Small Project Review Application

Including Transportation Impact Analysis

Submitted Pursuant to Article 80 of the Boston Zoning Code

425 LaGrange Street

West Roxbury, Massachusetts August 31, 2015

Submitted to:

Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Submitted by:

LaGrange AMA Realty Ventures, LLC

Prepared by:

Thomas Maistros Development Consulting
Thomas Maistros, AIA

In Association with:

Neshamkin French Architects, Inc.
Howard/Stein-Hudson

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TABLE OF CONTENTS

1.0 PROJECT SUMMARY

1.1 Project Team

Project Name:	425 LaGrange Street
Location:	The Project site is located at 425 La Grange Street in the West Roxbury Neighborhood of the City of Boston. The site is at the corner of La Grange and Centre Streets.
Proponent:	LaGrange AMA Realty Ventures, LLC 1461 VFW Parkway Boston, MA 02132 (617) 327 8100/michael@charlesriverrealty.com Mr. Michael Argiros
Architects:	Neshamkin French Architects, Inc. 5 Monument Square Charlestown, MA 02129 (617) 242-7422/lcn@nfarchitects.com Ms. Linda Nashamkin, AIA
Permitting Consultants:	Thomas Maistros Development Consulting 1049 Adams Street Dorchester, MA 02124 617 653 0838/tmaistros@verizon.net Mr. Thomas Maistros, AIA
Transportation and Parking Consultants:	Howard/Stein-Hudson, Inc. 38 Chauncey Street, 9th Fl. Boston, MA 02111 (617) 348-7080/msantos@hshassoc.com Mr. Michael A. Santos, P.E., PTOE
Legal Counsel:	McDermott, Quilty, Miller LLP Custom House Street Boston, MA 02109 Atty. Dennis Quilty
Mechanical, Plumbing & Fire Protection Engineer:	Zade Company, Inc. 140 Beach Street Boston, MA 02110 (617) 338 4406 Mr. Mohammad Zade
Civil Engineer:	Verne T. Porter, Jr., PLS Land Surveyors and Civil Engineers 354 Eliot Street Newton, MA 02464
Geotechnical Engineers:	Dick Pizzi, PE 201 Boston Post Road West Marlborough, MA 01752 (508) 229 0900 Mr. Dick Pizzi, P.E.

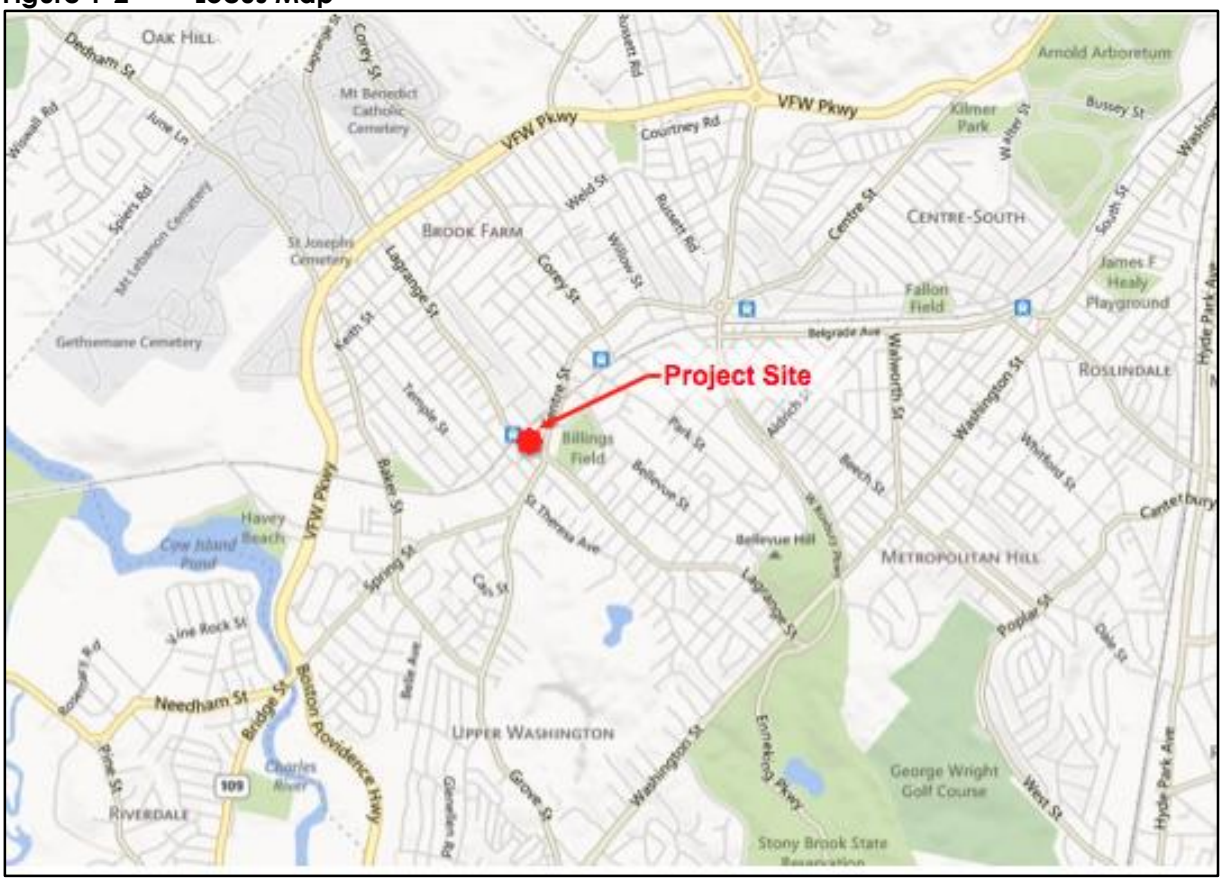
Environmental Engineers:	Lord Associates, Inc. 1506 Boston Providence TPKE, #30 Norwood, MA 02062 (781) 255-5554

1.2 Project Description

1.2.1 Project Site

425 LaGrange Street (the "Project") will be located at 425 La Grange Street in the West Roxbury neighborhood of Boston, at the corner of LaGrange and Centre Streets. It is currently occupied by a series of outdated, abandoned and burned out light-industrial timber framed buildings that were most recently used for commercial office and light manufacturing space. The site area is 27,045 square feet and is bounded to the North by the Westerly Burying Ground and further North by retail use; to the East by Center Street and retail uses; to the South by Lagrange Street and retail uses; to the West by Chapin Street and residential uses.

Figure 1-2 Locus Map



1.2.2 Proposed Development

LaGrange AMA Realty Ventures, LLC, a Massachusetts company (the "Proponent") is the developer of the Project. The Proponent is the owner of the Site and proposes developing a three story,

approximately 49,800 sq. ft. residential structure with below grade parking. The Project will require the demolition of the existing commercial buildings and new construction of the residential apartments.

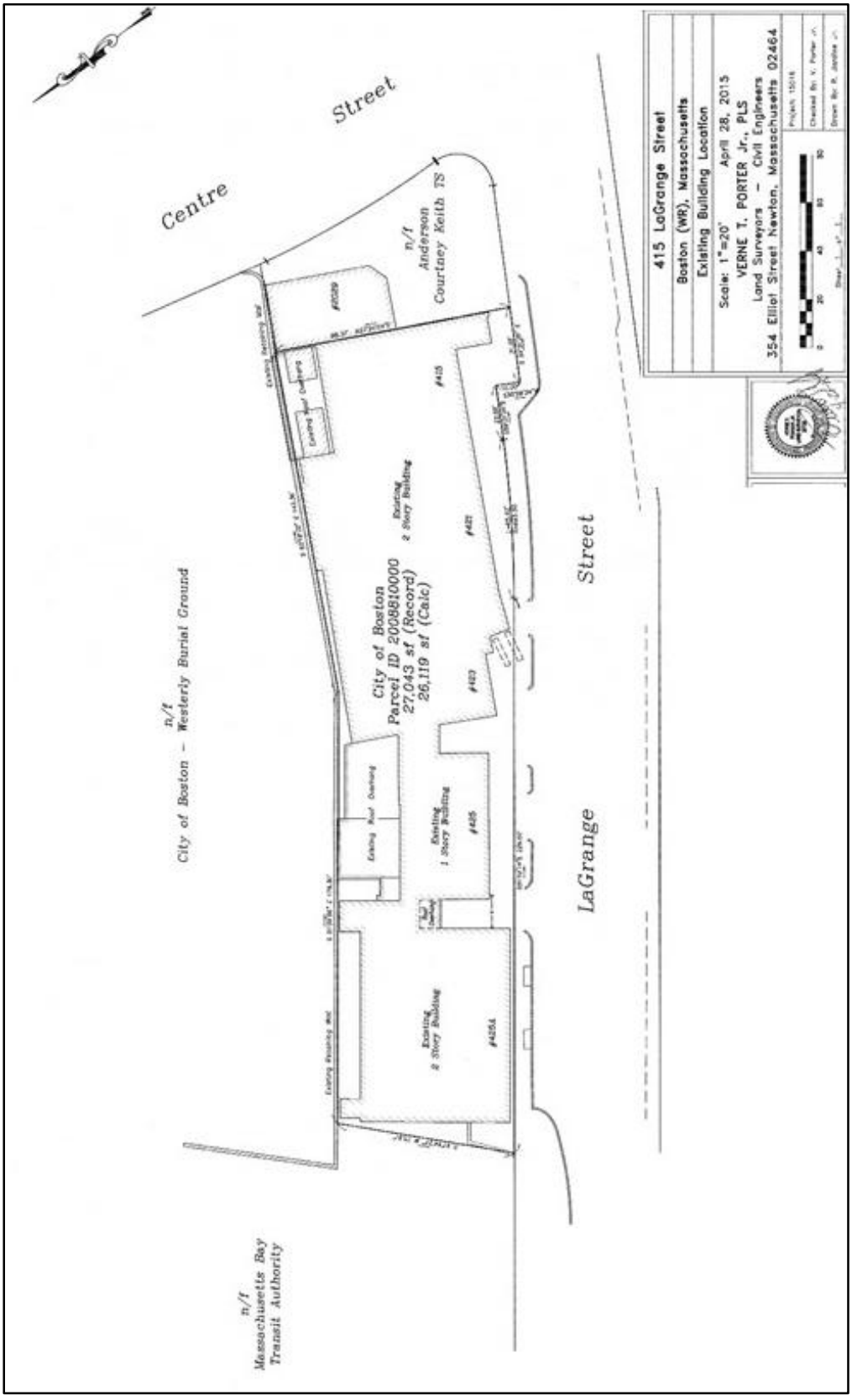
The residential program will consist of a total of 48 units, 42 market rate and 6 affordable units. 81 parking spaces will be provided in the sub-level parking garage that will be accessed from a driveway off LaGrange Street on the western side of the site.

Table 1-1 Approximate Project Dimensions

Project Element	Dimension
Project Site	27,045 SF
Residential Space	48 units/43,859 SF
Parking – below grade (Garage)	81 spaces
Open Space	Approximately 6,048 SF - 126 SF/Unit
Building Height	35 feet

Figure 1-1 Context Plan

Figure 1-2 Existing Plot Plan



The new design will create a Victorian Style multi-family building that will respect the town center public realm of main street with a moderately scaled residential building set back slightly from the street allowing for landscaped treatment that will separate the residences from the sidewalk and provide a more pleasant experience to pedestrians moving to and from the MBTA Station and West Roxbury Residences to the Centre Street Shopping area. Housing opportunities within the design include traditional studio, one, two and three-bedroom flats.

Eight-one (81) off-street parking spaces will be provided in a basement level garage meeting the communities request for a minimum of 1.5 spaces per unit (proposed ratio 1.69). The residents will still be able to take advantage of the MBTA commuter rail service across LaGrange adhering to the Transit-Oriented Development, Smart Growth Policies advocated by the Commonwealth and the City for development in these semi-urban settings. Street improvements will also provide additional on-street parking spaces for visitors and local residents. Resident parking for the Development will be accessed from a single existing curb cut on LaGrange Street. Trash compactors will be located inside the building and accessed via the ramp to the parking level.

The total development cost is expected to be approximately $10 million.

1.2.3 Design Objectives

The primary objective of the Project is to take advantage of an underutilized, blighted, and abandoned site in the Centre Street "Main Street" shopping district in West Roxbury to provide needed residential space. The Project is also adjacent to the West Roxbury Station on the MBTA Needham Commuter Rail Line providing the opportunity to create a Transit Oriented Development and more housing diversity to the West Roxbury Neighborhood.

While West Roxbury is known primarily as a neighborhood of single family homes, the Project will provide housing options for singles and new families hoping to enter this limited sub-urban market and to do so without the need to own an automobile and for West Roxbury native empty nesters looking to down-size but remain in the neighborhood. The site has an advantageous location along a major arterial with direct access to the local shopping district and current retail uses along Centre Street. The multi-family building also supports the general objectives established by the Smart Growth Policies advocated by the City and the Commonwealth. The style and density reinforces the viability of the Centre Street "Main Street" corridor allowing the development's residents direct pedestrian access to the adjacent community oriented retail.

The Project will be built to a height and mass that is in keeping with the existing building occupying the site and the adjacent institutional and commercial properties found along Centre Street. The result will be a residential development that will contribute to the life and vitality of the Centre Street/Main Street Shopping District and the West Roxbury Neighborhood.

1.2.4 Public Review

Because the Project will not exceed 50,000 square feet of gross floor area, it is subject to Small Project Review under Article 80B of the Boston Zoning Code (the "Code"). This PNF is being prepared to provide information on the proposed Project as required under small project review.

The Proponent has been committed to a full community participation process. A series of meetings have been held to communicate the intended plans and solicit input and as a result the project program has undergone multiple revisions. The building program has been changed from 62 to 48 units, a 22% reduction, and the off street park has been changed from 52 to 81 spaces, a 64% increase.

1.2.5 Public Benefits

The Project provides a number of public benefits to the City of Boston. The Project will replace the existing commercial, light industrial structure with an apartment development that is more consistent with the character of the adjacent residential neighborhood. The reuse of this site will result in the removal of a long-vacant, blighted structure significantly enhancing the urban design and architectural character of the neighborhood.

