Institutional Master Plan Notification Form

Project Notification Form

840 Columbus Avenue

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

Submitted by:
American Campus Communities
12700 Hill County Blvd, Suite T-200
Austin, TX 78738

AND

Northeastern University
360 Huntington Avenue
Boston, MA 02115

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

In Association with:
Elkus Manfredi Architects
Mel Shuman Law
Howard Stein Hudson
Nitsch Engineering
R. G. Vanderweil Engineers, LLP

November 12, 2019

Epsilon
ASSOCIATES INC.

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Northeastern University

AMERICAN CAMPUS COMMUNITIES

Epsilon ASSOCIATES INC.

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Chapter 1

Introduction and General Information

1.0 INTRODUCTION AND GENERAL INFORMATION

1.1 Introduction

Northeastern University (Northeastern) and American Campus Communities, Inc. (ACC, and together with Northeastern, the Proponent) are pleased to submit this Institutional Master Plan Notification Form/Project Notification Form (IMPNF/PNF) to amend Northeastern's existing Institutional Master Plan adopted in 2013 (IMP) pursuant to Article 80D of the Boston Zoning Code (Code) and initiate Large Project Review pursuant to Article 80B of the Code in order to enable the development of the Project described herein.

In order to attract and retain qualified students and to address the student housing goals of the Boston 2030 Plan and the 2013 IMP, the University is aiming to create an appealing atmosphere for on-campus living in an environment that encourages personal growth and interaction. This IMPNF/PNF is being filed in order to seek approval for a new mixed-use development that will provide new student housing beds as well as additional academic/office space (the Project). The Project is located adjacent to the existing Renaissance Park building, bounded by Columbus Avenue to the north, Melnea Cass Boulevard to the east, and Tremont Street to the south (the Project site).

ACC is the largest owner, manager and developer of high-quality student housing communities in the United States. The proposed Project will be the second student housing project to be developed through a partnership between Northeastern and ACC. In August of 2019, the 825-bed LightView residence hall on Columbus Avenue (previously referred to as the Columbus Avenue Housing Project) opened. LightView was fully leased nine months before its September opening, showing there is a high demand for on-campus living with innovative, state-of-the-art facilities.

1.2 Northeastern University Mission and Objectives

Founded in 1898, Northeastern is a top-tier, nonprofit research university located on both sides of Huntington Avenue on the edges of the Fenway, South End, Mission Hill and Roxbury neighborhoods of Boston. Northeastern's mission is to educate students for a life of fulfillment and accomplishment, and to create and translate knowledge to meet global and societal needs. Grounded in its signature cooperative education program, Northeastern today provides unprecedented experiential learning opportunities around the world. Northeastern's rapidly growing research enterprise is strategically aligned with three national and global imperatives: health, security, and sustainability. Northeastern offers students opportunities for professional work, research, service, and global learning in more than 130 countries on seven continents. Northeastern offers a comprehensive range of undergraduate and graduate programs leading to degrees through the doctorate in nine schools and colleges. It is the purpose of the IMP to provide an organizational framework for creating a physical plan and infrastructure in Boston that strengthen and celebrate Northeastern's mission.

Northeastern University's vision is to be the global leader in the development of living learning environments that translate all learning into purposeful action.

The proposed Project has great importance to the ongoing development of Northeastern's campus. The creation of additional 21st century on-campus living solutions for students, will help Northeastern accomplish its goal to provide a total of 1,000 new beds on campus within the 10-year master plan period.

1.3 History of IMP Process to Date/Status of IMP Projects

The IMP was submitted to the BPDA on June 14, 2013 and was approved by the BRA Board on November 14, 2013. A revised version of the IMP was submitted on November 20, 2013 and became effective December 20, 2013. Northeastern's specific objectives, as reflected in its revised IMP include:

- Development of superior academic facilities to serve Northeastern's increasingly sophisticated teaching environment;
- Development of superior research facilities to support Northeastern's growing research programs, including those in the fields of health, security and sustainability;
- Continued expansion and enhancement of Northeastern's student residential facilities, to help attract and retain qualified students; and
- Consolidation of administrative and other non-academic uses, so as to maximize the availability of space and resources in the central campus area to better serve Northeastern's academic priorities.

The IMP included eleven new projects with specific project sites to be refined and finalized during the ten-year term of the IMP. The IMP sought to accommodate over 2,000,000 GSF of academic and student life facility growth, including athletic facilities and additional housing, on the existing Northeastern campus. To satisfy this scale of needed facilities, while remaining within the confines of the existing campus, the IMP proposed to increase the built density through the re-purposing of under-utilized areas such as parking lots, and replacing low-rise, aging buildings, with taller, more economically and environmentally efficient construction.

Northeastern focused initially on completing a proposed Interdisciplinary Science and Engineering Complex (ISEC) as well as completing the 720-bed East Village (formerly named GrandMarc) residence hall before commencing additional projects. The ISEC completed construction in December 2016 and construction of the East Village residence hall was completed in November 2014 and occupied by students starting in January 2015. The LightView project, previously known as the Columbus Avenue Housing Project, was developed in partnership with ACC. This new residential community opened in August 2019 and welcomed Northeastern students to the 825 new student beds that the project provides. Northeastern students are eager to live in this new residential community as evidenced by the property being

fully preleased in just a few months. In May of 2019 Northeastern submitted a Project Notification Form for the second phase of ISEC, known as EXP. This project was approved by the BPDA Board in October 2019. It is anticipated that construction of EXP will begin in the first quarter of 2020.

While the exact timing and sequence of the remaining IMP projects are not known, each project is considered as a potential stand-alone development governed by the master planning principles of:

- addressing the campus edges and the relationship to its neighbors;
- providing campus and community open space improvements;
- improving connections through the campus including across the MBTA rail corridor; and
- reinforcing existing campus academic precincts while promoting mixed-use development.

1.4 Existing Campus Description

Northeastern's campus is adjacent to the Fenway, Mission Hill, South End and Lower Roxbury neighborhoods of Boston and has a variety of residential, commercial and institutional neighbors. Northeastern and the surrounding neighborhoods are connected through the activities of many students and faculty of Northeastern, who are involved in a multitude of programs and activities that engage community organizations and neighborhood residents. Within these diverse neighborhoods are wide arrays of land uses, including institutional, high-and-medium-density residential, commercial and recreational uses.

1.4.1 Owned and Leased Properties

Northeastern owns or leases 105 buildings within the City of Boston totaling approximately 8.13 million square feet. The land area associated with Northeastern facilities in Boston is approximately 67 acres in the City of Boston. Figure 1-1 presents a map of Northeastern's existing facilities on the Boston Campus, and Appendix A presents an inventory of existing University properties and facilities.

Northeastern owns and operates 39 residential or mixed-use buildings and ground leases a parcel to ACC who operates the LightView community that collectively provide student housing for up to 9,439 students. Figure 1-2 presents the Northeastern University student residence locations.

Academic & Administrative Buildings

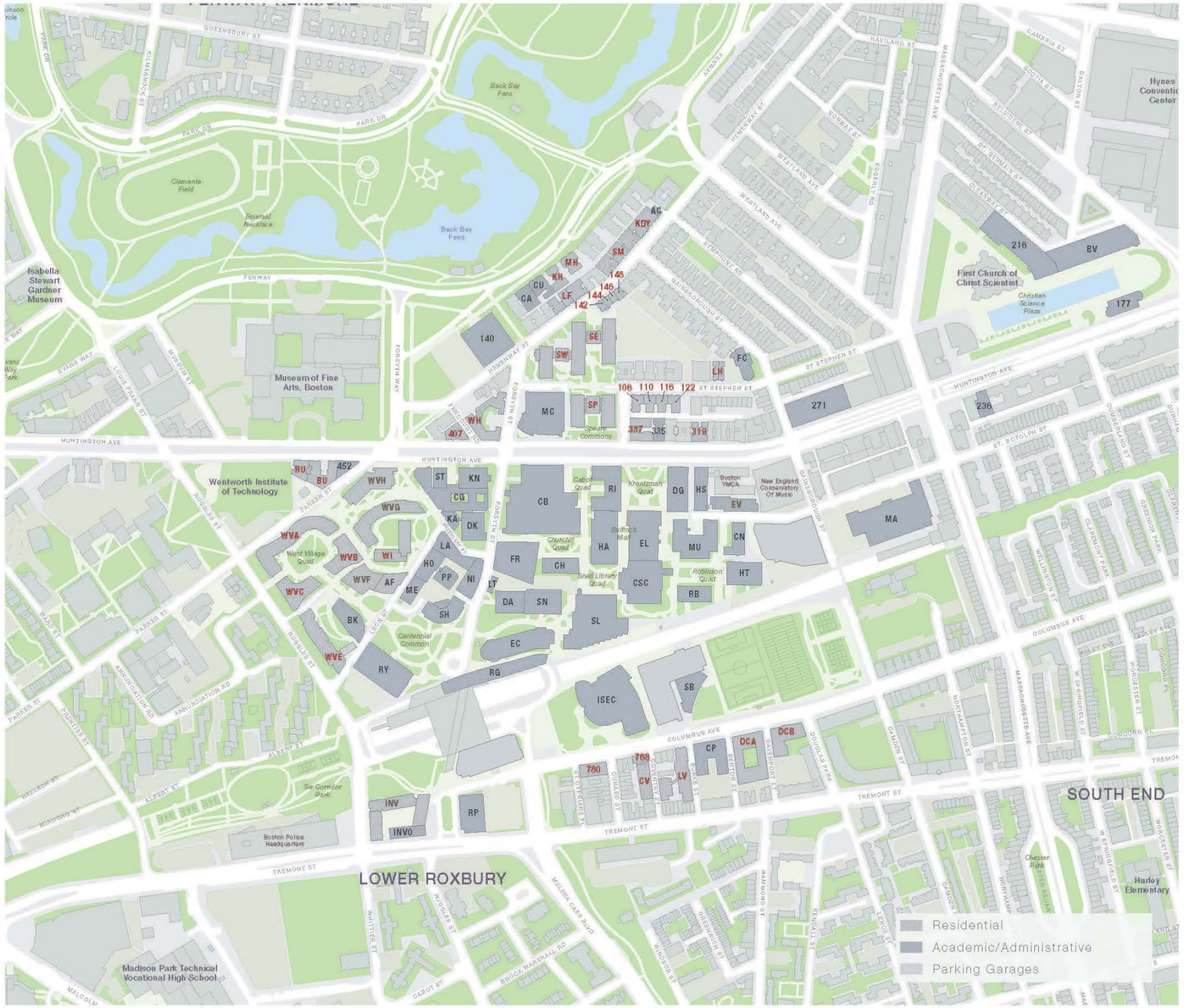
140	140 The Fenway
177	177 Huntington Avenue
216	216 Massachusetts Avenue
236	236 Huntington Avenue
271	271 Huntington Avenue
335	335 Huntington Avenue
452	452 Huntington Avenue
AC	Asian American Center
SB	Badger & Rosen Squash Busters Center
BK	Behrakis Health Sciences Center
BV	Belvidere
CA	Cahners Hall
CB	Cabot Physical Education Center & Barlatta Natatorium
CG	Cargill Hall
CH	Churchill Hall
CP	Columbus Place
CN	Cullinane Hall
CSC	Curry Student Center
CU	Cushing Hall
DA	Dana Research Center
DK	Dockser Hall
DG	Dodge Hall
EC	Egan Engineering / Science Research Center
EL	Ell Hall
FC	Fenway Center
FR	Forsyth Building
HA	Hayden Hall
HO	Holmes Hall
HT	Hurtig Hall
HS	Hastings Hall at the YMCA
INVO	International Village Administration
ISEC	Interdisciplinary Science & Engineering Complex
KA	Kariotis Hall
KN	Knowles Center
LA	Lake Hall
LT	Latino/a Student Cultural Center
MC	Marino Recreation Center
MA	Matthews Arena
ME	Meserve Hall
MU	Mugar Life Sciences Building
NI	Nightingale Hall
AF	O'Bryant African-American Institute
PP	Power Plant
RP	Renaissance Park
RI	Richards Hall
RB	Robinson Hall
RG	Ruggles (Architecture Studios)
RY	Ryder Hall
SH	Shillman Hall
SN	Snell Engineering Center
SL	Snell Library
ST	Stearns Center

Residence Buildings

106	106 St. Stephen Street
110	110 St. Stephen Street
116	116 St. Stephen Street
122	122 St. Stephen Street
142	142 Hemenway Street
144	144 Hemenway Street
146	146 Hemenway Street
148	148 Hemenway Street
319	319 Huntington Avenue
337	337 Huntington Avenue
407	407 Huntington Avenue
768	768 Columbus Avenue
780	780 Columbus Avenue
BU	Burstein Hall
CV	Coventry
DC	Davenport Commons: A-B
EV	East Village
INV	International Village
KDY	Kennedy Hall
KH	Kerr Hall
LH	Light Hall
LF	Loftman Hall & 153 Hemenway Street
LV	LightView by ACC
MH	Melvin Hall
SM	Smith Hall
SP	Speare Hall
SE	Stetson East
SW	Stetson West
RU	Rubenstein Hall
WV	West Village Residence: A, B, C, E
WV	West Village: F, G, H
WH	White Hall
WI	Willis Hall

Parking Garages

BVG	Belvidere Parking Garage
CPG	Columbus Parking Garage
GPG	Gainsborough Parking Garage
RPG	Renaissance Parking Garage
WPG	West Village Parking Garage



840 Columbus Avenue Boston, Massachusetts

Northeastern University

Figure 1-1

Northeastern University Existing Facilities

Academic & Administrative Buildings

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CU	Cushing Hall
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SM	Smith Hall
SP	Speare Hall
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SW	Stetson West
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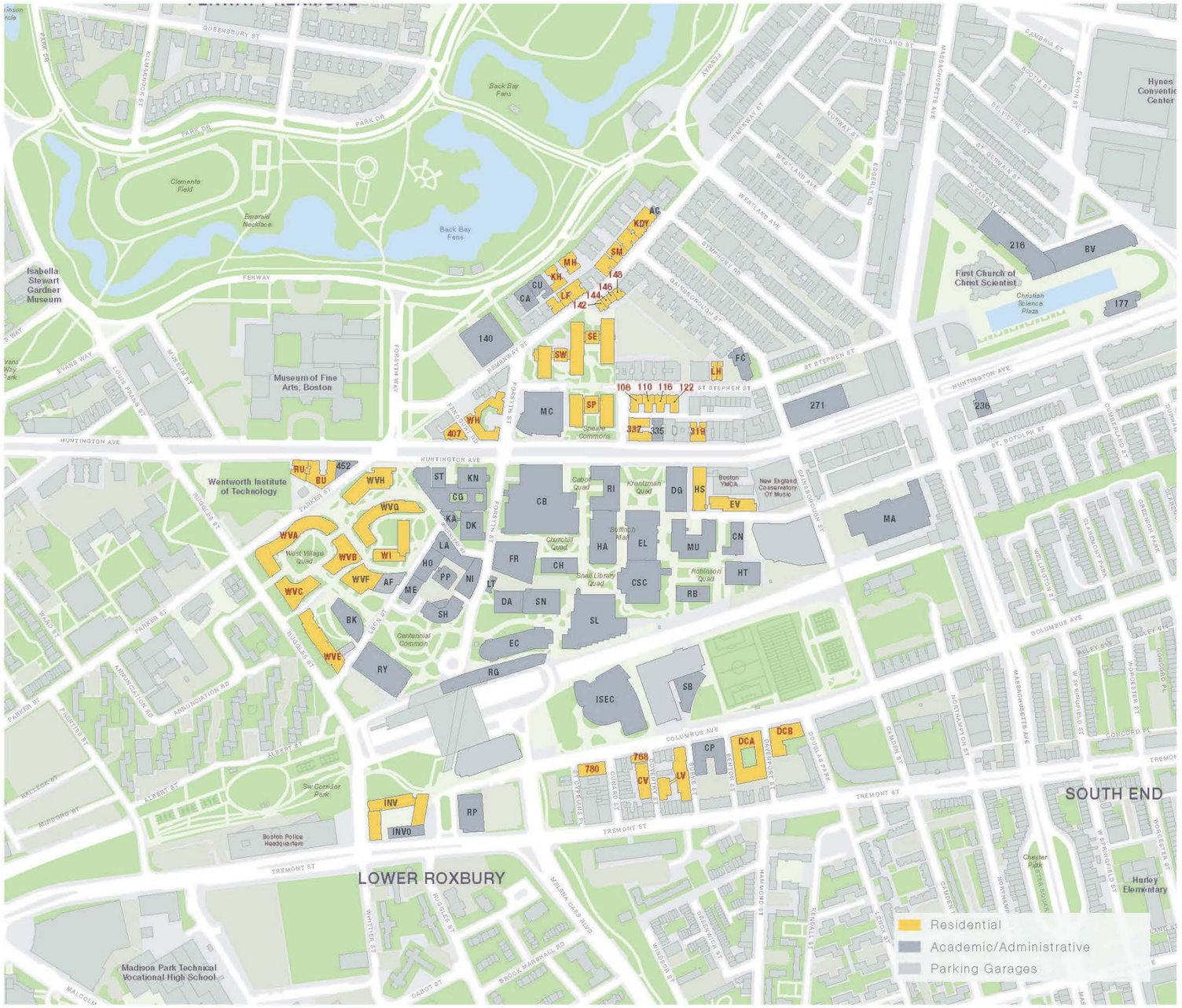
WV	West Village: F, G, H
WH	White Hall
WI	Willis Hall

Parking Garages

BVG	Belvidere Parking Garage
CPG	Columbus Parking Garage
GPG	Gainsborough Parking Garage
RPG	Renaissance Parking Garage
WPG	West Village Parking Garage



840 Columbus Avenue Boston, Massachusetts

Figure 1-2

Northeastern University Residential Facilities

1.4.2 Master Leased Property Program

Northeastern also leases apartments in several properties as part of the Master Lease Property Program (MLPP). The following properties described in Table 1-1, in which the University is leasing at least one unit, are included in the Master Lease Property Program.

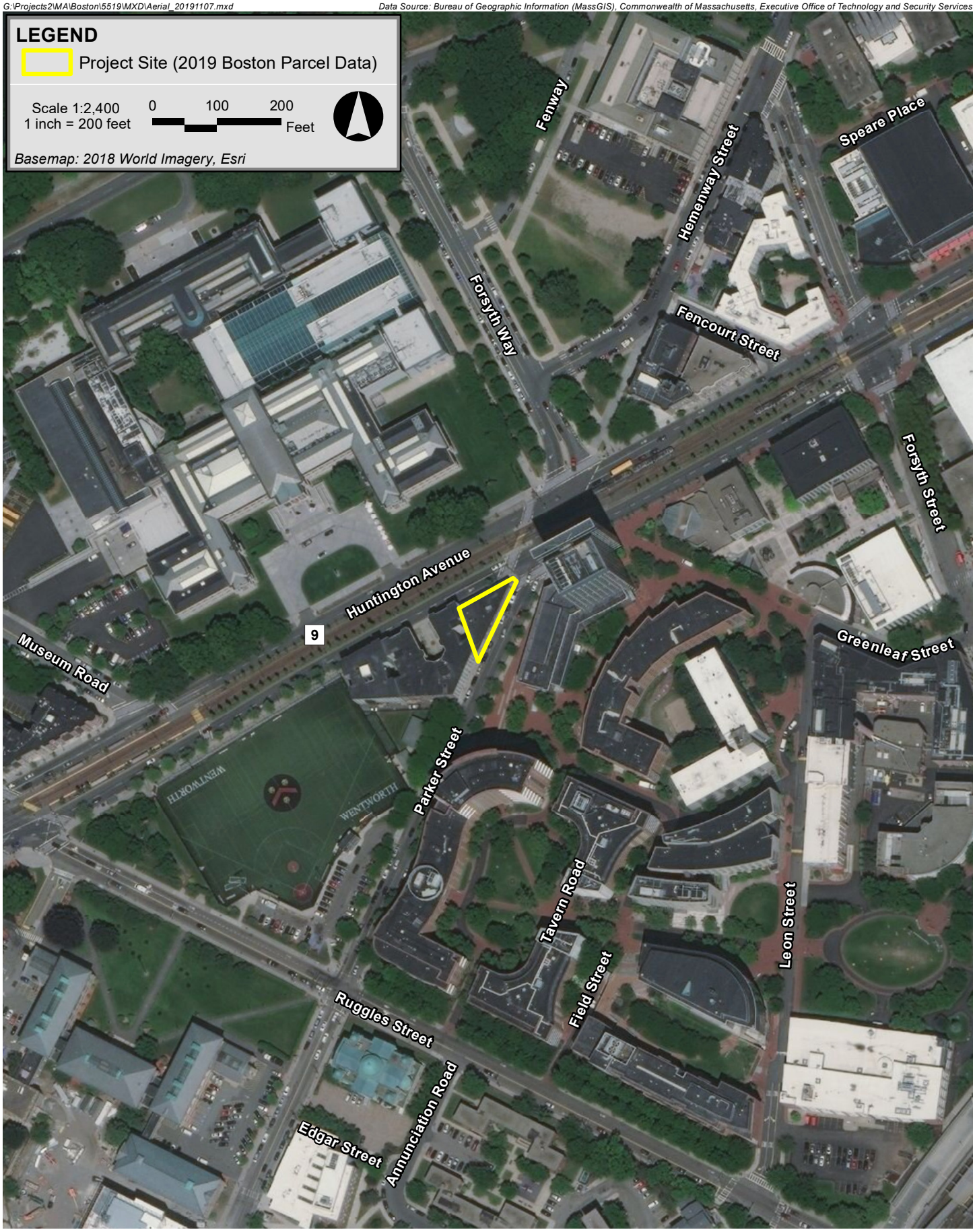
Table 1-1 Northeastern University Master Leased Property Program, 2019

Building	Bedspaces	Apartments
331 Huntington Ave	27	15
335 Huntington Ave	24	14
109 St. Stephen St	25	13
1065 Tremont St	42	16
115 St. Stephen St	65	32
132 Hemenway St	26	8
136 Hemenway St	21	9
16 Westland Ave	19	7
204 Hemenway St	44	16
309 Huntington Ave	7	2
311 Huntington Ave	23	10
313 Huntington Ave	17	8
315 Huntington Ave	29	10
49 Symphony Rd	48	23
52 Westland Ave	24	6
84 The Fenway	38	11
97 St. Stephen St	61	21
NU at Douglass Park	160	42
NU at Douglass Park Tremont	49	16
Total	**749**	**279**

1.5 Future Campus Project

Northeastern owns the property at 450 - 452 Huntington Avenue that formerly housed Punter's Pub (see Figure 1-3). The pub closed in December 2018, and the remainder of the property is occupied by University House of Pizza pursuant to a lease with Northeastern. Northeastern's long-term goal is to redevelop the site along with the adjacent parcels. A timetable for such redevelopment has not been established, but Northeastern is interested in activating this unique corner of a busy intersection for student and public use in the interim.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services



840 Columbus Avenue Boston, Massachusetts

Epsilon Associates Inc.

Figure 1-3
450-452 Huntington Avenue

The project will be a single story, up to 3,800 square feet, maximizing the current footprint of the parcel. Primary uses contemplated for the project include: classrooms, research laboratories such as maker space, eating facilities, or other spaces for public assembly. Ancillary uses may include eating facilities. No parking is contemplated as part of the project. Any parking needs will be met through the University's existing parking assets.

1.6 Campus Demographics

1.6.1 Students

Northeastern's full-time undergraduate enrollment for the 2019 - 2020 academic year is approximately 18,990 students. This includes 829 students for the less traditional, College of Professional Studies (CPS). The majority of CPS students are working full-time and the average student age is 32. This population is more likely to commute to classes than to live on or adjacent to campus.

The total full-time undergraduate enrollment includes students living outside of Boston, on co-op or studying abroad. In general, due to the dynamic elements of co-op, study abroad and other student activities, student population in the City of Boston generally hovers around 15,000. As of October 2019, 14,767 students are living in the City of Boston; 2,138 live outside of Boston, and 2,085 are out of state while on co-op or studying abroad. At this time, the University does not have any plans to cause any significant change to full-time undergraduate enrollment. There will not be any increase in enrollment as a result of the Project.

Northeastern's graduate school enrollment is more dynamic and complex. Over the last several years, Northeastern has been expanding its global reach and now has seven campus locations outside of Boston. The locations of these campuses are Charlotte, NC, Seattle, WA, San Francisco and San Jose, CA, Toronto and Vancouver, Canada, and London, United Kingdom. Much of the university's growth has been focused at these other campuses. Graduate student enrollment, including all full- and part-time students in graduate and law programs, at the Boston campus and across the seven other campuses, as well as and online, is approximately 13,808 for the 2019 - 2020 academic year. This total includes students living outside of Boston on co-op or studying abroad. This semester, approximately 5,534 graduate students are living outside the City of Boston and an additional 528 are living out of state while on co-op or studying abroad. Approximately 6,746 graduate students are living within the City of Boston in the fall 2019 semester.

1.6.2 Faculty and Staff

As of 2019, Northeastern employs 5,670 faculty and staff, not counting students and temporary workers. Of these employees, 5,424 work on the Boston campus and 1,505 of these employees are residents of the City of Boston, representing about 28% of the employees on the Boston campus. Of the 5,424 employees, 4,925 (91%) are full-time and 499 (9%) are part-time.

Future growth of the workforce will be responsive to the needs of the institution, as driven by research and academic priorities and market forces. Based on industry-wide best practices and comparative projections, Northeastern is projecting employee expansion of approximately 30% over the balance of the IMP period, although not all of that growth is expected on the Boston campus.

1.7 Campus Sustainability

Northeastern has a longstanding commitment to sustainability. In today's world of accelerating disruption, Northeastern's emphasis on resilience—the ability to withstand change and to recover and adapt quickly—strengthens that commitment.

Northeastern is meeting this imperative to build sustainable and resilient communities in a range of creative ways that marshal their strengths. The university is implementing forward-thinking initiatives to make their campuses more sustainable and resilient. Northeastern is sharing new knowledge and best practices across its global network of locations and industry partners. The university is leading multidisciplinary sustainability and resilience research, and is offering students robust academic programs and experiential learning opportunities that empower them to get involved in sustainability and resilience initiatives.

Northeastern's campuses have incorporated these core principles throughout their planning, construction and their day to day operations. From being recognized for its tireless commitment to reduce energy use to having the campus certified as an arboretum, Northeastern is creating a living laboratory for sustainability and resilience for its community.

Built Environment

Northeastern requires that all new major buildings or renovations achieve a minimum of LEED Silver certification, and incorporate other sustainability standards. To date, Northeastern has six LEED certified buildings in Boston including the Integrated Science and Engineering Complex certified LEED Gold in 2018 and East Village certified LEED Gold in 2016. There are two other building projects currently seeking LEED certification, including the recently completed LightView housing which is on track for Platinum certification, in addition to three other projects seeking sustainability certifications other than LEED. Other sustainability priorities include installing cool roofs, energy efficiency, and groundwater recharge systems.

Energy Management

Since 1992, Northeastern has made a concerted effort to reduce energy use as facilities are upgraded or expanded. Northeastern has conducted four campus-wide lighting upgrades and is in the middle of planning a fifth. Since 2009, Northeastern's energy efficiency investments have saved 12.5 million kWh, or over 10% of its electricity with projects that include campus-wide lighting upgrades, new motors, occupancy sensors, variable frequency drives, and expanding its energy management system. In 2015, Northeast Energy Efficiency Partnership recognized Northeastern for its leadership in reducing energy across the campus.

Waste Management

Despite being a constrained urban campus, Northeastern has been pursuing increased diversion of waste to recycling and composting facilities. About 1,900 tons of materials were recycled, composted, reused, or donated in 2018. This includes over 800 tons of compost collected from the dining halls and on campus restaurants. To reduce plastic waste, there are over 250 water bottle filling stations throughout campus.

Sustainable Dining

Northeastern is proud to serve locally grown produce. Local crops include potatoes, apples, pears, peppers, carrots, tomatoes, squash, and zucchini and constitute 14% of produce served, but each year Northeastern is pushing to increase this percentage. Fifteen campus restaurants and dining halls are Green Restaurant Certified, including Northeastern's International Village dining hall which is a 3-Star Certified Green Restaurant.

Transportation

Northeastern's Boston campus is well served by public transportation, biking and walking. About 93% of students use these more sustainable options to commute to the campuses. In addition, Northeastern has twelve Electric Vehicle (EV) charging stations on campus, two BLUEbikes bikeshare stations on- and adjacent to campus, each providing 30 bicycles for shared use, and 1,336 bike locking slots including four indoor secure bike lock locations are on the main campus.

Campus as an Arboretum

Northeastern's Boston campus has more than 1,400 individual trees, representing 143 different species, that shelter the walkways between buildings and surround the open green spaces, creating an urban oasis. Northeastern's Boston campus was named a level two arboretum, which means that it met the criteria of having more than 100 different species of trees, a policy that documents how the trees are maintained and acquired, and provides educational programming for the public.

1.8 Community Benefits

Following extensive consultation with the BPDA-appointed Northeastern IMP Task Force, the broader community, elected officials, and the BPDA, Northeastern committed to a robust package of public benefits in association with the eleven projects considered in the IMP. These specific commitments are over and above the diverse array of more than 240 community-focused programs and services that Northeastern developed over the years in response to community need and that the university continues to support. A comprehensive annual update on the IMP community benefits can be found in Appendix B and is also available online at: https://issuu.com/northeasterncrossing7/docs/2018_imp-cbar_annual_report_single.

The guidelines that Northeastern relied on to develop the package of community benefits associated with the IMP included the following:

- The benefit serves the mutual interests of the community and Northeastern and can be recognized to be of benefit in the local community and beyond;
- The benefit leads to sustainable partnerships in the community designed to promote the development of thriving communities along Northeastern's institutional borders, especially in Roxbury;
- The benefit builds on existing programmatic strengths and core competencies of the university, or builds upon other strengths that can be leveraged or harnessed;
- The benefit strives for innovative ways to optimize resources that build a strong community and a strong university; and
- The benefit helps develop a robust community engagement or service strategy that is supported by Northeastern's student and academic interests.

The specific community benefits are outlined in the IMP Cooperation Agreement that was executed in January 2014. Several of the benefits have been delivered including:

- Development of a neighborhood center, Northeastern Crossing, which opened in September 2015, and serves as a focal point for community engagement and a space that local residents and organizations can use for a variety of purposes;
- Renovation and expansion of Carter Playground, a City of Boston park available for public use, was completed in 2018. In addition to a substantial capital investment to renovate the fields, Northeastern contributes land to increase the playing areas and provides an air structure to increase utilization in the colder months. Northeastern University also committed to operate and maintain the park for 30 years;
- Creation of a beautiful, accessible pedestrian crossing of the train tracks that connects the Roxbury and Fenway neighborhoods through the Northeastern campus. This new bridge opened in May 2019;
- Delivery of 825 new student beds in partnership with ACC at LightView on Columbus Avenue which opened in August 2019; and
- Provision of an updated Student Housing Impact Report. The report was published in June 2019 and Pam McKinney presented the findings at the community task force meeting held on July 23, 2019. The full report is available at: http://www.bostonplans.org/getattachment/d12057e6-f270-4643-8278-157e69b94656.

In addition, Northeastern has several ongoing community benefit commitments. Some of the programs are highlighted below and a comprehensive update can be found in Appendix B.

- Partnering with Boston Public School (BPS) to offer its education opportunities and generous financial aid to students from the surrounding neighborhoods. Specifically, Northeastern has increased the availability of full tuition, need-based scholarships to Boston Public School graduates. Since 2014, 935 graduates of Boston Public High schools have matriculated to Northeastern undergraduate day program. Of those, an average of 36 students per year come to the university from the zip codes that are immediately abutting the university.

  Northeastern partners with BPS guidance counselors to host college readiness events on campus, particularly targeting students and families from the adjacent neighborhoods. Northeastern partners with local community colleges to offer transfer agreements for BPS graduates to access Northeastern if they are in good standing after two years at the community colleges. A similar program is ongoing for students to transfer in from the Foundation Year program.

- Maintaining regular and continuous dialogue and transparency with neighbors and exploring new possibilities for community-university engagement. This started out as an IMP Advisory Council and transformed into a Community Advisory Board, which includes a mix of individual residents of the adjacent neighborhoods and representatives of local community-based organizations. The Community Advisory Board (CAB) meets approximately four times per year.

- Working with partners to identify, advance, and support affordable housing projects in the surrounding neighborhoods that can take advantage of Northeastern's housing linkage obligations. While Northeastern has not recently paid linkage funds to support affordable housing projects in the vicinity of campus, Northeastern has kept ongoing communication with local neighborhood organizations, affordable housing developers, and the City about local affordable housing opportunities

- Assisting the City of Boston and Commonwealth of Massachusetts with the promotion and advancement of underrepresented businesses in the local community. As a key member of the community, Northeastern is proud to have provided community members with numerous opportunities for education and employment. With this formal commitment, in fiscal year 2015 Northeastern university continued to define goals for support by directing key percentages of Northeastern's spending to key groups of underrepresented business.

- Increasing hiring of local residents. Northeastern made a commitment and concerted effort to attract more employees from the City of Boston and the neighborhoods immediately adjacent to the Boston campus. From 2013 to 2018, Northeastern increased hiring of residents from the adjacent zip codes by 42%.

1.9 Project Team

The following lists the key members of the development team for the proposed Project:

Address/Location:	840 Columbus Avenue
Developer:	American Campus Communities, Inc. 12700 Hill County Blvd, Suite T-200 Austin, TX 78738 (512) 732-1000 Jason Wills
Institution:	Northeastern University 360 Huntington Avenue Boston, MA 02115 (617) 373-2000 Kathy Spiegelman John Tobin Maureen Hickey Michael Glover
Architect:	Elkus Manfredi Architects 25 Drydock Avenue Boston, MA 02210 (617) 426-1300 David Manfredi Christian Galvao Colin Whalen
Legal Counsel:	Mel Shuman Law 189 Eliot Street Brookline, MA 02467 Melvin Shuman, Esq.
Permitting Consultant:	Epsilon Associates, Inc. 3 Mill & Main Place, Suite 250 Maynard, MA 01754 (978) 897-7100 Talya Moked Hiromi Hashimoto

Transportation Consultant:	Howard Stein Hudson 11 Beacon Street, Suite 1010 Boston, MA 02108 (617) 482-7080 Ian McKinnon
Civil Engineer:	Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108 (617) 338-0063 Gary Pease Chris Hodney
Sustainable Design Consultant:	R. G. Vanderweil Engineers, LLP 274 Summer Street Boston, MA 02210 (617) 574-8132 Alana Spencer

Chapter 2

Project Description

2.0 PROJECT DESCRIPTION

2.1 Program Need

The Project presents an opportunity to continue to provide housing that is attractive and meets the needs of Northeastern's current and future students. The Project will include approximately 975 student housing beds. These beds will be more responsive to student preferences and draw students out of neighborhood housing. This Project will deliver the balance of the 1,000 bed commitment from the 2013 IMP and will contribute to the City of Boston's goal of constructing 18,500 new student beds by 2030.

The Project will provide an opportunity for the university to consolidate student beds in a single building offering a more dynamic living and learning community that appeals to Northeastern upper-class students. Across the university's entire student housing portfolio there are several buildings that are outdated, inefficient, and not particularly attractive to students. Many of these buildings are apartment buildings and rooming houses that were converted for student housing 40 to 50 years ago. To update Northeastern's student housing offerings and to provide housing that will draw students to live on-campus, the university plans to replace approximately 800 of these beds. These beds will be replaced in the proposed Project so that beds can be returned back to the market in order to increase housing opportunities for individuals and families in Boston and return properties onto the City's real estate tax rolls. These properties will be sold or ground leased ***after*** the new student beds are ready for occupancy; therefore there will be no decrease in student beds provided on campus. The Project and the anticipated property dispositions described above would result in approximately 175 net new beds on campus.

In addition to student housing, the five-story podium of the building will include office/academic space. Though the specific program has not yet been defined, the space will support the goals of developing academic facilities and research facilities to support Northeastern's growing research programs and academic programs. There will not be any increase in enrollment as a result of the Project.

2.2 Project Description

2.2.1 Project Site

The Project site contains approximately 32,382 sf located within Northeastern's south campus (see Figure 2-1). The Project site, which currently functions as a surface parking lot, is bounded by Columbus Avenue to the north, Melnea Cass Boulevard to the east, Tremont Street to the south, and the existing Renaissance Park building to the west. The Project site is an ideal location for pedestrian and transit-oriented student housing. Students can easily walk to the main Boston campus buildings. Furthermore, the Ruggles MBTA Station is less than a quarter-mile walk from the site, providing access to the MBTA Orange Line, several commuter rail lines, and numerous local bus routes.

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

840 Columbus Avenue Boston, Massachusetts

Epsilon ASSOCIATES INC.

Figure 2-1
Aerial Locus Map

2.2.2 Proposed Project

As shown in Table 2-1, the Project includes the construction of a new, 26-story, approximately 525,000 sf mixed-use building containing a five-story podium of academic/office space, and approximately 975 beds on the remaining 21 stories. The mix of academic and office space will be determined later in the design process depending on Northeastern's needs. It is anticipated that approximately 2,800 sf of the ground floor space will contain a food and beverage service. The Project will include a combination of efficiency units (studios), one-bedroom units, two-bedroom units with shared and private accommodations, and four-bedroom units with either shared or private accommodations.

