will have a primary access/egress point, onto South Drive and a secondary one on east drive. The peak Saturday one-hour entering and exiting traffic volumes for the underground level of the garage are shown in **Table 5-3**.

Table 5-3: Peak Hour Garage Traffic

Time Period	Entering (vehicles/hour)	Exiting (vehicles/hour)	Total (vehicles/hour)
Saturday Peak Hour	52	52	104

Source: BSC Group, Inc.

The U.S. Environmental Protection Agency (EPA) MOBILE6.2 emission factor model was used to calculate single vehicle CO emissions rates, for a vehicle speed of 5 mph. The inputs to the MOBILE6.2 model followed the latest guidance from the DEP and were performed for the Existing year of 2012 consistent with the microscale air quality analysis. This represents the worst case, since the MOBILE6.2 model predicts decreasing CO emissions rates in future years due to more stringent emission control requirements for new motor vehicles. The CO emission rate calculated by MOBILE6.2, for a speed of 5 mph, was 15.99 grams per mile (g/mi) for each entering and exiting vehicle. These emission rates apply to wintertime conditions when motor vehicle CO emissions are greatest due to cold temperatures. MOBILE6.2 model output is provided in **Appendix 4**.

To determine the maximum one-hour CO emissions inside the garage it was necessary to estimate the amount of time each motor vehicle will be in the parking garage with its engine running. To be conservative, it was assumed that every car entering the garage will travel to the farthest parking spot, and that the vehicles leaving the garage will have to travel the same distance from inside the garage to the exit. The calculations in **Appendix 4** show how long each vehicle was calculated to travel in the garage for the Saturday peak hour.

The peak one-hour CO emission rate for the parking garage was calculated to be 7.38 grams per minute (0.123 grams/second) for the Saturday peak hour. Applying the maximum volumetric garage ventilation flow rate for the parking garage, the peak one-hour CO concentration inside the garage was calculated to be 4.54 parts of CO per million parts of air (ppm) for the Saturday peak hour. This prediction represents conservative estimates of the peak garage CO emissions and concentrations.

5.2.3.2 Stationary Sources Air Quality Results

The results of the air quality analysis for locations outside and around the buildings are summarized in **Table 5-4**. The results in **Table 5-4** represent all outside locations on and near the Project Site, including nearby building air intakes and nearby residences. **Appendix 4** contains the AERMOD model output.

AERMOD predicted that the maximum one-hour CO concentration from the fuel combustion equipment and parking garage exhaust vents will be 1.0 ppm (1,148 $\mu\text{g}/\text{m}^3$). This concentration represents the maximum CO concentration at any location surrounding the Project.

The maximum predicted eight-hour CO concentration at any ambient (outside) location will be significantly smaller than the one-hour prediction. This is because: 1) the average number of vehicles entering and exiting the garage over the peak eight-hour period will be significantly less than the peak one-hour values used to predict the peak one-hour CO impact; 2) all fuel combustion equipment is operating at their maximum load simultaneously; and 3) the worst-case meteorological conditions used to predict the peak one-hour impact will not persist for eight (8) consecutive hours. AERSCREEN guidance allows the maximum eight-hour CO impact to be conservatively estimated by multiplying the maximum one-hour impact by a factor of 0.9 (i.e. the eight-hour impact is 90% of the one-hour impact). The maximum predicted eight-hour CO concentration was determined to be approximately 0.9 ppm (1.0 ppm x 0.9).

The U.S. EPA has established National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare in ambient air, with a margin for safety. The NAAQS for CO are 35 ppm for a one-hour average and 9 ppm for an eight-hour average. The Commonwealth of Massachusetts has established the same standards for CO. The CO background values of 2.5 ppm for a one-hour period and 1.8 ppm for an eight-hour period were added to the maximum predicted fuel combustion ambient impacts to represent the CO contribution from other, more distant, sources. With the background concentration added, the peak, total, one-hour and eight-hour CO impacts from the fuel combustion equipment, at any location around the building, will be no larger than 3.5 ppm and 2.7 ppm, respectively. These maximum predicted total CO concentrations (fuel combustion equipment and parking garage plus background) are safely in compliance with the NAAQS. This analysis demonstrates that the operation of the fuel combustion equipment will not have an adverse impact on air quality.

Table 5-4: Fuel Combustion Equipment and Parking Garage Air Quality Impacts

Location	Peak Predicted One-Hour Impact (ppm)	One-Hour NAAQS (ppm)	Peak Predicted Eight-Hour Impact (ppm)	Eight-Hour NAAQS (ppm)
Ambient Air Near Garage	3.5	35 (NAAQS)	2.7	9 (NAAQS)

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

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

5.2.3.3 Microscale CO Analysis for Selected Intersections

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

A microscale CO air quality analysis was performed to predict the maximum one-hour and eight-hour CO concentrations for sensitive receptors at the three intersections in the Project area that meet the BRA selection criteria. The analysis was performed for three (3) cases: 2012 Existing, 2017 No-Build, and 2017 Build. Estimation of CO levels at the intersections that meet the BRA/DEP selection criteria under the 2017 Build scenario provides a good indication of whether the project will interfere with the maintenance of the NAAQS for CO. Since CO levels are highest near intersections where the worst traffic congestion occurs, compliance with the NAAQS at these intersections and receptors protects public health elsewhere in the community.

Dispersion Model

The latest version of the U.S. EPA CAL3QHC model² (Version 2.0, dated October 1995) was used to predict maximum one-hour CO concentrations at each intersection from both moving and idling vehicles. This model includes the U.S. EPA CALINE-3 dispersion model³ along with methods for estimating queue lengths and the contribution of emissions from idling vehicles at intersections. Appendix 5-C contains the CAL3QHC model output.

Meteorological Inputs

The following meteorological parameters were selected for the CAL3QHC modeling, in accordance with U.S. EPA and Massachusetts DEP guidance:

- Roughness Length: 321 cm (central business district);
- Mixing Height: 1,000 meters;
- Wind Speed: 1.0 m/s (minimum);
- Wind Direction: 360° in 10° increments;
- Stability Class: Class D.

Intersections

Six (6) intersections were included in the transportation study area, and each of these intersections was considered for a microscale CO air quality analysis. **Table 5-5** shows a summary of the 2017 Build LOS analysis for each intersection. Traffic volume data were available for the peak weekday morning and afternoon, and Saturday periods. Traffic data for the period with the worst LOS (i.e. largest traffic congestion and vehicle delays) at each intersection were modeled to reflect the potential worst-case air quality impacts. Based on data presented in Section (summarized in **Table 5-5**), three intersections meet the DEP/BRA criteria for a microscale analysis:

1. Tremont Street/Melnea Cass Boulevard;

² U.S. EPA, User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollution Concentrations Near Roadway Intersections, Office of Air Quality Planning and Standards, September 1995.

³ California Department of Transportation, CALINE-3, A Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets, FHWA/CA/TL-79/23, Sacramento, CA, November 1979.

2. Tremont Street/Ruggles Street/Whittier Street;
3. Tremont Street/Malcolm X Blvd/Columbus Avenue.

Table 5-5: Summary of Build Case Level of Service

Intersection	Build LOS (AM/PM/Sat.)	Requires Analysis?
Tremont Street/Melnea Cass Boulevard – signalized	E/E/C	YES*
Tremont Street/Ruggles Street/Renaissance Park – signalized	A/A/A	NO
Tremont Street/Ruggles Street/Whittier Street – signalized	D/E/C	YES*
Tremont Street/Prentiss Street– signalized	C/C/C	NO
Tremont Street/Malcolm X Blvd/Columbus Avenue – signalized	F/F/E	YES
Tremont Street/Site Drive –signalized	C/C/B	NO

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

*Project does not contribute to reduction in level of service.

Source: BSC Group, Inc.

Receptors

Receptors are the locations where the CAL3QHC model predicts CO concentrations. Receptors were placed at regular intervals along each modeled roadway, where the public could have access. These receptors conservatively cover all of the locations where the general public may have frequent and prolonged access to the ambient air at each intersection. Figures 1 through 3 in **Appendix 4** show the locations of the receptors that were modeled at each of the four analyzed intersections. Following U.S. EPA guidance, all receptors were placed at a height of 1.8 meters and were located at least 3 meters from roadway curbsides.

Modeled Roadways

Each roadway approach was modeled as a 1,000 meter, free-flow (moving vehicles), line source. The width of each free-flow link was set equal to the roadway width (excluding the parking areas) plus 3 meters

on each side. Composite CO emission rates, in units of grams per mile, were applied to each free-flow link.

Each roadway approach with traffic signal control was also modeled as a queue link (vehicles waiting for a traffic signal to turn green). The width of each queue link was modeled as the actual approach lane width. The length of each queue was calculated by the CAL3QHC model. An idle CO emission factor, in grams per hour, was applied to each queue link.

The CAL3QHC model requires the input of signal timing for signalized intersections. All four (4) intersections are signalized and were modeled as being signalized for all three (3) cases. Signal timings for peak periods were provided by BSC Group, Inc. and are shown in the **Appendix 4**.

Eight-Hour Average CO Concentrations

Peak eight-hour CO concentrations from roadway traffic were calculated by multiplying the model predicted one-hour CO values (without an added background concentration) by a persistence factor of 0.7.⁴ The persistence factor takes into account that the intensity of the traffic during the peak eight-hour period will be less than that which will occur during the peak one-hour period. It also takes into account that the worst-case meteorological conditions (i.e. low wind speed blowing directly from the source to the receptor), corresponding to the peak one-hour concentrations, will not persist for an entire eight-hour period.

Background CO Concentrations

The one-hour and eight-hour traffic-related CO concentrations predicted by the CAL3QHC model were added to conservative one-hour and eight-hour background CO concentrations of 2.5 parts of CO ppm and 1.8 ppm, respectively, for the existing case. Background concentrations for the year 2017 will likely be lower than the existing background CO concentrations. To be conservative, the same background concentrations were used for the 2017 No-Build and Build

⁴ U.S. EPA, Guideline for Modeling Carbon Monoxide from Roadway Intersections, EPA-454/R-92-005, Office of Air Quality Planning and Standards, November 1992.

cases. The sums of the CAL3QHC modeled CO concentrations plus background were compared to the NAAQS for CO.

CO Emission Factors

The MOBILE6.2 Emission Factor Model⁵ was used to predict the composite CO emission factors for moving (free flow) vehicles at the intersections and the idle emission factors for vehicles queued at traffic signals. Output from the MOBILE6.2 model is included in the **Appendix 4**.

The input parameters used for the MOBILE6.2 models are consistent with those required by the latest Massachusetts DEP guidance dated February 12, 2003. This guidance allows credit to be taken for an enhanced I/M program with Massachusetts specific cutpoints, Stage II (refueling) emission controls, and reformulated gasoline.

Idle emission factors were calculated from the MOBILE6.2 emission factors for a speed of 2.5 mph, following U.S. EPA guidance. The idle emission factors for 2012 and 2017 were determined to be 45.44 and 38.94 grams/hour, respectively. MOBILE6.2 was used to predict the free flow emission rate for vehicles traveling on the roadways, conservatively using a vehicle speed of 25 mph for all of the modeled roadways. The free flow CO emission rates for a traffic speed of 25 and 30 mph were predicted to be 10.29 and 10.14 grams/mile in 2012, and 9.04 and 8.92 grams/mile in 2017, respectively.

5.2.3.4 Microscale CO Modeling Results

The microscale air quality analysis predicted maximum one-hour and eight-hour CO concentrations for sensitive receptors for three (3) intersections in the project area which meet the BRA/DEP selection criteria. The highest predicted CO concentrations for the one-hour and eight-hour periods, which consist of the sum of the maximum predicted impacts from intersection traffic and a conservative background CO concentration, are summarized in **Tables 5-6 and 5-7**. The results in these tables do not represent typical air pollution levels in the project

⁵ U.S. EPA, User's Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model, EPA420-R-02-028, Office of Transportation and Air Quality, October 2002.

area. Rather, they represent the highest concentrations that could exist during the joint occurrence of worst-case meteorology and peak roadway traffic.

2012 Existing Case: The maximum predicted one-hour and eight-hour CO concentrations, including conservative background concentrations of CO, for the 2012 Existing case are 4.5 ppm and 3.2 ppm, respectively. These maximum air quality impacts are predicted to occur at receptor #7 near Columbus Ave / Tremont St & Tremont St/ Malcolm X / Malcolm X Blvd (see the Figures 1 through 4 in the **Appendix 4**), and are in compliance with the NAAQS for CO.

Table 5-6: Maximum Predicted One-Hour CO Concentrations (PPM)

Intersection	2012 Existing	2012 No-Build	2017 Build
Tremont St/Tremont St & Melnea Cass Blvd	4.4	4.4	4.2
Tremont St & Ruggles St / Whittier St	4.1	4.1	4.1
Tremont Street/Malcolm X Blvd/Columbus Avenue	4.5	4.8	3.9
NAAQS	35	35	35

Note: Maximum predicted one-hour concentrations include background concentrations. The added one-hour average background CO concentration is 2.5 ppm in 2012 and 2017.

2017 No-Build Case: For the 2017 No-Build case, the maximum predicted one-hour and eight-hour CO concentrations, including conservative background concentrations of CO, are 4.8 ppm and 3.4 ppm, respectively. These maximum air quality impacts are predicted to occur at receptor #7 near Tremont Street/Malcolm X Boulevard/Columbus Avenue (see the Figures 1-4 in the **Appendix 4**). These maximum concentrations are slightly greater than those predicted for the 2012 Existing case and comply with the one-hour and eight-hour NAAQS for CO.

2017 Build Case: For the 2017 Build case, the maximum predicted one-hour and eight-hour CO concentrations, including conservative background concentrations of CO, are 3.9 and 2.8 ppm, respectively.

These maximum concentrations are less than those predicted for the 2012 Existing case and the 2017 No-Build case. The predicted CO impacts at all receptors are safely in compliance with the one-hour and eight-hour NAAQS for CO. These maximum air quality impacts are predicted to occur at receptor #8 near Tremont Street/Malcolm X Boulevard/Columbus Avenue (see the Figure in the **Appendix 4**). These results demonstrate that the project will not have an adverse impact on air quality at the most congested intersections in the project area.

Table 5-7: Maximum Predicted Eight-Hour CO Concentrations (PPM)

Intersection	2012 Existing	2012 No-Build	2017 Build
Tremont St/Tremont St & Melina Cass Blvd	3.1	3.1	3.0
Tremont St & Ruggles St / Whittier St	2.9	2.9	2.9
Tremont Street/Malcolm X Blvd/Columbus Avenue	3.2	3.4	2.8
NAAQS	9	9	9

Note: Maximum predicted eight-hour concentrations include background concentrations. The added eight-hour average background CO concentration is 1.8 ppm in 2012 and 2017.

The maximum predicted CO impacts for the 2017 No-Build and Build cases are less than those predicted for the 2012 Existing Case. This is a result of the lower CO emission rates for motor vehicles predicted by the MOBILE6.2 model for 2017, compared to 2012. The reduction in motor vehicle CO emission rates is primarily a result of the improved motor vehicle emission controls, and occurs as newer vehicles with lower CO emissions replace older vehicles on the road. The maximum predicted CO impacts for the 2017 Build case is less than those predicted for the 2017 No-Build Case due to proposed Travel Demand Management (TDM) measures presented in Section 3. The results show that the project will not have a significant impact on the air quality at the analyzed intersections.

5.2.4 Total Project Air Quality Results

The worst-case air quality impacts at the Project site can be conservatively represented by the highest predicted CO concentration at the intersection of Tremont Street/Tremont Street/Melnea Cass Boulevard, which is adjacent to the Project site. Adding in the impacts from the fuel combustion equipment and parking garage vents to the background concentration, the conservative estimate of the worst-case total one-hour and eight-hour CO impacts at the Project site will be 5.2 ppm and 3.9 ppm, respectively. These values are safely in compliance with the NAAQS for CO and indicate that the Project will not have an adverse impact on local air quality.

5.2.5 Conclusions

The microscale CO air quality dispersion modeling analysis clearly indicates that the worst-case traffic generated by the Tremont Crossing project will not cause or contribute to any violations of the NAAQS for CO, and will not significantly affect air quality. Total CO impacts at the intersections with the largest delays and at the Project site, including the impacts from the fuel combustion equipment and parking garage exhaust vents, are predicted to be safely in compliance with the NAAQS for CO.

5.3 Noise

5.3.1 Introduction

Tech Environmental, Inc., performed a noise study to determine whether the operation of the proposed Project will comply with the City of Boston Noise Regulations and the Massachusetts Department of Environmental Protection (“DEP”) Noise Policy.

5.3.2 Noise Terminology

The unit of sound pressure is the decibel (dB). The decibel scale is logarithmic to accommodate the wide range of sound intensities to which the human ear is subjected. A property of the decibel scale is that the sound pressure levels of two (2) separate sounds are not directly additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (or 73 dB), not a doubling to 140 dB. Thus, every 3 dB increase represents a doubling of sound energy. For broadband sounds, a 3 dB change is the

minimum change perceptible to the human ear. **Table 5-8** gives the perceived change in loudness of different changes in sound pressure levels.⁶

Table 5-8: Subjective Effects of Changes in Sound Pressure Levels

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

Non-steady noise exposure in a community is commonly expressed in terms of the A-weighted sound level (dBA); A-weighting approximates the frequency response of the human ear. Levels of many sounds change from moment to moment. Some are sharp impulses lasting 1 second or less, while others rise and fall over much longer periods of time. There are various measures of sound pressure designed for different purposes. To establish the background ambient sound level in an area, the L_{90} metric, which is the sound level exceeded 90 percent of the time, is typically used. The L_{90} can also be thought of as the level representing the quietest 10 percent of any time period. Similarly, the L_{10} can also be thought of as the level representing the quietest 90 percent of any time period. The L_{10} and L_{90} are broadband sound pressure measures, i.e., they include sounds at all frequencies. The L_{eq} , or equivalent sound level, is the steady-state sound level over a period of time that has the same acoustic energy as the fluctuating sounds that actually occurred during that same period. Federal noise guidelines are based on the L_{dn} , which is the A-weighted equivalent sound level for a 24-hour period with an additional 10 dB imposed on the equivalent sound levels for night time hours of 10 p.m. to 7 am.

Sound level measurements typically include an analysis of the sound spectrum into its various frequency components to determine tonal characteristics. The unit of frequency is Hertz (Hz), measuring the cycles per second of the sound pressure waves, and typically the frequency analysis examines 10 octave bands from 32 Hz to 16,000 Hz.

⁶ American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1989 ASHRAE Handbook-- Fundamentals (I-P) Edition, Atlanta, GA, 1989.

The acoustic environment in an urban area such as the Project area results from numerous sources. Observations show that major contributors to the background sound level in the Project area include motor vehicle traffic on local and distant streets, aircraft over-flights, mechanical equipment on nearby buildings, and general city noises such as street sweepers and police/fire sirens. Typical sound levels associated with various activities and environments are presented in **Table 5-9**.

5.3.3 Noise Regulations and Criteria

Commonwealth Noise Policy

The DEP regulates noise through 310 CMR 7.00, "Air Pollution Control." In these regulations "air contaminant" is defined to include sound and a condition of "air pollution" includes the presence of an air contaminant in such concentration and duration as to "cause a nuisance" or "unreasonably interfere with the comfortable enjoyment of life and property."

Regulation 7.10 prohibits "unnecessary emissions" of noise. The DEP DAQC Policy Statement 90-001 (February 1, 1990) interprets a violation of this noise regulation to have occurred if the noise source causes either:

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

The ambient background level is defined as the L_{90} level as measured during equipment operating hours. A "pure tone" condition occurs when any octave band sound pressure level exceeds both of the two adjacent octave band sound pressure levels by 3 dB or more.

The DEP does not regulate noise from motor vehicles accessing a site or the equipment backup notification alarms. Therefore, the provisions described above only apply to a portion of the sources that may generate sound following construction of the Project.

Local Regulations

The City of Boston Environment Department regulates noise through the Regulations for the Control of Noise as administered by the Air Pollution Control Commission. The Project is located in an area consisting of commercial

and residential uses. The Project will have low-rise residential uses to the north, east, and south. The Project must comply with Regulation 2.2 for noise levels in Residential Zoning Districts at these residential locations. **Table 5-10** lists the maximum allowable octave band and broadband sound pressure levels for residential and business districts. Daytime is defined by the City of Boston Noise Regulations as occurring between the hours of 7:00 a.m. and 6:00 p.m. daily except Sunday. Compliance with the most restrictive nighttime residential limits will ensure compliance for other land uses with equal or higher noise limits.

HUD Site Acceptability Standards

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

Normally Acceptable – L_{dn} not exceeding 65 dBA

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

Unacceptable – L_{dn} above 75 dBA.

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

Table 5-9: Common Indoor and Outdoor Sound Levels

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

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

Table 5-10: Maximum Allowable Sound Pressure Levels (dB)

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

5.3.4 Existing Conditions

5.3.4.1 Baseline Noise Environment

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

5.3.4.2 Noise Measurement Methodology

Existing baseline sound levels in the Project area were measured during the quietest overnight period when human activity and street traffic were at a minimum, and when the Project’s mechanical equipment (the principal sound sources) could be operating. Since the Project’s mechanical equipment may operate at any time during a 24-hour day, a weekday between 12:00 a.m. and 4:00 a.m. was selected as the worst-case time period, i.e., the time period when Project-related sounds may be most noticeable due to the quieter background sound levels. Establishing an existing background (L₉₀) during the

quietest hours of the facility operation is a conservative approach for noise impact assessment and is required by the DEP Noise Policy.

The nighttime noise measurement locations are as follows (see the Figure 1 in the **Appendix 5**):

- Location #1: Ruggles Street/Tremont Street;
- Location #2: Cabot Street;
- Location #3: Madison Park High School.

5.3.4.3 Measurement Equipment

Broadband (dBA) and octave band sound level measurements were made with a Bruel and Kjaer Model 2250 environmental sound level analyzer, at each monitoring location, for a duration of approximately thirty (30) minutes. The full octave band frequency analysis was performed on the frequencies spanning 16 to 16,000 Hertz. A time-integrated statistical analysis of the data used to quantify the sound variation was also performed, including the calculation of the L_{90} , which is used to set the ambient background sound level.

The B&K model 2250 is equipped with a ½" precision condenser microphone and has an operating range of 5 dB to 140 dB and an overall frequency range of 3.5 Hz to 20,000 Hz. This meter meets or exceeds all requirements set forth in the ANSI S1.4-1983 Standards for Type 1 quality and accuracy and the State and City requirements for sound level instrumentation. Prior to any measurements, this sound analyzer was calibrated with an ANSI Type 1 calibrator that has an accuracy traceable to the National Institute of Standards and Technology (NIST). During all measurements, the B&K 2250 was tripod mounted at approximately five feet above the ground in open areas away from vertical reflecting surfaces.

5.3.4.4 Baseline Ambient Noise Levels

The daytime sound level monitoring was conducted on Tuesday, August 6, 2013 and Monday, August 12, 2013, and the nighttime sound level monitoring was conducted on Wednesday, August 7, 2013. Weather conditions during the sound surveys were conducive to accurate sound level monitoring: the skies were clear, and the winds were light (i.e., less than 12 mph). The microphone of the sound level

analyzer was fitted with a 7-inch windscreen to negate any effects of wind-generated noise.

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

Noise monitoring at the Project Site during the morning and afternoon peak traffic period were used to evaluate the existing ambient sound levels and to evaluate conformance with the Site Acceptability Standards established by HUD for residential development. These sound level measurements were taken to help estimate the L_{dn} for the Project Site. A 30-minute sound level measurement was taken during the morning and afternoon, on Tuesday, August 6th between 4:33 p.m. and 5:03 p.m. and Monday, August 12th between 11:13 and 11:43 a.m. at Cabot Street (Location #2) representing the closest location to the Project Site.

The main source of noise during the peak afternoon traffic period sound level measurement was motor vehicle traffic on Tremont Street and local streets, sirens, and aircraft over-flights. The L_{eq} measured during the morning and afternoon periods were 60 dBA and 55 dBA, respectively. The L_{eq} sound level measured during the nighttime at the same location was 53 dBA. Using both the daytime and nighttime L_{eq} sound levels, the calculated L_{dn} for the site is 61 dBA, which is below the HUD guideline noise limit of 65 dBA.

The results of the nighttime baseline sound level measurements are presented in **Tables 5-11** and the complete measurement printouts are provided in **Appendix 5**. The nighttime background L_{90} level ranged from was 50.4 dBA at Location #2 to 55.9 dBA at Location #3.

The octave band data in **Tables 5-11** show that no pure tones were detected in the nighttime noise measurements.

Table 5-11: Night-time Baseline Sound Level Measurements- August 7, 2013

Sound Level Measurement	Location #1 Ruggles and Tremont Street 1:04 – 1:34 a.m.	Location #2 Cabot Street 12:26-12:56 a.m.	Location #3 Madison Park High School 1:42 – 2:12 a.m.
Broadband (dBA) Background (L₉₀)	51.5	50.4	55.9
Octave Band L₉₀ (dB)			
16 Hz	53.5	52.3	56.8
32 Hz	57.8	55.2	58.9
63 Hz	60.6	61.4	63.2
125 Hz	60.0	60.5	60.9
250 Hz	53.8	50.1	58.1
500 Hz	48.1	47.4	53.9
1000 Hz	45.4	43.5	48.4
2000 Hz	40.1	37.3	45.3
4000 Hz	31.1	29.2	38.7
8000 Hz	21.3	20.3	28.3
16000 Hz	13.8	13.3	14.1
Pure Tone?	No	No	No

5.3.5 Overview of Potential Project Noise Sources

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

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

- Cooling towers;
- Energy recovery ventilation units;
- Package HVAC units;
- Pump;

- Exhaust fans;
- Emergency generators;
- Boilers.

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

The sound generation profiles for the mechanical equipment noise sources operating concurrently under full-load conditions were used to determine the maximum possible resultant sound levels from the Project Site as a whole, to define a worst-case scenario. To be in compliance with City and DEP regulations, the resultant sound level must not exceed the allowable octave band limits in the City of Boston noise regulation and must be below the allowable incremental noise increase, relative to existing noise levels, as required in the DEP Noise Policy.

This sound level impact analysis was performed using sound generation data for representative equipment to demonstrate compliance with noise regulations. As the building design evolves, the sound generation for the actual equipment selected may differ from the values that were utilized for the analysis.

To minimize the sound level at nearby residences, the following noise mitigation specifications will be incorporated into the final engineering design of the Tremont Crossing Project, as necessary, to comply with the applicable sound level criteria:

- Specification of low-noise mechanical equipment: ERV, cooling towers, pumps and boilers will be of a low-noise design;
- Boilers, pumps and heat exchangers will be housed in weather-proofed penthouses that will provide sound attenuation;
- The standby generator will be equipped with a critical exhaust silencer for sound reduction.

5.3.6 Modeling Methodology

Future maximum sound levels at the upper floors of all existing residences bordering the Project, and at the nearest residential property lines, were

calculated with acoustic modeling software assuming simultaneous operation of all mechanical equipment at their maximum loads.

The Cadna-A computer program, a comprehensive 3-dimensional acoustical modeling software package was used to calculate Project generated sound propagation and attenuation.⁷ The model is based on ISO 9613, an internationally recognized standard specifically developed to ensure the highly accurate calculation of environmental noise in an outdoor environment. ISO 9613 standard incorporates the propagation and attenuation of sound energy due to divergence with distance, surface and building reflections, air and ground absorption, and sound wave diffraction and shielding effects caused by barriers, buildings, and ground topography.

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

The sound level impacts from the Project's mechanical equipment were predicted at the closest residential location, as well as at the Madison Park High School and O'Bryant School to the southwest. Figure 1 in **Appendix 5** shows the locations of the modeled noise receptors. Noise impacts at other nearby noise-sensitive locations (residences, parks, etc.) farther from the Project Site will be less than those predicted for these receptors.

5.3.7 Future Sound Level of Project

The City of Boston and DEP noise standards apply to the operation of the mechanical equipment at the proposed Project. The details of the noise predictions are presented in **Tables 5-12 through 5-17**. The sound impact analysis includes the simultaneous operation of the Project's rooftop mechanical equipment. The predicted sound levels are worst-case predictions that represent all hours of the day, as the analysis assumes full operation of the mechanical equipment 24-hours a day. The typical sound level impacts

⁷Cadna-A Computer Aided Noise Abatement Program, Version 4.3

from the mechanical equipment will likely be lower than what is presented here, since most of the mechanical equipment will operate at full-load only during certain times of the day and during the warmer months of the year, it is not likely that all of the mechanical equipment will operate at the same time. Sound level impacts at locations farther from the Project (e.g. other residences, etc.) will be lower than those presented in this report.

5.3.7.1 City of Boston Noise Standards

The noise impact analysis results, presented in **Tables 5-12 through 5-17**, reveal that the sound level impact at the noise-sensitive receptors will be between 38 and 46 dBA. The smallest sound level impact of 38 dBA is predicted to occur at the Madison Park High School (Location R5). The largest sound level impact of 46 dBA is predicted to occur at the Northeastern University dormitory building (Location R1). Noise impacts predicted at all locations are in compliance with the City of Boston's nighttime noise limit (50 dBA) for a residential area. Note that sound levels from the Project will be below the residential nighttime limits at all times. The results also demonstrate compliance with the City of Boston, residential, non-daytime, octave band noise limits at all locations.

The City of Boston noise limits for business areas are significantly higher than the nighttime noise limits for residential areas (see **Table 5-12**). The Project will also easily comply with the City of Boston business area noise limits at all surrounding commercial properties.

5.3.7.2 DEP Noise Regulations

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

As shown in **Tables 5-12 through 5-17**, the Project is predicted to produce a less than 1 dBA change in the background sound levels at all modeled locations. Therefore, the Project's worst-case sound level impacts during the quietest nighttime periods will be in compliance

with the DEP allowed noise increase of 10 dBA. The noise predictions for each octave band indicate that the mechanical equipment will not create a pure tone condition at any location.