Additional public benefits include:

- The Project will be certifiable under the U.S. Green Council's Leadership in Energy and Environmental Design (LEED) system.
- The Project will generate approximately $160,000 in annual property taxes.
- The Project will provide six (6) affordable units in accordance with the City's Inclusionary Housing Policies.
- The Project removes an underutilized, light industrial building and replaces it with uses supporting the residential character of the West Roxbury Community.
- The Project will create approximately 120 construction jobs and will comply with the City of Boston standards for Boston resident and minority hiring.
- An improved public realm along LaGrange Street replacing the numerous curb cuts, deteriorated sidewalks and loading docks with new sidewalks and curb, street trees, and improved street lighting.
- Indoor parking scheme will minimize physical impacts on on-street resources and visual impacts to abutters.
- Appropriate fencing/landscaped edge will be provided between the Project and the Westerly Burial Ground.

1.3 Consistency with Zoning

The subject property has a street address of 415 – 435 Lagrange Street (AKA 425 Lagrange Street) (the Property), and is comprised of a land area of approximately 27,043 square feet. The City of Boston Assessor's Office identifies it as Parcel 200881000.

The property is located within West Roxbury Neighborhood Business Sub District identified as Neighborhood Shopping Sub District (NS), per Article 56, West Roxbury Neighborhood District Map, as shown on Boston Zoning Map 11D. Generally, allowed uses in the NS subdistricts include restaurants, general and local retail business, office and many professional and other service uses. Multi-family residential uses are allowed above street level but are a conditional use at grade (Refer to Table B, Article 56 West Roxbury Neighborhood District).

Architectural Plans have been submitted to the Boston Inspectional Services Department to initiate the zoning review process and a determination of zoning variances has been provided (see **Figure 1-7**). Based on that determination several actions will be required from the Zoning Board of Appeals including a dimensional variance for Minimum Rear Yard, for off-street loading, a variance for off street parking due to the use of tandem and stacked parking and Residential Use at grade which is a conditional use. It should be noted that the proposed project improves on the existing condition relative to the rear yard setback as currently there is a zero rear yard and the proposed set back will vary from seven to 18 feet.

Following the anticipated vote of the Zoning Board of Appeals and the passage of the requisite appeal period, the property will be in conformance with all necessary zoning.

ZONING TABLE AND VARIANCES

	Zoning Requirement	**Proposed**
Maximum F.A.R.	2.0	1.84
Maximum Building Height	35 Feet	34'-9"
Minimum Lot Area	None	27,045 SF
Min. Lot Area per D.U.	N/A	48 TOTAL
Min, Usable Open Space/D.U.	50 SF	126 SF+/-
Minimum Lot Width	None	320 Feet
Minimum Lot Frontage	None	350 Feet
Minimum Front Yard	None	1'-0"
Minimum Side Yard	None	6'-6"
Minimum Rear Yard	40 Feet	Average 10'-7"
Off-Street Parking	1.5 Spaces/Unit	1.7 Spaces/Unit
Off-Street Loading	1 Bay	0 Bays
Allowed Use	Neighborhood Shopping	Residential (conditional on 1st Fl)

1.4 Legal Information

- The Proponent knows of no judgments, which are adverse to the proposed project.
- The Proponent knows of no tax arrearages with respect to the property as the same has been owned either by the Commonwealth of Massachusetts or the City of Boston.

Figure 1-7 Boston Inspectional Services Department Zoning Code Refusal

Boston Inspectional Services Department
Planning and Zoning Division

1010 Massachusetts Avenue Boston, MA 02118 Telephone: (617) 635-5300

Martin J. Walsh
Mayor

ZONING CODE REFUSAL

Gary P. Moccia
Inspector of Buildings

JOE CONSALVO
45 WOODLEY AVE
WEST ROXBURY, MA 02132

June 15, 2015

Location:	425 LAGRANGE ST WEST ROXBURY, MA 02132
Ward:	20
Zoning District:	West Roxbury
Zoning Subdistrict:	NS
Appl. # :	**ERT460078**
Date Filed:	April 06, 2015
Purpose:	Erect new 48 unit Multi-family Building on the site of the former Armstrong Manufacturing facility. Project consists of a new 3 story woood frame builing with 20,998 square footprint on an approximately 27,000. square foot lot. The proposed application includes 81 parking spaces in garage area and approximately 10,000 square foot open/green space.

YOUR APPLICATION REQUIRES RELIEF FROM THE BOARD OF APPEAL AS SAME WOULD BE IN VIOLATION OF THE BOSTON ZONING CODE TO WIT: CHAPTER 665, ACTS OF 1956 AS AMENDED:

Violation	Violation Description	Violation Comments
Art. 56, Section 39 * **	Off-Street Loading Insufficient	
Art. 56, Section 39 **	Off-Street Parking Insufficient	
Article 56, Section 7	Use Regulations	Multi-family dwelling(1st floor) Conditional
Article 56, Section 8	Dimensional Regulations	Rear Yard Insufficient

THIS DECISION MAY BE APPEALED TO THE BOARD OF APPEAL WITHIN FORTY-FIVE (45) DAYS PURSUANT TO CHAPTER 665 OF THE ACTS OF 1956, AS AMENDED. APPLICATIONS NOT APPEALED WITHIN THAT TIME PERIOD WILL BE DEEMED ABANDONED. IF YOU HAVE INQUIRIES REGARDING THE NEIGHBORHOOD PROCESS AND PUBLIC PARTICIPATION, PLEASE CONTACT THE MAYOR'S OFFICE OF NEIGHBORHOOD SERVICES AT 617-635-3485.

Luis Santana
(617)961-3286
for the Commissioner

Refusal of a permit may be appealed to the Board of Appeal within 45 days. Chapter 802, Acts of 1972, and Chapter 656, Acts of 1956, Section 19.

1.5 Public Agencies

The following is a list of state and local agencies from which permits or other actions are expected to be required:

Agency Name	Permit / Approval
STATE	
Massachusetts Water Resources Authority	Sewer Use Discharge Permit
LOCAL	
Boston Civic Design Commission	Determination to Review
Boston Redevelopment Authority	Zoning variance recommendations
Boston Water and Sewer Commission	Sewer Use Discharge Permit; Site Plan Approval; Sewer Extension/ Connection Permit; Stormwater Connection
City of Boston Inspectional Services Department	Building and Occupancy Permits
Boston Public Improvement Commission	Street and Sidewalk Occupation Permits; Specific Repair Plan
Boston Board of Appeals	Variance Approvals
Boston Parks and Recreation Commission	Review and Approval
City of Boston Interagency Green Building Committee	Climate Change Checklist Accessibility Checklist
Boston Transportation Department	Transportation Access Plan Agreement; Construction Management Plan

1.6 Schedule

Construction is expected to begin in the Fall of 2015 and will be completed for occupancy in 14 months (Fall 2016).

1.7 Project Design

1.7.1 Design Exhibits

The proponent has retained Neshamkin French Architects (NFA) as Project Architect. NFA has prepared the following graphic materials including context photos and architectural plans, elevations and illustrations to further describe the proposed scope of improvements.

Figure 1-8 Existing Condition – Context/Aerial View

Figure 1-9 Existing Condition – View of Existing Blighted Site from LaGrange St/MBTA Lot

Figure 1-10 Existing Condition – View from LaGrange St./Centre St. Intersection

Figure 1-11 Existing Condition – View from Centre St. toward Westerly Burial Ground

Figure 1-12 Site Plan

Figure 1-13 Second Floor Plan

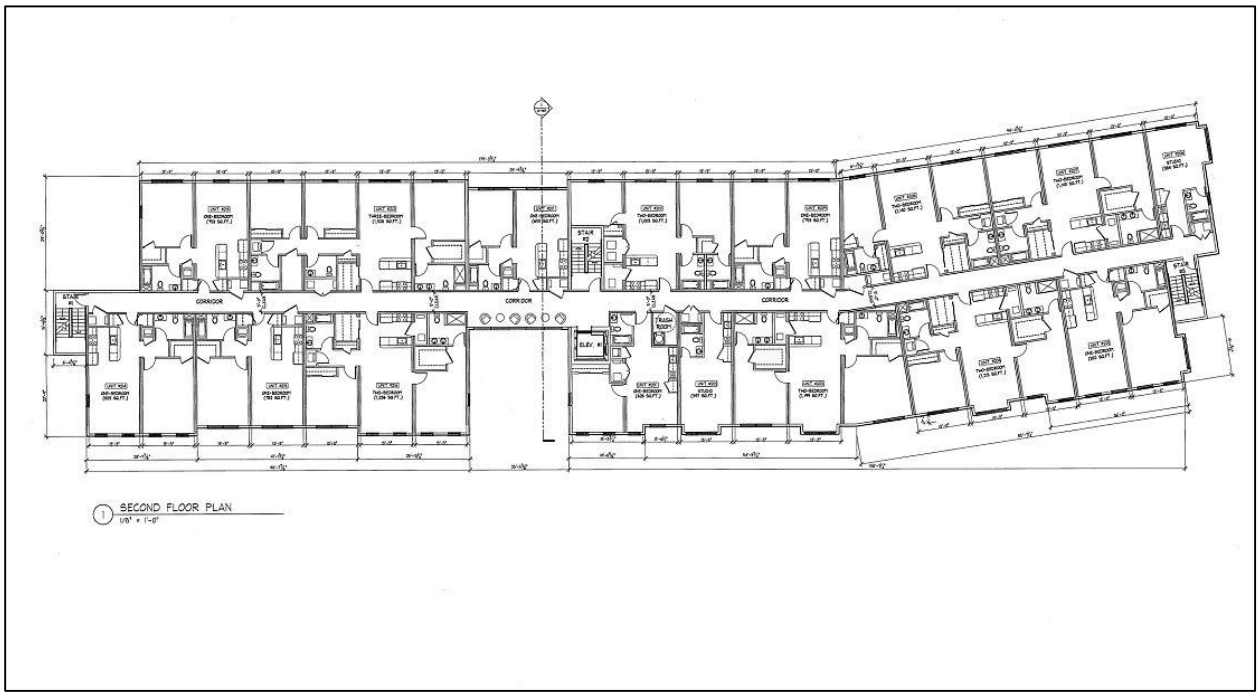


Figure 1-14 Third Floor Plan

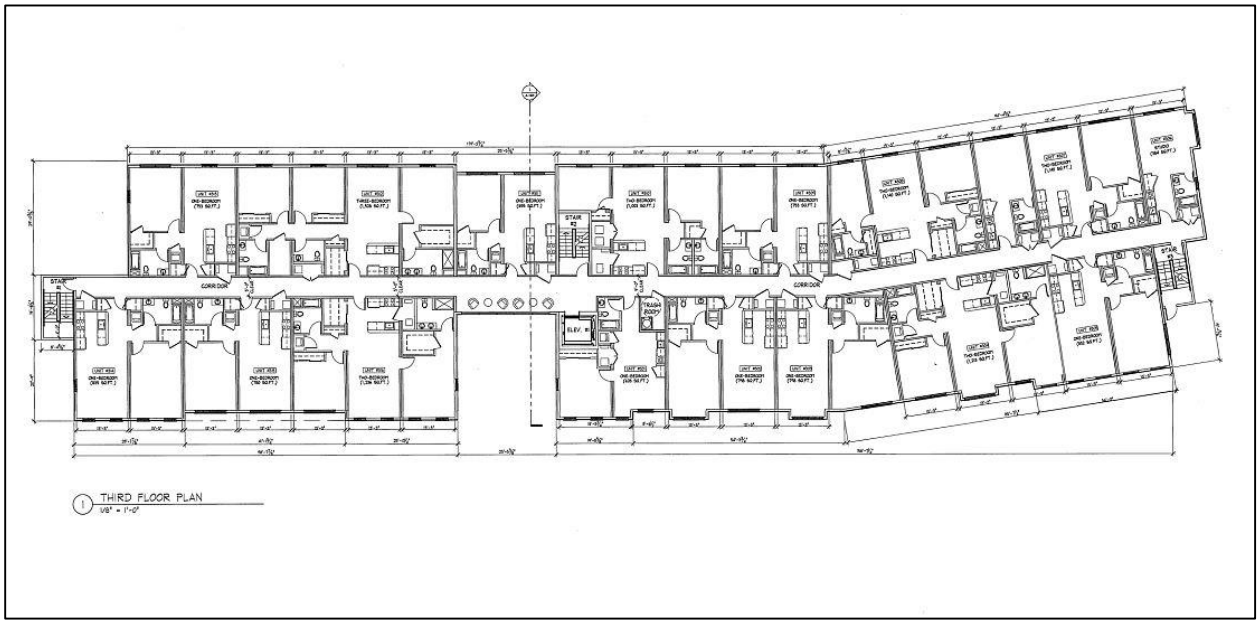


Figure 1-15 Elevations

Figure 1-16 View from Centre Street

Figure 1-17 First Floor Plan

2.0 ASSESSMENT OF DEVELOPMENT REVIEW COMPONENTS

Article 80 of the Code specifies that the BRA may require a Scoping Determination that defines studies to be prepared by the Proponent to determine the direct or indirect impact to the environment reasonably attributable to a proposed project. The development review components include transportation, environmental protection, urban design, historic resources, and infrastructure systems. Where potential for direct or indirect impacts exist, design measures are required to mitigate the impacts, to the extent economically feasible. The following is an assessment of the potential impacts that could be attributed to the Project and proposed mitigation measures.

2.1 Transportation

Howard/Stein-Hudson Associates, Inc. (HSH) has conducted an evaluation of the transportation impacts of the proposed residential development to be located at 425 LaGrange Street in the West Roxbury Neighborhood of Boston. This transportation study adheres to the Boston Transportation Department (BTD) Transportation Access Plan Guidelines and the Boston Redevelopment Authority's (BRA) Article 80 development review process. This study includes an evaluation of existing conditions, future conditions with and without the Project, projected parking demand, loading operations, transit services, and pedestrian activity.

2.1.1 Project Description

The Project site is located at 425 LaGrange Street in West Roxbury and is bounded by a cemetery to the north, MBTA Commuter Rail tracks to the west, LaGrange Street to the south, and Centre Street to the east as shown in **Figure 2-1**. The Project site is situated less than a quarter mile from West Roxbury station, which serves the MBTA Commuter Rail Line and several MBTA bus routes, providing convenient access to multiple transit opportunities. The nearby transit opportunities will provide residents of the Project with alternative non-vehicular modes of transportation that will reduce the vehicular traffic related impacts of the Project.