The Project will host a spectrum of student amenities, including a social lounge, fitness center, Academic Success Center, and laundry room. Additionally, there will be on-site paraprofessional staff and resident assistants available. Floor plans and a section are provided in Figures 2-2 through 2-7.

Table 2-1 Project Program

Project Element	Approximate Dimension
Residential	975 beds/282 units
Academic/Office	115,300 sf
Retail/Café	2,800 sf ±
Total Gross Floor Area	**525,000 sf**
Parking	No on-site parking
Building Height	26 stories (299 feet)
Parcel Area	32,382 sf

The Project activate the site using transparent façade materials, allowing views and access to student and community gathering spaces, as well as street level retail space. Upgraded sidewalk materials and furnishings, street trees, and enhanced street level lighting will also be incorporated. The facades of the upper stories of the podium will also be highly transparent and will provide a visual connection between the public realm and the building interior, as well as providing views from within the building to the surrounding neighborhoods.

2.2.3 Project Benefits

In addition to the many community benefits provided by Northeastern University, the Project will include numerous benefits to the neighborhood and the City of Boston, including but not limited to:

- Creation of approximately 175 net new student beds, which will reduce the number of students that seek off-campus housing and the student housing impacts on Boston neighborhoods.

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Figure 2-2
Ground Floor Plan

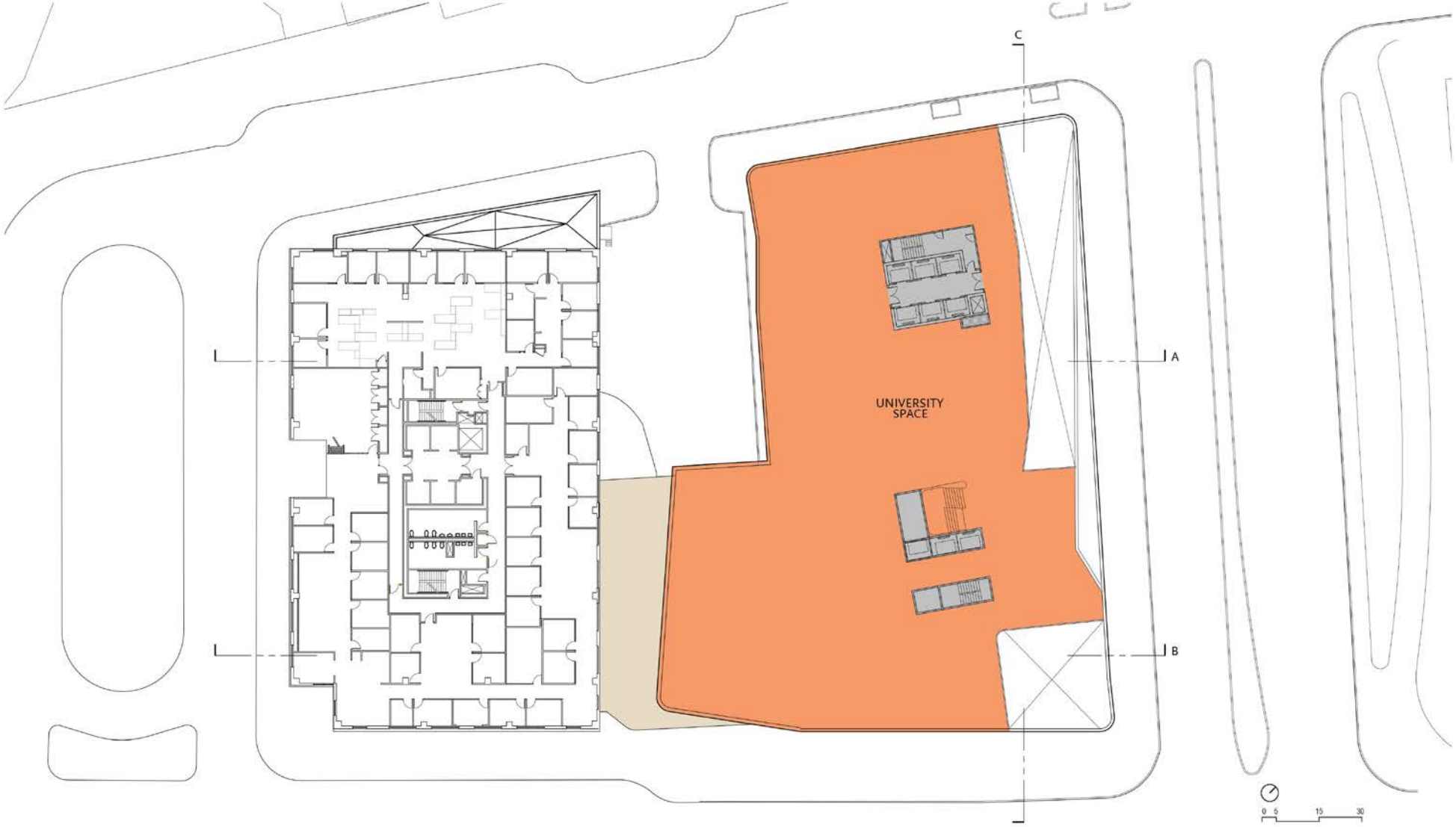

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Figure 2-3
Second Floor Plan

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Figure 2-4
Levels 3 through 5 Floor Plan

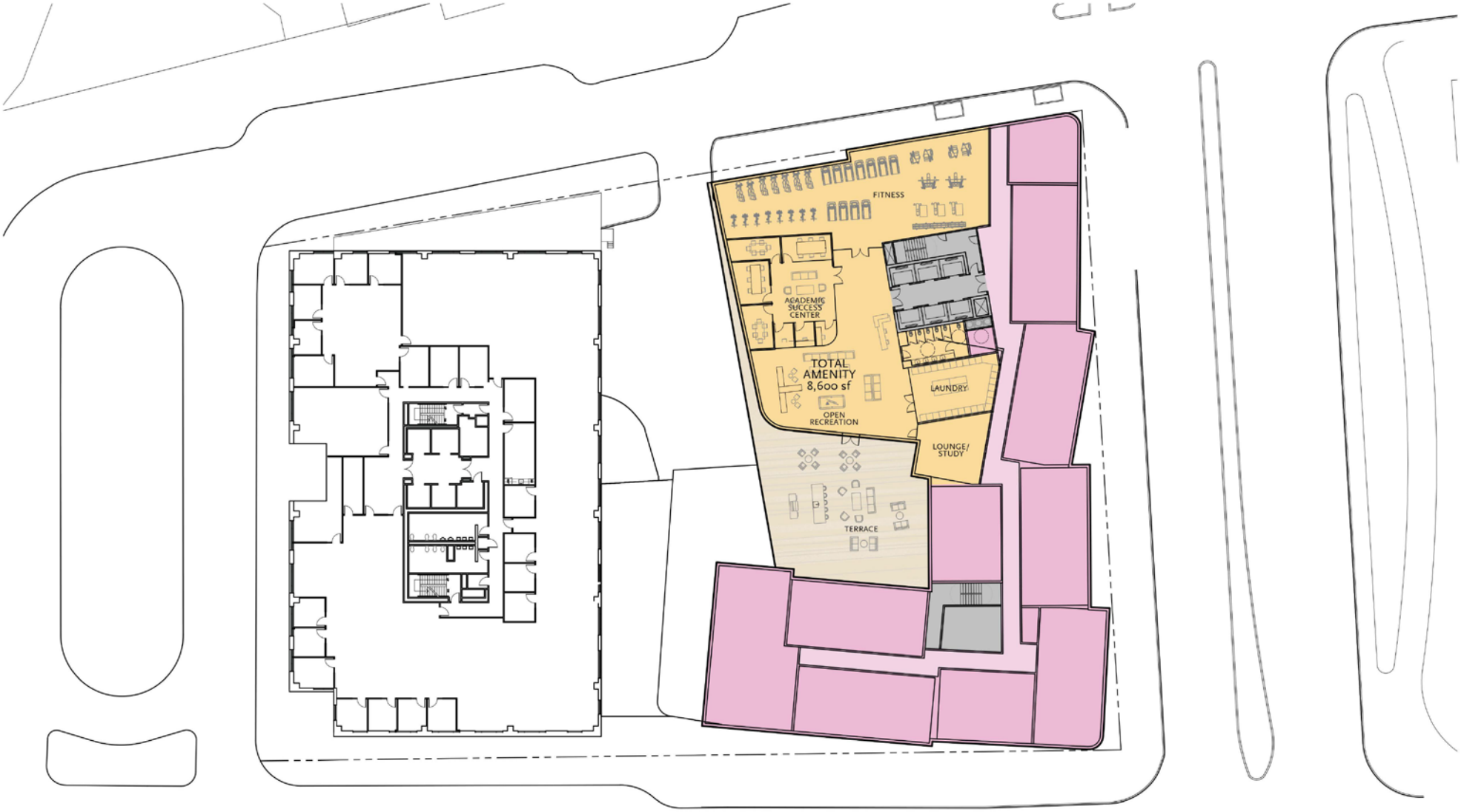

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Figure 2-5
Levels 6 Floor Plan

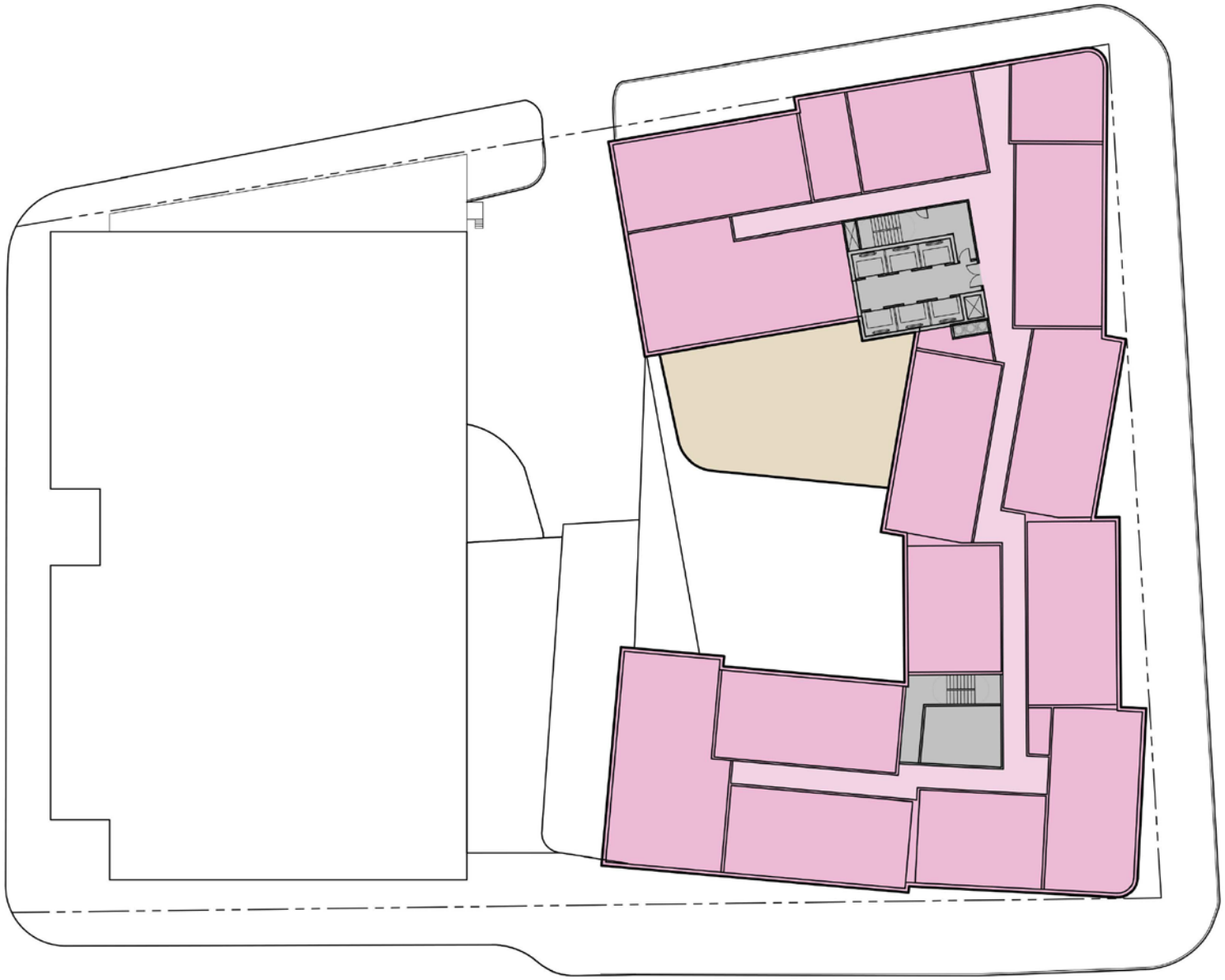

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Figure 2-6
Typical Residential Floor Plan

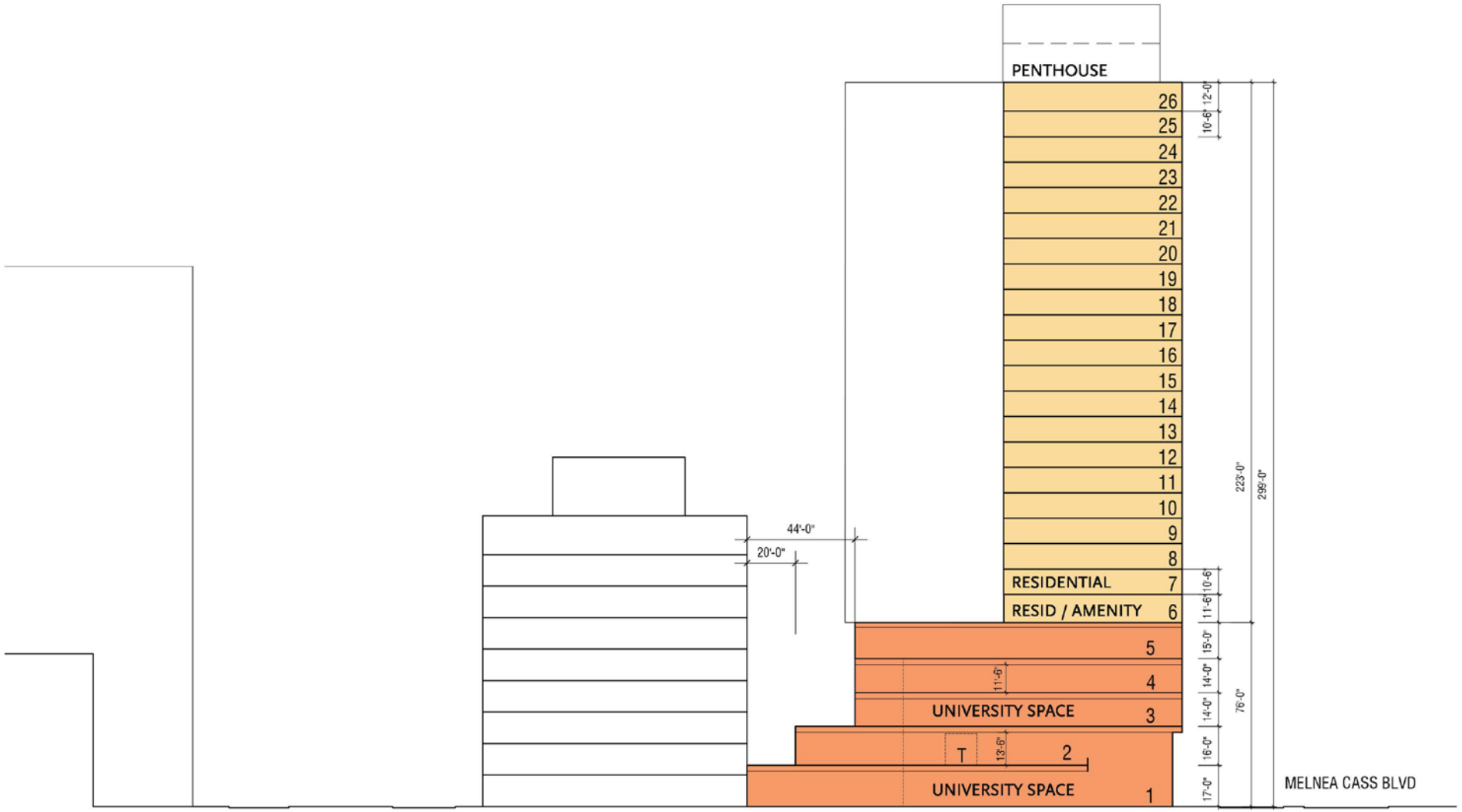

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Figure 2-7
Section

- Return of several properties to the neighborhood housing market and the city real estate tax roll because approximately 800 of the beds in the project will replace existing student housing.

- Creation of approximately 500 construction jobs, as well as new permanent jobs associated with building management, future Northeastern faculty/staff growth, and potential new office space.

- Improvement of the urban design characteristics and aesthetic character of the neighborhood by replacing a surface parking lot with active ground floor student uses and introducing high-quality architecture to the site.

- Compliance with Article 37 of the Boston Zoning Code by being Leadership in Energy and Environmental Design (LEED) certifiable anticipated at a minimum of Gold level.

2.2.4 Preliminary Project Schedule

It is anticipated that construction will begin in the first quarter of 2021 and will last approximately 31 months.

2.3 Relationship with ACC

Northeastern intends to lease a portion of the site to an ACC-related entity that will develop the Project. ACC will own and operate the student apartment community under a dormitory license from the City of Boston while Northeastern will own and operate the academic/office space located within the five-story podium. The lease will restrict the use of the site to student housing apartments and give Northeastern University students in their third, fourth, and fifth years of study the first right to lease apartments. The lease will require that the Project be operated in accordance with the Northeastern University student code of conduct.

2.4 Zoning

The Project site is located within: (i) the Greater Roxbury Economic Development Area within the Roxbury Neighborhood District; (ii) the Restricted Parking Overlay District; (iii) the Northeastern Institutional Master Plan Area; (iv) a Planned Development Area (PDA) overlay district; and (v) the area subject to the IMP. A portion of the Project Site is also located within the Boulevard Planning District of the Roxbury Neighborhood District. Section 7.5.3 of the IMP identified the Project site as an area of interest for potential future partnerships for development or tenancy, noting that it was part of a PDA then intended for hotel development. As described above, the Project consists of a building with approximately 525,000 sf of gross floor area (GFA) containing a podium of five levels of academic/office and related use topped by approximately 975 beds of student housing on the Project site, resulting in a FAR of approximately 16.2.

As noted, the Project is also in a PDA, which is a special purpose overlay district established pursuant to Section 3-1A of the Boston Zoning Code – in this case, Planned Development Area No. 34 which is subject to the Amended and Restated Development Plan for Planned Development Area No. 34 Renaissance Park (the Development Plan) approved in 2007. The Development Plan also contemplates that the Project site will be used as a hotel. However, if the proposed amendment to the IMP is approved, the Project will be permitted without any further zoning relief in accordance with Section 80D-11 of the Code, subject to obtaining a Certification of Consistency with the IMP pursuant to Section 80D-10 of the Code and a Certification of Compliance under Large Project Review pursuant to Section 80B-6 of the Code. Section 80D-11 provides that an IMP project which has obtained a Certification of Consistency and, of applicable, a Certification of Compliance "shall be deemed to be in compliance with the use, dimensional, parking and loading requirements of the underlying zoning (including special purpose overlay districts established pursuant to Section 3-1A), notwithstanding any provision of the underlying zoning to the contrary and without the requirement of further Zoning Relief." Even though approval of the IMP obviates the need for any further zoning relief, the Proponent also contemplates an amendment to the Development Plan, as well as a corresponding map amendment, to exclude the Project site from the PDA.

The apartments will be restricted to student housing uses through the ground lease of the Project site from Northeastern to an ACC-related entity and will be approved under a dormitory license in accordance with Northeastern's student code of conduct and housing standards, with paraprofessional staff and resident assistants on site. As such, the dwelling uses in the Project are classified as a Dormitory, as defined in Section 2A of the Code and are, therefore, exempt from the provisions of the Mayor's Order Relative to Inclusionary Development dated December 9, 2015. The Project will also include approximately 2,800 sf of GFA of ground floor commercial space and 115,300 sf of GFA for academic or office use. The Project will not include any off-street parking.

2.5 Anticipated Permits and Approvals

Table 2-2 presents a preliminary list of permits and approvals from governmental agencies that are expected to be required for the Project, based on currently available information. It is possible that some of these permits or actions will not be required, or that additional permits or actions will be required.

Table 2-2 Anticipated Permits and Approvals

Agency	Approval
Local	
Boston Civic Design Commission	Design Review
Boston Planning and Development Agency	Article 80B Large Project Review; Article 80D IMP Amendment; Article 80C PDA Amendment; Cooperation Agreement; Boston Residents Construction Employment Plan
Boston Zoning Commission	Approval of IMP Amendment; Approval of PDA Amendment; Map Amendment
Boston Transportation Department	Construction Management Plan; Transportation Access Plan Agreement
Boston Water and Sewer Commission	Site Plan Review; Water and Sewer connection permits; Cross Connection Backflow Prevention Approval (as required); Temporary Construction Dewatering Permit (as required)
Boston Inspectional Services Department	Building Permit; Other construction-related permits; Certificate(s) of Occupancy
Boston Public Works Department	Curb Cut Permit(s); Street Opening Permit (as required); Street/Sidewalk Occupancy Permit (as required)
Public Improvement Commission	Specific Repair Plan (as required); Permit/Agreement for Temporary Earth Retention Systems, Tie-Back Systems and Temporary Support of Subsurface Construction (as required); Permit for sign, awning, hood, canopy or marquee (as required)
Public Safety Commission Committee on Licenses	Flammable Storage License (as required)
Boston Licensing Board	Dormitory License
Boston Fire Department	Permit for fuel storage (as required)
Boston Parks Department	Approval within 100 feet of park (as required)
State	
Department of Environmental Protection	Sewer Connection Permit or Self-Certification (as required); Fossil Fuel Utilization Permit (as required); Notice of Construction
Massachusetts Historical Commission	Determination of No Adverse Effect (as required)
Massachusetts Water Resources Authority	Temporary Construction Dewatering Permit (as required)
Federal	
Environmental Protection Agency	NPDES General Construction Permit (as required)
Federal Aviation Authority	Determination of No Hazard to Air Navigation

2.6 Legal Information

2.6.1 Legal Judgements Adverse to the Proposed Project

There are no legal judgments adverse to the proposed Project.

2.6.2 History of Tax Arrears on Property

The Proponent does not have a history of tax arrears on property that it owns in the City of Boston.

2.6.3 Evidence of Site Control/Public Easements

Northeastern owns the Project site in accordance with a deed recorded in Suffolk County Registry of Deeds in Book 21899, Page 307. See Appendix C for a site survey.

Chapter 3

Transportation

3.0 TRANSPORTATION

3.1 Overview

This chapter describes the transportation-related components of the Project in accordance with the Boston Transportation Department's ("BTD") *Transportation Access Plan Guidelines* (2001) and the Article 80 Large Project Review process. Although BTD has not issued a formal transportation scoping determination, this section adheres to the general format requested by BTD.

Since the Project will not include any new parking, the analysis is focused on pedestrian activity, bicycle circulation and facilities, loading, and transportation demand management (TDM) measures.

3.1.1 Project Description

The Project site is located in the parking lot adjacent to Northeastern University's existing Renaissance Park building and has frontage on Columbus Avenue, Melnea Cass Boulevard, and Tremont Street. The Project would replace the existing, approximately 32,382 sf site with a mixed use campus development designed to accommodate new student residences as well as academic and commercial office space and ground floor retail. The Project will provide approximately 975 beds, 115,300 square feet of office space, and 2,800 square feet of retail space. As described in Section 2.1, of the 975 beds, 800 will be consolidated from other on-campus student residences and 175 are new student beds.

The Project will eliminate approximately 86 existing surface parking spaces, all of which are permitted to monthly card holders of the adjacent Beth Israel Deaconess Medical Center offices at 1135 Tremont Street. Given the proximity to the Northeastern campus and the 970-space Renaissance Parking garage, as well as the wide variety of public transit services located nearby, no parking will be provided as part of the Project.

No increase in student enrollment is anticipated with the addition of this Project. With the proposed development of this Project, the proportion of students living in on-campus housing will increase and trips to and from the campus will decrease.

All service and loading activity for the Project will take place within a dedicated loading area located opposite of the loading area for the existing Renaissance Park building.

The main student residential entrance will be on Melnea Cass Boulevard. Entrances to the retail and academic/office spaces will be provided on Melnea Cass Boulevard and Tremont Street.

The Project will provide a ground floor dedicated bicycle storage room as well as outdoor bicycle racks for visitors and guests. Access to the bicycle storage facility will be provided along Columbus Avenue.

3.1.2 Context

The Project site is located within Northeastern University's south campus and within walking distance of a variety of transportation alternatives including public transit, BlueBike shared bicycle facilities, as well as locations for Zipcar, Turo, and Getaround car-sharing services.

For Northeastern students, bicycles and walking are the primary modes of access to and throughout the Boston campus. While bicycling and walking are not the primary mode of access for most of Northeastern's faculty and staff, they are still a key mode of access. According to Northeastern's 2018 DEP Rideshare Survey, approximately 61 percent of all students and approximately eleven percent of all faculty/staff walk or bike to campus.

Northeastern has excellent access to a wide variety of public transportation options including 15 Massachusetts Bay Transportation Authority (MBTA) bus routes, Medical Academic and Scientific Community Organization, Inc. (MASCO) Shuttle bus access, rapid transit on the MBTA's Orange and Green lines, and commuter rail service. According to the 2018 DEP Rideshare Survey, public transit is the primary mode of access to campus for faculty and staff, and accounts for approximately 56 percent of trips. Public transit is also the secondary mode of access to campus for students, accounting for approximately 32 percent of trips.

Northeastern has made a strong commitment to TDM and continues to make improvements to TDM practices in order to reduce single-occupant automobile trips to and from its campus, and to promote non-automobile alternatives. As a result, since the Northeastern University 2012 DEP Rideshare Survey, drive-alone commuter trips to and from campus have declined slightly – from 6 percent to just 4 percent for students, and from 29 percent to 26 percent for faculty/staff, according to the 2018 DEP Rideshare Survey.

Table 3-1 summarizes the transportation mode splits from both the 2012 and 2018 Northeastern University DEP Rideshare Survey.

Table 3-1 Northeastern University Ride Share DEP Rideshare Survey Mode Splits

Mode	Student		Faculty/Staff	
	2012[1]	2018[2]	2012[1]	2018[2]
Drive Alone	6%	4%	29%	26%
Carpool	1%	1%	4%	6%
Transit	32%	32%	54%	56%
Walk/Bike	61%	61%	10%	11%
Ride Hail	0%	2%	0%	1%
Other	0%	0%	3%	0%
Total	**100%**	**100%**	**100%**	**100%**

1. Northeastern University 2012 DEP Rideshare Survey.
2. Northeastern University 2018 DEP Rideshare Survey.

3.2 Existing Transportation Condition

This section describes existing roadway conditions, parking supply and activity, transit and car-sharing services, and pedestrian and bicycle conditions associated with the Project site.

3.2.1 Existing Roadway Conditions

The site is bounded by Columbus Avenue to the north, Melnea Cass Boulevard to the east, and Tremont Street to the south. The area providing immediate access to the Project includes the following major roadways, which are categorized according to the Massachusetts Department of Transportation (MassDOT) Office of Transportation Planning functional classifications:

Columbus Avenue is located to the north of the Project site and primarily runs northeast to southwest between Park Plaza and Tremont Street. To the east of its intersection with Arlington Street, it is generally a one-way southwest bound, two-lane roadway and to the west of its intersection with Arlington Street, it is generally a two-way, four-lane roadway. In the vicinity of the Project site, Columbus Avenue is a two-way, two-lane roadway. Columbus Avenue is classified as an urban principal arterial under BTD jurisdiction. On-street parking and sidewalks are provided on both sides of Columbus Avenue.

Melnea Cass Boulevard extends from Massachusetts Avenue to Columbus Avenue in the South End of Boston. Across Massachusetts Avenue, Melnea Cass Boulevard connects to the "Massachusetts Avenue Connector," which provides access to I-93 northbound and southbound and I-90 eastbound and westbound. Classified as an urban principal arterial street under control of the City of Boston, Melnea Cass Boulevard provides two lanes in each direction with additional left turn lanes at Tremont Street, Washington Street, Harrison Avenue, Hampden Street, and Massachusetts Avenue. All of the intersections along the street are signalized, except the intersection with Northampton Street (Crosstown Drive). While varying in width from block to block, the roadway is generally 55-feet wide, with 7-foot sidewalks on either side. On-street parking is prohibited along the entire roadway. MBTA buses 8, 19, 43, and 47 run along Melnea Cass Boulevard within the study area. On the north side of the street, a 40-foot wide easement has been provided to accommodate Urban Ring public transportation. Today this easement is a landscaped corridor with a pedestrian/bicycle path, the South Bay Harbor Trail (SBHT), running through it. Sidewalks provided along both sides of the roadway in the vicinity of the study area are approximately seven feet wide.

Tremont Street, an urban principal arterial, extends from Huntington Avenue in Mission Hill to Cambridge Street in Downtown Boston. Tremont Street runs primarily east-west in the vicinity of the study area. In the study area, Tremont Street provides two lanes in each direction with additional turning lanes at Massachusetts Avenue, Columbus Avenue, and Ruggles Street. Near Massachusetts Avenue there is on-street parking provided along both sides of the roadway; however, there is no parking near any other intersection in the vicinity of the study area. Sidewalks provided along both sides of the street range in width from nine to 24 feet.

Whittier Street, an urban local street, runs north from Cabot Street to Tremont Street. Whittier Street provides one northbound lane with on-street parking along both sides of the roadway. Near its intersection with Tremont Street, Whittier Street consists of two lanes with on-street parking provided only on the west side. Sidewalks along both sides of the road are approximately eight feet wide.

Ruggles Street, an urban minor arterial, runs north-south from Huntington Avenue to Tremont Street. Ruggles Street generally consists of two lanes northbound and one lane southbound. There is no on-street parking provided on either side of the roadway. There are three MBTA bus stops located along Ruggles Street. Sidewalks provided along both sides of the roadway range in width from eight to twelve feet.

3.2.2 Existing Parking

An inventory of the existing on-street parking and car-sharing services in the vicinity of the Project was collected. A description of each follows.

3.2.2.1 On-Street Parking and Curb Usage

On-street parking surrounding the Project site consists of a variety of different parking regulations including metered parking, residential permit parking, pick-up/drop-off areas, and several others. The on-street parking regulations within the study area are shown in Figure 3-1.

3.2.2.2 Off-Street Parking

Northeastern University currently owns and operates five parking garages and thirteen surface parking lots on campus, including the proposed Project site, with a combined capacity of approximately 3,158 parking spaces. Parking is available for a combination of faculty, staff, students, visitors, and the general public. The Northeastern University off-street parking supply is summarized in Table 3-2 and illustrated in Figure 3-2.

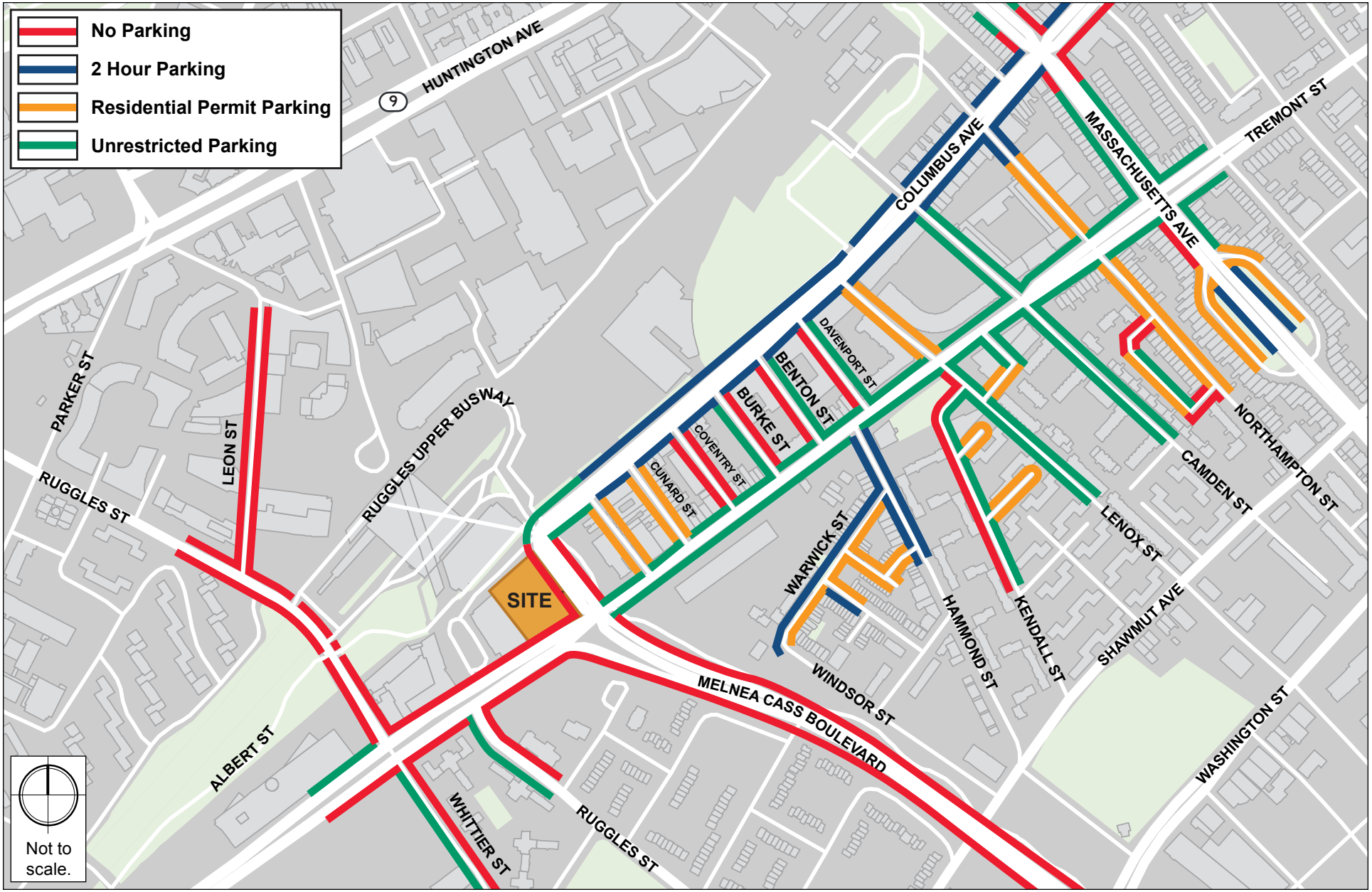

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Figure 3-1
On-Street Parking

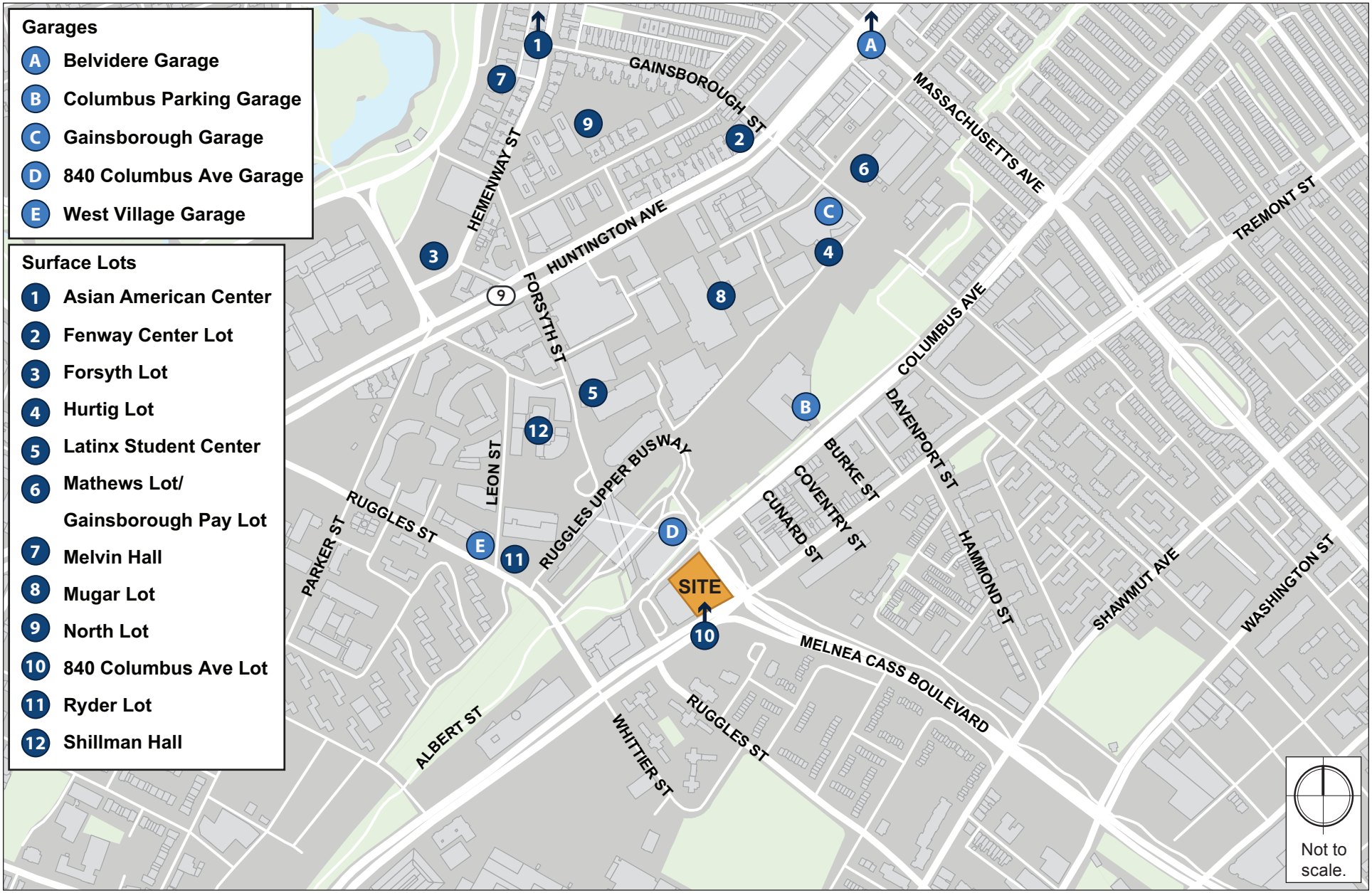

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Figure 3-2
Off-Street Parking Facilities

Table 3-2 Northeastern University Off-street Parking Supply

Map Label	Parking Facility	Parking Permits & Restrictions	Supply (spaces)
		Garages	
A	Columbus Garage	Faculty/Staff, Student	1,029
B	Gainsborough Garage	Visitor, Faculty (Day)	328
C	Renaissance Park Garage[1]	Visitor, Student, Faculty (Evening/Overnight)	972
D	West Village Garage	Visitor, Student, Faculty/Staff (Day)	267
	Belvidere Garage[2]	Visitor	94
	Subtotal Garages		**2,690**
		Surface Lots	
1	Asian American Center	Restricted	2
2	Fenway Center Lot	Faculty/Staff	14
3	Forsyth Lot (140 The Fenway)	Faculty/Staff	36
4	Hurtig Lot[3]	Faculty/Staff, Restricted	72
5	Latinx Student Center	Restricted	8
6	Matthews Arena	Faculty/Staff	46
	Gainsborough Pay Lot	Visitors, Event	33
7	Melvin Hall	Restricted	4
8	Mugar Lot	Restricted	4
9	North Lot	Faculty/Staff, Student	144
10	Renaissance Park Lot[4]	Beth Israel Hospital Monthly Cards (~75 permits)	62
11	Ryder Lot	Faculty/Staff, Vendor decals	38
12	Shillman Hall	Restricted	6
	Subtotal Lots		**469**
	Total		**3,159**

[1] Includes parking for Children's Hospital (500 permits), Beth Israel (25 permits), and NU Vans (58 nested spaces).
[2] Garage operated by Church of Christ Science, 94 spaces associated with Northeastern leases at 177 Huntington, 216 Massachusetts Avenue, and 101 Belvidere. Northeastern University parkers must obtain a special permit and access card to utilize the facility.
[3] 48 spaces are dedicated to YMCA during the day and the remaining 26 are available to YMCA after 5 p.m. No overnight parking.
[4] Proposed Project site; used exclusively by Beth Israel monthly card holders (~75 permits).

