



October 20, 2017

Assembly's Edge

Planned Unit Development Preliminary Master Plan

Somerville, Massachusetts

SUBMITTED TO

City of Somerville
Attn: Director of Planning
93 Highland Avenue
Somerville, MA 02143

PROPONENT

845 Riverview, LLC
200 Broadway
Suite 103
Lynnfield, MA 01940

PREPARED BY



IN ASSOCIATION WITH

Khalsa Design Incorporated
Verdant Landscape Architecture
McDermott Quilty & Miller LLP
Design Consultants, Inc. (DCI)
Perry King Neubauer, FAIA
Cooperstown Environmental, LLC.



October 20, 2017

Ref: 13893.00

George Proakis, Director of Planning
Somerville City Hall
93 Highland Ave.
Somerville, MA 02143

Re: Assembly's Edge Planned Unit Development Preliminary Master Plan

Dear Mr. Proakis,

On behalf of 845 Riverview, LLC. (the Proponent), VHB is pleased to submit this Planned Unit Development Preliminary Master Plan ("PUD-PMP") to the City of Somerville (the "City") to initiate the PUD-PMP review process. The Proponent proposes to redevelop approximately 37,075 square feet (0.85 acres) of land in the Assembly Square area of Somerville, Massachusetts (the "Project Site"), with a 369,140 square foot (sf), pedestrian and transit oriented, mixed-use development that consists of two (2) buildings containing up to approximately 215 residential units, approximately 9,515 sf of ground floor retail and/or restaurant space, an up to 180 room hotel, and approximately 293 below- and above-grade structured parking spaces (the "Project").

The Project will transform the Project Site into a hub of residential and retail activity, which will help knit together the fabric of Middlesex Avenue and will serve as the gateway to Assembly Square. The Project will also improve the connection between Assembly Row and the open space, commercial uses and residential neighborhoods of Somerville to the west of the I-93 elevated highway. This connection will be strengthened by new and improved public open space, an improved streetscape, and new residents who will enliven the area on a consistent and daily basis.

We look forward to your review of this Project. Please contact me at (617) 607-2988 if you have any questions.

Very truly yours,

Kyle Greaves, AICP
Project Manager/Environmental Planner
kgreaves@vhb.com

Engineers | Scientists | Planners | Designers

99 High Street
10th Floor
Boston, Massachusetts 02110
P 617.728.7777
F 617.728.7782

Assembly's Edge

Somerville, Massachusetts

SUBMITTED TO **City of Somerville**
Attn: George Proakis
93 Highland Avenue
Somerville, MA 02143

PROPONENT **845 Riverview, LLC**
200 Broadway
Suite 103
Lynnfield, MA 01940

PREPARED BY **VHB**
99 High Street, 10th Floor
Boston, MA 02110

In association with:

Khalsa Design Incorporated
Verdant Landscape Architecture
McDermott Quilty & Miller LLP
Design Consultants, Inc. (DCI)
Perry King Neubauer, FAIA
Cooperstown Environmental, LLC.

October 20, 2017

Table of Contents

Chapter 1: Executive Summary

Chapter 2: Application Forms

- 2.1 Preliminary Master Plan Application
- 2.2 Supplemental Questions
- 2.3 Requested Waivers
- 2.4 Abutters List
- 2.5 Accessibility Narrative
- 2.6 Summary of Environmental Response Actions

Chapter 3: Project Overview

- 3.1 Existing Conditions 3-1
- 3.2 Project Description 3-2
- 3.3 Project Schedule/Phasing 3-8
- 3.4 Consistency with SomerVision 3-8
- 3.5 Massachusetts Environmental Policy Act 3-9
- 3.6 Summary of Public Benefits 3-9
- 3.7 Community Outreach 3-11
- 3.8 Development Team 3-12

Chapter 4: Zoning Compliance Narrative

- 4.1 Article 5: Special Permits, Special Permits with Site Plan Review, Site Plan Approval
and Variances 4-1
- 4.2 Article 6: Establishment of Zoning Districts 4-5
- 4.3 Article 7: Permitted Uses 4-14
- 4.4 Article 16: Special Permits, Special Permits with Site Plan Review, Site Plan Approval
and Variances 4-14

Chapter 5: Transportation Impact and Access Study

- 5.1 Project Description 5-1
- 5.2 Study Area 5-2
- 5.3 Transportation Analysis Methodology 5-2
- 5.4 Existing Conditions Assessment 5-11
- 5.5 Future Conditions Analysis 5-20
- 5.6 2024 No-Build Conditions 5-20
- 5.7 2024 Build Conditions 5-24
- 5.8 Trip Distribution and Assignment 5-30
- 5.9 2024 Build Conditions 5-31
- 5.10 Parking Supply 5-31
- 5.11 Service and Loading 5-31

5.12	Traffic Operations Analysis.....	5-32
5.13	TDM Plan	5-50
5.14	Conclusion	5-51

Chapter 6: Utility Analysis

6.1	Study Description.....	6-1
6.2	Water Supply and Distribution	6-1
6.3	Sanitary Sewer	6-2
6.4	Stormwater Drainage System	6-3
6.5	Utilities.....	6-5

Appendices

Appendix A:	Transportation Supporting Documentation
Appendix B:	Shadow Studies
Appendix C:	Property Documentation

This page intentionally left blank.

List of Tables

Table No.	Description	Page No.
3-1	Program Table.....	3-3
3-2	Development Team Contact Information	3-12
4-1	Zoning Compliance Program Table	4-6
5-1	Level-of-Service Summary	5-3
5-2	Level-of-Service Summary (Continued)	5-4
5-3	Existing ATR Data Collection Summary	5-12
5-4	MassDOT Intersection Crash Conditions.....	5-16
5-5	MassDOT Intersection Crash Conditions (Continued)	5-17
5-6	Existing Dunkin Donuts Vehicle Trips	5-25
5-7	Internal Capture Trips	5-25
5-8	Pass-By Trip Reduction.....	5-26
5-9	Mode Split Percentages	5-27
5-10	Adjusted Trip Summary.....	5-27
5-11	Existing Sunrise Cuisine Vehicle Trips.....	5-28
5-12	Existing Vehicle Trip Reduction.....	5-28
5-13	Transit Trips.....	5-29
5-14	Level-Of-Service Criteria For Intersections	5-33
5-15	Capacity Analysis Summary, Existing Conditions.....	5-34
5-16	Capacity Analysis Summary, Existing Conditions (Continued)	5-35
5-17	Capacity Analysis Summary, No-Build Conditions	5-38
5-18	Capacity Analysis Summary, No-Build Conditions (Continued).....	5-39
5-19	Capacity Analysis Summary, Build Conditions	5-41
5-20	Capacity Analysis Summary, Build Conditions (Continued).....	5-42
5-21	Queue Analysis Summary.....	5-44
5-22	Queue Analysis Summary (Continued)	5-45
5-23	Queue Analysis Summary (Continued)	5-46
5-24	Queue Analysis Summary (Continued)	5-47
5-25	Queue Analysis Summary (Continued)	5-48
5-26	Queue Analysis Summary (Continued)	5-49

This page intentionally left blank.

List of Figures

Note: All report figures are provided at the end of each chapter/section.

Figure No.	Description
3.1	Site Location Map
3.2	Neighborhood Context
3.3	Existing Conditions Plan
3.4a	Existing Site Photos
3.4b	Existing Site Photos
3.4c	Existing Site Photos
3.4d	Existing Site Photos
3.5	Preliminary Master Plan Planned Unit Development
3.6	Program Diagram
3.7a	Below Grade & First Floor Plans
3.7b	Upper Parking Levels
3.7c	Typical Upper Floors
3.7d	Typical Upper Floors
3.8	Bird's Eye Looking SE
3.9	Project Rendering – Courtyard
3.10a	Project Rendering – Courtyard
3.10b	Project Rendering – Courtyard
3.11	Open Space Plan
3.12	Streetscape Section McGrath Highway
3.13	Streetscape Section Middlesex Avenue Section
3.14	Streetscape Section Kensington Removed
3.15	Streetscape Reference Images
3.16	Courtyard Plan
3.17	Urban Park Plan
3.18	Connector Plan
3.19	Circulation and Access Plan
3.20	Assembly's Edge Urban Elements
3.21	Assembly's Edge Pedestrian Linkages
3.22	2009 Master Plan Conformity
5.1	Locus Map
5.2	Study Intersections
5.3	Public Transportation Options

5.4	Car & Bicycle Sharing
5.5	Existing Pedestrian Volumes
5.6	Existing Bicycle Volumes
5.7	Existing Traffic Volumes – AM
5.8	Existing Traffic Volumes – PM
5.9	Existing Traffic Volumes – SAT
5.10	No Build Volumes – AM
5.11	No Build Volumes – PM
5.12	No Build Volumes – SAT
5.13	Trip Distribution – AM
5.14	Trip Distribution – PM
5.15	Trip Distribution – SAT
5.16	Site-Generated Trips – AM
5.17	Site-Generated Trips – PM
5.18	Site-Generated Trips – SAT
5.19	Build Volumes – AM
5.20	Build Volumes – PM
6.1	Existing Conditions Plan
6.2	Grading, Drainage & Utility Plan
6.3	Materials & Layout Plan

1

Executive Summary

845 Riverview, LLC (the "Proponent"), respectfully submits this Planned Unit Development Preliminary Master Plan ("PUD-PMP") to the City of Somerville (the "City") to initiate the PUD-PMP review process. The Proponent proposes to redevelop approximately 37,075 square feet (0.85 acres) of land in the Assembly Square area of Somerville, Massachusetts (the "Project Site", the "Site" or the "PUD Boundary"), with a 369,140 square foot (sf), pedestrian and transit oriented, mixed-use development that consists of two (2) new buildings containing up to approximately 215 residential units, approximately 9,515 square feet of ground floor retail and/or restaurant space, an up to 180 room hotel, and approximately 293 on-site below- and above-grade structured parking spaces (the "Project").

The Project is based on three key principles that are consistent with the City's longstanding goals for the Assembly Square Mixed Use District (the "District"):

1. **Create a balanced mixed-use program** | A mix of retail, commercial, and residential programming will create jobs, increase tax revenue, and improve the quality of life for Somerville residents.
2. **Pedestrian and transit-oriented planning and design** | Active ground floor uses and pedestrian-and bicycle-friendly streetscapes will leverage nearby transit opportunities.
3. **Focus development around new pedestrian-oriented public places** | Public open spaces, plazas and parks, together with the streetscape environment, make up the framework around which this mixed-use Project is designed. The public open spaces of the Project serve as green oases, social gathering points, venues for seasonal events and gateways to the Project and nearby Assembly Row. The Project's new open spaces, and proposed streetscape design and public realm improvements, will help create a vibrant pedestrian friendly environment.

2

Application Forms

2.1 Preliminary Master Plan Application

2.2 Supplemental Questions

2.3 Requested Waivers

2.4 Abutters List

2.5 Accessibility Narrative

2.6 Summary of Environmental Response Actions

2.1 Preliminary Master Plan Applications



APPLICATION
 For Planning Board and Zoning Board of Appeals Approval

CITY OF SOMERVILLE
 Joseph A. Curtatone, Mayor
 Office of Strategic Planning and Community Development (OSPCD)
 City Hall . 93 Highland Avenue . Somerville, MA 02143
 617.625.6600 ext. 2500

City Clerk Stamp

Office Use: Case #	PB Date	ZBA Date	Filing Fee	Ad Fee
--------------------	---------	----------	------------	--------

Please review the application information sheet. Complete applications must be submitted to the City Clerk's Office. Failure to submit all required information is grounds for denial of the request. If this form does not provide adequate space for your response, please attach additional sheets of paper.

1. Property Information				
Street Address(es)		Zoning District(s)	Overlay District(s), if any	Ward
845 McGrath Highway and 74 Middlesex Avenue		Assembly Square Mixed-Use District Zoning	Planned Unity Development Overlay District A (PUD-A)	1
Assessor's:				
Map	Block	Lot		
87	B	2 and 3		
Please indicate the name of the individual, individuals, corporation or trust that owns the property:				
Property Owner's Name		Complete Mailing Address	Phone Number(s)	Email
845 Riverview, LLC		200 Broadway, Suite 103 Lynnfield, MA 01940	(978) 360-9558	EDOHERTY@KEMSCORP.COM
Please indicate the name of the individual, individuals, corporation or trust that is applying (please note that the applicant should be the intended user or developer):				
Applicant's Name		Complete Mailing Address	Phone Number(s)	Email
845 Riverview, LLC		200 Broadway, Suite 103 Lynnfield, MA 01940	(978) 360-9558	EDOHERTY@KEMSCORP.COM
Please indicate the contact information for any agent, engineer or architect that will represent this application who may represent the owner and/or applicant in this application review process:				
Agent's Name (if applicable) Attorney or Other Agent		Complete Mailing Address	Phone Number(s)	Email
McDermott, Quilty & Miller, LLP		28 State Street, Suite 802 Boston, MA 02109	617 946 4600	jhanley@mqmlp.com nzozula@mqmlp.com
Architect's Name (if applicable)		Complete Mailing Address	Phone Number(s)	Email
KDI Jai Singh Khalsa		17 Ivaloo Street, Suite 400 Somerville, MA 02143	617 591 8682	jkhalsa@tkgeast.com estellman@tkgeast.com
Engineer's Name (if applicable)		Complete Mailing Address	Phone Number(s)	Email
DESIGN CONSULTANTS, INC. (DCI)		1495 Hancock Street, Suite 205 Quincy, MA 02169	617-776-3350	mclark@dc-ma.com TBertulis@dc-ma.com

2. Submission Type	
Check all that apply.	
<input type="checkbox"/>	Variance
<input type="checkbox"/>	Special Permit (SP)
<input type="checkbox"/>	Special Permit with Design Review (SPD)
<input type="checkbox"/>	Special Permit with Site Plan Review (SPSR)
<input checked="" type="checkbox"/>	Planned Unit Development (PUD) – Preliminary Master Plan Submission (PMP) / Special Permit with Site Plan Review (SPSR)
<input type="checkbox"/>	Subdivision or other Site Plan Approval
<input type="checkbox"/>	Comprehensive Permit under MGL Chapter 40B – Inclusionary Housing Development (follow SPSR submission and contact the Housing Director at 617.625.6600 ext. 2560)
<input type="checkbox"/>	Revision to Special Permit (only if certificate of occupancy or final sign-off is not yet received)
<input type="checkbox"/>	Administrative Appeal
<input type="checkbox"/>	Extension of Approval

Office of Strategic Planning and Community Development
 City Hall 3rd Floor . 93 Highland Ave . Somerville, MA 02143
 617.625.6600 ext. 2500
 M-W 8:30am-4:30pm, Th 8:30am-7:30pm, F 8:30am-12:30pm