The Project will replace blighted, burned-out and abandoned commercial/light manufacturing structures with a three-story building containing 48 residential units. Approximately 81 parking spaces for residents will be provided on-site in a below-grade garage. Secure on-site storage will be provided within the garage structure for approximately 48 bicycles.

Vehicular access to the garage will be provided by a single driveway along Lagrange Street, located at the edge of the site adjacent to the MBTA Needham Line Commuter Rail train tracks. Primary pedestrian access to the building will be provided through a main courtyard area located along LaGrange Street. Additional secondary pedestrian access will be located at the end of the building through a staircase from the parking garage. Loading, deliveries, and trash pick-up will take place in front of the building along Lagrange Street.

Loading, deliveries, and trash pick-up will take place curbside along Lagrange Street..

2.1.2 Transportation System

2.1.2.1 Study Area

The study area consists of the following two intersections, also shown on Fig. 2-1:

- LaGrange Street/Centre Street and
- LaGrange Street/MBTA Commuter Rail Parking Lot.

Figure 2-1 Project Intersections

2.1.2.2 Study Methodology

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

The existing conditions analysis includes an inventory of the existing (2014) transportation conditions such as traffic characteristics, parking and curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. Existing counts for vehicles, bicycles, and pedestrians were collected in February 12, 2014 at the study area intersections. The traffic counts form the basis for the transportation analysis conducted as part of this evaluation.

The future transportation conditions analysis evaluates potential transportation impacts associated with the Project. Long-term impacts are evaluated for the year 2019, based on a five-year horizon

from the year of the filing of this traffic study. Expected roadway, parking, transit, pedestrian, bicycle accommodation, and loading facilities are identified. This section includes the following scenarios:

- The 2019 No Build conditions scenario includes both general background traffic growth and traffic growth associated with specific developments and transportation improvements that are planned in the vicinity of the Project site.

- The 2019 Build conditions scenario includes Project-generated traffic volume estimates added to the traffic volumes developed as part of the 2019 No Build conditions scenario.

The final part of the transportation study identifies measures to mitigate Project-related impacts and to address any traffic, pedestrian, bicycle, transit, safety, or construction related issues that are necessary to accommodate the Project.

An evaluation of short-term traffic impacts associated with construction activities is also provided.

2.1.3 Existing Conditions

2.1.3.1 Existing Roadway Conditions

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

Lagrange Street

Lagrange Street is classified as an urban principal arterial roadway and is adjacent to the south side of the Project site. Lagrange Street runs in a northwest-southeast direction between Horace James Circle in Brookline to the northwest and West Roxbury Parkway to the southeast. Lagrange Street is a two-way roadway with a single travel lane in each direction. In the vicinity of the Project site, parking and sidewalks are provided along both sides of the roadway.

Centre Street

Centre Street is classified as an urban principal arterial roadway, is adjacent to the east side of the Project site. Centre Street generally runs in a north-south direction between Columbus Avenue to the north and the Dedham Town Line to the south. Centre Street is a two-way roadway with two travel lanes in each direction. In the vicinity of the Project site, parking and sidewalks are provided along both sides of the roadway.

2.1.3.2 Existing Intersection Conditions

Existing conditions at each of the study area intersections are described below.

Lagrange Street/Centre Street

Lagrange Street/Centre Street is a four-legged, signalized intersection under BTD jurisdiction. The Centre Street northbound approach consists of an exclusive left-turn lane, an exclusive through lane,

and a shared through/right-turn lane. The Centre Street southbound approach consists of an exclusive left-turn lane, an exclusive through lane, and a shared through/right-turn lane. The Lagrange Street eastbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. The Lagrange Street westbound approach consists of an exclusive left-turn lane and a shared through/right-turn lane. On-street parking is limited to only the northbound approach to the intersection. Sidewalks are provided along both sides of the roadway on all approaches. Pedestrian signals and crosswalks are provided across all legs of the intersection.

Lagrange Street/MBTA Commuter Rail Parking Lot

Lagrange Street/MBTA Commuter Rail Parking Lot is a three-legged, unsignalized intersection under BTD jurisdiction. The Lagrange Street eastbound and westbound approaches consist of single travel lanes and operate under free control. The MBTA Commuter Rail Parking Lot driveway is a one-way entrance on the south side of Lagrange Street. Parking is allowed and sidewalks are provided on both sides of the Lagrange Street.

2.1.3.3 Existing Traffic Conditions

Traffic movement data was collected at the intersections of Lagrange Street/Centre Street and Lagrange Street/MBTA Commuter Rail Driveway on Wednesday, February 12, 2014. Typical turning movement counts (TMCs) were conducted for cars, trucks, pedestrians and bicycles during the weekday a.m. and p.m. peak periods (7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively) for the study area intersections. Based on the TMCs, the peak hours of vehicular traffic throughout the study area are 7:15 – 8:15 a.m. and 5:00 – 6:00 p.m. The detailed traffic counts are provided in an Appendix.

2.1.3.4 Seasonal Adjustment

In order to account for seasonal variation in traffic volumes throughout the year, data provided by MassDOT were reviewed. Typically, nearby continuous traffic count stations are used to determine monthly fluctuations in traffic volumes. The most recent (2011) MassDOT Weekday Seasonal Factors were used to determine the need for seasonal adjustments to the February 2014 TMCs. The 2011 seasonal adjustment factor for February for roadways similar to the study area is 1.01, which indicates that average month traffic volumes are approximately one percent higher than typical February traffic volumes. The traffic counts were adjusted upward by one percent to reflect average month conditions. The 2014 Existing weekday a.m. and p.m. peak hour traffic volumes are shown in **Figure 2-2** and **Figure 2-3**, respectively.

Figure 2-2 Existing Conditions (2014) Turning Movement Volumes, a.m. Peak Hour (7:45 – 8:45 a.m.)

Howard/Stein-Hudson Associates, Inc.

Figure 2-3 Existing Conditions (2013) Turning Movement Volumes, p.m. Peak Hour (4:45 – 5:45 p.m.)

Howard/Stein-Hudson Associates, Inc.

2.1.3.5 Existing Traffic Operations

The criterion for evaluating traffic operations is level of service (LOS), which is determined by assessing average delay experienced by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 8) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the Transportation Research Board's 2000 Highway Capacity Manual (HCM). Field observations were performed by HSH to collect intersection geometry such as number of turning lanes, lane length, and lane width that were then incorporated into the operations analysis.

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. **Table 2-1** displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst (unacceptable) condition, with significant traffic delay. LOS D or better is typically considered acceptable in an urban area. However, LOS E or F is often typical for a stop controlled minor street that intersects a major roadway.

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

Table 2-1 Level of Service Criteria

Level of Service	Average Stopped Delay (sec./veh.)	
	Signalized Intersections	Unsignalized Intersections
A	≤10	≤10
B	>10 and ≤20	>10 and ≤15
C	>20 and ≤35	>15 and ≤25
D	>35 and ≤55	>25 and ≤35
E	>55 and ≤80	>35 and ≤50
F	>80	>50
Source: 2000 Highway Capacity Manual, Transportation Research Board.		

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

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

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

Table 2-2 and Table 2-3 presents the 2014 Existing Conditions Operational Analysis for the study area intersections during the a.m. and p.m. peak hours. The detailed analysis sheets are provided in the Appendix.

As shown in **Table 2-2**, the signalized intersection in the study area currently operates at LOS D, with all movements at the intersections operating at LOS D or better during the a.m. peak hour, with the exception of the Lagrange Street eastbound exclusive left-turn lane, and the Lagrange Street westbound shared thru/right-turn lane, which operate at a LOS E. The longest queues at the intersection were shown to occur along the Lagrange Street westbound approach and the Centre Street northbound approach. The movements at the unsignalized intersection currently operate at a LOS A with minimal delay and queuing during the a.m. peak hour.

Table 2-2 Existing Conditions (2014), Capacity Analysis Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**D**	**44.0**	—	—	—
Lagrange Street EB left	E	55.4	0.54	26	#70
Lagrange Street EB thru/right	D	41.8	0.69	165	231
Lagrange Street WB left	D	53.1	0.68	70	113
Lagrange Street WB thru/right	E	63.2	0.92	250	#405
Centre Street NB left	D	39.3	0.67	91	#208
Centre Street NB thru | thru/right	D	42.4	0.82	~425	#437
Centre Street SB left	C	34.8	0.52	40	62
Centre Street SB thru | thru/right	C	34.3	0.56	191	#246
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	—	—	—	—	—
Lagrange Street EB thru/right	A	0.0	0.22	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1

Table 2-3 Existing Conditions (2014), Capacity Analysis Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**E**	**55.6**	**—**	**—**	**—**
Lagrange Street EB left	C	34.6	0.38	57	104
Lagrange Street EB thru/right	E	79.9	1.00	341	#519
Lagrange Street WB left	F	>80.0	0.77	46	#124
Lagrange Street WB thru/right	C	33.5	0.43	120	192
Centre Street NB left	C	34.0	0.44	35	58
Centre Street NB thru | thru/right	D	49.1	0.84	~293	#424
Centre Street SB left	D	52.4	0.71	58	111
Centre Street SB thru | thru/right	E	55.7	0.91	~396	#505
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	**—**	**—**	**—**	**—**	**—**
Lagrange Street EB thru/right	A	0.0	0.33	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically infinite.
Grey shading indicates LOS E or LOS F.

Also shown in **Table 2-3**, the LaGrange Street/Centre Street intersection currently operates at LOS E, with all movements at the intersections operating at LOS D or better during the p.m. peak hour, with the exception of the Lagrange Street eastbound shared through/right-turn lane which operates at LOS E, the Lagrange Street westbound exclusive left-turn lane which operates at LOS F, and the Centre Street southbound shared through/through-right-turn lane which operates at a LOS E. The longest queues at the signalized intersections were shown to occur along the Lagrange Street eastbound approach and the Centre Street southbound approach. The LaGrange Street/MBTA Commuter Parking Lot Driveway intersection currently operates at LOS A, with minimal delay and queuing during the p.m. peak hour.

Based on the existing conditions traffic operations analysis, the study area intersections have adequate capacity to process the existing levels of traffic and do not currently need any additional capacity or operational improvements to accommodate vehicular traffic.

2.1.3.6 Existing Parking and Curb Usage

On-street parking surrounding the Project site generally consists of no parking, unrestricted parking, residential permit parking, and two-hour parking. Lagrange Street is generally unrestricted parking adjacent to the Project site, with no parking signs located at the approach to the intersection with

Centre Street. West Roxbury residential parking is located to the west of the site, and two-hour parking located east of the site. It was observed that the unrestricted parking along Lagrange Street, the narrow lane widths, and the vehicles parked adjacent to the West Roxbury Commuter Rail Station sometimes require traveling vehicles to encroach into the opposing travel lane. Centre Street is primarily restricted to two-hour parking Monday through Friday. Both streets are lined with numerous MBTA bus stops. The on-street parking regulations within the study area are shown on **Figure 2-4.**

2.1.3.7 Existing Public Transportation

The Project site is ideally situated to take advantage of several public transportation opportunities, being located across the street from the MBTA West Roxbury Commuter Rail Station, and within proximity of several MBTA bus routes. The following describes each public transportation route located in the vicinity of the Project site, with a map of the nearby public transportation services shown in **Figure 2-5**.

MBTA Bus Route 35 – This route provides service between the Stop and Shop at Dedham Mall and the Forest Hills bus terminal in Jamaica Plain. Weekday and Saturday service run from approximately 5:45 a.m. to 9:21 p.m., with Sunday service running from approximately 10:00 a.m. to 7:20 p.m. Headways are on average approximately 30 minutes. The route runs along Centre Street in the vicinity of the site, with the nearest stop located at the study intersections of Lagrange Street/Centre Street.

MBTA Bus Route 36 – This route provides service between the V.A. Hospital in West Roxbury and the Forest Hills bus terminal in Jamaica Plain. Weekday and weekend service run from approximately 4:55 a.m. to 1:20 a.m. Headways are on average approximately 20-30 minutes. The route runs along Centre Street in the vicinity of the site, with the nearest stop located at the intersection of Centre Street/Lagrange Street.

MBTA Bus Route 37 – This route provides service between Baker Street/Vermont Street in West Roxbury and the Forest Hills bus terminal in Jamaica Plain. Weekday and Saturday service runs from approximately 5:55 a.m. to 8:00 p.m. with headways of approximately 20-30 minutes. Sunday service is not provided. The route runs along Lagrange Street and Centre Street, with the nearest stops located opposite the site at the West Roxbury commuter rail station and at the intersection of Centre Street/Lagrange Street.

MBTA Needham Commuter Rail Line – The Needham branch of the MBTA Commuter Rail Line stops at West Roxbury Station, located on Lagrange Street across from the Project site. The Needham Line provides access between Needham Heights Station and South Station. The Needham Line operates with headways of approximately 30 to 45 minutes during weekday morning and evening peak hours. There is no commuter rail service on weekends.