3.2.2.3 Car-Sharing Services

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

Zipcar is the primary car-share company in the Boston car-sharing market, however other companies such as Turo and Getaround also operate within the city. There is currently one Zipcar location within a five-minute walk (one-quarter mile) of the Project site. Additionally, five Zipcar locations, 14 Turo cars, and four Getaround cars exist within a ten-minute walk (one-half mile) from the Project site. The nearby car-sharing locations are shown in Figure 3-3.

3.2.3 Existing Public Transportation Services

Northeastern has excellent transit access and is conveniently located adjacent to 15 MBTA bus routes, three MASCO shuttle bus routes, MBTA Green Line Heath/Lechmere E Branch on Huntington Avenue to the north, the MBTA Orange Line and commuter rail service at Ruggles Station to the north of the site, and Orange Line service at Massachusetts Avenue Station to the northeast. Ruggles Station is a major transit hub housing rapid transit, bus and commuter rail service. Public transportation is also an important mode of access for students and visitors and provides important connections to the surrounding commercial and cultural attractions, particularly for students living on the campus. The public transportation system serving the area around Northeastern University is shown in Figure 3-4 and listed in Table 3-3.

Table 3-3 Existing Public Transportation Services

Transit Service	Description	Daytime Frequency (minutes)
Subway Lines		
Orange	Oak Grove Station – Forest Hills Station	6-9
Green Line	E Line – Lechmere Station – Heath Street Station	6-8
Bus Routes		
1	Harvard Square to Dudley Station via Massachusetts Avenue	8-11
8	Harbor Point/UMASS to Kenmore Sta. via B.U. Medical Center & Dudley Station	14-55
15	Kane Sq. or Fields Corner Sta. to Ruggles Sta. via Uphams Corner	6-14
19	Fields Corner Sta. to Kenmore or Ruggles Sta. via Grove Hall & Dudley Station	14-60
22	Ashmont Sta. to Ruggles Sta. via Talbot Ave. & Jackson Sq.	8-15
23	Ashmont Sta. to Ruggles Sta. via Washington St.	6-12
28	Mattapan Sta. to Ruggles Sta. via Dudley Station	9-12
39	Forest Hills Sta. to Back Bay Sta. via Huntington Ave.	7-15
43	Ruggles Sta. to Park & Tremont Streets via Tremont St.	20-30
44	Jackson Sq. Sta. to Ruggles Sta. via Seaver St. & Humboldt Ave.	16-30
45	Franklin Park Zoo to Ruggles Sta. via Blue Hills Ave.	14-30
47	Central Sq., Cambridge to Broadway Sta. via BU Medical Center, Dudley Station & LMA	10-20
CT2	Sullivan Sta. to Ruggles Sta. via Kendall/MIT	25-35
CT3	Beth Israel Deaconess Medical Center Andrew Sta. via B.U. Medical Center	20-70

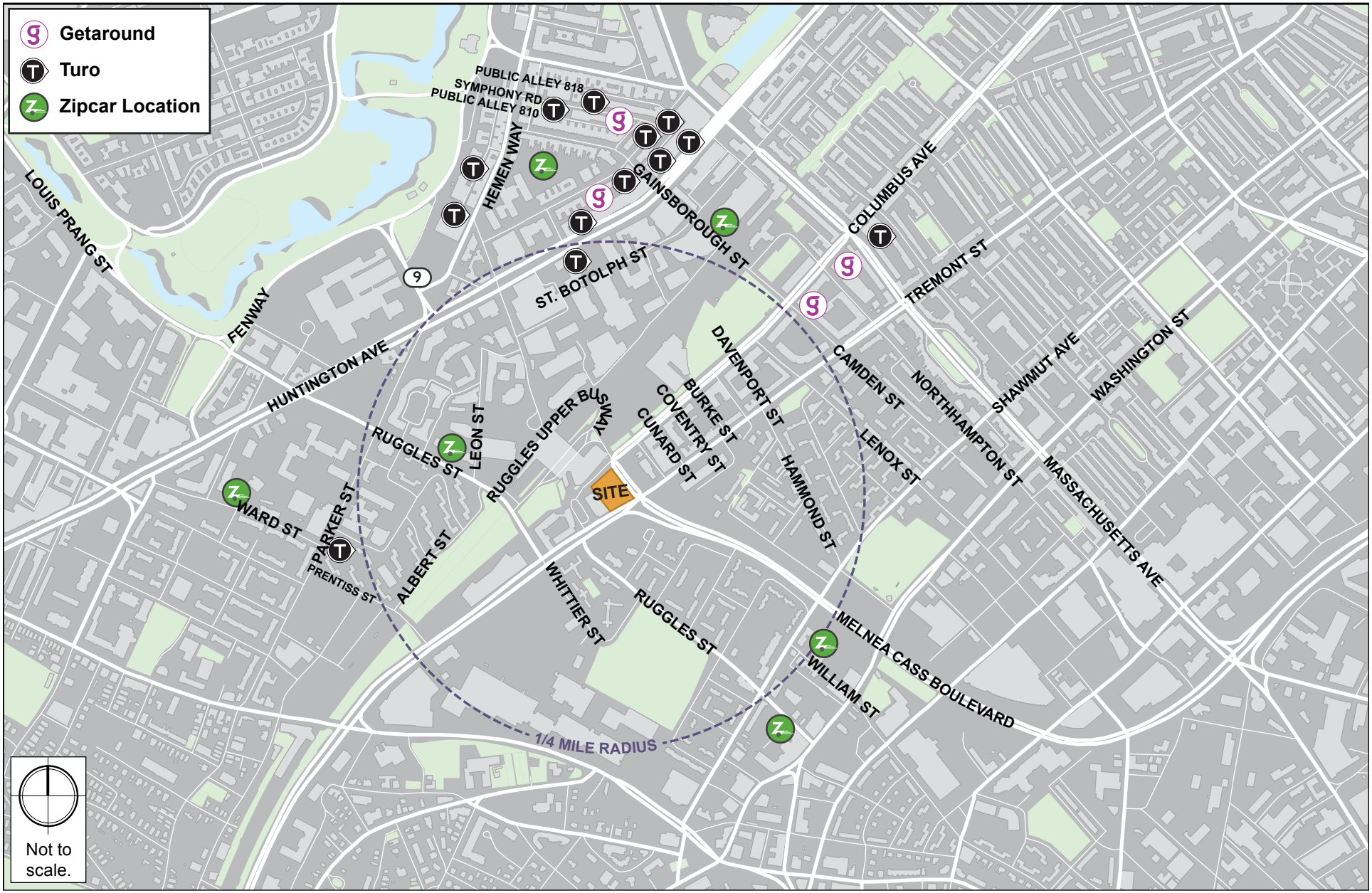

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Figure 3-3
Car Sharing Locations

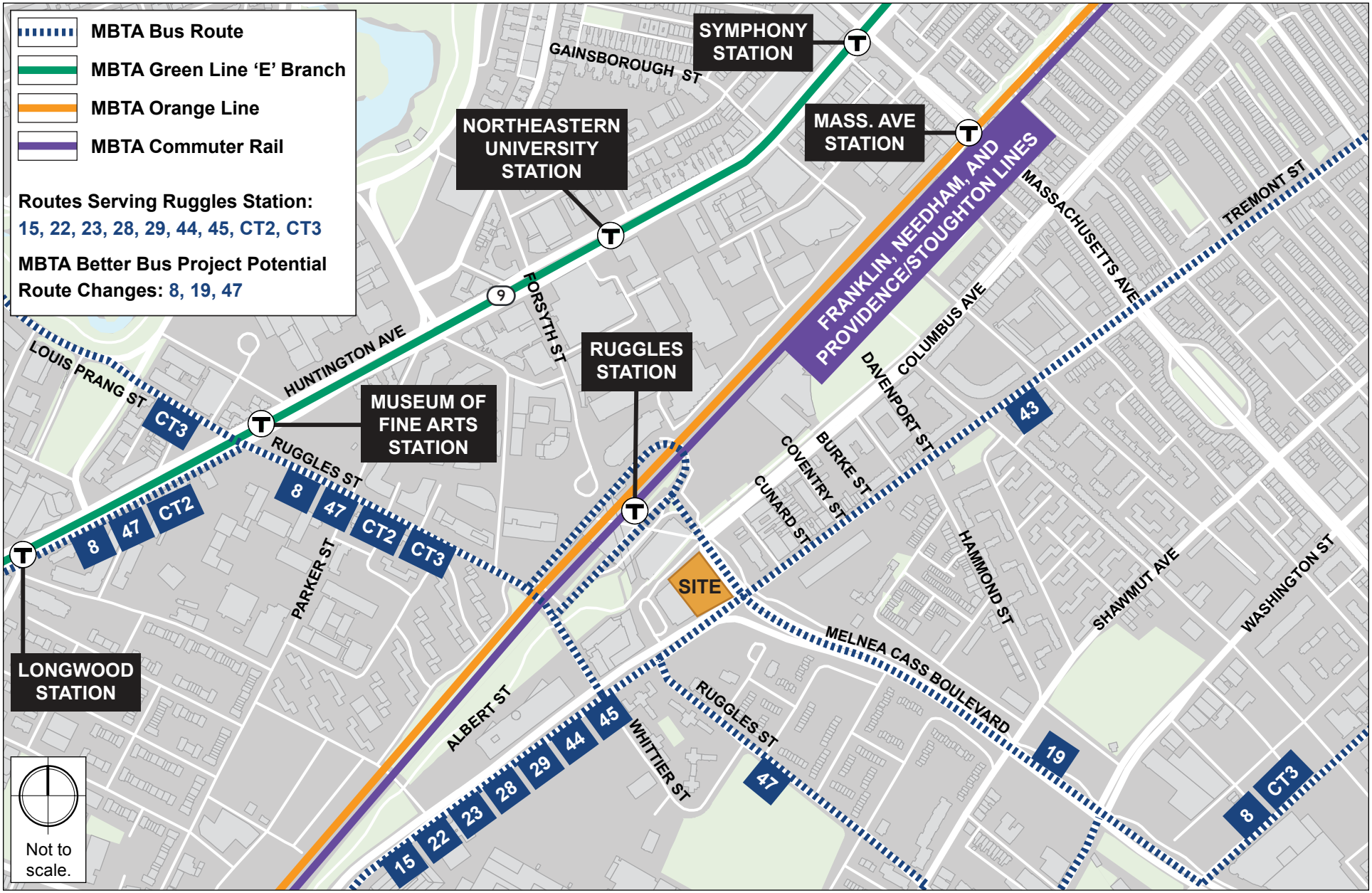

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Figure 3-4
Public Transportation

3.2.3.1 MBTA Orange Line

The MBTA's Orange Line subway provides service from Forest Hills Station in Jamaica Plain, Boston through downtown Boston to Oak Grove Station in Malden, Massachusetts. The Orange Line provides inbound and outbound service approximately every six minutes Monday through Friday and every nine to 13 minutes on Saturday and Sunday. Two MBTA stations are located within walking distance of the campus and used by the Northeastern community: Ruggles and Massachusetts Avenue stations. Ruggles Station is located in the south campus at the corner of Ruggles and Tremont Streets. The Massachusetts Avenue Station is east of the campus on Massachusetts Avenue between Columbus Avenue and St. Botolph Street. A secondary egress from Massachusetts Avenue station is provided on the Camden footbridge. This secondary egress is convenient for those coming to the campus, but riders cannot enter the station from this location.

3.2.3.2 MBTA Green Line

The MBTA Green Line E Branch provides trolley service between Heath and Lechmere stations. The E Branch operates on six-minute headways during the weekday morning and afternoon peak periods and on seven to nine-minute headways during off-peak periods. Weekend service runs approximately every nine to twelve minutes. The Museum of Fine Arts, Northeastern and Symphony Stations are all located within one-half mile from the Project site along Huntington Avenue.

3.2.3.3 MBTA Bus Service

As shown in Table 3-3 and Figure 3-4, the Northeastern Campus is located within convenient walking distance to 15 MBTA bus routes.

The primary MBTA bus route serving the Northeastern campus is the #39 Bus, which provides service between Forest Hills Station and Back Bay Station via Huntington Avenue. The buses operate on six- to ten-minute headways during the weekday morning and afternoon peak periods.

The Project site is adjacent to Ruggles Station, where passengers can access twelve MBTA bus routes, three MASCO shuttle bus routes, Orange Line rapid transit, and the commuter rail. The Project site is also located adjacent to the MBTA #43 bus on Tremont Street that provides service between Ruggles Station and Park Street Station.

3.2.3.4 MASCO Shuttle Buses

Medical Academic and Scientific Community Organization, Inc. (MASCO) is a non-profit organization dedicated to enhancing Boston's Longwood Medical and Academic area (LMA) with nearly 12,500 riders each day over ten different routes by using a fleet of 37 vehicles. MASCO, along with Paul Revere transportation, helps transport people to and around the LMA area via

shuttle services from public transit stops and off-site parking facilities. MASCO operates four shuttles that stop at, or near, Ruggles Station, including the Ruggles Express, JKF/UMass, Mission Hill, and Crosstown Shuttles.

3.2.3.5 MBTA Commuter Rail

Three MBTA commuter rail lines run through Ruggles Station: the Providence/Stoughton Line, the Franklin Line, and the Needham Line. Pilot service from Foxboro station is scheduled to begin in October 2019 with limited service to Ruggles. These trains provide access from Boston to the southern and southwestern regions of Massachusetts and Rhode Island.

The Needham Line has twelve inbound trains and twelve outbound trains that stop at Ruggles Station. Inbound trains run between 6:41 a.m. and 10:39 p.m. Outbound trains run between 12:09 p.m. to 10:39 p.m. Peak hour headways are approximately 30 minutes.

The Franklin Line has seven inbound trains and twelve outbound trains that stop at Ruggles Station. Inbound trains run between 7:00 a.m. and 12:57 p.m. approximately every 16 to 54 minutes during the peak periods. Outbound trains run between 12:53 p.m. to 11:58 p.m. approximately every 25 to 30 minutes during the peak periods.

The Providence/Stoughton Line has ten inbound trains and 25 outbound trains that stop at Ruggles Station. Inbound trains run between 6:11 a.m. and 2:42 p.m. approximately every 20 to 40 minutes during the peak periods. Outbound trains run between 6:28 a.m. to 12:07 a.m. approximately every eight to 27 minutes during the peak periods and less frequently during the morning hours.

Currently Ruggles Station has two commuter rail platforms servicing Tracks 1 and 3. During some train services, passengers riding the MBTA commuter train on Track 2 must get off at Back Bay Station and track back using the Orange Line to access Ruggles Station area. The Ruggles Station Platform Project, slated to open in 2020, is constructing a new 800-foot long platform on Track 2which will allow all trains the flexibility of stopping at Ruggles Station. Two new platform entrances will be constructed to provide access to the busway and Northeastern campus.

3.2.4 Existing Pedestrian and Bicycle Environment

Sidewalks are provided on both sides of all of the roadways within the study area. Crosswalks and ramps are provided at all of the study area intersections.

Dedicated bicycle lanes are provided along Columbus Avenue east of Melnea Cass Boulevard. Additionally, there are share-the-road arrows (sharrows) along Ruggles Street, north of Tremont Street. The City of Boston's "Bike Routes of Boston" map, updated in August 2013, designates Ruggles Street and Tremont Street as intermediate routes, or routes which do not have on-road bicycle markings or signage and are suitable for riders with some on-road experience. Additionally, the Southwest Corridor path, which follows the north edge of Columbus Avenue, is designated as a beginner route, or a path, trail or car-free roadway suitable for all riders including

new cyclists with no on-road experience. There is also a separated pathway that follows the east edge of Melnea Cass Boulevard that is designated as a beginner route, or a path, trail or car-free roadway that is suitable for all riders including new cyclists with no on-road experience.

The Project site is also located in proximity to numerous bicycle-sharing stations provided by BLUEbikes. BLUEbikes (formerly Hubway) is the Boston area's largest bicycle sharing service which was launched in 2011 and currently consists of more than 3,000 shared bicycles at more than 300 stations throughout Boston, Brookline, Cambridge, Somerville, and Everett. As shown in Figure 3-5, there is one BLUEbike station located adjacent to the site across Columbus Avenue and an additional ten located within one-half-mile of the site.

3.3 Future Conditions

The following sections provide a summary of the future transportation conditions without and with the Project.

3.3.1 No-Build Condition

The "No-Build Condition" reflects a future scenario that incorporates anticipated traffic volume changes associated with two factors: background traffic growth independent of any specific project and traffic associated with specific planned development projects.

The methodology to account for general future background traffic growth is to evaluate how traffic volumes may be affected by changes in demographics, smaller scale development projects, or projects unforeseen at this time. Based on a review of recent and historic traffic data and to account for any additional unforeseen traffic growth, a traffic growth rate of one-half percent per year applies to traffic volumes in the vicinity of the Project site.

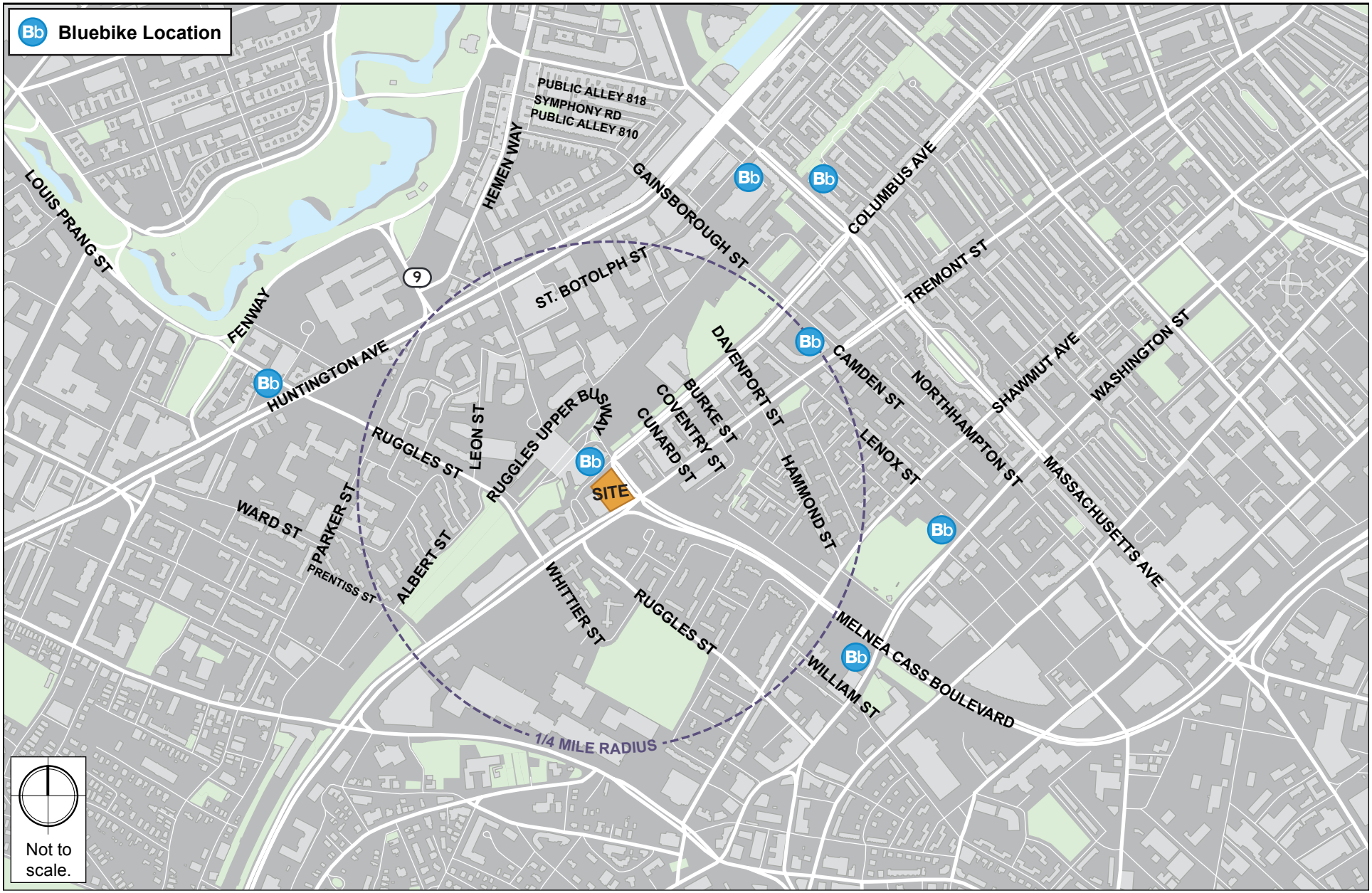
The traffic volumes associated with known, larger, or adjacent development projects can affect traffic patterns throughout the study area within the future analysis time horizon. Key background development projects were identified in the vicinity of the Project site and are shown in Figure 3-6.

3.3.2 Build Condition

The Project is proposed to include the construction of a mixed-use academic building that will house approximately 975 beds, 115,300 square feet of office space, and 2,800 square feet of retail space. Of the 975 beds, 800 will be consolidated from other on-campus student residences and only 175 create new on-campus housing.

3.3.2.1 Parking and Loading Accommodations

As previously mentioned, on-site parking will not be provided. The Proponent anticipates that Project parking will be accommodated at the Renaissance Park Garage.



840 Columbus Avenue Boston, Massachusetts

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Figure 3-5
Bicycle Sharing Locations

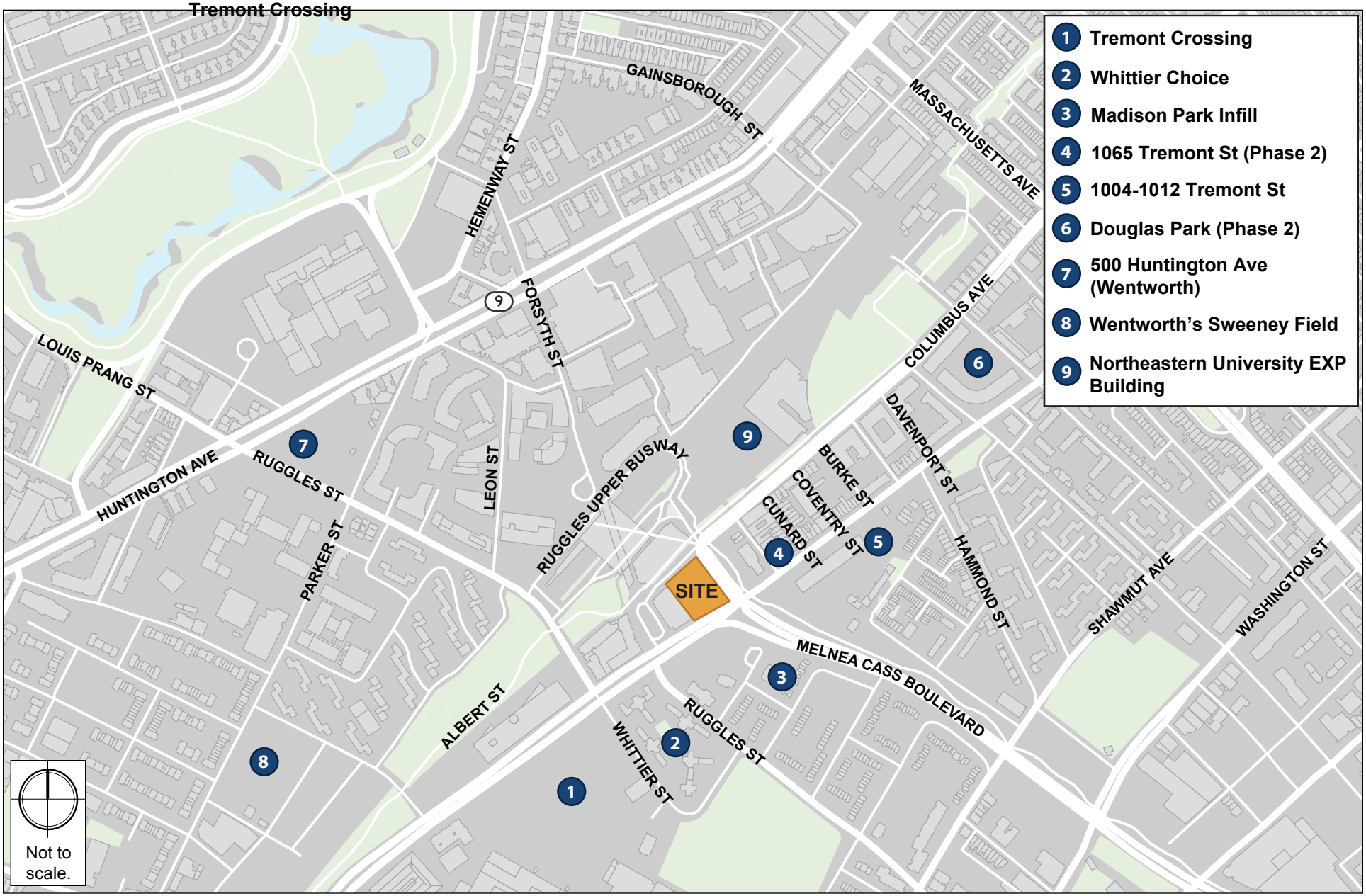

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Figure 3-6
Background Projects

Loading activity will be provided by an internal loading space located opposite of the exterior loading space used by the existing Renaissance Park building. The loading area will accommodate all building deliveries as well as trash removal.

3.3.2.2 Student Move-in Move Out

Since 2000, Northeastern has prepared Move-In/Move-Out Plans each academic year for the Boston Transportation Department (BTD). The Move-Out Plan is usually a less formalized document since that process is more gradual, taking place over a longer time-frame.

The elements of the Move-In Plan include:

- Attending community meetings to create support for the Move-In Plan.
- Notifying neighbors about the move-in process and arranging parking for neighbors in the Camden Lot and Gainsborough garages for the weekend.
- Avoiding moving students into the Fenway area on September 1 due to expected congestion.
- Working with the neighborhoods on August 31 and September 1.
- Assisting coordination of trash removal and police presence.
- Reaching out to neighboring businesses and institutions (i.e., the Symphony, Wentworth) in early May and early June to notify them of Northeastern's move-in plans.
- Coordinating with the Mayors' Office and various city agencies with regard to move-in schedule, plan, and coordination.
- Spreading move-in over five days to ease congestion and improve service.
- Easing the move-in process for parents and students by providing moving support (professional movers and moving carts) at targeted locations, and increasing campus volunteers.
- Expanding curb-side check-in at White Hall, Willis Hall, and West Village H.
- Confirming parking plans with the City and nearby neighborhoods to assist with smooth curbside check-ins.

Northeastern also monitors major events and construction activities in the area that might impact moving procedures.

The Project, when completed, will become an addition to the current Move-In Plan. Move-in activities associated with the Project are expected to have only a small impact on area roadways, as it will account for less than ten percent of the total number of students housed by

Northeastern. The specifics of this addition will be included in future Move-In Plans. It is likely that plans will include an adjacent Northeastern parking lot for staging and a large Northeastern lot for parental parking. There should be little impact to the adjacent neighborhoods.

3.3.2.3 Trip Generation Methodology

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

Trip generation estimates for the residential aspects of the Project are based on a variety of sources specific to Northeastern University, including the 2018 DEP Rideshare survey data, and historical trip generation based on parking occupancy counts, parking lot/garage driveway counts, and parking permit data.

Trip generation estimates for the retail and office land uses utilized data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*[1]. ITE provides data to estimate the total number of unadjusted vehicular trips associated with the Project. In an urban setting well-served by transit, adjustments are necessary to account for other travel modes such as walking, bicycling, and public transit.

To estimate the unadjusted number of vehicular trips for the Project, the following ITE land use codes (LUC) were used:

Land Use Code 710 – General Office Building. The General Office Building LUC includes office buildings that house multiple tenants; it is a location where persons or firms are conducted. An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers, and tenant services, such as a bank or savings and loan institution, a restaurant, or cafeteria and service retail facilities. This land use code was used to provide a conservative estimate of anticipated trips associated with the academic/office space. The commercial office land use offers a higher trip generation and was used to evaluate greatest potential Project impact.

Land Use Code 820 Shopping Center/Retail. The Shopping Center/Retail LUC includes an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its markets area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands.

[1] Trip Generation Manual, 10th Edition; Institute of Transportation Engineers; Washington, D.C.; 2017.

3.3.2.4 Travel Mode Share

BTD provides vehicle, transit, and walking mode share rates for different areas of Boston. The Project is in designated Area 4 – West Core. The unadjusted vehicular trips were converted to person-trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[2]. The person-trips were then distributed to different modes according to the travel mode shares shown in Table 3-4.

Table 3-4 Travel Mode Shares

Land Use		Walk/Bicycle Share	Transit Share	Vehicle Share	Vehicle Occupancy Rate
Daily					
Office Building	In	24%	32%	44%	1.18
	Out	24%	32%	44%	1.18
Shopping Center	In	55%	16%	29%	1.82
	Out	55%	16%	29%	1.82
On-Campus Residence	In	98%	0%	2%	1.0
	Out	98%	0%	2%	1.0
Weekday a.m. Peak Hour					
Office Building	In	25%	38%	37%	1.18
	Out	29%	28%	43%	1.18
Shopping Center	In	57%	19%	24%	1.82
	Out	61%	13%	26%	1.82
On-Campus Residence	In	98%	0%	2%	1.0
	Out	98%	0%	2%	1.0
Weekday p.m. Peak Hour					
Office Building	In	29%	28%	43%	1.18
	Out	25%	38%	37%	1.18
Shopping Center	In	61%	13%	26%	1.82
	Out	57%	19%	24%	1.82
On-Campus Residence	In	98%	0%	2%	1.18
	Out	98%	0%	2%	1.18

3.3.2.5 Project Trip Generation

The travel mode share percentages shown in Table 3-4 were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates for the Project. The trip generation for the Project by travel mode is shown in Table 3-5. The detailed trip generation information is provided in Appendix D.

[2] Summary of Travel Trends: 2009 National Household Travel Survey; FHWA; Washington, D.C.; June 2011.

Table 3-5 Project Trip Generation

Land Use		Walk/Bicycle Trips	Transit Trips	Vehicle Trips
Daily				
Office Building (115,300 SF)	In	159	212	247
	Out	159	212	247
	Total	**318**	**424**	**494**
Retail (2,800 SF)	In	39	12	12
	Out	39	12	12
	Total	**78**	**24**	**24**
Student Housing (175 beds)	In	542	0	11
	Out	542	0	11
	Total	**1084**	**0**	**22**
Total	In	740	224	270
	Out	740	224	270
	Total	**1480**	**448**	**540**
a.m. Peak Hour				
Office Building (115,300 SF)	In	34	52	42
	Out	6	6	8
	Total	**40**	**58**	**50**
Retail (2,800 SF)	In	1	1	1
	Out	1	0	0
	Total	**2**	**1**	**1**
Student Housing (175 beds)	In	13	0	0
	Out	39	0	1
	Total	**52**	**0**	**1**
Total	In	48	53	43
	Out	48	6	9
	Total	**94**	**59**	**52**
p.m. Peak Hour				
Office Building (115,300 SF)	In	7	7	9
	Out	33	50	41
	Total	**40**	**57**	**50**
Retail (2,800 SF)	In	4	1	1
	Out	5	2	1
	Total	**9**	**3**	**2**
Student Housing (175 beds)	In	47	0	1
	Out	45	0	1
	Total	**92**	**0**	**2**
Total	In	58	8	11
	Out	83	52	43
	Total	**141**	**60**	**54**

3.3.2.6 Bicycle Accommodations

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreement to provide secure bicycle parking for all employees and residents, as well as short-term bicycle racks for guests and visitors. The Project will provide a total of approximately 282 secure/covered bicycle parking spaces, based on BTD guidelines of a minimum of one secure/covered bicycle parking spaces per unit, as well as at a rate of 0.3 secure indoor bicycle parking spaces per 1,000 sf of commercial development. Additional bicycle storage will be provided by outdoor bicycle racks accessible to visitors to the site in accordance with BTD guidelines.

3.3.3 Transportation Demand Management

As outlined in its Institutional Master Plan, Northeastern University has made a strong commitment to TDM and continues to make improvements to TDM initiatives to help reduce single-occupant automobile commuting to and from its campus, and to promote non-automobile alternatives. It is expected that enhanced bicycle storage, expansion of car-sharing opportunities, provisions for alternative fuel vehicles, and continued attention to parking availability and pricing will be priority efforts over the term of the IMP. As the parking supply on campus is reduced due to new building projects, parking ratios for students and staff will decrease. This reduced availability typically leads to higher fees, further serving as a demand management measure.

3.3.4 Construction Period Impacts

Most construction activities will be accommodated within current site boundaries. Details of the overall construction schedule, working hours, number of construction workers, worker transportation and parking, number of construction vehicles, and routes will be addressed in detail in a Construction Management Plan (CMP) to be filed with BTD in accordance with the City's transportation maintenance plan requirements. The Project's contractor will be required to coordinate all construction activities with other on-going construction work to minimize impacts to area roadways.

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

- A truck routing plan will be developed to minimize impacts on adjacent roadways;
- On-site construction worker parking will be limited, and worker carpooling will be encouraged;
- A subsidy for MBTA passes will be considered for full-time employees; and
- Secure spaces will be provided on-site for workers' supplies and tools so they do not have to be brought to the site each day.

Chapter 4

Assessment of Development Review Components

4.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

This chapter provides detailed green building strategies, as well as discussions and qualitative analyses of other environmental impacts related to the Project.

4.1 Environmental Protection

4.1.1 Wind

The Project will have a maximum building height of approximately 300 feet. A quantitative (wind tunnel) wind analysis will be conducted, as required by the BPDA for buildings over 150 feet. Results of the wind analysis will be included in the Draft PIR.

4.1.2 Shadow

The building is being designed to minimize new shadows on open spaces, sitting areas, or pathways. The Proponent will conduct a shadow study for the Project and include the results in the Draft PIR.