APPLICATION For Planning Board and Zoning Board of Appeals Approval

3. Required Signatures		
NOTE: NO APPLICATION SHALL BE ACCEPTED AS COMPLETE WITHOUT THE REQUIRED SIGNATURES		
Owner Signature (if the project site has more than one owner, please supply additional copies of this page if necessary): As Owner, I make the following representations: <ol style="list-style-type: none"> 1) I hereby certify that I am the owner of the property at 845 McGrath Highway, Somerville, MA. 2) I hereby certify that the applicant named on this application form has been authorized by me to apply to develop and/or use the property listed above for the purposes indicated in this application 3) I hereby certify that the agent, engineer and/or architect listed on this application form have been authorized to represent this application before the Planning Staff, the Planning Board and/or the Zoning Board of Appeals. 4) I will permit Planning Staff to conduct site visits on my property. 5) Should the ownership of this parcel change before the board(s) have acted on this application, I will provide updated information and new copies of this signature page. 		
<div style="display: flex; justify-content: space-between; align-items: flex-end;"> (sign here) </div>		
This property is owned by (check one): 845 Riverview LLC		
<input type="checkbox"/>	An individual	<ul style="list-style-type: none"> attach deed application to be signed by owner
<input type="checkbox"/>	More than one individual, or a partnership	<ul style="list-style-type: none"> attach deed application to be signed by all owners
<input checked="" type="checkbox"/>	A corporation or LLC	<ul style="list-style-type: none"> attach deed and corporate articles of organization application to be signed by an officer authorized to do so by the corporation*
<input type="checkbox"/>	A trust	<ul style="list-style-type: none"> attach deed and certificate of trust application to be signed by authorized trustee
Applicant Signature (if the applicant is the owner, the owner should also sign below): As Applicant, I make the following representations: <ol style="list-style-type: none"> 1.) The information supplied on and with this application form is accurate to the best of my knowledge. 2.) If the current use of the property is a nonconforming use, I will furnish proof to the satisfaction of the SPGA that the nonconforming use is legal. 3.) I will make no changes to the approved project plans without the prior approval of the SPGA. 4.) If the proposed project is subject to linkage (SZO Article 15), I will sign all documents required by the Planning Staff/SPGA governing the amount and the method of payment of the linkage fee. 5.) I will return the notice sign or pay for its replacement. 6.) I will pay the fees associated with advertising the case in the newspaper and mailing notices to abutters. 7.) I hereby certify that the agent, engineer and/or architect listed on this application form have been authorized by me to represent me before the Planning Staff, the Planning Board and/or the Zoning Board of Appeals as it relates to the development and/or use of this property. 		
<div style="display: flex; justify-content: space-between; align-items: flex-end;"> (sign here) </div>		
Indicate applicants relationship to owner: APPLICANT 845 Riverview LLC is same as OWNER.		
This applicant is (check one):		
<input type="checkbox"/>	An individual	<ul style="list-style-type: none"> application to be signed by applicant
<input type="checkbox"/>	More than one individual, or a partnership	<ul style="list-style-type: none"> application to be signed by all applicants
<input checked="" type="checkbox"/>	A corporation or LLC	<ul style="list-style-type: none"> application to be signed by an officer authorized to do so by the corporation attach corporate articles of organization*
<input type="checkbox"/>	A trust	<ul style="list-style-type: none"> application to be signed by authorized trustee attach certificate of trust

* Refer to Appendix C for Property Documentation

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

3. Required Signatures

NOTE: NO APPLICATION SHALL BE ACCEPTED AS COMPLETE WITHOUT THE REQUIRED SIGNATURES

Owner Signature (if the project site has more than one owner, please supply additional copies of this page if necessary).

As Owner, I make the following representations:

- 1) I hereby certify that I am the owner of the property at 74 Middlesex Avenue, Somerville, MA.
- 2) I hereby certify that the applicant named on this application form has been authorized by me to apply to develop and/or use the property listed above for the purposes indicated in this application.
- 3) I hereby certify that the agent, engineer and/or architect listed on this application form have been authorized to represent this application before the Planning Staff, the Planning Board and/or the Zoning Board of Appeals.
- 4) I will permit Planning Staff to conduct site visits on my property.
- 5) Should the ownership of this parcel change before the board(s) have acted on this application, I will provide updated information and new copies of this signature page.

(sign here)

Richard Tuck, Trustee

This property is owned by (check one): **MIDDLESEX AVE 76 REALTY TRUST, RITTENBERG & TUCK TRUSTEE**

<input type="checkbox"/>	An individual	<ul style="list-style-type: none"> attach deed application to be signed by owner
<input type="checkbox"/>	More than one individual, or a partnership	<ul style="list-style-type: none"> attach deed application to be signed by all owners
<input type="checkbox"/>	A corporation or LLC	<ul style="list-style-type: none"> attach deed and corporate articles of organization application to be signed by an officer authorized to do so by the corporation *
<input checked="" type="checkbox"/>	A trust	<ul style="list-style-type: none"> attach deed and certificate of trust application to be signed by authorized trustee

Applicant Signature (if the applicant is the owner, the owner should also sign below):

As Applicant, I make the following representations:

- 1.) The information supplied on and with this application form is accurate to the best of my knowledge.
- 2.) If the current use of the property is a nonconforming use, I will furnish proof to the satisfaction of the SPGA that the nonconforming use is legal.
- 3.) I will make no changes to the approved project plans without the prior approval of the SPGA.
- 4.) If the proposed project is subject to linkage (SZO Article 15), I will sign all documents required by the Planning Staff/SPGA governing the amount and the method of payment of the linkage fee.
- 5.) I will return the notice sign or pay for its replacement.
- 6.) I will pay the fees associated with advertising the case in the newspaper and mailing notices to abutters.
- 7.) I hereby certify that the agent, engineer and/or architect listed on this application form have been authorized by me to represent me before the Planning Staff, the Planning Board and/or the Zoning Board of Appeals as it relates to the development and/or use of this property.

(sign here)

[Signature]

Indicate applicants relationship to owner: **APPLICANT 845 Riverview LLC is under contract with the property owner to purchase 76 Middlesex Avenue contingent upon permitting.**

This applicant is (check one):

<input type="checkbox"/>	An individual	<ul style="list-style-type: none"> application to be signed by applicant
<input type="checkbox"/>	More than one individual, or a partnership	<ul style="list-style-type: none"> application to be signed by all applicants
<input checked="" type="checkbox"/>	A corporation or LLC	<ul style="list-style-type: none"> application to be signed by an officer authorized to do so by the corporation attach corporate articles of organization *
<input type="checkbox"/>	A trust	<ul style="list-style-type: none"> application to be signed by authorized trustee attach certificate of trust

* Refer to Appendix C for Property Documentation

Office of Strategic Planning and Community Development
City Hall 3rd Floor, 93 Highland Ave., Somerville, MA 02143
617.625.6600 ext. 2500
M-W 8:30am-4:30pm, Th 8:30am-7:30pm, F 8:30am-12:30pm

Revision Date: 12.17.15

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

4. Applicable Section(s) of Zoning Ordinance and Prior Zoning Approvals
You may refer to the Inspectional Services Denial Letter for the section of the Zoning Ordinance cited.
Applicable Sections of Zoning Ordinance: 16.8.1, 16.8.2. No prior zoning approvals.
5. Met with Planning Department Staff to review application requirements.
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, date - June 5, 2017 and August 22, 2017 with George Proakis
6. Met with Engineering Department Staff to review application requirements.
Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, date - June 5, 2017 with Rich Raiche
7. Existing Conditions Description
Briefly describe existing structure(s) and/or use(s). Include number of employees, occupants and hours of operation, if applicable. Located in the Assembly Square Area of Somerville, the approximately 0.85 acre project site is bounded by McGrath Highway to the north, Middlesex Avenue to the east, Kensington Avenue and the elevated Interstate 93 off-ramp (the "Off-Ramp", "I-93"), to the west and an existing Public Storage building to the south. Kensington Avenue cuts through the middle of the Project Site and creates a vehicular and pedestrian connection between Middlesex Avenue and McGrath Highway. The portion of the Project Site to the north of Kensington Avenue includes a vacant lot consisting of pavement remnants and broken pavement, and a 5,506*
8. Proposal Description
A. Briefly describe any changes in the structure(s) and/or use(s). Include whom the project is intended to serve, expected number of employees, and/or occupants and hours of operation, if applicable. In the CCD or TOD districts also include the square footage that will be allocated to each use cluster and associated parking. The Proponent proposes to redevelop approximately 37,075 square feet (0.85 acres) of land in the Assembly Square area with a transit oriented, mixed-use development that consists of two buildings containing up to approximately 215 residential units, approximately 9,515 square feet of ground floor retail and restaurant space, an up to 180 room hotel, and approximately 293 below- and above-grade structured parking spaces. The Project will transform the Project Site into a hub of residential and retail activity, which will help knit together the fabric of Middlesex Avenue, and will serve as the gateway to Assembly Square.
B. Explain any green building practices that you are using. Please consult the Environmental Protection Agency's Residential Green Building Guide for ideas (www.epa.gov/ne/greenbuildings). The Proponent and the Project design team are committed to an integrated, sustainable design approach. The Project is currently targeting a goal of Leadership in Energy and Environmental Design® ("LEED") Version 4 Certified rating. The Proponent will provide a LEEDv4 checklist as part of the Special Permit Application.
C. Is the proposal for a multi-family residence of three or more units, or for a place of public accommodation? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, submit an Accessibility Narrative listed under Checklist of Required Information.
D. Are you demolishing a commercial structure or moving soil? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
E. Identify and list any 21E reports and other environmental assessments, analysis, clean-up studies, enforcement actions and any other environmental documentation that is available for the property, including documentation on underground storage tanks. Attach copies of all identified documents. Failure to identify and attach these documents, if applicable, will result in an application being deemed incomplete.
Please refer to Section 2.6 of the PUD-PMP for a Summary of Environmental Response Actions
If you discover an underground storage tank you must call the Somerville Fire Department immediately.

*gross square foot (sf) structure and parking lot associated with the existing Dunkin Donuts and Caribbean Restaurant. The portion of the Project Site to the south of Kensington Avenue is currently being used as passive open space directly adjacent to the Public Storage building. The Project includes removal of the existing surface parking lots on the Site, the demolition of the existing retail building and related open space and public realm improvements described in the full PUD-PMP Submission.

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

9. Zoning Data						
Refer to the SZO § 2.2 Definitions and SZO § 8 Dimensional Requirements for more information.						
Data	Existing	Proposed	Allowed	Existing or Permitted Nonconformity	New Violation	SZO Section Cited
	Fill in both columns: numbers must match those on plans and other attached documentation.		Office Use			
A. Use	Commercial Use/Vacant Lot	Mixed-Use Residential/ Hotel/Commercial Retail				
B. # of Dwelling Units*	0 units	Up to 215 residential units and up to 180 hotel units.				
C. Lot Area	37,075 square feet	37,075 square feet				
D. Lot Area ÷ # of Dwelling Units	0 sf per du	93.86 sf per du				
E. Gross Floor Area of Footprints of All Buildings	5,506 square feet	37,075 square feet				
F. Ground Coverage (E. ÷ C.)	14.9%	100%				
G. Landscaped Area (landscaped area ÷ C.)	64%	29%				
H. Pervious Area (pervious area ÷ C.)	64%	0%				
I. Net Floor Area** / *** (sum of all usable square feet)	5,506 square feet	369,140 square feet				
J. Floor Area Ratio (FAR) (I. ÷ C.)	0.15	9.96 across both buildings				
K. Building Height	~15-20 feet	~ 147-235 feet				
L. Front Yard Setback	0 feet	0 feet				
M. Rear Yard Setback	0 feet	0 feet				
N. Side Yard Setback (left when you face property)	9 feet	0 feet				
O. Side Yard Setback (right when you face property)	0 feet	0 feet				
P. Street Frontage	200 feet	200 feet				
Q. # of Parking Spaces	19	~293				
R. # of Bicycle Parking Spaces	0	~96				
S. # of Loading Spaces	0 loading docks	3 loading docks				
* 8 or more dwelling units - determine if Inclusionary Housing, Article 13, applies ** In CCD and TOD use GROSS floor area *** 30,000+ square feet - determine if Linkage, Article 15, applies						

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

10. Checklist of Required Information								
<p>This checklist will help you determine what you need to submit with this application form. Find the column for your submission type. The rows contain the number of copies of each item that you must submit and "Y" indicates include one copy. For each item check the column 'included' if you are submitting it or the 'Waiver Requested' column for items that are not applicable to your proposal. Planning Staff may contact you to submit items for which you are requesting a waiver. If your application includes more than one type, submit the greatest number of copies listed. Please submit plans and other documentation electronically on a CD, flash drive or via email in addition to hard copies noted below.</p>								
<p>Checklist key: # = # of copies Y = include 1 copy I/A = if applicable include 1 copy N/A = not applicable SPSR-A = SPSR in Assembly Sq. Mixed-Use District TOD = Transit Oriented District CCD = Corridor Commercial District †† = within 500 feet of property</p>	Variance	SP / SPD	SPSR	PUD PMP	Subdivision	Revision to SP	Included	Waiver Requested
Application Form & Supplemental Questions	3	3	3	3	3	3	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Denial Letter from Inspectional Services Division – if you received one	I/A	I/A	I/A	N/A	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Recorded Deed(s) to all properties involved in the project	1	1	1	N/A	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>
Fees for Filing, Advertising & Abutter List. See fee schedule on application information sheet. Submit 3 separate checks or money orders payable to the City of Somerville or cash.	Y	Y	Y	Y	Y	Y	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Abutter List from neighboring municipality if your property is less than 300' from the Somerville boundary. Obtain list from neighboring municipality of the property owners' names and addresses that are within 300' of your property.	I/A	I/A	I/A	I/A	I/A	I/A	<input type="checkbox"/>	<input type="checkbox"/>
Site Plans ➤ See appropriate Site Plan Review Checklists: (located in forms library under Planning and Zoning and Engineering): <ul style="list-style-type: none"> alterations with no change in footprint & no site work alterations with no change in footprint & site work residential additions or structures with <250 sf footprint residential additions or structures with >250 sf footprint and all commercial additions or structures ➤ If substantially altering a nonconforming structure, indicate the location of where the existing nonconformity will be maintained.	3	3	3	3	3	3		
	3 hard copies at initial filing, 8-10 copies at final filing							
Elevations front, side and rear of building(s) and signage with vertical height - measure from either lowest point between building and lot line, or 15' from building, to the highest point of roof beam, deck line of a mansard roof or average height between the plate and ridge of a gable, hip or gambrel roof – and description of proposed materials and colors. Include proposed mechanical and electrical system components, exhaust / ventilation systems, transformers, and satellite dishes and method of screening	3	3	3	N/A	N/A	3	<input type="checkbox"/>	<input type="checkbox"/>
	3 hard copies at initial filing, 8-10 copies at final filing							
Conceptual Floor Plans with square footage and # of units	Y	Y	Y	N/A	N/A	Y	<input type="checkbox"/>	<input type="checkbox"/>
Neighborhood Context Map showing the neighborhood in which the tract lies and any impacts upon the area (scale no less than 1"=100')	N/A	Wire-less only ††	SPS R-A only	Y	Y	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Photographs showing the development site and surrounding parcels	Y	Y	Y	Y	Y	Y	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Traffic/Parking Analysis	3	3	3	3	3	N/A		
Traffic Study (if less than 25,000 square feet) estimate peak hour traffic volumes generated by proposed use, relation to existing volumes and projected future conditions	N/A	I/A	I/A, Y in TOD	I/A	I/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Traffic Impact Analysis (if 25,000 square feet or more) prepared by a professional traffic engineer who is registered with the Commonwealth of Massachusetts as a professional engineer in either traffic or transportation engineering, or any individual who has been certified by the Transportation Professional Certification Board, Inc. as a Professional Traffic Operations Engineer (PTOE). No other professional registration or qualification shall substitute for this requirement	N/A	I/A	I/A, Y in TOD	I/A	I/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Transportation Demand Management Plan	N/A	N/A	SPS R-A & TOD only	I/A	I/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parking Optimization Plan	N/A	N/A	TOD only	I/A	I/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