5.3.7.3 HUD Site Acceptability Standards

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

5.3.8 Conclusions

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

Table 5-12: Northeastern University Dormitory (Location R1)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	49.1
63 Hz	67	46.9
125 Hz	61	45.9
250 Hz	52	44.1
500 Hz	46	40.5
1000 Hz	40	38.0
2000 Hz	33	33.0
4000 Hz	28	27.8
8000 Hz	26	18.6
Broadband (dBA)	50	42.9
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 1)	51.5
Tremont Crossing Project*	42.9
Calculated Combined Future Sound Level	52.1
Calculated Incremental Increase	+0.6
Compliance with DEP Noise Policy?	Yes

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

Table 5-13: Residence to the East (Location R2)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	51.7
63 Hz	67	49.0
125 Hz	61	46.0
250 Hz	52	44.5
500 Hz	46	40.2
1000 Hz	40	37.2
2000 Hz	33	32.1
4000 Hz	28	28.0
8000 Hz	26	19.7
Broadband (dBA)	50	42.6
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 2)	50.4
Tremont Crossing Project*	42.6
Calculated Combined Future Sound Level	51.1
Calculated Incremental Increase	+0.7
Compliance with DEP Noise Policy?	Yes

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

Table 5-14: Residence to the East-2 (Location R3)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	53.2
63 Hz	67	49.9
125 Hz	61	46.3
250 Hz	52	43.9
500 Hz	46	39.6
1000 Hz	40	35.9
2000 Hz	33	32.3
4000 Hz	28	28.0
8000 Hz	26	26.0
Broadband (dBA)	50	42.2
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 2)	50.4
Tremont Crossing Project*	42.2
Calculated Combined Future Sound Level	51.0
Calculated Incremental Increase	+0.6
Compliance with DEP Noise Policy?	Yes

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

Table 5-15: Residence to the East-3 (Location R4)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	53.1
63 Hz	67	50.0
125 Hz	61	46.9
250 Hz	52	43.3
500 Hz	46	39.9
1000 Hz	40	36.0
2000 Hz	33	31.7
4000 Hz	28	27.9
8000 Hz	26	23.5
Broadband (dBA)	50	42.0
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 2)	50.4
Tremont Crossing Project*	42.0
Calculated Combined Future Sound Level	51.0
Calculated Incremental Increase	+0.6
Compliance with DEP Noise Policy?	Yes

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

Table 5-16: Madison Park High School (Location R5)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	48.3
63 Hz	67	45.6
125 Hz	61	43.1
250 Hz	52	40.3
500 Hz	46	34.9
1000 Hz	40	30.8
2000 Hz	33	28.5
4000 Hz	28	23.6
8000 Hz	26	13.6
Broadband (dBA)	50	37.8
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 2)	55.9
Tremont Crossing Project*	37.8
Calculated Combined Future Sound Level	56.0
Calculated Incremental Increase	+0.1
Compliance with DEP Noise Policy?	Yes

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

Table 5-17: O'Bryant School (Location R6)- Estimated Future Level Impacts at Anytime

Octave Bands	Residential Nighttime Noise Standards	Maximum Predicted Sound Levels*
32 Hz	68	53.2
63 Hz	67	50.8
125 Hz	61	48.5
250 Hz	52	45.0
500 Hz	46	40.3
1000 Hz	40	36.4
2000 Hz	33	32.1
4000 Hz	28	28.0
8000 Hz	26	22.7
Broadband (dBA)	50	42.8
Compliance with the City of Boston Noise Regulation?		Yes

Sound Level Metric	Maximum Sound Levels* (dBA)
Existing Nighttime Background, L ₉₀ (Location # 2)	55.9
Tremont Crossing Project*	42.8
Calculated Combined Future Sound Level	56.1
Calculated Incremental Increase	+0.2
Compliance with DEP Noise Policy?	Yes

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

5.4 Solar Glare

Buildings with the Project Site will utilize high-performance materials and facades that are cognizant of the necessary balance of visual aesthetics, thermal performance, cost, heat gain and construction efficiency. The Project will comply with Article 37 of the Boston Zoning Code and will be “LEED Certifiable” per LEED-NC v 2.2 and LEED 2009 definitions. As such, all of the Project’s building structures will incorporate significant efficiencies related to energy conservation into their design.

Further, the Proponent does not believe that there will be any solar glare issues resulting from material and façade choices. Glazing performance will balance the metrics of visible light transmittance, thermal insulation value and solar heat gain. Highly mirrored finishes or glazing with a high degree of reflectivity will not be used within the Project Site.

5.5 Wind

Rowan Williams Davies & Irwin Inc. (RWDI) was retained by the Proponent to assess the potential wind conditions for the Project. The objective of this assessment was to provide a qualitative evaluation of wind comfort conditions on and around the development and recommend mitigation measures, if necessary. This qualitative assessment is based on the following:

- a review of regional long-term meteorological data;
- previous wind-tunnel tests on buildings in the Boston area;
- design drawings received by RWDI on July 25, 2013;
- engineering judgment and expert knowledge of wind flows around buildings; and
- use of software developed by RWDI (*Windestimator*) for estimating the potential wind comfort conditions around generalized building forms.

This qualitative approach provides a screening-level estimation of potential wind conditions. To quantify these conditions or refine any conceptual mitigation measures, physical scale model tests would typically be required. Note that other wind issues, such as those relating to door pressures, exhaust re-entrainment, snowdrifts, etc. are not considered in the scope of this assessment.

Appendix 7 sets forth the qualitative wind analysis.

5.6 Geotechnical Impacts / Groundwater

5.6.1 Subsurface Conditions

The soil layers encountered in the preliminary borings are described in order of increasing depth:

- **Fill:** A 3 to 7-foot-thick layer of miscellaneous urban fill was encountered at the ground surface;
- **Clay:** In the north corner of the site, the fill was underlain by a 5-foot-thick layer of medium stiff clay;
- **Organic Silt and Peat:** A 10-foot-thick layer of soft to medium stiff organic silt and peat was encountered below the clay in the north corner of the site;
- **Glacial Outwash Deposits:** Glacial outwash deposits consisting of medium dense to very dense sand and silt with varying amounts of gravel were encountered below the organic soil on the north and east sides of the site and below the fill in the southwest portion of the site. The thickness of the glacial outwash deposits varied from about 50 feet on the southwest portion of the site to more than 70 feet in the north corner of the site. The preliminary boring in the north corner of the site did not fully penetrate the glacial outwash layer;
- **Glacial Till:** Fifteen (15) feet of glacial till was encountered below the glacial outwash deposits on the southwest portion of the site;
- **Bedrock:** The top of the bedrock drops from south to north across the site. The bedrock on the southwest portion of the site was encountered at a depth of about 69 feet. We did not encounter bedrock in the north corner of the site, but based on borings from nearby lots, we do not expect bedrock to be more than 110 feet below the ground surface in the north corner of the site. Bedrock in the area is generally identified as Roxbury Conglomerate.

The former Stony Creek leading to the Fens Basin once flowed through a portion of the site, and is the likely source of the organic soils described above. Before being filled in, the creek flowed in a northeasterly direction from under what is now the Madison Park Vocational High School and along Downing Street on the southeast side of the site. The creek then looped through the adjacent property on the opposite side of Whittier Street and turned in a westerly direction as it crossed back through the north corner of the project

site before crossing through what is now Tremont Street. The location of the former creek and the organic soil deposits are key factors influencing the selection of the foundation types for the project.

5.6.2 Geotechnical Design and Below Grade Construction Activities

We understand that there is currently no below-grade parking planned. The proposed office building and the western portion of the 6-story parking garage may be supported on a mat foundation and spread footings bearing in the natural glacial outwash deposits. The remainder of the proposed buildings will need to be supported on deep foundation elements to transfer the building loads to a bearing layer below the urban fill and organic soil deposits. Foundation options being considered are pressure injected footings, auger-cast piles, driven piles, and drilled shafts.

An excavation support system such as soldier pile and lagging or sheet piles will be required along portions of Tremont Street. The support of excavation will be designed to support the lateral pressures due to soil and water to limit movement and settlement of the existing roadway and sidewalk. The remaining excavations for foundations may not require an excavation support system and will likely be sloped. Groundwater is not expected to be encountered for foundation excavations.

5.6.3 Groundwater Conditions

Based on measurements in groundwater observation wells and water level measurements in the boreholes, the average groundwater at the site is at about El. 7 (Boston City Base Datum). Groundwater may vary at different locations and times.

5.6.4 Impacts to Groundwater and Mitigation

We do not expect significant impacts to groundwater during construction since the proposed construction is expected to generally be above the groundwater level. Local sumping may be required to control surface water that enters the excavations. The discharge from the sumps will likely be recharged onsite.

5.6.5 Adjacency to Groundwater Conservation Overlay District

The site is not within the Boston Groundwater Conservation Overlay District. Since the proposed foundations and lowest level slabs are above the

groundwater level, we do not anticipate any impacts to the permanent groundwater level due to the proposed construction.

5.6.6 Solid and Hazardous Waste

The site is approximately 7.25 acres, of which only 2.5 acres (the MCP Portion) have been identified as contaminated and included as part of the Massachusetts Contingency Plan (MCP). The MCP Portion is bounded by Tremont Street to the northwest, Whittier Street to the northeast, Downing Street to the southeast and Vernon Street to the west. Additionally, asbestos, lead-based paint and miscellaneous hazardous waste (such as fluorescent light and light ballasts, motor oil, lube oil and antifreeze) was identified in the former Whittier Street Health Center building.

Weston & Sampson, Engineers, Inc., of Peabody, Massachusetts (Weston & Sampson) on behalf of the BRA conducted compliance actions pursuant to Chapter 21 E of the Massachusetts General Laws (M.G.L) and the Massachusetts Contingency Plan (MCP). The Proponent will assume responsibility for project site conditions and MCP compliance in accordance with the site ground lease.

Weston & Sampson investigated contaminant conditions at the Project Site between 1996 and 2002. Based on the review of historic records, no industrial or commercial uses were identified that would be the source of site contamination. However, a significant portion of the soil at the site would be characterized as "urban fill;" containing debris such as pieces of brick, coal and coal ash, glass, asphalt and concrete. Several urban fill contaminants, including petroleum hydrocarbons (EPH), polyaromatic hydrocarbons (PAH), and lead were encountered at Project Site. The BRA reported the contamination to the Department of Environmental Protection (DEP) and initiated compliance with the MCP including more extensive site investigation, a risk characterization, and developing an approach to site cleanup. The cleanup strategy recommended by Weston & Sampson for the MCP Portion focused on excavating "hot spots" and placing an Activity and Use Limitation (AUL) on the property.

5.6.6.1 Site Compliance

The MCP Portion is currently out of compliance with the MCP, and the developer will return the "disposal site" to compliance. A Phase II Comprehensive Site Assessment and Phase III Remedial Action Plan

were submitted to the DEP in April 2002; cleanup of the site was to be completed by April 2003.

In order to return the MCP Portion of the site back to compliance, we will prepare a Class C Response Action Outcome (RAO) Statement, as a temporary solution. The Class C RAO will state that the MCP Portion of the site poses no substantial hazard to the community. Site cleanup activities will be completed during construction. Once construction is completed, a Class A RAO, a permanent solution, likely with an AUL will be prepared.

The site cleanup strategy will be incorporated directly into design and construction of the mixed use development. A portion of the urban fill, some of which is contaminated, and "hot spots" will be excavated and reused below building areas on site or disposed off-site. The urban fill that remains on site will be capped beneath buildings or pavement. The key elements of our cleanup plan involve the following strategies:

- 1) Prepare a Class C RAO (Temporary Solution) for the disposal site, to return it to compliance;
- 2) Conduct additional subsurface investigation during the design phase to confirm foundation design plans and characterize soil identified for off-site disposal. This will better define the contaminant conditions on the "disposal site" along with the non-MCP portion of the site;
- 3) If MCP reportable conditions are encountered outside of the current MCP disposal site, the existing disposal site would be expanded to include those conditions;
- 4) Prepare a Release Abatement Measure (RAM) Plan prior to construction that revises the recommended remedy to incorporate construction of the Project;
- 5) Excavate "hot spots" and urban fill during the construction phase as required for development;
- 6) Revise the risk assessment upon completion of remediation, to reflect the characteristics of the urban fill that remain beneath the buildings and pavement;
- 7) Submit a Class A RAO (Permanent Solution), and an AUL, to MassDEP.

5.6.6.2 Remediation General Permit

According to the Boston Water and Sewer Commission in their comment letter of May 31, 2013, the US Environmental Protection Agency issued a draft Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. The Proponent did not apply for the RGP. At the appropriate time, prior to construction, the Proponent will file a Notice of Intent with the EPA for an RGP for this project with current groundwater quality data.

5.7 Stormwater / Water Quality

The quality of stormwater runoff and, therefore, downstream waters, is expected to improve due to the inclusion of stormwater treatment best management practices (BMPs) that will be included in the project design. Section 7.4 provides an overview of the proposed stormwater management system and how they will connect to the Boston Water and Sewer Commission's (BWSC's) existing drainage system. All stormwater management systems will be designed in accordance with BWSC Standards and Regulations.

During construction, stormwater impacts will be mitigated through appropriate erosion and sedimentation BMPs, including perimeter controls, controls on new and existing stormwater inlets, and construction techniques to minimize the amount and duration of unstabilized surfaces. Based on the size of the project, it will be necessary to prepare a Stormwater Pollution Prevention Plan (SWPPP) and to file a Notice of Intent (NOI) for coverage under the most recent Construction General Permit (CGP) of the Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES) program. Additionally, erosion and sedimentation controls will comply with the Water Quality section of the City of Boston Environment Department Guidelines for Construction.

5.8 Flood Hazards/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Map (FIRM) Suffolk County, Massachusetts (All Jurisdictions), Panel 79 of 151, City of Boston Map Number 25025C0079G, September 25, 2009 indicates the FEMA Flood Zone Designations for the Site area. As shown on this map (see Figure 3-21), the Project is located in a Zone X, Areas Determined to Be Outside the 0.2% Annual Chance Floodplain.

The Project Site does not contain wetlands or wetland resource areas and is not located within the buffer zone to any resource areas.

Figure 5-12: FEMA Flood Map



5.9 Solid and Hazardous Wastes

The Project will generate solid waste typical of other retail/mixed-use projects. Based on the solid waste generation rates of 5.5-tons per 1,000-sq.ft. per year for commercial, retail, and restaurant space and 4-pounds per bedroom per day for residential space, the Project is expected to generate approximately 4,757-tons of solid waste per year. Table 3-18 summarizes this estimate.

Table 5-18: Solid Waste Generation

Unit Type	Program	Generation Rate	Solid Waste (tons/year)
Residential	300 bedrooms	4 lbs/bedroom/day	219
Commercial / Retail / Restaurant / Museum	825,000 sq.ft.	5.5 tons/1,000 sq.ft./year	4538
Total Solid Waste Generation			4,757

Solid waste is expected to include wastepaper, cardboard, glass, and other typical waste associated with retail, restaurant, commercial office, and residential uses. A portion of the waste is expected to be recycled with the remainder removed by a waste hauler contracted by the Property Manager. The Project's recycling program will be described in future Article 80 filings with the BRA. Other than typical "household hazardous wastes" such as paint and cleaning fluids, the Project is not expected to generate hazardous waste.

5.10 Construction Impacts

5.10.1 Construction Management Plan

The Construction Management Plan (CMP) will be submitted to The Boston Transportation Department for their approval prior to the start of construction and will include specific mitigation measures and staging plans to minimize impacts to abutters. The construction manager will be bound by the CMP.

5.10.2 Construction Methodology

5.10.2.1 Construction Activity Schedule

The construction period for the project is expected to be approximately 24 months in duration. It is anticipated that the project is estimated to start on or about the summer of 2014. Typically construction hours will be from 7:00 a.m. to 6:00 p.m. Monday through Saturday. Weekend and off-hour work is anticipated on this project in order to minimize impact on vehicular and pedestrian traffic. We will attain all necessary permits in advance of these potential off hour activities occurring.

5.10.2.2 Construction Staging Area

The proposed Logistics Plan is designed to isolate the construction while providing safe access for pedestrians and automobiles during normal day-to-day activities and emergencies. Interaction with the public will occur mainly along Tremont St. and Whittier St.

The project consists of placing deep foundation elements, relocations of existing utilities, placing spread footings/foundation walls and the erection of mixed use building. The building will consist of retail space, a precast garage, office space, museum space, a hotel and residential apartments.

The site will be secured by a 6-foot high fence with privacy screening in accordance with the Logistics Plan. The site will utilize 2 primary gates for access.

All construction material delivery trucks will be directed to the Tremont Street entrance for deliveries during the construction period. During excavation and foundation phases of the project, the trucks will be able to drive directly into the site to load/unload and then drive directly out of the site, exiting onto Tremont St. Trucks will not be allowed to park or idle on the neighborhood streets. For major deliveries, such as steel, large pieces of mechanical equipment, etc., an off-site staging and marshaling area will be utilized. A wheel wash station will be located at the exit to the site and adjacent streets/sidewalks will be swept as necessary to minimize accumulations of dirt and dust. Mechanical sweeping will be utilized, continuously during the excavation and foundation phases.

Concrete pumps, Steel deliveries and precast deliveries will be staged as shown in the Figures below. The Project will utilize two crawler cranes for steel and precast erection. Due to safety restriction with overhead protection requirements, precast facade panels may be erected on second shift. This off hour work will require a special permit and will be coordinated with BTM and the Mayor's Office of Neighborhood Services (MONS).

Proper signage and Way Finding will direct pedestrians safely around the construction job site and activities

5.10.2.3 Perimeter Protection/Public Safety

The Project's general contractor will work to ensure the staging areas minimize impact to pedestrian and vehicular flow. The specific configuration of staging and pedestrian access around the site will vary depending on the phase of the work being performed. In general, secured fencing will be used to isolate construction areas from pedestrian traffic, pedestrian way finding signage will be installed and Police Details will be provided as needed to facilitate traffic flow. We will need to work outside of the site fence for utility work and connections. This work will be isolated from traffic and pedestrians utilizing traffic barriers. All utility work will also have a dedicated police detail.

Construction procedures will be designed to meet all OSHA safety standards for specific site construction activities. Subcontractors will implement and manage their own Health and Safety Program for the project. All Subcontractors are required to wear appropriate personal protective equipment.

Snow removal and ice treatment will be provided on the surrounding sidewalks, as will trash and debris clean up. Snow removal will occur in a timely manner and will occur on off hours.

The Permanent Street Lights will be removed for the duration of the project. Suffolk will provide sufficient temporary site lighting to ensure the safety of all pedestrians accessing the sidewalks around the site, including lighting at all covered pedestrian walkways, until permanent street lights are installed. The temporary lighting will be installed to meet the required illumination standards for street lighting.

5.10.3 Construction Traffic Impacts

5.10.3.1 Construction Trip Generation and Worker Parking

The number of workers required during the construction will vary with an estimated average daily workforce of 250 during peak of construction. Because the workforce will arrive prior to peak traffic periods, these trips are not expected to impact traffic conditions. Additionally, jobsite personnel will be encouraged to utilize public transportation. No personal vehicles will be allowed to park at the project construction site or in the adjacent residential streets. Terms and conditions related to workforce parking and public transportation use will be written into each subcontract. To further our worker parking mitigation, Suffolk is pursuing the procurement of parking spaces to designate for worker parking. The quantity and area is not known at this time.

5.10.3.2 Truck Routes and Volumes

Truck traffic will vary throughout the construction period, depending on the activity. It is expected that truck traffic will average 15 - 20 trucks daily spread evenly throughout the day.

5.10.4 Construction Air Quality

5.10.4.1 Dust Control

To reduce emission of fugitive dust and minimize impacts on the local environment, the construction contractor will adhere to a number of strictly enforced mitigation measures. These include:

- Wetting agents will be used regularly to control and suppress dust that may come from the construction materials;
- All trucks used for transportation of construction debris will be fully covered;
- Actual construction practices will be monitored to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized and to ensure that any emissions of dust are negligible;

- Street and sidewalks will be cleaned periodically to minimize dust accumulations;
- A wheel wash station will be located at the Tremont St. exit to the City streets during site work activities;
- Any stock piles of soils on site will be covered;
- We will conduct a preconstruction survey to determine the existing dust particle levels in the area and set a baseline for our controls. This survey will also document the conditions of the surrounding structures to establish existing dust levels on these structures.

5.10.5 Construction Noise

The project will require the use of equipment that can be heard from offsite locations. This project is committed to mitigating noise impacts. Increased community sound levels, however, are an inherent consequence of construction activities. The general contractor will record baseline neighborhood sound levels before the start of construction to better understand the existing conditions at the site. Construction will occur during the daytime hours as defined by the Boston Noise Regulation (7:00 a.m. to 6:00 p.m. except Sundays). In some instances, a second shift, off hour, holiday and Saturday may be required. When these events arise, all required permits will be in place.

5.10.6 Rodent Control

The City of Boston has declared that the infestation of rodents in the City is a serious problem. In order to control the infestation, the City enforces the requirements established under the Massachusetts State Sanitary Code and the State Building Code that the extermination of rodents shall be required for issuance of permits for demolition, excavation, foundation and basement rehabilitation. The proposed project will develop a rodent control program prior to its construction start. We will conduct a preconstruction survey to establish the rodent level. This survey will also document existing conditions that may affect the ability to manage the rodent control such as trash containment, etc.