4.1.3 Daylight

The purpose of a daylight analysis is to estimate the extent to which a proposed project affects the amount of daylight reaching public streets in the immediate vicinity of a project site. The daylight obstruction related to the Project is anticipated to be similar to daylight obstruction on streets in the surrounding area. The extent of daylight obstruction resulting from the Project and measures to mitigate adverse impacts will be included in the Draft PIR.

4.1.4 Solar Glare

It is not anticipated that the Project will include the use of reflective glass or other reflective materials on the building facades that would result in adverse impacts from reflected solar glare from the Project.

4.1.5 Air Quality

Potential long-term air quality impacts will be limited to emissions from Project-related mechanical equipment and pollutant emissions from vehicular traffic generated by the Project. Depending upon the results of the transportation analysis, the potential air quality impacts will be modeled for both existing and future conditions in the Draft PIR to demonstrate conformance with the National Ambient Air Quality Standards (NAAQS).

Construction period air quality impacts and mitigation are discussed below in Section 4.1.10.1.

4.1.6 Flood Hazard Zones/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Project Site located in the City of Boston - Community Panel Number 25025C0057G indicates the FEMA Flood Zone Designations for the Project Site. The map shows that the Project is located in a Zone X Area, determined to be outside the 0.2% annual chance floodplain.

The Project Site does not contain wetlands.

4.1.7 Geotechnical/Groundwater

4.1.7.1 Subsurface Soil and Groundwater Conditions

Subsurface explorations of the Project site were conducted in July 2019 by Haley Aldrich to examine the thickness and quality of near surface fill soils and depth to bedrock to determine feasible building foundation options. Conditions encountered at the site are summarized in Table 4.1-1 below.

Table 4.1-1 Subsurface Soil Conditions

Stratum/Subsurface Unit	Elevation Top of Stratum (ft, BCB)	Range in Thickness (ft)
Fill	El. 22 to 19	4 to 17
Organics	El. 16 to 14	1 to 4
Glaciofluvial Sand	El. 18 to El. 2	7 to 18
Marine Deposits (Sand/Clay)	El. 10 to El. -11	115 to 144
Glacial Deposits	El. -114 to El. -139	6 to 13
Weathered Bedrock	El. -145 to El. -148	Depth to top of bedrock = 164 to 167 ft

4.1.7.2 Groundwater

Groundwater levels measured in August 2019 were estimated to be 12.1 to 12.5 feet below existing grades, corresponding to approximately El. 7 to El. 9 BCB, and generally flowing north. The Project site is not located within the Groundwater Conservation Overlay District (GCOD).

Groundwater fluctuations should be expected in part due to seasonal changes, precipitation, below-grade utilities and other structures, as well as other environmental factors.

4.1.7.3 Project Impacts and Foundation Consideration

Several deep foundation types and sizes are being considered for the Project, including drilled-in elements (i.e., rock-socketed micropiles or caissons) or driven pile foundations. Selection of the appropriate foundation type will be influenced by design requirements (required vertical capacity, lateral load capacity, and uplift capacity), cost, schedule, installation issues, and other factors.

Due to the Project location and proximity to surrounding buildings, a monitoring program will be developed and implemented prior to the start of construction. Prior to implementation of the monitoring program, performance criteria will be established to protect adjacent structures and included in the contract documents. Construction activities will be required to comply with the established criteria based on the data collected from the monitoring. The instrumentation and monitoring program will be consistent with local practice and the proposed construction:

4.1.8 Solid and Hazardous Wastes

4.1.8.1 Existing Hazardous Waste Conditions

There is a current Activity and Use Limitation (AUL) at the site filed in 1997 that restricts the use of the site for Single-Family Residential use, however, it does allow for the construction of dormitories. A Release Abatement Measure (RAM) Plan that will serve as the Soil Management Plan is anticipated to be filed with MassDEP prior to the start of construction. A Health and Safety Plan will also be developed.

Any excess soils generated as a result of the planned construction will be managed in accordance with applicable regulations, including the Massachusetts Contingency Plan (MCP). A soil management plan will be developed and included in the Contract Documents defining requirements for execution of the work.

4.1.8.2 Operational Solid and Hazardous Wastes

The Project will generate solid waste typical of residential and retail uses. Solid waste is expected to include wastepaper, cardboard, glass bottles and food. Recyclable materials will be recycled through a program implemented by building management. The Project will generate approximately 877 tons of solid waste per year.

The Project will include recycling areas for items such as paper, plastic, glass, and cans.

4.1.9 Noise

The mechanical equipment for the Project will be similar to that used on similarly sized residential buildings. Rooftop equipment will be screened if necessary, and acoustic screening will be included if necessary, to meet City noise regulations. The Project team will ensure that the building's mechanical equipment will meet the City of Boston Noise Standards.

Construction period noise impacts and mitigation are discussed below in Section 4.1.10.2.

4.1.10 Construction Impacts

The proximity of city streets and abutting commercial properties to the Project Site will require careful scheduling of material removal and delivery. Planning with the City and neighborhood will be essential to the successful development of the Project.

A Construction Management Plan (CMP) will be submitted to the BTD for review and approval prior to issuance of a building permit. The CMP will define truck routes which will help in minimizing the impact of trucks on local streets.

Construction methodologies that ensure public safety and protect nearby businesses will be employed. Techniques such as barricades, walkways, painted lines, and signage will be used as necessary. Construction management and scheduling including plans for construction worker commuting and parking, routing plans and scheduling for trucking and deliveries, protection of existing utilities, maintenance of fire access, and control of noise and dust will minimize impacts on the surrounding environment.

Throughout Project construction, a secure perimeter will be maintained to protect the public from construction activities.

4.1.10.1 Construction Air Quality

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

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

4.1.10.2 Construction Noise

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

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

4.1.10.3 Construction Waste Management

The Proponent will reuse or recycle demolition and construction materials to the greatest extent feasible. Construction procedures will allow for the segregation, reuse, and recycling of materials. Materials that cannot be reused or recycled will be transported in covered trucks by a contract hauler to a licensed facility.

4.1.11 Rodent Control

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

4.1.12 Wildlife Habitat

The Project site is currently developed within a fully developed urban area and, as such, the Project will not impact wildlife habitats as designated on the National Heritage and Endangered Species Priority Habitats of Rare Species and Estimated Habitats of Rare Wildlife maps.

4.2 Sustainable Design and Green Buildings

4.2.1 Introduction

To measure the results of their sustainability initiatives and to comply with Article 37, the Proponent intends to use the framework of the Leadership in Energy and Environmental Design (LEED) rating system promulgated by the US Green Building Council (USGBC). The Project will use LEED for Multifamily Midrise (v4) as the rating system to demonstrate compliance with Article 37. The LEED rating system tracks the sustainable features of a project by allocating points in the following categories: Location and Transportation, Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, Indoor Environmental Quality, Innovation and Design Process, and Regional Priority Credits.

A LEED scorecard for the Project is included and reflects the credits the Project anticipates achieving. This is a preliminary evaluation of the LEED scorecard, and applicable credits may change as the building design advances.

The following is a detailed credit-by-credit analysis of the Project team's approach to achieving LEED certification at the Gold level.

4.2.2 Integrative Process

IP Integrative Process: In compliance with credit requirements, the Project team will complete the following tasks:

- Assemble and involve a project team from, but not limited to, the following disciplines and skill sets:
  - Architecture;
  - Mechanical or energy engineering;
  - Building science;
  - Green building or sustainable design; and
  - Civil engineering, landscape architecture.
- Involve the team members referenced above in the following phases of the design and construction process:
  - Conceptual or schematic design;
  - LEED/sustainable design planning;

- Preliminary design;
- Energy and envelope systems analysis or design;
- Design development;
- Final design, drawings, specifications; and
- Construction.

- Conduct meetings with the Project team at least monthly to review Project status, introduce new team members to Project goals, discuss problems, formulate solutions, review responsibilities, and identify next steps.

- Conduct at least one full-day workshop (or two half-day workshops) with the Project team to integrate green strategies across all aspects of the building design, drawing on the expertise of all participants.

- Conduct at least eight hours of training (extending a full day or over several days) on the green aspects of the Project and how the trades can contribute to achieving each prerequisite and attempted credit before construction but after trades have been hired for the project.

4.2.3 Location and Transportation

LT Prerequisite - Floodplain Avoidance: The Project site is not within a flood hazard zone such as the Federal Emergency Management Agency (FEMA) 100-year flood plain.

LT Site Selection: The Project site is located in Boston on previously developed, urban land, thus satisfying the credit conditions. The Project will provide bicycle storage (short and long term) and bicycle amenities (repair kits, shower(s), lockers, bike wash-off station).

LT Compact Development: The Project will be constructed to meet the dwelling unit per acre of buildable land area density requirements.

LT Community Resources: The proposed new building is a development located in Boston and has significant access to community resources. The building easily meets the credit threshold of twelve uses within a ½-mile walking distance of the main entrance. These resources include, but are not limited to:

- Bangkok Pinto Restaurant – 0.2 mile
- Cocina Saludo Restaurant - 0.3 mile
- St Catherine Dexel Parish Center - 0.2 mile
- City of Boston Credit Union ATM - 0.3 mile
- Centennial Common - 0.2 mile
- Snell Library - 0.3 mile
- Tropical Foods Grocery - 0.4 mile
- Reggie Lewis Track and Recreation Center - 0.4 mile
- Flutistry Boston Music Store - 0.4 mile

- Morgan Memorial Goodwill Store - 0.5 mile
- Boston Police Headquarters - 0.2
- Walgreens - 0.5 mile

LT Access to Transit: The Project site is located within a short distance (0.2 miles) of the Ruggles MBTA underground subway and bus station. This station provides at least 360 weekday trips and 216 weekend trips.

4.2.4 Sustainable Sites

SS Prerequisite – Construction Activity Pollution Prevention: The construction documents will include a Construction Activity Pollution Prevention Plan to be developed in accordance with the 2012 U.S. Environmental Protection Agency Construction General Permit of the NPDES. In addition, a Stormwater Pollution Prevention Plan (SWPPP) will be developed for the building in accordance with the US EPA's National Pollutant Discharge Elimination System Construction General Permit requirements. These documents will be used to document compliance with this prerequisite.

SS Prerequisite – No Invasive Plants: The Project will have minimal landscaping and plantings and will not include invasive plants.

SS Credit Heat Island Reduction: The building will utilize high albedo materials for all hardscapes, including both non-roof and roof installations. All installed materials will meet LEED requirements for either initial or three-year Solar Reflectance (SR) values.

SS Credit Rainwater Management: Using low-impact development and green infrastructure to replicate natural site hydrology, the Project will manage the runoff from the developed site, for the percentile regional / local rainfall events, on-site.

SS Credit Non-Toxic Pest Control: The Project will develop and implement an integrated pest management policy that includes guidance for residents on pesticide use, housekeeping, and prompt reporting of pest problems. This policy will be incorporated into the Project's Education Manual. Non-Toxic Pest control will include: sealing all external cracks, joints, penetrations, edges, and entry points with appropriate caulking; for below-grade walls, using solid concrete foundation walls, masonry walls with a course of solid block bond beam, or concrete-filled block.

4.2.5 Water Efficiency

WE Prerequisite – Water Metering: The Project will install a whole building water meter and water usage data will be shared with USGBC. Details for sharing data will be included in the Education Manual.

WE Credit - Indoor Water Use: The Project will reduce demand for potable water through high efficiency fixtures throughout the building – this design has a 35% reduction goal. The design will specify WaterSense labeled fixtures and have at least the following flow/flush rates:

- Shower: 1.75 GPM;
- Bath Lavatory: 1.50 GPM;
- Toilet: 1.28 GPF; and
- Energy Star Certified clothes washers.

WE Credit - Outdoor Water Use Reduction: While landscaping/planting plans are still to be determined, the plan will aim to reduce the landscape area planted with turf grass and landscape with native or adaptive plants.

4.2.6 Energy and Atmosphere

EA Prerequisite – Minimum Energy Performance: The building will meet this prerequisite and the Massachusetts Stretch Energy Code through the following design approaches, resulting in an ASHRAE 90.1 Appendix G model demonstrating a minimum Energy Use Reduction of at least 16% by cost, below ASHRAE 90.1-2010 (LEED).

- Above code levels of insulation within the cavity as well as continuous exterior of the sheathing;
- High efficiency equipment mechanical systems;
- LED lighting and sophisticated, automated controls;
- Energy Star appliances;
- Energy Recovery for all ventilation;

The Project will also follow and meet the ENERGY STAR Qualified Multifamily High-Rise Buildings Testing and Verification (T&V) Protocols for the Commissioning requirement within this prerequisite. Commissioning will be hired before the end of the design development phase and will provide review services for the Project Basis of Design and Owner's Project Requirements. They will also review the Design Development and Construction Documents' plan and specification set, observe all start-up testing and balancing procedures, and confirm installation and operation according to the design parameters.

EA Prerequisite – Energy Metering: The building will include a building-level energy meter for all energy consumption including electricity and natural gas and share energy usage data with USGBC. Details for sharing data will be included in the Education Manual.

EA Prerequisite – Education of the Homeowner, Tenant or Building Manager: The Project will develop and implement an Education Manual for occupants and O&M team that includes:

- The final LEED checklist for the Project;
- Copies of all final ENERGY STAR checklists;
- Product manufacturers' manuals for all applicable equipment, fixtures, and appliances;
- General information on efficient use of energy, water, and natural resources;

- Operations and maintenance guidance for any installed equipment, including space heating and cooling, mechanical ventilation, humidity control, radon protection, renewable energy, and irrigation, rainwater harvesting, or graywater systems;

- Guidance on occupants' activities and choices, including cleaning materials and methods, water-efficient landscaping, integrated pest management, effects of chemical fertilizers and pesticides, irrigation, lighting selection, and appliance selection;

- Information on local green power options; and

- Information on sharing utility data with USGBC via a USGBC-approved third party.

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

- Above code levels of insulation within the cavity as well as continuous exterior of the sheathing;
- High efficiency equipment mechanical systems;
- LED lighting and sophisticated, automated controls;
- Energy Star appliances;
- Energy Recovery for all ventilation;

EA Credit - Efficient Hot Water Distribution: The Project will develop an energy-efficient hot water distribution system that incorporates measures that include: maximum pipe length, maximum pipe volume limits, and/or pipe insulation that will ultimately reduce energy consumption and the burden on the water supply and wastewater systems.

EA Credit - Advanced Utility Tracking: The Project plans to share energy and water data with the USGBC.

4.2.7 Materials and Resources

MR Prerequisite – Certified Tropical Wood: All wood in the building will be non-tropical, reused or reclaimed, or certified by the Forest Stewardship Council, or USGBC-approved equivalent.

MR Prerequisite – Durability Management: The Project will install all the applicable indoor moisture control measures required for the Project including but not limited to: kitchens, bathrooms, laundry rooms, entryways.

MR Credit - Durability Management Verification: The Project's verification team will inspect and verify each measure listed in the ENERGY STAR for Homes, v3, water management system builder checklist. The checklist will be included in the Education Manual.

MR Credit - Environmentally Preferable Products: The Project team will target Option 2 Environmentally Preferable Products. At least 90% of each compliant building component will apply products that contain at least 25% postconsumer or 50% preconsumer content; Apply concrete that consists of at least 30% fly ash or slag used as a cement substitute and 50%recycled content or reclaimed aggregate or 90% recycled content or reclaimed aggregate.

MR Credit - Construction Waste Management: The Project will target 60%+ construction and demolition waste reduction.

4.2.8 Indoor Environmental Quality

IEQ Prerequisite – Ventilation: The Project team will ensure that all local exhaust and outdoor ventilation systems meet the minimum requirements of ASHRAE 62.2 – 2010, sections 4, 5 and 7 or local equivalent, whichever is more stringent, Section 1503.4 of the 2009 International Residential Code, and all local exhaust requirements. Each unit will have kitchen and bath exhaust as required by the Standard. In addition, fresh air will be mechanically supplied directly to each unit.

IEQ Prerequisite – Combustion Venting: The building will be designed to limit the leakage of combustion gases into occupied space by venting combustion appliances as applicable, installing a CO monitor on each floor of each unit, properly venting space- and water-heating equipment, and not installing fireplaces/woodstoves.

IEQ Prerequisite – Garage Pollutant Protection: The Project does not have parking associated with the building, therefore complies with this prerequisite.

IEQ Prerequisite – Radon-Resistant Construction: The Project will be designed and constructed following the applicable codes: American Association of Radon Scientist and Technologists (AARST), Reducing Radon in New Construction of 1 & 2 Family (RRNC 2.0); EPA Building Radon Out; NFPA 5000, Chapter 49; International Residential Code, Appendix F; CABO, Appendix F; ASTM E1465; or a local equivalent, whichever is more stringent, and EPA Indoor airPLUS, 2.1 requirements.

IEQ Prerequisite – Air Filtering: The Project will install air filters with a minimum efficiency reporting value (MERV) of 8 or higher on all recirculating space conditioning systems per ASHRAE 62.1-2010; Nonducted systems are exempt from the minimum MERV 8 requirements but must have an internal air filter in the air-handling unit; stall air filters rated MERV 6 or higher for mechanically supplied outdoor air for systems with 10 feet (3 meters) of ductwork or more, per ASHRAE 62.2–2010, Section 6.7.

IEQ Prerequisite – Environmental Tobacco Smoke: The Project will prohibit smoking in all common areas of the building; prohibit on-property smoking within 25 feet of entries, outdoor air intakes, and operable windows and provide non-smoking signage. Non-smoking rules will be provided in the Education Manual.

IEQ Prerequisite – Compartmentalization: The Project will be designed with compartmentalization to each residential unit to minimize leakage between units; sealing penetrations in walls, ceilings, and floors and by sealing vertical chases (including utility chases, garbage chutes, mail drops, and elevator shafts) adjacent to the units; weather-stripping of all doors in the residential units leading to common hallways, all exterior doors and operable windows; and perform a blower door test in adherence with ENERGY STAR Multifamily High Rise Program Testing and Verification Protocols, Version 1.0, with an allowable maximum leakage of 0.23 cfm50 per square foot (0.07 cmm50 per square meter) of enclosure (i.e., all surfaces enclosing the apartment, including exterior and party walls, floors, and ceiling).

IEQ Credit - Contaminant Control: The Project will implement the following contaminant control measures: at each primary entryway from the outdoors, install a permanent walk-off mat that is at least 10 feet long and allows access for cleaning (e.g., grating with catch basin); a preoccupancy/ post construction air flush.

IEQ Credit - Balancing of Heating and Cooling Distribution Systems: The building's heating and cooling system will be designed with a multiple zoning system that has at least two space-conditioning zones with independent thermostatic controls.

IEQ Credit - Enhanced Compartmentalization: The building will meet the criteria for the compartmentalization blower door test according to the ENERGY STAR testing and verification protocols for multifamily midrise buildings, with an allowable maximum leakage of 0.15 cfm50 per square foot (0.04 cmm50 per square meter) of enclosure (i.e., all surfaces enclosing the apartment, including exterior and party walls, floors, and ceiling).

IEQ Credit - Enhanced Combustion Venting: The Project will not install fireplaces or wood stoves meeting the criteria for Option 1.

IEQ Credit - Enhanced Garage Pollutant Protection: The Project does not have an associated parking garage, therefore meeting the criteria for Case 1, Option 2.

IEQ Credit - Low Emitting Materials: The Project team will specify interior paints/coatings, flooring, insulation, applied adhesives/sealants and composite wood that comply with this credit criteria.

IEQ Credit - No Environmental Tobacco Smoke: The Project will prohibit smoking, meeting the credit criteria.

4.2.9 Innovation in Design

The Project team will seek to achieve five Innovation points. Potential credits include: Ongoing Recycling Program, Green Purchases, Green Building Education, Reduction of Mercury in Lighting, and Green Housekeeping.

ID LEED Accredited Professional: At least one accredited professional is part of the Project team.

4.2.10 Regional Priority

Regional Priority Credits (RPCs) are established LEED credits designated by the USGBC to have priority for a particular area of the country. When a Project team achieves one of the designated RPCs, an additional credit is awarded to the Project.

RPCs applicable to the site include: LT Access to Transit, SS Rainwater Management, SS Non-Toxic Pest Control, and EA Annual Energy.

4.3 Climate Change Resilience

4.3.1 Introduction

The Project team considered climate change conditions including higher maximum and mean temperatures, more frequent and longer extreme heat events, more frequent and longer droughts, more severe freezing rain and heavy rainfall events, and increased wind gusts.

A copy of the complete Climate Resiliency Checklist is included as Appendix E. Given the preliminary level of design, the responses are also preliminary and may be updated as the Project design progresses.

4.3.2 Extreme Heat Events

The Climate Ready Boston report predicts that in Boston, there may be between 25 to 90 days over 90 degrees by 2070, compared to an average of 11 days per year over 90 degrees between 1971 to 2000. The Project design will include measures to adapt to these conditions, including designing/constructing high performance envelope, high performance MEP equipment, energy recovery, and onsite/offsite renewables to mitigate climate change impacts.

4.3.3 Rain Events

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

4.3.4 Drought Conditions

Although more intense rain storms are predicted, extended periods of drought are also predicted due to climate change. Under the high emissions scenario, the occurrence of droughts lasting one to three months could go up by as much as 75% over existing conditions by the end of the century. To minimize the Project's susceptibility to drought conditions, the landscape design is anticipated to incorporate native and adaptive plants and reclaim materials. Low and ultra-low flow/flush fixtures, and appliances will be chosen for water conservation qualities, conserving potable water supplies.

LEED v4 for Building Design and Construction: Multifamily Midrise

Project Checklist

Project Name: 840 Columbus Avenue
Date: 22OCT2019

Y	?	N			
1	1		Credit	Integrative Process	2

11	1	3	**Location and Transportation**		15
Y			Prereq	Floodplain Avoidance	Required
			PERFORMANCE PATH		
		0	Credit	LEED for Neighborhood Development Location	15
			PRESCRIPTIVE PATH		
5		3	Credit	Site Selection	8
2	1		Credit	Compact Development	3
2			Credit	Community Resources	2
2			Credit	Access to Transit	2

5	2	0	**Sustainable Sites**		7
Y			Prereq	Construction Activity Pollution Prevention	Required
Y			Prereq	No Invasive Plants	Required
2			Credit	Heat Island Reduction	2
1	2		Credit	Rainwater Management	3
2			Credit	Non-Toxic Pest Control	2

5	5	2	**Water Efficiency**		12
Y			Prereq	Water Metering	Required
			PERFORMANCE PATH		
		2	Credit	Total Water Use	12
			PRESCRIPTIVE PATH		
4	2		Credit	Indoor Water Use	6
1	3		Credit	Outdoor Water Use	4

16	21	0	**Energy and Atmosphere**		37
Y			Prereq	Minimum Energy Performance	Required
Y			Prereq	Energy Metering	Required
Y			Prereq	Education of the Homeowner, Tenant or Building Manager	Required
13	17		Credit	Annual Energy Use	30
2	3		Credit	Efficient Hot Water Distribution	5
1	1		Credit	Advanced Utility Tracking	2

6	3	0	**Materials and Resources**		9
Y			Prereq	Certified Tropical Wood	Required
Y			Prereq	Durability Management	Required
1			Credit	Durability Management Verification	1
2	3		Credit	Environmentally Preferable Products	5
3			Credit	Construction Waste Management	3

10	8	0	**Indoor Environmental Quality**		18
Y			Prereq	Ventilation	Required
Y			Prereq	Combustion Venting	Required
Y			Prereq	Garage Pollutant Protection	Required
Y			Prereq	Radon-Resistant Construction	Required
Y			Prereq	Air FIltering	Required
Y			Prereq	Environmental Tobacco Smoke	Required
Y			Prereq	Compartmentalization	Required
	3		Credit	Enhanced Ventilation	3
1	1		Credit	Contaminant Control	2
1	2		Credit	Balancing of Heating and Cooling Distribution Systems	3
3			Credit	Enhanced Compartmentalization	3
2			Credit	Enhanced Combustion Venting	2
1			Credit	Enhanced Garage Pollutant Protection	1
1	2		Credit	Low Emitting Products	3
1			Credit	No Environmental Tobacco Smoke	1

6	0	0	**Innovation**		6
Y			Prereq	Preliminary Rating	Required
5			Credit	Innovation	5
1			Credit	LEED Accredited Professional	1

2	2	0	**Regional Priority**		4
	1		Credit	Annual Energy Use, 15 pts	1
1			Credit	Access to Transit, 1 pt	1
	1		Credit	Rainwater Mgmt, 3 pts	1
1			Credit	Non toxic Pest Control, 2 pts	1

62	43	5	**TOTALS**	Possible Points:	110

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

4.4 Urban Design

The proposed Project will continue the ongoing transformation and revitalization of Columbus Avenue that began during the 2000 IMP. The public realm will be enhanced on Tremont Street, Columbus Avenue, and Melnea Cass Boulevard. The Project activate the site using transparent façade materials, allowing views and access to student and community gathering spaces, as well as street level retail space. Upgraded sidewalk materials and furnishings, street trees, and enhanced street level lighting will also be incorporated. The facades of the upper stories of the podium will also be highly transparent and will provide a visual connection between the public realm and the building interior, as well as providing views from within the building to the surrounding neighborhoods.

The massing of the proposed building respects the scale and massing associated with each of the primary site frontage areas, with a reduced building height on Tremont Street transitioning to the building's maximum height at the corner of Columbus Avenue and Melnea Cass Boulevard (the corner of the site most visible from the Northeastern University campus). The building exterior will incorporate a high-performance wall system in connection with the Project's sustainable design goals, with materials selected to harmonize with the surrounding neighborhood, while establishing a unique identity for the Project as a whole.

4.5 Historic and Archaeological Resources

4.5.1 Historic Resources on the Project Site

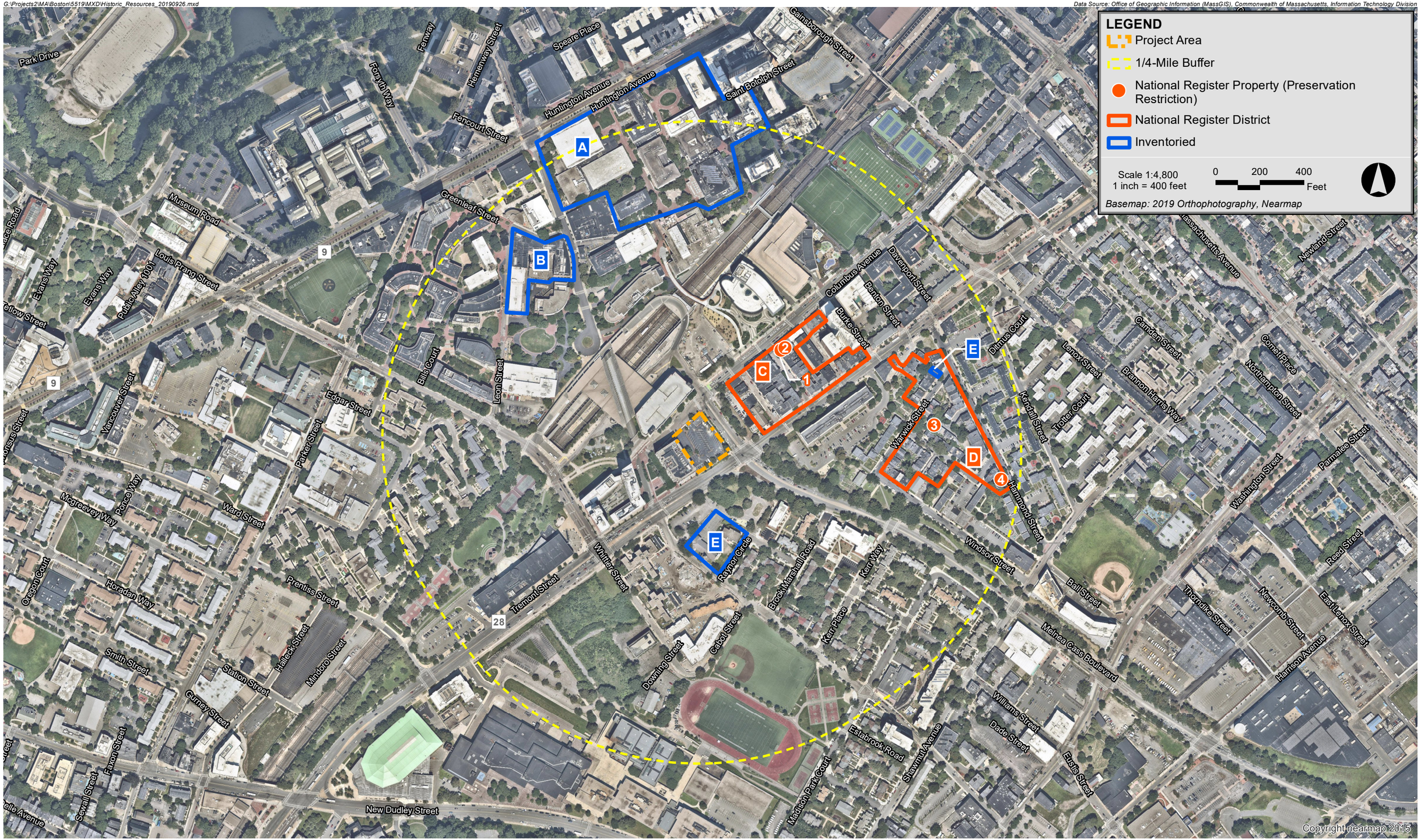
There are no historic resources located within the Project site that are listed in the State and National Registers of Historic Places or included in the Inventory of Historic and Archaeological Assets of the Commonwealth.

4.5.2 Historic Resources in the Project Vicinity

Historic resources in the vicinity of the Project site include the Lower Roxbury Historic District and the Frederick Douglas Square Historic District to the east, which are both listed on the State and National Registers of Historic Places. The St. Francis de Sales Roman Catholic Church at 159 Ruggles Street is located to the south of the site and is included in the MHC's Inventory of Historic and Archaeological Assets of the Commonwealth. Table 4.5-1 lists historic resources within a quarter mile radius of the Project site; the locations of these resources are depicted on Figure 4.5-1.

G:\Projects2\MA\Boston\5519\MXD\Historic_Resources_20190926.mxd

Data Source: Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division



840 Columbus Avenue Boston, Massachusetts

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Figure 4.5-1
Historic Resources

Table 4.5-1 Historic Resources Within and in the Vicinity of the Project

Existing Map Key	Historic Resource	Address	Designation*
A	Northeastern University - Krentzman Quadrangle	Southside of Huntington Avenue and includes 324, 330, 346, 360, 370, 380 Huntington Avenue	INV
B	United Drug Company	The survey area includes 35-37, 39-41, and 43 Leon Street; 105-107 and 111 Forsyth Street	INV
C	Lower Roxbury Historic District	Roughly bound by Tremont Street to the south, Saint Cyprians Place to the west, Columbus Ave to the north, and Burke Street to the east	NRDIS
D	Douglass, Frederick Square Historic District	Roughly bound by Hammond Street to the northwest, Westminster street to the southeast, and Windsor Street to the southwest	NRDIS
E	SS Francis de Sales - Philip Roman Catholic Church	The survey area includes159 Ruggles Street, 34 Weston Street, and 1 Warwick Street	INV
1	Orlansky Apartment Building	776-778 Columbus Ave	NRDIS, PR
2	Wilson, Claude A. and Cyril A. Apartment House	774 Columbus Ave	NRDIS, PR
3	Paine, Robert Treat House	38 Sussex St	NRDIS, PR
4	Smith, William H. Apartment Building	46 Hammond St	NRDIS, PR

*Designation Legend

NRIND	Individually listed in the National Register of Historic Places
NRDIS	National Register of Historic Places historic district
INV	Massachusetts Historic Commission Inventory
PR	Preservation Restriction

4.5.3 Archaeological Resources Within the Project Site

A review of Massachusetts Historical Commission's online archaeological base maps was conducted on September 26, 2019 and identified one known archeological site mapped in the vicinity of the Project site. The Project site is a previously developed urban parcel and due to previous development and related site disturbances, it is anticipated that the site will not contain significant archaeological resources. As the Project advances, MHC will be consulted in accordance with M.G.L., Chapter 9, Sections 26-27C (50 CMR 71.00), as necessary, to assess potential impacts to significant historic and archeological resources. If impacts associated with the Project are identified, the Proponent will work with MHC and interested parties in developing appropriate measures to mitigate impacts to those resources related to the Project.

4.5.4 Status of Project Review with Historical Agencies

4.5.4.1 Boston Landmarks Commission (BLC)

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

4.5.4.2 Massachusetts Historical Commission (MHC)

The MHC has review authority over projects requiring state funding, licensing, permitting, and/or approvals that may have direct or indirect impacts to properties listed in the State Register of Historic Places. If a state permit is required for the Project, the MHC review process will be initiated through the filing of an MHC Project Notification Form as prescribed in MHC's governing regulations.

4.6 Infrastructure Systems

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

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

4.6.1 Wastewater

4.6.1.1 Sewer Infrastructure

There are existing Boston Water and Sewer Commission (BWSC) dedicated sewer and drain mains located in Columbus Avenue, Melnea Cass Boulevard, and Tremont Street.

Columbus Avenue

There is an 18-inch BWSC sewer main which flows in a southwesterly direction. The 18-inch main expands to a 36-inch main and then connects to a 120-inch MWRA combined sewer main in Ruggles Street.

Tremont Street

There is a 12-inch sewer main which flows in a southwesterly direction before expanding to a 15-inch sewer main and then connecting to a 120-inch MWRA combined sewer main in Ruggles Street.

The existing sewer system is illustrated in Figure 4.6-1.

4.6.1.2 Wastewater Generation

The Project's sewage generation rates were estimated using Massachusetts Department of Environmental Protection 310 CMR 15.00 values for the proposed building program. 310 CMR 15.00 lists typical sewage generation values for the proposed building uses, as shown in Table 4.6-1. Typical generation values are conservative values for estimating the sewage flows from new construction.

The Project site is currently comprised of a parking lot.

Table 4.6-1 Proposed Project Wastewater Generation

Use	Size/Unit	310 CMR Value (gpd/unit)	Total Flow (gpd)
Existing Building (using average 310 CMR values)			
Parking Lot	33,500 square feet	0	0
		Total Existing Sewer Flows	**0**
Existing Dorms Coming Offline on Campus (using average 310 CMR values)			
Dormitory	800 bedrooms	65/bedroom	52,000
Proposed Building (using average 310 CMR values)			
Dormitory	975 bedrooms	65/bedroom	63,375
Retail*	2,800 sf	50/1000 sf	200
Academic/Office**	115,300 sf	75/1000 sf	8,648
*Minimum 200 gpd **The amount of office space has not yet been determined. To provide a conservative (high) estimate, sewage generation was calculated using all office space			
		Total New Sewer Flows	**20,223**

Increase in Sewer Flows (gpd):	**20,223**

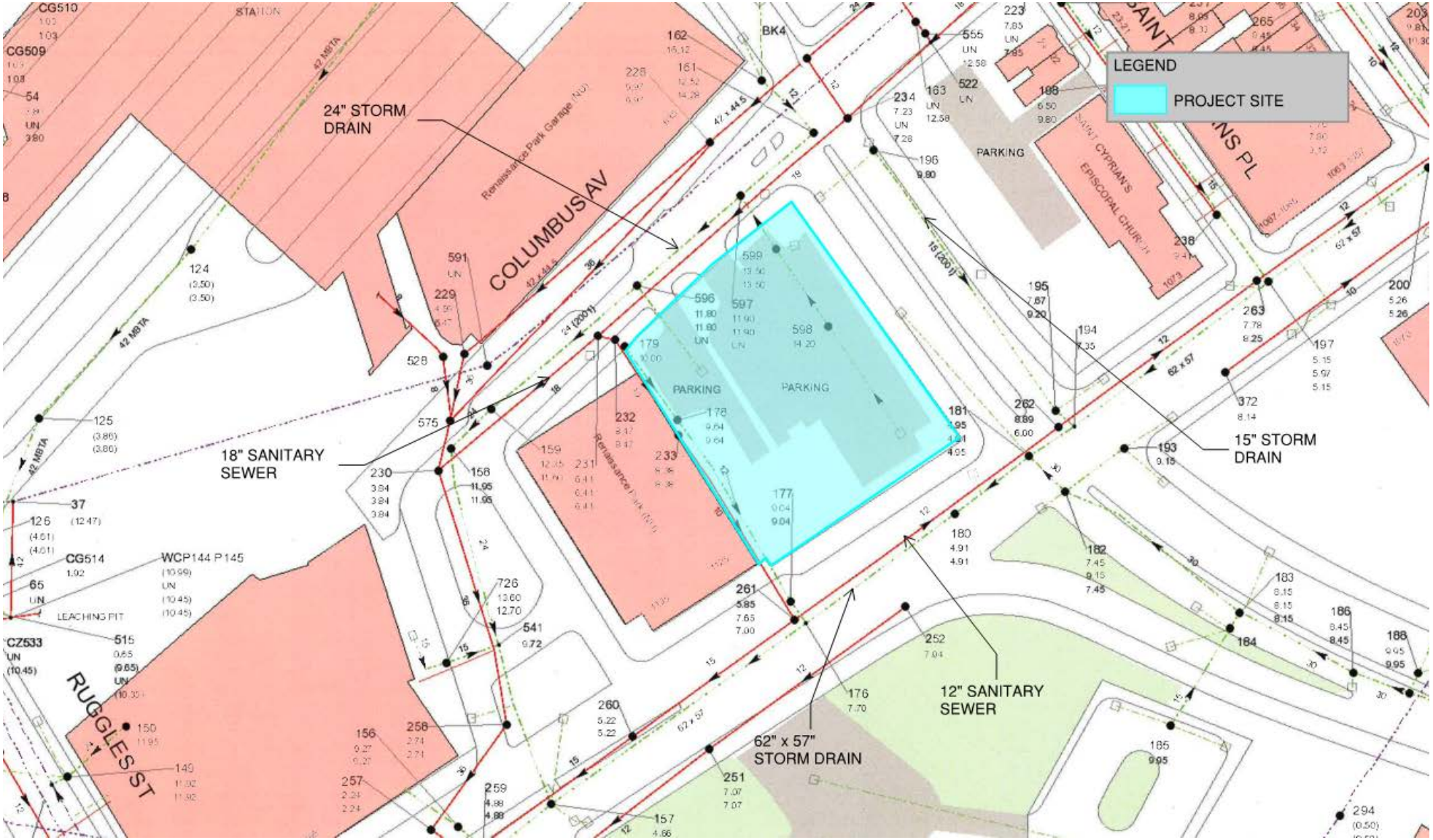

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Figure 4.6-1

Existing Sewer & Storm Drainage System

4.6.1.3 Sewage Capacity & Impacts

The Project's impact on the existing BWSC systems in Columbus Avenue and Tremont Street was studied. The existing sewer system capacity calculations are presented in Table 4.6-2.