(Checklist of Required Information Continued)	Variance	SP / SPD	SPSR	PUD PMP	Subdivision	Revision to SP	Included	Waiver Requested
Checklist key: # = # of copies Y = include 1 copy I/A = if applicable include 1 copy N/A = not applicable SPSR-A = SPSR in Assembly Sq. Mixed-Use District TOD = Transit Oriented District CCD = Corridor Commercial District †† = within 500 feet of property								
Building Shadow Analysis	I/A, Y in CCD/ TOD	I/A, Y in CCD/ TOD	Y	Y	I/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Accessibility Narrative For multi-family residences of three or more units, and for places of public accommodation: describe the major accessibility requirements, if any, for the proposed project under federal or state law(s), as well as the applicant's strategies for meeting those requirements. If your project is exempt from any accessibility requirements due to scoping parameters in the applicable standard(s), be sure to explain how and why. Please consult the Americans with Disabilities Act (ADA), the Fair Housing Act (FHA), the regulations of the Massachusetts Architectural Access Board (MAAB), and other accessibility standards as necessary. This narrative may take the form of a brief memo, prepared by a licensed architect or code consultant.	I/A	I/A	I/A	I/A	I/A	I/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Housing Projects including 4 or more Units Explain measures taken to provide for, protect, or increase the affordability of housing units within the proposed structure; the degree of such affordability to households of low or moderate income, as defined by HUD; and the duration of legal assurances of such affordability.	I/A	I/A	I/A	I/A	I/A	I/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LEED Worksheet (if greater than 10,000 square feet)	N/A	N/A	SPS R-A & TOD only	N/A	N/A	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/> N/A
Conceptual 3-D Model of the Master Plan at 20 scale or alternate scale acceptable to the SPGA. In CCD and TOD include abutting properties.	I/A	I/A	SPS R-A, CCD & TOD only	I/A	I/A	I/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rendering or Computer-Simulated Photograph (from at least 2 prominent locations along the surrounding rights-of-way)	N/A	Wire- less only	N/A	N/A	N/A	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/> N/A

11-17. Supplemental Questions

Answer the supplemental questions for the permit you are seeking.

See attached.

2.2 Supplemental Questions

APPLICATION

For Planning Board and Zoning Board of Appeals Approval

Electronic version available:
<http://www.somervillema.gov>
Forms Library

Supplemental Questions for:

Planned Unit Developments (PUD) Preliminary Master Plan (PMP) /
Planned Unit Developments (PUD) Special Permit with Site Plan Review (SPSR)

14. PUD PMP/SPSR Supporting Statements
Address each of the following items. Attach to application form.
A. Explain if and how the proposal is compatible with the characteristics of the built and unbuilt surrounding area and land uses.
The transit oriented, mixed-use development proposes two new buildings containing up to approximately 215 residential units, approximately 9,515 sf of ground floor retail and restaurant space, an up to 180 room hotel, and approximately 293 below- and above-grade structured parking spaces (the "Project"). The Project is designed to be compatible with the immediate neighborhood, which contains similar mixed-use developments and buildings, such as Assembly Row and the La Quinta hotel. The Project, provides density, active ground floor uses and pedestrian-and bicycle-friendly streetscapes which will leverage the Site's transit opportunities and links to nearby mass transit. The Project will also provide an improved connection between Assembly Row and the Mystic River, and the open space, commercial uses and residential neighborhoods of Somerville to the west of the elevated highway. The proposed buildings will maintain the aesthetic and characteristics of the recently approved mixed-use developments in the area.
B. Explain any impacts that the proposed use, structure, or activity will have on the surrounding area from noise, light, glare, dust, smoke, or vibration.
The Project may create limited impacts during the period of construction. Any such impacts will be minimized to the maximum extent practicable. Following construction, the Project will not create adverse impacts and will be consistent with the urban uses in the vicinity of the Project Site.
C. Explain any impacts that the proposed use, structure, or activity will have on the surrounding area from emission or noxious or hazardous materials.
The Project does not anticipate any impacts from emissions or noxious/hazardous materials. The Project will support trip reduction measures via support of alternative modes of transportation, implementation of a transportation demand management (TDM) program, and dust and emission control during construction phases.
D. Explain any impacts that the proposed use, structure, or activity will have on the surrounding area from pollution of waterways or ground water.
The Project will not create adverse impacts and will incorporate all required pollution prevention measures (physical and operational) for discharges to waterways. See attached Chapter 6, Utility Analysis.
E. Explain the impact on the public systems: sanitary sewer system, storm drainage system, public water supply, and recreational system. Document the status of Department of Environmental Management and/or other sewage permits.
The Project will not create adverse impacts to the public systems. Proposed improvements to the public systems are discussed in Chapter 6, Utility Analysis.
F. Give a general summary of existing and proposed easements or other burdens now existing or to be placed on the property.
The locations of all existing and proposed easements are shown on Figure 6.1, Existing Conditions Plan and Figure 6.2, Grading, Draining and Utility Plan. Required utility easements will be coordinated with the corresponding utility when final alignments are confirmed, and as such, are not shown on the plans at this time.
G. See SZO §16.7 PUD Design Guidelines. Explain any discrepancies between your proposal and the Design Guidelines.

APPLICATION

For Planning Board and Zoning Board of Appeals Approval

<p>The Project has been designed to be consistent with the Section 16.7 of the Ordinance - PUD Design Guidelines. Please refer to Section 4.4 of this document for a description of how the Project complies with the individual design guidelines.</p>
<p>H. Explain any impacts that the proposed use, structure, or activity will have on the surrounding area from the transmission of signals that interfere with radio or television transmission.</p>
<p>The Project will not create adverse impacts on radio or television transmissions.</p>
<p>I. Explain any changes to the vehicular and pedestrian circulation patterns.</p>
<p>Vehicular and pedestrian circulation are shown on Figures 3.19-3.21 of the PUD-PMP. The Projects' Site design strategy focuses on creating pedestrian-oriented sidewalks and streets surrounding the Project Site. Existing sidewalks will be expanded and improved with new street trees (some in raised planters), benches, street lights and bicycle racks, dramatically improving the pedestrian experience, while maintaining existing circulation patterns around the Site.</p> <p>As described in Section 3.2.2, the Project envisions removing Kensington Avenue to create a new 15,826 sf off-site public open space (the "Urban Park"). The Urban Park is not part of the PUD, and is considered an off-site improvement to City owned land that extends from the Site southeast to the edge of the existing Public-Storage Facility on Middlesex Avenue. The Urban Park will create an attractive gateway into the Assembly Row development and will provide generous pedestrian and bicycle infrastructure that connects Foley Street to the Kensington Underpass below I-93, and the Stop and Shop and Garfield Avenue neighborhood to the southwest.</p> <p>The Kensington Avenue Pedestrian Street will provide between a 17' and 24' clear right-of-way ("ROW") to accommodate the proposed open space, emergency vehicles, and for occasional vehicular circulation needs that support maintenance and park events. See Figures 3.14 and 3.17.</p>
<p>J. Explain any measures taken to preserve and protect natural resources (such as wetlands, steep slopes, floodplains, hilltops, vegetation, sun and wind exposure). If there is any wetland, pond or surface water body on the subject property, as defined under Wetlands Protection Act, MGL Chapter 131, Sec. 40, explain the project's wetland permitting status and plans for protection of these features.</p>
<p>None. No natural resources such as wetlands or other water features exist on the Project Site.</p>
<p>K. Explain the demolition and construction procedures including movement of soil, impact mitigation measures, and an estimate of the time period required for completion of the development. Please consult the Mass Department of Environmental Protection's regulations (www.mass.gov/dep/).</p>
<p>All existing buildings within the Project Site will be demolished. The Proponent anticipates commencing Site preparation and utility relocation work in the spring of 2018 for both the Hotel and Residential Buildings. Work for both is anticipated to be complete by mid-to-late 2020 (approximately 20 months). Specific details on timing and mitigation related to demolition and construction will be addressed during the Special Permit approval process.</p>
<p>L. Explain proposed method for solid waste disposal (how waste will be collected and stored, who will be responsible for pick-up and maintenance, recycling efforts, etc.) and for screening of disposal facilities.</p>

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

Solid waste disposal will be handled by private contractors. The disposal facilities (dumpsters and compactors) will be internal or screened and buffered accordingly. Additional details will be provided during the Special Permit approval process.

M. Identify any historic sites or structures on the project site, or on neighboring properties, and explain any measures to protect historic features. Note that structures over 50 years old may require Historic Preservation Commission review before demolition or substantial alteration occurs.

A review of the Massachusetts Historical Commission's (MHC) Inventory of the Historic and Archaeological Assets of the Commonwealth, available through the Massachusetts Cultural Resource Information System (MACRIS), indicated one previously inventoried property located in the Project area. A 1927 service station (SMV.1003) was recorded in 1990 along Middlesex Avenue, but has since been demolished. The property was recorded as part of the Assembly Square Area (SMV.I); in 2002 the MHC opined that the area did not retain enough integrity to be eligible for the National Register, and the area has recently been redeveloped.

12.1. Planned Unit Development – Preliminary Master Plan Submission – Additional Supporting Statements

Address each of the following in order to submit a PUD Preliminary Master Plan.

A. State what the general impact of the PUD will be upon the neighborhood.

The Project will transform an undeutilized and mostly vacant Project Site into a hub of residential and retail activity, which will help activate, and knit together the fabric of Middlesex Avenue, and will serve as the gateway to Assembly Square. The Project will improve the connection between Assembly Row and the open space, commercial uses and residential neighborhoods of Somerville to the west of the I-93 elevated highway. This connection will be further strengthened by new and improved public open space, an improved streetscape, and new residents who will enliven the area on a consistent and daily basis. As described in the Section 3.2.2, the Project will provide approximately 10,613 square feet of on-site open space, and approximately 15,826 sf of new off-site open space improvements.

B. Explain the landscaping and maintenance provisions for all open space and drainage areas.

Please refer to Section 3.2.2 and Figures 3.11-3.17 for a summary of conceptual landscaping and open space to be provided by the Project. Please refer to Section 6.4 for a summary of existing and proposed stormwater management strategies. A final open space and landscaping plan, along with a final stormwater management plan will be provided during the Special Permit approval process.

The Proponent (which term shall include each and every successor in interest to the original Proponent) will be responsible for maintenance of the open space and public realm improvements on the Project Site. The Proponent will work closely with the City to provide additional details during the Special Permit review process regarding the maintenance of the proposed off-site improvements to City-owned property.

C. Explain the water supply and sewage disposal systems. For structures served by sewage disposal systems, document the status of Departmental of Environmental Management and/or other sewage permits.

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

Please refer to Chapter 6, and Figures 6.1 - 6.3 of the PUD-PMP for an analysis of existing and proposed utilities. There are no wetlands on the Project Site that will be altered by the Project.

There is a 20-inch water main on the Project side of Middlesex avenue, which will supply both domestic and fire service to the Project. Preliminary conversations with the City Engineer have indicated that this main is adequate for the project. A hydrant flow test will be performed during the design phase to verify that there is adequate water supply to the building.

Currently the Site is serviced by a 10-inch vitrified clay pipe which collects and conveys wastewater from the area to the MWRA system. The Proponent will continue to work closely with the City to determine existing water usage (which relates to sewer flows) contributing to this existing system, and if improvements need to be made to the collection system to support the Project.

12.2. Special Permit with Site Plan Review for a PUD – Additional Supporting Statements

Address each of the following items in order to apply for a Special Permit with Site Plan Review for a PUD.

A. State the project's relationship to the approved PUD Preliminary Master Plan. Note the phase and any departure from the approved plan.

N/A.

B. Explain the provisions for the ownership and maintenance of usable open space as appropriate.

N/A

C. Explain the deed restrictions or covenants requiring compliance of all development with the PUD master plan, and any architectural or other guidelines or standards.

APPLICATION
For Planning Board and Zoning Board of Appeals Approval

N/A

2.3 Requested Waivers

2.3 Requested Waivers

The following are the items that zoning relief is sought for:

1. A waiver is requested for exceeding the maximum height limit for the proposed Project. The Project Site is located within a PUD-A district and per Section 6.4.6 – Assembly Square Mixed Use District (“ASMD”) Table of Dimensional Requirements – the Project Site is located more than 350 feet from the Mystic River Bank and more than 1,000 feet from an MBTA Orange Line entrance, therefore the maximum building height requirement for “all other locations” is 125 feet. Relief is sought for both buildings, which currently exceed the maximum building height requirement of 125 feet.
2. A waiver is requested for allowing the proposed multi-family residential dwelling use for the proposed Project. The Project Site is located within the ASMD and per Section 7.11 – Table of Permitted Uses – Use 1(c), the proposed multi-family residential dwelling use of more than seven (7) units will require relief in the form of a Special Permit with Site Plan Review.
3. A waiver is requested for allowing the proposed hotel use for the proposed Project. The Project Site is located within the ASMD and per Section 7.11 – Table of Permitted Uses – Use 10-5(b), the proposed hotel dwelling use of more than 10,000 square feet of gross floor area will require relief in the form of a Special Permit with Site Plan Review.
4. A waiver is requested as the proposed Project will not meet the parking requirements set forth in Section 9.16. The Project Site is located within the ASMD and per Section 9.16 – Parking Space and Loading Area Requirements in the ASMD and the PUD-A District – the proposed Project will not meet the minimum parking spaces requirement of 1.0 spaces per residential use unit, 0.5 spaces per hotel unit and 1 space per 1,000 square feet for the retail use. Zoning requires the Project to provide 315 parking spaces. The Project currently proposes 293 total structured parking spaces on-site. Relief is sought for all three (3) proposed uses.
5. A waiver is requested from the loading bay requirement stated in Section 9.16 and Section 9.7, and described in Section 16.5.5. As encouraged in Section 9.16.3, the Applicant is proposing a shared loading approach for the retail, hotel and residential uses. The Project design includes three (3) loading bay spaces located off of McGrath Highway between the two buildings, appropriately screened from the public right of way, each of which complies with the minimum dimensional requirements of 12-feet wide, 30-feet long. The total number of loading bays required for the Project varies depending on the mix of retail, restaurant and residential space within the building. Based on the zoning

requirements, the maximum loading need for the Project would be 5 loading spaces through a combination of retail, residential and hotel uses.