Figure 5-13: Phase I – Utility Relocation

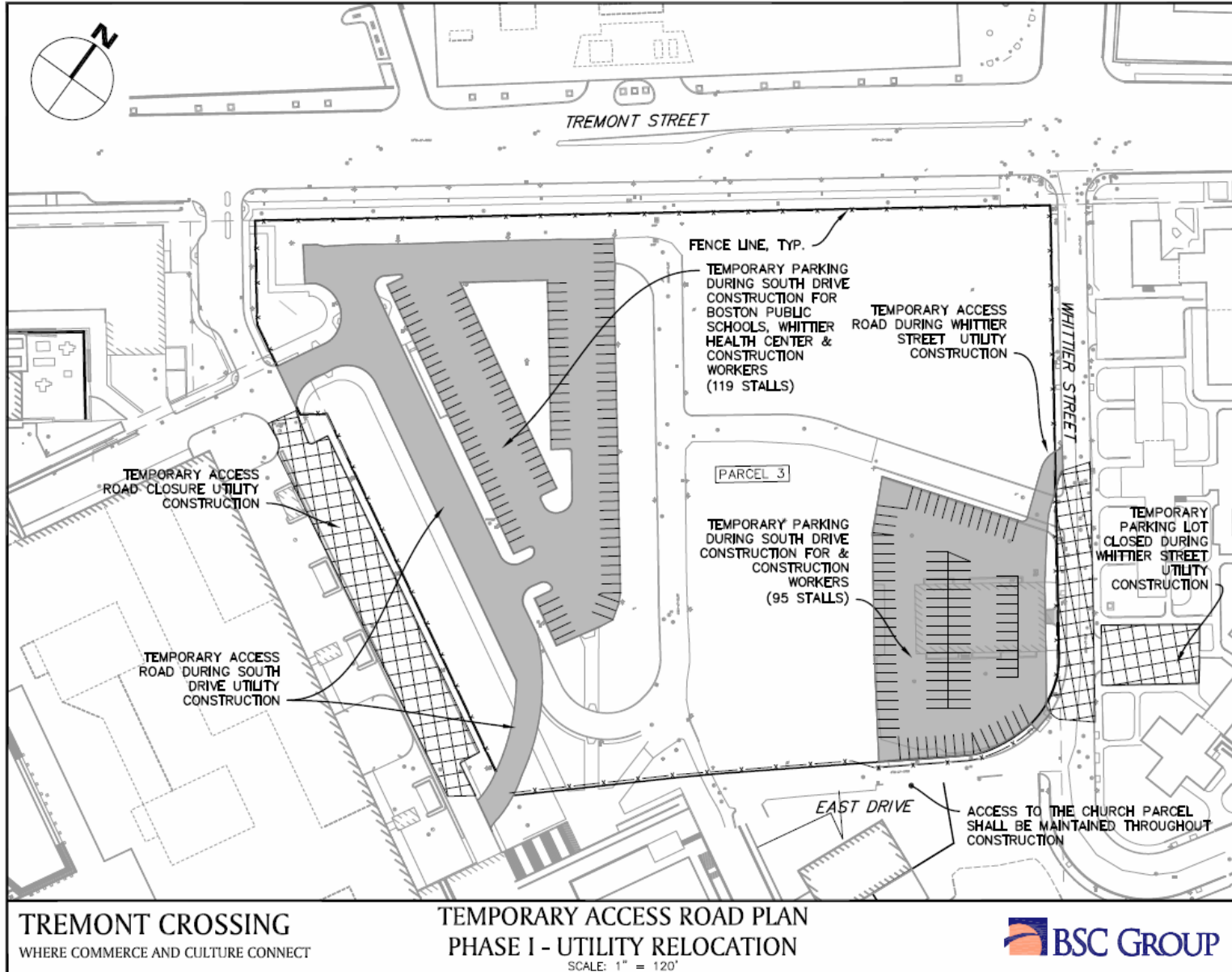


Figure 5-14: Phase II – Foundation Work

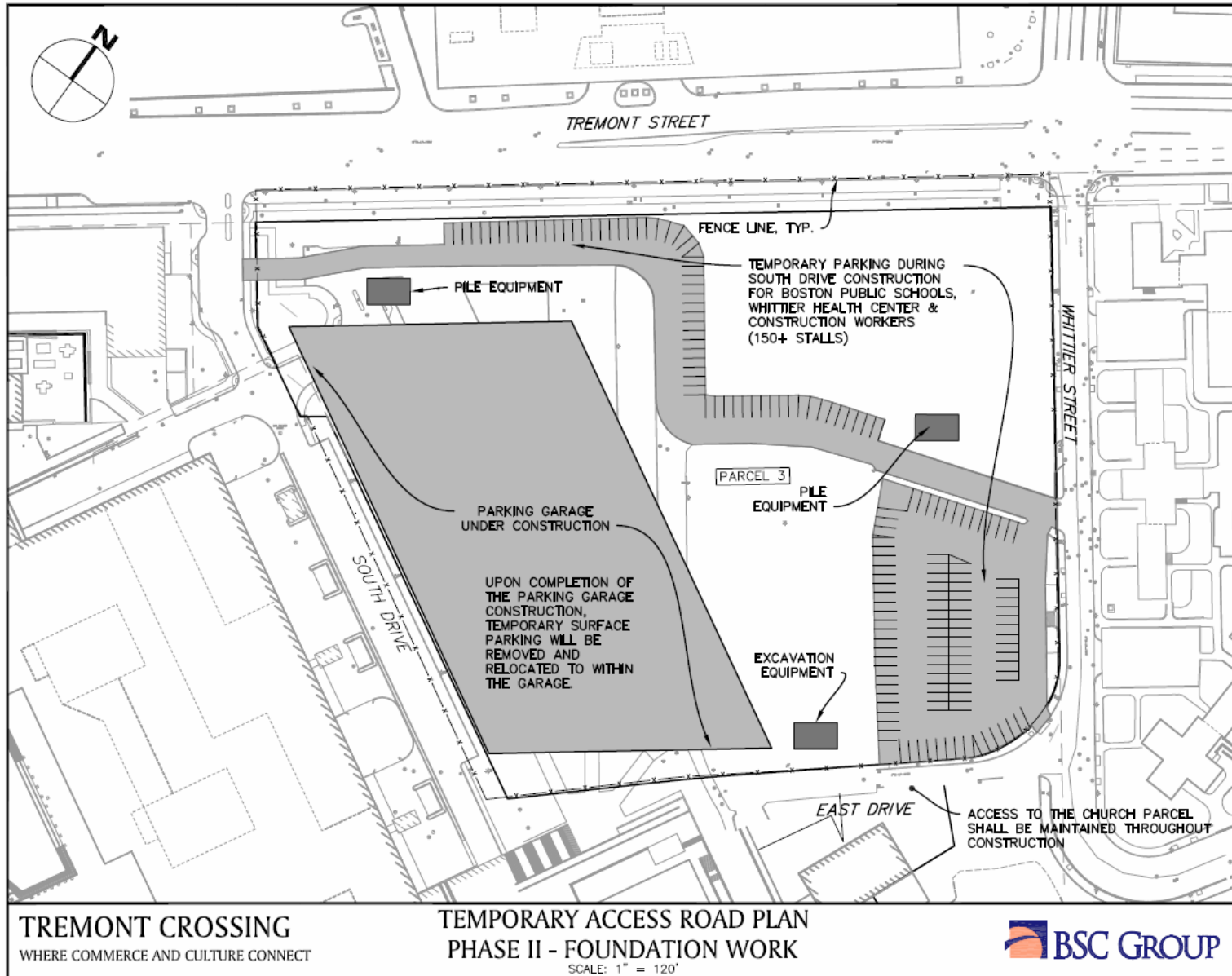


Figure 5-15: Phase III – Structure and Facade

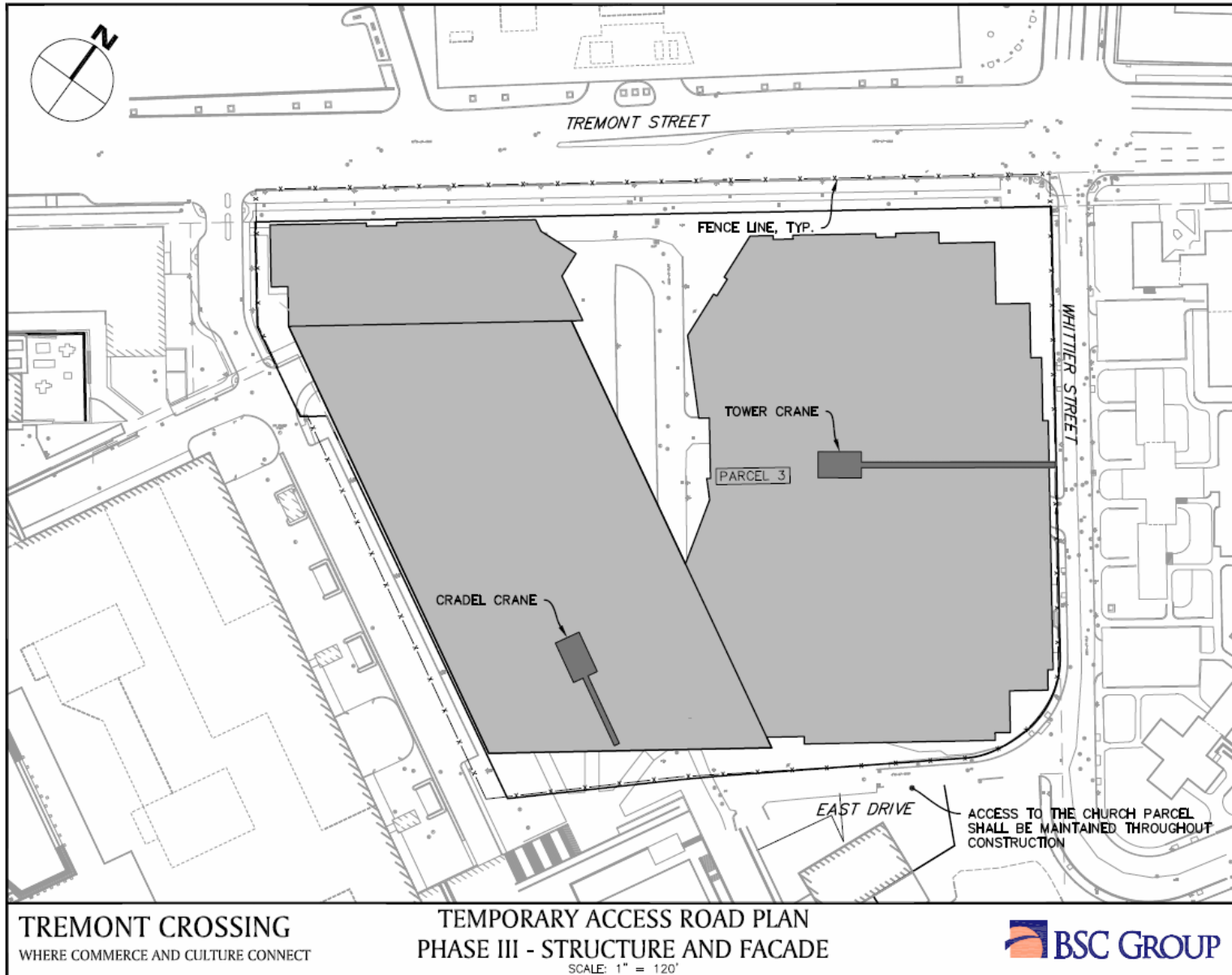
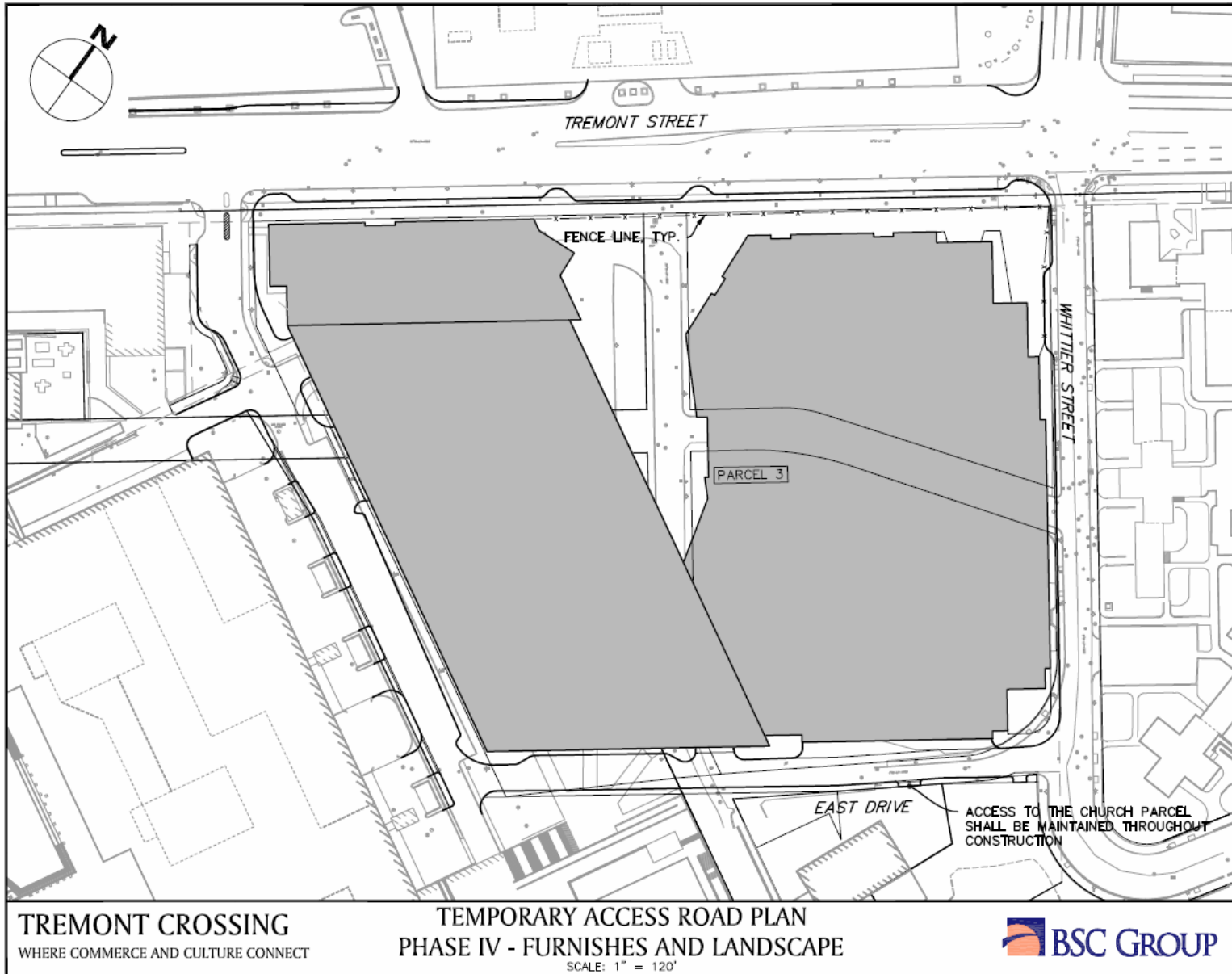


Figure 5-16: Phase IV– Furnishes and Landscape



5.11 Wildlife Habitat

The Project is located outside of the Estimated Habitats of Rare Wildlife and the Priority Habitats of Rare Species according to the most recent GIS polygons for each as maintained by the Natural Heritage and Endangered Species Program (NHESP) of the Massachusetts Division of Fisheries and Wildlife.

5.12 Sustainable Design

The Project will be Leadership in Energy and Environmental Design (LEED) certifiable in accordance with the BRA's Article 37 Green Building Program (Green Building Program). Energy conservation and efficiency will be integral parts of the Project's design. Buildings will employ energy efficient features in the mechanical, electrical, architectural, and structural elements where possible. Mechanical and HVAC systems will be designed and installed to industry standards as well as applicable sections of the Massachusetts Building Code. The Project is situated in a dense, urban Site that is well serviced by public transportation.

5.12.1 General

Sustainable building practices can substantially reduce or eliminate negative environmental impacts through high-performance, market-leading design, construction, and operations practices. As an added benefit, sustainable operations and management reduce operating costs, enhance building marketability, increase workers' productivity, and reduce potential liability resulting from indoor air quality problems.

LEED is a voluntary, consensus based, market-driven program that provides third-party verification of green buildings. From individual buildings and homes, to entire neighborhoods and communities, LEED has transformed the way built environments are designed, constructed, and operated. The LEED rating system addresses the entire lifecycle of a building.

5.12.2 City of Boston

In 2007, Boston was the first city in the nation to require a green building standard through municipal zoning requirements. By amending Article 37 of the municipal zoning code, the City requires that all large-scale projects meet the U.S. Green Building Council's LEED certification standards.

5.12.3 Green Rating System

The LEED Green Building Rating System for New Construction is a set of performance standards for certifying the design and construction of buildings of all sizes, both public and private. The intent is to promote healthful, durable, affordable, and environmentally sound practices in building design and construction. As a requirement of the City of Boston, the Tremont Crossing project will be designed to achieve minimum LEED certification standards. The overarching goals for LEED Certified buildings are to:

- Lower operating costs and increase asset value;
- Reduce waste sent to landfills;
- Conserve energy and water;
- Be healthier and safer for occupants;
- Reduce harmful greenhouse gas emissions.

LEED for New Construction certifications are awarded according to the following scale:

- Certified 40—49 points;
- Silver 50—59 points;
- Gold 60—79 points;
- Platinum 80 points and above.

Prerequisites and credits in the LEED Green Building Rating Systems address seven topics:

- Sustainable Sites;
- Water Efficiency;
- Energy and Atmosphere;
- Materials and Resources;
- Indoor Environmental Quality;
- Innovation in Design;
- Regional Priorities.

5.12.4 Tremont Crossing LEED Considerations

The following highlights are elements to be integrated into the Project. The Proponent anticipates a collective 50 points allowing Tremont Crossing to be targeted as LEED Certified design standards:

- Construction activity pollution prevention plan including preventing sedimentation of storm sewers and air pollution with dust and particulate matter;
- Encouraging developmental density through the use of existing infrastructure and promoting community connectivity through its walkable location to cultural, institutional, shopping, and mass transit within ½ mile from site;
- Promoting bicycle commuting through bicycle storage and accessibility;
- Encouraging low-emitting and fuel-efficient vehicles through innovative parking locations and/or charging stations. A car sharing service will be available onsite;
- Enacting a stormwater management plan to ensure that the post-development stormwater discharge does not exceed the existing rates;
- Using lighter-color roofing and hardscape materials to reduce the heat island effect—when dark, nonreflective surfaces absorb the sun’s warmth and radiates heat. This is an identified LEED regional priority for Boston;
- Reducing potable water use by at least 30% better than EPA baseline through selection of efficient urinals, toilets, and faucets;
- Improved landscaping practices including selection of water-efficient plant species, and irrigation efficiency;
- Enhanced commissioning of building energy systems to ensure correct and efficient use for equipment and maintenance staff;
- Improved energy performance for mechanical, electrical, and plumbing systems through efficient operations and equipment selection;
- Selection of mechanical refrigerants with zero or low ozone depleting potential (ODP) and minimal direct global warming potential (GWP);
- Storage and collection of recyclables;
- Construction waste management plan to divert construction debris from disposal in landfills;
- Maximizing the use of wood-based materials certified in accordance with the Forest Stewardship Council to support responsible forest practices and wildlife habitat;
- Measuring CO₂ concentrations to determine and maintain adequate outdoor air ventilation rates;
- Construction Indoor Air Quality Management Plan to the potentially negative effects of construction on indoor air contaminants;

- Selection of materials, adhesives, sealants, paints and coatings that have a positive impact on indoor air quality through reduction of emitting volatile organic compounds (VOCs);
- Increased ventilation and isolation of areas in spaces with increased airborne chemicals and particles, such as copying or printing rooms;
- Controllability of lighting and thermal systems to provide controls for occupant's comfort.

A preliminary LEED checklist is provided at the end of this section (Figure 5-17) to identify sustainable design goals for the Project. Additionally, Appendix 6 sets forth an analysis relative to the Project's Article 37 compliance.

Figure 5-17: LEED Checklist

Project Name: Tremont Crossing | Project Address: Boston, MA 02120 US

LEED 2009 for New Construction and Major Renovations
Project Checklist

Y	?	N	Points	Requirement	Points
18 2 6 Sustainable Sites Possible Points: 26					
Y				Prereq 1 Construction Activity Pollution Prevention	
	1			Credit 1 Site Selection	1
	5			Credit 2 Development Density and Community Connectivity	5
		1		Credit 3 Brownfield Redevelopment	1
	6			Credit 4.1	6
	1			Credit 4.2	1
	2	1		Credit 4.3	3
		2		Credit 4.4	2
		1		Credit 5.1	1
		1		Credit 5.2	1
	1			Credit 6.1	1
	1			Credit 6.2	1
	1			Credit 7.1	1
	1			Credit 7.2	1
	1			Credit 8 Light Pollution Reduction	1
6 2 2 Water Efficiency Possible Points: 10					
Y				Prereq 1	
	4			Credit 1 Water Efficient Landscaping	2 to 4
		2		Credit 2 Innovative Wastewater Technologies	2
	2	2		Credit 3 Water Use Reduction	2 to 4
7 20 8 Energy and Atmosphere Possible Points: 35					
Y				Prereq 1 Fundamental Commissioning of Building Energy Systems	
Y				Prereq 2 Minimum Energy Performance	
Y				Prereq 3 Fundamental Refrigerant Management	
	3	10	6	Credit 1 Optimize Energy Performance	1 to 19
		7		Credit 2 On-Site Renewable Energy	1 to 7
	2			Credit 3 Enhanced Commissioning	2
	2			Credit 4 Enhanced Refrigerant Management	2
		3		Credit 5 Measurement and Verification	3
		2		Credit 6 Green Power	2
3 4 7 Materials and Resources Possible Points: 14					
Y				Prereq 1 Storage and Collection of Recyclables	
		3		Credit 1.1	1 to 3
		1		Credit 1.2	1
	2			Credit 2 Construction Waste Management	1 to 2
		2		Credit 3 Materials Reuse	1 to 2
Materials and Resources Possible Points: 14					
Y	?	N			
	2			Credit 4 Recycled Content	1 to 2
	2			Credit 5 Regional Materials	1 to 2
		1		Credit 6 Rapidly Renewable Materials	1
	1			Credit 7 Certified Wood	1
11 4 0 Indoor Environmental Quality Possible Points: 15					
Y				Prereq 1 Minimum Indoor Air Quality Performance	
Y				Prereq 2 Environmental Tobacco Smoke (ETS) Control	
	1			Credit 1 Outdoor Air Delivery Monitoring	1
		1		Credit 2 Increased Ventilation	1
	1			Credit 3.1	1
		1		Credit 3.2	1
	1			Credit 4.1	1
	1			Credit 4.2	1
	1			Credit 4.3	1
	1			Credit 4.4	1
	1			Credit 5 Indoor Chemical and Pollutant Source Control	1
	1			Credit 6.1	1
	1			Credit 6.2	1
	1			Credit 7.1	1
	1			Credit 7.2	1
		1		Credit 8.1	1
		1		Credit 8.2	1
2 4 0 Innovation and Design Process Possible Points: 6					
1				Credit 1.1 Innovation in Design: Exemplary Performance SSc4.1	1
	1			Credit 1.2 Innovation in Design	1
	1			Credit 1.3 Innovation in Design	1
	1			Credit 1.4 Innovation in Design	1
	1			Credit 1.5 Innovation in Design	1
	1			Credit 2 LEED Accredited Professional	1
3 0 1 Regional Priority Credits Possible Points: 4					
1				Credit 1.1 02120 Regional Priority: Stormwater Design - Quantity Control	1
1				Credit 1.2 02120 Regional Priority: Heat Island Effect - Nonroof	1
1				Credit 1.3 02120 Regional Priority: Heat Island Effect - Roof	1
		1		Credit 1.4 02120 Regional Priority: On-Site Renewable Energy 1%	1
50 36 24 Total Possible Points: 110					

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

6.0 HISTORICAL AND ARCHEOLOGICAL RESOURCES

This Section describes the historic and archeological resources that may be affected by the Project.

6.1 Historic Resources Within the Site

As identified in the Project PNF, the Project Site does not contain any properties included in the *Inventory of Historic and Archeological Assets of the Commonwealth* (Inventory), maintained by the Massachusetts Historical Commission (MHC).

6.2 Historic Resources Within Vicinity of the Site

As identified in the Project PNF, multiple sites listed on the Inventory and the State and National Registers of Historic Places are located in the vicinity of the Project Site. These include, but are not limited to, John Eliot Square, the First Church of Roxbury, the Marcus Garvey House and Gardens, Ionic Hall, the James F. Timilty School, the Modern Sewing Machine and Supply Company, and Saint Cyprian's Episcopal Church and Parish House.

6.3 Archeological Resources on the Project Site

As identified in the Project PNF, there are no known archeological resources listed in the State and National Registers of Historic Places or included in the Inventory located within the Project Site.

6.4 Massachusetts Historical Commission (MHC) Review

On May 4, 2012, a copy of the Project's Environmental Notification Form (ENF) was submitted to the MHC for their review and comment. The ENF document contained a copy of Section 3.7 Historic and Archeological Resources from the PNF which included the list and map of documented resources. As part of MHC Review and Compliance requirements, MHC reviews all Environmental Notification Forms and comments on those in which there are concerns that the project has the potential to affect significant historic or archaeological properties. MHC comments directly to the Secretary of Environmental Affairs, as stipulated in MEPA's instructions for submitting comments.

Based on this, no further consultation with MHC is required under MEPA because they received a copy of the ENF, reviewed it, and did not submit any comments.

6.5 Massachusetts Environmental Policy Act (MEPA)

As stated above, an ENF was filed with the MEPA office on May 4, 2012 and a Certificate for the Project was issued on June 15, 2012 by the Secretary of Energy and Environmental Affairs

7.0 INFRASTRUCTURE SYSTEMS

7.1 Overview of Utility Services

The existing infrastructure surrounding the site of Tremont Crossing is anticipated to be of adequate capacity to service the needs of the Project. As outlined in the Project PNF filing, there are existing sanitary sewer, storm drainage, water, gas, electric, and telecommunications lines in Tremont Street. There are existing sewer, storm drainage, water, gas, and electric lines in Whittier Street. There are sewer, gas, and electric lines in Downing Street, including the 72-inch by 96-inch, Stony Brook Conduit combined sewer. Included among the utilities that run through the Site is the Stony Brook Interceptor combined sewer. A detailed discussion on the relocation of the Interceptor is included in Section 7.3.5 Sewer Relocation and in the PNF filing.

Prior to demolition, the Proponent will cut and cap all existing storm drain, sanitary sewer and water services that are not proposed for reuse on the Project. A Termination Verification Approval Form for a Demolition Permit will be completed and submitted to the City of Boston Inspectional Services Department (ISD) as required.

Approval of Site Plans and a General Service Application are required from Boston Water and Sewer Commission (BWSC) for construction and activation of sewer, water, and storm drainage service connections. The final sewer and water connections, as well as the Project's stormwater management system, will be designed in conformance with BWSC's design standards, Requirements for Site Plans, Regulations Governing the Use of Sanitary and Combined Sewers and Storm Drains, and Regulations Governing the Use of the Water Distribution Facilities of the Boston Water and Sewer Commission.

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

7.2 Water System

7.2.1 Existing Water Service

BWSC owns, operates, and maintains the water distribution systems in the vicinity of the Project Site. The extent of existing water distribution in the vicinity of the Project Site was shown on Figure 3-4 of the Project PNF. All

existing water services will be cut and capped prior to demolition, as required by BWSC. Existing hydrants will be removed and relocated in coordination with Boston Fire Department (BFD) service needs.

7.2.2 Estimated Proposed Water Demand

The estimated proposed water demand for the Project is based on the estimated sanitary sewer flow (see Table 7-1), with a factor of 1.1 applied to account for consumption and other losses. Based on this formula, the Project's estimated peak water demand for domestic uses is 144,260-gallons per day. The domestic water will be supplied by the BWSC water system.

Based on discussions with BWSC, there are no expected water capacity problems in the vicinity of the Project Site. Prior to full design, this will be confirmed by flow testing by BWSC. The Project's engineer will coordinate water demand and availability with BWSC during Project design to ensure the Project needs are met while maintaining adequate water flows to the surrounding neighborhood.

7.2.3 Proposed Water Service

It is anticipated that service connections will be connected to either the existing 12 inch ductile iron (DI) low pressure water main built in 1996 located on the far side of Tremont Street or the newly installed water loop to be constructed as part of this Project, located in East and South Drives. Final service locations will be coordinated with BWSC. Metering will be conducted in accordance with BWSC requirements including the installation of meter transmission units (MTU's) to comply with BWSC's automatic meter reading system. Appropriate gate valves and backflow prevention devices will also be installed on each water service to allow individual services to be shut off and to prevent potential backflow of non-potable water or other contaminants into the public water supply. See Figure 7-1 for proposed water service connections.

The Project is also expected to include multiple fire protection services. The size and location of these service connections will be coordinated between the Project's engineer and the BWSC. Appropriate gate valves and backflow prevention devices will also be installed on each fire protection service to allow individual services to be shut off and to prevent potential backflow of non-potable water or other contaminants into the public water supply. If required, the Project will include internal booster pumps to ensure adequate water

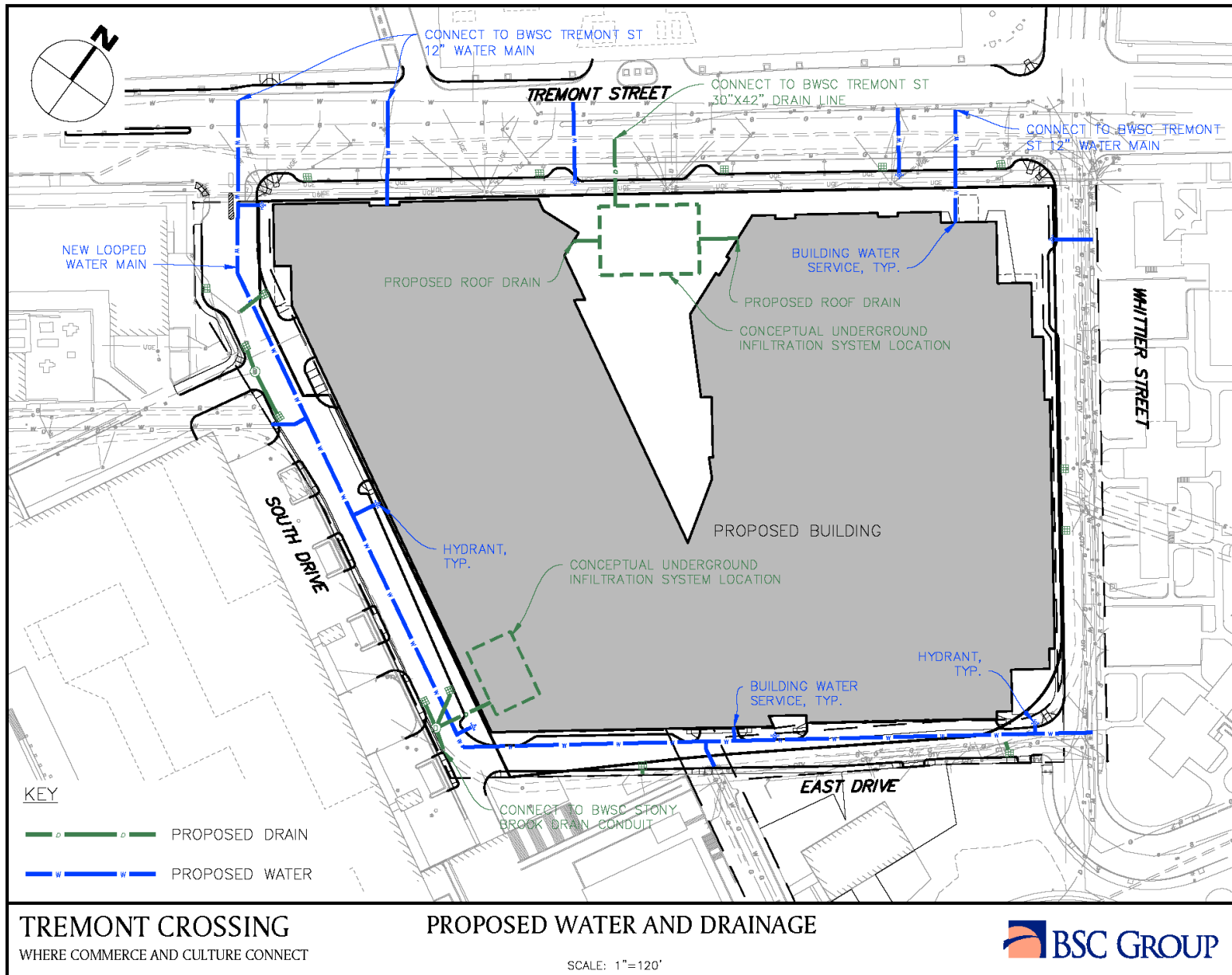
pressure to all standpipes and sprinkler systems. See Figure 7-1 for proposed fire protection service connections.

In order to provide appropriate fire protection around the Project perimeter, several additional fire hydrants are being proposed on the abutting streets/road network, including relocation of existing hydrants on Whittier Street and the addition of hydrants on Tremont Street, South Drive and East Drive. The final number and location of hydrants will be coordinated with the Boston Fire Department.

7.2.4 Water Supply Conservation and Mitigation

The Project will be LEED certifiable in accordance with the BRA's Article 37 Green Building program. As such, various water conservation measures such as low-flow toilets and urinals, restricted flow faucets, and sensor operated sinks, toilets, and urinals may be incorporated in order to meet the LEED water conservation requirements. Specific water conservation measures to be included in the Project will be more fully described as the building designs develop.

Figure 7-1: Proposed Water and Drainage Utilities



7.3 Sanitary Sewer System

7.3.1 Existing Sanitary Sewer System

BWSC owns, operates, and maintains the sanitary and combined sewer mains on and in the vicinity of the Project Site.

The extent of existing sanitary sewer distribution in the vicinity of the Project Site was shown on Figure 3-6 of the Project PNF. The Proponent anticipates utilizing the existing 12 inch separated sewer main in Tremont Street for two proposed service connections and the relocated Stony Brook Interceptor in Whittier Street for the remainder.

All existing sanitary sewer services will be cut and capped prior to demolition, as required by BWSC.

7.3.2 Estimated Proposed Sanitary Flow

The Massachusetts Department of Environmental Protection (MassDEP) establishes sewer generation rates for various types of establishments in a section of the State Environmental Code Title V (Title V), 310 CMR 15.203. Based on an estimate of the Project's building program, Table 7-x gives the estimated proposed sanitary sewer flows expected to be generated by the Project. Based on these Title V sewer generation rates, the project is expected to produce approximately 131,145-gallons/day of sewer flow. The proposed sewer generation calculation will be refined as the building tenants are confirmed and final sewer generation flows will be coordinated with BWSC.

Table 7-1: Sewer Generation

Unit Type	Program	Sewer Generation Rate	Sewer Flow (gpd)
Residential	300 bedrooms	110 gallons/day/bedroom	33,000
Retail / Arts	475,621 sq.ft.	50 gallons/day/1,000 sq.ft.	23,782
Hotel	200 rooms	110 gallons/day/room	22,000
Office	231,500sq.ft.	75 gallons/day/1,000 sq.ft.	17,363
Allowance for uses such as restaurants, supermarkets and other potential tenants and amenities.			35,000
Total Sewer Generation			131,145

Based on preliminary calculations and discussions with BWSC, there are no expected sewer capacity problems in the vicinity of the Project Site. The Project’s engineer will coordinate final, proposed sewer flows and available capacity with BWSC during Project design to ensure the Project needs are met without disruption of service to the surrounding area.

7.3.3 Proposed Sanitary Sewer Connections

Due to the size of the Project, the Project will require multiple service connections to the BWSC sewer systems in the surrounding streets. Service connections are anticipated to occur in Tremont Street and Whittier Street as well as to the relocated Stony Brook Interceptor in the rear (south) of the Project Site. The size and location of these service connections will be coordinated between the Project’s plumbing engineer and the BWSC. Any restaurant space will include separate sewers from the kitchen(s) through appropriately sized grease trap(s). Floor drains from the covered levels of the parking garage will be collected and routed through an approved oil/grease separator prior to discharge into the sanitary sewer system.

All sewer connections will be constructed so as to minimize effects on adjacent streets, sidewalks, and other areas within the public right-of-way. All sewer service connections will be kept separate from storm drain connections in accordance with BWSC requirements. Where connecting to a combined sewer system, these separate connections will be provided to allow future connections to separated sanitary and storm drain systems when they are

constructed by BWSC. See Figure 7-2 for proposed sanitary sewer service connections.

7.3.4 Sewer System Mitigation

In accordance with 314 CMR 7.00, the project will require a Sewer Connection Permit from MassDEP as it is expected to exceed the 50,000 gallons/day threshold. The Sewer Connection Permit will be submitted to BWSC at the same time as the Site Plan package for review and approval as the municipal sewer system owner. Upon approval from BWSC, the permit will be forwarded to MassDEP for review and approval. As part of the Sewer Connection Permit, the Project will need to eliminate inflow and infiltration (I/I) into the BWSC sewer system, and ultimately the MWRA regional wastewater system, at a rate of 4-gallons for every 1-gallon of new sewer flow, initially calculated at - 524,580 gallons/day.

One of the major components of I/I removal will be the replacement of the portion of the Stony Brook Interceptor identified in Section 7.3.5. Older brick pipelines tend to have cracks and/or breaks in their walls, gaps at section joint or manhole connections and old abandoned service connections. These points in the main are all potential sources of groundwater infiltration. Given the depth of the main and the length of the section of main to be replaced, the volume of infiltration is assumed to be significant and eliminating that groundwater flow from the water being sent to the MWRA for treatment will be significantly reduced.

Another significant improvement, relative to the reduction of stormwater flows being unnecessarily treated at the MWRA treatment facility, is that the Project will direct the roof runoff and the majority of the Project Site to separated storm sewer systems. Under today's conditions, approximately ½ of the site's stormwater runoff is collected in catch basins that are piped directly into combined sewer systems. As part of the BWSC's ongoing effort to separate the sanitary sewer mains from the storm sewer mains, the Project flows will be directed to previously separated storm mains and only a small portion of the sidewalk and patio areas will remain flowing into the combined sewer system.

The Project's proponent and engineer will work with BWSC to determine the volume of removal associated with the Stony Brook Conduit work and identify

additional I/I measures that may be taken to ensure the Project complies with the I/I elimination requirements.

Additionally, as stated in the Water Supply Conservation and Mitigation Section, various measures for water use reduction, which translates directly into wastewater reduction, are being implemented into the design which will also benefit the overall goal of reducing the volume of flows being sent to the MWRA wastewater treatment facility.

7.4 Storm Drainage System

7.4.1 Existing Storm Drainage System

The existing Project Site is a combination of paved parking lot, one building, grassed areas, and lightly wooded areas. Runoff from portions of the active parking lot in the southwest side of the Project Site currently flows into catch basins that connect to the BWSC drainage system. Runoff from the remainder of this parking lot, as well as from the grassed and lightly wooded areas on Site, sheet flows off Site to the various surrounding streets and/or properties. While it is not clear where runoff from the roof of the existing building is directed, there are catch basins that collect runoff from the paved area surrounding this building and direct it to a drainage main in Downing Street that connects to the combined sewer in that same street.

The Existing Watershed Map included in this Section identifies the existing infrastructure surrounding the Project and where existing site flows are being routed to currently.

Any existing storm drainage services will be cut and capped prior to demolition, as required by BWSC.