Table 4.6-2 Sewer Hydraulic Capacity Analysis

Manhole (BWSC Number)	Distance	Invert Elevation (Up)	Invert Elevation (Down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
Columbus Avenue								
234 to 231	249	7.28	6.41	0.3%	18	0.013	6.21	4.01
231 to 230	157	6.41	3.84	1.6%	18	0.013	13.44	8.69
230 to 258	198	3.84	2.74	0.6%	36	0.013	49.71	32.13
258 to 257	98	2.74	2.24	0.5%	36	0.013	47.64	30.79
257 to 134	80	2.24	1.24	1.3%	36	0.013	74.57	48.20
						Minimum Flow Analyzed	6.21	4.01
Tremont Street								
262 to 261	246	8.89	5.85	1.2%	12	0.013	3.96	2.56
261 to 259	288	5.85	4.88	0.3%	15	0.013	3.75	2.42
259 to 134	51	4.88	1.24	7.1%	15	0.013	17.26	11.15
						Minimum Flow Analyzed	3.75	2.42

Note: 1. Manhole numbers taken from BWSC Sewer system GIS Map received on 09/18/19
2. Flow Calculations based on Manning Equation

Table 4.6-2 indicates the hydraulic capacity of the existing 18-inch sewer main in Columbus Avenue and the 12-inch sewer main in Tremont Street. The minimum hydraulic capacity is 4.01 million gallons per day (MGD) or 6.21 cubic feet per second (CFS) for the 18-inch main in Columbus Avenue and 2.42 million gallons per day (MGD) or 3.75 cubic feet per second (CFS) for the 12-inch sewer main in Tremont Street.

Based on an average daily flow estimate for the Project of 72,223 GPD or 0.072MGD, an increase of 20,223 GPD or .020 MGD from the existing buildings, and with a factor of safety estimate of 10 (total estimate = 0.072 MGD x 10 = 0.72 MGD), there should not be capacity problems for a proposed sewer connection. BWSC maps do not indicate an existing sewer connection. Design of sanitary sewer connections will be coordinated with BWSC during the permitting phase and will not negatively impact the capacity of any existing sewer mains in the streets adjacent to the Project site.

4.6.1.4 Proposed Conditions

The Proponent will coordinate with the BWSC on the design and capacity of the proposed connections to the sewer system. The Project is expected to generate an increase in wastewater flows of approximately 20,223 GPD. Approval for the increase in sanitary flow will come from BWSC.

New sewer services for the Project will likely connect to the existing sanitary sewer mains in Columbus Avenue and Tremont Street.

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

4.6.2 Water Supply

4.6.2.1 Water Infrastructure

Water for the Project site will be provided by the BWSC. There are six water systems within the City, and these provide service to portions of the City based on ground surface elevation. The six systems are southern low (commonly known as low service), southern high (commonly known as high service), southern extra high, northern low, northern high, and high pressure fire service. There are existing BWSC water mains in Columbus Avenue and Tremont Street.

There is a 12-inch southern low main in Columbus Avenue, and a 12-inch southern low main in Tremont Street.

The existing water system is illustrated in Figure 4.6-2.

4.6.2.2 Water Consumption

The Project's water demand estimate for domestic services is based on the Project's estimated sewage generation, described above. A conservative factor of 1.1 (10%) is applied to the estimated average daily wastewater flows calculated with 310 CMR 15.00 values to account for consumption, system losses, and other usages to estimate an average daily water demand. The Project's estimated domestic water demand is 72,223 GPD. The water for the Project will be supplied by the BWSC systems in Columbus Avenue and Tremont Street.

4.6.2.3 Existing Water Capacity and Impacts

BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the Project site was requested by the Proponent. Hydrant flow data was available for one hydrant on Tremont Street, near the Project site. The existing hydrant flow data is shown in Table 4.6-3.

Table 4.6-3 Existing Hydrant Flow Data

Flow Hydrant Number	Date of Test	Static Pressure (psi)	Residual Pressure (psi)	Total Flow (gpm)
21IH90	10/02/2018	78	76	1,736

Note: Data provided by BWSC on September 18, 2019

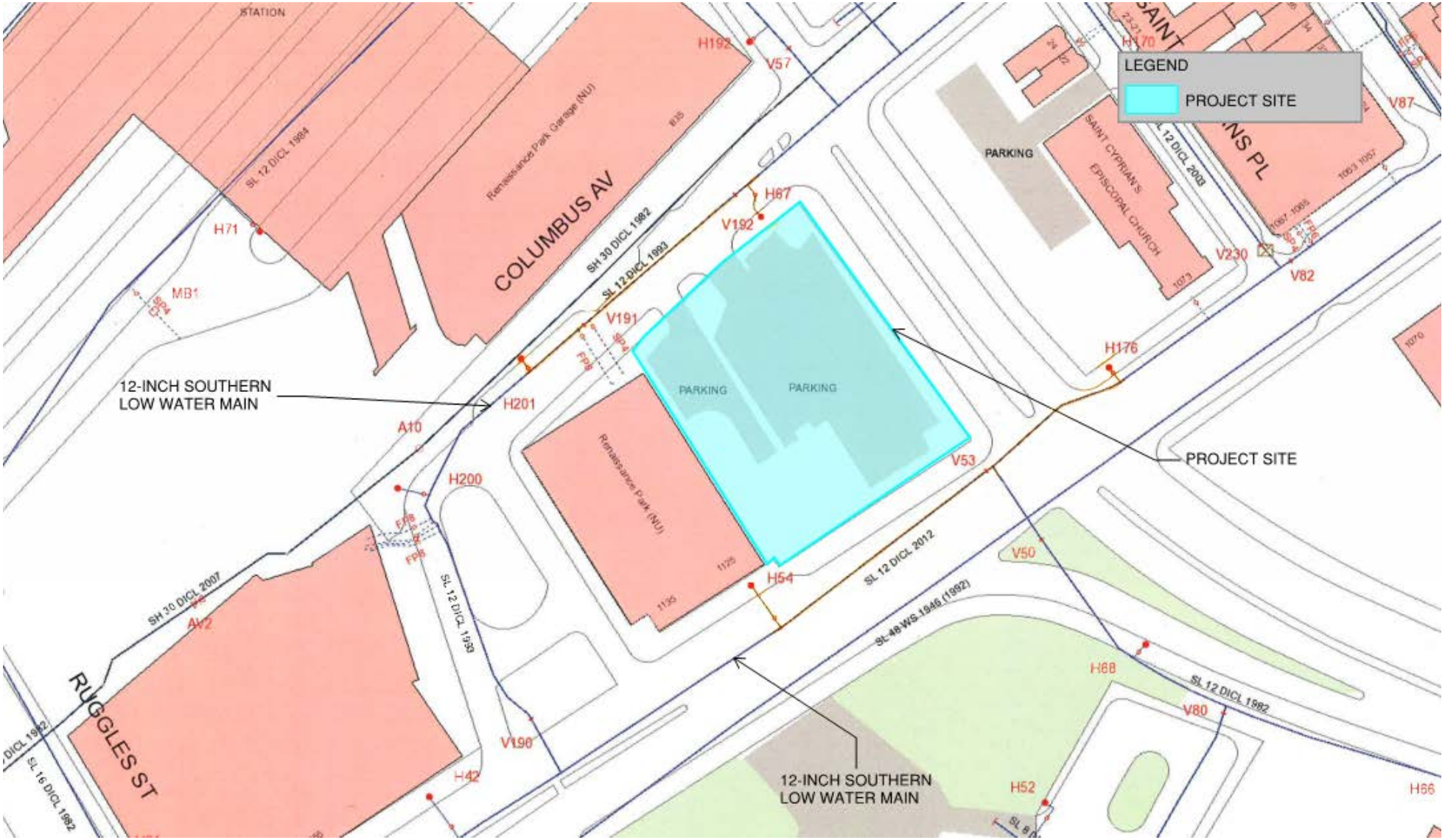

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Figure 4.6-2

Existing Water System

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

4.6.2.4 Proposed Project

The domestic and fire protection water services for the Project will likely connect to the existing BWSC water mains in Columbus Avenue and/or Tremont Street.

The proposed Project's impacts to the existing water system will be reviewed as part of the BWSC's Site Plan Review process.

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

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

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

4.6.3 Stormwater

There are existing BWSC storm drain mains in Columbus Avenue, Melnea Cass Boulevard, and Tremont Street adjacent to the Project site. There are also existing private storm drain lines at the Project site that connect to the existing BWSC storm drain in Columbus Avenue. The existing drainage ultimately flows to the Charles River.

Columbus Ave

There is a 24-inch BWSC storm drain which flows in a southwesterly direction along Columbus Avenue. The 24-inch storm drain connects to a 62-inch by 57-inch in Tremont Street and then connects to a MWRA combined sewer main on Ruggles Street.

Melnea Cass Boulevard

There is a 15-inch BWSC storm drain which flows in a southeasterly direction along Melnea Cass Boulevard before connecting to the 62-inch by 57-inch main in Tremont Street described above.

Tremont Street

There is a 62-inch by 57-inch BWSC storm drain which flows southwesterly direction along Tremont Street. It then connects to a MWRA combined sewer main.

The existing BWSC storm drain system is illustrated in Figure 4.6-1.

Stormwater at the site is currently captured by two 12-inch private storm drain lines that connect to the 24-inch BWSC storm drain in Columbus Avenue.

4.6.3.1 Proposed Project

The Project site is comprised of a parking lot and is nearly entirely impervious. The Project will meet or reduce the existing peak rates of stormwater discharge and volumes of stormwater runoff from the site and promote runoff recharge to the maximum extent practicable.

The Project will comply with BPDA smart utilities requirements and retain the first one and a quarter inch-inch of stormwater runoff from site impervious areas. Different approaches to stormwater recharge will be assessed. It is anticipated that the underground stormwater recharge systems will be used to passively infiltrate runoff into the ground. Any required site closed drainage systems will be designed so that there will be no increase in the peak rate of stormwater discharge from the Project site in the developed condition compared to the existing condition.

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

4.6.3.2 Water Quality Impact

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

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

4.6.3.3 Stormwater Infiltration

The BPDA oversees proposed projects within the Groundwater Conservation Overlay District under Article 32. The Project parcel is not located within the City of Boston's Groundwater Conservation Overlay District.

Furthermore, the BPDA also oversees the Smart Utilities Policy for Article 80 Development Review. Since the Project is above the threshold criteria of having at or above 100,000 square feet of floor area, the Project is required through the use of Green Infrastructure to retain, on site, a volume of runoff equal to 1.25 inches of rainfall across the portion of impervious area on site.

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

4.6.3.4 MassDEP Stormwater Management Policy Standards

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

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

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

Compliance: The Project will comply with this Standard. The design will incorporate the appropriate stormwater treatment and no new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Project.

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

Compliance: The Project will comply with this Standard. The existing discharge rate will be met or decreased as a result of the improvements associated with the Project.

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

Compliance: The Project will comply with this Standard to the maximum extent practicable.

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

a. *Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*

b. *Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*

c. *Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

Compliance: The Project will comply with this standard to the maximum extent practicable. Within the Project's limit of work, there will be mostly building roof, paved sidewalk, and roadway areas. Runoff from paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by deep sump, hooded catch basins and conveyed through stormwater systems designed to improve runoff quality before discharging into the BWSC system.

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

Compliance: The Project will comply with this Standard. The Project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-6).

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

Compliance: The Project will comply with this Standard. The Project will not discharge untreated stormwater to a sensitive area or any other area.

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

Compliance: The Project is a redevelopment. A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. A redevelopment project must comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

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

Compliance: The Project will comply with this Standard. Sedimentation and erosion controls will be incorporated as part of the design of these projects and employed during construction.

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

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

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

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

4.6.4 Protection Proposed During Construction

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

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

4.6.5 Conservation or Resources

The State Building Code requires the use of water-conserving fixtures. Water conservation measures such as low-flow toilets and restricted flow faucets will help reduce the domestic water demand on the existing distribution system. The installation of sensor-operated sinks with water conserving aerators and sensor-operated toilets in all non-residential restrooms will be incorporated into the design plans for the Project.

4.6.6 Electrical Service

Eversource owns and maintains the electrical transmission system in the vicinity of the Project. The electrical power supply design and loads for the building will be coordinated with Eversource during the design phase.

4.6.7 Telecommunication Systems

Verizon and Comcast provide cable and telephone services in the Project area. Services will be coordinated during the design phase.

4.6.8 Gas Systems

National Grid provides natural gas in the Project area. The actual size and location of the building services will be coordinated with National Grid.

Chapter 5

Coordination with Other Governmental Agencies

5.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

5.1 Architectural Access Board Requirements

The Project will comply with the requirements of the Massachusetts Architectural Access Board and the standards of the Americans with Disabilities Act. An Accessibility Checklist and related plans is included in Appendix F.

5.2 Massachusetts Environmental Policy Act (MEPA)

A project is subject to the Massachusetts Environmental Policy Act (MEPA) review when the following two conditions are met: (1) a project is subject to MEPA jurisdiction, and (2) a MEPA review threshold is exceeded. Current plans do not call for the Project to receive any state permits or state funding, or to involve any state land transfers and thus, the Proponent anticipates that MEPA will have no jurisdiction over the Project.

5.3 Massachusetts Historical Commission State Register Review

The Proponent does not anticipate that the Project will require any state or federal licenses, permits or approvals, and does not anticipate utilizing any state or federal funds, nor does the Project involve alteration of a property on the State Register. Therefore, review by the Massachusetts Historical Commission (MHC) is not anticipated at this time. In the event that state or federal licenses, permits, approvals or funding is involved, the Proponent will file an MHC Project Notification Form to initiate MHC's review of the Project.

5.4 Other Permits and Approvals

Section 2.4 provides a list of agencies from which it is anticipated that permits and approvals for the Project will be sought.

Appendix A

Northeastern University Facilities Matrix

Northeastern University - Facilities Data Matrix

Issue Date 09/2019

Building Name	Code	Official Street Address	Year Built	Year Acquired	Year Major Reno	Gross SF	Owned or Leased	Primary Building Use
Academic & Administrative Facilities								
140 The Fenway	140	140 The Fenway	1912,59,69	2010		148,145 sf	Leased	Research/Academic
177 Huntington Avenue	177	177 Huntington Avenue	1974	2010	2014	111,448 sf	Leased	Administrative/Academic
216 Massachusetts Avenue	216	216 Massachusetts Avenue		2017	2017	76,014 sf	Leased	Administrative/Academic
236 Huntington Avenue	236	236 Huntington Avenue	Unknown	2012	2012	5,440 sf	Leased	Administrative
271 Huntington Avenue	271	271 Huntington Avenue	Unknown	2014	2014	24,045 sf	Leased	Academic
335A Huntington Avenue (portion of bldg)	335	335A Huntington Avenue	Unknown	2000	2000	4,407 sf	Leased	Student Services
34 Beacon Street	34	34 Beacon Street, Boston, MA	1825	2006	2000	11,056 sf	Owned	Residence & Event Space
450 Huntington Avenue	450	444-452 Huntington Avenue		2016		3,733 sf	Owned	Unknown
Asian American Center	AC	109 Hemenway Street	1898	2005		4,646 sf	Owned	Student Services
O'Bryant Center (part of WVF)	AF	40 Leon Street	2006	NU Built		16,578 sf	Owned	Academic/Administrative
Warehouse	AT	76 Atherton Street, Boston, MA	Unknown	Unknown		140,197 sf	Owned	Warehouse
Behrakis Health Sciences Center	BK	30 Leon Street	2002	NU Built		124,572 sf	Owned	Classroom/Admin.
Broad Street Facility	BM	89 Broad Street, Boston, MA	Unknown	1994	1994	27,620 sf	Leased	Classroom & Conference
101 Belvidere	BV	101 Belvidere Street	1974	2008	2005	69,911 sf	Leased	Academic/Administrative
Cahners Hall	CA	110 The Fenway	1957	1965		14,912 sf	Owned	Classroom/Admin.
Cargill Hall	CG	45 Forsyth Street	1982	NU Built		28,378 sf	Owned	Classroom/Admin.
Churchill Hall	CH	380 Huntington Avenue	1959	NU Built		56,277 sf	Owned	Classroom/Admin.
Cullinane Hall	CN	288 St Botolph Street	1911	1930	1986	28,043 sf	Owned	Administrative
Columbus Place	CP	716 Columbus Avenue	1910	1984	1995	124,214 sf	Owned	Administrative
Curry Student Center	CSC	346 Huntington Avenue	1964	NU Built	1994	167,573 sf	Owned	Student Services
Cushing Hall	CU	102 The Fenway	1910	1966		25,902 sf	Owned	Administrative
Dana Research Center	DA	110 Forsyth Street	1966	NU Built		71,374 sf	Owned	Research/Classroom
Dodge Hall	DG	324 Huntington Avenue	1952	NU Built	1993	85,826 sf	Owned	Classroom/Admin.
Dockser Hall	DK	65 Forsyth Street	1968	NU Built	2008	63,383 sf	Owned	Classroom/Admin.
Egan Engineering/Science Research Center	EC	120 Forsyth Street	1996	NU Built		117,710 sf	Owned	Research
Ell Hall	EL	346 Huntington Avenue	1947	NU Built	2000	88,430 sf	Owned	Classroom/Admin.
Fenway Center	FC	77 St Stephen Street	1898	2005		18,026 sf	Owned	Student Services
Forsyth Building	FR	70 Forsyth Street	1926	1949		87,454 sf	Owned	Classroom/Admin.
Hayden Hall	HA	370 Huntington Avenue	1956	NU Built		110,515 sf	Owned	Classroom/Admin.
Holmes Hall	HO	39-41 Leon Street	1910	1961		73,758 sf	Owned	Administrative
Hurtig Hall	HT	334 Huntington Avenue	1968	NU Built		82,160 sf	Owned	Research/Classroom
International Village - Office Building	INVO	1155-1175 Tremont Street	2009	NU Built		35,574 sf	Owned	Academic/Administrative
Interdisciplinary Science & Engineering Complex	ISEC	805 Columbus Avenue	2017	NU Built		238,610 sf	Owned	Research/Classroom
Kariotis Hall	KA	55 Forsyth Street	1982	NU Built		14,987 sf	Owned	Classroom
Knowles Center	KN	416 Huntington Avenue	1961	NU Built	1990	61,112 sf	Owned	Classroom/Library
Lake Hall	LA	43 Leon Street	1910	1961		54,883 sf	Owned	Administrative
Latino/a Student Cultural Center	LT	104 Forsyth Street	1922	1963	1998	3,418 sf	Owned	Student Services
Meserve Hall	ME	35-37 Leon Street	1893	1961		33,101 sf	Owned	Administrative
Mugar Life Sciences Building	MU	330 Huntington Avenue	1941	NU Built	2014	136,321 sf	Owned	Research/Classroom
Nightingale Hall	NI	105-107 Forsyth Street	1911	1961		65,110 sf	Owned	Administrative
Power Plant	PP	111 Forsyth Street	1910	1961		6,815 sf	Owned	Mechanical Facility
Robinson Hall	RB	336 Huntington Avenue	1965	NU Built		53,286 sf	Owned	Classroom/Admin.
Architecture Studios	RG	(Not Assigned)	1985	2000	2000	16,844 sf	Leased	Academic
Richards Hall	RI	360 Huntington Avenue	1938	NU Built		113,827 sf	Owned	Classroom/Admin.
Renaissance Park	RP	1135 Tremont Street	1994	1997		164,665 sf	Owned	Academic/Administrative
Ryder Hall	RY	11 Leon Street	1913	1976	1986	114,329 sf	Owned	Classroom/Admin.
Shillman Hall	SH	115 Forsyth Street	1995	NU Built		49,304 sf	Owned	Classroom
Snell Library	SL	376 Huntington Avenue	1988	NU Built		245,993 sf	Owned	Library/Classroom
Snell Engineering Center	SN	110 Forsyth Street	1984	NU Built		85,980 sf	Owned	Classroom/Admin.
Stearns Center	ST	420 Huntington Avenue	1976	NU Built		32,515 sf	Owned	Administrative
		Sub-total Academic Facilities			***50 buildings***	***3,538,422 sf***		
Residence Facilities								
106 St. Stephen Street	106	106 St. Stephen Street	1923	1975 (leased 1966)		17,529 sf	Owned	Residence Facility
110 St. Stephen Street	110	110 St. Stephen Street	1923	1975 (leased 1966)		17,590 sf	Owned	Residence Facility
116 St. Stephen Street	116	116 St. Stephen Street	1923	1975 (leased 1966)		17,567 sf	Owned	Residence Facility
122 St. Stephen Street (Levine Hall)	122	122 St. Stephen Street	1923	1975 (leased 1966)		17,534 sf	Owned	Residence Facility
142 Hemenway Street	142	142 Hemenway Street	1896	1961		10,142 sf	Owned	Residence Facility
144 Hemenway Street	144	144 Hemenway Street	1896	1961		8,012 sf	Owned	Residence Facility
146 Hemenway Street	146	146 Hemenway Street	1896	1961		8,036 sf	Owned	Residence Facility
148 Hemenway Street	148	148 Hemenway Street	1896	1961		8,787 sf	Owned	Residence Facility
319 Huntington Ave.	319	319 Huntington Avenue	c 1916	1982		31,320 sf	Owned	Residence Facility
337 Huntington Ave.	337	337 Huntington Avenue	1923	1982		50,023 sf	Owned	Residence Facility
407 Huntington Ave.	407	407 Huntington Avenue	1922	1969		29,921 sf	Owned	Residence Facility
768 Columbus Avenue	768	768 Columbus Avenue	1914	1999		11,317 sf	Owned	Residence Facility
780 Columbus Avenue	780	780 Columbus Avenue	1912	Unknown	2001	40,273 sf	Owned	Residence Facility
Burstein Hall	BU	454-458-460 Huntington Ave	1927	Unknown	1984	51,715 sf	Owned	Residence Facility
Coventry	CV	10 Coventry Street	2004	2004		69,739 sf	Owned	Residence Facility
Davenport Commons A	DCA	700 Columbus Avenue	2001	2001		122,719 sf	Owned	Residence Facility
Davenport Commons B	DCB	696 Columbus Avenue	2001	2001		76,325 sf	Owned	Residence Facility
East Village	EV	291 St Botolph Street	2014	2014		221,754 sf	Leased	Residence Facility
Hastings Hall	HS	320 Huntington Avenue	1913	2012 (leased 2007)	2014	81,867 sf	Owned	Classroom/Residence
International Village - Residence	INV	1155-1175 Tremont Street	2009	NU Built		459,753 sf	Owned	Residence Facility/Academic
Kennedy Hall	KDY	115-119 Hemenway Street	1911	1979 (leased 1965)		46,925 sf	Owned	Residence Facility
Kerr Hall	KH	96 The Fenway	1913	1973	2004	28,023 sf	Owned	Residence Facility
Loftman Hall (& 153 Hemenway Street)	LF	163, 157, 153 Hemenway Street	1909	1976-78		53,219 sf	Owned	Residence Facility
Light Hall	LH	81-83 St. Stephen Street	1892	1965		15,724 sf	Owned	Residence Facility
Melvin Hall	MH	90 The Fenway	1913	1965		30,455 sf	Owned	Residence Facility
Rubenstein Hall	RU	464 Huntington Avenue	1924	1977		29,591 sf	Owned	Residence Facility
Stetson East	SE	11 Speare Place	1967	NU Built		70,450 sf	Owned	Residence Facility
Smith Hall	SM	125,129,131 Hemenway Street	1902	1965	2007	59,225 sf	Owned	Residence Facility
Speare Hall	SP	10 Speare Place	1964	NU Built	2011	98,710 sf	Owned	Residence Facility
Stetson West	SW	10 Forsyth Street	1966	NU Built	2012	120,208 sf	Owned	Residence Facility
White Hall	WH	19-21-23 Forsyth Street	1925	1961	2011	89,378 sf	Owned	Residence Facility
Willis Hall	WI	50 Leon Street	1979	NU Built		114,058 sf	Owned	Residence Facility

West Village A	WVA	500-510 Parker Street	1999	NU Built		225,315 sf	Owned	Residence Facility
West Village B	WVB	460 Parker Street (rear)	2000	NU Built		90,039 sf	Owned	Residence Facility
West Village C	WVC	480 Parker Street (rear)	2000	NU Built		92,569 sf	Owned	Residence Facility
West Village E	WVE	10-20 Leon Street	2002	NU Built		124,176 sf	Owned	Residence Facility
West Village F	WVF	40 Leon Street	2006	NU Built		128,460 sf	Owned	Residence Facility/Academic
West Village G	WVG	450 Parker Street	2004	NU Built		133,981 sf	Owned	Residence Facility/Academic
West Village H	WVH	440 Huntington Avenue	2004	NU Built		174,307 sf	Owned	Residence Facility/Academic
	Sub-total Residence Facilities				***39 buildings***	***3,076,738 sf***		
Athletic & Recreation Facilities								
Cabot Center (& Barletta Natatorium)	CB	400 Huntington Avenue	1954	NU Built		252,295 sf	Owned	Athletic Facility
Henderson Boathouse	HBH	1345 Soldiers Field Road, Brighton	1989	NU Built	2016	17,710 sf	Owned	Athletic Facility
Matthews Arena	MA	238-262 St. Botolph Street	1906	1980	2000	156,860 sf	Owned	Athletic Facility
Marino Recreation Center	MC	359-369 Huntington Avenue	1996	NU Built		82,763 sf	Owned	Athletic Facility
Badger & Rosen Squashbusters Center	SB	795A Columbus Avenue	2003	NU Built		38,498 sf	Owned	Athletic Facility
	Sub-total Athletic/Recreation Facilities				***5 buildings***	***530,415 sf***		
	Sub-total Academic, Residential & Athletic/Recreation Facilities				***94 buildings***	***7,145,576 sf***		
Parking Structures								
Columbus Parking Garage	CPG	795 Columbus Avenue	1986	NU Built		327,931 sf	Owned	Parking Facility
Gainsborough Garage	GG	10 Gainsborough Street	1918	2000		198,897 sf	Owned	Parking Facility
Renaissance Park Garage	RPG	835 Columbus Avenue	2000	NU Built		337,574 sf	Owned	Parking Facility
West Village Garage	WPG	10-20 Leon Street	2002	NU Built		102,743 sf	Owned	Parking Facility
	Sub-total Parking Facilities				***5 buildings***	***967,975 sf***		
	Total All Boston Campus Facilities				***99 buildings***	***8,113,551 sf***	***57.58 acres***	

Surface Parking Lots	***Acres***
Arena Parking Area	0.83 acres
Camden Parking Area	1.56 acres
Columbus Parking Area	3.82 acres
Columbus Place Parking Area	0.50 acres
Hurtig Parking Area	0.39 acres
North Parking Area	1.95 acres
Ryder Parking Area	0.40 acres
	9.46 acres

Property Without Buildings or Parking Lots	***Land size***
78 The Fenway (property at or about)	0.11 acres
790 Columbus (property at or about)	0.06 acres
	0.17 acres

Boston Campus Acreage	***67.21 acres***
Boathouse Property	***0.30 acres***
Parsons Field Property	***5.52 acres***
Total All Boston Campus Acreage	***73.03 acres***

Other Properties								
1A Joy Street	1A	1A Joy Street, Boston, MA	1825	2007	2000	2,001 sf	Owned	Condominium
	Sub-total Other Facilities				***1 buildings***	***2,001 sf***	***0.00 acres***	

Appendix B

Community Benefits Annual Report

2018 IMP
Community Benefits
ANNUAL REPORT

Northeastern University

Table of Contents


WOMEN
EMPOW

Northeastern

Dear Friends,

Northeastern is a university with deep and important roots in the neighborhoods that have anchored it for 120 years. Engagement with our local communities is a core element in our academic mission and a defining aspect of our character. By continuing to establish strong community partnerships and take strides toward even greater diversity and inclusivity at every level in our institution, we are building on this longstanding tradition. This booklet provides an overview of our ongoing progress.

Over the past year, that progress has been substantial. Among the highlights: With a commitment of $108 million to the project, Northeastern reopened the historic William E. Carter Playground; in October 2017, we hosted the Clinton Global Initiative University annual event, bringing an international focus to Boston communities with more than 1,200 global students participating in a Day of Action for community service; and we continued to strengthen our partnerships, professional development opportunities, and investment in Boston and its residents. In the year ahead, I look forward to even closer engagement with our friends and neighbors.

Sincerely,

Joseph E. Aoun

President

Community Engagement and Investment

CONTRIBUTORS

John Tobin, *Vice President of City & Community Affairs*

Becca Berkey, *Director of Service-Learning*

Derek Lumpkins, *Director of Neighborhood Partnerships and Programs*

Hilary Sullivan, *Director of Co-Curricular Service Programs*

Marisa Luse, *Campus Engagement & Collaborations Manager*

NUPD Community Engagement Unit

NORTHEASTERN UNIVERSITY

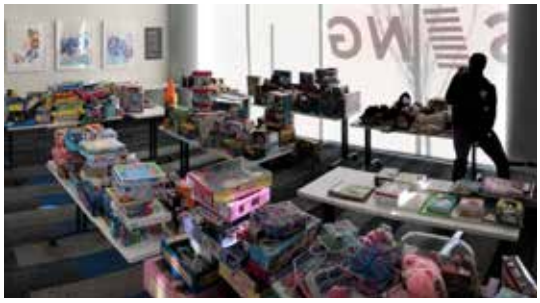
is committed to staying deeply invested in regards to Boston urban life

— the people, the communities, the issues, and the opportunities that make our modern city so vibrant. Our relationships are made possible through our work from so many varied partners.

In this section, we have highlighted the groups and offices that make the work we do together on a daily basis meaningful, impactful and enjoyable. Whether it is an office or a group of students right here at Northeastern or our local friends and neighbors, it takes everyone's collective efforts to make sure that we are reaching our goals and staying true to the neighborhood mission of Northeastern University.

TOY AND FOOD DRIVE

This year, City & Community Affairs (CCA) hosted their annual campus wide food and toy drives. Collection boxes were distributed to more than 50 locations across campus. In November, the 41st annual food drive yielded around 1500 pounds of food, which was donated to Grant Manor in Roxbury. Over $200 in monetary donations were also collected and that money was used to buy additional food. In December, the toys that were collected were distributed to a number of community partners and organizations for families in need. With over $500 in monetary donations, we were able to purchase additional toys to give to some of the local housing developments. CCA is proud of the campus' continued commitment to charitable giving and looks forward to continuing and expanding these drives annually.



PANCAKES AND PARTNERSHIPS

The annual Pancakes and Partnerships event recognizes partnerships involving students, neighborhood organizations, residents, faculty, administrators and staff that are mutually beneficial, socially and ethically responsive, strategic, and purposeful. This year, the following recipients received a 2018 Community Engagement Award for their leadership in their respective communities:

Jonathan Kong, *Northeastern Student*

Northeastern Graduate Students of Color Collective, *Northeastern Student Group*

Leslie Salmon Jones and Jeff Jones of AfroFlo Yoga, *Northeastern Community Partner*

Cecilia Akuffo, *Northeastern Staff Member*

Brent Henry, *Roxbury Community Resident*

Circle K, *Northeastern Student Group*

COMMUNITY ADVISORY BOARD

The Office of City & Community Affairs formed a new Community Advisory Board (CAB) in June 2016. Representatives from local organizations and the neighborhoods surrounding Northeastern University were recruited to participate on the advisory board because of their current or potential connections with the University and for the valuable perspective that they bring to community-university conversations.

The two subgroups comprising the CAB are:

1. Community Partners & Programs Advisory Group, which provides feedback on how Northeastern students, staff and faculty interact through initiatives run by the Center of Community Service.
2. Neighborhood Advisory Group, which provides feedback on how Northeastern Crossing engages and fosters new connections between individuals and the University.

Members of the Community Advisory Board participate by:

- Attending the CAB meetings and being a member of at least one group.
- Strengthening and growing the network of community engagement programs and initiatives as fostered by the Office of City & Community Affairs.
- Serving as advocates for our work in their various community roles, as appropriate. For example, if members hear about a City & Community Affairs initiative that is pertinent to their connections in the community, they will relay that information to the appropriate party.
- Providing ongoing feedback to City & Community Affairs staff on the work and initiatives of the division.

CENTER OF COMMUNITY SERVICE

In collaboration with our many community partnerships across Boston and beyond, the Center of Community Service engages hundreds of students, staff and faculty in service and engagement opportunities in Boston and beyond. Through these programs, the Northeastern community has demonstrated the commitment to use university resources to positively impact the communities in which we live, study and visit.

MISSION

The mission of the Center of Community Service is to facilitate partnerships and programs that connect community assets with university resources through engagement and education.

VISION

The Center of Community Service envisions transformational partnerships that recognize the role and leverage the resources of the university in creating a more just world.

ALTERNATIVE SPRING BREAK

The Alternative Spring Break (ASB) Program is a weeklong immersive service experience. Through meaningful action, reflection, and education, students and university representatives engage in direct service and explore a critical social issue in their host community or region.

- **Number of trips:** 17
- **Number of Team Leaders:** 34
- **Number of Volunteers:** 196
- **Number of University Representatives:** 17
- **Program Collaborations:** Northeastern University Scholars Program

ISSUE AREAS
public health, youth development, education, clean water access, sustainability, environmental conservation

"The experience renewed my interest in the intersection of education and structural disadvantage. I now think this is an area of social impact that I would like to be more strongly involved in back home in Boston, whether that means seeking our tutoring opportunities or getting involved in work to address the structural problems facing our own public education system".

- from a Team Leader on the Outreach 360 trip to Nicaragua

"The experience helped show me the importance of community building and awareness of surroundings. We were able to speak with the Executive Director of the center for an hour, and in this dialogue he made some points that struck me very deeply about always keeping your privilege in mind and allowing community leaders to emerge in service. I also feel that I gained a better idea of how to volunteer in the LGBTQ community".

- LGTBQA trip to Philadelphia with the William Way Center Quotes from Trip Volunteers

"This trip and working with solar panels, a renewable energy source, has cemented the fact in my mind that I definitely want to do something with renewable energy after I finish college."

- a student who volunteered with Grid Alternatives, an organization that installs solar panels on homes in low income neighborhoods

This experience has deeply impacted me! I know this is one of the highlights of 2018 and my 10 years at NU. I really enjoyed working with this amazing group of students and getting to know them in one week. I appreciated this particular service trip and thought it was one of the most meaningful. It has shown me my personal need to find meaning in my work. To quote our volunteer coordinator at PK, Susannah, she said her job was "soul filling."

- ASB University Rep, University Staff Member

CIVIC ENGAGEMENT PROGRAM

The Civic Engagement Program (CEP) aims to redefine scholarship by ensuring that students receiving full-tuition scholarships not only excel academically, but have the opportunity to grow as civic minded individuals who give back through service to our local and global communities. While there was no new entering CEP class in the fall of 2017, the program is comprised of over 900 students representing ten scholarship programs who are required to fulfill 100 hours of civic engagement activities per year.

- **Number of CEP students: 963**
- **Number of hours contributed by CEP Students: 91,696**

"Volunteering with the same organization for 5 years was very rewarding. The community partnerships CEP has give many opportunities to students to get/stay involved. Through ABCD, I've been able to serve on an advisory board and I was selected because of my service. This has added depth to my civic engagement."

- CEP Graduating Senior

An aspect of the CEP program that I really appreciated was the fact that it allowed me to engage and become familiar with the wider Boston community. If it had not been for my service in certain areas such as Roxbury, I would have not ventured into them despite their close proximity to NU. CEP opportunities therefore, made me more familiar with & comfortable in the wider Boston community."