From a functional perspective, this amount of loading spaces should not be necessary based on several factors. Individual tenant use of the loading bays by the three primary uses will be for supply deliveries and may be from smaller trucks rather than longer trailer trucks. Accordingly, some shorter-term deliveries will be able to occur with two small vans simultaneously utilizing a loading area only allocated for one larger truck per the zoning standards. Most deliveries will likely occur in the weekday morning hours. As part of the overall Site management, deliveries being made to the Project or residents moving in and out of the building will be scheduled to help minimize any shared loading conflicts.

2.4 Abutters List

City of Somerville - Assessing Department: Abutter List
Somerville, MA

MBLU	Location	Owner Name	Care Of	Mailing Address	City	State	Zip
86/ A/ 1/ /	133 Middlesex Ave.	FR. Assembly Square LLC		1626 East Jefferston St	Rockville	MD	20852
87/ A/ 1/ /	20 Cummings St.	Tage Restaurant Realty		PO BOX 386	Weston	MA	02493
87/ B/ 2/ /	74 Middlesex Ave.	Rittenberg Jordan L	Tuck, Jerome M	25 Boundbrook Road	Newton Highlands	MA	02461
87/ B/ 3/ /	845 Mcgrath Hwy.	Mcgrath 845 Investments Llc		647 Sanctuary Dr.	Boca Raton	FL	33431
88/ A/ 1/ /	5 Middlesex Ave.	National Tax Search Llc Trustee	SOM Office Assoc. C/O Rd. MGMT. LLC.	810 Seventh Ave. - 10th Fl	New York	NY	10019
68/ B/ 4/ /	23 Cummings St.	Cummings-Middlesex Somerville Llc	J. Tagliente	P O BOX 386	Weston	MA	02493
87/ C/ 1/ /	50 Middlesex Ave.	Ps Northeast Llc		701 Western Ave	Glendale	CA	91221
68/ B/ 3/ /	132 Middlesex Ave.	Christian Assembly Inc		616 Fellsway	Medford	MA	02155
87/ C/ 1/A /	0 Middlesex Ave.	City Of Somerville		93 Highland Ave	Somerville	MA	02143

2.5 Accessibility Narrative



KHALSA DESIGN INCORPORATED
Architects & Engineers

17 Ivaloo Street, Suite 400, Somerville, MA 02143
p.617-591-8682 / f. 617-591-2086

TO: George Proakis
Director of Planning
City of Somerville
93 Highland Street
Somerville, MA 02143

FROM: Jai Singh Khalsa / Principal

RE: Assembly Edge PUD-PMP

Dear George,

Pursuant to the requirements of the City of Somerville application for Planning Board Approvals, KDI is providing the following Accessibility Narrative.

The Assembly Edge Planned Unit Development (the "Project") will be designed in compliance with the following applicable accessibility codes and guidelines:

- › 2010 ADA Standards for Accessible Design
- › 521 CMR: Architectural Access Board

521 CMR (MAAB) is applicable to all areas accessed by the general public. The Project will provide accessible routes connecting accessible spaces and elements of the Project. Accessible routes will coincide with routes for the general public.

2010 ADA Standards are applicable to new fixed or built-in elements of site improvements and pedestrian routes or vehicular ways located in the Project. The Project will provide accessible routes from accessible parking spaces and accessible passenger loading zones, public streets and sidewalks, and public transportation stops to the accessible building or facility entrances they serve, and provide accessible routes connecting accessible buildings, accessible facilities, accessible elements, and accessible spaces within the Project.

Please let me know if you have any questions.

Jai Singh Khalsa
Principal
Khalsa Design Inc.

2.6 Summary of Environmental Response Actions

June 20, 2017

Mr. George Proakis
Director of Planning
Somerville City Hall
93 Highland Ave.
Somerville, MA 02143

Re: Environmental Response Actions – Assembly’s Edge
845 McGrath Highway & 74 Middlesex Avenue
Somerville, MA 02145

Dear Mr. Proakis:

Cooperstown Environmental LLC (Cooperstown) is pleased to provide this summary of environmental response actions to be conducted at the above site in connection with the “Assembly’s Edge” redevelopment project proposed by 845 Riverview, LLC. This letter provides an overview of the extensive environmental cleanup to be conducted on this “brownfield” site as part of the redevelopment project.

845 Riverview, LLC purchased the parcel at 845 McGrath Highway on April 28, 2017, and holds a purchase option on the adjacent parcel at 74 Middlesex Avenue. 845 Riverview has planned a major redevelopment including a hotel, residential housing, and a retail component and is now in the permitting process. Specifically, the applicant is developing an application under the Planned Unit Development Preliminary Master Plan (PUD-PMP).

Environmental History

As part of the redevelopment, the applicant will be resolving the known environmental issues on the properties. The McGrath Highway parcel was designated by the Massachusetts Department of Environmental Protection (DEP) as a “disposal site” in 1990. As such, it is regulated by the Massachusetts Contingency Plan (MCP) and is identified as Release Tracking Number (RTN) 3-2891. In 1996 this site received a Class C Response Action Outcome (RAO), now called a Temporary Solution, and as such has certain requirements to comply with the DEP regulations, including the requirement to attain a Permanent Solution. The reports include references to the removal of underground storage tanks (USTs) at the property.

Available reports on this site can be viewed on DEP’s File Viewer at:

<http://public.dep.state.ma.us/fileviewer/Rtn.aspx?rtn=3-0002891>. Included in the site file history are the following reports:

1989-08-30	<i>Phase I Limited Site Investigation</i>
1996-10-16	<i>Phase II Scope of Work</i>
1996-11-13	<i>Phase II, Phase II, and Response Action Outcome</i>
2008-12-01	<i>Class C-1 Periodic Review Opinion</i>
2009-11-10	<i>Letter referring to future removal of 10,000-gal diesel UST</i>
2014-04-01	<i>Class C RAO 5-Year Periodic Review</i>

The parcel at 74 Middlesex also has reportable (regulated) levels of certain constituents (based on the site testing), although this has not yet been reported to DEP. Two reports were commissioned in May 2017 and are available electronically upon request:

2017-05-03 *Phase I & II Environmental Property Assessment*

2017-05-10 *Soil Management Plan*

Planned Environmental Activities

845 Riverview has committed as part of the “Assembly’s Edge” project to fully investigating the properties and plans a complete remediation of the contamination present on these parcels from prior uses. With the excavation of the entire soil volume down to native materials, there will be no need for an Activity and Use Limitation (AUL) or other restrictions. In other words, it will be a full and complete cleanup to unrestricted standards.

Cooperstown has been retained to serve as the Licensed Site Professional (LSP) of Record for the site. As the LSP-of-Record for the overall development project inclusive of both properties, we will provide all relevant expertise and services related to the environmental conditions at the site. Our work will be performed in accordance with the MCP regulations. While the ultimate scope of services to be required will become clear only as the project unfolds, we generally have identified several tasks that will commence as this project moves forward including:

Permitting Assistance

We understand that VHB of Boston, Massachusetts has been retained to secure local permits including the Planned Unit Development (PUD) process. Cooperstown will provide environmental expertise and submittals as may be required in this process.

Site Testing

Prior consultants have performed site investigations at these properties including groundwater and soil testing. We will be conducting additional testing for purposes of assessing future soil disposal options, for use in preparing a Soil Management Plan (SMP), and generally to meet DEP requirements.

Soil Disposal Characterization

Testing will be needed specifically related to the eventual soil trucking and disposal that will be implemented as part of site redevelopment. Disposal facilities typically require one sample for every 500 cubic yards (cy) of soil. Here, up to 16,550 cy of soil could be removed from the site, if excavated to a depth of 12 feet across the entire footprint of 37,075 square feet. This quantity would require a minimum of 33 soil samples.

Release Notification Form

Cooperstown will make the notification to DEP for the Middlesex Avenue property within the timeframes following purchase of that property.

Dewatering

The prior data indicate that the depth to groundwater is approximately 8 to 12 feet below the ground surface. Because excavation to a depth of up to 12 feet is possible, dewatering could be required. If so, a dewatering system and a treatment system will be needed, as well as a permit to discharge the clean water following treatment.

We expect that a National Pollutant Discharge Elimination System (NPDES) permit will be needed, specifically a Remediation General Permit (RGP). The RGP requires initial testing of the groundwater and analysis of a wide range of constituents, followed by a Notice of Intent listing the testing results. Once a permit is granted, there are follow-up testing requirements and inspections by a certified Waste Water Treatment Plant (WWTP) Operator on a schedule specified by EPA.

For treatment, it is likely that a system will include one or more fractionation (frac) tanks, filters for silt removal, and treatment by granular activated carbon (GAC) to remove contaminants, at minimum. Iron and/or metals treatment could also be required.

Soil Management

The removal, transportation, and disposal of soil with contamination is highly regulated in Massachusetts. Proper characterization is the initial step, followed by communications with various disposal facilities to identify sites willing and able to accept the soil subject to acceptable processing rates and favorable prices. Once disposal facilities are identified, a waste profile, LSP Opinion Letter, testing data, and a properly-completed Bill of Lading (BOL) will be required for each facility.

Excavation Oversight/Field Services/Dust Monitoring

Once the excavation commences, Cooperstown will provide a field scientist or engineer to oversee the process, track trucks leaving the facility, ensure proper BOL procedures are being followed, and generally coordinate the activity among the excavator, the truckers, and the disposal facilities.

DEP generally requires that any excavation and loading activities on a contaminated site include provisions for dust monitoring and control to ensure that surrounding populations are not exposed to unacceptable levels of contaminants. This typically requires upwind and downwind dust monitoring locations and regular checks and recording of these readings to demonstrate compliance with the action levels specified in the RAM Plan.

Post-Excavation Sampling

After an excavation is completed, confirmatory samples must be collected at the limits of excavation (horizontal and vertical) to document the residual contamination levels. We will sample on a frequency appropriate to the scope of the excavation.

MCP Reporting and Activities

Because the work to be implemented here will be performed on a Massachusetts Contingency Plan (MCP) site, LSP Services will be required including a variety of reports and submittals and overall project guidance and oversight. At a minimum, we anticipate:

- Release Notification Form (RNF) related to the 74 Middlesex Avenue property
- A Release Abatement Measure (RAM) Plan filed prior to commencement of construction
- RAM Status Reports at regular intervals during the work

Letter – George Proakis
845 McGrath Highway & 74 Middlesex Avenue, Somerville
June 20, 2017
Page 4 of 4

- A RAM Completion Report/Permanent Solution Report at project conclusion
- Public Notifications reporting related to these submittals

Other MCP reports could become necessary depending on the results of other activities and the time frame of soil removal and construction activities. We do not anticipate the need for an Activity and Use Limitation (AUL), as the soil removal planned should remove all the contamination or at least enough such that an AUL will not be required.

Please contact me by phone or email at Jim@CooperstownEnv.com should you desire to discuss this work.

Very sincerely yours,
Cooperstown Environmental LLC

A handwritten signature in black ink that reads "James T. Curtis". The signature is written in a cursive, flowing style.

James T. Curtis
President

3

Project Overview

In accordance with Article 16 of the City of Somerville Zoning Code (the "Code"), 845 Riverview, LLC (the "Proponent"), respectfully submits this Planned Unit Development Preliminary Master Plan ("PUD-PMP") to the City of Somerville (the "City") to initiate the PUD-PMP review process. The Proponent proposes to redevelop approximately 37,075 square feet (0.85 acres) of land in the Assembly Square area of Somerville, Massachusetts (the "Project Site", the "Site", or the "PUD Boundary"), with a 369,140 square foot (sf), pedestrian and transit oriented, mixed-use development that consists of two (2) buildings containing up to approximately 215 residential units, approximately 9,515 sf of ground floor retail and/or restaurant space, an up to 180 room hotel, and approximately 293 below- and above-grade structured parking spaces (the "Project"). Refer to Figure 3.1 for a Site location map and Figure 3.2 for a Neighborhood Context Map.

The Project is based on three key principles that are consistent with the City's longstanding goals for the Assembly Square Mixed-Use District (the "District"):

- › Create a balanced mixed-use program;
- › Pedestrian & transit-oriented planning and design; and
- › Focus development around new pedestrian-oriented public places.

The Project will transform the Project Site into a hub of residential and retail activity, which will help knit together the fabric of Middlesex Avenue and will serve as the gateway to Assembly Square. The Project will also improve the connection between Assembly Row and the open space, commercial uses and residential neighborhoods of Somerville to the west of the I-93 elevated highway. This connection will be strengthened by new and improved public open space, an improved streetscape, and new residents who will enliven the area on a consistent and daily basis.

This chapter provides an overview of existing Site conditions, describes the Project and the Project Site, describes the Project schedule and summarizes the Project-related public benefits.

3.1 Existing Conditions

Figure 3.3 includes the existing conditions Site plan and Figures 3.4a-d present photographs of the existing Site conditions. Located in the Assembly Square area of Somerville, the approximately 0.85-acre Project Site is bounded by McGrath Highway to the north, Middlesex Avenue to the east, Kensington Avenue and the elevated Interstate 93 off-ramp (the "Off-Ramp", "I-93") to the west and an existing

Public Storage building to the south. Kensington Avenue cuts through the middle of the Project Site and creates a vehicular and pedestrian connection between Middlesex Avenue and McGrath Highway.

The portion of the Project Site to the north of Kensington Avenue includes a vacant lot consisting of deteriorated pavement, and a 5,506 sf, single-story structure and parking lot supporting an existing Dunkin Donuts and a Caribbean Restaurant. The portion of the Project Site to the south of Kensington Avenue is currently being used as passive open space directly adjacent to the Public Storage building.

The Project will replace the existing surface parking lots and retail building with new open space and public realm improvements described later in this Chapter.

According to the City of Somerville Zoning Ordinance, the Project Site is located within the Assembly Square Mixed-Use District ("ASMD").

3.2 Project Description

The Project consists of two (2) buildings that will be constructed over one floor of below-grade parking, as show in Figure 3.5 and Figures 3.7a-d. Additionally, Figures 3.9 and 3.10a-b provide conceptual Project renderings.