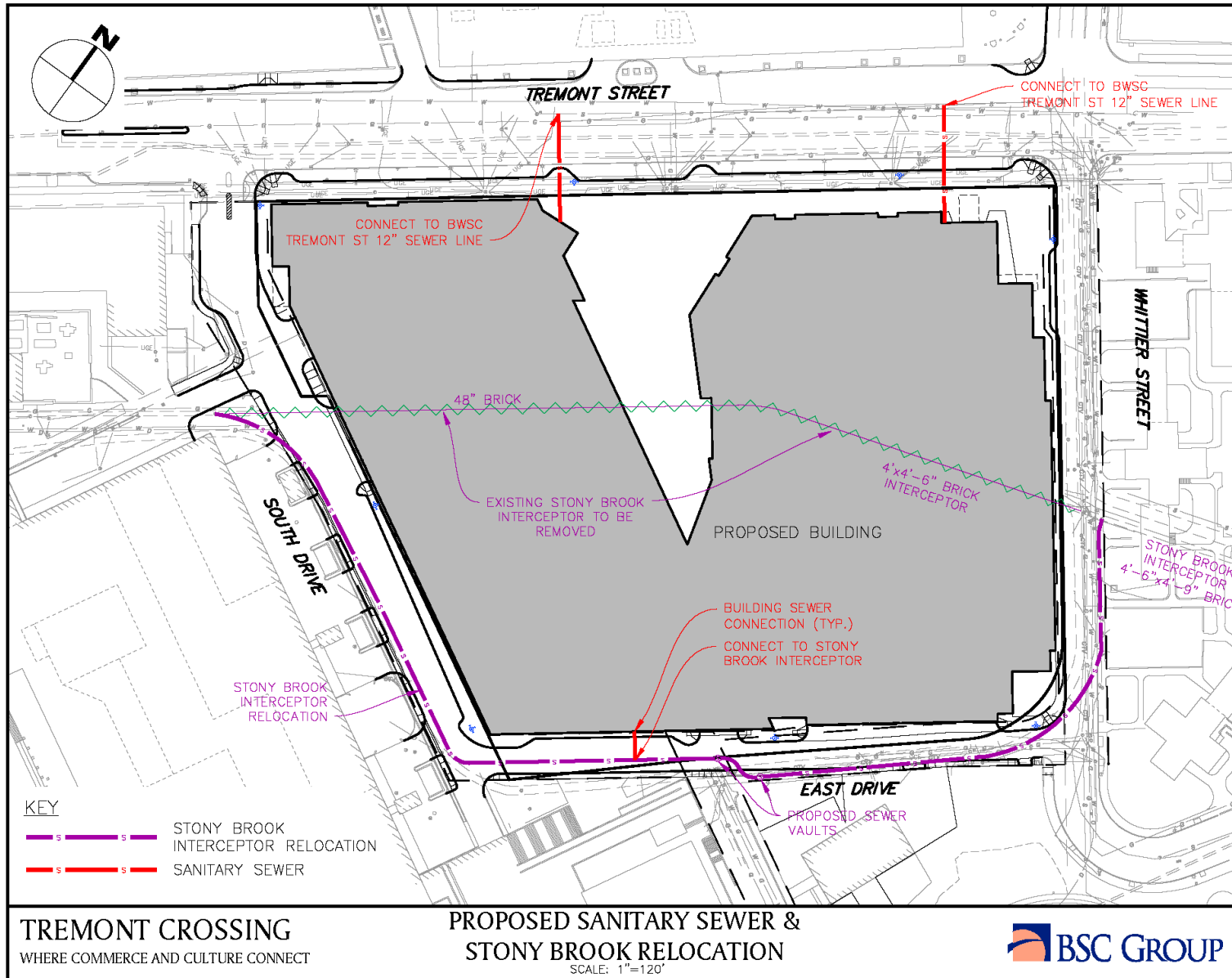
7.4.2 Proposed Storm Drainage System

The proposed stormwater management system will be designed to comply with BWSC requirements. Stormwater runoff will be collected and treated on-site, as necessary, and will be routed to subsurface infiltration systems to the maximum extent practicable in an effort to reduce the impact on the BWSC drainage system. At a minimum, on-site systems will be designed with a capacity of 1-inch over the Project site. For larger storms, these systems will be equipped with overflow connections to the municipal system. Appropriate stormwater best management practices (BMP's) are be included in the project

to improve the quality of stormwater runoff discharged from the Project Site, to promote infiltration to groundwater, and to ensure peak flows are at or below existing levels. Overflow connections from the underground infiltration/detention areas are proposed to handle larger, less frequent storm events and will discharge to the BWSC drain system. See Figure 7-2 for a schematic design of the proposed storm drainage connection points and underground stormwater infiltration/detention systems. A long term operations and maintenance plan will be used to assist the Property Manager in maintaining the stormwater BMP's in appropriate operational condition.

Since the Project will disturb more than one (1) acre of land, construction will require the submittal of a Notice of Intent (NOI) for coverage under the Construction General Permit (CGP) as part of the Environmental Protection Agency's (EPA's) National Pollutant Discharge Elimination System (NPDES). Conformance with NPDES will require the preparation of a Stormwater Pollution Prevention Plan (SWPPP) for the Project's construction and performance of applicable SWPPP Site inspections. As part of conformance with the SWPPP and NPDES, appropriate erosion and sedimentation (E&S) controls will be installed to prevent sediment laden stormwater runoff from leaving the Site and entering the BWSC drainage system. E&S controls may include structural methods such as catch basin inlet controls, hay bales, silt fence, and silt socks as well as non-structural methods such as minimizing the extent and duration of exposed soils. E&S controls will be maintained as necessary until all disturbed areas have been stabilized through the placement of pavement, structure, or established vegetative cover and will conform to the Water Quality section of the City of Boston Environment Department Guidelines for Construction.

Figure 7-2: Proposed Sewer and Stony Brook Relocation

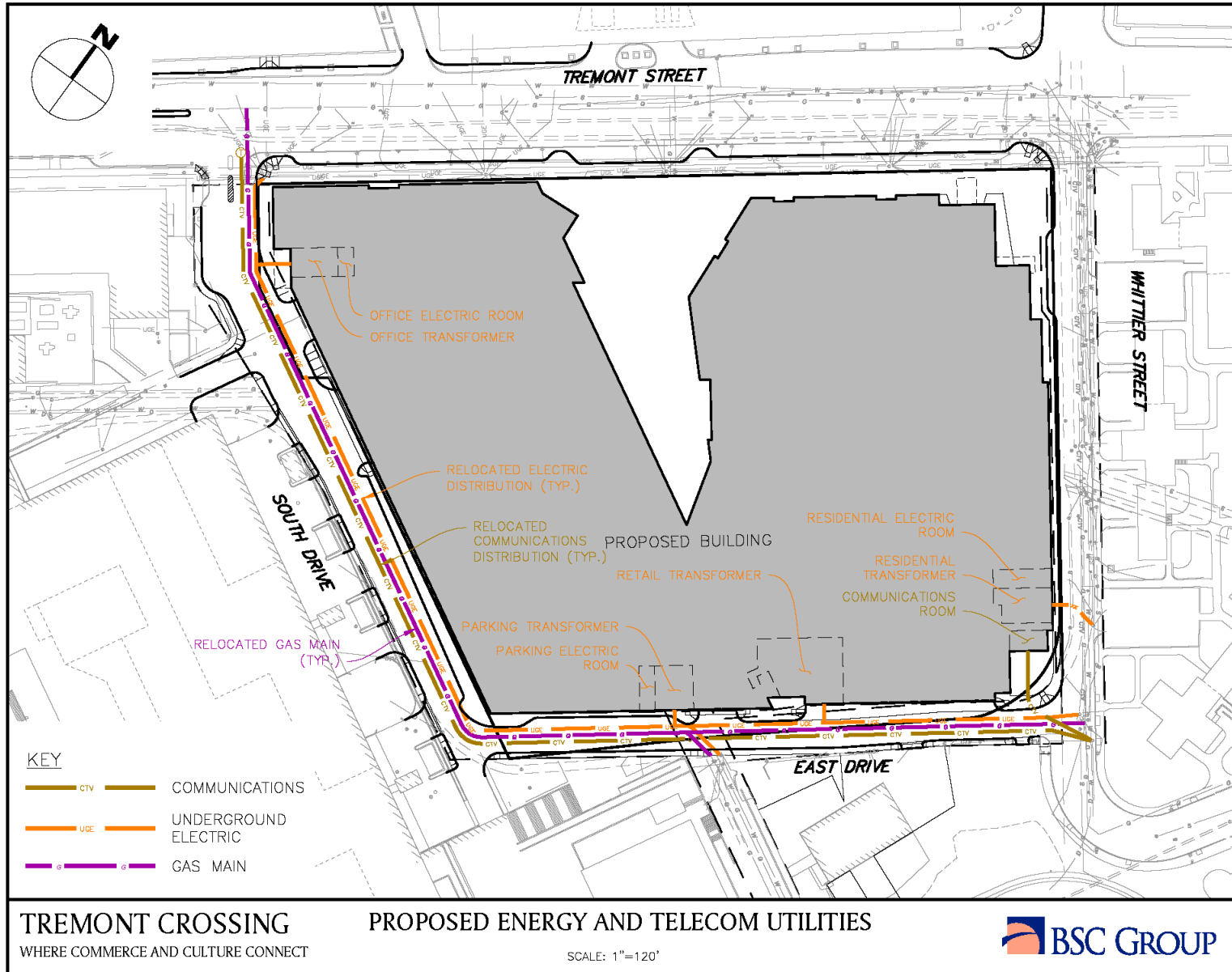


7.5 Energy and Telecommunications

The extent of existing energy and telecommunications in the vicinity of the Project Site was shown on Figure 3-8 of the Project PNF. All energy and telecommunications connections will be coordinated with the appropriate utility companies and the City of Boston.

As the building has developed, preliminary locations for electrical and communications rooms have been identified and the appropriate service connection points have been identified on the Proposed Energy and Telecom Utilities Figure.

Figure 7-3: Proposed Gas and Electric Utilities



7.6 Existing Conditions Survey

In order to better understand the existing conditions and infrastructure on and immediately adjacent to the Project Site, a topographic survey and perimeter survey was performed. A copy of the Existing Conditions Plan is included in the PNF, Section 3.8.7. Figure 7-4 shows an updated metes & bounds plan showing the boundary of Parcel-3 with bearings, distances and overall parcel area. The perimeter defined as the Project boundary was coordinated with the BRA legal staff during the preparation of the DPIR and is identified as the “Remainder of Parcel P-3”.

Other Parcels anticipated to be impacted by the development of the roadway network

As identified in this document and the PNF, the Project has been designed to maintain all building footprints within the defined development perimeter of Parcel-3. Given the nature of this development and the existing property improvements adjacent to the Site, the Project is proposing to modify and redefine the existing roadway network. Figure 7-5 shows portions of adjacent parcels that are expected to be impacted by the roadway network. The South Drive is proposed over portions of Parcel 3 (BRA controlled), Parcel 3-H (BRA controlled) and Parcel-1 (City of Boston controlled) and existing public ways (City of Boston controlled). The East Drive is proposed over portions of Parcel-3 (BRA controlled), Parcel-1 (City of Boston controlled), and adjacent parcels along the southerly side of Downing Street (BRA controlled), and existing public ways (City of Boston controlled). The Whittier Street widening required to accommodate 2-way traffic on a portion of Whittier Street is proposed over a portion of Parcel-3 (BRA controlled). This widening is proposed as an Easement to accommodate widening the sidewalk to 8-feet.

In this regard, a Letter of Cooperation, previously included in the PNF, memorializes an understanding in concept between the Proponent and BPS. Additionally, the Proponent met with BPS officials during the preparation of this DPIR to better understand their needs, current and future, particularly along South Drive and have factored those needs into the current design.

Figure 7-4: Parcel P-3 Perimeter Exhibit

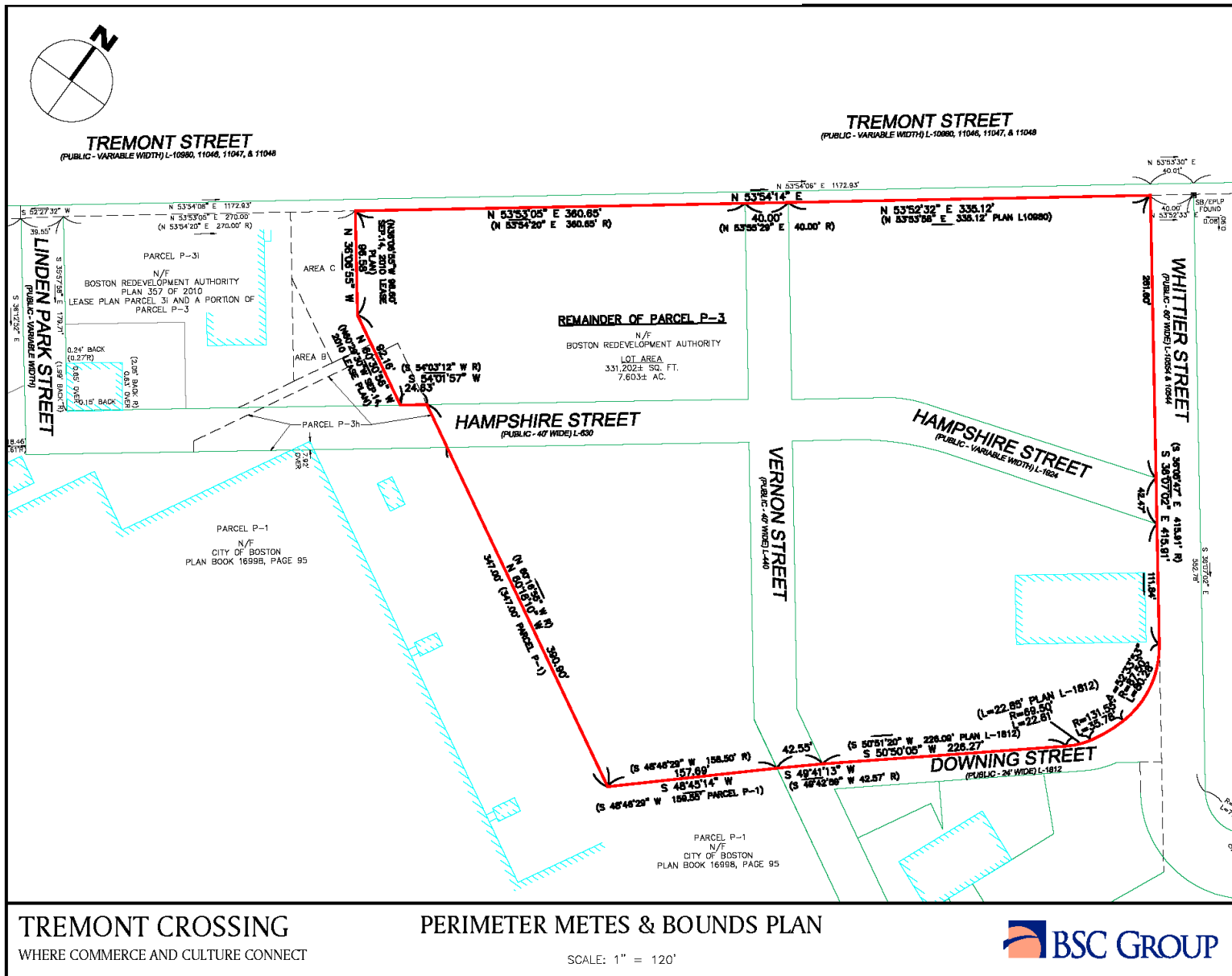
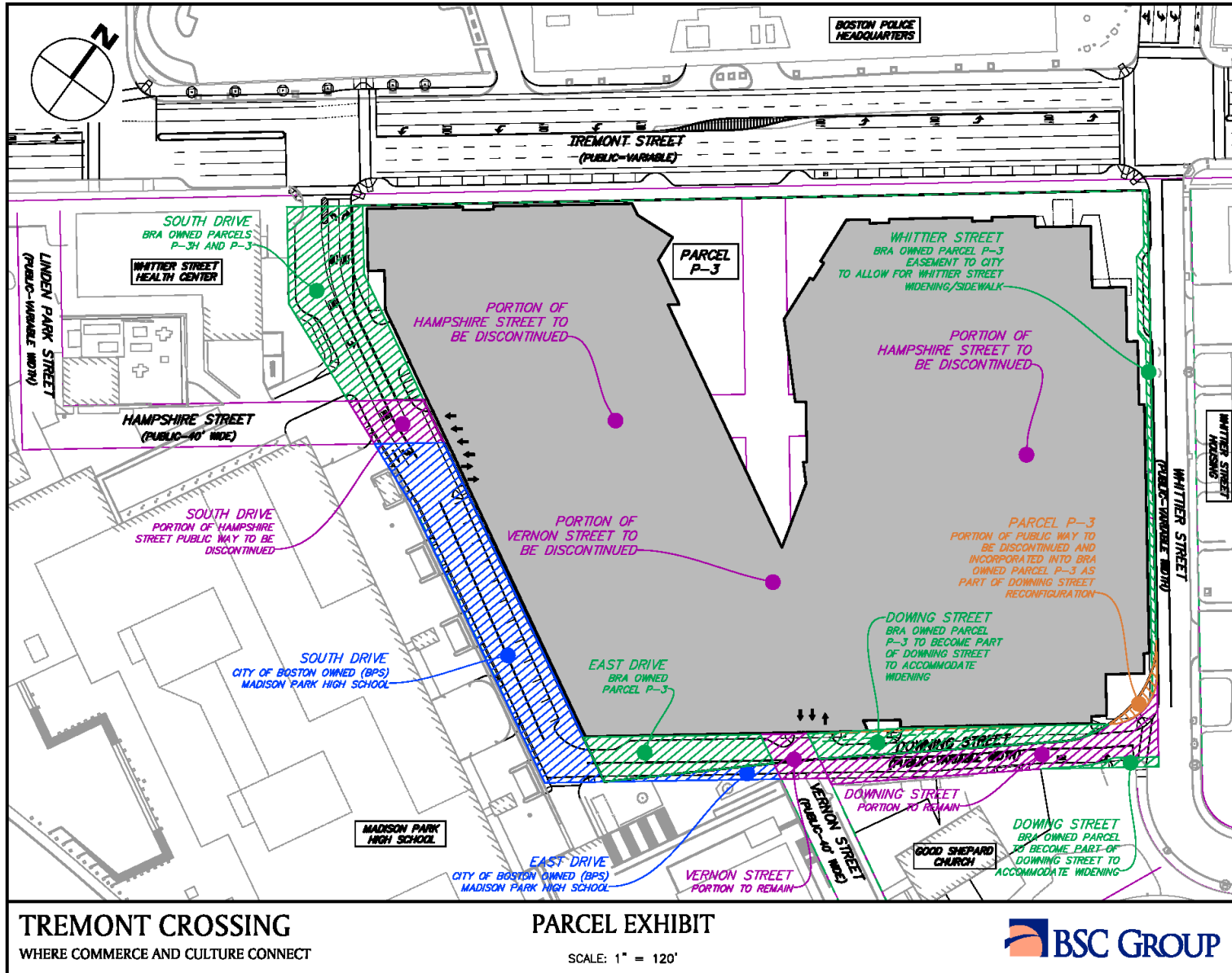


Figure 7-5: Parcel Exhibit



7.7 Roadway Network

The Project Site is bound on the northwest by Tremont Street, a major public roadway of variable width running generally in a southwest to northeast direction from Malcolm X Boulevard/Columbus Avenue to Charles Street through Boston, Massachusetts. The existing one-way vehicular roadway layout of Whittier Street between Tremont Street and Downing Street provides the project's northeastern boundary. Additionally, the paper streets Vernon Street and Hampshire Street run north-south and east-west through the Project Site and Downing Street runs along the southeastly side of the Site from Whittier Street to Vernon Street. The existing roadway network is shown on Figure 7-6. In order to facilitate construction of the Project, portion of both Hampshire and Vernon Street will be discontinued through the street discontinuance process with the Boston Public Improvement Commission (PIC). The proposed limit of discontinuation of these roadways is shown on Figure 7-7.

To provide access to and circulation around the Project Site, two new shared access roadways are proposed. South Drive and East Drive will be located along the southwest and southeast edges of the Project Site respectively. South Drive will provide shared access to Whittier Health Center, Madison Park High School and the Project. East Drive will primarily provide shared access to Madison Park High School and the Project. The ultimate status of these roads as public ways, private ways or private driveways will be determined through further discussion with PWD, BTM, and PIC, as well as the abutting land owners.

The Project calls for the existing Whittier Street right-of-way (ROW), adjacent to the Project Site, to be reconfigured within its current 40-foot ROW. The reconfiguration requires an additional 4.5-feet to accommodate the proposed improvements, therefore a 4.5-foot Easement is proposed to be granted from Parcel P-3 to the City. The widening allows this portion of Whittier Street to provide two-way vehicular travel while maintaining an 8-foot parking lane on the northeast side and pedestrian walkways on both sides of the street. Additionally, the Project calls for the existing 24-foot wide ROW of Downing Street to be widened to forty (40) feet between Whittier Street and Vernon Street. The widening allows this portion of Downing Street to provide two-way vehicular travel with pedestrian walkways on both sides of the street.

The Proposed Roadway Network as described above is shown on Figure 7-7. Section 3 provides additional information on the traffic improvements along these roadways. Section 4.1.4.1 provides additional information on the pedestrian accommodations along these roadways.

Figure 7-6: Existing Roadway Network

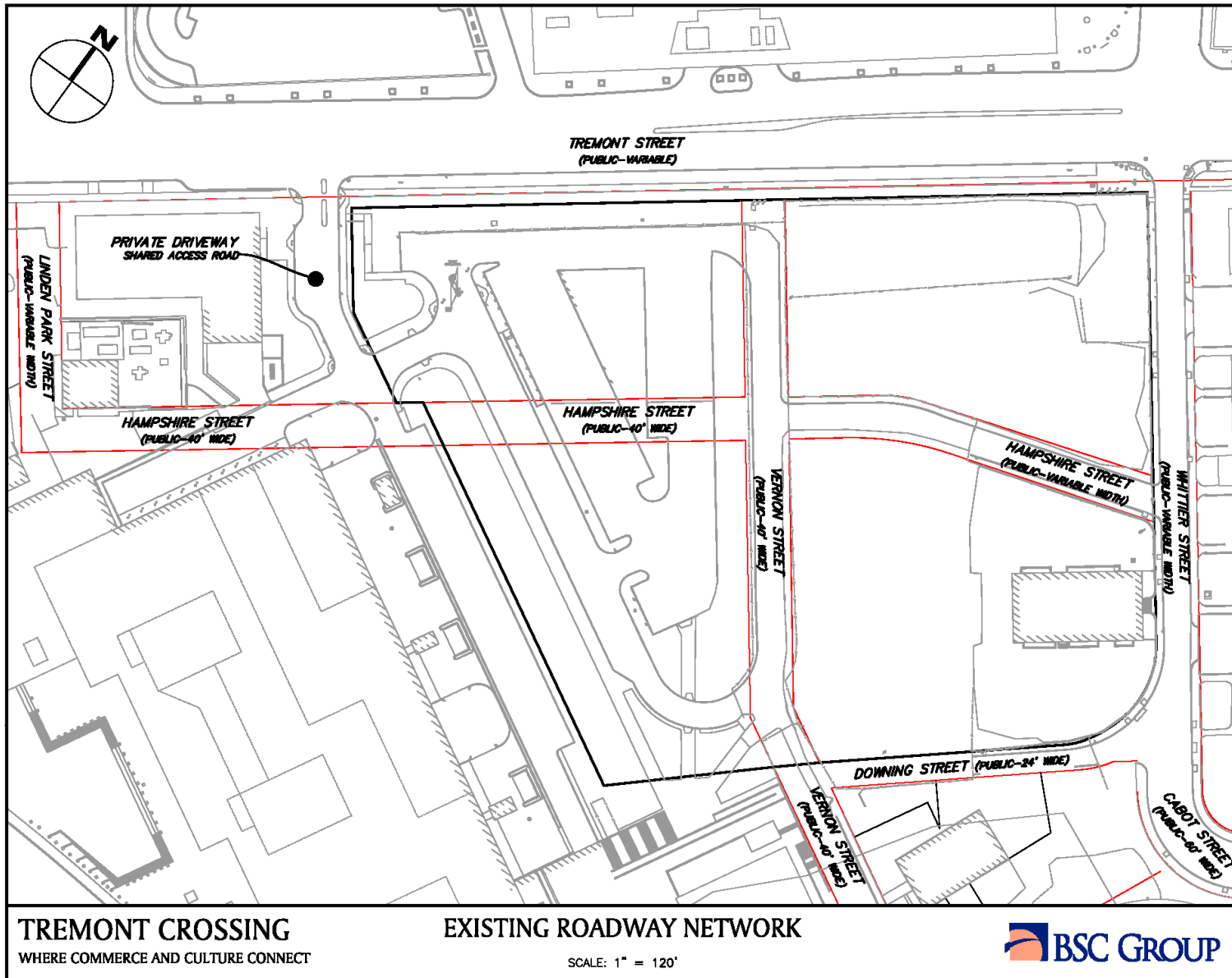
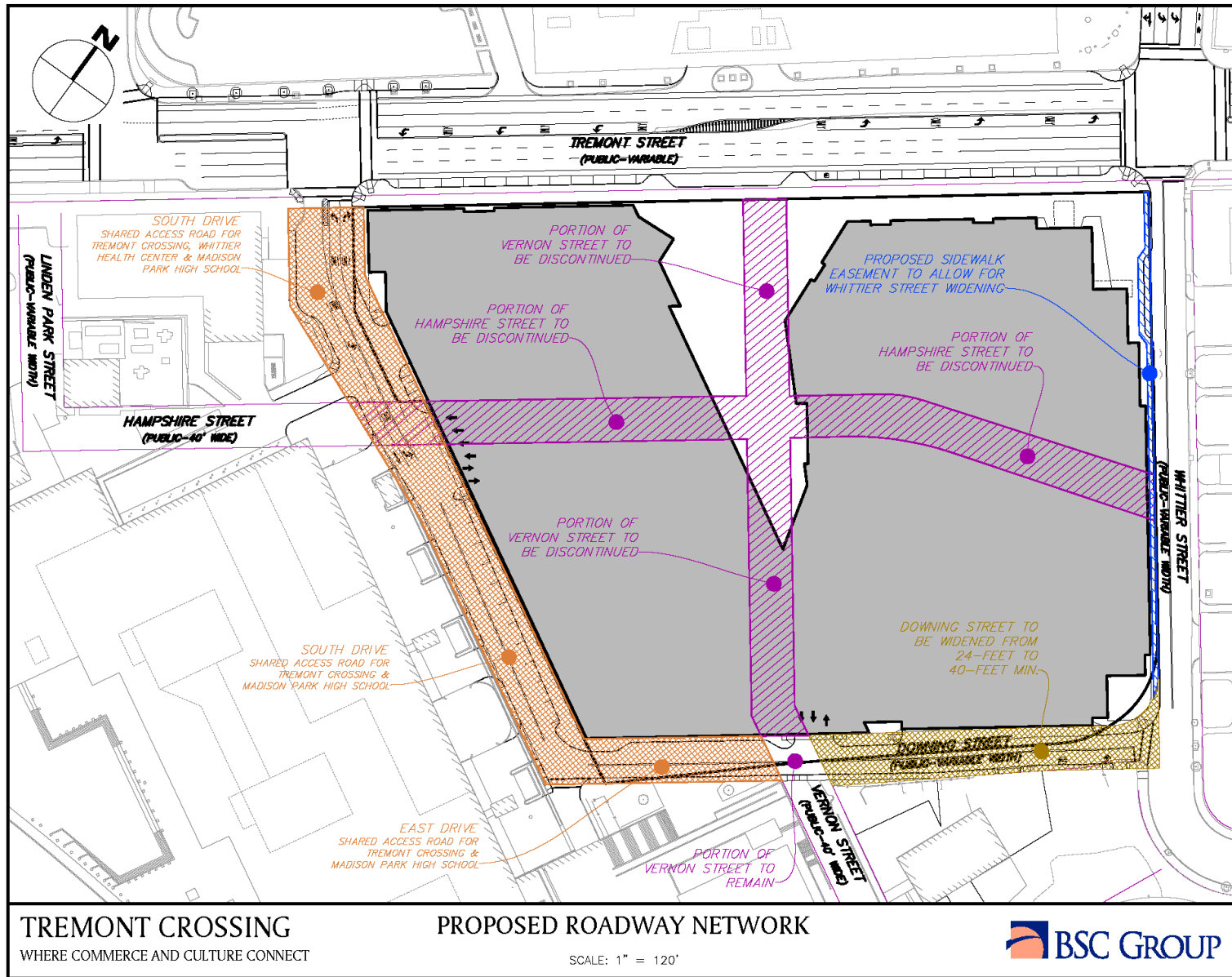


Figure 7-7: Proposed Roadway Network



8.0 COORDINATION WITH OTHER GOVERNMENT AGENCIES

8.1 Architectural Access Board Requirements

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

8.2 Boston Civic Design Commission

The Project will comply with the provisions of Article 28 of the Boston Zoning Code. This DPIR will be submitted to the Boston Civic Design Commission by the BRA as part of the Article 80 process.

8.3 Other Permits and Approvals

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

Additionally, the Project Site has been designated as necessitating a Public Involvement Plan (PIP), by mandate of a neighborhood petition. The PIP pertains to the environmental remediation component of the site. There will need to be a public hearing regarding the PIP and a requisite written agreement to be delivered to the BRA.

8.4 Community Outreach

The Proponent is committed to effective and meaningful community outreach and will engage the community to ensure public input on the Project.

9.0 RESPONSE TO COMMENTS

This Section provides responses to the BRA Scoping Determination, issued August 16, 2012 and the comment letters that were received on the Project Notification Form filed on April 17, 2012. The letters have been reproduced and individual comments coded in the margins. Responses to the comments follow each individual letter and can be matched using the comment code numbers. Letters were received from the following City of Boston Departments, Organizations and individuals (corresponding code is in parentheses):

City Agencies

Boston Redevelopment Authority Scoping Determination (BRA)

Boston Transportation Department (BTD)

Boston Redevelopment Authority- Traffic Department (BRAT)

Boston Fire Department (BFD)

Boston Water and Sewer Commission (BWSC)

City of Boston Public Improvements Commission (PIC)

Public Works Department (PWD)

Boston Landmarks Commission (BLC)

Letters from Individuals

Jason Turgeon

Mark Schafer

Ruediger Volk, Ph.D.