Figure 2-4 On-street Parking Regulations

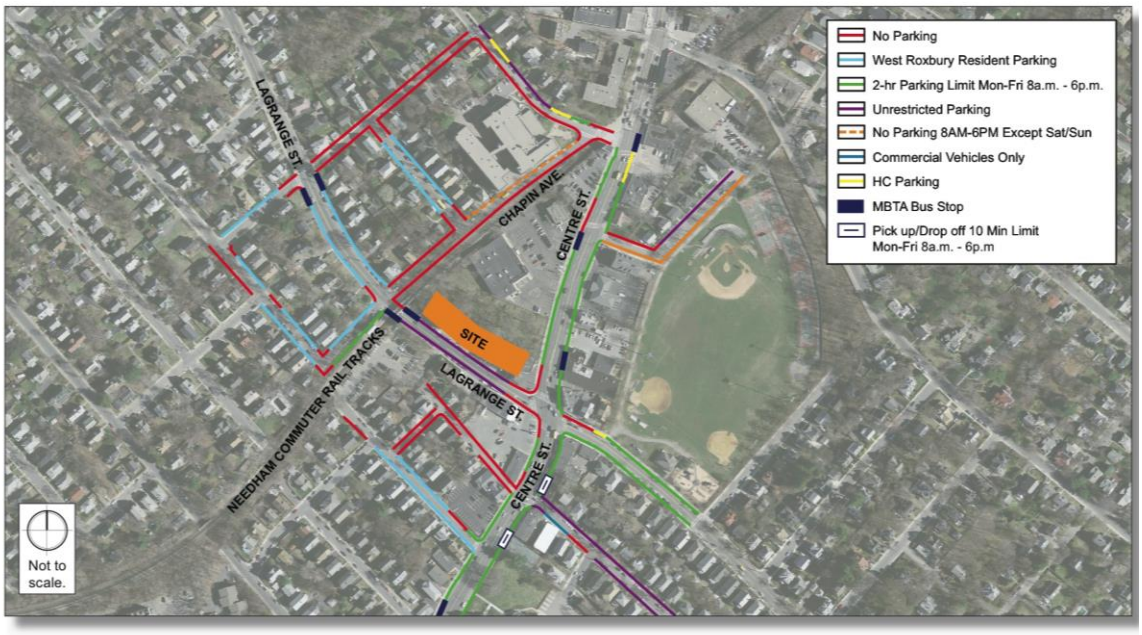


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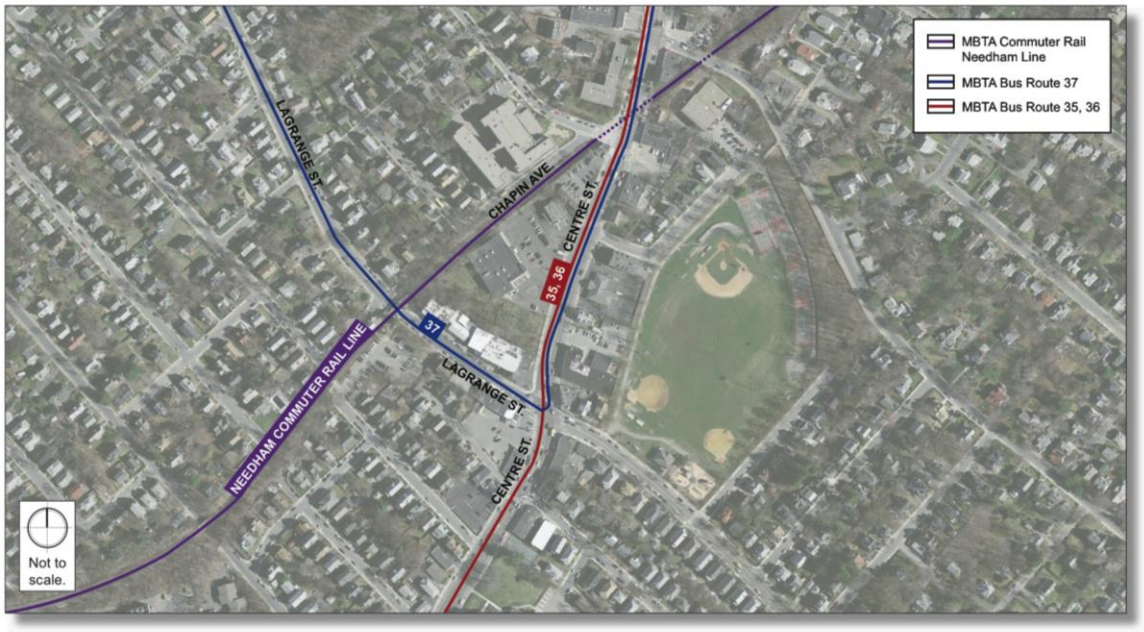
Figure 2-5 Public Transportation in the Study Area



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2.1.3.8 Existing Pedestrian Conditions

The Project site is located adjacent to Lagrange Street and Centre Street in West Roxbury. Sidewalks are provided along all streets within the study area. The sidewalks along Lagrange Street range from approximately 5 to as much as 13 feet in width, and are generally in good condition. The sidewalks along Centre Street range from 8 to 10 feet in width, and are generally in good condition. The sidewalk on Lagrange Street adjacent to the site is intersected by a number of driveway curb cuts. Pedestrian activity in the area is minimal, with the exception of people accessing the West Roxbury Commuter Rail station from parked cars along Lagrange Street. Crosswalks and handicap ramps are provided at the signalized intersection of Lagrange Street at Centre Street, with pedestrian signal equipment and phasing provided. Crosswalks are not provided at the unsignalized intersection of Lagrange Street at the Commuter Rail parking lot.

To estimate the amount of pedestrian activity within the study area, pedestrian counts were conducted concurrent with the TMCs at the study area intersections and are presented in **Figure 2-6**. The counts were conducted in February and the overall level of pedestrian activity may be higher during different parts of the year.

2.1.3.9 Existing Bicycle Facilities

In recent years, bicycle use has increased dramatically throughout the City of Boston. There are currently no formal bicycle facilities located along the study area roadways. The following roadways within the study area are designated bicycle routes on the City of Boston's "Bike Routes of Boston" map:

- **Lagrange Street** is designated as an intermediate route suitable for riders with some on-road experience; and
- **Centre Street** is designated as an advanced route suitable for traffic-confident cyclists with on-road experience.

Based on the bicycle counts that were conducted concurrent with the vehicular TMCs, there are no bicycles using the study area intersections. The counts were conducted in February and the overall level of bicycle activity is most likely higher during other parts of the year.

2.1.3.10 Car Sharing Services

Car sharing, predominantly served by Zipcar in the Boston area, provides 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. There are currently no car sharing services located in proximity of the site.

Figure 2-6 Existing Conditions (2014) Pedestrian Volumes, a.m. and p.m. Peak Hours

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2.1.4 Future Conditions

For transportation impact analyses, it is standard practice to evaluate two future conditions: No Build conditions (without the proposed project) and Build conditions (with the proposed project). In accordance with BTD guidelines, these conditions are projected to a future date five years from the current year. For the evaluation of this Project, 2019 was selected as the horizon year for the future conditions analyses.

This section presents a description of the 2019 future conditions scenarios and includes an evaluation of the transportation facilities under the No Build and Build conditions.

2.1.4.1 No-Build Conditions

The No Build conditions reflect a future scenario that incorporates any anticipated traffic volume changes independent of the Project, and any planned infrastructure improvements that will affect travel patterns throughout the study area. Infrastructure improvements include roadway, public transportation, pedestrian and bicycle improvements. Traffic volume changes are based on two factors: an annual growth rate and growth associated with specific developments near the Project.

2.1.4.2 Background Traffic Growth

The methodology to account for future traffic growth, independent of the Project, consists of two parts. The first part of the methodology accounts for general background traffic growth that may be affected by changes in demographics, automobile usage, and automobile ownership. To

account for any additional unforeseen traffic growth, a one-percent per year annual traffic growth rate was used to develop the future conditions traffic volumes.

The second part of the methodology identifies any specific planned developments that are expected to affect traffic patterns throughout the study area within the future analysis time horizon. The following projects are located in the vicinity of the site and are expected to add minimal traffic to the study area intersections. Traffic volumes for these projects were assumed to be accounted for in the general background growth rate.

- **5165 Washington Street** – This development includes the construction of a three-story building with 20 new residential units and 32 associated parking spaces. The project is located southeast of the Site; and

- **West Roxbury YMCA** – This project proposes to reconstruct the existing YMCA, located north of the site on Bellevue Street. The project includes the construction of a new curb cut on Centre Street which will slightly increase traffic along Centre Street.

The one-percent per year annual growth rate was applied to the 2014 existing conditions traffic volumes to develop the 2019 No Build conditions traffic volumes. The 2019 No Build a.m. and p.m. peak hour traffic volumes are shown on **Figure 2-7** and **Figure 2-8**, respectively.

2.1.4.3 No-Build Conditions Traffic Operations

The 2019 No-Build conditions scenario analysis uses the same methodology as the 2014 existing conditions scenario analysis. **Table 2-4** and **Table 2-5** present the 2019 No-Build conditions operations analysis for the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the Appendix.

As shown in **Table 2-4**, the Lagrange Street/Centre Street intersection is expected to remain at a LOS D during the a.m. peak hour. The Lagrange Street westbound exclusive left-turn lane will worse from LOS D to LOS E. This is primarily a result of a longer queue that exceeds capacity, due to the additional number of vehicles added to the approach. The Centre Street southbound movements are expected to worsen from LOS C to LOS D, which is an acceptable change and causes no change in the queue length from the existing conditions. All movements at the Lagrange Street/MBTA Commuter Rail Parking Lot will continue to operate at LOS A.

As shown in **Table 2-5**, the Lagrange Street/Centre Street intersection is expected to remain at a LOS E during the p.m. peak hour. The Lagrange Street eastbound exclusive left-turn and shared thru/right-turn movements are expected to worsen from LOS C to LOS D and LOS E to LOS F, respectively. The Centre Street northbound exclusive left-turn lane will worsen from LOS C to LOS D, and the southbound exclusive left-turn lane will worsen from LOS D to LOS E. All movements at the Lagrange Street/MBTA Commuter Rail Parking Lot will continue to operate at LOS A.

Table 2-4 No-Build Conditions (2019), Capacity Analysis Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**D**	**47.4**	—	—	—
Lagrange Street EB left	E	67.0	0.63	29	#83
Lagrange Street EB thru/right	D	42.5	0.71	175	244
Lagrange Street WB left	E	58.6	0.74	75	#128
Lagrange Street WB thru/right	E	68.1	0.95	268	#435
Centre Street NB left	D	45.9	0.74	97	#232
Centre Street NB thru | thru/right	D	46.1	0.88	~460	#467
Centre Street SB left	D	36.9	0.55	41	64
Centre Street SB thru | thru/right	D	35.4	0.60	202	#266
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	—	—	—	—	—
Lagrange Street EB thru/right	A	0.0	0.23	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically infinite.
Grey shading indicates LOS worsens from Existing Conditions.

Table 2-5 No-Build Conditions (2019), Capacity Analysis Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**E**	**63.2**	—	—	—
Lagrange Street EB left	D	35.9	0.41	61	111
Lagrange Street EB thru/right	F	>80.0	>1.00	~392	#556
Lagrange Street WB left	F	>80.0	0.99	53	#143
Lagrange Street WB thru/right	C	34.0	0.45	128	201
Centre Street NB left	D	35.1	0.47	37	60
Centre Street NB thru | thru/right	D	52.5	0.88	~333	#456
Centre Street SB left	E	63.1	0.79	61	#134
Centre Street SB thru | thru/right	E	62.7	0.96	~431	#540
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	—	—	—	—	—
Lagrange Street EB thru/right	A	0.0	0.35	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically infinite.
Grey shading indicates LOS worsens from Existing Conditions.

Figure 2-7 No Build Conditions (2019) Turning Movement Volumes, a.m. Peak Hour

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Figure 2-8 No Build Conditions (2019) Turning Movement Volumes, p.m. Peak Hour

Howard/Stein-Hudson Associates, Inc.

2.1.4.4 Build Conditions

As previously summarized, the Project will consist of approximately 48 residential apartment units with a total of approximately 81 parking spaces provided on-site in a garage accessed off of Lagrange Street for the residents. Secure storage for approximately 48 bicycles will also be provided on the site.

2.1.4.5 Site Access and Circulation

As shown in the Project site plan in **Figure 2-9 and 2-10**, access will be provided to a below-grade parking garage by a single driveway located along the northerly side of Lagrange Street, approximately 400 feet west of the intersection of Centre Street/Lagrange Street.
Loading and service, including trash, recycling, and deliveries will be minimal and will take place in front of the building along Lagrange Street.

Primary pedestrian access will be provided by an entrance along Lagrange Street near the center of the building, with secondary access provided through the garage and at each end of the building.