The specific use and unit mix, height, and sizing described in Table 3-1 and shown on Figure 3.6 are conceptual, and subject to minor revisions as the design for each building is advanced, provided that the Proponent shall not exceed the limits of development and impervious areas described in this section and shown on the plans.

On the eastern portion of the Site fronting Middlesex Avenue, up to 215 residential units will be located in the "Residential Building." The Residential Building includes approximately 9,515 sf of ground floor retail, three (3) floors of above-grade, architecturally-screened parking, and approximately 249,203 sf for residential uses. The Residential Building rises 21 stories, to a height of approximately 235 feet from grade to the top of the highest occupiable floor ("building height").

On the western portion of the Site adjacent to the elevated highway, up to 180 hotel rooms will be located in the "Hotel Building." The Hotel Building includes a lobby and three (3) floors of above-grade, architecturally-screened parking, and approximately 108,542 sf of hotel use. Additional amenity space for the hotel, condominium, and apartments will be incorporated into the fifth floor of the hotel building with a terrace shared by both buildings. The Hotel Building rises 13 stories, to a height of approximately 147 feet. The proposed development program is presented in Table 3-1 below. Note, all dimensions are approximate.

The Project will benefit the Assembly Square area by redeveloping an underutilized Site, a portion of which is currently closed to the public, and by eliminating the gap on Middlesex Avenue between commercial uses to the north and south and the residential and commercial uses to the east. The Project will also diminish the visual

impact of the elevated roadway and highway ramps from Assembly Square. See Figures 3.8a-b.

Table 3-1 Program Table

	Hotel Building	Residential Building
Total Net Square Feet (sf) ¹	108,542	260,598
Height (ft) ²	147	235
# Stories	13	21
Residential (sf) ¹		249,203
Residential Units ³		215
Hotel (sf) ¹	108,542	-
Hotel Units	180	-
Retail (sf) ¹	-	9,515
Above-Grade Parking (sf)	86,268 sf / 199 Spaces	
Below-Grade Parking (sf) ⁴	37,056 sf / 94 Spaces	
Floor Area Ratio (FAR)	2.93	7.03
FAR Total (across both buildings): 9.96		
Total Site Area: 37,075 (0.85 acres)		

- 1 All areas are provided as net ground floor area (NFA) as defined in Article 2 of the Somerville Zoning Ordinance, which excludes accessory garage, support spaces and mechanical uses accessory to the operation of the building, off-street loading facilities, malls, plazas, elevator shafts, escalators, stairways and stair landings, and those areas used for the storage, operation, or maintenance of mechanical equipment such as air conditioning and heating apparatus.
- 2 In accordance with the Somerville Zoning Ordinance, heights are measured from the finished grade adjoining an exterior wall of a building to the highest point of the roof/beams. Table 3-1 includes zoning heights to the top of the highest occupiable floor.
- 3 Assumes approximately 39 one-bedroom units, 119 two-bedroom units, 17 two-bedroom + Study Units, and 40 three-bedroom units.
- 4 As defined in Article 6.4.6 B of the Somerville Zoning Ordinance, In the ASMD, Structured Parking, whether above grade or below grade, shall be excluded for purposed of calculating Gross Floor Area, Net Floor Area, and Floor Area Ratio.

3.2.1 Site Access/Connectivity

The Project Site has convenient public transit access, including; one (1) MBTA station within a quarter mile (0.25) mile, the Orange Line station at Assembly Square, and three (3) bus routes with stops near the Project Site along Middlesex Avenue and Mystic Avenue which provides opportunities to minimize vehicle trips and encourage alternative modes of travel. See Figures 3.19 – 3.21 and 5.3.

The open space, pedestrian pathways and sidewalk connections provided as part of the Project, and as described in Section 3.2.2, will be designed to complete and improve connections with the existing network of parks and pathways in the vicinity of the Project Site, including improving the connection between Assembly Row and

the Mystic River, and the residential and commercial neighborhoods of East Somerville to the west of the I-93 Off-Ramp.

The Project Site also has excellent vehicular access and visibility from I-93. The primary vehicular point of entry to the Site will be at the intersection of Middlesex Avenue and McGrath Highway. As described in Section 3.2.2, and as shown on Figure 3.7a-b, on-site structured vehicle parking, short-term hotel drop-off and valet parking, and service and loading areas will all be accessible from McGrath Highway and Kensington Avenue. Above-grade parking in both buildings will be connected by an elevated garage bridge (the "Garage Connector") on floors two through four.

3.2.2 Open Space Summary

The Proponent is committed to improving and operating the Project Site with as much publicly accessible open space as possible, excluding the building footprint. As described below, up to approximately 10,613 sf of publicly accessible open space (approximately 8,542 sf of useable open space) will be provided on the Project Site. Additionally, the Project proposes up to approximately 15,826 sf of off-site open space improvements. The conceptual design and programming of these areas are described below. See Figures 3.11-3.17.

Hotel and Residential Courtyard

The Hotel and Residential Buildings located at the north and south edges of the Site create an interior courtyard over subsurface parking (the "Courtyard"). This multi-functional Courtyard will serve as a convenient public passage through the Site, a prominent gathering area for ground level commercial space, and as an entry for the Hotel Building. The Courtyard opens to new proposed public open space (the "Urban Park") to the east, and connects under the Garage Bridge to McGrath Highway, establishing permeability throughout the Site and important pedestrian connections to the surrounding neighborhood.

The Courtyard is designed as a grid of decorative pavers accented with an informal arrangement of curbed planters. The planting plan will utilize contrasting textures and colors of grasses, perennials and shrubs accented with small flowering trees. Fixed and flexible seating will be provided for hotel guests and public users of this space. The Courtyard design will extend around the Hotel Building to the Hotel Building entrance and along the proposed pedestrian street (the "Pedestrian Street") that will replace Kensington Avenue. See Figures 3.11 and 3.17.

Urban Park

The Project envisions removing Kensington Avenue to create a new, approximately 15,826 sf Urban Park. The Urban Park is not part of the PUD, and is considered an off-site improvement to City-owned land that extends from the Site southeast to the edge of the existing Public Storage facility on Middlesex Avenue. The Urban Park will create an attractive gateway into the Assembly Row development and will provide generous pedestrian and bicycle infrastructure that connects Foley Street to the

Kensington Underpass below I-93 (the "Underpass"), and the Stop and Shop and Garfield Avenue neighborhood to the southwest.

The Urban Park is envisioned as a passive park with lawn, shade trees, and ornamental plantings. Pedestrian pathways will be defined with decorative seatwalls and festive lighting will create an active and safe space at all times of the day.

The Kensington Avenue Pedestrian Street will provide between a 17-foot and 24-foot clear right-of-way ("ROW") to accommodate the proposed open space, emergency vehicles, and for occasional vehicular access to support maintenance and park events. See Figures 3.14 and 3.17.

These improvements require the City to abandon Kensington Avenue, a public way. The City of Somerville would retain ownership of the Pedestrian Street; however, the Proponent is prepared to improve the Urban Park.

The Proponent will continue to coordinate closely with the City on the abandonment of this public way, which would require a vote from the Board of Aldermen and final approval from the Mayor. An update on the status of this request will be provided in the special permit with site plan review application (the "Special Permit").

Streetscape Design and Public Realm Improvements

The Project's Site design strategy focuses on creating pedestrian-oriented sidewalks and streets surrounding the Project Site. The following section summarizes streetscape design and public real improvements proposed on Middlesex Avenue, McGrath Highway and Kensington Avenue.

Middlesex Avenue

The streetscape along Middlesex Avenue is designed to establish the Project's identity, and to support the active uses associated with the proposed Residential Building lobby and ground floor retail. The Project will provide a generous eight (8)-foot wide pedestrian zone, and a (6)-foot furnishing zone that includes new street trees, stormwater planters, benches, street lights and bicycle racks, which will dramatically improve the pedestrian experience while maintaining critical Site distances for vehicles. Twenty-four short-term, back-in angled vehicle parking spaces will be provided along Middlesex Avenue to serve the ground level retail. (See Figure 3.12).

McGrath Highway

The McGrath Highway frontage will provide the vehicular access points for the service and loading areas, below-grade parking across the Site, and structured parking on the second, third and fourth floors of the Hotel and Residential Buildings. The Project will provide a generous eight (8)-foot wide pedestrian zone, and a six (6)-foot wide furnishing zone that includes new street trees, stormwater planters, benches, street lights and bicycle racks, which will dramatically improve the pedestrian experience, while maintaining critical Site distances for vehicles. (See

Figure 3.13). The portion of McGrath Highway that fronts the Project Site will be repaved as part of this Project.

Kensington Avenue

The Kensington Avenue streetscape will be designed to accommodate a new taxi stand, and short-term drop-off area for valet parking that will support the Hotel Building lobby. The Project will provide a four (4)-foot wide pedestrian zone with new concrete paving at this portion of the Project Site. The portion of Kensington Avenue that fronts the Project Site will be repaved as part of this Project.

3.2.3 Parking Summary

Vehicle Parking

Structured Vehicular Parking

The Project will provide 293 spaces both underground and on the second and third floors of the Hotel and Residential Buildings. The 93 underground parking spaces will be accessed from a ramp located adjacent to the loading bays that service the Residential Building on McGrath Highway. The above-grade structured parking floors will provide up to 189 spaces, and will be accessed from a ramp located on McGrath Highway. Above-grade parking in both buildings will be connected by the Garage Connector (See Figure 3.5 and Figures 3.7a-b).

Unstructured Vehicular Parking

The Project will provide up to approximately 24 short-term, back-in angled vehicle parking spaces to support the ground level retail space along Middlesex Avenue.

Hotel Parking

The Hotel Building entrance on Kensington Avenue will accommodate short-term drop-off and valet parking. Parking spaces designated for longer-term hotel use will be located in the underground garage.

Bicycle Parking

The Project will also include short- and long-term bicycle parking storage areas to meet Somerville Zoning Ordinance bicycle parking requirements. Based on the current design, the Somerville Zoning Ordinance requires that a minimum total of 80 bicycle parking spaces be provided on the Project Site. The Project will provide 74 interior, secure bicycle spaces located in the above-grade parking for residents. Additionally, approximately 22-short term bicycle parking spaces will be provided via bicycle racks within 50 feet of each entrance. Thus, the Project will provide approximately 96 total bicycle parking spaces, which exceeds Somerville Zoning Ordinance requirements.

3.2.4 Accessibility Summary

Project Site Accessibility

The Project will improve accessibility around the Project Site by creating generous, barrier-free pedestrian zones along Middlesex Avenue, McGrath Highway and Kensington Avenue.

The Project will implement the following:

- › A taxi stand and new drop-off area will be created along Kensington Avenue in front of the Hotel Building entrances, the design of which will incorporate a curb ramp to provide barrier-free access to the buildings.
- › The sidewalks on Middlesex Avenue and McGrath Highway will be widened, paved in concrete, free of obstructions and will have a comfortable and Americans With Disabilities Act ("ADA") compliant slope, where feasible.
- › The parking ingress/egress will incorporate a flush sidewalk condition giving priority to the pedestrian over the vehicle.
- › It is anticipated that five (5) percent of the residential units in the Hotel Building and Residential Building will be designed to be accessible, in compliance with 521 CMR.

Additionally, the Project will comply with accessibility regulations set forth in 521 CMR: Architectural Access Board. Both the Residential and Hotel Building will be served by multiple elevators and two (2) egress stairs.

3.2.5 Sustainability/Green Building Design

The Proponent and the Project design team are committed to an integrated, sustainable design approach. The Project is currently targeting a goal of Leadership in Energy and Environmental Design® ("LEED") Version 4 Certified rating. The Proponent will provide a LEEDv4 checklist as part of the Special Permit Application. As the Project design advances, the Project team will explore sustainable design strategies that will maximize the conservation of energy, water and other resources, will consider strategies to utilize recycled building materials, improve indoor air quality and occupant well-being, in addition to other innovative design and operational strategies.

3.2.6 Height/Massing

The Project Site is bounded on the east and west by major vehicular roadways: Middlesex Avenue and the I-93 Off-Ramp. The Site is in an "urban valley", which contains a mix of uses and building heights, including the La Quinta Hotel, the 99 Restaurant, Dunkin' Donuts, and the Public Storage building. It is anticipated that these existing uses may become transitional as momentum continues to build for new development in the ASMD.

Directly across Middlesex Avenue, the Project faces the blank, rear walls of the big box stores and a sea of surface parking farther north that supports the Assembly Row development.

The Hotel and Residential Buildings are similar in scale and density to the recently built structures in Assembly Row. The Residential Building proposed at 235 feet will be similar in height to the recently completed and nearby Partners Healthcare building. Please refer to Figures 3.8a-b for a comparison of the Project's massing to other proposed and/or approved projects in the vicinity of the Project Site.

As described in Section 4.2, a building height waiver will be sought by Special Permit for both the Residential and Hotel Buildings. As the design advances, facade treatment will be explored to address the height and massing of the Project and to break down the scale into separate components that will be consistent with the *Assembly Row Design Guidelines at Assembly Square*.

3.3 Project Schedule/Phasing

The Proponent intends to file the Special Permit Application in late fall of 2017. Throughout the coming months, the Proponent expects to work diligently with the community and with the City to complete the PUD-PMP and Special Permit review and approval processes.

The Proponent anticipates commencing Site preparation and utility relocation work in the spring of 2018 for both the Hotel and Residential Buildings. Work for both is anticipated to be complete by mid-to-late 2020 (approximately 20 months).

3.4 Consistency with SomerVision

SomerVision: Somerville's Comprehensive Plan 2010-2030, was developed by a steering committee in collaboration with the Mayor's Office of Strategic Planning and Community Development through a series of meetings, visioning sessions, and public workshops. It was endorsed by the Somerville Board of Aldermen and adopted by the Somerville Planning Board in April 2012, and aims to serve as a guide for future growth and development in the City. The primary goals of the plan are to:

- › Preserve existing residential neighborhoods;
- › Enhance existing squares and commercial corridors; and
- › Transform opportunity areas on the eastern and southern edges of Somerville.

The Project is consistent with these goals, as it is located within an identified opportunity area of Somerville. As proposed, the Project will enhance connections to the Assembly Row development from residential areas located in East Somerville on the southern edge of the ASMD.

Please also refer to Figure 3.22, which shows how the Project complies with the City's long-range master plan for the Assembly Square District (July, 2009).

3.5 Massachusetts Environmental Policy Act (MEPA)

As currently proposed, the Project is not subject to review pursuant to MEPA implementing regulations (301 CMR 11.03).