- CEP Graduating Senior

HUSKY VOLUNTEER TEAM

The Husky Volunteer Team (HVT) Program enables students, staff, and faculty, in teams of 3-10, the opportunity to engage in ongoing service projects with local nonprofit organizations for 2-4 hours each week over the course of an academic term. The HVT Program aims to provide community partner organizations with a team of consistent volunteers on days when volunteer turnout is historically low or additional volunteer support is needed.

Number of HVT partners:

Fall: 9 + Spring: 7 + Summer 1: 8 = **24**

Number of teams:

Fall: 15 + Spring: 16 + Summer 1: 25 = **56**

Number of volunteers:

Fall: 45 + Spring: 79 + Summer 1: 95 = **219**

Number of hours contributed by HVT teams:

Fall: 975.5 + Spring: 1818 + Summer 1: 3907 = **6700.5**

JUMPSTART

The mission of Jumpstart is to work toward the day every child in America enters Kindergarten prepared to succeed. This year 53 Northeastern Jumpstart Corps Members worked in 8 teams in 8 preschool classrooms. The Jumpstart Corps Members participate in direct, hands-on service in local pre-school classrooms in Roxbury. Students implement high quality language and literacy lesson that include small group reading, center time activities, and whole group lessons.

- **Number of Jumpstart Corps Members: 53**
- **Number of hours contributed by Jumpstart corps: 12,924**
- **Number of Preschool children served: 135**
- **Partner sites:**
  - Parker Hill Fenway Head Start
  - Hattie B. Cooper Community Center
  - NICE,inc
  - Roxbury YMCA
  - Crispus Attucks

"When I pulled data from all the classrooms, the Jumpstart classroom is higher in their language and literacy skills overall because they have Jumpstart.

- Jennifer Fronduto, Educational Director at Parker Hill Fenway Head Start"

"When I first signed up for Jumpstart, I didn't think it would impact me as much as it has. My first year at Jumpstart was also my first year at college, away from home and the people I love. It was a way for me to give back, get involved, and get to know the community outside of Northeastern. Jumpstart has given me the opportunity to really feel like a part of my community and proud to call Boston Home.

- Isabelle Carrillo, Team Leader '17 & '18

MASSACHUSETTS PROMISE FELLOWSHIP

The Massachusetts Promise Fellowship (MPF) believes that all young people in the Commonwealth have a right to the resources they need to be successful in life, including a caring adult, a safe place, a healthy start, an effective education, and an opportunity to serve. MPF achieves this mission by placing 40 full-time AmeriCorps members at non-profit organizations, city agencies, and schools across the state to lead out-of-school time programming focused on academic enrichments, mentoring, and college and career readiness for young people in grades 6-12.

- **Number of corps members: 37**
- **Number of organizations hosting Fellows: 35**
- **Number of hours served by Fellows: 61,908**

Additional data:

- **Youth served: 7,960**
- **Academic enrichment activities led by Fellows: 1,124**
- **One-on-one college advising sessions led by Fellows: 2,209**
- **Volunteers recruited by Fellows: 447**
- **Volunteer hours contributed to host sites: 10,486**

NORTHEASTERN UNIVERSITY ALLIANCE OF CIVICALLY ENGAGED STUDENTS

The Northeastern University Alliance of Civically Engaged Students or NU|ACES launched in the fall of 2017 and was created by combining two previous CCS programs. NU|ACES is an opportunity for first-year students to engage deeply and meaningfully in the greater Boston community. First-year students arrive at Northeastern a week early for NU|ACES Welcome Week (previously nuSERVES), an intensive team-based adventure where they learn about their new campus and neighborhood through service. After a fun and action-packed week full of mini-service projects, workshops, networking activities, and group reflections, students are prepared to commit to a year-long partnership with a local community nonprofit organization (previously the Civic Engagement Program first-year model). NU|ACES participants work together as an alliance of passionate, caring, and civic-minded individuals. This program will help them develop their leadership skills and become change agents during and after their time at Northeastern.

- **Number of ACES students:** 106
- **% of students who completed the first-year program:** 97%
- **Number of community partners:** 24
- **Number of hours contributed by ACES students:** 10,185

"I have learned a TON about Boston and its amazing neighborhoods. Coming from out of state I really enjoyed learning about the community I am now living in. I have learned a lot about social issues in Boston like the busing crisis redlining, Gentrification, economic income inequality etc. how to be civically engaged".

- 1st Year Aces Participant

SERVICE - LEARNING

Service-Learning (S-L) is a form of experiential learning for students and a teaching tool for faculty that purposefully integrates academics and service or community-engaged projects to meet classroom and community goals throughout the semester. As part of their coursework, students partner with community-based organizations, non-profit organizations, and government agencies as a way to learn the course material.

- **Number of colleges:** 8 (plus University Honors Program and NU Explore Program)
- **Number of faculty:** 63
- **Number of course sections:** 106
- **Number of S-L students:** 1995
- **Number of S-LTAs:** 63
- **Number of Street Team members:** 17
- **Number of S-L Team Managers:** 10
- **Number of Service-Learning Fellows:** 6
- **Number of partner organizations:** 139

"I was able to be more in touch with Northeastern and the community. I got to be a role model for my students and give them good advice for school. I think being able to talk to someone who has taken the class and taken the classes that they need to take in the upcoming years, I was able to give them some insight."

- College of Science Student Leader

"From my years here at Northeastern I have seen the importance of gaining cultural exposure and knowledge. This service was and added experience for me in term of cultural awareness and development as a health care professional. We encounter so many different backgrounds and cultures in our profession that it is vital to be aware and be able to adapt to certain patients. Additionally I believe it helped me further my awareness to not get stuck in my ways so to say. Since this service was such a different experience than any previous for me I think I gained a lot from it in the end."

- Bouvé College of Health Sciences student

"Through the partnership out students were able to see how different aspects of math can play into games and puzzles. On a larger scale I think they were also able to see how math can be found in areas you may never expect or that thinking about things mathematically can help improve choices and outcomes. The kids really loved learning some new games and tricks and I love that they learned a little bit of the mathematics and strategy behind the games."

- Community Partner

"Service-Learning has allowed me to continue relationships with my students through upper class mentoring for students coming in. This has created impact for my program, and has allowed me to also expand our impact."

- College of Engineering faculty member

"They gave us linguistic and cultural capacity we don't have without them. They played cards, called BINGO, answered questions about smart phones and wireless access, shared their stories and their smiles, and helped create micro-communities all over the city."

- Community Partner

COMMUNITY PARTNER EVENTS

Volunteer Fairs

The Center of Community Service annually hosts events that bring community partners to campus to meet, interact and build partnerships with students, staff and faculty.

- **Fall Volunteer Fair:** The Fall Volunteer Fair is held annually each September on Centennial Common, with over 60 community partners on campus to meet and recruit student volunteers. 90% of community partners rate our fair as an excellent way to meet and engage with potential volunteers.
- **Making Connections:** Making Connections was held for the first time in February 2018 with the goal of connecting community partners with student and staff groups looking to engage in ongoing partnerships. This Valentine's themed event reminded community partners and campus groups that true partnership takes time, mutual respect, and commitment on both sides.

Clinton Global Initiative University (CGIU) Day of Action

In October 2017, Northeastern University hosted the Clinton Global Initiative University (CGIU) annual event. The Center of Community Service co-lead the Day of Action alongside Clinton Global Initiative. CGIU participants, including approximately 50 Northeastern students, served with 4 local nonprofit organizations: St. Stephen's Youth Programs, Inner City Sanctuary for the Arts, Emerald Necklace Conservancy, and Orchard Gardens Housing Complex.

COMMUNITY SERVICE GRANTS

In order to demonstrate Northeastern's financial and human capital support for the local community, CCS offered 14 Community Service Grants for Boston-based organizations. Grants were awarded to new and current projects that ranged from starting a Community Health and Wellness Center at Catholic Charities to further developing Greater Boston Chinese Golden Age Center's Memory Cafe for Asian Elders. Winners were chosen based on their need for funding, sustainability of the project, impact of the project, and the project's connection to Northeastern.

St. Francis House $1500	Catholic Charities $1500
Greater Boston Chinese Golden Age Center $1500	Old Colony YMCA $750
Inquilinos Boricuas en Acción $1500	Charlestown High School $1000
Round Table Inc $1500	LEAP for Education $1500
Castle Square Tenants Organization $1500	826 Boston $1500
Friends of Hernandez, Noche de Fiesta $1500	Timothy Smith Network $1500
Shooting Touch $1500	Peer Health Exchange $500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NORTHEASTERN CROSSING

Northeastern Crossing's role as a venue for intentional interactions and the exchange of ideas between Boston residents and the Northeastern University community continued to grow during FY 2017-2018.

THE BRIDGE EXPERIENCE

Now in its third year, the department's free, interactive programming series, The Bridge Experience, continued to cultivate audiences by engaging stakeholders though its five pillars and by reducing the barriers to interaction and learning.

Storytelling - Personal stories that promote understanding of collective and shared experiences.

A special screening of the Blasian Narratives was a notable highlight last year. The film, which Northeastern Crossing co-sponsored with the Boston Asian American Film Festival (BAAFF), Roxbury International Film Festival, and Mixed Asian Pacific-Islander Association, explored the intersection and identities of mixed-race Black and Asian individuals. After the screening finished, attendees participated in a post-screening discussion about the film's issues and shared their personal accounts of being Blasian in America and abroad.

Skills Building - Classes and trainings offering opportunities for personal and professional growth.

A new offering last year was a three-part Ikigai, meaning "reason for being" in Japanese, series led by Martha Fields. Fields used the principles behind Ikigai to help participants find their own reasons for being and use those to assist them in achieving individual paths of work/life success.

Self-care & Wellness - One-hour sessions providing time and space for participants to be contemplative and focused on their own physical, mental, and emotional well-being.

Afro Flow Yoga continued to be our most popular self-care workshop. Led by the team of Leslie Salmon Jones and Jeff Jones, this unique yoga experience combines elements of African dance with yoga to promote healing, balance, and peace. Sessions remained open to groups of up to 20 people and of all ages and experience levels.

Immersion - Programming that draws upon some combination of the three pillars above and uses audience participation to enhance the content.

Since its creation, Northeastern Crossing has been a venue for exhibitions by local artists including Ekua Holmes, Eli Portman, and Cicely Carew. As part of making these art experiences less passive and more interactive, recent opening and closing receptions have incorporated interactive art-making workshops where attendees produced their own creations (sometimes resulting in a group project) under the guidance of the exhibiting artist.

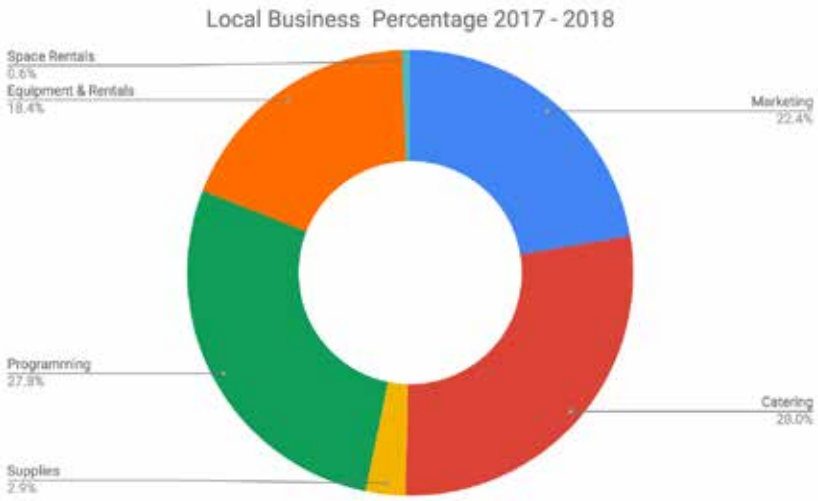
Gateway - Events that bring our work to a larger scale by involving hundreds of participants in thought provoking programming and networking, with food and entertainment provided by local vendors.

The Gateway events saw the largest increase in attendance of all of Northeastern Crossing's programming. The annual Gateway Mixer, an early autumn networking event held in September, grew to approximately 400 guests for the first time. Attendees, which included local residents and Northeastern faculty, staff, and students, were drawn by the opportunity to connect in an informal outdoor setting, as well as by the entertainment provided by DJ Tao and refreshments provided by Haley House Bakery Cafe and Mass Hole Donuts. Additionally, attendance for February's Winter Gateway speaker event doubled over the previous year, from 300 to 600 guests, with the appearance of author and activist Shaun King. King spoke on a range of topics including how to organize movements, criminal justice reform, and the state of politics and our political leadership.

ECONOMIC IMPACT

The majority of Northeastern Crossing's purchases are local, specifically with Boston-based MWBEs. Our intent is to build the capacity of local businesses and entrepreneurs by spending dollars directly on their products and services. Our staff ensures that Boston's diversity of talent, cultural origins, and tastes is represented through a rotating selection of caterers, food trucks, dancers, poets, musicians, instructors, DJs, and others who create unique vignettes and experiences for our participants. We also use local and neighborhood-based publications, including the Bay State Banner, DigBoston, Fenway News, and Mission Hill Gazette to inform and invite area residents to attend and participate in our programming.

During FY2017-2018, 75% of Northeastern Crossing's spending was on local businesses, totaling nearly $75,500.



DATA: COMPILING AND REPORTING

Since 2016, Northeastern Crossing has undertaken the role of compiling data about Northeastern University's community benefits commitments in the Institutional Master Plan. The production of this Community Benefits Annual Report (CBAR) and the annual CBAR Reception are the two platforms by which Northeastern Crossing informs the public about progress made and provides the contact information to the appropriate staff overseeing various community benefits initiatives.


DO NOT
ENTER

NORTHEASTERN UNIVERSITY POLICE DEPARTMENT

The Northeastern University Police Department (NUPD) is committed to work in partnership with the local community. We believe that showing our commitment to the members of our community not only helps to strengthen ties with our neighbors, but also does its part to reduce crime in the area.

We take pride in the fact that we can make a positive impact on the city of Boston and all of its citizens.

Through our commitment to the members of our community we arrange monthly engagement opportunities such as coffee and tea with NUPD, activities with local daycares, youth programs and volunteer with local organizations such as: Cradles to Crayons, Martin Richard Foundation, homeless shelters, Boston Children's Hospital, food banks and donation drives.


POLICE

Lifelong Learning Opportunities

CONTRIBUTORS

Ebony Clinton, *Senior Director, Office of Undergraduate Admissions*

Martha M. Loftus, *Director of Foundation Year*

Nicolette Aduama, *Associate Director of Academic Operations, University Pathways Portfolio*

Michael Fitzgerald, *Special Events Manager and Community Liaison*

ENROLLMENT AND SCHOLARSHIPS

SCHOLARSHIPS AND FINANCIAL AID

Goals

Beginning fall 2015, Northeastern will offer an additional 30 full tuition, need based scholarships to Boston Public Schools graduates, 20 in the specified zip codes (02115,02118,02119,02120 and 02130) and 10 citywide, in addition to continuation of 120 current full-tuition scholarships currently offered in Boston. Of the 120 existing scholarships, a minimum of 10 will be targeted to the specific zip codes.

Beginning fall 2015, Northeastern will provide financial aid covering 100% of demonstrated need for all enrolling BPS students from these neighborhoods.

2018 Key Progress & Current Status

Northeastern University has a longstanding commitment to Boston residents and Boston Public High School students. Through community-based programs, admission, and financial aid initiatives, creating pathways to college and degree completion remain a priority for the university.

At Northeastern the Enrollment Management division in partners with the greater campus community, to employ a comprehensive and multilevel approach in the recruitment of local Boston students. Our recruitment strategy works to identify talented populations throughout the city and execute tactics to engage with students in the community and designated zip codes. This strategy allows us to connect with students, parents and the counseling community that support them in accessing admission to Northeastern. From our student search process, to data driven recruitment and throughout all phases of our Admissions Committee selection process, we remain steadfast in our unwavering commitment to increasing opportunities for Boston students.

Now in year five our strategies remain focused in four major areas including a) strengthening established feeder and partnership programs, b) continuing to connect the institution with Boston students on a personal level, c) expanded partnership and the creation of professional development opportunities for the city's public-school counselors, and d) the promotion and awarding of scholarship opportunities designated for Boston students. These strategies while consistent with earlier years continue to be evaluated and new initiatives implemented to support this strategy.

We offer a diverse portfolio of enrollment opportunities for Boston area students. By delivering this range of admission opportunities, Boston residents continue to access and receive support in obtaining a Northeastern education. In year five we continue to see an increase in enrollment of Boston students and residents at the University.

Highlights include

Enrollment Initiatives Updates

- A designated team of staff members from Admissions, Student Financial Services, Foundation Year, The Opportunity Scholarships and Outreach Programs, The John D. O'Bryant African American Institute, The Civic Engagement Program and the College of Professional Studies support Boston students in accessing enrollment and persistence at the university. The networked group convenes regularly to assess trends amongst the cohort of Boston students and understand and respond to the needs of the Boston Public Schools and the city at large.
- We saw a 6% increase in applications from Boston students from 2017, with an above university average admission rate for Boston students.
- Experienced a 14% Increase in enrollment from 2017 to 2018 in Boston students.
- 100% participation in key college fairs for Boston students around the city, including participation in area community college fairs and high school visits throughout the city.
- Participation and College Information Programs with community based organization partners serving Boston Public Schools and city of Boston students.
- Hosting site for unique on campus visit experience for multiple BPS high schools and student groups offering tailored programming and admissions advising.
- Partnered with BHA to host an on-campus Admissions information session for Boston residents living in the BHA settlements. Residents learned about scholarship program and different enrollment opportunities to the university. Northeastern produced and information sheets in English, Spanish and Mandarin to be distributed across the BHA settlements.
- Northeastern hosted the annual Boston Public Schools College ad and Scholarship boot camp for high achieving BPS Juniors in January 2018.
- The Undergraduate Admission Selection Committee worked with Boston Public Schools Guidance leadership as part of the university selection committee in awarding of Northeastern's most prestigious scholarships targeting BPS graduates and Boston residents.
- Hosted an on campus overnight visit experience for Boston Scholarship award recipients.
- Supported the Bridge to Calculus and Early College Experience program throughout the summer with College Admissions advising.
- Presented Boston students with the opportunity to participate in Northeastern's Pre-college summer programs with scholarship money available.

Financial Aid and Scholarships Updates

- We currently have 390 Undergraduate students enrolled for Fall 2018 at the University from Boston zip codes, receiving over $11.9 million dollars in Institutional merit aid. With the average award for Boston students up annually.
- 130 Boston students receiving scholarships to attend the university.
- Awarded 14 Valedictorian Scholarships to Boston Public and Boston Charter School students (full tuition, room and board awards) with 11 enrolled, the largest share in the city.

TRANSFERS

Goals

Beginning in spring 2015, BPS graduates not admitted directly to the undergraduate program or to Foundation Year can arrange with an admissions counselor for a transfer contract, guaranteeing transfer admission provided the student successfully hits a determined set of academic benchmarks at any accredited institution.

Beginning fall 2014, Northeastern will negotiate transfer articulation agreements with Roxbury Community College and Bunker Hill Community College to provide another route for BPS graduates from these neighborhoods to enter Northeastern.

2018 Key Progress & Current Status

Boston Public High School students who were denied admission to Northeastern were all offered the opportunity to pursue a transfer admission contract which guarantees admission to Northeastern after the successful completion of one year of college work at a local community. Interested students are offered advising sessions with the Admissions team and assigned a designated Admission Counselor to support them as they make progress toward fulfilling the terms of the contract. We currently have 13 Boston students under active contact who have the opportunity to matriculate to Northeastern in Fall 2019.

We continue to maintain the transfer articulation & guaranteed admissions program for Boston student with Roxbury Community College and Bunker Hill Community College applicable to both the full-time Undergraduate Residential Day School and the College of Professional Studies.

Northeastern continues its Boston Housing Authority Scholarship program for Boston residents residing in the Boston Housing Authority settlements. This Scholarship program is available to Boston residents seeking admission and enrollment in both the full time Undergraduate Residential Day School and the College of Professional Studies. This full tuition scholarship opportunity for transfer students with an interest in attending the University that would have been cost prohibitive without this scholarship award.

Northeastern will meet 100% of the full demonstrated need for all transfer students from Boston, in a continued effort to advance enrollment efforts for Boston residents.

FOUNDATION YEAR

Foundation Year is a first year college program where students from the City of Boston tackle a traditional first year college curriculum while receiving extensive wrap-around supports. Integrated tutors, personal and academic advising and scaffolded curricular programming allow students to earn up to 32 semester hours of credit. After completing Foundation Year, students apply as transfer students to other colleges and universities including Northeastern University.

2018 Key Progress & Current Status

15 students from specified Boston zip codes were enrolled in the 2018-2019 school year cohort.

14 students from Cohort 9 (2017-2018) transferred to one of Northeastern's colleges for their 2nd year of college in 2018-2019.

Foundation Year has an 85% completion rate. 8o% of the students who complete Foundation Year enroll at 4-year institutions while 20% enroll in a 2-year institution.

Foundation Year cohorts are persisting at a higher rate than BPS graduates at 2-year institutions (63.1%), and are persisting slightly more than BPS graduates overall, including those at 4-year institutions (81%).

FY Students Nola De la Cruz, Thao Nguyen, and Betiel Brhane were selected to volunteer as Boston Ballet Ambassadors during the 2017-2018 season. The ambassador program is a fun way for students to be involved with Boston Ballet, meet peers who are passionate about the arts/dance, and gain hands-on experience volunteering with a nonprofit arts organization.

"I am a scholar, I will be challenged, I will explore, I will experience, I will learn, and I am glad I can do all of that because of Foundation Year."

- Cristian Martipena, Class of 2022

LEARNING LINK

The Learning Link is a program designed for individuals aged 55 + who live in neighborhoods surrounding Northeastern. Learning Link membership provides the opportunity to audit one class in the Fall and Spring semesters at Northeastern in addition to other perks such as access to the library and online resources.

The Office of City and Community Affairs assists neighbors in identifying a class that meets their interests and fits into their schedule. All classes offered are available to audit pending the instructor 's approval and availability of seats. The registration period for Learning Link members takes place during the Add/Drop phase of each semester which is typically 2-3 weeks after the semester begins.This year, we had 5 people enroll for classes: British Literature, Intro to history of the US, Intro to Middle Eastern History, Urban Development and Politics, and Drug Trade and Drug War.

The Spring 2019 registration period will take place between January 15th and 28th.
For more information, contact Michael Fitzgerald at MM.Fitzgerald@northeastern.edu.

COLLEGE READINESS

The College Readiness program is targeted toward 9th and 10th graders in our surrounding communities to help them prepare to apply to colleges. This year, we partnered with Sociedad Latina, located in Mission Hill, and hosted their summer Escalera Program on campus with approximately 150 students. While on campus they met with representatives from our Admissions Office and a Torch Scholar who shared their personal experiences applying to colleges, and life in college as a first-generation college student.

We continue to partner with the YMCA's Achievers Program, which focuses on serving at-risk-youth in Boston, hosting them on campus thirteen Saturdays throughout the school year. Their first session was held on October 13 through May 11.

YMCA Achievers focuses on at-risk youth while Sociedad focuses on ESL first generation students. Both programs were able to meet with folks from our admissions department and learn about general expectations colleges have and also learn about college life from current students.

Workforce Development and Career Advancement

CONTRIBUTOR

Stephen Rando, *Interim Manager of Talent Acquisition*

COMMUNITY HIRING & INTERNSHIPS

Goals

Northeastern will pursue the goal of increasing Northeastern employees in the contiguous zip codes by 3-5% within three years.

Northeastern will encourage Northeastern vendors to hire an additional 100 employees from the contiguous zip codes within three years.

Northeastern will provide 10-15 three-month internship opportunities to community members per year.

2018 Key Progress

The responsibility of implementing procedures to meet the hiring and internship goals has been assigned to the Human Resources Management (HRM) Department at Northeastern.

In order to meet these goals Northeastern's HRM Department has continued to:

- Expand the current internship program to include a partnership with Year Up.
    - Information Technology Services (ITS) in 2018 was the host pilot of three interns from Year Up.
    - This program proved to be extremely successful thus ITS has continued their commitment for interns as part of a continuous annual program. Each student apprentice receives college credit for the Internship experience.
    - ITS created a foundational and dedicated program for all intern participants.
    - ITS Customer Services Support/division provides interns with the experience to help support the InfoCommons/DMC computer labs and our expanding printer locations around campus.
    - Academic Technology Services/division provides interns with the opportunity to learn and develop new ways to use current services/software and support in developing an understanding in learning module creations.
    - The program consists of focused and dedicated mentorship, training, professional development, and practical skills in the ever growing/developing IT industry.
    - The focus is to offer successful participants permanent hiring opportunities at Northeastern.
    - Northeastern University is proud to be a dedicated corporate partner to the Year Up program.
    - In 2018, a second department, Research Administration and Finance, began work with Year Up, taking its first intern. Future expansion is being considered.
- Build on existing temporary employment agency relationships to promote diverse and local hiring.
- Evaluate the online posting sites on which Northeastern posts job openings and research new posting sites with the goal of reaching local residents.
- Assemble a print media plan targeting local neighborhoods to inform the residents of hiring events at Northeastern. This is part of our ongoing commitment.
- Ads were created conveying the message that the event was a community focused Job Fair, featuring top local employers and training organizations.

COMMUNITY HIRING & INTERNSHIPS CONT'D

- Some of the publications where the ads were posted are Boston Metro, Sampan, Fenway News, Bay State Banner, Mission Hill Gazette, Back Bay Courant, and Dorchester Reporter.
    - Flyers for the events were distributed to all of the City of Boston Main Streets organizations.
    - Ads were posted on Northeastern's City and Community Affairs Facebook and Twitter accounts.
    - Ads were also posted on the list serve for Boston Career Link, YMCA Training Inc., and Operation A.B.L.E.
- Continue to partner with Northeastern's preferred temporary hiring agencies to focus their temporary placements on residents from our surrounding neighborhoods.

    Temporary Hiring Agencies:

    - KNF&T Staffing Resources
    - Total Clerical Services
    - Professional Staffing Group
- Increased the number of diversity websites to which all Northeastern jobs are posted from eight sites to 51.
- Northeastern's Talent Acquisition team participated in YMCA Inc.'s Interview Blitz, the culmination of a 20 week program, assisting participants with their interview skills.
- The Talent Acquisition also supported training and networking efforts at Northeastern Crossing, including serving on panels for student leaders and providing guidance on resumes and cover letters. The team also did informational interviews with interested participants as a follow-up to these events.

Our goal is to increase the number of Northeastern University employees from Boston. In 2018, the following percentage of Northeastern University employees are from Boston:

Without PT Faculty	**1,431**	**32% of overall workforce**
With PT Faculty	**1,659**	**28% of overall workforce**

We continue to focus on meeting with department heads and hiring managers to garner support and educate them on the hiring initiatives.

In addition, HRM consults with departments on strategies and resources to enable them to support the goals.

JOB FAIRS AND TRAINING

Goals

Northeastern will provide 10 employment training and education programs to community members per year.

Northeastern will continue to hold job fairs, including events targeted specifically to local residents.

2018 Key Progress

During the past year Northeastern hosted the fourth annual Community Vendor Job fair. The fair was attended by over 13 vendors and 144 applicants.

Participating vendors included Chartwell's Dining Services, KNF & T Staffing Resources, Professional Staffing Group, Northeastern Crossing, Northeastern University/Human Resource Management, Laz Parking, Northeastern University Bookstore – Barnes and Noble College Booksellers, Operation Able of Greater Boston, and Vanguard Parking & General Services.

Community Vendor Job Fair August 1, 2018
Vendors: 13
Attendees: 144 (this represents the number of registered attendees, some attendees choose to not register)

This year's community vendor job fair received positive feedback from vendors and participants.

Vendor/Employer feedback:

"Folks came in ready and well-prepared."

"The opportunites are real."

Participant feedback:

"I was impressed by the energy in the room."

"Everyone was very friendly and helpful."

In addition, for the period of July 2015 to October 2018 Human Resource Management coordinated and participated in the following community based events and training. The events and training were comprised of Job Fairs, Interview Preparation, Workshops, and Trainings.

The event tally is 20 total:

- **2015 – 6 events**
- **2016 – 12 events**
- **2017 – 3 events**
- **2018 - 2 events**

Year	Date	Event
2015	July 14, 2015	Workshop: Attending A Job Fair
2015	July 14, 2015	Workshop: Resume 101
2015	July 17, 2015	Workshop: Interview Preparation
2015	August 26, 2015	Boston Career Link General Job Fair
2015	October 6, 2015	Boston Career Link Info session/Presentation on finding employment at Northeastern
2016	January 27, 2016	YMCA Interview Blitz
2016	March 23, 2016	Boston Career Link Job Fair
2016	April 28, 2016	YMCA Interview Blitz
2016	May 9, 2016	Operation A.B.L.E. Starfish Thrower fundraising benefit, supported by Northeastern
2016	July 26, 2016	YMCA Training, Inc. - Employer Focus Group on crucial skills Northeastern and other employers are hiring for.
2016	August 18, 2016	YMCA Interview Blitz
2016	August 24, 2016	Boston Career Link Summer Job Fair
2016	August 25, 2016	Northeastern University / Northeastern University Crossing Neighborhood Night
2016	August 30, 2016	Boston Career Link Info session/Presentation on finding employment at Northeastern
2016	September 13, 2016	HRM/NU Crossing/Operation A.B.L.E. partnership Career Advancement Series Session #1: Resumes, Cover Letters, plus.
2016	October 11, 2016	HRM/NU Crossing/Operation A.B.L.E. partnership Career Advancement Series Session #2: Creating a Winning LinkedIn Profile
2016	November 15, 2016	HRM/NU Crossing/Operation A.B.L.E. partnership Career Advancement Series Session #3: Career Planning
2017	August, 17, 2017	Community Job Fair
2017	September 27, 2017	HRM/ NU Crossing Student Leader Panel Presentation
2017	October 27, 2017	YMCA Training, Inc. Mock Interview Blitz
2018	March 27, 2018	HRM/NU Crossing Writer's Week Event – Resume and Cover Letter Workshop
2018	August 1, 2018	Community Job Fair

Next Steps:

- Continue to partner with Northeastern Crossing to develop programming and coordination of events.
- Create an annual calendar, to be available at Northeastern Crossing that will highlight our employment related programming (employment trainings and education programs).


FINA

Business Development and Procurement

CONTRIBUTORS

Michael McNamara, *Director of Procurement Services*

Catherine Walsh, *Associate Vice President of Fiscal & Management Services*

MINORITY, WOMEN AND SMALL BUSINESS ENTERPRISES

INITIATIVE BACKGROUND & COMMITMENT

Initiative Background

In 2014, Northeastern University formalized a plan for the University to assist the City of Boston and Commonwealth of Massachusetts with the promotion and advancement of underrepresented businesses in our local community. As a key member of the community, Northeastern University is proud to have provided community members with numerous opportunities for education and employment. With this formal commitment, in fiscal year 2015 Northeastern University continued to define the University's goals for supporting by directing key percentages of the University spending to key groups of underrepresented business including:

- Women and Minority owned business enterprise (W/MBE)
- Small and Local business enterprise (SLBE)

Northeastern University's Goals

Given the significant size of investment the University makes every year on goods and services, the University spending goals are expected to make significant impact on underrepresented businesses.

The initiative's goals over time include the following:

- Northeastern will commit to increasing business with SLBEs to 20% of its discretionary spending and W/MBEs to 12% of discretionary spending within ten years.
- Northeastern will identify appropriate community-based businesses for on-campus opportunities, with the goal of integrating them into new or existing university buildings as well as designating them as preferred vendors in the university purchasing system.

In addition to our economic impact, Northeastern has made a commitment to support underrepresented businesses indirectly by providing valuable learning and networking opportunities. Specifically, the University has offered the following engagement opportunities to help improve the growth and business potential of underrepresented businesses.

These include:

- Supplier fairs
- Business networking events
- Training and mentoring initiatives
- Capacity building programs

In FY2018, Northeastern University made additional progress in accomplishing the goals of this very important commitment to the Boston community. The Procurement Services department has responsibility to assure the University delivers on its commitment. In order to accomplish this, Procurement Services has over the course of the year collaborated with a number of internal and external persons to undertake the tasks of planning, organizing, and implementing the many aspects of our supplier diversity initiatives.

INITIATIVE AREAS & ACCOMPLISHMENTS

University Spending

The University's combined Tier 1 and 2 supplier spend across all underrepresented businesses totaled approximately $55.3 million. Of this total, $11 million represented spending with Woman and Minority owned business and $32.3 million in spending with Small and Local businesses. See Section III for details on these figures.

Community Networking Events

Organization and planning during FY2018 by the Procurement Services department culminated in the 7th annual Small, Local, Minority and Woman Owned Businesses Networking Event was held on Wednesday, August 22nd, 2018. This successful event had over 220 attendees and included 32 organizations staffing tables to answer questions and hand out information about doing business with many of the Greater Boston area colleges, universities, hospitals and the new Casino in Everett.

Associations & Partnerships

Associations and partnerships continue to be integral to promoting the growth of underrepresented business. This past year the University renewed its participation and partnership with key external organizations including the following:

- Interise, a local non-profit organization, which provides business operations training for start-up businesses.
- Greater New England Minority Supplier Development Council (GNEMSDC), an organization committed to the certification and development of minority suppliers.
- Boston Chamber of Commerce Pacesetters program.
- Several individual contributions have also been made to these organizations. Lindsay Dahlberg was hired as the new Associate Director of Procurement Services. She will be in charge of leading Procurement Services in this area.

Supplier Management

The Procurement Services department continues to support and work with suppliers and departments who find ways to incorporate diverse suppliers within existing supplier contracts. During FY2018, Tier 2 spend increased over the prior year. Thus, this year we continued to use a measurement and reporting structure that includes both Tier 1 suppliers, suppliers we directly contract with, as well as Tier 2 suppliers, that are sub-contractors to Tier 1 suppliers.

2018 UNIVERSITY SPENDING REPORT

The 2018 report year is defined by the University's 2018 fiscal year which began on July 1st, 2017 and ended on June 30th, 2018. Figures below are shown in millions of dollars (MM).

Supplier Classification	Tier 1 Supplier Spend	Tier 2 Supplier Spend	TOTAL FY2018
WMBE	$ 23.0	$ 19.0	**$ 42**
SLBE	$ 32.3	$ 1.2	**$ 33.5**
Total (MM)	**$ 55.3**	**$ 20.2**	**$ 75.5**

Supplier Classification	Tier 1 Supplier Spend	Tier 2 Supplier Spend	Total FY2018 Spend	Spend Goal	Spend Percentage
W/MBE	$8.6	$12.4	$21	12%	25.3%
SLBE	$3.8	$1.2	$5	20%	4.3%
Total($M)	$12.4	$13.6	$26	-	-

IMP DESIGN/CONSTRUCTION SPENDING

Goals Committed

Northeastern will direct 30% of major design/construction spending in the Northeastern IMP to MBEs and 10% to WBEs.

Fiscal Year 2018 Key Progress & Current Status

The following table presents FY18 design and construction expenditures with W/MBEs on Carter Playground and the ISEC.

BUSINESS ENTITIES	IMP GOAL	FY18 EXPENDITURES
Minority	30%	10.1%
Women	10%	20.8%
TOTAL		30.9%

Northeastern has increased our total IMP W/MBE spend from 26.88% to 29.43% from FY17 to FY18

NON-IMP DESIGN/CONSTRUCTION SPENDING

Goals Committed

Northeastern will direct 10% of design/construction spending for projects not described in the Northeastern IMP to Small Local, Women and Minority Owned Business Enterprises (SL/W/MBE) within three years

Fiscal Year 2018 Key Progress

The following table presents FY18 design and construction expenditures with M/W/SLBEs.

BUSINESS ENTITIES	IMP GOAL	FY18 EXPENDITURES
Minority	-	5.7%
Women	-	16.3%
Small and Local	-	6.9%
TOTAL	10%	28.9%

Building the Future

CONTRIBUTOR

Kathy Spiegelman, *Vice President and Chief of Campus Planning*
Maureen Hickey, *Director of Strategic Initiatives*
Cassandra McKenzie, *Program Director*

CARTER PLAYGROUND

Goals Committed

Northeastern is committed to rebuilding and maintaining Carter Playground, enhanced by the long-term inclusion of the University's Camden parking lot (approximately 2 acres appraised at $8.9 million), into an expanded park at a cost of up to $15 million initially. The city will continue to regulate permitting and schedule of the facilities.

2018 Key Progress

The Carter Field and Playground project was completed in September 2018 and was in full use.

Both High School and Pop Warner football were able to practice on the field for the 2018 season. The grand opening celebration was held on September 14, 2018 in which City of Boston Mayor Walsh and Northeastern President Joseph Aoun spoke about the positive impact the new quality space will have on both the Boston and Northeastern community.

The final remaining element includes the erection of the seasonal air structure scheduled to open January 2019. The addition of the dome for the winter season will extend general and permitted use of the playing field for the community.

MBTA TRACK CROSSING

Goals Committed

As part of the ISEC project and subject to receipt of necessary permits and approvals, Northeastern will create a landscaped crossing of the public transit rail line to better knit the Roxbury and Fenway communities and enhance access for persons with disabilities.

2018 Key Progress

The pedestrian bridge was fabricated in Houston, TX and all components were transported to Boston, MA via 39 tracker trailer loads.