Figure 2-9 Site Access Plan – Ground Floor

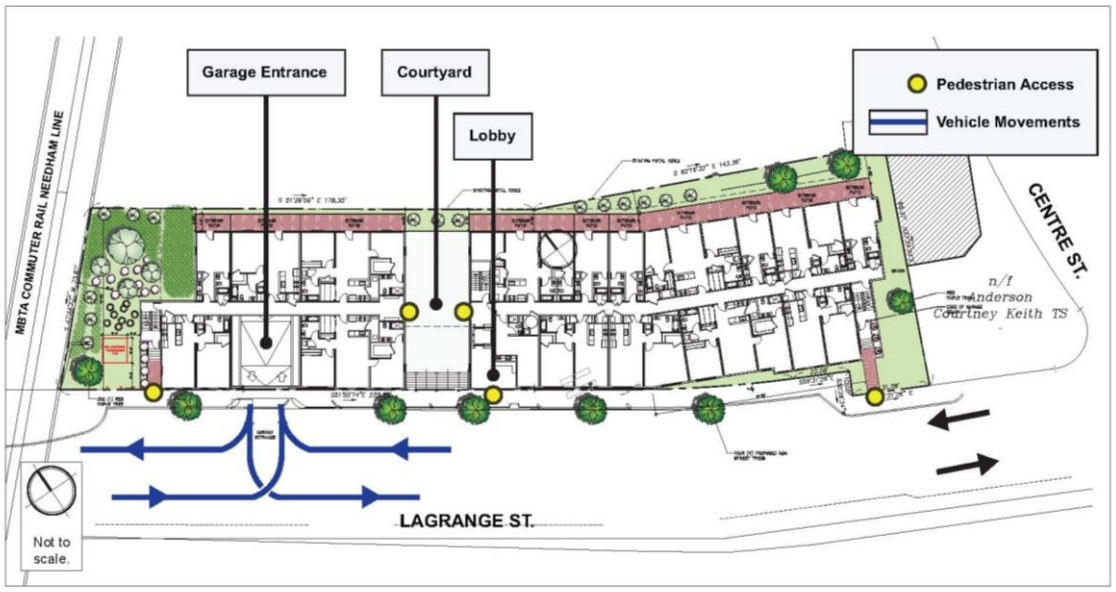

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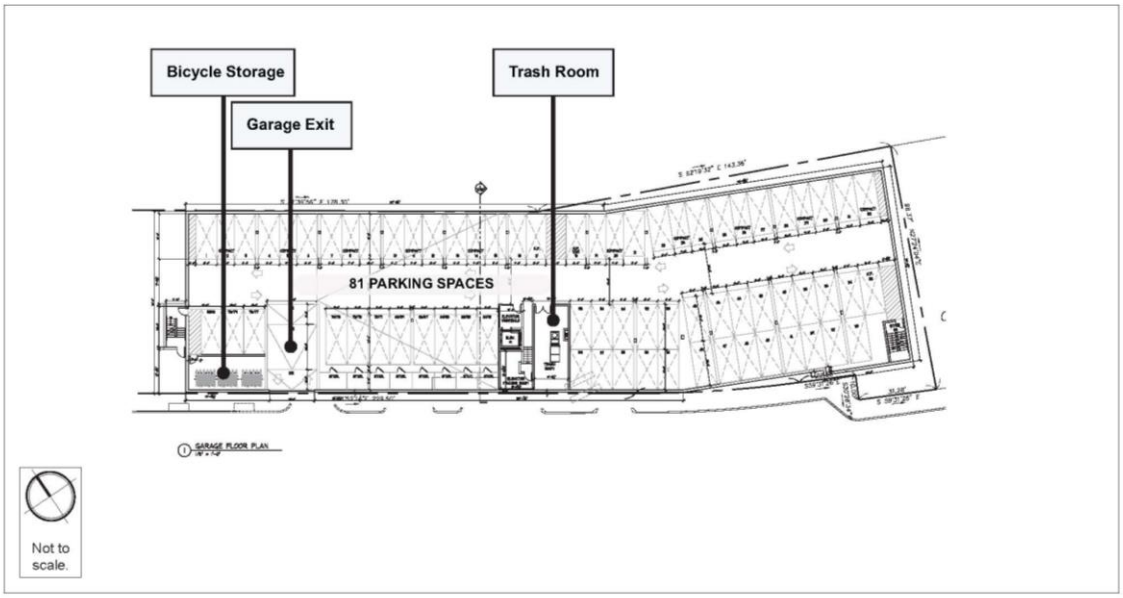
Figure 2-10 Site Access Plan – Garage Level



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2.1.4.6 Trip Generation Methodology

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

To estimate the number of trips expected to be generated by the Project, data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual*[1] were used. ITE provides data to estimate the total number of unadjusted vehicular trips associated with the Project. In an urban setting well-served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit.
To estimate the unadjusted number of vehicular trips for the Project, the following ITE land use codes (LUCs) were used:

Residential Uses: LUC 220 – Apartment. The apartment land use is defined as rental dwellings located within the same building with at least three other dwelling units. Trip generation estimates are based on average vehicle rates per unit. The Apartment land use code was selected because it has slightly

[1] *Trip Generation Manual*, 9th Edition; Institute of Transportation Engineers; Washington, D.C.; 2012.

higher trip generation rates than the other similar residential land uses provided in the *Trip Generation Manual* and presents a more conservative scenario.

2.1.4.7 Mode Share

The BTD publishes vehicle, transit, and walking/bicycling mode split rates for different areas of Boston. The Project site is located within BTD's designated Area 19. The unadjusted vehicular trips were converted to person trips by using vehicle occupancy rates published by the Federal Highway Administration (FHWA)[2]. The BTD's travel mode share data for Area 19 are shown in **Table 2-6**.

Table 2-6 Travel Mode Shares

Land Use	Direction	Transit Share	Walk/ Bicycle Share	Auto Share	Vehicle Occupancy Rate
Daily					
Residential	In	8%	8%	84%	1.13
	Out	8%	8%	84%	1.13
a.m. Peak Hour					
Residential	In	9%	11%	80%	1.13
	Out	19%	8%	73%	1.13
p.m. Peak Hour					
Residential	In	19%	8%	73%	1.13
	Out	9%	11%	80%	1.13

2.1.4.8 Trip Generation

The mode share percentages shown in **Table 2-6** were applied to the number of person trips to develop walk/bicycle, transit, and vehicle trip generation estimates. The existing uses on the Project site currently generate no traffic volumes and were not accounted for in the trip generation estimates. The trip generation for the Project by mode is shown in **Table 2-7**. The detailed trip generation information is provided in the Appendix.

2.1.4.9 Vehicle Trip Generation

To develop the overall trip generation characteristics, the adjusted vehicular trips associated with the Project were estimated. The Project-generated new vehicle trips are summarized in **Table 2-8**, with the detailed trip generation information provided in the Appendix.

As shown in **Table 2-8**, the Project is expected to generate approximately 348 new daily vehicle trips (174 entering and exiting), with 20 new vehicle trips (4 entering and 16 exiting) during the a.m. peak hour, approximately 1 new vehicle trip every 3 minutes, and 33 new vehicle trips (21 entering and 12 exiting) during the p.m. peak hour, approximately 1 new vehicle trip every 2 minutes.

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

Table 2-7 Project Trip Generation

Land Use		Transit Trips	Walk/ Bicycle Trips	Vehicle Trips
Daily				
Residential[1] *48 units*	In	19	19	174
	Out	19	19	174
	Total	**38**	**38**	**348**
a.m. Peak Hour				
Residential[1] *48 units*	In	1	1	6
	Out	5	2	16
	Total	**6**	**3**	**20**
p.m. Peak Hour				
Residential[1] *48 units*	In	6	3	21
	Out	2	2	12
	Total	**8**	**5**	**33**

1 Based on ITE LUC 220 – Apartments for 48 units.

Table 2-8 Project Vehicle Trip Generation

Time Period	Direction	Residential [1]
Daily	In	174
	Out	174
	Total	**348**
a.m. Peak Hour	In	4
	Out	16
	Total	**20**
p.m. Peak Hour	In	21
	Out	12
	Total	**33**

1 Based on ITE LUC 220 – Apartments for 48 units.

2.1.4.10 Trip Distribution

The trip distribution identifies the various travel paths for vehicles arriving and leaving the Project site. Trip distribution patterns for the Project were based on BTD's origin-destination data for Area 19 and trip distribution patterns presented in traffic studies for nearby projects. The trip distribution patterns for the Project are illustrated in **Figure 2-11**.

The Project-generated vehicle trips were assigned to the study area roadway network based on the trip distribution patterns shown in **Figure 2-11**, and are shown in **Figure 2-12** and **Figure 2-13** for the a.m. and p.m. peak hours, respectively. The Project-generated trips were added to the 2019 No-Build conditions traffic volumes to develop the 2019 Build conditions peak hour traffic volume networks and are shown in **Figure 2-14** and **Figure 2-15** for the a.m. and p.m. peak hours, respectively.

Figure 2-11 Trip Distribution

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Figure 2-12 Project Generated Trips, a.m. Peak Hour

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Figure 2-13 Project Generated Trips, p.m. Peak Hour

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Figure 2-14 Build Conditions (2019) Turning Movement Volumes, a.m. Peak Hour

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Figure 2-15 Build Conditions (2019) Turning Movement Volumes, p.m. Peak Hour

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2.1.4.11 Build Conditions Traffic Operations

The 2019 Build conditions scenario analyses use the same methodology as the 2014 Existing and 2019 No Build conditions scenario analyses. The results of the 2019 Build condition traffic analysis at study area intersections are presented in **Table 2-9** and **Table 2-10** for the a.m. and p.m. peak hours, respectively. The detailed analysis sheets are provided in the Appendix.

As shown in **Table 9 and Table 10**, under the 2019 Build conditions, the study area intersections operate at the same LOS as under the 2019 No-Build conditions during the a.m. peak hour and p.m. peak hour, respectively. The proposed unsignalized intersection of LaGrange Street/Site Driveway operates at LOS C or better during a.m. and p.m. peak hours, and is expected to have minimal impact upon Lagrange Street.

Based on the results presented in **Table 2-9** and **Table 2-10**, the Project generally has minimal impact at the intersections throughout the study area.

Table 2-9 Build Conditions (2019), Capacity Analysis Summary, a.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**D**	**48.1**	—	—	—
Lagrange Street EB left	E	72.7	0.67	31	#89
Lagrange Street EB thru/right	D	44.2	0.73	184	255
Lagrange Street WB left	E	64.2	0.78	76	#134
Lagrange Street WB thru/right	E	68.4	0.95	268	#438
Centre Street NB left	D	46.3	0.75	97	#234
Centre Street NB thru | thru/right	D	46.2	0.88	~460	#467
Centre Street SB left	D	36.9	0.55	41	64
Centre Street SB thru | thru/right	D	35.5	0.60	203	#268
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	—	—	—	—	—
Lagrange Street EB thru/right	A	0.0	0.24	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1
Lagrange Street/Site Drive	—	—	—	—	—
Lagrange Street EB left/thru	A	0.0	0.00	—	0
Lagrange Street WB thru/right	A	0.0	0.32	—	0
Site Drive SB left/right	C	16.1	0.05	—	4

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically infinite.

Table 2-10 Build Conditions (2019), Capacity Analysis Summary, p.m. Peak Hour

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
Signalized Intersections					
Lagrange Street/Centre Street	**E**	**65.4**	—	—	—
Lagrange Street EB left	D	36.3	0.42	62	114
Lagrange Street EB thru/right	F	>80.0	>1.00	~407	#571
Lagrange Street WB left	F	>80.0	>1.00	~60	#149
Lagrange Street WB thru/right	C	34.2	0.46	131	207
Centre Street NB left	D	38.5	0.53	43	67
Centre Street NB thru | thru/right	D	52.5	0.88	~333	#456
Centre Street SB left	E	63.1	0.79	61	#134
Centre Street SB thru | thru/right	E	63.5	0.97	~434	#543
Unsignalized Intersections					
Lagrange Street/MBTA Commuter Rail Parking Lot	—	—	—	—	—
Lagrange Street EB thru/right	A	0.0	0.35	—	0
Lagrange Street WB left/thru	A	0.3	0.01	—	1
Lagrange Street/Site Drive	—	—	—	—	—
Lagrange Street EB left/thru	A	0.1	0.00	—	0
Lagrange Street WB thru/right	A	0.0	0.17	—	0
Site Drive SB left/right	C	15.3	0.04	—	3

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically infinite.

2.1.4.12 Parking

This section presents the Project's parking supply and an evaluation of the Project's parking demand. The Project will provide a total of approximately 81 parking spaces on the site in a partially below-grade garage, resulting in a parking ratio of 1.69 spaces per market rate unit.

2.1.4.13 Public Transportation

As previously discussed, the Project is ideally situated to take advantage of nearby public transportation opportunities. The West Roxbury Station provides convenient access to the MBTA Commuter Rail Line. Based on the transit mode shares presented earlier, the future transit trips associated with the Project were estimated and are summarized in **Table 2-11**.

As shown in **Table 2-11**, the Project will generate an estimated 38 new transit trips on a daily basis. Approximately 6 new transit trips (1 alighting and 5 boarding) will occur during the a.m. peak hour and 8 new trips (6 alighting and 2 boarding) will occur during the p.m. peak hour.
These transit trips will be accommodated by the MBTA Commuter Rail Line at West Roxbury Station, as well as via the MBTA bus routes that run along Lagrange Street and Centre Street.

Table 2-11 Project Transit Trips

Time Period	Direction	Residential
Daily	In	19
	Out	19
	Total	**38**
a.m. Peak Hour	In	1
	Out	5
	Total	**6**
p.m. Peak Hour	In	6
	Out	2
	Total	**8**

2.1.4.14 Pedestrians

Based on the walk mode shares presented earlier, the future walk trips were estimated and are summarized in **Table 2-12**.

Table 2-12 Project Pedestrian Trips

Time Period	Direction	Residential
Daily	In	18
	Out	18
	Total	**36**
a.m. Peak Hour	In	1
	Out	2
	Total	**3**
p.m. Peak Hour	In	2
	Out	2
	Total	**4**

Over the course of a day, the Project will generate an estimated 36 new pedestrian trips and an additional 38 new transit trips that will require a walk to or from the site. This results in an additional 74 new pedestrian trips per day. Approximately 3 new pedestrian trips will occur during the a.m. peak hour and 4 new pedestrian trips will occur during the p.m. peak hour in addition to the transit trips that will also require a walk from the site. The pedestrian facilities surrounding the site have adequate capacity to accommodate the pedestrian trips generated by the Project.

The Proponent is proposing to upgrade all sidewalks that are immediately adjacent to the Project site in accordance with the City of Boston's Complete Streets guidelines. These improvements will enhance the overall pedestrian network along Lagrange Street and will provide additional benefit to residents, commuters, and businesses in the vicinity of the Project.

2.1.4.15 Bicycle Accommodations

BTD has established guidelines requiring projects subject to Transportation Access Plan Agreements to provide secure covered bicycle parking for residents and employees, and short-term bicycle racks for visitors. The Project will provide approximately 48 covered and secure bicycle storage spaces on-site in the garage. Additional storage will be provided by outdoor bicycle racks accessible to visitors to the site in accordance with BTD guidelines.

All bicycle racks, signs, and parking areas will conform to BTD guidelines and will be located in safe, secure locations. The Proponent will work with BTD to identify the most appropriate quantity and location for bicycle racks on the Project site as part of the Transportation Access Plan Agreement process.

2.1.4.16 Loading and Service Activity

All loading, service, and trash/recycling activity will take place along Lagrange Street. Move-in/move-out activity will also take place along Lagrange Street. Residents can obtain street occupancy permits from the City of Boston to reserve curb space for moving purposes. The level of loading and service activity at the site is expected to be minimal and will have little impact to the public sidewalk, parking activity, and roadway.

A summary of anticipated loading/service activity by land use was developed; the sources of the assumptions are presented below. Delivery trip estimates were based on data provided in the Truck Trip Generation Rates by Land Use in the Central Artery/Tunnel Project Study Area report[3]. Deliveries to the Project site will be limited to SU-36 trucks and smaller delivery vehicles.

Residential. Residential units primarily generate delivery trips related to small packages and prepared food. Based on the CTPS report, residential uses generate approximately 0.01 light truck trips per 1,000 sf of gross floor area and 0.001 medium/heavy truck trips per 1,000 sf of gross floor area.