3.6 Summary of Public Benefits

Urban Design and Public Realm

- › The Project will create a high-quality continuous street frontage activated by vibrant and engaging ground floor uses, such as retail and restaurant spaces, and Residential and Hotel Building lobbies. Through the use of glass facades wherever possible, the Project will provide transparency and create an inviting and safe ground-level experience for pedestrians.
- › The Project will provide a significantly upgraded streetscape, including new sidewalks, street lighting, landscaping and other public amenities along Middlesex Avenue, McGrath Highway and Kensington Avenue.
- › New pedestrian pathways and sidewalk connections will be designed to complete connections with the existing network of parks and pathways in the area, including improving the connection between Assembly Row, the Project Site and development to the west of the I-93 Off-Ramp.
- › The Project will repave the portions of McGrath Highway and Kensington Avenue that front the Project Site.
- › The Project will create a new, 8,542 sf Courtyard on-site, which will serve as a convenient public passage through the Site, a prominent gathering area for ground level commercial space, and as an entry for the Hotel Building.
- › The Project will create a new 15,826 sf Urban Park. This off-site improvement will form an attractive gateway into the new Assembly Row developments and will provide generous pedestrian and bicycle connection from Foley Street across the park area to connect below I-93 to the Stop and Shop and Garfield Avenue neighborhood to the southwest.

Sustainability/Environmental

Sustainable and high-performance building strategies are at the core of the design for the Project.

- › **Area Revitalization** – The Project revitalizes an underutilized urban site, uses land efficiently by increasing density in immediate proximity to public transportation, and encourages the use of non-automotive modes of transportation.
- › **LEED** – The Project is currently targeting a goal of Leadership in Energy and Environmental Design® ("LEED") Version 4 Certified rating. The Proponent will provide a LEEDv4 checklist as part of the Special Permit Application.

- › **Stormwater** – The Project will implement Best Management Practices (BMPs) to improve water quality. The stormwater management system will be designed to release flows less than or equal to the existing condition. In the event, the Project receives drainage easements from the City, total volumes leaving the site will be reduced to meet the existing condition.
- › **Sewer Mitigation / Infiltration and Inflow (I/I)** – The Somerville Water and Sewer Department (SWSD) requires all new sewer connections or expansions of existing connections that exceed 2,000 gallons per day of wastewater to mitigate the impacts of the development by removing four (4) gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. The Proponent will comply with this requirement and develop an I/I mitigation plan through coordination with SWSD that removes approximately 260,000 GPD of I/I.

Transit and Transportation

- › **Pedestrians** – As described in Section 3.2.2, the Project will improve the pedestrian environment significantly through the development of the new pedestrian pathways and sidewalk connections and the creation of new publicly accessible open space.
- › **Bicycle Accommodations and Parking** – The Project will incorporate bicycle accommodations in compliance with the City of Somerville's guidelines to encourage cycling as a strong alternative transportation mode.
- › **Transportation Demand Management (TDM) Program** – The Project will implement a robust program of TDM strategies to take full advantage of its proximity to multiple mobility options and to reduce vehicles traveling to and from the Project Site. Please refer to Section 5.13 for a description of specific TDM measures to be implemented for the Project.

Social and Economic

- › **Additional Residential Opportunities** – The Project will provide up to 215 new units of housing – a low traffic-generating use – geared to meet the needs of both the condominium sale and rental housing markets. The Project promotes a vibrant mixed-use neighborhood, and will draw residents and customers to other restaurants, stores, and services in the area.
- › **Affordable Housing** – Consistent with the City of Somerville Inclusionary Housing Policy, the Project will provide approximately 43 affordable units (20 percent of the total residential units). As currently designed, the anticipated breakdown of the affordable units is approximately as follows:¹
 - Eight (8) One-bedroom units;
 - Twenty-four (24) two-bedroom units;
 - Three (3) two-bedroom plus study units; and

¹ Assumes a total residential unit allocation for the Project of approximately 39 one-bedroom units, 119 two-bedroom units, 17 two-bedroom + Study Units, and 40 three-bedroom units.

- Eight (8) three bedroom units.

In general, affordable units will be provided on-site in the Residential Building. Affordable housing units will be intermixed with the market rate units, dispersed throughout the building, and will be comparable to market-rate units in every respect, including location, quality and character, room size, and external appearance. Additional details on affordability and bedroom distribution shall be provided in the Special Permit Application.

- › **Enhanced Retail Opportunities** – The Project will provide new retail opportunities for neighborhood residents, visitors, and the public, consistent with those currently existing at the Property Site.
- › **New Job Creation** -The Project will enhance the economy by providing new job opportunities and a source of customers for local retail and restaurant establishments. It will create approximately 175 permanent jobs relating to the retail, and residential/hotel administration components, and create approximately 900 construction jobs in a variety of trades for the Project construction. The Project will also retain the existing 20 jobs associated with the Dunkin Donuts.
- › **Enhanced Tax Revenues** – The Project will generate new real estate and hotel tax revenues for the City of Somerville.

3.7 Community Outreach

Prior to and subsequent to filing the PUD-PMP, the Proponent met with and received feedback from multiple City agencies and community state holders, not limited to the Office of Strategic Planning and Community Development (OSPCD), the Department of Public Works and the Mystic View Task Force (MVTF).

3.7.1 Mystic View Task Force

The Project team met twice with the MVTF prior to filing the PUD-PMP on July 19, 2017 and September 14, 2017. The meetings with the MVTF have focused on a number of topics, including general public realm design, building height, shadow and wind impacts, and interior air quality.

As a result of these initial consultations the Proponent engaged Allied Engineering to help them research and identify air quality solutions for the Project. While conversations are ongoing, the Proponent has agreed to install high-efficiency HEPA 16 filters in both buildings. Additionally, the Proponent has agreed to assess the above-grade pedestrian wind impacts on the 5th floor open space in the Courtyard as part of the Special Permit Application.

The Proponent looks forward to continuing to receive feedback on the Project and coordinating with the relevant agencies, abutters and community representatives as the Project progresses.

3.8 Development Team

Table 3-2 identifies the members of the design and consulting team (the "Project Team") and provides their primary contact information.

Table 3-2 – Development Team Contact Information

DEVELOPMENT TEAM CONTACT INFORMATION	
Proponent	845 Riverview, LLC 200 Broadway, Suite 103 Lynnfield, MA 01940 978.360.9558 <i>Contact: Edward Doherty</i>
Legal Counsel	McDermott, Quilty and Miller LLP 28 State Street, Suite 802 Boston, MA 02109 617.946.4600 <i>Contact: Joseph P. Hanley, Nicholas J. Zozula</i>
Permitting	VHB 99 High Street, 10 th Floor Boston, MA 02110 617.728.7777 <i>Contact: Kyle Greaves</i>
Transportation	Design Consultants Inc. (DCI) 120 Middlesex Avenue, Suite 20 Somerville, MA 021456 617.776.3350 <i>Contact: Tom Bertulis</i>
Civil and Survey	Design Consultants Inc. (DCI) 120 Middlesex Avenue, Suite 20 Somerville, MA 021456 617.776.3350 <i>Contact: Michael Clark</i>
Architect	Khalsa Design 17 Ivaloo Street, Suite 400 Somerville, MA 02143 617.591.8682 <i>Contact: Jai Singh Khalsa, Evan Stellman</i>
Urban Planning and Design	Perry King Neubauer, FAIA 108 Holworthy Street Cambridge, MA 02138 617.234.4434 <i>Contact: Perry Neubauer</i>
Landscape Architecture	Verdant 318 Harvard Street, Suite 25 Brookline, MA 02446 617.735.1180 <i>Contact: Blair Hines</i>
Environmental Engineer	Cooperstown Environmental, LLC 23 Main St. Andover, MA 01810 978.470.4755

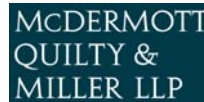
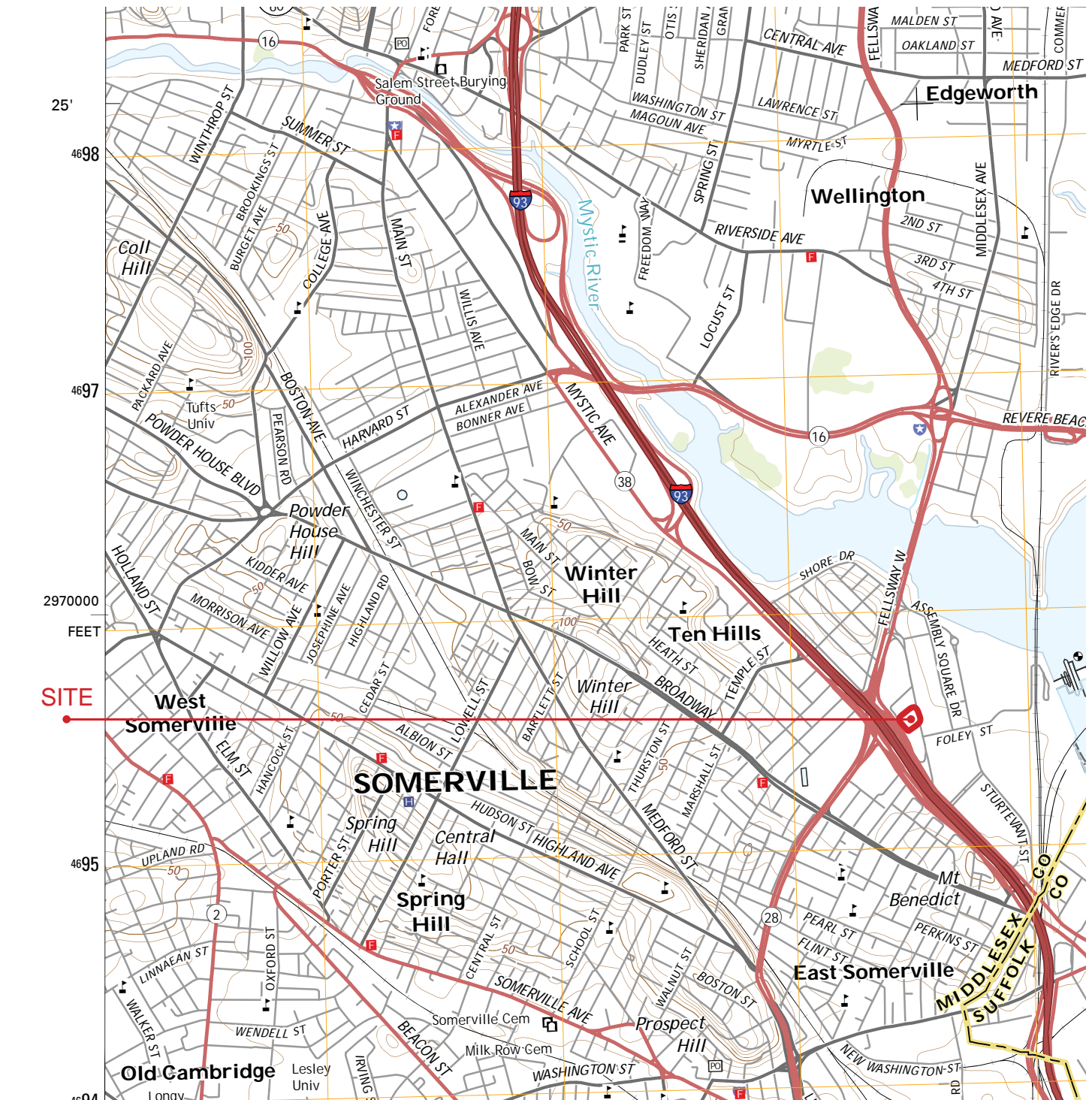
	Contact: James T. Curtis



ASSEMBLY'S EDGE

PUD - PMP

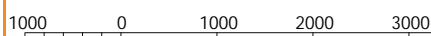
AT ASSEMBLY SQUARE



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

USGS MAP NO. 7381828

SCALE 1:24 000



Site Location Map
Figure 3.1

September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Not To Scale



Neighborhood Context
Figure 3.2

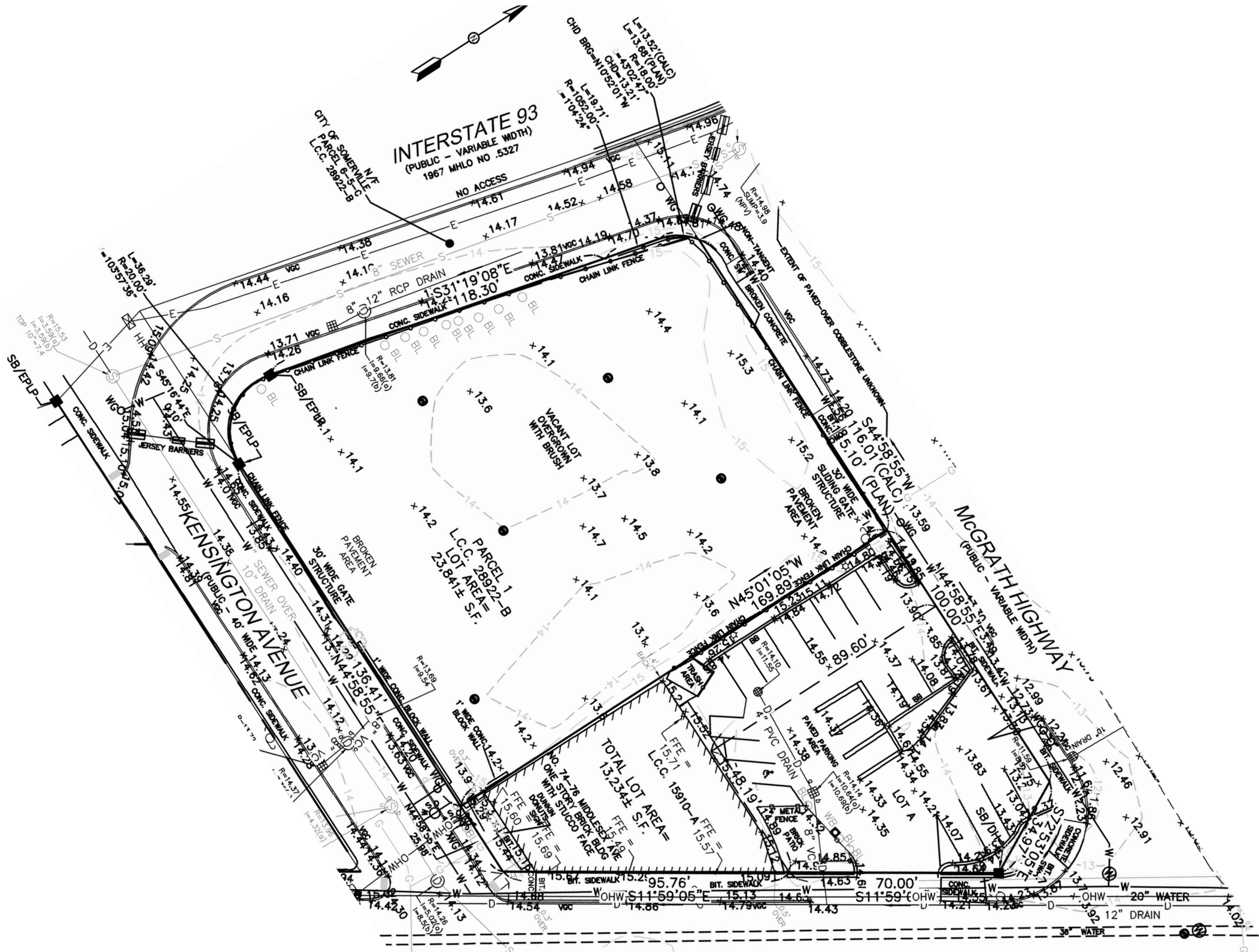
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