The steel bridge was assembled in the lay down yard on Columbus Avenue and then picked from the yard with a 220-foot long boom crane and placed over the MBTA tracks in early October 2018. The contractor will continue to complete the remaining work on the bridge deck and site work through the winter months. The bridge is targeted to open in the Spring 2019.

AFFORDABLE HOUSING

Goals Committed

Northeastern will work with partners to identify, advance, and support affordable housing projects in the surrounding neighborhoods that can take advantage of Northeastern's housing linkage obligations.

2018 Key Progress

Northeastern has kept ongoing communication with local neighborhood organizations, affordable housing developers, and the City about local affordable housing opportunities. In the past year, there have been no opportunities for Northeastern to assist with affordable housing projects in the neighborhoods abutting the university.

HOUSING IMPACT STUDY

Goals Committed

Northeastern will fund an update of the Housing Impact Study at or around the five-year term of the Northeastern IMP in order to examine any changes in the impacts of Northeastern students in rental housing stock, particularly in light of the anticipated opening of over 1,000 new dormitory beds during the next five years.

2018 Key Progress

Northeastern has contracted with Byrne McKinney& Associates to complete an update of the Student Housing Impact Study. The report should be available in late 2018.

NEW STUDENT HOUSING

Goals Committed

Northeastern University commits to create, or assist in the creation of, new housing for a minimum of 600 undergraduate students before five years of the term of the Northeastern IMP have elapsed.

Housing should be a net addition to the stock of housing currently available to Northeastern students, i.e. not a conversion of master leased units.

Housing shall be an addition to the city's housing stock, i.e. shall not be created through the conversion or replacement of existing housing.

2018 Key Progress

Northeastern is on schedule to have 825 new student beds on campus available for occupancy in fall 2019 in the Lightview residence on Columbus Avenue. The building is a partnership between Northeastern and American Campus Communities (ACC), a national student housing developer, and is currently in construction. In September 2018, Northeastern students started to sign leases and view a mock of an apartment at the leasing center located on Columbus Ave at Melnea Cass.

Additional Public Resources

CONTRIBUTOR

Marisa Luse, *Campus Engagement & Collaborations Manager*

MARINO RECREATION CENTER

A maximum of 50 residents of the City of Boston have access to the Marino Recreation Center on a daily basis between 5:00am - 9:00am. Community residents will have access to the facility on holidays/weekends and during the summer academic semesters, when the building opens.

Visit website, for eligibility criteria, equipment check-out, and safety and security information.

CONTACT:
140 Marino Center, Boston
617-373-4433
campusrec.neu.edu/general/community.php

THE FENWAY CENTER

Each semester, the Music Department hosts a series of concerts and events that are free and open to the public ranging from the Boston Symphony Orchestra's annual community chamber music concerts to jazz ensembles. All performances are held at the Fenway Center located at 77 St. Stephen Street.

CONTACT:
Arthur Rishi
a.rishi@northeastern.edu
617-373-2671
northeastern.edu/camd.music

NORTHEASTERN ATHLETICS

The Northeastern University Sports Information office handles the publicity of all 18 varsity sports. Members of the public can submit requests for admission to games, access to athletic expertise or experience, or request for sponsorship or collaboration.

CONTACT:
To submit a Sports Ticket Request:
northeastern.edu/crossing/contact/donation-request-form

SNELL LIBRARY ARCHIVES AND SPECIAL COLLECTIONS

Members of the public who seek to use Northeastern information resources not available to them at their public or institutional libraries; may apply for a temporary researcher pass.

The Archives and Special Collections is open to all visitors.

Library and research or curriculum-related tours are also available upon request. A list of guest names must be provided in advance.

CONTACT:
libraryprivileges@neu.edu

VISITOR CENTER

The Visitor Center is a state of the art facility that primarily serves as faculty, staff and prospective students and their families first Husky experience. The center provides all visitors with a interactive look at the university through the eyes of its students, faculty, staff.

Schedule an individual or group campus tour and/or information session.

CONTACT:
West Village F, 40 Leon Street
617-373-2200
admissions@northeastern.edu

GALLERY 360

Gallery 360 celebrates creative expression and the visual arts. It advances Northeastern's mission to enrich the intellectual lives of students and the broader community through creative endeavors. This elegant, 1,000-square-foot space displays works by students, faculty, and alumni, as well as emerging local, national, and international artists. The gallery operates year-round in Ell Hall, with easy access from Curry Student Center.

Gallery Hours:
Monday - Friday:
11am - 7pm
Saturday: 12pm - 5pm
Closed Sundays in the summer

CONTACT:
To submit your art for consideration in an upcoming exhibition: northeastern.edu/art/category/allery-360/

WRBB 104.5 FM

WRBB is a non-commercial, non-profit, free-form station run by students at Northeastern University providing the surrounding areas with a musical diversity not available on any of Boston's commercial stations. Members of the community can listen to a broad range of programming, including live broadcasts of Northeastern basketball, baseball, and hockey games.

CONTACT:
174 Curry Student Center
617-373-2658
Facebook @WRBBRadio

NORTHEASTERN CULTURE & LANGUAGE LEARNING SOCIETY

NUCALLS is a student organization at Northeastern University that is dedicated to offering free language classes to the Northeastern community. Our purpose is to create a fun environment where you can develop your language skills and become familiar with other cultures.

We don't only introduce you to the language but also to the unique particularities of the country and its people.

In addition to language classes, NUCALLS also hosts cultural events and activities throughout the semester. We also connect you to the numerous cultural clubs around campus as well as in Boston.

CONTACT:
nucalls@gmail.com
nucalls.neu.edu

MYRA KRAFT OPEN CLASSROOM

A semester-long seminar series open to the general public focusing on a broad range of issues impacting today's society on a city, state, national and international level. This seminar series is organized by the School of Public Policy and Urban Affairs.

CONTACT:
For seminar locations and up-to-date information, visit northeastern.edu/cssh/policyschool/myra-kraft-open-classroom

Twitter
@NU_PolicySchool

Facebook
@northeasternpolicyschool

NORTHEASTERN STUDENTS4GIVING

Northeastern Students4Giving is student-led philanthropy education program through which undergraduates award authentic grants to local nonprofit organizations. Every year, students choose a funding priority, develop a request for proposals, review applications, conduct site visits, and award a $10,000 grant through a consensus-based decision making process. Their coursework challenges them to consider the complexity of the social challenges they hope to address and the ethical implications of controlling scarce resources in the face of abundant need. In past years, students have awarded grants addressing topics such as mental health, post-incarceration reintegration, intimate partner violence, positive youth development, trauma, and diversity and inclusion.

To apply: northeastern.edu/impactlab/

CONTACT:
Rebecca Riccio
617-373-4020
r.riccio@northeastern.edu

PUBLIC ART WALK

President Joseph E. Aoun's Public Art Initiative invites artists from the Northeastern community and around the world to showcase their creativity and artistic expression. The campus itself becomes the canvas, providing that art need not to be contained by four walls. Around every corner are thought-provoking artworks created by students, faculty and world-renowned artists – works that embody Northeastern's energy and creative spirit. Tour the campus and experience for yourself Northeastern's public art.

CONTACT:
northeastern.edu/art/category/public-art/

NORTHEASTERN UNIVERSITY MARINE SCIENCE CENTER

The Marine Science Center is part of the Department of Marine and Environmental Sciences. The center is the marine research and educational facility of Northeastern University located on the peninsula at historic East Point in Nahant, Massachusetts.

Outreach programs consist of: guided tours, field trips, educator resources, marine activities for students, environmental justice leadership programs for girls, including an annual High School symposium and other academic enrichment programs for middle and high school students.

CONTACT For more information:
Northeastern University Marine Science Center
430 Nahant Road, Nahant MA 01908
Phone: 781.581.7370, Fax: 781.581.6076
mscinfo@northeastern.edu

NEIGHBORHOOD MATTERS

Neighborhood Matters is a lunchtime series that celebrates the ways in which community groups have shaped the neighborhoods surrounding the Northeastern campus. This series is co-curated by the Northeastern Center for the Arts and the Archives and Special Collections at the Northeastern University Library.

CONTACT:
centerforthearts@neu.edu
617-373-7098

NORTHEASTERN DINING

- **Argo Tea** (Snell Library)
- **café716** (716 Columbus Avenue)
- **Café Crossing** (1175 Tremont Street)
- **Caffé Strega** (ISEC, 805 Columbus Avenue)
- **Curry Center Dining** (the Market, Sweet Tomatoes Pizza, Za'tar, UBurger, Kigo Kitchen, Popeye's Louisiana Kitchen, The West End, and Starbucks
- **Dunkin' Donuts** (Hayden and Shillman Hall)
- **Food Hall** (Stetson West)
- **International Village Cafeteria** (1155 Tremont Street)
- **Levine Marketplace** (Stetson East)
- **Subway** (Ryder Hall)

CONTACT:
For hours of operation and location information, visit nudining.com/hours or follow Facebook & Twitter @NUDining

CENTER FOR FAMILY BUSINESS

Northeastern University's Center for Family Business was founded in 1991. A membership based educational program, the Center's activities revolve around Constituent Forums focused on the unique interests of emerging leaders, successors and senior generation family members who are stakeholders in their family businesses. Bi-monthly participation with peers in small facilitated and focused discussion groups allows forum members to address issues of their own concern and to learn from others.

Membership in the Center for Family Business is considered a necessary and ordinary business expense for continuing education and continued growth and success for business families. Participation in Center activities is open to a limited number of family-owned and managed businesses, and is restricted to members, prospective members and sponsors.

CONTACT:
Grace Oliveira Wyld
617-373-3718 or g.wyld@neu.edu


A
SICIST
OURSE I HAVE
PROBLEMS

DEPARTMENTAL CONTACT LIST

Community Engagement & Investment

John Tobin, Vice President of City & Community Affairs
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Becca Berkey, Director of Service-Learning
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Derek Lumpkins, Director of Neighborhood Partnerships and Programs
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Sgt. John Farrell, Crime Prevention and Community Engagement
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Additional Public Resources

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m.luse@northeastern.edu

Northeastern University

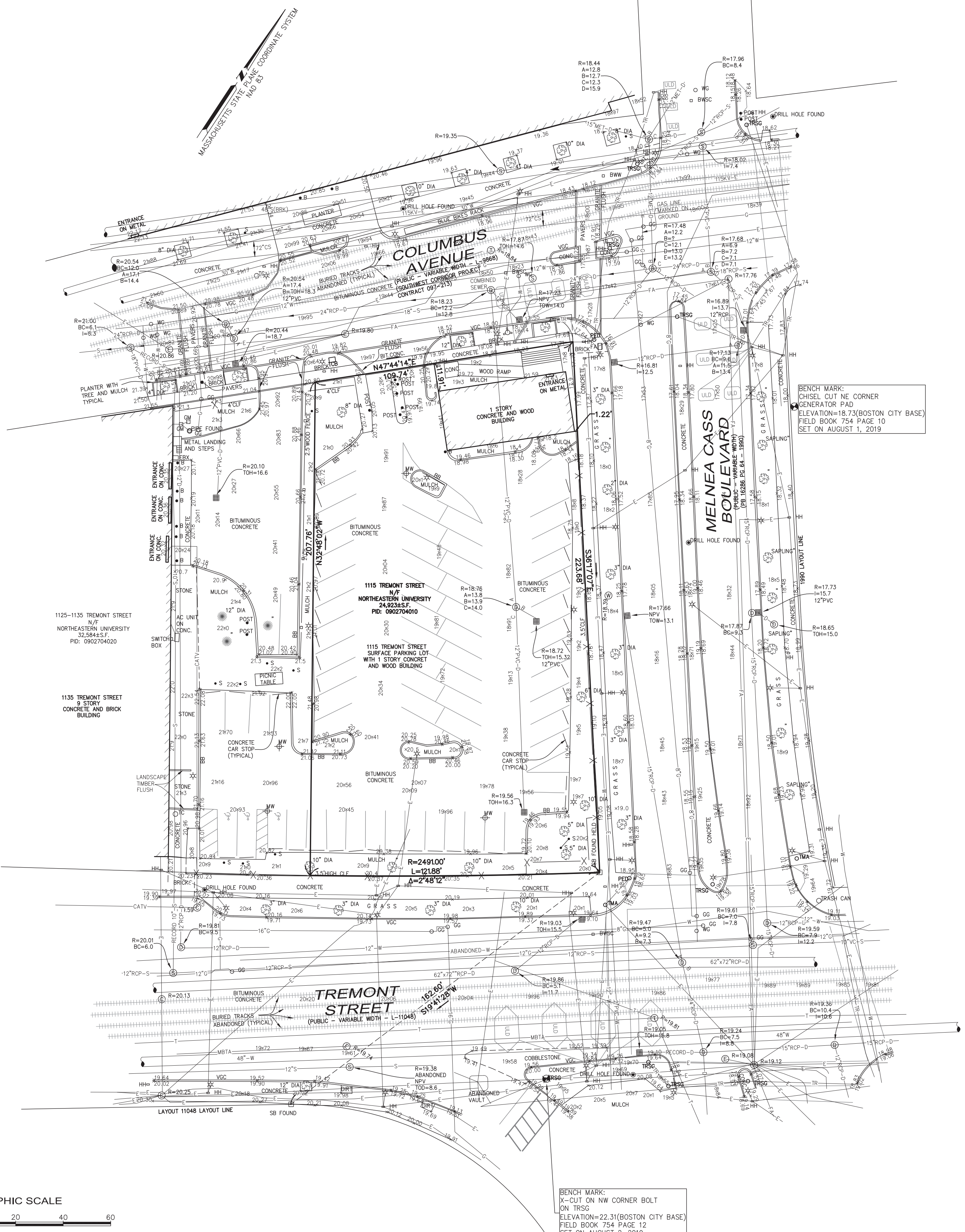
360 Huntington Ave • Boston, Massachusetts • 02115
northeastern.edu

Appendix C

Site Survey

LEGEND

Symbol	Description
	CATCH BASIN
	CABLE TELEVISION MANHOLE
	DRAIN MANHOLE
	ELECTRIC MANHOLE
	MISCELLANEOUS MANHOLE
	SEWER MANHOLE
	TELEPHONE MANHOLE
	WATER MANHOLE
GSO	GAS SHUT–OFF
WSO	WATER SHUT–OFF
GG	GAS GATE
WG	WATER GATE
ICV	IRRIGATION CONTROL VALVE
CLEANOUT	CLEANOUT
BWW	BOSTON WATER WORKS
	FIRE HYDRANT
DS	DOWN SPOUT
UP	UTILITY POLE
UP W/ UE	UTILITY POLE WITH CONDUIT LINE TO GROUND
	LIGHT POLE
LB	LIGHT BOLLARD
LL	LANDSCAPE LIGHT
HH	HAND HOLE
TC	TRASH CAN
FACB	FIRE ALARM CALL BOX
MP	METAL POST
CP	CONCRETE POST
PM	PARKING METER
S	SIGN POST
TMA	TRAFFIC MAST ARM
TRSG	TRAFFIC SIGNAL
PED	PEDESTRIAN SIGNAL
12"	DECIDUOUS TREE WITH TRUNK DIAMETER
12"	CONIFEROUS TREE WITH TRUNK DIAMETER
	HANDICAP PARKING
601x43	SPOT ELEVATION
CLF	CHAIN LINK FENCE
BB	BITUMINOUS CONCRETE BERM
SGC	SLOPED GRANITE CURB
VGC	VERTICAL GRANITE CURB
VCC	VERTICAL CONCRETE CURB
WCR	WHEELCHAIR RAMP
LST	LANDSCAPE TIMBER
R=	RIM ELEVATION EQUALS
I=	INVERT ELEVATION EQUALS
TH=	TOP OF HOOD ELEVATION EQUALS
NPV	NO PIPES VISIBLE
TOW=	TOP OF WATER
TCB	TRAFFIC CONTROL BOX
ULD	UNDERGROUND LOOP DETECTOR
DWP	DETECTABLE WARNING PANEL
601x43TW	TOP OF WALL ELEVATION
CATV	UNDERGROUND CABLE TELEVISION LINE
D	UNDERGROUND DRAIN LINE
E	UNDERGROUND ELECTRIC LINE
G	UNDERGROUND GAS LINE
S	UNDERGROUND SEWER LINE
T	UNDERGROUND TELEPHONE LINE
W	UNDERGROUND WATER LINE
OHW	OVERHEAD WIRES
	MONITORING WELL
	BENCH MARK



GRAPHIC SCALE

20 10 0 20 40 60

SCALE: 1"=20'

NOTES

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3. HORIZONTAL COORDINATES REFER TO NAD 83 MASSACHUSETTS STATE PLAN BASED ON RTK GPS OBSERVATIONS.

4. ELEVATION REFERS TO BOSTON CITY BASE VERTICAL BASED ON RTK GPS OBSERVATIONS.

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UTILITY INFORMATION STATEMENT

1. THE SUB–SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CLIENT, IF ANY; THEREFORE WE CANNOT GUARANTEE THE ACCURACY OF SAID COMPILED SUB–SURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB–SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.

2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS.

3. ADDITIONAL BURIED UTILITIES/STRUCTURES MAY BE ENCOUNTERED.

4. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.

5. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS.

6. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.

7. THE PROPER UTILITY ENGINEERING/COMPANY SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD (V.I.F.) BEFORE PLANNING FUTURE CONNECTIONS. CONTACT THE DIG SAFE CALL CENTER AT 1–888–344–7233, SEVENTY–TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.

8. AS OF THE DATE OF THIS PLAN RECORD INFORMATION HAS NOT BEEN RECEIVED BY NITSCH ENGINEERING FOR THE FOLLOWING UTILITIES: EVERSOURCE FIBER, PAN AM, CSX, AMTRAK, MCI VERIZON BUSINESS, WAVEGUIDE, VERIZON, AND EVERSOURCE ELECTRIC.

PROPERTY REFERENCES

SUFFOLK COUNTY REGISTRY OF DEEDS

DEED
BOOK 21899 PAGE 307
BOOK 12045 PAGE 314
BOOK 44943 PAGE 277

PLANS
PLAN BOOK 17669 PAGE 234

L–PLANS
L–11048
L–11084
L–10950

COMMONWEALTH OF MASSACHUSETTS
DENIS R. SEGUIN
#37058
PROFESSIONAL LAND SURVEYOR

DENIS R. SEGUIN, PLS
MASSACHUSETTS REG. No. 37058
REGISTERED PROFESSIONAL LAND SURVEYOR

DATE

Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

EXISTING CONDITIONS PLAN

NORTHEASTER UNIVERSITY RENAISSANCE PARK
1115 TREMONT STREET, BOSTON, MASSACHUSETTS

PREPARED FOR:
AMERICAN CAMPUS COMMUNITIES
12700 HILL COUNTRY BLVD, SUITE T200, AUSTIN, TX 78738

REV.	COMMENTS	DATE

REVISIONS

PROJECT #	13583
FILE:	13583_TOPO1.dwg
SCALE:	1"=20'
DATE:	AUGUST 2019
DES./COMP:	DRS
FIELD BOOK:	754
DRAFTED BY:	MBP
CHECKED BY:	

SHEET:1

EX-1

OF 1 REV.

Appendix D

Transportation

Northeastern - 840 Columbus Avenue

Trip Generation Assessment

HOWARD STEIN HUDSON

23-Sep-2019

Land Use	Size	Category	Directional Split	Average Trip Rate	Unadjusted Vehicle Trips	Transit Share[2]	Transit Person-Trips	Walk/Bike/ Other Share[2]	Walk/ Bike/ Other Trips	Auto Share[2]	Auto Person-Trips	Assumed Local Auto Occupancy Rate[1,3]	Total Adjusted Private Auto Trips	Total Adjusted Ride Hail Trips	Total Adjusted Auto Trips (Private + Ride Hail)
Daily Peak Hour															
Office Building[4]	115.3	Total		9.740	1,124	32%	**424**	24%	**318**	44%	**584**	1.18	**494**	**0**	**494**
	KSF	In	50%	4.870	562	32%	**212**	24%	**159**	44%	**292**	1.18	**247**	**0**	**247**
		Out	50%	4.870	562	32%	**212**	24%	**159**	44%	**292**	1.18	**247**	**0**	**247**
Shopping Center[5]	2.8	Total		37.750	106	16%	**24**	55%	**78**	29%	**42**	1.82	**24**	**0**	**24**
	KSF	In	50%	18.875	53	16%	**12**	55%	**39**	29%	**21**	1.82	**12**	**0**	**12**
		Out	50%	18.875	53	16%	**12**	55%	**39**	29%	**21**	1.82	**12**	**0**	**12**
On-Campus Student Residence[6]	175	Total		6.320	1,106	0%	**0**	98%	**1,084**	2%	**22**	1.00	**22**	**0**	**22**
	Beds	In	50%	3.160	553	0%	**0**	98%	**542**	2%	**11**	1.00	**11**	**0**	**11**
		Out	50%	3.160	553	0%	**0**	98%	**542**	2%	**11**	1.00	**11**	**0**	**11**
Total		Total			**1,230**		**448**		**1,480**		**626**		**540**	**0**	**540**
		In			**615**		**224**		**740**		**313**		**270**	**0**	**270**
		Out			**615**		**224**		**740**		**313**		**270**	**0**	**270**
AM Peak Hour															
Office Building[4]	115.3	Total		1.16	134		**58**		**40**		**60**	1.18	**50**	**0**	**50**
	KSF	In	86%	0.998	115	38%	**52**	25%	**34**	37%	**50**	1.18	**42**	**0**	**42**
		Out	14%	0.162	19	28%	**6**	29%	**6**	43%	**10**	1.18	**8**	**0**	**8**
Shopping Center[5]	2.8	Total		0.94	3		**1**		**2**		**1**	1.82	**1**	**0**	**1**
	KSF	In	62%	0.583	2	19%	**1**	57%	**1**	24%	**1**	1.82	**1**	**0**	**1**
		Out	38%	0.357	1	13%	**0**	61%	**1**	26%	**0**	1.82	**0**	**0**	**0**
On-Campus Student Residence[6]	175	Total		0.31	53	0%	**0**	98%	**52**	2%	**1**	1.00	**1**	**0**	**1**
	Beds	In		0.08	13	0%	**0**	98%	**13**	2%	**0**	1.00	**0**	**0**	**0**
		Out		0.23	40	0%	**0**	98%	**39**	2%	**1**	1.00	**1**	**0**	**1**
Total		Total			**137**		**59**		**94**		**62**		**52**	**0**	**52**
		In			**117**		**53**		**48**		**51**		**43**	**0**	**43**
		Out			**20**		**6**		**46**		**11**		**9**	**0**	**9**
PM Peak Hour															
Office Building[4]	115.3	Total		1.15	132		**57**		**40**		**59**	1.18	**50**	**0**	**50**
	KSF	In	16%	0.184	21	28%	**7**	29%	**7**	43%	**11**	1.18	**9**	**0**	**9**
		Out	84%	0.966	111	38%	**50**	25%	**33**	37%	**48**	1.18	**41**	**0**	**41**
Shopping Center[5]	2.8	Total		3.81	11		**3**		**9**		**4**	1.82	**2**	**0**	**2**
	KSF	In	48%	1.829	5	13%	**1**	61%	**4**	26%	**2**	1.82	**1**	**0**	**1**
		Out	52%	1.981	6	19%	**2**	57%	**5**	24%	**2**	1.82	**1**	**0**	**1**
On-Campus Student Residence[6]	175	Total		0.54	94	0%	**0**	98%	**92**	2%	**2**	1.18	**2**	**0**	**2**
	Beds	In		0.275	48	0%	**0**	98%	**47**	2%	**1**	1.18	**1**	**0**	**1**
		Out		0.260	46	0%	**0**	98%	**45**	2%	**1**	1.18	**1**	**0**	**1**
Total		Total			**143**		**60**		**141**		**65**		**54**	**0**	**54**
		In			**26**		**8**		**58**		**14**		**11**	**0**	**11**
		Out			**117**		**52**		**83**		**51**		**43**	**0**	**43**

1. 2017 National vehicle occupancy rates - 1.18: home to work; 1.82: family/personal business; 1.82: shopping; 2.1: social/recreational
2. Mode shares based on Mode Share and Zip Code Data supplied by Northeastern
3. Local Auto Occupancy Rate for students based on Mode Share and Zip Code Data supplied by Northeastern
4. ITE Trip Generation Manual, 10th Edition, LUC 710 (General Office Building), average rate
5. ITE Trip Generation Manual, 10th Edition, LUC 820 (Shopping Center/Retail), average rate
6. Information provided by Northeastern

Appendix E

Climate Change Checklist

Boston Planning & Development Agency
Climate Resiliency Report Summary

Submitted: 11/07/2019 08:49:47

A.1 - Project Information

Project Name:	840 Columbus Avenue			
Project Address:	840 Columbus Avenue			
Filing Type:	Initial (PNF, EPNF, NPC or other substantial filing)			
Filing Contact:	Alana Spencer	Vanderweil Engineers	aspencer@vanderweil.com	617.423.7423
Is MEPA approval required?	No	MEPA date:		

A.2 - Project Team

Owner / Developer:	Northeastern University/American Campus Communities
Architect:	Elkus Manfredi Architects
Engineer:	TBD
Sustainability / LEED:	Vanderweil Engineers
Permitting:	Epsilon Associates, Inc
Construction Management:	John Moriarty Associates

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Dormitory, Office/academic
List the First Floor Uses:	Office/academic, Office/Dormitory lobby
List any Critical Site Infrastructure and or Building Uses:	

Site and Building:

Site Area (SF):	32382	Building Area (SF):	525000
Building Height (Ft):	299	Building Height (Stories):	26
Existing Site Elevation – Low (Ft BCB):	17.7	Existing Site Elevation – High (Ft BCB):	22.5
Proposed Site Elevation – Low (Ft BCB):	17.7	Proposed Site Elevation – High (Ft BCB):	22.5
Proposed First Floor Elevation (Ft BCB):	20	Below grade spaces/levels (#):	0

Article 37 Green Building:

Boston Planning & Development Agency
Climate Resiliency Report Summary

boston planning & development agency

LEED Version - Rating System:	LEED v4 Multifamily Midrise	LEED Certification:	Yes
Proposed LEED rating:	Gold	Proposed LEED point score (Pts.):	62

Building Envelope:

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

Roof:	TBD	Exposed Floor :	TBD
Foundation Wall:	TBD	Slab Edge (at or below grade):	TBD

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

Area of Opaque Curtain Wall & Spandrel Assembly:	TBD	Wall & Spandrel Assembly Value:	TBD
Area of Framed & Insulated / Standard Wall:	TBD	Wall Value:	TBD
Area of Vision Window:	TBD	Window Glazing Assembly Value:	TBD
		Window Glazing SHGC:	TBD
Area of Doors:	TBD	Door Assembly Value :	TBD

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	Project will be energy modeled per LEED and per energy code. Project anticipates meeting and exceeding thresholds. This information will be provided in the DPIR.		
Annual Electric (kWh):		Peak Electric (kW):	
Annual Heating (MMbtu/hr):		Peak Heating (MMbtu):	
Annual Cooling (Tons/hr):		Peak Cooling (Tons):	
Energy Use - Below ASHRAE 90.1 - 2013 (%):		Have the local utilities reviewed the building energy performance?:	No
Energy Use - Below Mass. Code (%):		Energy Use Intensity (kBtu/SF):	

Back-up / Emergency Power System

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

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

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

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

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

B.1 – GHG Emissions - Design Conditions

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

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

Project will integrate performance targets for the building and supporting analysis will be done as the design progresses.

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

The building is proposed to utilize a high-performance envelope and supporting analysis will be done as design progresses.

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

The building is proposed to incorporate high performing HVAC / lighting systems; controls; metering.

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

The building has begun to analyze on-site renewable (rooftop and canopy PV), clean, and energy storage systems and will be analyzed further as design progresses.

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

TBD

Describe any energy efficiency assistance or support provided or to be provided to the project:

Eversource and National Grid will be incorporated early into the Project for energy efficiency incentive/rebate and assistance.

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

The power grid is anticipated to become more sustainable and less carbon intensive over time, and as the building requires system upgrades, the building will adapt systems for grid improvements and climate change.

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low (Deg.):	8	Temperature Range - High (Deg.):	91
Annual Heating Degree Days:	5521	Annual Cooling Degree Days	776

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

Days - Above 90° (#):	60	Days - Above 100° (#):	30
Number of Heatwaves / Year (#):	6	Average Duration of Heatwave (Days):	5

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

The building will incorporate high SRI materials for hardscape surfaces and as applicable landscaping to reduce heat-island effect.

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

The building will incorporate a high performing envelope which will enable highly efficient mechanical design including energy recovery, and then onsite/offsite renewables.

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

The building will include a generator for life safety systems and as applicable onsite/offsite renewables.

D - Extreme Precipitation Events

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

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

D.1 – Extreme Precipitation - Design Conditions

What is the project design precipitation level? (In. / 24 Hours)	6

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

The building will direct roof runoff to a reuse and/or infiltration structure that will be sized to retain the first 1.25 inches over the site impervious area

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

The building is analyzing storm water reclaim/harvesting and reuse, and landscaping including green roof area.

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA Special Flood Hazard Area?	No	What Zone:	
What is the current FEMA SFHA Zone Base Flood Elevation for the site (Ft BCB)?			
Is any portion of the site in the BPDA Sea Level Rise Flood Hazard Area (see SLR-FHA online map)?	No		

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented by the Sea Level Rise Flood Hazard Area (SLR-FHA), which includes 3.2' of sea level rise above 2013 tide levels, an additional 2.5" to account for subsidence, and the 1% Annual Chance Flood. After using the SLR-FHA to identify a project's Sea Level Rise Base Flood Elevation, proponents should calculate the Sea Level Rise Design Flood Elevation by

adding 12" of freeboard for buildings, and 24" of freeboard for critical facilities and infrastructure and any ground floor residential units.

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

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

What are the Site Elevations at Building (Ft BCB)?

First Floor Elevation (Ft BCB):

What is the Accessible Route Elevation (Ft BCB)?

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

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

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

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

Thank you for completing the Boston Climate Change Checklist!

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

Appendix F

Accessibility Checklist

Article 80 – Accessibility Checklist

A requirement of the Boston Planning & Development Agency (BPDA)
Article 80 Development Review Process

The Mayor's Commission for Persons with Disabilities strives to reduce architectural, procedural, attitudinal, and communication barriers that affect persons with disabilities in the City of Boston. In 2009, a Disability Advisory Board was appointed by the Mayor to work alongside the Commission in creating universal access throughout the city's built environment. The Disability Advisory Board is made up of 13 volunteer Boston residents with disabilities who have been tasked with representing the accessibility needs of their neighborhoods and increasing inclusion of people with disabilities.

In conformance with this directive, the BDPA has instituted this Accessibility Checklist as a tool to encourage developers to begin thinking about access and inclusion at the beginning of development projects, and strive to go beyond meeting only minimum MAAB / ADAAG compliance requirements. Instead, our goal is for developers to create ideal design for accessibility which will ensure that the built environment provides equitable experiences for all people, regardless of their abilities. As such, any project subject to Boston Zoning Article 80 Small or Large Project Review, including Institutional Master Plan modifications and updates, must complete this Accessibility Checklist thoroughly to provide specific detail about accessibility and inclusion, including descriptions, diagrams, and data.

For more information on compliance requirements, advancing best practices, and learning about progressive approaches to expand accessibility throughout Boston's built environment. Proponents are highly encouraged to meet with Commission staff, prior to filing.

Accessibility Analysis Information Sources:

1. Americans with Disabilities Act – 2010 ADA Standards for Accessible Design
   http://www.ada.gov/2010ADAstandards_index.htm
2. Massachusetts Architectural Access Board 521 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/aab/aab-rules-and-regulations-pdf.html
3. Massachusetts State Building Code 780 CMR
   http://www.mass.gov/eopss/consumer-prot-and-bus-lic/license-type/csl/building-codebbrs.html
4. Massachusetts Office of Disability – Disabled Parking Regulations
   http://www.mass.gov/anf/docs/mod/hp-parking-regulations-summary-mod.pdf
5. MBTA Fixed Route Accessible Transit Stations
   http://www.mbta.com/riding_the_t/accessible_services/
6. City of Boston – Complete Street Guidelines
   http://bostoncompletestreets.org/
7. City of Boston – Mayor's Commission for Persons with Disabilities Advisory Board
   www.boston.gov/disability
8. City of Boston – Public Works Sidewalk Reconstruction Policy
   http://www.cityofboston.gov/images_documents/sidewalk%20policy%200114_tcm3-41668.pdf
9. City of Boston – Public Improvement Commission Sidewalk Café Policy
   http://www.cityofboston.gov/images_documents/Sidewalk_cafes_tcm3-1845.pdf

Glossary of Terms:

1. ***Accessible Route*** – A continuous and unobstructed path of travel that meets or exceeds the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 20
2. ***Accessible Group 2 Units*** – Residential units with additional floor space that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 9.4
3. ***Accessible Guestrooms*** – Guestrooms with additional floor space, that meet or exceed the dimensional and inclusionary requirements set forth by MAAB 521 CMR: Section 8.4
4. ***Inclusionary Development Policy (IDP)*** – Program run by the BPDA that preserves access to affordable housing opportunities, in the City. For more information visit: http://www.bostonplans.org/housing/overview
5. ***Public Improvement Commission (PIC)*** – The regulatory body in charge of managing the public right of way. For more information visit: https://www.boston.gov/pic
6. ***Visitability*** – A place's ability to be accessed and visited by persons with disabilities that cause functional limitations; where architectural barriers do not inhibit access to entrances/doors and bathrooms.

1. Project Information:

If this is a multi-phased or multi-building project, fill out a separate Checklist for each phase/building.

Project Name:	840 Columbus Avenue
Primary Project Address:	840 Columbus Avenue, Boston, Massachusetts
Total Number of Phases/Buildings:	1
Primary Contact (Name / Title / Company / Email / Phone):	Jason Wills, Chief Marketing Officer, American Campus Communities, jwills@americancampus.com, 512-732-1000
Owner / Developer:	American Campus Communities
Architect:	Elkus Manfredi
Civil Engineer:	Nitsch Engineering, Inc.
Landscape Architect:	Carol R. Johnson Associates Inc.
Permitting:	Epsilon Associates, Inc
Construction Management:	John Moriarty & Associates

At what stage is the project at time of this questionnaire? Select below:

	☑PNF/Expanded PNF Submitted	Draft/Final Project Impact Report Submitted	BPDA Board Approved
	BPDA Design Approved	Under Construction	Construction Completed:

Do you anticipate filing for any variances with the Massachusetts Architectural Access Board (MAAB)? ***If yes,*** identify and explain.	No

2. Building Classification and Description:

This section identifies preliminary construction information about the project including size and uses.

What are the dimensions of the project?

Site Area:	*+- 32,382 SF*	Building Area:	*525,000 GSF*
Building Height:	*+- 299 FT.*	Number of Stories:	*26 Flrs.*
First Floor Elevation:	Approx. 20'-0" (BCB)	Is there below grade space:	*No*

What is the Construction Type? (Select most appropriate type)				
	Wood Frame	Masonry	☑Steel Frame	Concrete
What are the principal building uses? (IBC definitions are below – select all appropriate that apply)				
	Residential – One - Three Unit	☑Residential - Multi-unit, Four +	Institutional	Educational
	☑Business	☑Mercantile	Factory	Hospitality
	Laboratory / Medical	Storage, Utility and Other	*☑Assembly (Meeting & Lecture Halls)*	
List street-level uses of the building:	*Student, Community & Resident Gathering Spaces, Building Support Spaces, Retail*			

3. Assessment of Existing Infrastructure for Accessibility:

This section explores the proximity to accessible transit lines and institutions, such as (but not limited to) hospitals, elderly & disabled housing, and general neighborhood resources. Identify how the area surrounding the development is accessible for people with mobility impairments and analyze the existing condition of the accessible routes through sidewalk and pedestrian ramp reports.

Provide a description of the neighborhood where this development is located and its identifying topographical characteristics:	The Project site, which currently functions as a surface parking lot, is bounded by Columbus Avenue to the north, Melnea Cass Boulevard to the east, Tremont Street to the south, and the existing Renaissance Park building to the west. The site is relatively flat.
List the surrounding accessible MBTA transit lines and their proximity to development site: commuter rail / subway stations, bus stops:	Orange Line, Commuter Rail (Ruggles) – across Columbus Avenue #43 Bus (Tremont Street @ Melnea Cass Boulevard)
List the surrounding institutions: hospitals, public housing, elderly and disabled housing developments, educational facilities, others:	Northeastern University, Wentworth Institute of Technology, Alice Heyward Taylor Apartments, New England Baptist Hospital, St. Cyprians Church
List the surrounding government buildings: libraries, community centers, recreational facilities, and other related facilities:	Boston Police Department Headquarters, Reggie Lewis Track and Athletic Center

4. Surrounding Site Conditions – Existing:

This section identifies current condition of the sidewalks and pedestrian ramps at the development site.