The Project is expected to generate approximately 1 to 2 deliveries per day. It is anticipated that the majority of these deliveries will occur between 7:00 a.m. and 1:00 p.m. These numbers do not include trash truck trips. The low number of anticipated deliveries will have minimal impact on the vehicular operations along Lagrange Street.

2.1.5 Transportation Mitigation Measures

While the traffic impacts associated with the new trips are minimal, the Proponent will continue to work with the City of Boston to create a Project that efficiently serves vehicle trips, improves the

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

pedestrian environment, and encourages transit and bicycle use. As part of the Project, the Proponent will bring all abutting sidewalks and pedestrian ramps to the City of Boston standards in accordance with the Boston Complete Streets design guidelines.

The Proponent is also recommending the implementation of an optimal traffic signal timing and phasing plan at the intersection of Lagrange Street/Centre Street to provide more efficient traffic flow. Currently, the Lagrange Street approaches have exclusive left-turn lanes; however, the left-turns along Lagrange Street are not provided an exclusive left-turn phase. Left-turns along Lagrange Street currently operate as a permissive phase that must yield to the opposing through traffic movements. Due to this phasing configuration, left-turns along Lagrange Street are difficult during the peak hours. The Proponent recommends providing a phasing plan that includes exclusive left-turn phases followed by an exclusive/permissive phase. A traffic operations analysis was conducted for the intersection of Lagrange Street/Centre Street with a new phasing and timing plan. The results of the analysis are presented in Table 13.

Table 2-13 Build with Mitigation Conditions (2019), Capacity Analysis Summary

Intersection	LOS	Delay (seconds)	V/C Ratio	50th Percentile Queue Length (ft)	95th Percentile Queue Length (ft)
a.m. Peak Hours					
Lagrange Street/Centre Street		**51.7**	—	—	—
Lagrange Street EB left	C	28.3	0.33	25	50
Lagrange Street EB thru/right	E	55.9	0.81	209	284
Lagrange Street WB left	C	32.7	0.52	62	91
Lagrange Street WB thru/right	E	76.1	0.97	305	#491
Centre Street NB left	D	44.9	0.74	112	#218
Centre Street NB thru | thru/right	D	51.9	0.91	~521	#521
Centre Street SB left	C	31.2	0.41	47	72
Centre Street SB thru | thru/right	D	43.5	0.68	~265	#334
Unsignalized Intersections					
Lagrange Street/Centre Street	E	66.3	—	—	—
Lagrange Street EB left	C	29.3	0.31	66	106
LaGrange Street EB thru/right	E	78.3	0.96	490	#665
Lagrange Street WB left	C	32.4	0.41	44	75
LaGrange Street WB thru/right	D	40.0	0.41	170	250
Centre Street NB left	D	50.5	0.58	60	86
Centre Street NB thru | thru/right	E	60.5	0.84	416	#557
Centre Street SB left	E	54.8	0.76	86	#156
Centre Street SB thru | thru/right	E	73.0	0.96	~553	#664

= 95th percentile volume exceeds capacity. Queue may be longer. Queue shown is the maximum after two cycles.
~ = Volume exceeds capacity, queue is theoretically

As shown in **Table 2-13**, the intersection of Lagrange Street/Centre Street is shown to continue to operate at an overall LOS D during the a.m. peak hour and LOS E during the p.m. peak hour. The

Lagrange Street eastbound left-turn movements were shown to improve from LOS E to LOS C during the a.m. peak hour and from LOS D to LOS C during the p.m. peak hour with the proposed phasing and timing plan. The LaGrange Street westbound movements were shown to improve from LOS E to LOS C during the a.m. peak hour and from LOS F to LOS C during the p.m. peak hour with the proposed phasing and timing plan when compared to the 2019 Build conditions scenario analysis. It is expected that the proposed phasing will allow the left-turns along LaGrange Street to operate more efficiently during the peak periods, allowing easier access to Centre Street northbound and southbound.

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

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

2.1.6 Transportation Demand Management

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

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

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

- **Orientation Packets**: The Proponent will provide orientation packets to new residents containing information on available transportation choices, including transit routes/schedules and nearby

vehicle sharing and bicycle sharing locations, if applicable. On-site management will work with residents as they move in to help facilitate transportation for new arrivals.

- **Bicycle Accommodation**: The Proponent will provide bicycle storage in secure, sheltered areas for residents. Subject to necessary approvals, public use bicycle racks for visitors will be placed near building entrances.

- **Transportation Coordinator**: The Proponent will designate a transportation coordinator to oversee transportation issues, including parking, service and loading, and deliveries, and will work with residents as they move in to raise awareness of public transportation, bicycling, and walking opportunities.

- **Project Web Site**: The web site will include transportation-related information for residents, workers, and visitors.

- **Electric Charging Stations**: The Proponent will provide one electric vehicle charging station on the site.

- **Priority Parking Spaces**: The Proponent will provide priority parking spaces for hybrid and electric vehicles on the site.

- **Vehicle Sharing Program**: The Proponent will explore the feasibility of providing spaces in the garage for a car sharing service.

2.1.7 Evaluation of Short-term Construction Impacts

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

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

- Construction workers will be encouraged to use public transportation and/or carpool;

- A subsidy for MBTA passes will be considered for full-time employees; and

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

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

2.1.7.1 Construction Management

A Construction Management Plan will address construction-period issues and will be submitted by the general contractor to BTD in support of the building permit application. The Construction Management Plan will cover issues including truck routes, occupancy of public ways, noise and dust attenuation and hours of construction activity.

APPENDIX (see attached CD)

- Turning movement traffic counts
- Synchro traffic analysis files
- Trip generation calculations

2.2 Environmental Protection

2.2.1 Wind

The objective of a Wind Assessment is to determine the effect a proposed development would have on the pedestrian level winds in the vicinity of the Project. The primary criteria used to determine impacts are the surrounding terrain and the height and façade treatment of a proposed building. This analysis is required for new developments of 150' and taller.

The Project will be a three story building reaching a height of approximately 35 feet on the La Grange Street frontage. Wind speed increases with height so that the taller the building, the greater the potential to accelerate pedestrian level winds at the lower levels of a building, particularly the corners. At 35 feet, the height of the proposed project is not expected to create any deterioration of pedestrian level winds on the project site or the immediate vicinity. As a result, quantitative and qualitative wind studies should not be required

2.2.2 Shadow

A shadow study indicates the potential impact of the Project on adjacent public spaces and properties. The Project is in a moderately developed sub-urban area consisting of one, two and three story residential, commercial and institutional buildings. The site is currently developed by a series of commercial buildings that are of similar scale to the proposed Project.

At three stories (35 feet), the Project will not create significant new shadows on the existing structures and private open spaces. The Project is south of the Westerly Burial Ground and will cast minimal new shadow on this open space throughout the day during all studied periods. However, these shadows will be similar to those cast by the existing structures that are of similar height and closer to the property line of the Burial ground. As a result, the proposed development will have minimal net new impact on the historic open space or on the adjacent sidewalks and public ways.

2.2.3 Daylight

The purpose of the daylight study is to estimate the extent to which the Proposed Project restricts the amount of light reaching the streets or pedestrian ways in the immediate vicinity of the Project Site.

The impact is based on the length of façade on the public streets and the change in height of the facade from the existing condition.

In the case of the Proposed Project, the proposed building will have a similar site coverage as compared to the existing structures. The building heights of both the existing and proposed structures vary with the existing two story commercial buildings averaging approximately 30 feet and the proposed structure is slightly taller at 35 feet. The building does utilize a mansard roof which slightly modifies the Daylight impact. The project does conform to the existing zoning height limits so the daylight "obstruction" is basically an as-of-right impact.

As a result, the daylight obstruction value on the sky dome on both La Grange and Centre Streets will be relatively low. It is concluded that a quantitative BRADA study would provide little additional information and should not be required.

2.2.4 Solar Glare

The Solar Glare Analysis is intended to measure potential glare from buildings onto streets, public spaces and sidewalks in order to determine the potential visual impact or discomfort due to reflective spot glare as well as heat build-up on adjacent buildings. This analysis is required if a proposed project incorporates substantial glass facades as a part of the design.

The Project is not expected to have adverse solar impacts for several reasons. The Project will not significantly alter the percentage of glazing from the existing condition. The primary exterior material will be wood clapboards painted in neutral tones that produce minimal reflectance. Also, the Project will no be using reflective glass or other reflective materials.

With regard to solar gain impacts, the adjacent residential buildings are similar in height to the base of the existing structure so any reflectance from the windows is unlikely to reach those structures. Since reflected materials are not planned for the roof area or any new or existing window openings that might be attributed to reflecting sunlight on to adjacent structures, it would not be possible for the redevelopment to create significant solar impact and those created would be similar to the existing condition. As a result, solar reflectance from the building would be limited.

Since the Project will not use reflective glass or other reflective materials on the building facades, there should not be any adverse impacts from reflected solar glare on adjacent buildings, streets and sidewalks.

2.2.5 Air Quality

Potential long-term air quality impacts are generally attributed to emissions from project-related mechanical equipment and pollutant emissions from vehicular traffic attributed to the proposed development.

HVAC Equipment will be gas-fired boilers that would not create elevated carbon monoxide levels and would not trigger microscale air quality analysis.

Regarding potential vehicle related impacts, the traffic analysis (Section 3.1) shows that intersections in the vicinity of the Project do not have a failing level of service and therefore do not meet the DEP/BRA criteria for a microscale analysis to determine potential exceedances of the NAAQS thresholds. Since the Project will not result in a deterioration of intersection level of service that could result in exceedances of the air quality standards, a microscale air quality analysis would not be required.

The Project will have an underground parking garage. This facility will be mechanically vented with a roof-top exhaust. Carbon Monoxide monitors and alarms will be provided to insure the safety of the residents and occupants of the commercial space.

2.2.6 Stormwater/Water Quality

The Project will not affect the water quality of nearby water bodies. In general, the Project will comply with the Boston Water and Sewer Commission's regulations and standards regarding the design of the storm drainage system including methods to reduce the peak rates of runoff and improve the quality of the stormwater. The Project calls for the replacement of an existing building that has a slightly larger site coverage than the proposed build condition and as a result will not increase the amount of impervious area. Also, the existing impervious areas will be reduced by creating additional landscaped open space.

The stormwater runoff will be managed through a recharge system that will utilize the newly create perimeter open space and landscape buffers and areas under the garage level. Overflows will utilize new connections to the Boston Water and Sewer Commission's drain lines under LaGrange Street discontinuing the current system of discharging building storm drains into the sanitary sewer system and the Westerly Burial Ground.

An oil and grease separator will be provided in the garage as required to improve water quality prior to discharge into the sanitary sewer. Additionally, sediment and construction materials will be controlled during construction through a combination of hay bales, silt fence and catch basin filters.

The Project will yield a decrease in peak discharge rates and volumes of run-off and improve ground water recharge. This is accomplished primarily by installing a stormwater infiltration system.

2.2.7 Stormwater Management Standards

A brief explanation of the DEP Stormwater Management Policy Standard as adopted by the BWSC and the system compliance is provided in Section 2.5.3.1 Stormwater System.

2.2.8 Flood Hazard Zones/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Site located in the City of Boston - Community Panel Number 250286 0014 G indicates the FEMA Flood Zone Designations for the Site area. The map shows that the Project is not located in a FEMA 100 year flood plain.

The Site is developed and does not contain wetlands.

2.2.9 Geotechnical/Groundwater

This section addresses the below-grade construction activities anticipated for the Project. It discusses existing soil and groundwater conditions, anticipated foundation construction methods and excavation work anticipated for the Project based on available subsurface information and a conceptual foundation design study.

Exploratory borings indicate that the site is composed of several feet of sand over glacial till presumably allowing for a simple spread footing or matte foundation system. The depth of sand will also allow for simple cut excavation to accommodate the sublevel parking garage. The exact excavation process cannot be determined until the existing structures have been demolished and borings are taken across the entire site. However the Project will be preparing a Construction Management Plan that will include mitigation for the possible discovery of conditions that would require either removal of ledge or the setting of driven piles so as to insure the impacts on the quality of life of area residents is minimized and that construction activities comply with all applicable Environment Department standards for noise and vibration. If required, the Construction Manager will take all appropriate actions to insure abutting structures are not impacted including pre-construction surveys.

The Project specifications will include provisions for sheeting and other excavating activities with specific attention paid to the abutting Westerly Burial Ground. All appropriate sets will be taken to insure historic markers and graves are not damaged or disturbed.

Initial geotechnical analysis indicates the Project Site is not located within area monitored by the Boston Ground Water Trust so review and permitting by this organization is not required. Test borings sis encounter ground water at depths of 5.70 -12.35 feet below ground surface an as a result ground water dewatering may or may not be required during excavation. Project specifications will include provisions for remedial measures for the contractor to implement to mitigate any movement or lowering of groundwater levels should conditions warrant. Foundation excavation will be observed by an experienced geotechnical engineer for compliance with project specifications. The Proponent will secure all necessary construction dewatering and related permits from the City (BWSC) and State (MWRA) as required.

2.2.10 Solid and Hazardous Wastes

2.2.10.1 Existing Hazardous Waste Conditions

A Phase I Site Assessment with subsurface investigation was conducted in February 2001. Contamination was identified in groundwater above reportable concentrations and Release Tracking Number (RTN) 3-0020561 was issued by the MADEP. A Downgradient Property Status (DPS) was filed in April 2001, as the release was attributed to an upgradient property. In November 2009, a subsurface investigation was conducted by Coneco. Lord Associates and a subsequent investigation was conducted in November 2013 by Lord Associates. No underground storage tanks are known to be currently or historically located at the site. Based on known site conditions it is likely

the proponent will contract a Licensed Site Profesional (LSP) to conduct additional site investigations in support of a Response Action Outcome (RAO).

The Proponent will retain a licensed site professional to monitor all remediation and cleanup operations and will insure that all monitoring and reporting requirements are followed. All soils removed from the site during construction will be managed for off-site disposal in accordance the current regulations and policies of the Massachusetts DEP.

2.2.10.2 Operational Solid and Hazardous Wastes

The Project will generate solid waste typical of other residential projects. . The Project will construct a trash cute for non-recyclable waste with access from each floor that will terminate at the basement level where a waste compactor will be located. Non-recyclable waste and compacted material will be removed by a waste hauler contracted by the Project.