LEGEND

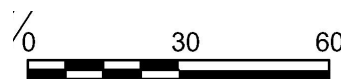
EXISTING:

- CATCH BASIN
- DECIDUOUS TREE
- CONIFEROUS TREE
- FIRE HYDRANT
- WG WATER GATE
- GG GAS GATE
- WB WASTE BASKET
- PM PARKING METER
- MB MAIL BOX
- TS TRAFFIC SIGNAL
- UTILITY POLE
- SPOT GRADE

- CS COMBINED SEWER & DRAIN
- S SANITARY SEWER
- D DRAIN LINE
- W WATER LINE
- OHW ELECTRIC LINE
- G GAS LINE
- T TELEPHONE LINE
- ST STEAM LINE
- S SANITARY MANHOLE
- D DRAIN MANHOLE
- E ELECTRIC MANHOLE
- T TELEPHONE MANHOLE



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Existing Conditions Plan
Figure 3.3

September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

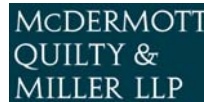
PUD - PMP



1. View of the Project Site from I-93 off Ramp looking toward Assembly Square.



2. View of the Project Site from McGrath Highway at Kensington Avenue looking toward Assembly Square.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Existing Site Photos

Figure 3.4A

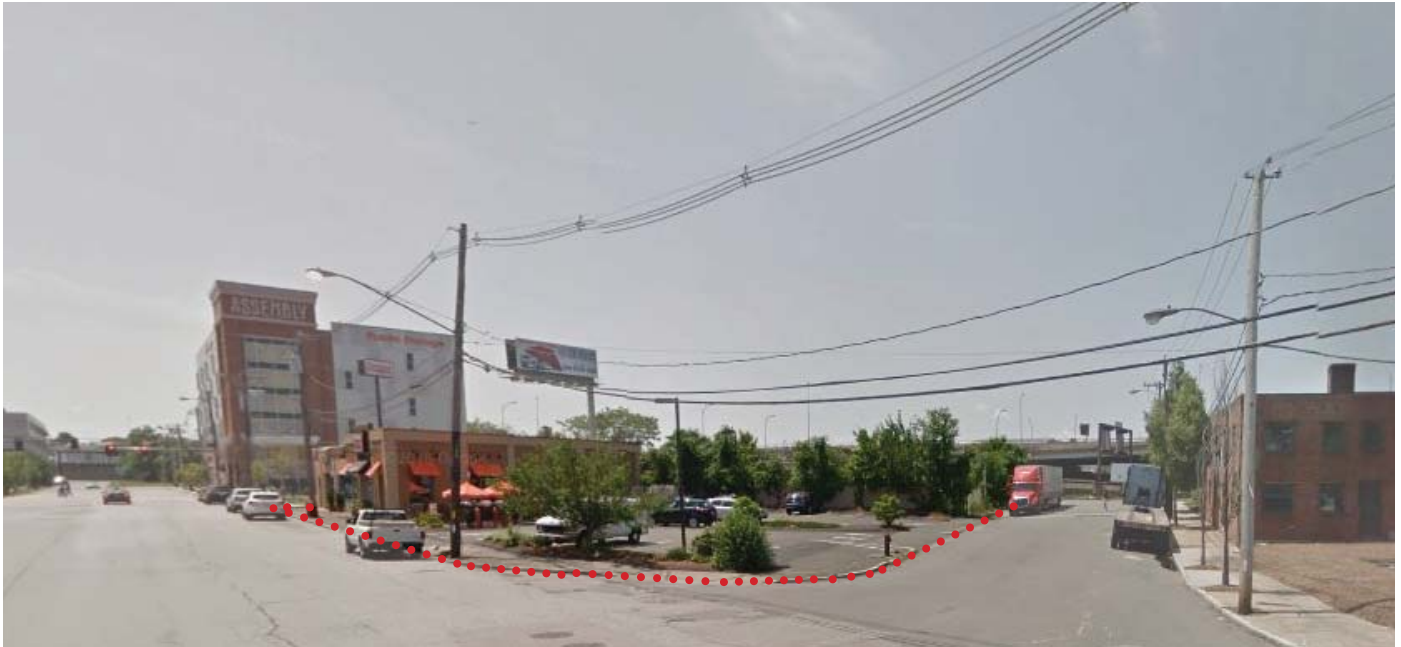
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

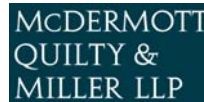
PUD - PMP



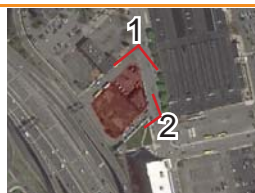
1. View of the Project Site from McGrath Highway at Middlesex Avenue looking toward I-93.



2. View of the Project Site from Middlesex Avenue at Kensington Avenue looking toward I-93.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Existing Site Photos
Figure 3.4B

September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

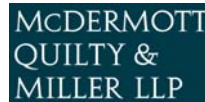
PUD - PMP



1. View toward the Project Site through the Kensington Underpass.



2. View of the Project Site and adjacent park to be renovated from Foley Street at Middlesex Avenue.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Existing Site Photos
Figure 3.4C

September 2017



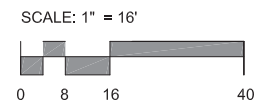
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



PRELIMINARY MASTER PLAN
PLANNED UNIT DEVELOPMENT

Figure 3.5
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

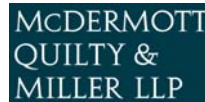
PUD - PMP



1. View toward Project Site from Foley Street.



2. View toward the Project Site from Middlesex Avenue.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Existing Site Photos
Figure 3.4D

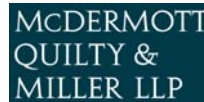
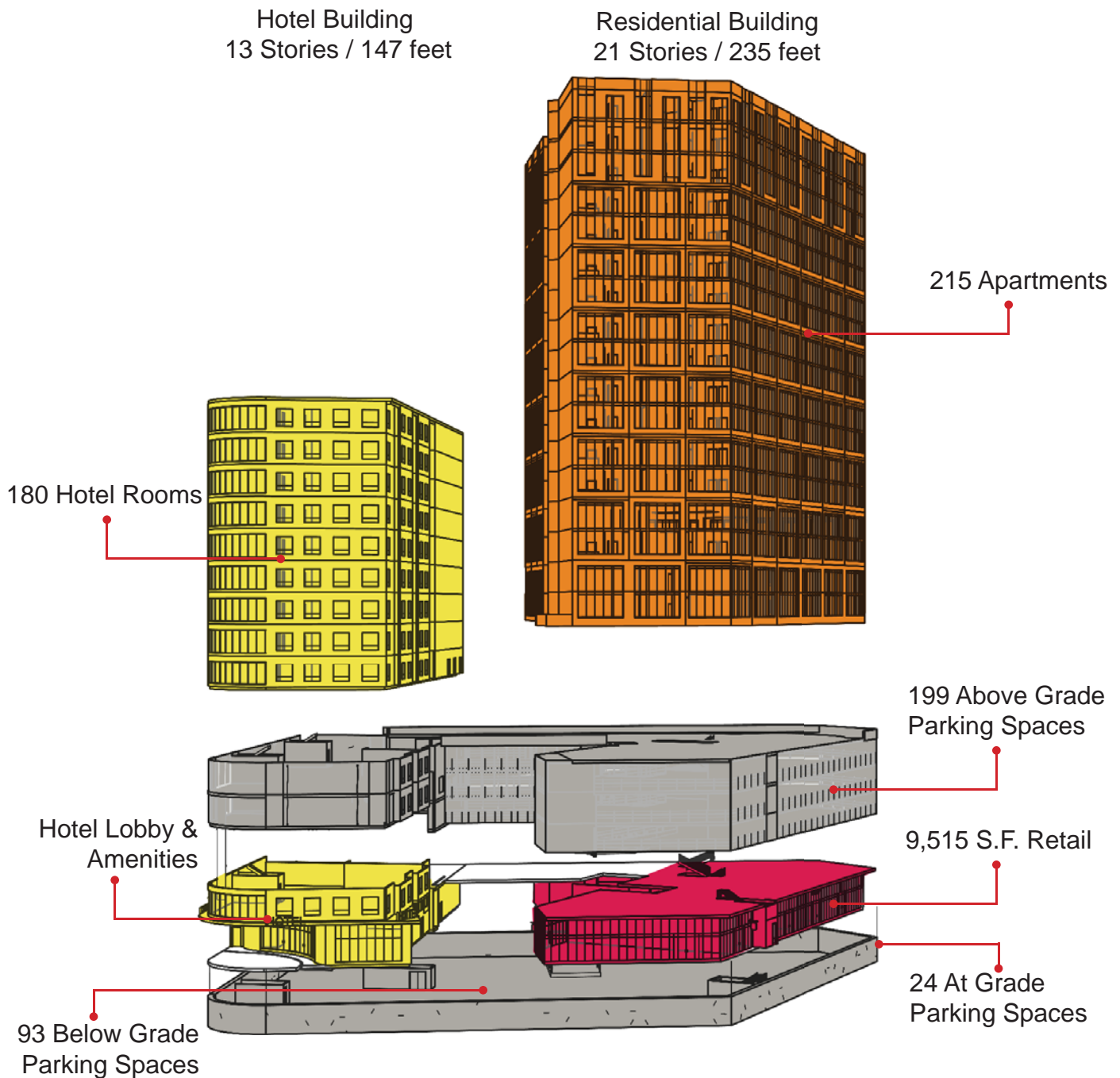
September 2017



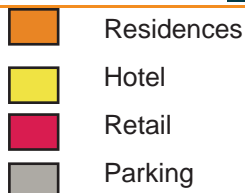
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



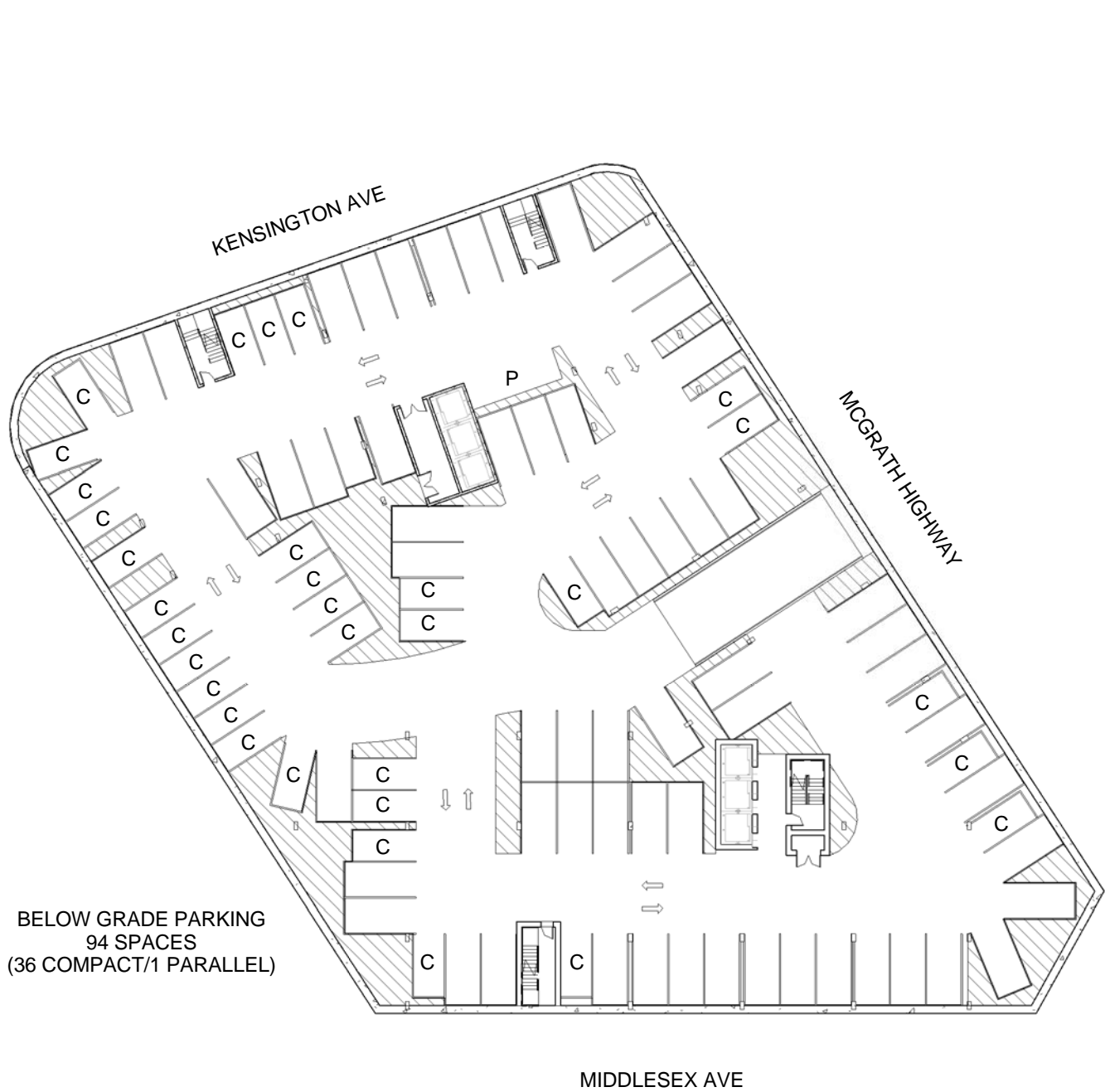
Program Diagram
Figure 3.6

September 2017

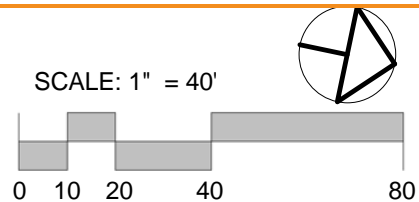


ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Below Grade & First Floor
Plans
Figure 3.7A
September 2017



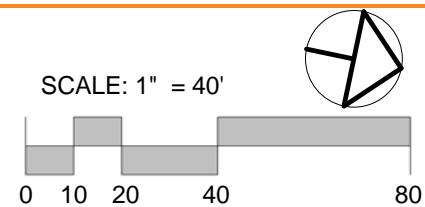
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Upper Parking Levels