Marie Lindahl

Tom Yardley, Senior Planner- MASCO

9.1 BRA Scoping Determination

9.1.1 Comments from City Public Agencies

August 16, 2012

Barry Feldman
P-3 Partners, LLC
220 Elm Street, Suite 104
New Canaan, CT 06840

Edmund Barry Gaither
P-3 Partners, LLC
300 Walnut Avenue
Roxbury, MA 02119

Dear Mr. Feldman and Mr. Gaither:

Re: **Tremont Crossing, Roxbury, Massachusetts
Project Notification Form for the Proposed Tremont Crossing Project
Consisting of Approximately 500,000 Square Feet of Retail, 200,000
Square Feet of Office Space, Approximately 200,000 Square Feet of
Residential Space (240 Units), 58,000 Square Feet of Cultural Facilities,
and 1,700 Parking Spaces - Scoping Determination**

Please find enclosed the Scoping Determination for the Tremont Crossing Project, consisting of approximately five hundred thousand (500,000) square feet of retail space, two hundred thousand (200,000) square feet of office space, two hundred thousand (200,000) square feet of residential space, fifty-eight thousand (58,000) of cultural space and approximately one thousand seven hundred (1,700) parking spaces. This Scoping Determination describes information required by the Boston Redevelopment Authority in response to the Project Notification Form, which was submitted under Article 80 of the Boston Zoning Code on April 17, 2012 and noticed in the *Boston Herald* on the same day. Additional information may be required during the course of the review of the proposal.

If you have any questions regarding the Scoping Determination or the review process, please contact me at (617) 918-4429.

Sincerely,

Erico Lopez
Senior Project Manager

Cc. Brenda McKenzie
Heather Campisano

EL/ Tremont Crossing Scope
8.16.12

**BOSTON REDEVELOPMENT AUTHORITY
SCOPING DETERMINATION**

FOR

TREMONT CROSSING PROJECT NOTIFICATION FORM

PREAMBLE

P-3 Partners, LLC (the “Developer” or “Proponent”) submitted to Boston Redevelopment Authority (“BRA”) a Project Notification Form (“PNF”) under Article 80 of the Boston Zoning Code on April 17, 2012 and noticed in the *Boston Herald* on the same day, to construct approximately five hundred thousand (500,000) square feet of retail space, two hundred thousand (200,000) square feet of office space, two hundred thousand (200,000) square feet of residential space, fifty-eight thousand (58,000) of cultural space and approximately one thousand seven hundred (1,700) parking spaces (the “Proposed Project”). Written comments constitute an integral part of the Scoping Determination and should be responded to in the Draft Project Impact Report (the “DPIR”).

Specific concerns below are highlighted for additional emphasis and consideration:

- Traffic. Pursuant to feedback received at the Project Review Committee meeting held on May 8, 2012 at the Reggie Lewis Track and Athletic Center, at the formal BRA Scoping Session held on May 10, 2012 and in the BRA-sponsored public meeting on May 16, 2012 at the Central Boston Elderly Services, traffic is a significant issue that must be addressed by the Proponent. The trip generation anticipated for the Proposed Project for both weekday and weekend will impact an already congested area. The Proponent must identify all anticipated traffic impacts in the DPIR submission and outline mitigation necessary to offset these impacts..

- The Proponents needs to show provide more information relative to Leadership in Energy and Environmental Design (“LEED”) standards. Integrating green building components into the planning and design of new projects improves energy efficiency and promotes responsible and sustainable building practices.

BRA. 1

BRA. 2

- Alternative modes of transportation should be encouraged for employees, residents and patrons of the site. The Developer should encourage alternate modes of transit by providing safe and secure bike storage, locker room and shower facilities and convenient and discounted delivery options for Boston residents.

SUBMISSION REQUIREMENTS

FOR

TREMONT CROSSING, PROPOSAL FOR 500,000 SQUARE FEET OF RETAIL, 200,000 SQUARE FEET OF OFFICE SPACE, 200,000 SQUARE FEET OF RESIDENTIAL SPACE (240 UNITS), 58,000 SQUARE FEET OF CULTURAL FACILITIES, AND 1,700 PARKING SPACES - DRAFT PROJECT IMPACT REPORT

The Boston Redevelopment Authority ("BRA") is issuing this Scoping Determination ("Scope") pursuant to Section 80B-5 of the Boston Zoning Code (the "Code"), in response to a Project Notification Form ("PNF") which P-3 Partners (the "Developer" or "Proponent") submitted on April 17, 2012 to to construct approximately five hundred thousand (500,000) square feet of retail space, two hundred thousand (200,000) square feet of office space, two hundred thousand (200,000) square feet of residential space, fifty-eight thousand (58,000) of cultural space and approximately one thousand seven hundred (1,700) parking spaces (the "Proposed Project"). Notice of the receipt by the BRA of the PNF was published in the *Boston Herald* on April 17, 2012 initiating the public comment period that closed on June 1, 2012. Pursuant to Section 80A-2 of the Code, the Notice and the PNF were sent to all public agencies of the City and other interested individuals and parties. Written comments in response to the Notice and the PNF that were received by the BRA prior to the end of the public comment period are included in the Appendices of this Scope. The Scope requests information that the BRA requires for its review of the Proposed Project in connection with the following:

- (a) Certification of Compliance of the Proposed Project pursuant to Article 80, Section 80B-6 of the Code; and
- (b) Preliminary Adequacy Determination pursuant to Article 80, Section 80B-5.4(c) of the Code; and

The BRA is reviewing the Proposed Project pursuant to Article 80, Section 80B, Large Project Review, which sets out comprehensive procedures for project review and requires the BRA to examine the urban design, transportation, environmental, and other impacts of proposed projects. The Developer is required to prepare and submit to the BRA a Draft Project Impact Report ("DPIR") that meets the requirements of the Scope by detailing the Proposed Project's expected impacts and proposing measures to mitigate, limit, or minimize such impacts. The DPIR shall contain the information necessary to meet the specifications of Section 80B-3 (Scope of Review; Content of Reports) and Section 80B-4 (Standards for Large Project Review Approval) as required by the Scope.

Subsequent to the end of the required seventy-five (75) day public comment period for the DPIR, the BRA will issue a Preliminary Adequacy Determination ("PAD") that indicates the additional steps necessary for the Proponent to complete in order to satisfy the requirements of the Scope and all applicable sections of Article 80 of the Code. If the BRA finds that the PNF/DPIR adequately describe the Proposed Project's impacts and, if appropriate, proposes satisfactory measures to mitigate, limit or minimize such impacts, the PAD will announce such a determination and that the requirements for the filing and review of a Final Project Impact Report are waived pursuant to Section 80B-5.4(c)(iv) of the Code. Before reaching said findings, the BRA shall hold a public hearing pursuant to Article 80 of the Code. Section 80B-6 requires the Director of the BRA to issue a Certification of Compliance before the Commissioner of Inspectional Services can issue any building permit for the Proposed Project.

I. PROPOSED PROJECT DESCRIPTION

The project, as proposed, will be a mixed use project that will include 500,000 square feet of large format retail, which could also have entertainment and recreational uses, 50,000 square feet of smaller shops and boutiques fronting along Tremont Street, 200,000 square feet of office space, 240 units of multi-family residential (approximately 200,000 square feet) made up of studios, one bedroom and two bedroom rental apartments (of which any requisite affordable units will be provided), and 58,000 square feet of cultural facilities that will primarily house a new museum for the National Center for Afro-American Artists ("NCAAA"). The Tremont Crossing development will also include a large public plaza and an adjacent, multi-level parking structure consisting of approximately 1,700 parking spaces (the "Proposed Project").

The Proposed Project is to be located at Parcel P-3 (consisting of Parcel P-3 and a portion of Parcel P3-h in the Campus High School Urban Renewal Area) in Boston's Roxbury neighborhood. The Project site consists of approximately 7.86 acres of land area and is bounded by Tremont Street to the northwest, Whittier

Street to the northeast, Downing Street to the southeast, the Reggie Lewis Track and Athletic Center to the southwest, and the Madison Park Technical Vocational High School and the John D. O'Bryant School of Mathematics and Science to the southwest (the "Project Site").

II. DEVELOPMENT REVIEW REQUIREMENTS - ARTICLE 80

SUBMISSION REQUIREMENTS

In addition to full-size scale drawings, sixty (60) copies of a bound report containing all submission materials reduced to size 8-1/2" x 11", except where otherwise specified, are required. The report should be printed on both sides of the page. In addition, an adequate number of copies must be available for community review. A copy of this Scope should be included in the report submitted for review.

A. GENERAL INFORMATION

1. Applicant Information

a. Development Team

(1) Names

(a) Developer (including description of development entity and type of corporation)

(b) Attorney

(c) Project consultants and architect

(2) Business address and telephone number for each

(3) Designated contact for each

b. Legal Information

(1) Legal judgments or actions pending concerning the Proposed Project

(2) History of tax arrears on property owned in Boston by the Applicant

(3) Evidence of site control over the project area, including current ownership and purchase options of all parcels in the Proposed Project, all restrictive covenants and contractual restrictions affecting the proponent's right or ability to accomplish the Proposed Project, and the nature of the agreements for securing parcels not owned by the Applicant.

(4) Nature and extent of any and all public easements into, through, or surrounding the site.

BRA. 4

BRA. 5

2.

3. Project Area

- a. An area map identifying the location of the Proposed Project
- b. Description of metes and bounds of project area or certified survey of project area
- c. Property Line Map showing the owners of the property with the Proposed Project laid over it in order for the BRA to see who owns the property to be used by the Proposed Project.

BRA. 6

4. Public Benefits

- a. Anticipated employment levels including the following:
 - (1) Estimated number of construction jobs
 - (2) Estimated number of permanent jobsThe Proponent is expected to provide a workforce development plan and needs assessment for the Proposed Project. The Proponent should describe the efforts it will undertake to ensure that an appropriate share of new jobs and construction jobs will be filled by Boston residents.
- b. Current activities and programs which benefit adjacent neighborhoods of Boston and the city at large, such as: child care programs, scholarships, internships, elderly services, education and job training programs, etc.
- c. Other public benefits, if any, to be provided.

BRA. 7

5. Regulatory Controls and Permits

- a. Existing zoning requirements, zoning computation forms, and any anticipated requests for zoning relief should be explained.
- b. Anticipated permits required from other local, state, and federal entities with a proposed application schedule should be noted.
- c. A statement on the applicability of the Massachusetts Environmental Policy Act (MEPA) should be provided. If the Proposed Project is subject to MEPA, all required documentation should be provided to the BRA, including, but not limited to, copies of the Environmental Notification Form, decisions of the Secretary of Environmental Affairs, and the proposed schedule for coordination with BRA procedure.

BRA. 8

6. Community Groups

- a. Names and addresses of project area owners, abutters, and any community or business groups which, in the opinion of the applicant, may be substantially interested in or affected by the Proposed Project.
- b. A list of meetings held and proposed with interested parties, including public agencies, abutters, and community and business groups.

BRA. 9

B. PROJECT DESCRIPTION AND ALTERNATIVES

1. Project Description

The DPIR shall contain a full description of the Proposed Project and its components, including its size, physical characteristics, development schedule, costs, and proposed uses. This section of the DPIR also shall present analysis of the development context of the Proposed Project. Appropriate site and building plans to illustrate clearly the Proposed Project shall be required.

BRA. 10

2. Project Alternatives

A description of alternatives to the Proposed Project that were considered shall be presented and the primary differences among the alternatives, particularly as they may affect environmental conditions, shall be discussed.

BRA. 11

C. TRANSPORTATION COMPONENT

Please refer to the comments and information requested by the Boston Transportation Department ("BTD") along with James Fitzgerald, BRA Sr. Manager, Transportation & Infrastructure Projects included in **Appendix 1**.

BRA. 12

D. ENVIRONMENTAL PROTECTION COMPONENT

1. Leadership in Energy and Environmental Design (LEED)

The Proponent should consider and document how it would use the Leadership in Energy and Environmental Design (LEED) standards. Integrating green building components into the planning and design of new projects improves energy efficiency and promotes responsible and sustainable building practices.

BRA. 13

2. Wind

In general, the Boston Redevelopment Authority (BRA) has adopted two standards for assessing the relative wind comfort of pedestrians. First, the BRA wind design criterion states that an effective gust velocity of 31 mph should not be exceeded more than one percent of the time. The second set of criteria used by the BRA to determine the acceptability of specific locations is based on the work of Melbourne. The placement of wind measurement locations shall be based on an understanding of the pedestrian use of the Proposed Project and the surrounding area. This set of criteria is used to determine the relative level of pedestrian wind comfort for activities such as sitting, standing or walking.

To this end, the Proponent must conduct a complete wind tunnel analysis of the Proposed Project and all Project Alternative scenarios set forth in section IV-C of this Scoping Determination to evaluate the Pedestrian Level Wind (PLW) impacts of each extending a minimum of 1,500 feet from the base of the Proposed Project. Measurement points for this PLW analysis should be placed at all building entrances, entrances to public transportation stations, crosswalks and public sidewalks, public plazas and gathering areas, parks and green spaces.

BRA. 14

These PLW studies must conform to the following specifications:

- Customary Wind Roses based on aggregated Boston Wind data from Logan Airport 1945-1996
- Special test cases for conditions with sustained wind speeds of 30, 40, and 50 MPH; with gusts up to 1.5X sustained wind speed.

1. Noise

The Proponent shall establish the existing noise levels at the Proposed Project site and vicinity and shall calculate future noise levels after project completion, thus demonstrating compliance with the Interior Design Noise Levels (not to exceed day-night average sound level of 45 decibels) established by U.S. Department of Housing and Urban Development, as well as applicable City of

BRA. 15

Boston, Commonwealth of Massachusetts and Federal noise criteria.

Mechanical equipment such as chillers, garage exhaust fans, and emergency generators have the potential to cause nuisance levels of noise and thus due to the Proposed Project's proximity to an adjacent residential neighbors, appropriate low-noise mechanical equipment and noise control measures will be required in accord with the Regulations for Control of Noise in the City of Boston and the Commonwealth of Massachusetts. The Proponent shall also describe any other measures necessary to minimize and/or eliminate adverse noise impacts from the Proposed Project.

BRA. 15
cont'd

2. Shadow

The Proponent shall be required to perform a shadow analysis for the existing and Build conditions for the hours 9:00 a.m., 12:00 noon, and 3:00 p.m. for the vernal equinox, summer solstice, autumnal equinox, and winter solstice and for 6:00 p.m. during the summer and autumn and that due to the time differences (daylight savings v. standard), the autumnal equinox shadows would not be the same as the vernal equinox shadows and therefore separate shadow studies were included for the vernal and autumnal equinoxes.

BRA. 16

The shadow impact analysis must include net shadow from the Proposed Project as well as existing shadow and clearly illustrate the incremental impact of the Proposed Project. For purposes of clarity, new shadow should be shown in a dark, contrasting tone, distinguishable from existing shadow. The shadow impact study area shall include, at a minimum, the entire area to be encompassed by the maximum shadow expected to be produced by the Proposed Project. The build condition(s) shall include all buildings under construction and any proposed buildings anticipated to be completed prior to the completion of the Proposed Project. Shadows from all existing buildings within the shadow impact study area shall be shown. A North Arrow shall be provided on all figures. Shadows shall be determined by using the applicable Boston Azimuth and Altitude data.

Particular attention shall be given to existing or proposed public open spaces and pedestrian areas, including, but not limited to, the existing sidewalks and pedestrian walkways within, adjacent to, and in the vicinity of the Proposed Project and the existing and

proposed plazas, historic resources, and other open space areas within the vicinity of the Proposed Project.

BRA. 16
cont'd

3. Daylight

(Please refer to Urban Design comments)

4. Air Quality

The Proponent shall be required to provide a description of the existing and projected future air quality in the Proposed Project vicinity and shall evaluate ambient levels to determine conformance with the National Ambient Air Quality Standards (NAAQS). Careful consideration shall be given to mitigation measures to ensure compliance with air quality standards.

A future air quality (carbon monoxide) analysis shall be required for any intersection (including garage entrance/exits) where the level of service (LOS) is expected to deteriorate to D and the Proposed Project causes a 10 percent increase in traffic or where the level of service is E or F and the Proposed Project contributes to a reduction in LOS.

The study shall analyze the existing conditions, future No-Build and future Build conditions, for all Project Alternatives. The methodology and parameters of the air quality analysis shall be approved in advance by the Boston Redevelopment Authority (BRA) and the Massachusetts Department of Environmental Protection (DEP). Mitigation measures to eliminate or avoid any violation of air quality standards shall be described.

BRA. 17

A description of the Proposed Project's heating and mechanical systems including location of buildings/ garage intake and exhaust vents and specifications, and an analysis of the impact on pedestrian level air quality and on any sensitive receptors from operation of the heating, mechanical and exhaust systems, including the building's emergency generator as well as the parking garage, shall be required. Measures to avoid any violation of air quality standards shall be described.

The Construction Management Plan (CMP) shall include mitigation measures to ensure the short-term air quality impacts from fugitive dust expected during the early phases of construction from demolition of existing buildings and site preparation activities are

minimal. These measures must be specifically designed to avoid negative impacts to the Proposed Project site's residential neighbors.

5. Sustainable Design/Green Buildings

The purpose of Article 37 of the Boston Zoning Code is to ensure that major buildings projects are planned, designed, constructed and managed to minimize adverse environmental impacts; to conserve natural resources; to promote sustainable development; and to enhance the quality of life in Boston. Any proposed project subject to the provisions of Article 37 shall be LEED Certifiable (U.S. Green Buildings Council) under the most appropriate LEED rating system. Proponents are encouraged to integrate sustainable building practices at the pre-design phase. Proposed projects which are subject to comply with Section 80B of the Boston Zoning Code, Large Project Review, shall also be subject to the requirements of Article 37.

The LEED 2009 for New Construction and Major Rehabilitation Checklist that the Proponent submitted as part of the PNF filing fails to demonstrate compliance with Article 37, as the Proponent has indicated that the Proposed Project will achieve 17 points. The Proposed Project is required to achieve a minimum of 40 points under the LEED 2009 for New Construction and Major Rehabilitation rating system, in order to demonstrate compliance with Article 37.

The Proponent shall be required to revise and update the LEED 2009 for New Construction and Major Rehabilitation Checklist, so as to demonstrate compliance with Article 37. In addition, prior to the Article 80B process completion the Proponent shall be required to submit a Final Article 37 Submission Package. This package shall include the most current and accurate LEED Checklist, together with a supporting comprehensive narrative detailing how each of the points will be achieved. Please refer to the USGBC guidelines as to what is deemed necessary to demonstrate that the point has been achieved (or will be).

E. URBAN DESIGN COMPONENT

1. Connectivity

As currently designed the building seems to have little relationship to the surrounding neighborhood. While we require an active street front along Tremont Street the concern is the remaining three elevations are large blank walls with little or no transparency or physical connections to the surrounding neighborhood. They should be asked to explore alternatives that open up the building on all four sides and develop a building that has many fronts and feels more connected to the other sides of the neighborhood.

BRA.19

2. Scale

As the design progresses the overall scale of the building needs to be addressed. The massing, materials and building elements need to relate at a pedestrian scale. The current design lacks a finer grain scale that would make the building feel more a part of the neighborhood. Some additional study showing the surrounding buildings and how they begin to relate to their neighbors is needed. This can be done with additional drawings showing the buildings on either side and across the street. Building materials and elements need to be chosen and designed to reinforce this more intimate scale.

BRA. 20

3. Design

a. The treatment of the garage and the rear and side elevations of the large scale retail currently design are largely blank and not very inviting. While we understand that there will need to be some areas for "back of the house stuff" there are a number of examples of buildings in the Boston area that treat these areas in a manner that is more interesting and inviting.

BRA. 21

b. The Center Public Plaza architecturally and programmatically should be integrated with the surrounding uses to enhance its active and vibrant public realm.

BRA. 22

c. The design should establish a clear, strong identity to promote the community vision and site potential while

BRA. 23

articulating the diverse uses with a coherent architectural expression.

BRA. 23
cont'd

d. The design should ensure an active retail environment the full length of the pedestrian way from Whittier Street on one end to the WSHC on the other end. The project team also needs to discuss what happens at the ends of the pedestrian way. In addition, the plans need to reflect the change of grade from Tremont Street back into the site and show how this would affect the retail environment of the pedestrian way.

BRA. 24

e. The design needs to include a stronger landscape set back /buffer along the length of a wider Whittier Street.

BRA. 25

f. The design needs to recognize the visibility of the southeast corner and the rear of the large retail building across the school field in back from the Dudley Square neighborhood.

BRA. 26

g. The design of the South and East Drives needs to ensure a safe pedestrian environment by providing proper sidewalks, crosswalks, and landscaping. The design needs to account for the stairs to the high school, the current driveway to the school field, and the church behind.

BRA. 27

h. The design should explore creative ideas for the roof areas of the parking structure and large retail building. The ideas could include green building ideas and/or other uses that can be a benefit to the neighborhood.

BRA. 28

6. Submission Requirements

The Proponent shall submit materials to allow for a thorough review of the options available to address the issues cited above as well as others that may arise in further development and examination of the Proposed Project. In addition the Proponent shall provide

a. a series of neighborhood plans at a scale of 1"=100' showing existing and proposed building heights, building uses, pedestrian circulation, and vehicular circulation of cars and service vehicles; the area to be included in the plans shall extend not less than 1,000 feet in all directions from the proposed project site;

BRA. 29

- | | |
|--|---------|
| b. diagrammatic sections through the neighborhood cutting north-south and east-west at the scale and distance indicated above; | BRA. 30 |
| c. true-scale three-dimensional graphic representations of the area indicated above either as aerial perspective or isometric views showing all buildings, streets, parks, and natural features; | BRA. 31 |
| d. a study model at a scale of 1"=40' showing the proposal in the context of other buildings extending 500 feet in all directions from the project site; | BRA. 32 |

The items above except the model shall be submitted in both printed form and as printable and duplicable digital files.

Finally, the Proposed Project will require further review by the Boston Civic Design Commission (BCDC). The Proposed Project was referred to subcommittee at the initial meeting of the BCDC. When sufficient material has been developed, the Proponent should contact David Carlson, Executive Director of the BCDC. The BRA Urban Design reviewer will also assist in determining the Proponent's readiness for presentation. Monthly meetings of the BCDC are scheduled on the first Tuesday of each month. Attached is a memorandum, which briefly describes requirements (which should be considered prerequisites) for this scheduling.

INFORMATION REQUIREMENTS FOR BCDC PRESENTATION

BCDC Review is established by Article 28 of the Code and is a part of the Article 80 Project and Plan review processes. BCDC review is advisory to the BRA and should occur before the BRA Board takes action pursuant to the Article 80 process. In special cases, where this threshold is not applicable, BCDC review should occur during the schematic phase of project design or plan evolution so as to maximize the potential benefit of BCDC comments.	BRA. 33
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The Proponents should have available for presentation to the BCDC the full schematic design submission requirements as set forth in the BRA Development Review Procedures booklet. BRA Urban Design Staff shall have reviewed the Proponent's submission materials to assess their level of completeness before a Project is submitted for BCDC review. BCDC Project Summary Booklets (15) shall be prepared and delivered to the Executive Director at least one week before the first scheduled hearing

before the Commission. Summary booklets need not repeat full PNF/ENF, NPC, Master Plan, or DPIR information, but should contain a brief narrative and fact sheet explaining the Project or Plan as well as sufficient photographs, drawings and sketches to fully understand the Project as proposed in its design and neighborhood context.

In general, the following must be included:

- Site Plan with context (one or more city blocks, depending on Project size);
- Elevations, Sections, and eye-level perspectives with context (adjacent buildings and more, depending on site) showing comparative heights and relationships to buildings, structures, or topography across the street(s) or to the rear. Models are encouraged;
- Fact Sheet with underlying zoning background (including design guidelines, district criteria, status of other public reviews, etc.) as well as proposed height(s), FAR, setbacks, and all other data directly or indirectly affecting the Public Realm (parking supplied vs. required, i.e.); and
- Other Materials deemed necessary by BRA or BCDC staff.

Unless advised otherwise, presentations will be limited to a MAXIMUM of 15 minutes. Please bring easels or other equipment necessary for your presentation. BRA staff working on a Project should be present to answer questions raised by Commissioners. The major reviewing community group(s) should be informed of the presentation beforehand and ask to be represented at the meeting. Proponents should be prepared to submit presentation material to the BRA the morning of the day before a hearing, for BRA urban design staff review. David Carlson can be reached at 617-918-4284. Fax is 617-918-4329. Email is david.carlson.bra@cityofboston.gov

F. HISTORIC RESOURCES COMPONENT

The Proponents should also respond to the comments of the Boston Landmarks Commission Department in **Appendix 1**.

BRA. 34

H. INFRASTRUCTURE SYSTEMS COMPONENT

The standard scope for infrastructure analysis is given below:

1. Utility Systems and Water Quality

- a. Estimated water consumption and sewage generation from the Proposed Project and the basis for each estimate. Include

BRA. 35

separate calculations for air conditioning system make-up water;

- b. Description of the capacity and adequacy of water, storm drain and sewer systems and an evaluation of the impacts of the Proposed Project on those systems;
- c. Identification of measures to conserve resources, including any provisions for recycling;
- d. Description of the Proposed Project's impacts on the water quality of Boston Harbor or other water bodies (Charles River) that could be affected by the project, if applicable;
- e. Description of mitigation measures to reduce or eliminate impacts on water quality;
- f. Description of impact of on-site storm drainage on water quality;
- g. Detail methods of protection proposed for infrastructure conduits and other artifacts, including BSWC sewer lines and water mains, during construction; and
- h. Detail the energy source of the interior space heating; how obtained, and, if applicable, plans for reuse of condensate.

BRA. 35
cont'd

Thorough consultation with the planners and engineers of the utilities will be required, and should be referenced in the Infrastructure Component section.

2. Energy Systems

- a. Description of energy requirements of the Proposed Project and evaluation of the Proposed Project's impacts on resources and supply; and
- b. Description of measures to conserve energy usage and consideration of the feasibility of including solar energy provisions or other on-site energy provisions.

BRA. 36

Additional constraints or information required are described below. Any other system (emergency systems, gas, steam, optic fiber, cable, etc.) impacted by this development should also be described in brief.

- The location of transformer and other vaults required for electrical distribution or ventilation must be chosen to minimize disruption to pedestrian paths and public improvements both when operating normally and when being serviced, and must be described.
- Sewer systems and storm water systems must be separated if possible; utilization of combined systems should be avoided. Thorough analysis and continuing discussions with BWSC are required.
- Water supply systems adjacent to the Proposed Project and servicing the Proposed Project should be looped so as to minimize public hazard or inconvenience in the event of a main break.

BRA. 36
cont'd

In addition, the Proponent should respond to the comments by the Boston Water and Sewer Commission found in **Appendix 1**.

I. DEVELOPMENT IMPACT PROJECT COMPONENT

Based on square footage and use the Proposed Project will be subject to and be required to enter into a Development Impact Project ("DIP or Linkage") agreement. A full analysis of square footage should be submitted in the DPIR. See below for a breakdown of payment.

Housing Linkage:

DIP Uses	??????? square feet
Exclusion:	<u>-100,000</u>
	??????
	x <u>\$7.87</u> /square foot
	\$??????????

BRA. 37

Jobs Linkage:

DIP Uses	????????? square feet
Exclusion	<u>-100,000</u>
	??????
	x <u>\$1.57</u> /square foot
	\$??????????

J. PUBLIC NOTICE

The Proponent will be responsible for preparing and publishing in one or more newspapers of general circulation in the city of Boston a Public Notice of the submission of the Draft Project Impact Report (DPIR) to the BRA as required by Section 80A-2. This Notice shall be published within five (5) days after the receipt of the DPIR by the BRA. Therefore, public comments shall be transmitted to the BRA within sixty (60) days of the publication of this Notice.

Sample forms of the Public Notices are attached as **Appendix 3**.

Following publication of the Public Notice, the Proponent shall submit to the BRA a copy of the published Notice together with the date of publication.

Boston Redevelopment Authority

BRA 1 Identify all anticipated traffic impacts.

Please see Section 3 for a discussion of all traffic impacts.

BRA 2 Provide more information on LEED standards.

Section 5.12 sets forth a LEED checklist and presents a narrative relative to the Project's approach to sustainable design. Additionally, Appendix 6 sets forth an analysis relative to the Project's Article 37 compliance.

BRA 3 Alternative modes of transportation should be encouraged.

The Project includes bicycle storage within the parking garage and other requires areas within the Project Site. Other measures to encourage alternate modes of transportation are outlined in Section 3 and in the Public Benefits narrative- Section 1.2.6.

BRA 4 Provide Proponent identification.

The Proponent's identification is set forth in Section 1.1 and Section 1.2.4.

BRA 5 Provide listed legal information.

Please see Section 1.5.

BRA 6 Provide area map of Project Site including survey and ownership.

The area map annotated with ownership consideration is set forth as Figure 7-5: Parcel Exhibit.

BRA 7 What are the public benefits of the project?

See Section 1.2.6.

BRA 8 What are existing zoning requirements of site and what are any anticipated permits required including status of MEPA?

See Section 1.3 for a discussion of zoning related issues and Section 6.5 relating to MEPA requirements.

BRA 9 Who are the abutters to the Project Site and what meetings have been held with interested parties?

The abutters to the Project Site comprise of:

1. Whittier Street Apartments;
2. Good Sheppard Church;
3. Madison Park High School;
4. Whittier Street Health Center;
5. The Reggie Lewis Track and Athletic Center;
6. The Boston Police Department; and
7. Northeastern University.

The Proponent has met iteratively with all abutting parties over the course of its Tentative Designation.

BRA 10 Provide Project description.

Please refer to Section 1.2.2 for a description of the Project.

BRA 11 What were the alternative to the proposed Project that were considered?

Please refer to Section 1.6 for a discussion of alternatives to the proposed project that were considered by the proponent.

BRA 12 Please respond to transportation related comments.

Section 3 responds to all of the transportation related comments in the Scoping Determination including BTB and James Fitzgerald of the BRA.