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

With the exception of "household hazardous wastes" typical of residential use (for example, cleaning fluids and paint), the residences will not generate hazardous waste.

2.2.11 Noise/Vibration

The noise analysis would be required to determine if the project generated noise, principally from the roof mounted HVAC equipment, would exceed the City of Boston Noise Zoning District Noise Standards for nighttime and residential zones, which are the most stringent of the applicable standards. The primary source of sound exterior to the Project will be the cooling towers that would be mounted on the roof. Noise generated from any rooftop units must be addressed, as the Site is within a residential neighborhood with existing residential buildings to the south and west.

The Project is too early in the design and permitting process to determine what the equipment requirements and the associated sound generation would be and, as a result, noise analysis is not available at this time. However, since the Project intends to use water source heat pumps to heat and cool the condominiums (reducing the size requirements for the roof-top HVAC equipment) and any equipment would be screened with sound attenuation devises, the Project's mechanical equipment is not expected to result in a perceptible change in background noise levels. If required, a supplemental noise analysis can be prepared to insure the Project's compliance with the City of Boston Noise Ordinance.

2.2.12 Construction Impacts

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 include:

- A Construction Activity Schedule
- Defined Construction Staging Areas
- Parameters for the Demolition Phase
- Guidelines for Perimeter Protection/Public Safety
- Material Handling and Construction Waste Plan
- Construction Traffic Management including Worker Parking and Truck Routes
- Construction Air Quality and Noise management and mitigation

The Proponent will comply with all applicable state and local regulations governing construction of the Proposed Project. The Proponent will require that the general contractor comply with the Construction Management Plan, ("CMP") developed in consultation with and approved by the Boston Transportation Department ("BTD"), prior to the commencement of construction. The construction manager will be bound by the CMP, which will establish the guidelines for the duration of the Project and will include specific mitigation measures and staging plans to minimize impacts on abutters.

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.

2.2.13 Rodent Control

The City of Boston has declared that the infestation of rodents in the City is a serious problem. In order to control this infestation, the City of enforces the requirements established under the Massachusetts State Sanitary Code, Chapter 11, 105 CMR 410.550 and the State Building Code, Section 108.6. Policy Number 87-4 (City of Boston) established that extermination of rodents shall be required for issuance of permits of demolition, excavation, foundation, and basement rehabilitation.

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 proposed Project, in compliance with the City's requirements. Rodent extermination prior to work start-up will consist of treatment of areas throughout the Site. During the construction process, regular service visits will be made by a certified rodent control firm to monitor the situation..

2.2.14 Wildlife Habitat

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

2.3 Urban Design

2.3.1 Design Theme

The goal of the proposed development is to redevelop an underutilized site in the West Roxbury neighborhood into multifamily housing of a density that contributes to the Centre Street Main Street neighborhood commercial district as well as creates a transit oriented development that takes advantage of the adjacent West Roxbury commuter rail stations. The building will be compatible to the existing residential neighborhood in style and scale and the use of underground parking will minimize any potential impact on existing parking resources as well as reduce its overall height.

Our site, the former Pharmacitical manufacturing facility, was constructed in multiple phases with the oldest dating to 1899. The site is most closely related to the Main Street shopping district on Centre Street – much more so than the single family residential neighborhoods that are further west on LaGrange or to the east also on LaGrange but on the other side of Centre Street. The site is truly part of a more condense "Town Centre" with immediate access to shopping, transit, public open space and other community facilities. It is in a prime location for a higher density multi-family style development.

The current commercial/light industrial use that has long occupied the site represents an activity that is no longer the highest and best for this site nor for the longer term interests of the community as a whole. Therefore, the design theme for our proposed building is to introduce a use and building form that will extend the intimate Main Street character of Centre Street down LaGrange to the MBTA Station and beyond.

2.3.2 Site Plan

This underutilized site sits at the edge of two important suburban typologies – the "small town Main Street of Centre Street and the single family residential neighborhood west of the rail line. It creates the opportunity to bridge these two areas reinforcing the Main Street objective of maintaining a pleasant pedestrian environment and building on the Transit Oriented Development principles advocated under the Commonwealth's Smart Growth policies.

The building is oriented linearly to the street ideal for a double loaded corridor apartment style typology. A benefit of the current building orientation is that it establishes a strong building/street relationship typical of residential apartment style buildings throughout the city. This strengthens the pedestrian corridor from Centre to the MBTA Station and into the neighborhood putting "eyes on the street" – a major objective of defensible streets.

The street facade will continue the existing street wall only more uniform eliminating random parking that inhibits pedestrian circulation along LaGrange. The side and rear setbacks create some breathing space between the MBTA right-of-way and the Historic Westerly Burial Ground. The east/ west orientation of the building provides the additional benefit of balancing both direct and indirect natural light to units of both sides of the double loaded corridor and minimizes direct solar gain in the summer and harsh north winds in the winter.

The residential entrance will be mid-block along LaGrange and accented by a Tower reminiscent of that feature currently found on the existing structures. The main parking access is at the western end of the building providing sufficient distance from the LaGrange Centre Street intersection so as to minimize conflicts at the LaGrange/Centre intersection.

There is an opportunity for the residents to have direct access to the burial ground via the covered courtyard which would improve access and ownership of this historic space. The relationship to the burial ground must still be coordinated with the City's Parks Department and other historic resources groups. There is an opportunity to create private yards with personal planting beds for the ground floor units facing the burial ground making that narrow rear setback more usable and creating a better condition for those particular units.

Privacy for the ground floor units facing LaGrange will be managed by either providing landscaped setbacks for the units closest to Centre Street or raising the units up off the street where space for setbacks is limited. Pedestrian amenities including street trees, period lighting and specialty paving will be provided on LaGrange consistent with the City's Complete Streets Guidelines.

2.3.3 Height, Massing and Façade Treatment

In terms of building massing, height, façade treatment and landscape features, the intent of the new design is to create a residential building that transitions from the traditional Main Street Business district to the streetcar suburb pattern of residential development that extends both east and west along La Grange Street. To fulfill this purpose, the new design is similar in scale, and siting to its immediate abutters

The new building design reflects the height and massing of its neighboring buildings and responds to the characteristic street walls of the surrounding Main Street corridor. In its simplified way it responds to the fundamental architectural character of adjacent residential neighbors with the wood façade and uses detailing elements of the mansard, projecting bays, dormers and gables to break-up the long façade and be more in scale with the single family neighborhood.

The overall building will be compatible with its neighbors in similar height, shape, form and texture. The window and bay proportion will be vertical in orientation and will be consistent in size and proportion to the fenestration patterns of the existing residential buildings in the …

Wood clapboards, mansard roof, gables and replica tower reflect the rich texture of abutting buildings but will be of a more modern and simple decorative theme. The building proportions and details will be in keeping with the "low-rise condominium develops being constructed in much of West Roxbury.

2.4 Historic and Archaeological Resources

The site is currently improved with a series of one and two story light industrial buildings that have most recently been occupied by a pharmaceutical company. These buildings were constructed

between 1899 and 1950. The Site was first improved in the 1700s and up until 1898 was occupied by the Billings Sheepskin Factory. Prior to its use by the Armstrong Pharmaceutical Company, the buildings housed the Armstrong Knitting Company and a tannery. There are no records of the historical significance of the buildings in either the Environment Department's historic buildings survey files or the Inventory of Historic and Archeological Assets of the Commonwealth.

2.4.1 Historic Resources proximate to the Site

The Proposed Project is located in the West Roxbury Neighborhood of Boston and there are no designated Historic Districts within quarter mile of the site. The only significant historic resource directly impacted by the proposed development is the Westerly Burial Ground. The Theodore Parker Unitarian Church is in the area but not visible form the site.

The Westerly Burying Ground, (currently at Centre and Lagrange Streets) was established in 1683 to permit local burial of residents of Jamaica Plain and the western end of Roxbury. When West Roxbury was still part of Roxbury, the town's first burial place was today's Eliot Burying Ground, near the present-day Dudley Square. This was a long distance to travel for the inhabitants of West Roxbury and in 1683 the town selectmen voted to establish a local burying place, now known as Westerly Burying Ground.

Westerly Burying Ground served as this community's burial place well into the 19th century. The oldest graves contain many of the town's earliest and most prominent families. Eight veterans of the American Revolution and fifteen veterans of the American Civil War are also buried here. War veterans interred are detailed in the article *"Westerly" and the Civil War*.

The site is significant for its large collection of three centuries of funerary art. One-third of its extant gravestones date from the 18th century; almost half date from the 19th century and only about twenty bear 20th-century dates. Another distinguishing feature of Westerly Burying Ground is the number of individual mound tombs found here. Mound tombs at other burying grounds are typically larger, built to contain a number of bodies. The oldest gravestone, from 1691, commemorates James and Merriam Draper, members of a prominent West Roxbury family. Headstones provide an historic record of three centuries of West Roxbury residents and also illustrate the skills of local stone carvers.

The cemetery was added to the National register of Historic Places in 1987. The cemetery directly abuts the Project.

At Centre and Corey Streets, the **Theodore Parker Unitarian Church** features seven stained glass windows made by the Tiffany Studios between 1894 and 1927. The original church, designed in 1890 by Alexander Wadsworth Longfellow, Jr., is now a parish hall. Henry Seaver designed the current church in 1900. Theodore Parker (1810–1860), an advocate of progressive religious ideas, abolitionism and women's suffrage, was minister of this Unitarian congregation from 1837 to 1846. The Church has been designated a Boston Landmark in 1985.

This structure is sufficiently removed from the Project and will not be impacted by the Proposed Project.

3.4.2 Archaeological Resources

The Site consists of a previously developed urban parcel. Due to previous development activities and disturbances, it is expected that the Site does not contain significant archaeological resources. The site abuts the Westerly Burial Ground, which is a National Register Individual Property.

3.4.3 Impacts to Historic Resources

The Proposed Project is located in an area of the City that has a rich historic and architectural history most importantly being located adjacent to the Westerly Burial Ground, a National Register Individual Property. The Proposed Project will replace a series of light industrial building creating a much improved edge condition for this historic resource. This will insure that the Project is in keeping with the historic district's existing urban scale and building geometries. The Project will be reviewed by the Boston Landmarks Commission as required by State statute further insuring it will not have an impact on historic resources of West Roxbury specifically or the City in its entirety.

2.5 Infrastructure Systems

The following sections describe the existing water, sewer, and drainage systems surrounding the Site and explain how these systems will service the Project.

2.5.1 Sewage System

2.5.1.1 Existing Conditions

The existing site is connected to water and sanitary sewer lines in Bunker Hill Street. The site is also connected to natural gas supply lines in the same location. These services lines will be abandoned replaced with new connections to meet the capacity requirements of the proposed use.

2.5.1.2 Proposed Sewage Generation

The Project's sewage generation rates were estimated using Massachusetts State Environmental Code (Title 5) at 310 CMR 15.203. This reference lists typical values for the source listed in Table 2-12. Other wastewater generation includes the cooling system. As shown in Table 2-12, the Project will have average daily flows of approximately 7,480 gpd of sanitary sewage.

Table 2-12 Project Sewage Generation

Use	Number	Sewage Generation Rate	Total gpd
Studio, One, Two & Three Bedroom Units	68 bedrooms	110 GPD/BRM	7,480
Total			7,480

The net change in sewage generation is presented below in Table 2-13.

Table 2-13 Net Change in Sewage Generation

	Existing	Future	Net New Flow
Estimated Sewage Flow	0	7,480	7,480

2.5.1.3 System Connections

The Project will utilize existing public sanitary sewer lines to meet new program requirements minimizing required permits and approvals. All sewage flows will be kept separate from all storm drain service connections. All appropriate permits and approvals will be obtained prior to construction.

2.5.1.4 Sewer System Mitigation

Existing connections will be inspected and upgraded as required to comply with the BWSC Sewer Uses Regulations. Plumbing fixtures, including grease traps, deep sump catch basins and area drains and backflow valves will be installed as required to remove contaminants and sediments from the sewage before discharge into the BWSC sewer system. Storm Drain lines will not be connected to separated BWSC sanitary sewer systems.

2.5.2 Water Supply System

2.5.2.1 Existing Conditions

LaGrange Street contains a high water service main that is owned and operated by the BWSC. While it has not been confirmed that the site is currently served from this location the project's civil engineers assume future service will connect to this main.

2.5.2.2 Proposed Water System

The Project's water demand estimates for domestic sources are based on the Project's estimated sewage generation. A conservative factor of 1.1 is applied to the average daily wastewater flows to estimate the average water use on a daily basis. This factor accounts for consumption and other miscellaneous losses. Therefore, it is estimated that the Project will consume approximately 8,228 gpd of domestic water. The water will be supplied by the BWSC.

Water capacity and pressure are not anticipated to be an issue for the Project based on the projected domestic and fire protection water demands. BWSC record flow data and hydrant flow test will be used to confirm that there is enough pressure in the existing water system to support the Project's needs.

2.5.3 Stormwater System

2.5.3.1 Existing Condition

The existing streets adjacent to the Project contain storm drains owned and maintained by the BWSC. LaGrange Street contains separated storm and sanitary sewer lines that are believed to be of sufficient capacity to meet projected demands.

2.5.3.2 Proposed Stormwater System

The Project will utilize existing connections to the BWSC Drain System. A description of the future condition is provided in Section 2.2.6 Stormwater/Water Quality of this PNF. Additional information regarding stormwater management is contained in the following section 2.5.4.

2.5.4 Water Quality and Stormwater Management

The Project will not affect the water quality of nearby water bodies. There is expected to be minimal impact to the storm drain system due to erosion and sediment as the site will be encompassed with appropriate erosion control devices. The Project will minimize the transport of the soils and sediment to the Boston Water and Sewer Commission ("BWSC") storm drain system using BWSC, Department of Environmental Protection Agency ("DEP") and the Environmental Protection Agency ("EPA") Best Practices (BMPs") by protecting existing catch basins with filter fabric, hay bales and/or crushed stone to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until all areas of disturbance have been stabilized through the placement of pavement or vegetative cover.