Is the development site within a historic district? ***If yes,*** identify which district:	No
Are there sidewalks and pedestrian ramps existing at the development	Yes – an Apex HC Curb Cut is provided at the northwest corner of the Project site.

site? ***If yes***, list the existing sidewalk and pedestrian ramp dimensions, slopes, materials, and physical condition at the development site:	
Are the sidewalks and pedestrian ramps existing-to-remain? ***If yes,*** have they been verified as ADA / MAAB compliant (with yellow composite detectable warning surfaces, cast in concrete)? ***If yes,*** provide description and photos:	Existing extents will remain, subject to improvements for which final design is pending – (sidewalks and features related to accessible routes will be made MAAB compliant as part of project scope).
5. Surrounding Site Conditions – Proposed *This section identifies the proposed condition of the walkways and pedestrian ramps around the development site. Sidewalk width contributes to the degree of comfort walking along a street. Narrow sidewalks do not support lively pedestrian activity, and may create dangerous conditions that force people to walk in the street. Wider sidewalks allow people to walk side by side and pass each other comfortably walking alone, walking in pairs, or using a wheelchair.*	
Are the proposed sidewalks consistent with the Boston Complete Street Guidelines? ***If yes***, choose which Street Type was applied: Downtown Commercial, Downtown Mixed-use, Neighborhood Main, Connector, Residential, Industrial, Shared Street, Parkway, or Boulevard.	To be verified as design of public realm areas becomes more comprehensively developed
What are the total dimensions and slopes of the proposed sidewalks? List the widths of the proposed zones: Frontage, Pedestrian and Furnishing Zone:	Configuration to be verified once building design adjacent to the public way is more completely resolved
List the proposed materials for each Zone. Will the proposed materials be on private property or will the proposed materials be on the City of Boston pedestrian right-of-way?	To be verified as design of public realm areas becomes more comprehensively developed
Will sidewalk cafes or other furnishings be programmed for the pedestrian right-of-way? ***If yes,*** what are the proposed dimensions of the sidewalk café or furnishings and what will the remaining right-of-way clearance be?	No Sidewalk Café Is Currently Programmed

If the pedestrian right-of-way is on private property, will the proponent seek a pedestrian easement with the Public Improvement Commission (PIC)?	To Be Verified
Will any portion of the Project be going through the PIC? ***If yes,*** identify PIC actions and provide details.	PIC involvement is likely; specific actions to be verified once design of public realm areas is more completely developed
6. Accessible Parking: *See Massachusetts Architectural Access Board Rules and Regulations 521 CMR Section 23.00 regarding accessible parking requirement counts and the Massachusetts Office of Disability – Disabled Parking Regulations.*	
What is the total number of parking spaces provided at the development site? Will these be in a parking lot or garage?	No parking is being provided on-site
What is the total number of accessible spaces provided at the development site? How many of these are "Van Accessible" spaces with an 8 foot access aisle?	N/A
Will any on-street accessible parking spaces be required? ***If yes,*** has the proponent contacted the Commission for Persons with Disabilities regarding this need?	No
Where is the accessible visitor parking located?	No parking is being provided on-site
Has a drop-off area been identified? ***If yes,*** will it be accessible?	No drop off area is provided
7. Circulation and Accessible Routes: *The primary objective in designing smooth and continuous paths of travel is to create universal access to entryways and common spaces, which accommodates persons of all abilities and allows for visitability with neighbors.*	
Describe accessibility at each entryway: Example: Flush Condition, Stairs, Ramp, Lift or Elevator:	Each entryway will typically consist of a Flush Condition
Are the accessible entrances and standard entrance integrated? ***If yes,*** *describe.* ***If no,*** what is the reason?	All entrances will be configured as accessible entrances

If project is subject to Large Project Review/Institutional Master Plan, describe the accessible routes way-finding / signage package.	Depending upon program area, way finding signage will be consistent with either ACC or Northeastern standards, and will conform to the requirements of the Architectural Access Board for specific sign types.
8. Accessible Units (Group 2) and Guestrooms: (If applicable) *In order to facilitate access to housing and hospitality, this section addresses the number of accessible units that are proposed for the development site that remove barriers to housing and hotel rooms.*	
What is the total number of proposed housing units or hotel rooms for the development?	Approximately 282 transient dwelling units
If a residential development, how many units are for sale? How many are for rent? What is the breakdown of market value units vs. IDP (Inclusionary Development Policy) units?	All units are for rent. Student housing does not require the provision of IDP units
If a residential development, how many accessible Group 2 units are being proposed?	15 accessible Group 2 Units (5% of total dwelling units) are proposed
If a residential development, how many accessible Group 2 units will also be IDP units? ***If none***, describe reason.	Not applicable to student housing.
If a hospitality development, how many accessible units will feature a wheel-in shower? Will accessible equipment be provided as well? ***If yes,*** provide amount and location of equipment.	N/A (not a hospitality development)
Do standard units have architectural barriers that would prevent entry or use of common space for persons with mobility impairments? Example: stairs / thresholds at entry, step to balcony, others. ***If yes***, provide reason.	No
Are there interior elevators, ramps or lifts located in the development for access around architectural barriers and/or to separate floors? ***If yes***, describe:	Yes – Elevators will be provided to serve all floors of the project and all program areas.

9. Community Impact: *Accessibility and inclusion extend past required compliance with building codes. Providing an overall scheme that allows full and equal participation of persons with disabilities makes the development an asset to the surrounding community.*	
Is this project providing any funding or improvements to the surrounding neighborhood? Examples: adding extra street trees, building or refurbishing a local park, or supporting other community-based initiatives?	Additional Street Trees are proposed adjacent to the Project Site Boundaries
What inclusion elements does this development provide for persons with disabilities in common social and open spaces? Example: Indoor seating and TVs in common rooms; outdoor seating and barbeque grills in yard. Will all of these spaces and features provide accessibility?	All spaces and features open to and usable by the surrounding community will include accessible characteristics for each type of space or feature.
Are any restrooms planned in common public spaces? ***If yes,*** will any be single-stall, ADA compliant and designated as "Family"/ "Companion" restrooms? ***If no***, explain why not.	Yes – Single Stall ADA compliant facilities will be provided, the provision of a Unisex "Family Restroom Facility" will be taken into consideration as programming progresses.
Has the proponent reviewed the proposed plan with the City of Boston Disability Commissioner or with their Architectural Access staff? ***If yes,*** did they approve? ***If no,*** what were their comments?	No review has taken place yet, but a review will be scheduled in connection with development of project documents.
Has the proponent presented the proposed plan to the Disability Advisory Board at one of their monthly meetings? Did the Advisory Board vote to support this project? ***If no,*** what recommendations did the Advisory Board give to make this project more accessible?	No review has taken place yet, but a review will be scheduled in connection with development of project documents.
10. Attachments *Include a list of all documents you are submitting with this Checklist. This may include drawings, diagrams, photos, or any other material that describes the accessible and inclusive elements of this project.*	

Provide a diagram of the accessible routes to and from the accessible parking lot/garage and drop-off areas to the development entry locations, including route distances.
Provide a diagram of the accessible route connections through the site, including distances.
Provide a diagram the accessible route to any roof decks or outdoor courtyard space? (if applicable)
Provide a plan and diagram of the accessible Group 2 units, including locations and route from accessible entry.
Provide any additional drawings, diagrams, photos, or any other material that describes the inclusive and accessible elements of this project. • • • •

This completes the Article 80 Accessibility Checklist required for your project. Prior to and during the review process, Commission staff are able to provide technical assistance and design review, in order to help achieve ideal accessibility and to ensure that all buildings, sidewalks, parks, and open spaces are usable and welcoming to Boston's diverse residents and visitors, including those with physical, sensory, and other disabilities.

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

The Mayor's Commission for Persons with Disabilities
1 City Hall Square, Room 967,
Boston MA 02201.

Architectural Access staff can be reached at:

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

Appendix G

Smart Utilities Checklist

Boston Smart Utilities Checklist

Date Submitted:	11/07/2019 14:04:54
Submitted by:	tmoked@epsilonassociates.com

Background

The Smart Utilities Checklist will facilitate the Boston Smart Utilities Steering Committee's review of:

a) compliance with the Smart Utilities Policy for Article 80 Development Review, which calls for the integration of five (5) Smart Utility Technologies (SUTs) into Article 80 developments

b) integration of the Smart Utility Standards

More information about the Boston Smart Utilities Vision project, including the Smart Utilities Policy and Smart Utility Standards, is available at:
www.http://bostonplans.org/smart-utilities

Note: Any documents submitted via email to manuel.esquivel@boston.gov will not be attached to the pdf form generated after submission, but are available upon request.

Part 1 - General Project Information

1.1 Project Name	840 Columbus Avenue
1.2 Project Address	840 Columbus Avenue
1.3 Building Size (square feet) **For a multi-building development, enter total development size (square feet)*	525000
1.4 Filing Stage	Initial Filing (i.e., PNF)
1.5 Filing Contact Information	
1.5a Name	Talya Moked

Boston Smart Utilities Checklist

1.5b Company	Epsilon Associates
1.5c E-mail	tmoked@epsilonassociates.com
1.5d Phone Number	

1.6 Project Team

1.6a Project Owner/Developer	Northeastern University/American Campus Communities
1.6b Architect	Elkus Manfredi Architects
1.6c Permitting	Epsilon Associates, Inc.
1.6d Construction Management	

Part 2 - District Energy Microgrids

Fill out this section if the proposed project's total development size is equal to or greater than 1.5 million square feet.

Note on submission requirements timeline:

Feasibility Assessment Part A should be submitted with PNF or any other initial filing.

Feasibility Assessment Part B should be submitted with any major filing during the Development Review stage (i.e., DPIR)

District Energy Microgrid Master Plan Part A should be submitted before submission of the Draft Board Memorandum by the BPDA Project Manager (Note: Draft Board Memorandums are due one month ahead of the BPDA Board meetings)

District Energy Microgrid Master Plan Part B should be submitted before applying for a Building Permit

Please email submission to manuel.esquivel@boston.gov

2.1 Consultant Assessing/Designing District Energy Microgrid (if applicable)	Not Applicable

Boston Smart Utilities Checklist

2.2 Latest document submitted	
2.3 Date of latest submission	
2.4 Which of the following have you had engagement/review meetings with regarding District Energy Microgrids? (select all that apply)	
2.5 What engagement meetings have you had with utilities and/or other agencies (i.e., MA DOER, MassCEC) regarding District Energy Microgrids? (Optional: include dates)	
2.6 Additional Information	

Part 3 - Telecommunications Utilidor

Fill out this section if the proposed project's total development size is equal to or greater than 1.5 million square feet OR if the project will include the construction of roadways equal to or greater than 0.5 miles in length.

Please submit a map/diagram highlighting the sections of the roads on the development area where a Telecom Utilidor will be installed, including access points to the Telcom Utilidor (i.e., manholes)

Please email submission to manuel.esquivel@boston.gov

3.1 Consultant Assessing/Designing Telecom Utilidor (if applicable)	Not Applicable
3.2 Date Telecom Utilidor Map/Diagram was submitted	

Boston Smart Utilities Checklist

3.3 Dimensions of Telecom Utilidor (include units)	
3.3a Cross-section (i.e., diameter, width X height)	
3.3b Length	
3.4 Capacity of Telecom Utilidor (i.e., number of interducts, 2 inch (ID) pipes, etc.)	
3.5 Which of the following have you had engagement/review meetings with regarding the Telecom Utilidor? (select all that apply)	
3.6 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding the Telecom Utilidor? (Optional: include dates)	
3.7 Additional Information	

Part 4 - Green Infrastructure

Fill out this section if the proposed project's total development size is equal to or greater than 100,000 square feet.

Please submit a map/diagram highlighting where on the development Green Infrastructure will be installed.

Please email submission to manuel.esquivel@boston.gov

4.1 Consultant Assessing/Designing Green Infrastructure (if applicable)	Nitsch Engineering

Boston Smart Utilities Checklist

4.2 Date Green Infrastructure Map/Diagram was submitted	
4.3 Types of Green Infrastructure included in the project (select all that apply)	Subsurface infiltration system to retain, on site, a volume of runoff equal to 1.25 inches of rainfall across the portion of impervious area on site
4.4 Total impervious area of the development (in square inches)	5298048
4.5 Volume of stormwater that will be retained (in cubic inches)* **Note: Should equal to at least "Total impervious area (entered in section 4.4)" times "1.25 inches"*	6622560
4.6 Which of the following have you had engagement/review meetings with regarding Green Infrastructure? (select all that apply)	
4.7 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding Green Infrastructure? (Optional: include dates)	
4.8 Additional Information	

Part 5 - Adaptive Signal Technology (AST)

Fill out this section if as part of your project BTD will require you to install new traffic signals or make significant improvements to the existing signal system.

Please submit a map/diagram highlighting the context of AST around the proposed development area, as well as any areas within the development where new traffic signals will be installed or where significant improvements to traffic signals will be made.

Please email submission to manuel.esquivel@boston.gov

Boston Smart Utilities Checklist

5.1 Consultant Assessing/Designing Adaptive Signal Technology (if applicable)	It is not anticipated that this will be applicable.
5.2 Date AST Map/Diagram was submitted	
5.3 Describe how the AST system will benefit/impact the following transportation modes	
5.3a Pedestrians	
5.3b Bicycles	
5.3c Buses and other Public Transportation	
5.3d Other Motorized Vehicles	
5.4 Describe the components of the AST system (including system design and components)	
5.5 Which of the following have you had engagement/review meetings with regarding AST? (select all that apply)	
5.6 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding AST? (Optional: include dates)	
5.7 Additional Information	

Part 6 - Smart Street Lights

Fill out this section if as part of your project PWD and PIC will require you to install new street lights or make significant improvements to the existing street light system.

Boston Smart Utilities Checklist

Please submit a map/diagram highlighting where new street lights will be installed or where improvements to street lights will be made.

Please email submission to manuel.esquivel@boston.gov

6.1 Consultant Assessing/Designing Smart Street Lights (if applicable)	Nitsch Engineering
6.2 Date Smart Street Lights Map/Diagram was submitted	
6.3 Which of the following have you had engagement/review meetings with regarding Smart Street Lights? (select all that apply)	
6.4 What engagement meetings have you had with utilities and/or other agencies (i.e., State agencies) regarding Smart Street Lights? (Optional: include dates)	
6.5 Additional Information	If required, Smart Street Lights infrastructure will be coordinated with Boston Street Lighting during the PIC process.

Part 7 - Smart Utility Standards

The Smart Utility Standards set forth guidelines for planning and integration of SUTs with existing utility infrastructure in existing or new streets, including cross-section, lateral, and intersection diagrams. The Smart Utility Standards are intended to serve as guidelines for developers, architects, engineers, and utility providers for planning, designing, and locating utilities. The Smart Utility Standards will serve as the baseline for discussions on any deviations from the standards needed/proposed for any given utility infrastructure.

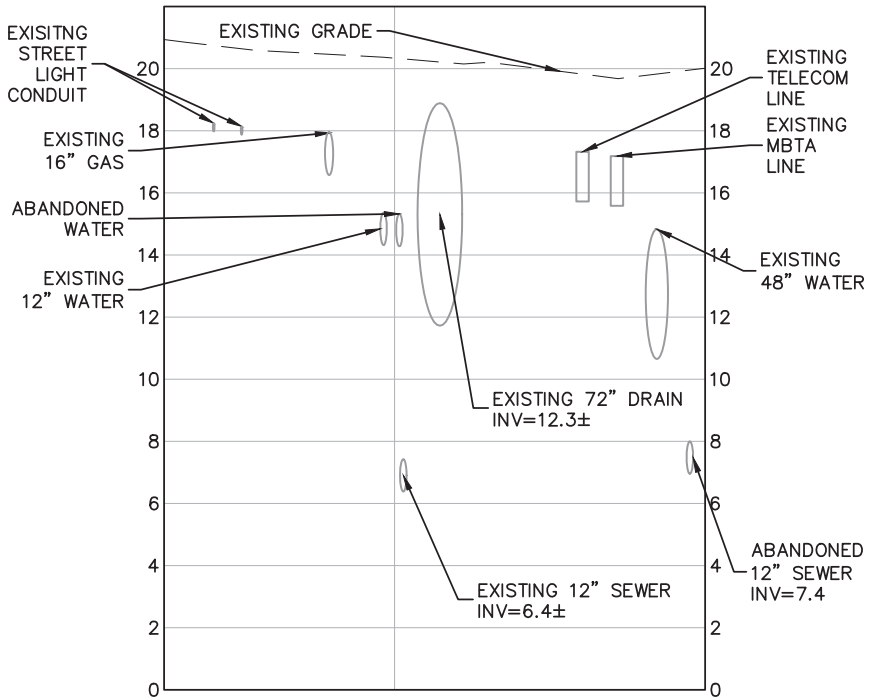
Please submit typical below and above grade cross section diagrams of all utility infrastructure in the proposed development area (including infrastructure related to the applicable SUTs).

Boston Smart Utilities Checklist

Please submit typical below and above grade lateral diagrams of all utility infrastructure in the proposed development area (including infrastructure related to the applicable SUTs).

Please email submission to manuel.esquivel@boston.gov

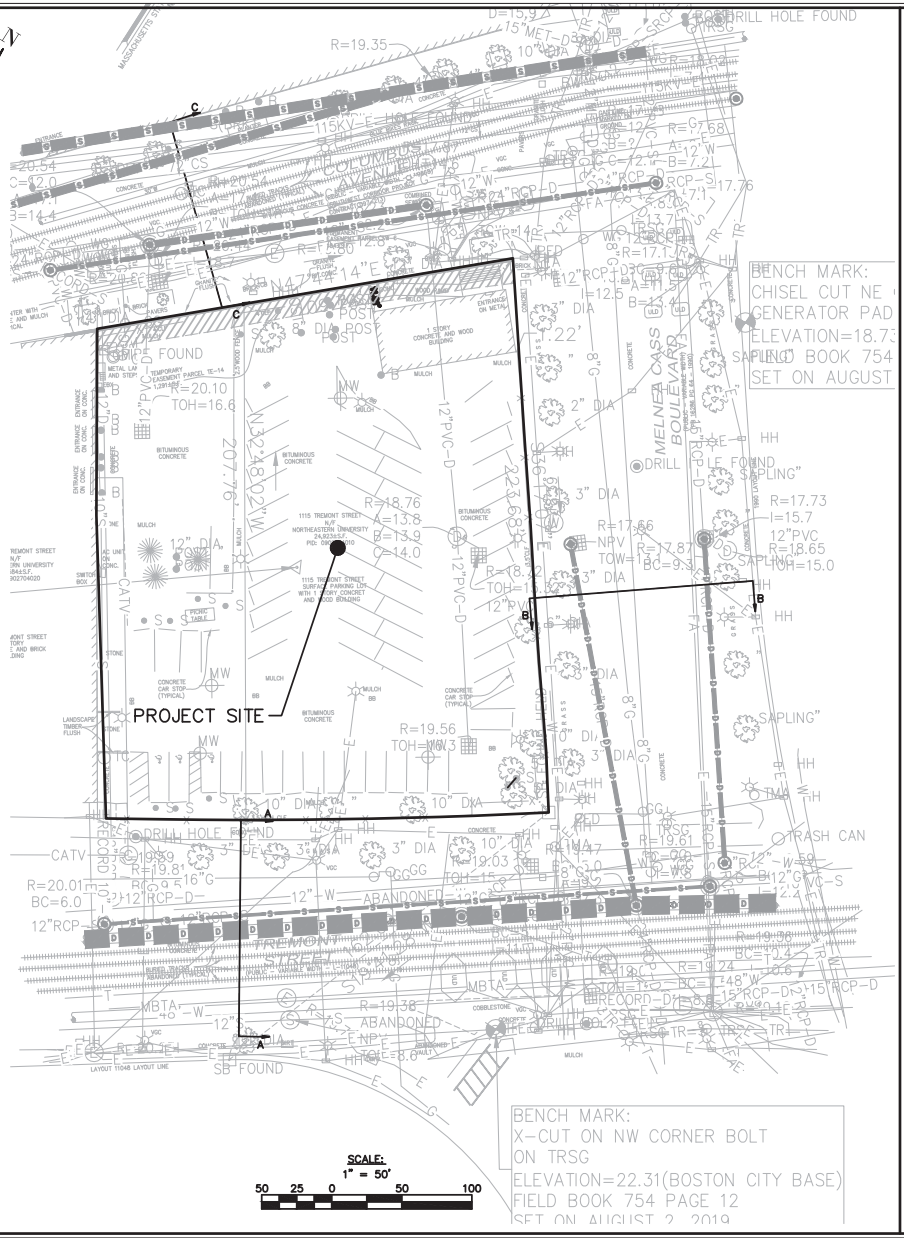
7.1 Date Cross Section Diagram(s) was submitted	11/07/2019
7.2 Date Lateral Diagram(s) was submitted	11/07/2019
7.3 Additional Information	



TREMONT ST EX. UTILITY PROFILE

SECTION A–A

HORIZONTAL SCALE SCALE: 1"=20'
VERTICAL SCALE SCALE: 1"=4'



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- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

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NORTHEASTERN UNIVERSITY
BOSTON, MA

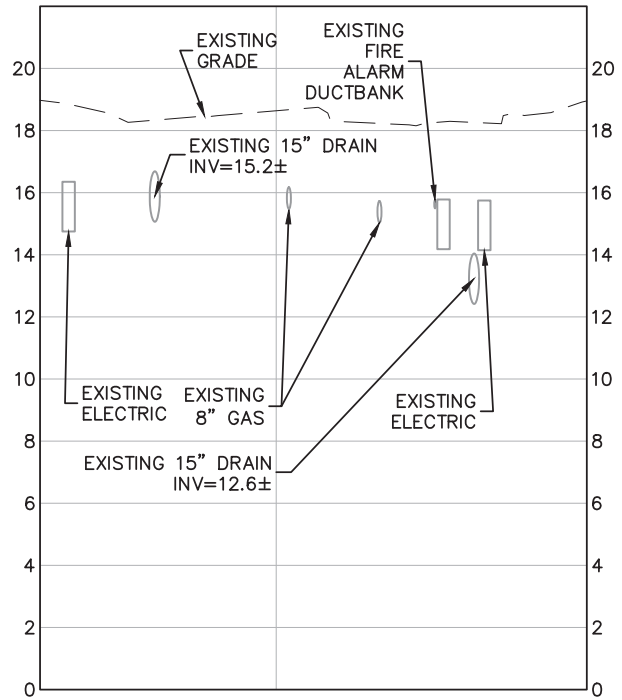
PREPARED FOR:
AMERICAN CAMPUS COMMUNITIES
12700 HILL COUNTRY BOULEVARD, SUITE T200
AUSTIN, TX 78738

PROJECT #	#13583
FILE:	13583cut.dwg
SCALE:	AS NOTED
DATE:	10/10/2019
PROJECT MGR:	CDH
SURVEYOR:	
DRAFTED BY:	MF
CHECKED BY:	CDH

UT-1

10/11/2019 3:09 PM

q:\13583 nu ren park housing\civil\cad\13583cut.dwg

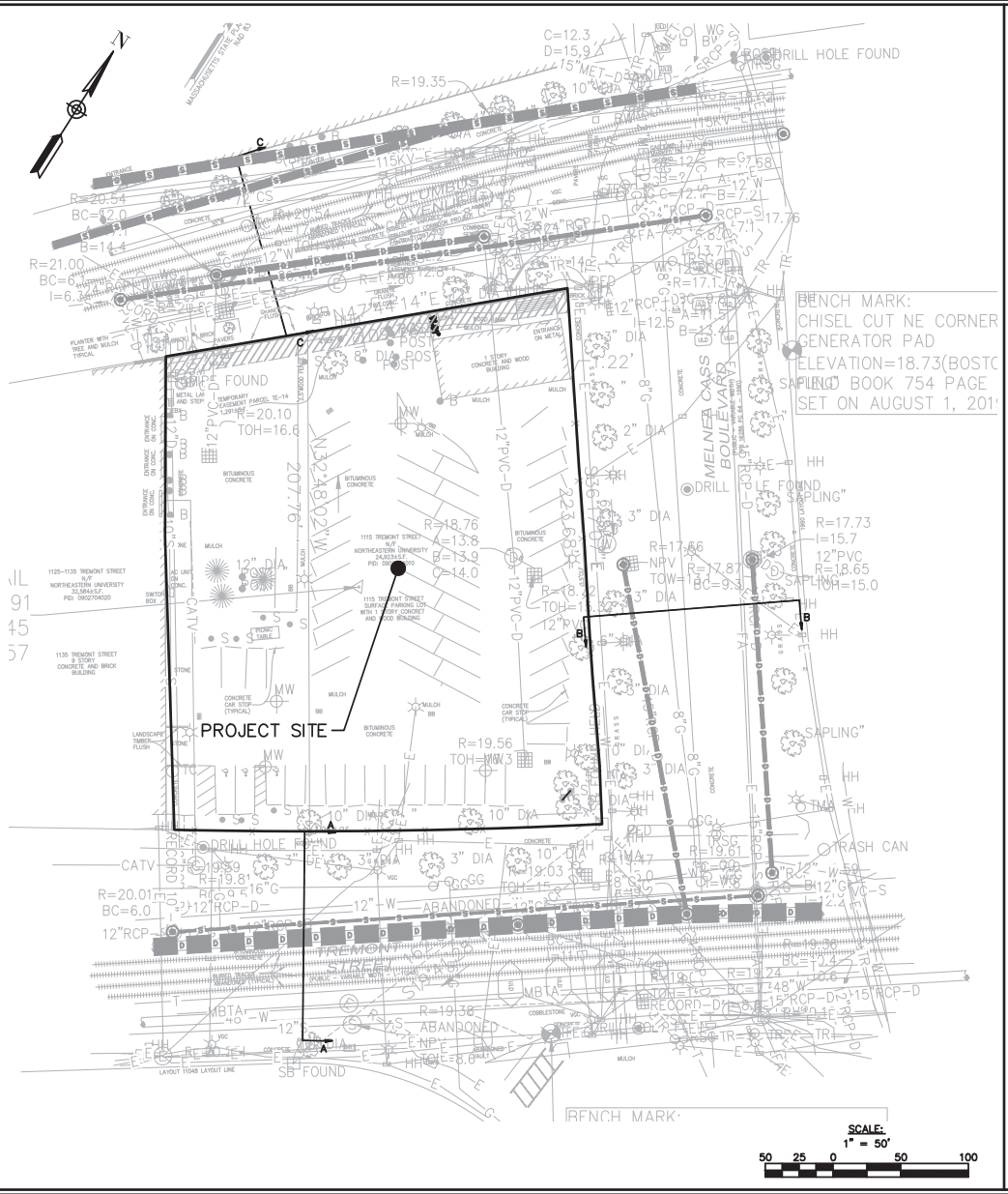


MELNEA CASS BLVD EX. UTILITY PROFILE

SECTION B–B

HORIZONTAL SCALE SCALE: 1"=20'

VERTICAL SCALE SCALE: 1"=4'



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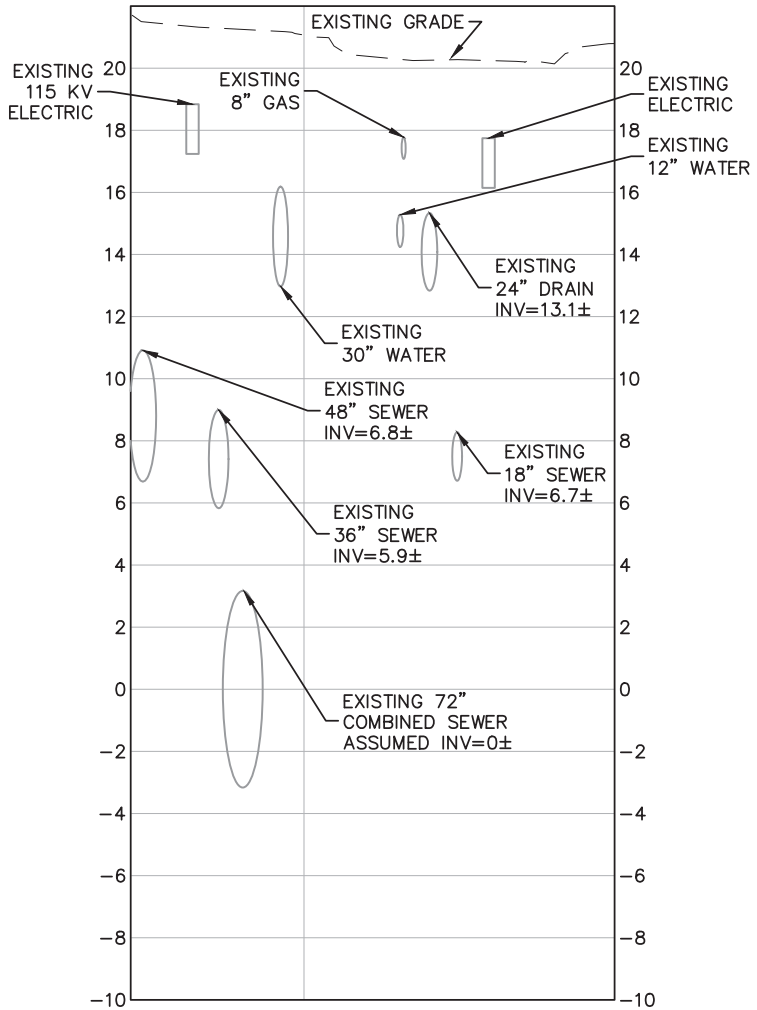
AUSTIN, TX 78738

PROJECT #	#13583
FILE:	13583cut.dwg
SCALE:	AS NOTED
DATE:	10/10/2019
PROJECT MGR:	CDH
SURVEYOR:	
DRAFTED BY:	MF
CHECKED BY:	CDH

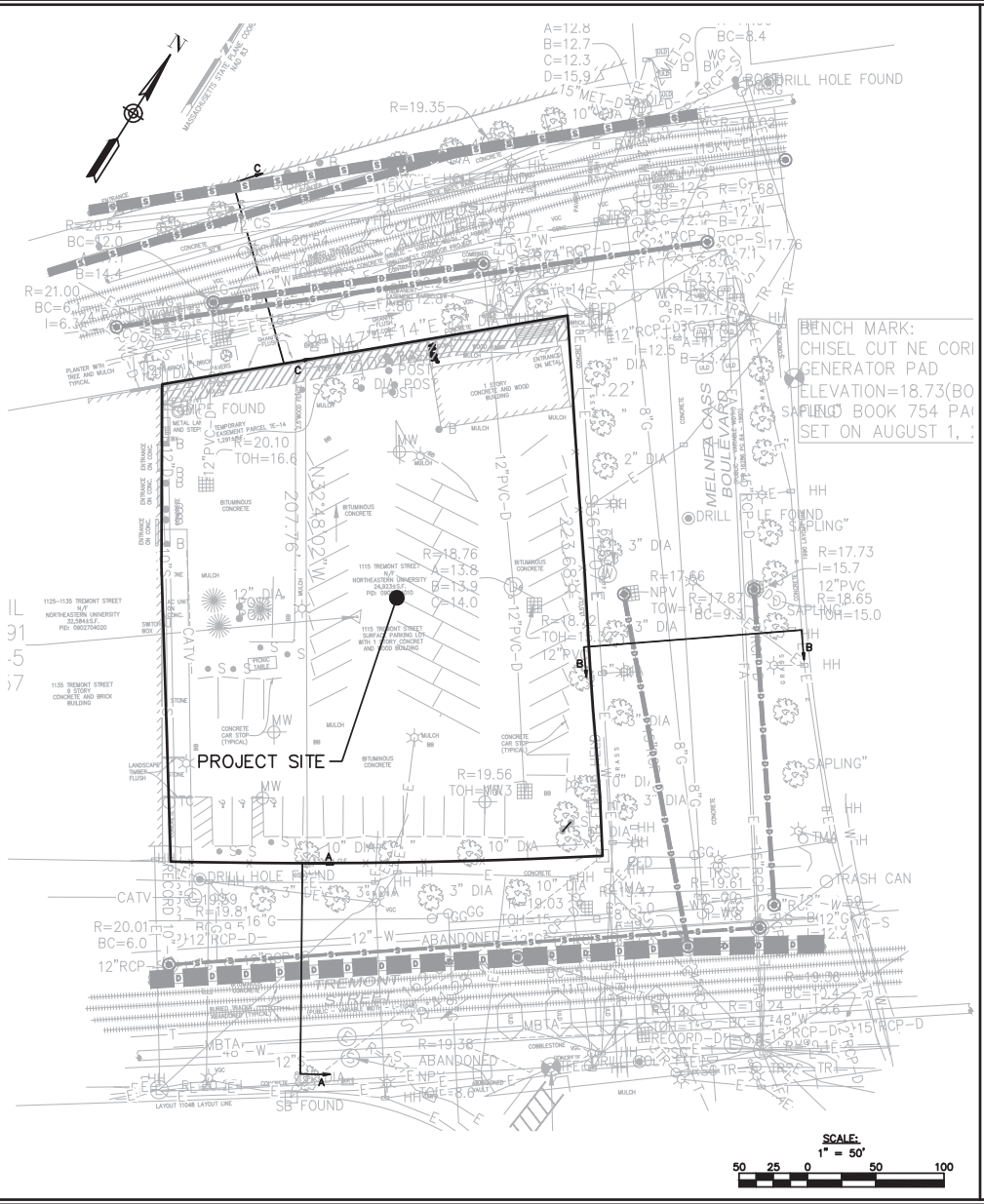
UT-2



COULMBUS AVE EX. UTILITY PROFILE

SECTION C–C

HORIZONTAL SCALE SCALE: 1"=20'
VERTICAL SCALE SCALE: 1"=4'



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AUSTIN, TX 78738

PROJECT #	#13583
FILE:	13583cut.dwg
SCALE:	AS NOTED
DATE:	10/10/2019
PROJECT MGR:	CDH
SURVEYOR:	
DRAFTED BY:	MF
CHECKED BY:	CDH

UT-3

Appendix H

Broadband Ready Checklist

24				*11/07/2019 8:57:40*
		Form Publisher Template		
11/07/2019				

This is a simple template document automatically generated by Form Publisher.
Feel free to personalize it like any other Google Spreadsheet.

Questions list:				
Project Name::				
Project Address Primary: :				
Project Address Additional: :				
Project Contact (name / Title / Company / email / phone): :				
Expected completion date:	09/01/2023			
Owner / Developer:	Northeastern University/American Campus Communities			
Architect:	Elkus Manfredi Architects			
Engineer (building systems)::	TBD			
Permitting::	Epsilon Associates, Inc			
Construction Management:	John Moriarty & Associates			
Number of Points of Entry:	Unknown			
Locations of Points of Entry:	Unknown			
Quantity and size of conduits:	Unknown			
Location where conduits connect (e.g. building-owned manhole, carrier-specific manhole or stubbed at property line) :	Unknown			
Other information/comments:				
Do you plan to conduct a utility site assessment to identify where cabling is located within the street? This information can be helpful in determining the locations of POEs and telco rooms. Please enter 'unknown' if these decisions have not yet been made or you are presently unsure.:	Yes			
Number of risers:	Unknown			
Distance between risers (if more than one):	Unknown			
Dimensions of riser closets:	Unknown			
Riser or conduit will reach to top floor :	Yes			
Number and size of conduits or sleeves within each riser:	Unknown			
Proximity to other utilities (e.g. electrical, heating):	Unknown			
Other information/comments:				
What is the size of the telecom room?:	Unknown			
Describe the electrical capacity of the telecom room (i.e. # and size of electrical circuits):	Unknown			
Will the telecom room be located in an area of the building containing one or more load bearing walls?:	No			

Will the telecom room be climate controlled? :	Yes			
If the building is within a flood-prone geographic area, will the telecom equipment will be located above the floodplain?:	Yes			
Will the telecom room be located on a floor where water or other liquid storage is present?:	Unknown			
Will the telecom room contain a flood drain?:	Unknown			
Will the telecom room be single use (telecom only) or shared with other utilities?:	Yes			
Other information/comments:				
Will building/developer supply common inside wiring to all floors of the building? :	Unknown			
If yes, what transmission medium (e.g. coax, fiber)? Please enter ‘unknown’ if these decisions have not yet been made or you are presently unsure.:	Unknown			
Is the building/developer providing wiring within each unit? :	Yes			
If yes, what transmission medium (e.g. coax, fiber)? Please enter ‘unknown’ if these decisions have not yet been made or you are presently unsure.:	Unknown			
Will the building conduct any RF benchmark testing to assess cellular coverage?:	Unknown			
Will the building allocate any floor space for future in-building wireless solutions (DAS/small cell/booster equipment)?:	Unknown			
Will the building be providing an in-building solution (DAS/ Small cell/ booster)? :	Unknown			
If so, are you partnering with a carrier, neutral host provider, or self-installing?:				
Will you allow cellular providers to place equipment on the roof?:	Unknown			
Will you allow broadband providers (fixed wireless) to install equipment on the roof? :	Unknown			
Will you allow broadband providers (fixed wireless) to install equipment on the roof? :	Unknown			
Date contacted:				
Does Comcast intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Date contacted:				
Does RCN intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Date contacted:				

Does Verizon intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Date contacted:				
Does netBlazr intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Date contacted:				
Does WebPass intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Date contacted:				
Does Starry intend to serve the building?:				
Transmission Medium:				
If no or unknown, why?:				
Do you plan to abstain from exclusivity agreements with broadband and cable providers? :	Unknown			
Do you plan to make public to tenants and prospective tenants the list of broadband/cable providers who serve the building?:	Unknown			