- BRA 13** **Proponent should consider how it will utilize LEED standards.**
- Please refer to Section 5.12 and see Appendix 6 for a discussion of LEED standard considerations.
- BRA 14** **Provide a wind analysis.**
- A wind analysis is set forth in Section 5.5.
- BRA 15** **Establish existing noise levels at the Project Site and provide an analysis on the Project's noise impacts.**
- Existing noise conditions and the Project's noise impacts can be found in Section 5.3 and Appendix 5.
- BRA 16** **Provide a shadow analysis.**
- Please refer to Section 5.1.
- BRA 17** **Provide an air quality analysis.**
- Please refer to Section 5.2 and Appendix 4.
- BRA 18** **Provide a LEED checklist as required by Article 37.**
- The Project's LEED checklist can be found as Figure 5-17: LEED Checklist.
- BRA 19** **Explore ways by which the Project can connect with its surroundings.**
- A discussion of the Project's neighborhood context is set forth in Section 4.2.
- BRA 20** **The scale of the Project's buildings needs to be addressed.**
- The scale of the Project's building is addressed in Section 4.1 and Section 4.2.
- BRA 21** **The treatment of the garage and rear and side elevations are not very inviting.**
- Particular attention has been paid to the treatment of the garage and side elevations in further iterations of the Project's design since the filing of the PNF. The Proponent will incorporate façade treatment and/or additional materials to the design of the parking structure to

maintain a harmonious relationship with its surroundings. Please refer to Section 4.1 for further discussion of these considerations.

BRA 22 Integrate the central plaza with the project's uses.

The central plaza is at the “heart” of the Project and is the defining feature that connects all of its uses by way of its channeling energy. The Proponent’s architectural team designed the central plaza as an “urban room” which will capture the pedestrian flow through the Project. Please refer to Section 4.1 for a discussion of the central plaza.

BRA 23 Design should establish a clear, strong identity.

See section 4.1 for a discussion of building design considerations.

BRA 24 Ensure an active retail environment along Tremont Street and address the Project Site grade change on the anticipated retail program.

The Project’s uses will include smaller shops, restaurants and boutiques along the entire edge of Tremont Street. The Proponent intends to include an element of al fresco dining at the Tremont sidewalk which will further enhance the pedestrian retail experience.

Currently, along the Project's Tremont Street frontage, the site slopes from west to east quite dramatically, such that the intersection of Tremont Street and Whittier Street is at an elevation that is approximately nine (9) feet lower than the intersection of Tremont Street and South Drive, the latter of which is the name given to identify the main driveway entrance into the development. Since it is intended that the Tremont Street frontage of the Project will be lined with a series of small retail stores, boutiques and restaurants, this grade change presents access problems and ADA compliance issues. To respond to this challenge, the Proponent has two workable solutions that are dependent on tenant mix, size of respective stores and specific uses, all of which are unknowns at the time of this DPIR submission. Therefore, depending on the outcome of the Proponent's leasing efforts, the grade change can be handled by: (a) creating a series of external steps and handicap ramps to gain access to specific stores; or (b) internally adjusting the elevation of the floor slabs of these stores as

the grade changes externally from east to west or visa-versa. Under the former option (option “a”), the currently designed twenty (20) foot deep front sidewalk along Tremont Street would accommodate its implementation, and in the latter option (option “b”), pre-leasing the stores in question would define their respective slab dimensions and grade elevation for appropriate street access.

BRA 25 Project needs a stronger landscape buffer at Whittier Street.

Please see Section 4.1.5 for a discussion of the landscape treatment along Whittier Street.

BRA 26 Design must recognize the southeast corner and rear of the retail building.

The Proponent has now extended its residential building to wrap around a significant portion of Whittier Street. By doing so, the southeast portion of the Project is now more closely aligned with the character of the established neighborhood. See Section 4.2 for a discussion of the Project’s neighborhood context.

BRA 27 South and East Drives need to provide safe pedestrian environment.

The Proponent is providing new ADA/AAB-compliant sidewalks on both sides of South Drive and East Drive. See Section 4.1.6 Pedestrian Circulation for additional information regarding pedestrian environments along South Drive and East Drive.

BRA 28 Explore creative ideas for roof areas.

The Proponent intends to incorporate a roof terrace for both its residential and hotel uses. Additionally, the Proponent is exploring options to lease portions of the roof of the retail building to entities that install and maintain photovoltaic panels. For a more detailed description of the roof design of the project, please refer to Section 4.1.

BRA 29 Provide neighborhood plans at a scale of 1” = 100’ extending not less than 1,000 feet in all directions.

Please see Figure 4-9: Neighborhood Plan (Section 4.2).

BRA 30 Provide diagrammatic sections through the neighborhood.

Please see Figure 4.11 through Figure 4.12 (Section 4.2).

BRA 31 Provide three-dimensional graphic representation showing perspectives of the Project's buildings.

Please refer to Figures 1-3 through 1-8 in Section 1.2.3.

BRA 32 Provide a study model at a scale of 1" – 40'.

The Proponent has commissioned a study model to the specification set forth in the Scoping Determination and will deliver to the BRA as is required.

BRA 33 BCDC review will be required.

The Proponent presented the Project to the BCDC on May 1, 2012 in conjunction with the public review period of the PNF filing. The BCDC determined that the Project would be subject to review of a subcommittee. The Proponent will continue the review process with the BCDC as part of the public review period requisite of the DPIR filing.

BRA 34 Respond to the comments from the Boston Landmarks Commission.

Please refer to Section 9 herein.

BRA 35 Please respond to the requested utility and water quality requests.

See Section 9 Response to Comments - Boston Water and Sewer Commission (BWSC) for the Proponent's detailed response to BWSC requests regarding utility and water quality components of the Project.

BRA 36 What are the anticipated energy requirements of the Project and what are anticipated measures to conserve energy?

The anticipated energy measures to conserve energy at the Project will include:

1. Condensing Boilers
2. High Efficiency Chillers
3. High Efficiency Heat Pumps
4. VFDs on Pumps
5. Energy Recovery

6. Plate & Frame Heat Exchanger for Free cooling on Office / Museum / Retail side
7. Improved building envelope insulation
8. Improved building glazing
9. Combined heat and power

BRA 37

What is the square footage that the proposed Project will use relative to its requirements as a Development Impact Project?

The Project will be a Development Impact Project. Please refer to Section 1.4.

APPENDIX 1
COMMENTS FROM CITY PUBLIC AGENCIES



BOSTON
TRANSPORTATION
DEPARTMENT

ONE CITY HALL PLAZA/ROOM 721
BOSTON, MASSACHUSETTS 02201
(617) 635-4680/FAX (617) 635-4295

June 8th, 2012

Erico Lopez
Boston Redevelopment Authority
Boston City Hall
Boston, MA 02201

RE: Tremont Crossing Project (P-3) Project Notification Form

Dear Mr. Lopez,

Thank you for the opportunity to comment on the Article 80 Large Project Review submittal for the Tremont Crossing Project in Roxbury. The proposed mixed use development consists of new construction of a four story Large-Format Retail facility totaling approximately 500,000 square feet, Ground Floor Retail of approximately 50,000 square feet, nine stories of Office Space totaling approximately 200,000 square feet, eleven stories of Residential Space (240 units) totaling approximately 200,000 square feet, a three story Museum Space for the National Association of Afro-American Artists on three levels totaling approximately 58,000 square feet and a proposed nine story parking garage facility consisting of approximately 592,000 square feet. The Project location is along Tremont Street situated on BRA designated Parcel P-3 directly across from the Boston Police Headquarters building. The Project garage is proposed to accommodate approximately 1,700 parking spaces.

The Boston Transportation Department has reviewed the Expanded Project Notification submission for Large Project Review and submits the following comments and questions.

Parking

- The proposed plan for a garage to house seventeen hundred (1,700) parking spaces exceeds the recommended BTD parking ratios for a mixed use project of this size. The proposed 1.64 ratio is substantially above BTD guidelines especially in light of close proximity to a major MBTA facility. (Ruggles Station)
- Even when accounting for and deducting the existing parking at the site for a variety of institutions including BPD Headquarters, the Reggie Lewis Track Center, Madison Park High School, and the new Whittier Street Health Center, the number of spaces exceeds a maximum 1.25/1000 per sf of development.
- The Letter of Cooperation with BPS found in Appendix 1 implies accommodation of fifty eight (58) spaces for school use. Section 3.1.6.7 of the PNF also mentions an agreement for future lease of seventy five (75) spaces to Whittier Street Health Center. However, it is not clear to BTD concerning the displacement of existing BPD parking both temporarily and permanently at the site.

BTD. 1

BTD. 2

THOMAS M. MENINO, Mayor
Thomas J. Timlin, Commissioner

- Section 3.1.6.7 refers to an understanding of a temporary BPD parking accommodation at the nearby Crescent Parcel. If that is the case then there are significant access, parcel ownership, ROW and abutter issues that would need to be reviewed by BTM, PWD, ISD and the Commonwealth of Massachusetts which hold title to a segment of the Crescent Parcel. BTM. 3
- As it pertains to a more permanent solution for the displacement of the current BPD parking, BTM would appreciate being included in any negotiations or discussions of ideas or proposals. Is use of garage space being considered as a possibility?
- Today, curbside parking for authorized BPD vehicles, pick up drop off and HP is allowed along the Tremont Street frontage of the Schroeder Building during off peak hours. The proposed access plan calls for elimination of that on street parking entirely in order to accommodate travel and turning lanes. BTM recommends retention of this parking off peak if at all possible.
- BTM supports the proposal for on street parking to be instituted along the east side Tremont Street to support the ground floor retail and to help create a more urban streetscape. If however, an acceptable alternative for replacement of the BPD headquarters on street parking is not reached, then the east side parking may need to be reconsidered. BTM. 4
- With the proposal for reconfiguring Whittier Street to two lanes, current unregulated space for approximately 25 vehicles would have to be removed on one side of the roadway. Given that the majority of those spaces are used by commuters from outside the neighborhood, BTM does not have a major concern about the loss of those unregulated spaces. However, in concurrence with Section 3.1.11, in order to accommodate and preserve parking for the abutting Whittier Street Housing tenants, BTM is recommending a plan for RPP along the north side of Whittier Street. BTM. 5
- Please indicate number of proposed HP and employee reserved spaces on the site plan.
- Please indicate parking stall dimensions on the site plan. BTM. 6
- BTM asks that the proponent include EV charging stations/parking spaces within the garage facility as well as car sharing, vanpool and shuttle spaces.
- Was an event scenario analysis conducted for site parking? Both the Reggie Lewis Track Center and Madison Park High School generate significant event parking demand and overflow. BTM. 7

Site Access/Circulation

- BTM understands the challenges the Proponent faces working within the limitations of the existing roadway network and site access points. We also appreciate that the team has taken our preliminary design comments into account in the project submission. There are however still issues of significant concern as they relate to site access.
- As currently designed, BTM believes that the proposed signal at Tremont Street and site drive (South Drive) will not operate at an acceptable level. The signalized site drive proposed for the main entrance is approximately within 200 feet of the existing signalized intersection at Prentiss Street. Congestion and queueing would be problematic. Possible solution may simply be unsignalized intersection allowing right in and right out only. BTM asks that the proponent meet with our planning and engineering staff to discuss in further detail. BTM. 8
- The proposal to eliminate on street parking servicing the Police Headquarters in order use as a third travel lane will need further discussion. A concrete understanding between BTM Engineering, the Proponent and BPD would need to be agreed upon before acceptance. BTM. 9

- The proposed northbound turning lane at Tremont and Site drive essentially reduces the thru travel way to two lanes and only one if there is illegal parking along the curbline. Proponent must work with BTM Engineering to determine a feasible cross section. | BTM. 10
- For the proposed alterations to Tremont Street, Whittier Street, South Drive and East Drive, right of way agreements, permitting and PIC review will need to be formalized and approved with the City's PWD, BRA and Law Dept before acceptance. | BTM. 11
- Pavement marking and signage plans will be required as part of site plans submission for review by both BTM and PWD for public and internal roadways. | BTM. 12
- Section 3.1.4 Summary of findings proposes an exclusive pedestrian phase at Tremont/Site Drive. Proponent must work with BTM planning and engineering to determine whether exclusive pedestrian phase is feasible at this location given peak hour volumes. | BTM. 13
- What is the anticipated distribution and circulation pattern of passenger vehicles/delivery vehicles for the primary and secondary garage access/egress? Will southbound ingress traffic be guided to the rear by way of Whittier Street and northbound traffic by way of Tremont? | BTM. 14

Study Methodology

- Although an updated Traffic Model network for the site area, Future No Build development projects including Parcels 9+10, and established BTM Mode Splits were all utilized per the BTM scoping, BTM has concerns regarding lane use assumptions and other discrepancies regarding volumes (BTM Engineering) | BTM. 15
- Although BTM agreed that Zone 4 was the most applicable for the project site, especially given the proximity to Ruggles Station, what operations results are shown applying a Zone 15 mode split? The ITE rates applied for large retail, the VOR of 1.8 for retail/museum and the Mode Split Zone 4 applications need further evaluation with BTM in order to calculate a more precise trip generation estimate. The ITE code for large retail rate may be overstating trips as well as the 1.8 VOR while conversely the Zone 4 retail split may be underestimating the trips. | BTM. 16

Signalized/Unsignalized Intersection Capacity Analysis

- Even with added signalization, additional turning lanes and an assumption of a third southbound Tremont street travel lane between Ruggles Street and Prentiss Street, the LOS at key intersections deteriorates to F with greater than 120 sec delay times. BTM requests that the Proponent determine additional mitigation or proposals in order alleviate the impact. | BTM. 17
- BTM finds it curious that the No Build LOS and the 2017 Build LOS for key intersections are very similar even with the addition of the over one million square feet of development proposed by the developer. BTM requests the Proponent reevaluate the capacity analysis and modeling after consultation with BTM Planning & Engineering staff.

Service & Loading

- BTM appreciates that most service and loading will take place off street in the enclosed area at the rear of the project site along East Drive. As per standard, BTM requests the Proponent provide the appropriate truck turning templates for the site drive entrance, South Drive, East Drive and the rear loading area. | BTM. 18

- The proposed on street loading zone, bus drop off and short term public parking along the Tremont Street development frontage may be too complex to manage as described and could lead to negative traffic implications. There is a likelihood that delivery trucks and school busses dropping off find occupied curbside and have to unload from a travel lane without proper scheduling logistics, regulations and enforcement. BTM requests the Proponent's traffic engineering firm present plans to BTM planning and engineering on curbside regulations and management.

BTD. 19

Bicycle Accommodations

- Bicycle accommodations proposed for the project in the PNF are inadequate. BTM requests the Proponent refer to the City's bicycle section of the City's Complete Streets guidelines. (www.bostoncompletestreets.org)
- Secure bicycle storage is strongly recommended for both the residential and commercial office component of the project.
- Connections from the proposed development to existing (SW Corridor/Ruggles St) and planned (Malcolm X Blvd/Melnea Cass/SBHT) bicycle networks must be strengthened as part of the project and consistent with the Boston Bicycle Network Plan.
- Shower facilities as a component of the planned commercial space is also strongly recommended.

BTD. 20

Transportation Demand Management

- BTM applauds the proponent's inclusion of a Transportation Demand Management Program and encourages further expansion, aggressive marketing and implementation of the following:
 - Transit incentives/pre-tax benefit
 - Real time transit scheduling information provided online, and accessible by hand held device or on large screens in common areas/lobbies.
 - Transportation coordinator
 - Information and promotion of travel alternatives
 - MassRIDES/TripMATCH participation and utilization
 - Rideshare parking spaces
 - EV charging stations/reserved parking in garage
 - Guaranteed Ride Home and Carsharing Programs
 - Secure bicycle storage facilities both exterior and interior
 - Limit and charge fee for employee parking

BTD. 21

Construction Management Plan (CMP) & Transportation Access Plan Agreement (TAPA)

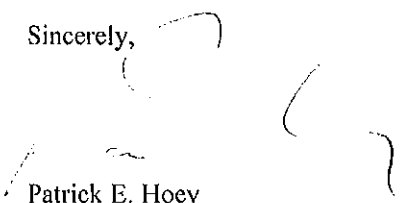
- As referenced in Table 2-2 of the General Information Chapter, Article 80 review process requires the proponent submit a Construction Management Plan and Transportation Access Plan Agreement to BTM. The CMP will detail the schedule, staging, parking and other impacts of the construction activities. The TAPA will document and ratify the development's access, site plan and mitigation requirements.

BTD. 22

Finally, thank you again for the opportunity to review and comment on this landmark project. BTM is very much in support of the overall goals and objectives of the P-3 Partners and the unique concept of connecting "Commerce and Culture". BTM in no way wishes to hinder the advancement or success of this ambitious project.

As our department continues to review and analyze the project submission, we encourage the development team to join our staff in further refining the plans. If you have any questions regarding this letter or formation of a TAPA for the project, please feel free to contact me at (617) 635-2454.

Sincerely,



Patrick E. Hoey
Senior Transportation Planner
BTD Policy and Planning

Cc: Vineet Gupta, Director, BTD Planning
John DeBenedictus, Director, BTD Engineering
Don Burgess, Supervisor of Traffic Engineers
Carl McKenzie, BTD Engineering
Para Jayasinghe, City Engineer, PWD Engineering
William Egan, PWD Engineering
Alywn McLeod, MONS
Jim Fitzgerald, BRA

Boston Transportation Department

BTD 1 The planned garage exceeds the recommended ratios.

See Section 3.10 of the DPIR for discussion on Tremont Crossing parking ratios.

BTD 2 The plan is not clear for the displaced Boston Police Department parking spaces.

The Proponent understands that the relocation of the ancillary parking by the Boston Police Department on the Project Site is being handled by the BRA at this time.

BTD 3 There are concerns related to the Crescent parking lot relocation of the BPD parking spaces.

The Proponent understands that the Police have already started to park at the Crescent parking lot. The BRA is handling the relocation.

BTD 4 BTD recommends retention of curbside parking outside BPD HQ during off-peak hours.

The proposed cross section of Tremont Street will allow on-street parking in front of the BPD HQ between Ruggles Street and Prentiss Street during both peak and off-peak hours. Parking regulations of these spaces will be discussed with BTD and posted at their direction.

BTD 5 Recommends a plan of Resident Parking Permits along north side of Whittier Street.

Per the recommendation of BTD, the Proponent will prepare a Residential Parking Permit plan and submit it as part of the Transportation Access Plan Agreement (TAPA) between the BTD and the Proponent.

BTD 6 What are number of handicapped and employee parking spaces at the Project Site?

See Section 3.10 of the DPIR

BTB 7 Was an event scenario study conducted?

The event parking scenario is no longer required by the BTB as part of the Project.

BTB 8 BTB asks that Proponent meet with them to discuss signalized intersection at Prentiss and Tremont Streets and South Drive.

The Proponent has met with BTB Engineering on several occasions to discuss the proposed signalization of the South (Site) Drive and Prentiss Street and Tremont Street. At the direction of BTB, the intersections of Tremont Street at Prentiss Street and South Drive are to operate as a single intersection under one traffic signal controller.

BTB 9 The proposal to eliminate BPD parking in front of their headquarters needs further discussion.

Parking in front of the BPD headquarters is to remain as a result of changes to the proposed Tremont Street cross section.

BTB 10 Work with BTB to determine if the main entrance to the Project on Tremont Street serves as a feasible cross section.

The Proponent has worked with the BTB to revise the proposed cross section of Tremont Street as follows: three (3) northbound through travel lane and one (1) right turn lane, a bicycle lane and a parking lane; two (2) southbound through travel lanes and one left turn lane into the site, a bicycle lane and parking lane. The bicycle lane will be striped in the future when BTB implements formal bicycle lanes in the Tremont Street corridor.

BTB 11 The proposed alterations to Tremont Street and other streets will require the approval of various City agencies.

The Proponent has had discussions with various City agencies and will work with them to secure the necessary permits and sign offs for the proposed changes to Tremont Street and the other streets in the project area.

BTB 12 Pavement marking and signage plans will be required.

The Proponent will submit engineered site plans as part of the TAPA process showing all proposed pavement markings and signage.

BTD 13 **Is the proposed exclusive pedestrian phase at Tremont/South Drive feasible at peak hour volumes?**

Based on discussions with BTD, concurrent pedestrian phase with Lead Pedestrian Interval is now proposed at Tremont Street/South Drive intersection.

BTD 14 **What are the distribution and circulation patterns of the main and secondary access/egress?**

The primary access/egress to the site is South Drive. All truck traffic will be directed this way. The Proponent does not intend to direct any traffic through Whittier Street. It is anticipated that over time some southbound traffic will use Whittier Street to access the site.

BTD 15 **BTD has concerns relating to lane split assumptions and volumes in traffic model.**

The Proponent used the Synchro Model provided by the BTD for the analysis.

BTD 16 **ITE rates and Mode Split 4 Zone assumption need further consideration as they pertain to the Project's traffic model.**

Based on further discussions, the BTD has confirmed its original direction to utilize mode split assumptions for Zone 4 for the project site.

BTD 17 **Request that additional mitigation be implemented to alleviate LOS impacts and requests information pertaining to similarities in Build and No Build scenarios.**

See Section 3.9.6 and 3.11 of the DPIR for revised traffic analysis and proposed mitigation.

BTD 18 **Provide the appropriate truck turning templates for entrances, South Drive, East Drive and rear loading area.**

Truck turning templates are included in in the Figure, Loading Bay Truck Turning in Appendix 3-I: Proposed Improvement Plans.

BTD 19 Present plan on curbside regulations and management.

The site circulation plan contained set forth in Figure 3.12 shows the location of proposed on street parking and drop-off areas. As part of the TAPA process, the Proponent will prepare engineered site plans that show parking regulations and management.

BTD 20 Bicycle accommodations are inadequate.

The Proponent has proposed five-foot bicycle lanes on either side of Tremont Street between Ruggles Street and Prentiss Street per discussions with BTM. Connections from the site to SW Corridor Park will be via existing bicycle lanes on Ruggles Street and proposed “Shared Lane” markings on Prentiss Street. The Proponent is proposing secured parking spaces for bicycles within the parking garage.

BTD 21 Proponent is encouraged to further expand its Transportation Demand Management program.

Section 3.12 of the DPM presents comprehensive Transportation Demand Management measures. In addition, the Proponent will work with BTM to identify other feasible TDM options for the site.

BTD 22 Must submit a Construction Management Plan and Transportation Access Plan Agreement.

The Proponent will submit a Construction Management Plan and Transportation Access Plan Agreement. See Section 5.10 Construction Impacts.

Lopez, Erico

From: Fitzgerald, James
Sent: Friday, June 01, 2012 12:20 PM
To: Lopez, Erico
Cc: Cannizzo, Michael; Egan, William; Hoey, Patrick; Campisano, Heather; Monestime, Hugues; Ju, Jeong-Jun; Faria, Maria; Carlson, Janet
Subject: P3 Comments

Follow Up Flag: FollowUp
Flag Status: Flagged

Erico,

I obviously share with everyone the concerns associated with traffic in the area and specifically with the degeneration to failing conditions for the Cass, Ruggles, Prentiss and Malcolm X intersections. As Bill pointed out not all "F"s are equal and conditions do not stop getting worse once this threshold is surpassed. For the scoping for the next phase I offer the following specific points for consideration:

- Present the traffic model outputs of a future full-build scenario that assumes the parking remains along the Police Headquarters side of Tremont between Ruggles and Prentiss with 1 through lanes and 1 shared through/left turn lane into the site drive | BRAT. 1
- Present queuing information for the "full build" condition on Tremont Street at both the Ruggles and Prentiss/Site Drive intersections that includes a graphic representation of queue lengths for each lane | BRAT. 2
- Explore changes to the future roadway network as follows and model their combined impacts with the future full-build conditions (the proponent must commit to fully funding and implementing these improvements)
 - Creation of a dedicated left turn only lane into the site drive while keeping the current 2 thru lanes and existing curb lane condition along the Police Headquarters side of Tremont (to gain this additional roadway dimension the curb line along P3 will likely need to be modified) | BRAT. 3
 - Extend the proposed left turn lane for Whittier to just before Ruggles Street
 - Closely analyze the Tremont/Malcolm X intersection and incorporate geometric and signal operations improvements to mitigate the project's impacts (all intersection improvements must be implemented by the proponent)
- Explore alternative drop-off locations to Tremont (i.e. South Drive, Whittier Street) for both the Museum and access to retail | BRAT. 4
- Conduct a shared parking analysis to reveal reductions in the overall parking supplied. Finding the right parking supply is always challenging, but when there is a consistent supply of available parking the ability to meet the assumptions on future non-auto mode shares becomes questionable and this will result in further traffic impacts. | BRAT. 5

Let me know if you have any questions or want to discuss further.

Jim

Boston Redevelopment Authority- Traffic Department

BRAT 1 Present traffic model outputs of Build scenario that assumes parking remains alongside of the BPD headquarters.

See Section 3.9.6 for the revised future Build Scenario. Parking in front of the BPD headquarters is assumed to remain on Tremont Street.

BRAT 2 Present queuing information for the full build condition on Tremont Street at Ruggles and Prentiss Streets.

See the Appendix 3 for queuing information including queue length figures.

BRAT 3 Model the requested changes in the roadway network into the future, full build conditions.

See Section 3.9.6 for revised traffic analysis. Traffic operations at Malcolm X Boulevard and Tremont Street intersection would be greatly improved if concurrent pedestrian phase is implemented. The Proponent will work with the BTM to implement the change if approved.

BRAT 4 Explore alternative drop-off locations for the Project's retail uses.

See Section 3.10 for revised site access and circulation plan.

BRAT 5 Conduct a shared parking analysis.

Parking demand and shared parking analysis are included in Section 3.10.

Boston

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

May 8, 2012

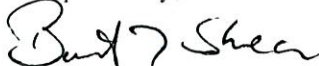
Dear Mr. Lopez:

Regarding the Project Notification Form for the Tremont Crossing Project submitted to the BRA on April 17, 2012 the Boston Fire Department requires the following issues addressed by a qualified individual.

- | | | |
|--|--|--------|
| 1. Emergency vehicle site access to the new buildings as well as existing buildings that might be affected. | | BFD. 1 |
| 2. Impact on availability and accessibility of hydrant locations for new buildings as well as for any existing buildings that might be impacted. | | BFD. 2 |
| 3. Impact on availability and accessibility to siamese connection locations for new buildings as well as for any existing buildings that might be impacted. | | BFD. 3 |
| 4. Impact that a transformer vault fire or explosion will have on the fire safety of the building. Particularly as it relates to the location of the vault. | | BFD. 4 |
| 5. Need for Boston Fire Department permit requirements as outlined in the Boston Fire Prevention Code, the Massachusetts Fire Prevention Regulations (527 CMR), and the Massachusetts Fire Prevention Laws (MGL CH148). | | BFD. 5 |
| 6. For projects involving air-supported structures, it is critical that the impact of the design has on fire safety relative to the interaction of the area underneath the structure to the structure as well as to the interaction of the structure to the area underneath the structure. | | BFD. 6 |

These items should be analyzed for all phases of the construction as well as the final design stage. This project will need permits from the Boston Fire Department as well as the Inspectional Services Department.

Respectfully,



Bart J. Shea
Fire Marshal

Cc: Paul Donga, FPE, Plans Unit, BFD



Thomas M. Menino, Mayor/FIRE DEPARTMENT/115 Southampton Street 02118

 Printed on recycled paper

Boston Fire Department

BFD 1 Address emergency vehicle site access.

See Section 7.7 Proposed Roadway Network for additional information regarding emergency vehicle site access. Site plans within Section 7.7 illustrate turning templates for City of Boston Fire Department emergency vehicles.

BFD 2 What is the impact on availability and accessibility of hydrant locations?

See Section 7.2.3 Proposed Water Service for the location of proposed fire hydrants on the Project. The Proponent will continue to work with Boston Fire Department to coordinate desired hydrant locations.

BFD 3 What is the impact on availability and accessibility to Siamese connection locations?

Detailed plans identifying the locations of all proposed Siamese connections will be provided during the Boston Water and Sewer Commission Site Plan Review process, and will be documented on site plans submitted with applications for Building Permit with Inspectional Services. Plans will be designed and endorsed by a qualified design professional.

BFD 4 What is the impact of a transformer vault fire or explosion to fire safety?

The NSTAR transformer vaults will be designed with a three-hour fire rating. HVAC plans will incorporate a two-speed ventilation system. The ventilation system design will incorporate a fire mode, which will be initiated by the vault smoke detector.

To allow NSTAR to perform routine maintenance, the smoke detectors can be taken out of service. NSTAR must notify the property manager prior to performing this maintenance. A placard shall be installed on all vault doors reading "Caution: Smoke detector installed in the vault. Contact building owner/manager to disable smoke detectors before working within the vault."

BFD 5 Address the need for Boston Fire Department permits.

Fire Department permit regulations will be complied with as part of the process of review of documents with the department and the process of filing Project details and permit applications.

BFD 6 If the Project includes air supported structures, address impact to fire safety.

There are no air supported structures currently anticipated for the Project or in the construction process.

**Boston Water and
Sewer Commission**



980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

May 31, 2012

Secretary Richard K. Sullivan
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Deidre Buckley, EEA No. 14900
100 Cambridge Street
Suite 900
Boston, MA 02114

and

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston City Hall
Boston, MA 02201

Re: Tremont Crossing Project
Environmental Notification Form/Project Notification Form

Dear Secretary Sullivan and Mr. Lopez:

The Boston Water and Sewer Commission (Commission) has reviewed the Environmental Notification Form (ENF) and the Project Notification Form (PNF) for the proposed Tremont Crossing Project in the Roxbury District of Boston.

The proposed project site, Parcel P-3, is on Tremont Street in Lower Roxbury. It includes a 1.6-million square foot (sf) mixed use development that will provide approximately 1 million sf of leasable space and a 592,000 sf parking garage with 1,700 parking spaces.

The site is bounded by Tremont Street to the northwest, Whittier Street to the northeast, Downing Street to the southeast, the Whittier Street Health Center to the southwest, and the Madison Park Technical Vocational High School and John D. O'Bryant School of Mathematics to the southwest. It is owned by the Boston Redevelopment Authority (BRA) which will lease approximately 7.86 acres of the site to the proponent.

According to the ENF/PNF, the proposed water demand for the project is 126,000 gpd. The proponent proposes to connect to the 12-inch low service water main in two locations to provide water service. The Commission owns and maintains the 12-inch water main in addition to a 48-inch transmission main in Tremont Street. There is a low service 12-inch water main on Vernon



Street that runs into the project site and is capped 230 feet southeast of the site adjacent to Madison Park Technical Vocational High School. There is a 6-inch low service water main in Downing Street. The Commission will not permit the proponent to connect to the 48-inch main for fire protection or domestic water services.