Any dewatering will be conducted in accordance with a MWRA and BWSC discharge permit, the application for which is currently being prepared. Once construction is complete, the Project will be in compliance with all local and state stormwater management policies. See Section 2.5.5 below for additional information.

2.5.5 BWSC Stormwater Management Compliance

In January 2008, the DEP revised the Stormwater Management Policy. 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 (BMP's) in the stormwater management design. The Policy is administered locally pursuant to M.G.L. 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 proposed design will comply with this Standard. 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 proposed Project.

Standard #2: Stormwater management systems must be designed so that post-development peak discharge rates do not exceed pre-development peak discharge rates.

Compliance: The proposed design should not increase the impervious area compared to the pre-development condition. The Proponent review all mitigation options with the BWSC, including the use of a detention system, to manage the peak rate of runoff from the Site.

Standard #3: Loss of annual recharge to groundwater should be minimized through the use of infiltration measures to the maximum extent practicable. The annual recharge from the post development site should approximate the annual recharge from the pre-development or existing site conditions, based on soil types.

Compliance: The Project should not increase the impervious area compared to the pre-development condition. However, the plans will include a groundwater recharge system based on BWSC standards (One inch of water over the entire impervious area on the site.) Soil types to assess perk rates will be determined by test pits and standard field- testing procedures.

Standard #4: For new development, stormwater management systems must be designed to remove 80% of the average annual load (post-development conditions) of Total Suspended Solids (TSS). It is presumed that this standard is met when:

(a) Suitable nonstructural practices for source control and pollution prevention are implemented;

(b) Stormwater management best management practices (BMPs) are sized to capture the prescribed runoff volume; and

(c) Stormwater management BMPs are maintained as designed.

Compliance: Within the Project's limit of work, there will be mostly roof and balcony area. There will be no paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system. Therefore, no measures will need to be taken for water quality.

Standard #5: Stormwater discharges from areas with higher potential pollutant loads require the use of specific stormwater management BMPs (see chart on page 1-8). The use of infiltration practices without pretreatment is prohibited.

Compliance: The Project is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, Page 1-8). This Project complies with this standard.

Standard #6: Stormwater discharge to critical areas must utilize certain stormwater management BMPs approved for critical areas (see list on page 1-8). Critical areas are Outstanding Resource Waters (ORWs), shellfish beds, swimming beaches, cold-water fisheries and recharge areas for public water supplies.

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

Standard #7: Redevelopment of previously developed sites must meet the Stormwater Management Standards to the maximum extent practicable. However, if it is not practicable to meet all the Standards, new (retrofitted or expanded) stormwater management systems must be designed to improve existing conditions.

Compliance: The Project will meet or exceed all standards.

Standard #8: Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

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

Standard #9:A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

Compliance: The project will comply with this standard. A long term maintenance plan will be submitted to the Boston Water & sewer Commission for review and approval during the Site Plan Approval process.

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

Compliance: The project will comply with this standard.

2.5.6 Mitigation Measures

The peak rate of runoff will not exceed the existing rate as the amount of impervious surface on site will not be increased by this Project. However, several measures will be implemented to reduce storm water discharge in accordance with BWSC and DEP regulations including the addition of a landscaped courtyard. The Project is also reviewing the opportunity to install porous paving on exterior paved surfaces and a ground water recharge system under the sublevel parking structure to address BWSC objectives regarding ground water recharge.

2.5.7 Coordination with BWSC

Proposed connections to the Commission's water, sanitary sewer, and storm drain system will be designed in conformance with the Commission's design standards, Sewer Use and Water Distribution System Regulations, and Requirements for Site Plans. The Utility Contractor will submit a General Service Application and a site plan for review and approval prior to construction. The site plan will indicate the existing and proposed water mains, sanitary sewers, storm sewers, telephone, gas, electric, steam, and cable television. The plan will include the disconnections of the existing services as well as the proposed connections.

The applicant or proponent does not file the GSA application. Only a bonded, licensed Drain Layer can file this application.

2.6 Sustainable Design

2.6.1 Sustainable Design/ Green Building

All developments proposed in the City of Boston must now follow the Boston Green Building Regulations including standards established under Article 37 of the Boston Zoning Code. The Project as currently conceived will meet or exceed the U.S. Green Council's Leadership in Energy and Environmental Design (LEED) system to achieve a Silver standard. A summary of how the project addresses each checklist category is included below with an expanded version to be prepared in accordance with the Article 37 regulations. A Climate Change Preparedness Questionnaire and Accessibility Checklist will also be prepared and submitted to the Interagency Green Building Committee as required.

Our team is committed to incorporating environmentally sensitive, sustainable design elements into the proposed development. These elements will improve the quality of life for the residents of this project as well as the neighborhood, while helping to protect the global environment. Ultimately they will also reduce operating costs while increasing value for the project, improving its business viability. We are committed to identifying opportunities presented by the redevelopment by setting proactive goals and ensuring an undertaking that is LEED Silver certifiable as a minimum and satisfies the requirements of the City of Boston Environment Department.

The proponent has set proactive goals to ensure an undertaking that is LEED certifiable and satisfies the requirements of the City of Boston Environment Department, and has assembled an architectural and engineering team familiar with implementing these goals. Neshamkin French Architects, Inc.'s own LEED accredited personnel is working in concert with innovative LEED accredited engineers (mechanical, electrical and plumbing engineers.) In turn, the team will actively involve the selected contractor in turning this commitment into reality. Please see Appendix I for a LEED Scorecard.

The following sections outline the team's approach to individual LEED Credits:

2.6.2 City of Boston Article 37

The Project will include the following Prerequisite Boston Green Building Credits:

<u>Boston Public Health Development Prerequisite Credits:</u>

Prerequisite Diesel Retrofit of Construction Vehicles
Retrofit of all diesel construction vehicles from the United States Environmental Protection Agency approved retrofit technologies, or a contribution of a comparable amount to the Air Pollution Control Commission Abatement Fund.
Prerequisite Outdoor Construction Management Plan
An outdoor construction management plan including provisions for wheel washing, site vacuuming, truck covers and anti-idling signage.
Prerequisite Integrated Pest Management Plan
The Project will include Item No. 3 and 4 listed below, of the Boston Credits.

Boston Credits:

A. Modern Grid Credit; Not applicable for this Project.

B. Historic Preservation Credit; Not applicable for this Project.

C. Groundwater Recharge Credit; Yes

1. The Project will capture rainwater including landscape irrigation.

D. Modern Mobility Credit Yes

Prerequisites:

1. Designate an on-site transportation coordinator in the management office.
2. Post information about public transportation and car-sharing options.
3. Provide transit, bike and pedestrian access information on building website.
4. Provide on-site, external bicycle racks for visitors and covered secure bicycle storage for the building occupants. 15% residential and 5% other uses.
5. Comply with Boston Transportation Department district parking ratios.
6. Join a Transportation Management Association (for mixed-use projects).

For Residential Projects:

1. Provide preferred parking spaces for a car-sharing service capable of serving 1% of building occupants.
2. Residential parking spaces required by zoning may only be purchased and used by building tenants/unit owners.
3. On-site electric charging plug-in stations for plug-ins capable of serving 1% of the building occupants.

2.6.3 Sustainable Sites

The integration of the Proposed Project into the sub-urban fabric of West Roxbury and the redevelopment of the project site for housing reinforces the design goals of LEED. It locates multi-family housing in close proximity to existing mass transit lines and is within walking distance of existing neighborhood shopping. The enclosed parking is designed to meet the minimum parking requirements of the Neighborhood Zoning District and will also accommodate bicycle storage areas as required by the City. To further enhance alternative transportation the enclosed parking will designate preferred parking status for hybrid fuel vehicles.

Our proposed development will restore open space, will improve storm water management by introducing a recharge system, will reduce the heat island effect by replacing selected asphalt areas with planting, and reduce light pollution by introducing low cut off lights that concentrate lighting to increase safety of the site and abutting public areas while enhancing architecture, landscape and streetscape.

2.6.4 Water Efficiency

Landscape materials will be selected that enhance sustainability and conservation of resources by virtue of suitability to site conditions. No irrigation system will be utilized and the team will design the

building systems to reduce water consumption by 20%, using technologies such as dual-flush toilets and reduced flow sinks and lavatories.

2.6.5 Energy and Atmosphere

Energy efficiency is a key part of the overall design strategy. With rapidly increasing energy costs, attention to energy use will provide economic as well as environmental benefits to the project. The team will use an integrated design approach with life cycle costing of various system options, in order to ensure that this project meets the goals of LEED in this category in a cost effective manner.

Specific strategies to be incorporated include:

- Systems will be fully commissioned by a third party commissioning agent, meeting all requirements of both the LEED prerequisite for commissioning.
- Various HVAC systems will be explored in the design phase of the project, including gas absorption chillers.
- All equipment will be CFC free.
- The Developer will pursue third party funding of energy efficiency and renewable energy strategies through local utilities and the Massachusetts Renewable Energy Trust Fund.
- Measurement and verification of energy usage will be provided by the utilization of individual utility metering at each unit.

2.6.6 Materials and Resources

In addition to complying with the storage and collection of recyclables, the Project will exemplify the fulfillment of LEED goals in a number of other aspects.

The construction will divert seventy percent of waste through construction waste management, a minimum of five percent of materials incorporated into the Project will be recycled content and a minimum of twenty percent of materials will be committed to be locally manufactured. The project will qualify for the LEED credit for Rapidly Renewable Materials by committing to meeting or exceeding five percent of the building value, excluding labor and MEP components, in rapidly renewable materials including Bamboo floors at living spaces and Marmoleum or other linseed/resin based flooring materials at utility spaces. The team will explore the potential use of strawboard for appropriate surfaces and will investigate the possibilities of utilizing FSC (Forest Stewardship Council) Certified woods for at least half of the woods used on the project.

2.6.7 Indoor Environmental Quality

The Project will meet the required Minimum Indoor Air Quality Performance and Environmental Tobacco Smoke Control criteria. Additionally, in its selection of materials incorporated into the building, the Project will provide for a high level of emissions reduction by the use of certified Low-Emitting Materials for Adhesives and Sealants, Paints, Carpet and Composite Wood. Indoor chemical and Pollutant Sources will be controlled by the utilization of separate exhausts for janitors' closets, walk off mats at entries, and garage separation and exhaust.

Perimeter systems will be controllable by virtue of the selection of operable windows and small lighting zones, and non-perimeter systems will be controllable by the incorporation of local controls and zones. Mechanical design will comply with Thermal Comfort requirements by complying with the ASHRAE 55 standards. The building design will provide for daylight to seventy five percent of the spaces in the building, excluding enclosed parking. Ninety percent of the spaces designed for human occupancy (again excluding enclosed parking) will enjoy views.

2.6.8 Innovation and Design Process

There are three ways in which the team plans to initiate innovation in the design process: via the incorporation of environmental education into the process of the building construction and operation, the setting of a goal program in concert with the contractor for exemplary performance in handling construction waste, use of energy star compliant appliances, and through the continued involvement of LEED accredited professionals.

Figure 2-18 LEED Checklist

LEED 2009 for New Construction and Major Renovations

Project Checklist

425 Lagrange St, West Roxbury, MA 02132

Sustainable Sites — Possible Points: 26

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
1			Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
3			Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
		2	Credit 4.4	Alternative Transportation—Parking Capacity	2
1			Credit 5.1	Site Development—Protect or Restore Habitat	1
		1	Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
1			Credit 6.2	Stormwater Design—Quality Control	1
1			Credit 7.1	Heat Island Effect—Non-roof	1
		1	Credit 7.2	Heat Island Effect—Roof	1
		1	Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y			Prereq 1	Water Use Reduction—20% Reduction	
4			Credit 1	Water Efficient Landscaping	2 to 4
2			Credit 2	Innovative Wastewater Technologies	2
		4	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
		19	Credit 1	Optimize Energy Performance	1 to 19
7			Credit 2	On-Site Renewable Energy	1 to 7
		2	Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
		3	Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y			Prereq 1	Storage and Collection of Recyclables	
		3	Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
		1	Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
		2	Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	?	N			
2			Credit 4	Recycled Content	1 to 2
2			Credit 5	Regional Materials	1 to 2
1			Credit 6	Rapidly Renewable Materials	1
		1	Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
1			Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
1			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
		1	Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
1			Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
1			Credit 7.1	Thermal Comfort—Design	1
		1	Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

		1	Credit 1.1	Innovation in Design: Specific Title	1
		1	Credit 1.2	Innovation in Design: Specific Title	1
		1	Credit 1.3	Innovation in Design: Specific Title	1
		1	Credit 1.4	Innovation in Design: Specific Title	1
		1	Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

1			Credit 1.1	Regional Priority: Specific Credit	1
1			Credit 1.2	Regional Priority: Specific Credit	1
1			Credit 1.3	Regional Priority: Specific Credit	1
		1	Credit 1.4	Regional Priority: Specific Credit	1

Total — Possible Points: 110

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

3.0 COORDINATION WITH OTHER GOVERNMENTAL AGENCIES

3.1 Massachusetts Environmental Policy Act

The Project does not meet the thresholds for review under the Massachusetts Environmental Policy Act (MEPA) so an Environmental Notification Form (ENF) will not be filed.

3.2 Massachusetts Historical Commission

The Project does not require any state permits but is adjacent to a National Register listed property. The Massachusetts Historical Commission (MHC) will be contacted regarding potential review by that agency.

3.3 Boston Landmarks Commission

The Project is not a designated landmark nor is it in a designated historic district however proximity to the Westerly Burial Ground may require review by the Boston Landmark Commission. The Proponent will notify the Environment Department of the proposed development and comply with any determination made regarding review by the BLC.

3.4 Architectural Access Board Requirements

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

3.5 Boston Civic Design Commission

Article 28 of the Boston Zoning Code stipulates that projects over 100,000 square feet shall be subject to review by the Boston Civic Design Commission. Preliminary determination by the BRA is that this project does not meet that threshold and therefore BCDC review is not required.

3.6 Other Permits and Approvals

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

3.7 Community Outreach

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

4.0 PROJECT'S CERTIFICATION

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

Signature of Proponent's Representative

Michael Argiros
LaGrange AMA Realty Ventures, LLC

August 31, 2015
Date

Signature of Preparer

Thomas Maistros, Jr.
Development Consultant

August 31, 2015
Date