According to the ENF/PNF, current proposed sewage generation is 114,500 gpd. For sewage and storm drainage service, the site is served by a 12-inch sanitary sewer and 30x42-inch storm drain in Tremont Street, a 10-inch sanitary sewer and the (2) 99x114-inch Stony Brook Conduit in Whittier Street, a 96-inch by 72-inch storm drain to the southwest and southeast of the site, two 12-inch sanitary sewers, and a 12-inch and 72-inch storm drain to the southeast of the site. The Stony Brook Interceptor, a 48-inch by 54-inch combined sewer and a 15-inch drain run through the project site from west to east.

The Stony Brook Interceptor is a combined sewer that carries the flow from the West Roxbury Low Level Sewer as well as the system in Malcolm X Boulevard. The interceptor flows northeast to the intersection of Hampshire and Whittier Streets and then continues beneath the Whittier Street Apartments. The proponent is planning to reroute a portion of the interceptor around the project site. At an initial meeting with the Chief Engineer of the Commission, the relocation concept was preferred over the construction of buildings on top of the existing Interceptor. The proponent is continuing with final design on the relocated interceptor pipe. The new Interceptor will be sized to carry existing flows as well as any additional flows from the project.

The Commission has the following comments regarding the proposed project:

General

1. Prior to demolition of the buildings, all water, sewer and storm drain connections to the buildings must be cut and capped at the main pipe in accordance with the Commission's requirements. The Developers, P-3 Partners, LLC must then complete a Termination Verification Approval Form for a Demolition Permit, available from the Commission and submit the completed form to the City of Boston's Inspectional Services Department before a demolition permit will be issued. BWSC. 1

2. All new or relocated water mains, sewers and storm drains must be designed and constructed at P-3 Partners, LLC's expense. They must be designed and constructed in conformance with the Commission's design standards, Water Distribution System and Sewer Use Regulations, and Requirements for Site Plans. To assure compliance with the Commission's requirements, the proponent must submit a site plan and a General Service Application to the Commission's Engineering Customer Service Department for review and approval when the design of the new water and wastewater systems and the proposed service connections to those systems are 50 percent complete. The site plan should include BWSC. 2



- the locations of new, relocated and existing water mains, sewers and drains which serve the site, proposed service connections as well as water meter locations. | BWSC. 2 cont'd
3. P-3 Partners, LLC should be aware that the US Environmental Protection Agency issued a draft Remediation General Permit (RGP) for Groundwater Remediation, Contaminated Construction Dewatering, and Miscellaneous Surface Water Discharges. If groundwater contaminated with petroleum products, for example, is encountered, the proponent will be required to apply for a RGP to cover these discharges. | BWSC. 3
 4. A Groundwater Conservation Overlay District has been developed and this project is located adjacent to it. This district is intended to promote the restoration of groundwater levels and reduce the impact of surface water runoff. The applicant for a building permit will be required to construct a structure capable of retaining a specific amount of stormwater accumulated on the site. This retention structure would be designed to direct the stormwater towards the groundwater table for recharge. P-3 Partners, LLC should contact the Inspectional Services Department for further information. | BWSC. 4
 5. The proponent is advised that the Commission will not allow buildings to be constructed over any of its water lines. Also, any plans to build over Commission sewer facilities are subject to review and approval by the Commission. The project must be designed so that access, including vehicular access, to the Commission's water and sewer lines for the purpose of operation and maintenance is not inhibited. | BWSC. 5

Water

1. P-3 Partners, LLC should provide separate estimates of peak and continuous maximum water demand for residential, commercial, industrial, irrigation of landscaped areas, and air-conditioning make-up water for the project with the site plan. Estimates should be based on full-site build-out of the proposed project. P-3 Partners, LLC should also provide the methodology used to estimate water demand for the proposed project. | BWSC. 6
2. In addition to the water conservation measures required by the Massachusetts Plumbing Code and listed in the ENF/PNF, P-3 Partners, LLC should also consider implementing other water saving measures where appropriate. Public restrooms should be equipped with sensor-operated faucets and toilets. | BWSC. 7
3. P-3 Partners, LLC is required to obtain a Hydrant Permit for use of any hydrant during the construction phase of this project. The water used from the hydrant must be metered. P-3 Partners, LLC should contact the Commission's Operations Division for information on and to obtain a Hydrant Permit. | BWSC. 8
4. If potable water is to be used for irrigation of the landscaped areas, the amount should be quantified. If P-3 Partners, LLC plans to install a sprinkler system, the Commission | BWSC. 9



suggests that timers, tension meters (soil moisture indicators) and rainfall sensors also be installed. The Commission strongly encourages the creation of landscape that requires minimal use of potable water.

BWSC.
9 cont'd

5. The Commission is utilizing a Fixed Radio Meter Reading System to obtain water meter readings. For new water meters, the Commission will provide a Meter Transmitter Unit (MTU) and connect the device to the meter. For information regarding the installation of MTUs, P-3 Partners, LLC should contact the Commission's Meter installation Department.

BWSC.
10

Sewage / Drainage

1. P-3 Partners, LLC must submit to the Commission's Engineering Customer Service Department a detailed stormwater management plan which:
 - Identifies best management practices for controlling erosion and for preventing the discharge of sediment and contaminated groundwater or stormwater runoff to the Commission's drainage system when the construction is underway.
 - Includes a site map which shows, at a minimum, existing drainage patterns and areas used for storage or treatment of contaminated soils, groundwater or stormwater, and the location of major control or treatment structures to be utilized during the construction.
 - Provides a stormwater management plan in compliance with the DEP's standards mentioned above. The plan should include a description of the measures to control pollutants in stormwater after construction is completed.
2. Developers of projects involving disturbances of land of one acre or more will be required to obtain an NPDES General Permit for Construction from the Environmental Protection Agency and the Massachusetts Department of Environmental Protection. The Tremont Crossing is responsible for determining if such a permit is required and for obtaining the permit. If such a permit is required, it is requested that a copy of the permit and any pollution prevention plan prepared pursuant to the permit be provided to the Commission's Engineering Customer Services Department, prior to the commencement of construction. The pollution prevention plan submitted pursuant to a NPDES Permit may be submitted in place of the pollution prevention plan required by the Commission provided the Plan addresses the same components identified in item 1 above.
3. The Commission encourages P-3 Partners, LLC to explore additional opportunities for protecting stormwater quality on site by minimizing sanding and the use of deicing chemicals, pesticides, and fertilizers.
4. If P-3 Partners, LLC seeks to discharge dewatering drainage to the Commission's sewer system, they will be required to obtain a Drainage Discharge Permit from the Commission's

BWSC.
11

BWSC.
12

BWSC.
13

BWSC.
14



- Engineering Customer Service Department prior to discharge. | BWSC.
14 cont'd
5. P-3 Partners, LLC must fully investigate methods for retaining stormwater on-site before the Commission will consider a request to discharge stormwater to the Commission's system. The site plan should indicate how storm drainage from roof drains will be handled and the feasibility of retaining their stormwater discharge on-site. Under no circumstances will stormwater be allowed to discharge to a sanitary sewer. | BWSC.
15
 6. Sanitary sewage must be kept separate from stormwater and separate sanitary sewer and storm drain service connections must be provided. | BWSC.
16
 7. The Commission requests that P-3 Partners, LLC install a permanent casting stating "Don't Dump: Drains to Boston Harbor" next to any catch basin created or modified as part of this project. P-3 Partners, LLC should contact the Commission's Operations Division for information regarding the purchase of the castings. | BWSC.
17
 8. If a cafeteria or food service facility is built as part of this project, grease traps will be required in accordance with the Commission's Sewer Use Regulations. P-3 Partners, LLC is advised to consult with the Commission's Operations Department with regards to grease traps. | BWSC.
18
 9. Existing sewer and drain services not reused by the proponent shall be capped at the existing sewer main in conformance with the Commission's standards. | BWSC.
19
 10. Though it is not anticipated for this project, the Commission requires that existing stormwater and sanitary sewer service connections, which are to be re-used by the proposed project, be dye tested to confirm they are connected to the appropriate system. | BWSC.
20
 11. The enclosed floors of a parking garage must drain through oil separators into the sewer system in accordance with the Commission's Sewer Use Regulations. The Commission's Requirements for Site Plans, available by contacting the Engineering Services Department, include requirements for separators. | BWSC.
21

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/ah



C: Barry Gaither, P-3 Partners, LLC
Kathleen Pedersen, BRA
M. Zlody, BED
P. Larocque, BWSC

**Boston Water and
Sewer Commission**



980 Harrison Avenue
Boston, MA 02119-2540
617-989-7000

June 4, 2012

Secretary Richard K. Sullivan
Executive Office of Energy and Environmental Affairs
Attention: MEPA Office
Deidre Buckley, EEA No. 14900
100 Cambridge Street
Suite 900
Boston, MA 02114

and

Erico Lopez
Senior Project Manager
Boston Redevelopment Authority
One City Hall Square
Boston City Hall
Boston, MA 02201

Re: Tremont Crossing Project
Environmental Notification Form/Project Notification Form
Additional Comment

Dear Secretary Sullivan and Mr. Lopez:

The Boston Water and Sewer Commission (Commission) previously submitted comments on May 31, 2012 on the Environmental Notification Form (ENF) and the Project Notification Form (PNF) for the proposed Tremont Crossing Project in the Roxbury District of Boston. The Commission has one additional comment on the proposed Project. The comment is as follows:

General

1. The Department of Environmental Protection, in cooperation with the Massachusetts Water Resources Authority and its member communities, are implementing a coordinated approach to flow control in the MWRA regional wastewater system, particularly the removal of extraneous clean water (e.g., infiltration/ inflow (I/I)) in the system. In this regard, DEP has been routinely requiring proponents proposing to add significant new wastewater flow to assist in the I/I reduction effort to ensure that the additional wastewater flows are offset by the removal of I/I. Currently, DEP is typically using a minimum 4:1 ratio for I/I removal to new wastewater flow added. The Commission supports the DEP/MWRA policy, and will require the proponent to develop a consistent inflow reduction plan. The 4:1 requirement should be addressed at least 90 days prior to



activation of water service and should be based on the estimated sewage generation provided on the project site plan.

BWSC.
22 cont'd

Thank you for the opportunity to comment on this project.

Yours truly,

John P. Sullivan, P.E.
Chief Engineer

JPS/ah

C: Barry Gaither, P-3 Partners, LLC
Kathleen Pedersen, BRA
M. Zlody, BED
P. Larocque, BWSC

Boston Water and Sewer Commission

BWSC 1 Prior to demolition of any buildings, all water sewer and drain connections must be capped.

Prior to demolition of any buildings, the Proponent will obtain a General Service Application (GSA) from Boston Water and Sewer Commission (BWSC) and upon issuance of GSA, will cap all existing water, sewer and drain connections from the existing building.

BWSC 2 All relocated water mains, sewers and storm drains must be constructed at the Proponent's expense.

The Proponent agrees to construct and finance all relocated water mains, sanitary sewers and storm drains.

BWSC 3 Proponent should be aware that the US Environmental Protection Agency issued a draft RGP.

Please see Section 5.6.6.2.

BWSC 4 The Project is located adjacent to a Groundwater Conservation Overlay District.

The Proponent is aware of the requirements for project located within the Groundwater Conservation Overlay District under Article 32 and has met with BWSC to discuss groundwater recharge. The Project will provide groundwater recharge through underground stormwater storage chambers for greater than or equal to one (1) inch of rainfall across the project site. See Section 7.4.2 for additional information on proposed storm drainage system. The Proponent will continue to work with BWSC to ensure that the requirements of the Groundwater Conservation Overlay District under Article 32 are being met to BWSC's satisfaction.

BWSC 5 The Proponent is advised that buildings may not be constructed over water lines.

The Proponent will relocate any existing water lines within the proposed building footprint at their own expense.

BWSC 6 Provide separate estimates for peak and continuous maximum water demand and air-conditioning make-up for the Project.

The estimated cooling tower water make-up flow for the project is approximately 200 GPM.

Peak water demand is detailed in section 7.2.2.

BWSC 7 Consider additional water saving measures in addition to those required by Massachusetts Plumbing Code.

The Project is committed to environmentally responsible development and will take all reasonable measures to reduce or offset water demand. Specific measure will be detailed as part of the BWSC Site Plan Review process.

BWSC 8 Proponent is required to obtain hydrant permit during construction.

The Proponent will obtain a hydrant permit from BWSC prior to the commencement of construction activities.

BWSC 9 Quantify potable water consumption for irrigation of the landscape areas of the Project.

The Proponent will continue to refine and develop its landscape plan as part of the process with the BCDC. As the plan becomes more focused, the potable water consumption will be estimated and provided for consideration.

BWSC 10 Contact the Commissioner's Meter Installation department regarding information on Meter Transmitter Unit connection.

The Proponent will contact BWSC Commissioner's Meter Installation department regarding information on Meter Transmitter Unit connection.

BWSC 11 Proponent must submit a detailed stormwater management plan to the Commissioner’s Engineering Customer Service Department.

The Proponent will submit a detailed stormwater management plan to BWSC Commissioner’s Engineering Customer Service Department. See Section 7.4.2 for additional information on proposed storm drainage system.

BWSC 12 The proponent must determine if it is required to submit an NPDES General Permit for Construction.

The Project’s construction activities will disturb greater than one (1) acre and thus will require a NPDES General Permit for Construction under the EPA 2012 Construction General Permit. The Proponent will prepare a Stormwater Pollution Prevention Plan (SWPPP) for the Project and apply for a NPDES General Permit for Construction prior to the commencement of construction activities.

BWSC 13 Explore additional opportunities for protecting stormwater quality.

See Section 7.4.2 for additional information on proposed storm drainage system.

BWSC 14 If the Proponent seeks to discharge dewatering drainage to the sewer system, they will be required to obtain the necessary permit.

All dewatering discharges will be properly permitted and managed in compliance with BWSC requirements as well as other state and federal requirements.

BWSC 15 Fully investigate methods for retaining stormwater.

See Section 7.4.2 for additional information on proposed storm drainage system.

BWSC 16 Sanitary sewage must be kept separate from stormwater.

The Project maintains separate utility infrastructure systems for sanitary sewage collection and stormwater collection. See Section 7.3.3 for additional information on proposed sanitary sewer connections and Section 7.4.2 on proposed storm drainage system.

BWSC 17 Install permanent casting stating “Don’t Dump: Drains to Boston harbor”.

The Proponent will obtain “Do Not Dump: Drains to Boston Harbor” plaques from BWSC for installation adjacent to all proposed catch basin inlets.

BWSC 18 Install grease traps if cafeteria or food service will be a Project use.

The Proponent will install grease traps for all Project uses that include food service.

BWSC 19 Cap existing sewer and drain service not being used.

Prior to demolition of any buildings, the Proponent will obtain a General Service Application (GSA) from Boston Water and Sewer Commission (BWSC) and upon issuance of GSA, will cap all existing water, sewer and drain connections that are not being used in redevelopment.

BWSC 20 Existing sanitary sewer and stormwater service connections must be dye tested.

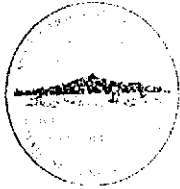
The Proponent will conduct dye testing on all existing sanitary sewer and stormwater service connections that are proposed for reuse in redevelopment.

BWSC 21 Enclosed floors of the parking garage must drain through oil separators.

The Proponent will provide an oil and grease separator for enclosed parking garage connection prior to connection into the municipal sanitary sewer system. See Section 7.3.3 for additional information on proposed sanitary sewer connections.

BWSC 22 Proponent is required to address the 4:1 removal ratio for wastewater at least 90 days prior to activation of water service.

The Proponent will address the 4:1 removal ratio for wastewater at least 90 days prior to the activation of water service. See Section 7.3.4 for additional information on sewer system mitigation.



CITY OF BOSTON
PUBLIC IMPROVEMENT COMMISSION

PUBLIC WORKS DEPARTMENT
CITY HALL ROOM 714

Boston, Massachusetts 02201

Telephone: (617) 635-4961
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Email: PIC@cityofboston.gov

JOANNE P. MASSARO
Chairperson

Commission Members:
Transportation Department
Property Management
Inspectional Services
Water & Sewer Commission

AMY S. CORDING
Chief Engineer

TODD M. LIMING
Acting Executive Secretary

To: Erico Lopez
From: Amy Cording
Date: 6/1/2012
Re: PIC Tremont Crossing PNF Comments

The Public Improvement Commission has reviewed the PNF for the Tremont Crossing Project and offers the following comments:

1. There are large BWSC relocations for the Stony Brook and the Stony Brook Interceptor. Only preliminary evaluations, meetings and designs have been done. Suggest that the project have follow up meetings with BWSC to discuss these designs. The PIC will need BWSC to be satisfied with the constructability of the proposed design prior to taking any actions to discontinue streets. PIC. 1
2. There are some concerns regarding the impact to school property as well as their proposed access. A more formalized concept of South Drive and the impacts to school access and circulation will need to be considered. Suggest the project meet with Khadijah Brown, Director of Facilities Management for Boston Public Schools. PIC. 2
3. There are many proposed street discontinuances and street layouts. The design is too preliminary to offer comments. A more extensive plan for the street network showing formalized layouts, property lines and ownership will need to be presented prior to taking any PIC actions. PIC. 3

Public Improvements Commission

PIC 1 PIC suggests follow-up meetings with the BWSC relating to the relocation of the Stony Brook Interceptor.

The Proponent will continue to meet with Boston Water and Sewer Commission (BWSC) staff to discuss relocation of Stony Brook Interceptor. See Section 7.3.3 for additional information on the relocation of the Stony Brook Interceptor.

PIC 2 Provide a more formalized plan for South drive and impacts to Madison Park School.

The Proponent has met with Boston Public Schools (BPS) to discuss their needs in South Drive. At the present time, BPS has expressed the desire to keep all existing curb cuts. South Drive has been designed to accommodate vehicles entering and exiting the garage bays on the north side of Madison Park School, as well as access to the school's existing parking garage. See Section 7.7 Roadway Network for additional information on South Drive. The Proponent will continue to coordinate directly with BPS as the detailed design of South Drive progresses to minimize impacts to Madison Park School operations.

PIC 3 Provide a more extensive plan of any street discontinuance.

The Proponent has met with Public Improvements Commission (PIC) staff to further discuss street discontinuance. See Section 7.7 Roadway Network for additional information on street discontinuance.

May 31, 2012

Mr. Erico Lopez, Project Manager
Boston Redevelopment Authority
One City Hall Plaza
Boston, MA 02201

Reference: P3. Tremont Crossing

Mr. Lopez:

The City of Boston Public Works Department has reviewed the Project Notification Form for the proposed Tremont Crossing Project and offers the following comments:

Functional Design Report; A functional design report should be prepared for the project. For the study intersections there are a number of locations where the intersections will have a LOS of F by 2017 in the no-build condition. The functional design report needs to address what the difference in delay/wait time will be at the intersections between the no-build and full build condition.

PWD. 1

Lane Configuration and Lane Widths; What are the lane widths on Tremont Street in the full build condition? Will they be 12 foot lanes or a reduced width?

PWD. 2

Bike lanes on Tremont Street; A cross section shall be submitted to show what the proposed lane arrangements will be. The cross section needs to include bike lanes in both directions. Tremont Street is one of the major thoroughfares that are part of the City's bike network. Directing bike lanes onto the Southwest Corridor Park should not be considered an acceptable alternative.

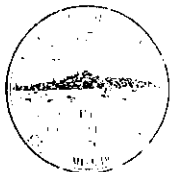
PWD. 3

Construction Access; Access to the church and Madison Park High School during construction needs to be addressed. Please provide a traffic management plan that shows how access to the church and school will be maintained during construction.

PWD. 4

School Access; School access when the project is completed is a concern. An access plan shall be developed that mitigates parking and traffic circulation adjacent to Madison Park High School along South and East Drive. Included in the plan shall be the addressing of parking for the staff and faculty, parking and circulation of busses and accessibility compliance. The plan should be reviewed and approved by the School Department, the Public Works Department and the Transportation Department prior to construction.

PWD. 5

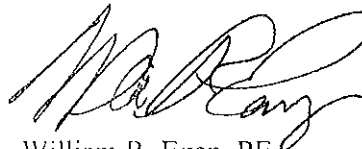


<u>Church Access:</u> How will access to the Church be maintained during construction?	PWD. 6
<u>South and East Drive:</u> What is the proposed curb to curb dimension of South and East Drive? Are sidewalks being placed on both sides of the street? With respect to South Drive, what will the plan of the roadway consist of in front of Madison Park High School? In addition to PIC review and approval, the fire and police department should review for emergency access and the Madison Park High School should review for access to their property.	PWD. 7
<u>Design Waivers:</u> For the design of the roadways and traffic signals, what design waivers are anticipated?	PWD. 8
<u>Parking Garage Entrance on South Street:</u> Has the traffic engineer looked at the possibility of cars entering the parking garage on South Street backing up onto Tremont Street during peak shopping hours?	PWD. 9
<u>ADA Compliance:</u> The project proponent and their designers shall ensure that all public ways are fully accessible and meet all requirements of the Americans with Disabilities Act.	PWD. 10

Also attached is the Public Works Department Standard Policy and Procedures for the Construction of Article 80 (Large Project and Small Project Reviews) Projects in the City of Boston. Please review the attached document and ensure that the procedures are followed during construction.

If you have any questions or comments, please do not hesitate to contact me.

Sincerely,
City of Boston Public Works Department



William R. Egan, PE
Chief Civil Engineer

attachment: Public Works Department Standard Policy and Procedures for the Construction of Article 80 Projects



City of Boston Public Works Department

Standard Policy and Procedures for the Construction of Article 80 (Large Project and Small Project Reviews) Projects in the City of Boston

October 2011

The following policies and procedures shall act as a guide for proponents of private development projects (Article 80) in the City of Boston.

Sidewalk Construction

- Americans with Disabilities Act (ADA) compliance; all new construction in the city is required to meet the latest standards of the (ADA). The primary standards/specifications that the City of Boston designs to with respect to the public realm are CMR 521 and the proposed Accessibility guidelines for Pedestrian Facilities in the Public Right of Way, July 26, 2011. Other comments or questions regarding ADA accessibility issues can be addressed to the City's Commissioner for Persons with Disabilities (617)-635-3682.
- Pavers: In general, the city constructs sidewalks with concrete and does not use any pavers or bricks on local or collector roads outside of historic districts. If a developer is proposing to construct a new sidewalk in front of their development with pavers then the material itself shall be approved by the City of Boston Persons with Disabilities and the City's Public Improvement Commission.
- Bricks: Brick pavers may only be used in the City's historic districts when the sidewalk, prior to construction of a particular development, has a brick sidewalk. The only type of brick that the City accepts are wire cut brick pavers (Endicott, Medium Ironspot, No. 46 or Pine Hall, Traditional Edge Paver, Pathway Full Range South Carolina or an approved equal).
- Concrete Sidewalks: The city uses a standard 4,000 psi mix for concrete sidewalks. Sidewalks are to be raked finished with 3/8 inch toweled joints. New sidewalks are to be 6 inches thick and are to be placed on a bed of 6 inches of compacted gravel.
- Pedestrian Ramps: Construction of Pedestrian Ramps shall be based on CMR 521. If a new ramp is constructed to replace an existing ramp, then the receiving ramp across the street shall be reconstructed if it does not meet the latest CMR 521 guidelines.
- Curb cuts: New curb cuts shall be approved by the City's Public Improvement Commission.
- Trees: All trees species shall be approved by the Parks Department. Tree pits shall be designed to allow for maximum water filtration and route

saturation. If the tree roots do not get sufficient water then the roots rise to the ground surface and push up/warp the sidewalk.

- Bike racks and street furniture: All bike racks, benches or other street furniture shall be approved by the City's Public Improvement Commission. Street furniture shall be placed along the curb line. For sidewalks with width's that are greater than 10 feet street furniture shall be placed along the back of sidewalk. When determining the location of street furniture, keep in mind that a consistent/straight 4 foot path of travel shall be maintained along the entire length of the sidewalk.

PWD. 11
cont'd

Roadway and Street Maintenance

- Maintenance and care of roadway during construction: For development projects under construction, the developer shall ensure that the roadway adjacent to the construction site is maintained in such a manor that the roadway surface shall be drivable. Any potholes and ruts that are the result of construction vehicles shall be patched as soon as practicable.
- Street sweeping: During construction, particularly during the excavation and foundation installation stages, trucks leaving the site shall be hosed down to prevent dirt and construction remnants from being tracked onto the street. The developer shall ensure that material, dropped or tracked onto the street shall be swept off of the street with a street sweeper.
- Final condition: Upon completion of the project the developer shall ensure that the sidewalks and road adjacent to the construction project a restored to the same or better condition as the city's road and sidewalk assets were prior to construction.
- Utility work: Trench excavation in the street or sidewalk shall be fully supported and designed in accordance with AASHTO Guidelines. Backfilling of all trenches shall be done in accordance with the "Rules and Specifications for Excavation Activity in the City of Boston. Public Works has a 100% haul away policy for all excavated materials. All backfill shall be clean, well graded fill compacted to ASTM T-120.
- Construction: No construction work such as pre assembly of building elements shall be done outside the fenced in limits of the project site without prior approval of the Public Works Department or the Boston Transportation Department.

PWD. 12

Dewatering during construction

- For any project that requires dewatering during construction, the developer shall prepare a dewatering plan which shall be reviewed by the Boston Groundwater Trust (bgwt.org). The plan shall show the methodology for dewatering, steps taken to limit drawdown of the water table outside of the construction area and the groundwater methodology.

PWD. 13

Effects of Support of Excavation during Construction on City Streets

- When support of excavation is required to allow for the construction of a foundation it shall be designed for minimal deflection or disruption to the soil it is laterally supporting. If cracks or settlement of the adjacent roadway occurs during construction the project proponent will be responsible for reconstructing the roadway to its original condition. If it is determined by the City Engineer that extensive settlement and cracking of the roadway has occurred the proponent may be required to fully reconstruct the roadway and sub-base and compact the underlying soil.

PWD. 14

Crane Use on City Streets

- Portable cranes brought to the site that are placed in the street for the purpose of lifting into place building materials or other construction components shall have a predetermined maximum lifting capacity based on the type of crane, its maximum reach and the size of the project area. The developer shall ensure that at all times there is sufficient factor of safety during raising or lowering material or equipment to eliminate the possibility of overturning or other failure of the crane apparatus'. The developer shall also determine the bearing capacity of the soil under the crane and that a cribbing system shall be installed when necessary to prevent settlement of the soil or potential crushing of underground utilities.

PWD. 15

Demolition/Hazardous Materials Removal

- All hazardous materials being removed from the site shall be properly disposed of. Collection of hazardous materials shall meet all city, state and federal guidelines.

PWD. 16

Drainage

- Water generated from construction activities shall be filtered through sedimentation basins prior to draining to the city's drainage system. The developer will be responsible for retaining an EPA NPDES Construction General Permit. <http://cfpub.epa.gov/npdes/stormwater/egp.cfm>

PWD. 17

Street lighting

- For projects where the developer will be installing street lighting on City sidewalks; the City of Boston street light standards, drawings and specifications are available from the street light section located on Frontage Road in South Boston. All street lighting plans, weather

PWD. 18

**Standard Policy and Procedures for Article 80 Projects in the City of Boston
October 2011**

standard or non-standard equipment, shall be reviewed and approved prior to construction by the City's street lighting group.

PWD. 18
cont'd

Utilities

- Excavation in the public way for replacement or connection to utilities shall be approved by both the Public Works Department and the Boston Transportation Department. The Public Works Department issues a permit to perform excavation and utility work. The Transportation Department approves the hours that the work can be performed and the traffic management plan. Excavation and backfilling shall be in accordance with the City's Rule and Specifications for Excavation Activity within the City of Boston guide dated 2-10-2009.

PWD. 19

Reference Documents

- Pavement Guide for the Reconstruction and Overlay of City of Boston Streets. October 2011
- Sidewalk Guide for the Reconstruction of Sidewalks in the City of Boston, October 2011
- Excavation and backfilling shall be in accordance with the City's Rule and Specifications for Excavation Activity within the City of Boston guide, 2-10-2009.
- City of Boston Public Works Department Sidewalk Construction and Rehabilitation Policy for Non-Arterial (local and collector) Streets, September 2011
- City of Boston Street Lighting Specifications

Public Works Commission

PWD 1 Prepare a functional design report with required intersections.

A functional design report that validates the proposed roadway and signal design will be prepared as part of the TAPA for review by the City.

PWD 2 What are the lane widths on Tremont Street?

Based on discussions with the BTM, travel lanes on Tremont Street will be 11-feet wide with the exception on left-turn lanes at Prentiss Street, Site Drive and Whittier Street. Section 3 has figures showing the proposed lane configuration and widths.

PWD 3 Provide a cross section of proposed bike lanes.

Cross sections including bicycle lanes on Tremont Street are included in Section 3.

PWD 4 Address access to the Church and Madison Park School during construction.

See Section 5.10.3 Construction Traffic Impacts for a figure identifying temporary access roads to provide access to Madison Park School during construction. Additionally, the Construction phasing plans identify that the contractor is to maintain an access route to the church parcel throughout construction. These Construction Management Plans will be further developed with the input of BTM as part of the TAPA process.

PWD 5 Access to Madison Park School after construction is a concern.

The Proponent has met with Boston Public Schools (BPS) to discuss their needs in South Drive. At the present time, BPS has expressed the desire to keep all existing curb cuts. South Drive has been designed to accommodate vehicles entering and exiting the garage bays on the north side of Madison Park School, as well as access to the school's existing parking garage. See Section 7.7 Roadway Network for

additional information on South Drive. The Proponent will continue to coordinate directly with BPS as the detailed design of South Drive progresses to minimize impacts to Madison Park School operations.

PWD 6 How will access to the Church be maintained during construction?

Access to the Church is currently through Downing Street, which will be reconstructed as part of the project. The Proponent will stage the project such that access is maintained to the Church at all times during the construction.

PWD 7 What is the curb to curb dimensions of South and East Drives?

The curb to curb dimensions of South Drive varies from 44 feet at Tremont Street to 24 feet at East Drive, excluding the on-street parking spaces. The curb to curb dimension of East Drive, excluding the eight-foot bus layover area, varies from 24 to 26 feet.

PWD 8 What design waivers will be required for design of roadways and traffic signals?

The Proponent does not intend to request any design waivers for the roadways at this time. The Proponent has had discussions with the City regarding the status of the internal roadways and has not determined if they would be public, private ways or driveways.

PWD 9 Has traffic engineer studied queuing issues relating to main entrance and Tremont Street?

The entrance to the parking garage on South Drive located at approximately 300 feet east of Tremont Crossing. There is a secondary access on East Drive. The entrance at South Drive will have two (2) entry lanes controlled by a gate with card reader and ticket dispenser. Assuming a service rate of 5.5 seconds per vehicle, the maximum number of vehicles that could be processed in one hour per lane is 650. For design purposes we assume a rate that is 80% of the maximum resulting in 520 vehicles per hour per lane or 1,040 vehicles per hour entering the garage entrance at South Drive. The capacity of the garage access is greater than the trip generation estimates for the project and therefore we do not anticipate traffic backing up into Tremont Crossing. It is noted that the East Drive entrance also has a design capacity of 520

vehicles per hour and vehicles could be directed to that entrance if needed.

PWD 10 Ensure that all public ways are ADA compliant.

The Proponent is providing new ADA/AAB-compliant sidewalks on both sides of South Drive and East Drive. The Proponent is also widening the existing ADA/AAB-compliant sidewalk on the western side of Whittier Street to ten feet in width for increased pedestrian circulation. See Section 4.1.6 Pedestrian Circulation for additional information regarding pedestrian environments in public ways.

PWD 11 Sidewalk construction must meet required standards.

The Proponent will construct sidewalks that meet City of Boston standards. The Proponent will continue to work with City of Boston Public Works Department (PWD) and Public Improvements Commission (PIC) to ensure that sidewalk construction is to their satisfaction.

PWD 12 Roadway and street maintenance must meet required specifications.

Comment noted. The Proponent will work with the Contractor to ensure full roadway maintenance during construction.

PWD 13 Prepare a dewatering plan, if necessary.

The Proponent's general contractor will design and implement the necessary dewatering plan.

PWD 14 Design excavation supports with minimal disruptions to the soil it is supporting.

An excavation support system such as soldier pile and lagging or sheet piles will be required along portions of Tremont Street. The support of excavation will be designed to support the lateral pressures due to soil and water to limit movement and settlement of the existing roadway and sidewalk. The remaining excavations for foundations may not require an excavation support system and will likely be sloped. Groundwater is not expected to be encountered for foundation excavations.

PWD 15 Portable cranes used for construction must meet predetermined standards.

All portable cranes used for construction will meet predetermined standards.

PWD 16 Dispose of hazardous materials properly.

The Proponent will take great care to conform to all requisite stipulations for the removal and disposal of hazardous waste. For a discussion of solid and hazardous waste at the Project Site, please refer to section 5.6.6.

PWD 17 The Proponent must retain an EPA NPDES General Permit during construction.

The Project's construction activities will disturb greater than one (1) acre and thus will require a NPDES General Permit for Construction under the EPA 2012 Construction General Permit. The Proponent will prepare a Stormwater Pollution Prevention Plan (SWPPP) for the Project and apply for a NPDES General Permit for Construction prior to the commencement of construction activities.

PWD 18 All installed street lamps must meet City of Boston standards.

The Proponent will install street lamps that meet City of Boston standards. The Proponent will continue to work with City of Boston Public Works Department – Street Lighting Division to ensure that street lighting is to PWD's satisfaction.

PWD 19 Excavation of public ways must be approved by both PWD and BTM.

The Proponent will obtain approvals from both Public Works Department (PWD) and Boston Transportation Department (BTM) prior to excavation of public ways.



Boston Landmarks Commission

City of Boston
The Environment
Department

Boston City Hall/ Room 805
Boston, Massachusetts 02201
617/635-3850

www.cityofboston.gov/landmarks

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Yanni Tsipis
Charles Vasiliades
Richard Yeager
Ellen J. Lipsey, Exec. Director

June 4, 2012

Peter Meade, Director
Boston Redevelopment Authority
City Hall, 9th Floor
Boston, MA 02201

Re: Comments on the Tremont Crossing Project Notification Form (PNF)

Dear Director Meade:

The Boston Landmarks Commission (BLC) staff is pleased to comment on the Project Notification Form (PNF) dated April 17, 2012 and to offer its support for the proposed Tremont Crossing project. The project's mix of uses will include approximately 500,000 square feet of large format retail, which could also have entertainment and recreational uses; 50,000 square feet of smaller shops and boutiques; 200,000 square feet of office space; 240 units of multifamily residential and 58,000 square feet of cultural facilities that will primarily house a new museum for the National Center for Afro-American Artists (NCAAA). The cultural facilities and, potentially, entertainment facilities are particularly appropriate to the history of the site. The BLC finds that the massing and scale are appropriate within the physical context of the area. Specific comments follow.

The potential entertainment uses in the proposed development and the 58,000 square feet of cultural facilities to primarily house a new museum for the NCAAA are very much in keeping with the stipulations of a binding Memorandum of Agreement executed in 1998 between the Boston Redevelopment Authority and the Boston Landmarks Commission. The large public plaza is equally in keeping with the 1998 MOA. The Memorandum of Agreement recognizes the cultural associations of the building then located at 1182-1184 Tremont Street, Roxbury – Connolly's Bar -- with jazz and Boston history and seeks to mitigate the demolition of the building in order to redevelop Parcel P-3Z.

The two major aspects of the MOA, spelled out in detail in the copy of the MOA enclosed, are that any future development of the property shall include a permanent public interpretive component and the "Connolly's" neon sign should be preserved by an appropriate entity. The interpretive component is defined as consisting of one or more of the following: a sculpture, mural, performance space, lobby exhibit, art installation, or audio installation. The MOA specifies topics to be included in the content of the interpretive component. A marker program and/or information on current jazz performances and venues in Boston may be implemented as well. The BLC looks forward to working with the project team to realize mutual goals of the development and the MOA. The BLC would be pleased to provide a copy of its 1997 Study Report on the potential designation of Connolly's Bar as a Boston Landmark (denied by vote of the BLC).

BLC.
1

The BLC confirms that demolition of the former Whittier Street Health Center building and any other existing buildings on the site will be subject to review by the BLC under Article 85 of the Boston Zoning Code, Demolition Delay. The Article 85 application and instructions are available at www.cityofboston.gov/landmarks. Please contact BLC staff with any questions about the Article 85 review process.

BLC.
2

The PNF states that the project site does not contain any known archaeological resources listed in the State and National Registers of Historic Places or included in the Inventory of Historic and Archaeological Assets of the Commonwealth. The BLC requests information regarding whether there are any known archaeological sensitivity areas within the project site, whether or not such areas are listed in the inventory or the State or National Register.

BLC.
3

BLC comments on the Tremont Crossing PNF

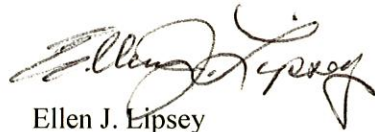
June 4, 2012

Page 2

The BLC thanks the project proponent for the comprehensive listing of historic resources within a quarter mile of the site. Although the proposed project is large in footprint and a portion of it has substantial height, the massing helps to relate the project to its historic context. In addition, Tremont Street along the Southwest Corridor will benefit from mixed-use development and revitalization of the type and scale proposed for Tremont Crossing.

Please contact staff of the Boston Landmarks Commission if you have further questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Ellen J. Lipsey". The signature is fluid and cursive, with a large initial "E" and "L".

Ellen J. Lipsey
Executive Director

MEMORANDUM OF AGREEMENT

This Memorandum of Agreement is entered into by and between the Boston Redevelopment Authority (hereafter the "Authority") and the Boston Landmarks Commission (hereafter the "Commission").

Whereas: The Authority has proposed to redevelop Parcel P-3Z, Roxbury, Massachusetts and in anticipation of the site's preparation, the Commission has determined that the associated demolition of a certain building (hereafter the "Building") located at 1182-1184 Tremont Street, Roxbury, will have an adverse effect on a structure which the Commission recognizes as a historic resource because of its cultural associations with jazz and Boston history; and

Whereas: The Commission voted on December 9, 1997 not to designate the Building as a Boston Landmark; and

Whereas: The Authority and the Commission have completed a consultation process regarding alternative means to mitigate the loss of the Building; now

Therefore: The Authority and the Commission agree that the proposed Parcel P-3Z (hereafter the "Property") site preparation and redevelopment, including the demolition of the Building, shall be undertaken by the Authority in accordance with the following stipulations in order to take into account the adverse effect on a historic resource.

Stipulations

Commemoration

The Authority, in coordination with the Commission, will ensure that the following measures are carried out:

1. If the Building is demolished, any future development of the Property shall include a permanent Public Interpretive Component (hereafter the "Interpretive Component") celebrating the site's important associations to the history of jazz. For the purposes of this Agreement, the Interpretive Component is defined as consisting of one or more of the following: a sculpture, mural, performance space, lobby exhibit, art installation, or audio installation. A marker program and/or information on current jazz performances and venues in Boston may be implemented along with one of the elements above. The Interpretive Component shall:
 - a) communicate the historic and cultural value of this site;
 - b) preserve the cultural memory of Connolly's as an influential Boston nightclub where nationally-prominent jazz musicians and aspiring local talent gathered, performed, and influenced each other's music and ultimately the evolution of jazz history;
 - c) incorporate the names of outstanding artists associated with this site, specifically: Tony Williams; Jackie McLean; Roy Eldrich; Charlie Shavers; Zoot Sims; Dicky Wells; Ben Webster; Stan Getz; Alan Dawson; and Sabby Lewis;
 - d) interpret the site's significance from the perspective of musicians and patrons;
 - e) celebrate Roxbury's jazz legacy; and
 - f) be prominently featured in a public location on the Property.
2. The design of the Interpretive Component shall be subject to the review and approval of the Commission.
3. In the event the Authority elects to transfer, assign, sell or otherwise convey the Property to an unrelated transferee, assignee or buyer, the obligation to implement this Agreement, including obligations relating to the Interpretive Component shall be included in the land disposition agreement between the Authority and the transferee, assignee or buyer. No Certificate of Completion shall be issued by the Authority until the Interpretive Element has been determined to be complete by the Commission. In the event that no Certificate of Completion is executed within three (3) years from the date of execution of this Agreement, the Authority and the Commission shall re-negotiate the time schedule and method for implementation of the Interpretive Component as set forth in paragraph number 1, above.
4. The appearance and condition of the Interpretive Component shall be managed and maintained in a manner satisfactory to the Commission, and for such purpose a mechanism satisfactory to the Commission shall be put in place prior to final approval of the design for the Interpretive Component. The Commission does not assume any obligation for maintaining, repairing or administering the Interpretive Component.
5. Alterations to the Interpretive Component shall be subject to the review and approval of the Commission.


6. The "Connolly's" neon sign should be preserved by an entity with associations to music history, Roxbury, or Boston history as reviewed and approved by the Commission.
7. This Agreement and the exhibits attached hereto embody the entire agreement and understanding between the parties with respect to the subject matter of this Memorandum of Agreement and supersedes any and all prior agreements and understandings.
8. This Agreement shall be binding upon and inure to the benefit of the parties to this Agreement and their respective successors and assigns.

In witness hereof we set forth our seals this _____ day of _____, 1998.

ATTEST

BOSTON REDEVELOPMENT AUTHORITY

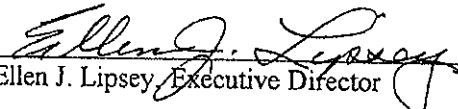
Laurence E. Beaply

By: 
Thomas N. O'Brien, Director

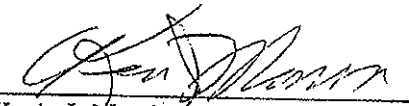
ATTEST

BOSTON LANDMARKS COMMISSION

Michael A. Carriso

By: 
Ellen J. Lipsey, Executive Director

Approved as to Form


Kevin J. Morrison
General Counsel
Boston Redevelopment Authority

Boston Landmarks Commission

BLC 1 Include a permanent, public interpretative component and the “Connolly’s” neon sign.

The Proponent intends to incorporate the Connolly’s neon sign as an element of one its plaza spaces with the addition of a commemorative plaque.

BLC 2 The demolition of the Whittier Street Health building will be subject to BLC review.

The Proponent will seek the review of the BLC prior to the demolition of the Whittier Health building.

BLC 3 Provide information regarding any known archeological sensitivities in the area.

On May 4, 2012, a copy of the Project’s Environmental Notification Form (ENF) was submitted to the MHC for their review and comment. The ENF document contained a copy of Section 3.7 Historic and Archeological Resources from the PNF which included the list and map of documented resources. As part of MHC Review and Compliance requirements, MHC reviews all Environmental Notification Forms and comments on those in which there are concerns that the project has the potential to affect significant historic or archaeological properties. MHC comments directly to the Secretary of Environmental Affairs, as stipulated in MEPA’s instructions for submitting comments.

Based on this, no further consultation with MHC is required under MEPA because they received a copy of the ENF, reviewed it, and did not submit any comments.

Comments from the Public

Jason Turgeon

Mark Schafer

Ruediger Volk, Ph.D.

Marie Lindahl

Tom Yardley, Senior Planner- MASCO

APPENDIX 2
COMMENTS FROM THE PUBLIC

Lopez, Erico

From: Jason Turgeon [jason.turgeon@gmail.com]
Sent: Wednesday, May 16, 2012 10:39 PM
To: Lopez, Erico
Cc: Brook; Barry Gaither; Derek Lumpkins
Subject: Tremont Crossing

Mr. Lopez-

I am writing to express my support in the strongest possible terms for the proposed Tremont Crossing. As a homeowner in Roxbury who lives less than 1/2 mile from the site, a Northeastern alumnus, and a member of the Board of Directors of Discover Roxbury, I am deeply invested in this area and very familiar with the site. I cannot envision a better project for our community. I know Mr. Gaither, one of the principals of the project, from my work with Discover Roxbury and I am confident that he has the best interests of the neighborhood at heart. Although both of us sit on the board of Discover Roxbury, I have no financial interest or other role in this project - my support is genuine and unbiased. The project's mix of cultural uses, retail, office, and housing with an emphasis on transit-oriented development is exactly what this part of the city needs to bring it back from the blight that has persisted since the failed I-95 extension of the 1960s, and it will be an excellent complement to the many other projects underway and planned for Roxbury.

Please let me know if I can be of any assistance as this project moves forward. I would be happy to speak in support of the project in a public forum or provide further written support for the project.

Best,

Jason Turgeon
617-934-6650

Art: www.boston.igmentproject.org
Commerce: www.thephotobot.com
History: www.forthillhistory.tumblr.com

Lopez, Erico

From: Mark Schafer [msmexico2@gmail.com]
Sent: Monday, May 21, 2012 8:36 PM
To: Lopez, Erico
Subject: Comment on: P-3/Tremont Crossing Community Presentation - TOMORROW-Wednesday

Dear Enrico Lopez,

I have briefly looked at the Tremont Crossing proposal (link below), and while I am not an architect and so do not have a clear understanding of much of what is being proposed, I have one comment: I don't think the name "Tremont Crossing" makes sense for this development in this location.

First of all, naming this development a "Crossing" will put it on the unfair side of two comparisons. First of all, it will be in direct comparison, by physical proximity, with Roxbury Crossing, a crossing in many senses of the word, most importantly, I think, that it is a true crossroads--for people, traffic, transportation, neighborhoods, school, businesses, and history, among other things. The other comparison, to my mind, is with Downtown Crossing, another major crossing in all of the above senses of the word. I think by labeling this development "Tremont Crossing," it already sets it up as a *minor* version of the other crossings.

Secondly, I think the presence of local (not to mention national and international) culture--the museum--in this development offers an opportunity to celebrate local culture more directly in the naming of the development. One idea that comes to my mind is "Elma Lewis Square." A square is a destination as much as a crossing of paths.

Thank you for your consideration of my comment.

Best,
Mark Schafer
13 Highland Ave. #3
Roxbury, MA 02119

:)
Mark

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Don't stop after beating the swords
into ploughshares; don't stop! Go on beating
and make musical instruments out of them.
Whoever wants to make war again
will have to turn the ploughshares first

from "An Appendix to the Vision of Peace,"
Yehuda Amichai, tr. Glenda Abramson and Tudor Parfitt

Ruediger Volk, Ph.D.
8 Sussex Street, Boston, MA 02120-2206
Tel.: 617-784 3918 or rvolk_2000@yahoo.com
Boston May 29th, 2012

RE: comments to Parcel 3 proposal – Save the George White Building

To whom it may concern,

I got a message from one of our neighbors about the plans for Parcel 3 in Lower Roxbury to be developed. I am pleased that this largest undeveloped and underused land in such central location is on the way to be used.

My main concern is, that the plans offered, does not include the George White building, the only and oldest structure on the site. The large building is located on the east south border of the planned lot and would not disturb largely any development, but could be integrated nicely into the complex. Built as a relative 'nice' structure and definitely with philanthropic ideas, which are seen in its architecture, it is worthwhile to preserving. Further on, this building is the mind of thousands of people in the neighborhood, to be helping building, since it housed for decades the Whittier Street Health center, before it was located to the Renaissance Building (with its asbestos/ventilation problem) being recently located to the permanent place of the south west side of parcel 3 lot (just opposite of the George White Building).

More important is besides the history and its use for common goods, also the intension of the creation. George White was a philanthropist, who gave his fortune for numerous charity projects. It is shameful, that not 100years after his death (exact 90 years) his buildings are not only used, but also slated to be demolished. So I urge the BRA and any responsible people, to keep this building, which is easy to be reused, intact and make a good use of it. In its shape and architectural feature, it can be a marvel stone in the corner of the parcel.

The building as so many others can educate and spurs the population to be engaged further on in any philanthropist cause (e.g. with the dedication of a small part of the building to a permanent exhibition of the charity organization in the past and present in Boston. George White was a Bostonian and should be entitled with more respect of the outcome of his fortune, as to have 'his' buildings be razed.

An idea to integrate the building by using the maximum of space for other purpose is, to build towards the southwest corner of the building a glass-roofed inner court yard (similar done to the Boston Downtown crossing example, in the house block behind the former Filenes building, where modern architecture build a nice and useful symbiosis with old remaining architectural facades in a glass-roofed bright inner court yard setting.

Thank you for your consideration and I would be interested in a feedback, what would be counter arguments.

For further information: Please read following informative website

Reference: http://en.wikipedia.org/wiki/George_Robert_White

An excerpts of the description should be honored:

“George Robert White Fund”:

The George Robert White Fund was established in White's will when he left a trust of \$5,000,000 to the City of Boston as a permanent charitable fund. The net income of the fund is to be used only for creating public beauty and utility for the inhabitants of the city, and cannot be used for any of the normally provided services of the municipality. Management of the fund is seated in the Mayor of Boston, the President of the City Council, the City Auditor, the President of the Chamber of Commerce, and the President of the Boston Bar Association. Eager to prevent unduly hasty disbursements from the fund, White required a minimum of 3 months deliberation before disbursement. He required the city to make an annual report to the public by the trustees in order to maintain a degree of public accountability. White's desire was to concentrate the fund's spending on substantial projects to beautify the city and while not requiring the following, mentioned in his will projects such as a zoological garden, aquarium, and public gathering places. He suggested allowing the income of the fund to build periodically in order that the projects undertaken could be substantial and not trivial.”

Lopez, Erico

From: marie.lindah1@comcast.net
Sent: Thursday, May 31, 2012 12:49 AM
To: Lopez, Erico
Cc: silbabe@comcast.net; carol.nicholls@statestreet.com; c.swanigan@hotmail.com; bartonn@gmail.com; npriggs99@hotmail.com; valencia, e; Rawls, Lisa; bettyjeanpalmer2@yahoo.com; nsmith1948@verizon.net; nicholaskaroutsos@hotmail.com; toms324@comcast.net; joastele@yahoo.com; rasheed.meadows@gmail.com; Janey; shanen, stephanie; sileshiw@comcast.net; cruzsherley@yahoo.com; jolley, renee; Metayer, Maxence; mglensmith@yahoo.com; leliajackson@aol.com; meda@well.com; keithvinc@comcast.net; xmasjsc@cs.com; Rodriguez, Jose; gloyd@cityfresh.com; erica_ross@myway.com; elw18@verizon.net; shep27@aol.com; wowbils@aol.com; amgnsn@verizon.net; adumas519@aol.com; awhita1739@yahoo.com; marylchurchill@yahoo.com; Janey, Kim; lorrainepaynewheeler@gmail.com
Subject: Comments on Tremont Crossing Development

Dear Mr. Lopez,

I have looked at the power point presentation giving highlights of the development and read the Banner article. It is heartening to see an actual plan for parcel 3, an approximately 8 acre lot, which anticipates the creation of 1,738 jobs--a critical consideration in an area with disproportionately high unemployment compared to the rest of Boston. In addition, I would like to see the following be part of the overall final design:

1. Adhere to sustainable design standards to reduce carbon footprint
 2. Promote livability, inclusiveness and social sustainability
 3. Emphasize walkable, bicycle-friendly pathways/streets and maximize access to public transport
 4. Replace 11 story monolithic apartment building with two four-story buildings that create enticing environments for people to walk, hang out, dine in a cafe, people watch and window-shop.
 5. Group the structures in a way that preserves more of the surrounding environment, i.e. the trees
- Finally, I concur with Mary Churchill who wrote: "The "back" side of the development should not look like a "back" side--it is the front yard for Roxbury residents, high school students, and Boston's youth and families (the headquarters of the Boston Centers for Youth and Families is housed in Madison Park and the courts and athletic fields to the East of Tremont crossing are utilized year-round by families across the city.) Additionally, Roxbury residents on Cabot, Dewitt, Whittier and Ruggles Streets will have a view of the loading docks."

Sincerely yours,
Marie Lindahl
Long-time resident of Roxbury



MEDICAL ACADEMIC AND SCIENTIFIC COMMUNITY ORGANIZATION, INC.

People / Places / Plans / Future

June 14, 2012

Erico Lopez
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201-1007

Re: Project Notification Form, Tremont Crossing (Parcel P-3)

Dear Mr. Lopez,

Thank you for the opportunity to comment on The Tremont Crossing Development located at Parcel P-3 in Boston's Roxbury neighborhood. MASCO is a charitable corporation with 24 member and associate member organizations, established to plan, develop and enhance the Longwood Medical and Academic Area (LMA) for the benefit of the public and its members. We offer a wide range of services including transportation planning and development, parking and transit and travel demand management through our TMA, CommuteWorks. We commend the City and project team for this landmark project which will replace 7.86 acres of long-vacant land and surface parking with a vibrant, mixed-use and cultural development providing the following benefits:

- A new, updated and larger home for the National Center for African American Artists (NCAA) including education and performance spaces for fine and performing arts;
- A new public plaza facing Tremont Street, with sculptures, park benches, landscaping;
- 1,738 new permanent jobs and 670 construction jobs;
- An Office of Collaboration and Partnership (OCP) helping to increase employment opportunities in greater Roxbury particularly in the fields of healthcare and medicine;
- A pedestrian-friendly environment on the Tremont Street (Route 28) corridor including a widened sidewalk, improved lighting and landscaping.

We note the proposed traffic and roadway improvements and alterations including the signalization of the Site Drive with Tremont Street and removal of the median to allow left-turns and addition of turning lanes to access the project site. In order to understand the full impacts of the proposed development, we look forward to seeing further analysis of potential traffic and parking impacts to area roadways, specifically:

- The capacity analysis for signalized intersections indicates that the seconds of delay at the Melnea Cass Boulevard/Tremont Street intersection more than double by 2017, under the Build and No Build conditions. Projections for the Tremont /Ruggles/Whittier Street intersection show similar increases in delay and declines in Level of Service (LOS) with the exception of the weekday AM peak hour. Any impacts to the congested section of Tremont Street between the intersections with Melnea Cass Boulevard and Ruggles Street/Whittier Street should be carefully studied and where feasible, mitigated. This section of

Member Institutions

- Beth Israel Deaconess Medical Center
- Brigham and Women's Hospital
- Children's Hospital Boston
- Dana-Farber Cancer Institute
- Emmanuel College
- Harvard Medical School
- Harvard School of Dental Medicine
- Harvard School of Public Health
- Immune Disease Institute
- Isabella Stewart Gardner Museum
- Joslin Diabetes Center
- Judge Baker Children's Center
- Massachusetts College of Art
- Massachusetts College of Pharmacy and Health Sciences
- Massachusetts Department of Mental Health
- Simmons College
- Temple Israel
- Wentworth Institute of Technology
- Wheelock College
- The Winsor School

Associate Members

- Blue Cross Blue Shield of Massachusetts
- Harvard Vanguard Medical Associates
- Merck Research Laboratories

Tremont Street accommodates heavy volumes of both crosstown traffic travelling between Melnea Cass Boulevard and points west and heavy volumes of traffic on Tremont Street (Route 28) into and out of Downtown Boston. Crosstown traffic travelling between I-93, South End, Roxbury and the LMA and the growing Fenway/Kenmore neighborhood has few alternative crosstown routes and is especially dependent on these intersections operating well.

- Considering the importance of these intersections to crosstown traffic and the twelve MBTA bus routes accessing Ruggles Station, it would be helpful for the City and project proponent to examine additional mitigation concepts. Potential projects worth further study include slightly pulling back the curb at the northwest corner of the Tremont/Ruggles Street intersection to allow larger vehicles a sufficient turning radius to make the right turn from Tremont Street southbound to Ruggles Street in one movement. Currently large trucks and buses are unable to make this movement without mounting the curb or stopping in the intersection, blocking traffic flows.
- The traffic analysis in the PNF supports the need for better circumferential transit services to connect the economic growth centers outside the Downtown core. To that end, we recommend that the project proponent coordinate planning with the City's center bus median planning on Melnea Cass Boulevard. The current plan contemplates changes to the configuration of the intersection of Melnea Cass Boulevard and Tremont Street including the elimination of the slip lane which accommodates northbound traffic on Tremont Street heading east on Melnea Cass Boulevard.
- Given their proximity to the project site and the importance of the Ruggles Street corridor for MBTA and private bus access to Huntington Avenue of the Arts, the LMA and points beyond, we request that the following additional intersections be evaluated: Ruggles Street/Ruggles Station Busway, Ruggles Street/Parker Street and Ruggles Street and Huntington Avenue.
- As part of the future No Build Traffic Conditions, in addition to 121 Brookline Avenue in the Fenway (which is under construction), the analysis should include other projects in the pipeline in the Fenway neighborhood, including The Point (1383-1395 Boylston Street) and the Fenway Triangle Mixed Use Project (1325-1341 Boylston Street).
- Clarify how the proposed 31 on-street parking spaces in front of the project site on Tremont Street will be used and how access of these spaces might impact traffic flows and safety on the inbound (northbound) travel lanes on Tremont Street.
- Conduct further analysis of the new signal at the intersection of Tremont Street and the proposed "South Drive", including an exclusive pedestrian phase; and how this will be coordinated with the existing signal at Tremont and Prentiss streets (which we note also includes an exclusive phase).

Thank you for your consideration.

Sincerely,



Tom Yardley, Senior Planner

APPENDIX 3
EXAMPLES OF PUBLIC NOTICE

SAMPLE

PUBLIC NOTICE

The Boston Redevelopment Authority (BRA), acting pursuant to Article 80 of the Boston Zoning Code, hereby gives notice that a Draft Project Impact Report (DPIR) for Large Project Review has been received from

(Name of Applicant)

for _____

(Brief Description of Project)

proposed at _____.

(Location of Project)

The DPIR may be reviewed or obtained at the Office of the Secretary of the BRA Boston City Hall, Room 910, between 9:00 A.M. and 5:00 P.M., Monday through Friday, except legal holidays. Public comments on the DPIR, including the comments of public agencies, should be transmitted to Erico Lopez, Senior Project Manager, Boston Redevelopment Authority, Boston City Hall, Boston, MA 02201, within sixty (60) days of this notice or by _____. Approvals are requested of the BRA pursuant to Article 80 for

_____.

The BRA in the Preliminary Adequacy Determination regarding the DPIR may waive further review requirements pursuant to Section 80B-5.4(c)(iv), if after reviewing public comments, the BRA finds that the _____ adequately describes the Proposed Project's impacts.

BOSTON REDEVELOPMENT AUTHORITY

Brian Golden, Secretary

APPENDIX 4
SUBMISSION REQUIREMENTS FOR DESIGN DEVELOPMENT
AND CONTRACT DOCUMENTS SUBMISSIONS

Phase II Submission: Design Development

1. Written description of the Proposed Project.
2. Site sections.
3. Site plan showing:
 - a. Relationship of the proposed building and open space and existing adjacent buildings, open spaces, streets, and buildings and open spaces across streets.
 - b. Proposed site improvements and amenities including paving, landscaping, and street furniture.
 - c. Building and site dimensions, including setbacks and other dimensions subject to zoning requirements.
4. Dimensional drawings at an appropriate scale (e.g., 1" = 8') developed from approved schematic design drawings which reflect the impact of proposed structural and mechanical systems on the appearance of exterior facades, interior public spaces, and roofscape including:
 - a. Building plans
 - b. Preliminary structural drawings
 - c. Preliminary mechanical drawings
 - d. Sections
 - e. Elevations showing the Proposed Project in the context of the surrounding area as required by the Authority to illustrate relationships or character, scale and materials.
5. Large-scale (e.g., 3/4" = 1'-10") typical exterior wall sections, elevations and details sufficient to describe specific architectural components and methods of their assembly.
6. Outline specifications of all materials for site improvements, exterior facades, roofscape, and interior public spaces.
7. Eye-level perspective drawings showing the Proposed Project in the context of the surrounding area.

8. Samples of all proposed exterior materials.
9. Complete photo documentation (35 mm color slides) of above components including major changes from initial submission to the Proposed Project approval.

Phase III Submission: Contract Documents

1. Final written description of the Proposed Project.
2. A site plan showing all site development and landscape details for lighting, paving, planting, street furniture, utilities, grading, drainage, access, service, and parking.
3. Complete architectural and engineering drawings and specifications.
4. Full-size assemblies (at the project site) of exterior materials and details of construction.
5. Eye-level perspective drawings or presentation model that accurately represents the Proposed Project, and a rendered site plan showing all adjacent existing and proposed structures, streets and site improvements.
6. Site and building plan at 1" = 100' for Authority's use in updating its 1" = 100" photogrammetric map sheets.

Phase IV Submission: Construction Inspection

1. All contract addenda, proposed change orders, and other modifications and revisions of approved contract documents, which affect site improvements, exterior facades, roofscape, and interior public spaces shall be submitted to the BRA prior to taking effect.
2. Shop drawings of architectural components, which differ from or were not fully described in contract documents.