Figure 3.7B
September 2017

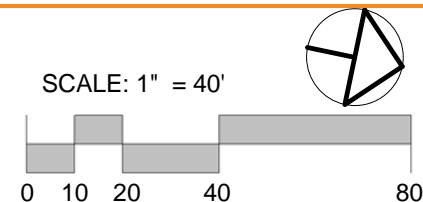


ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Typical Upper Floors

Figure 3.7C
September 2017



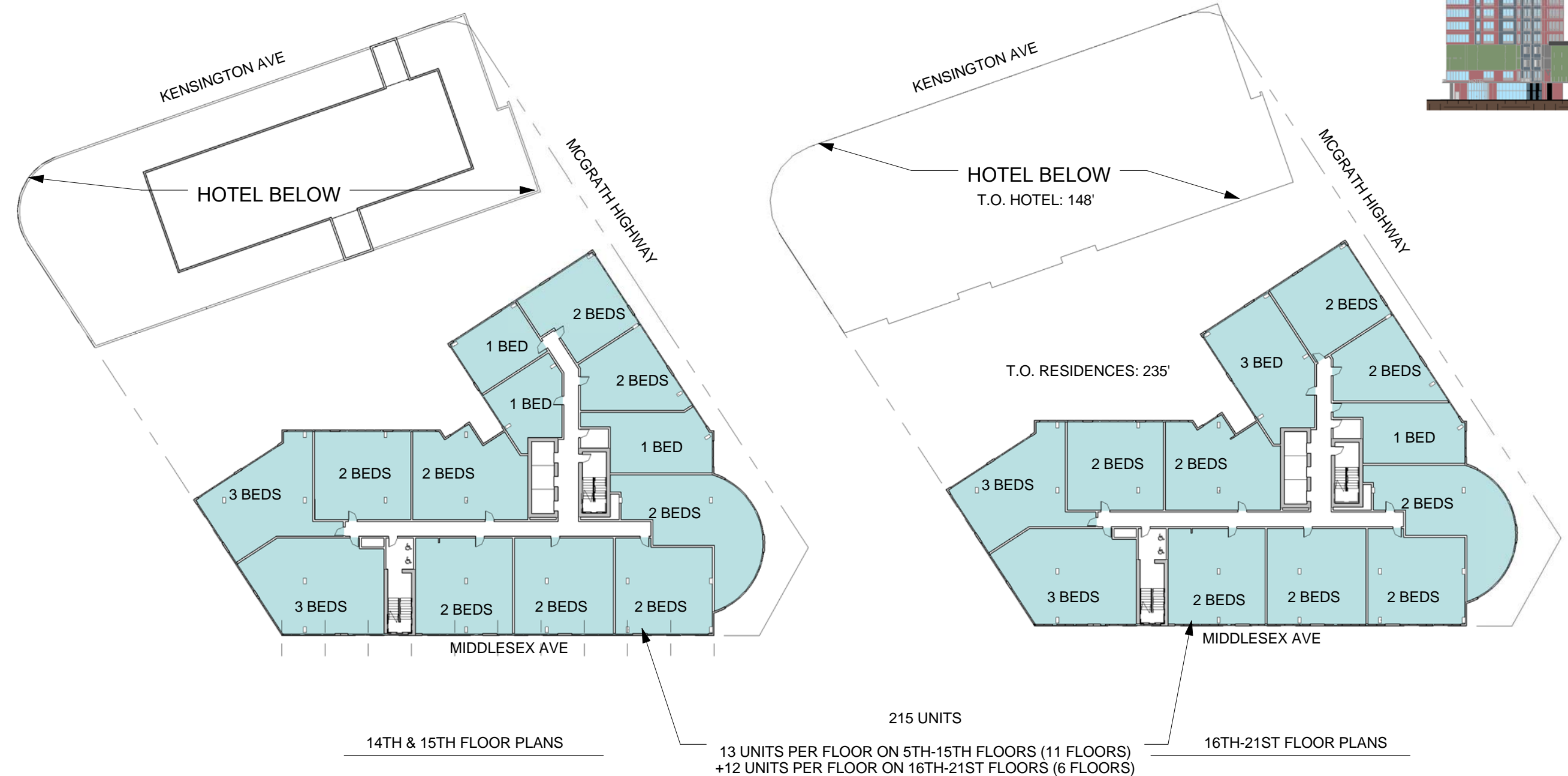
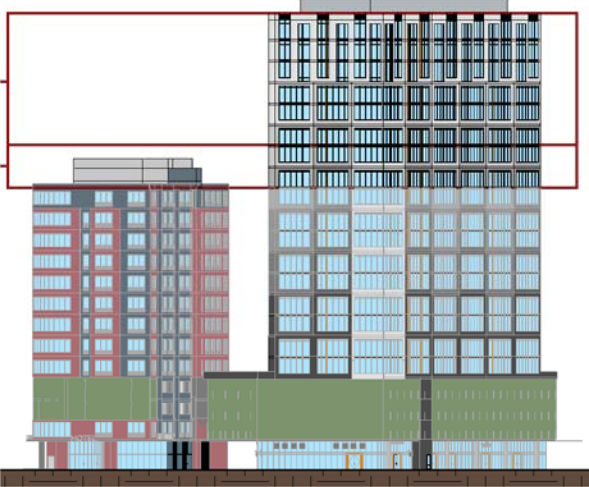
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

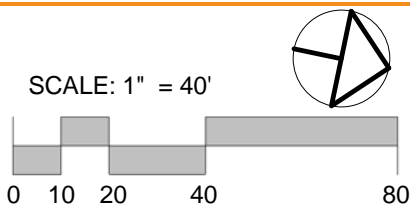
PUD - PMP

FLOORS 16-21

FLOORS 14-15



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Typical Upper Floors

Figure 3.7D
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP

Partners Healthcare
232' to T.O. Mechanicals

Block 8:
244' to T.O. Building
* Per Master Plan
Submission

Block 6:
212' to T.O. Building
~232 to T.O. Mechanicals

Block 5:
172' to T.O. Building
*Per Master Plan
Submission



Project Site
147' to T.O. Hotel Roof
(~162' to T.O. Hotel
Mechanicals)
235 to T.O. Residential
Roof
(~255 to T.O.
Mechanicals)



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Bird's Eye View Looking SE
Figure 3.8A

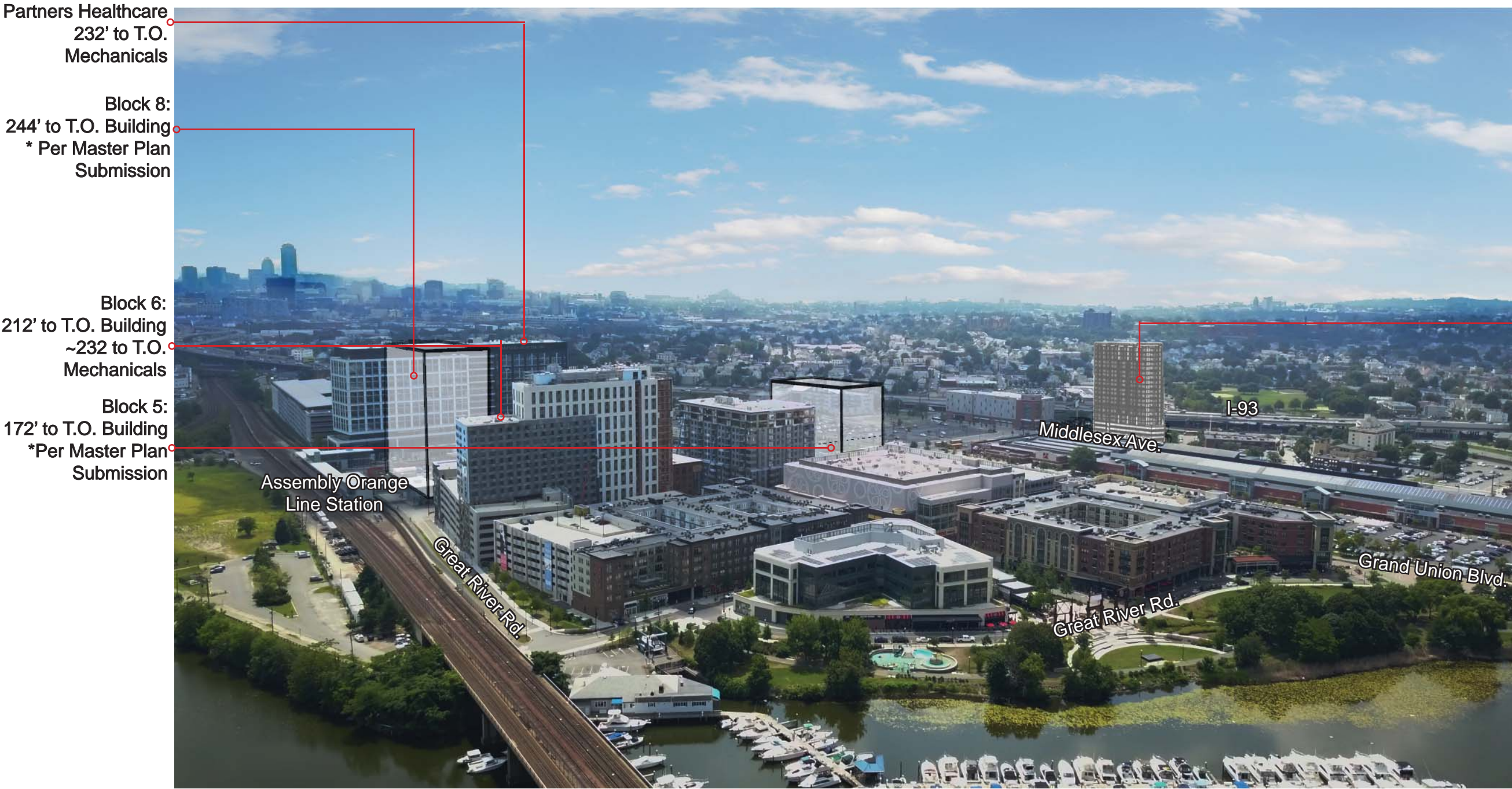
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP





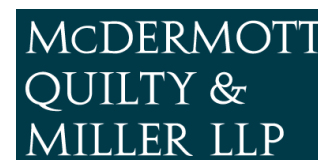
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Project Rendering-Courtyard
Figure 3.9

September 2017



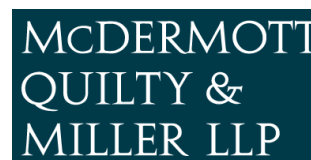
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Project Rendering-Courtyard
Figure 3.10A

September 2017



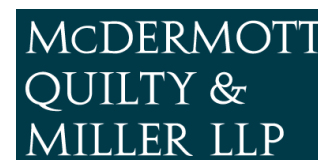
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Project Rendering-Courtyard
Figure 3.10B

September 2017



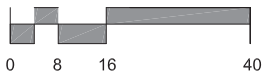
ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

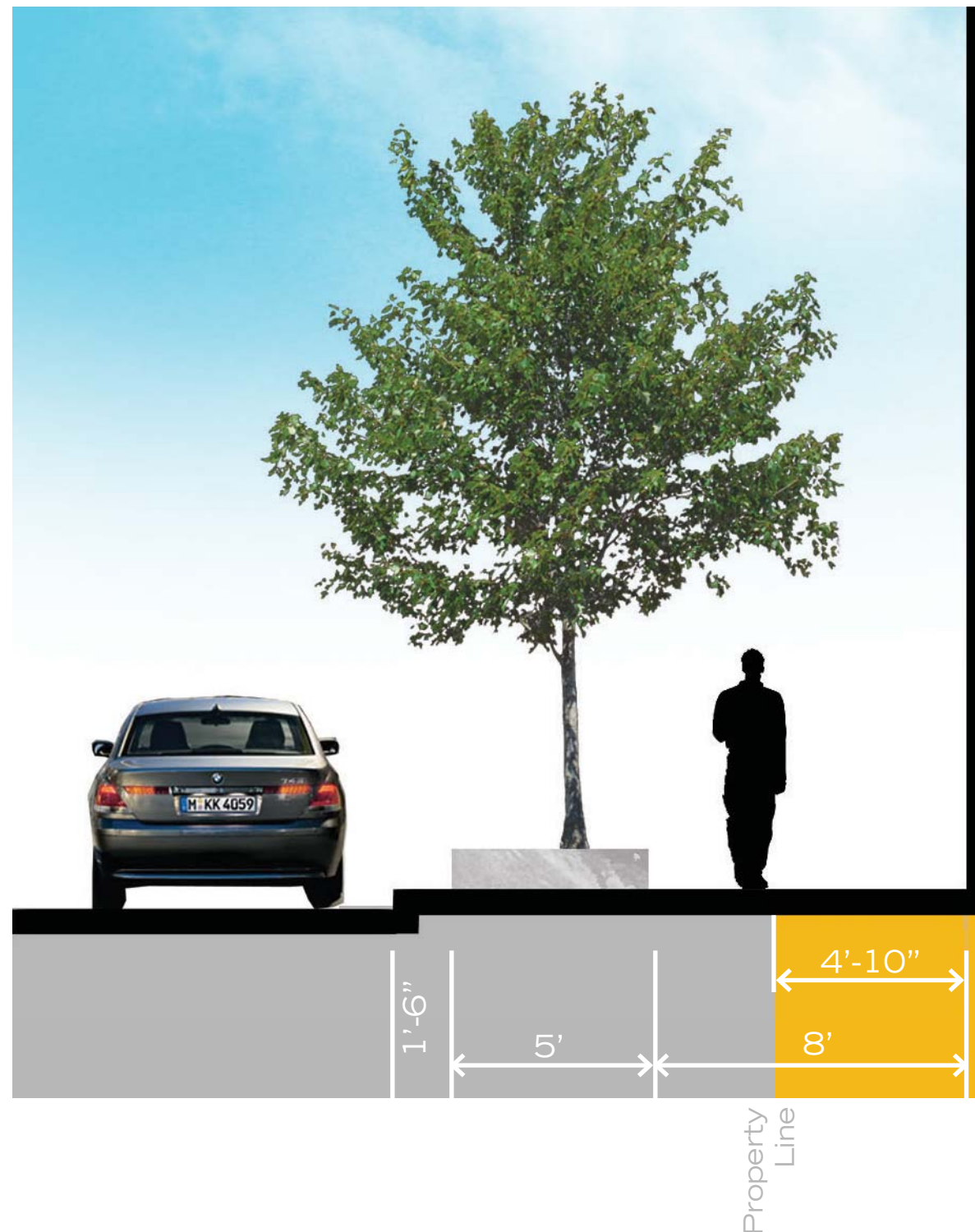


OPEN SPACE PLAN

Figure 3.11
June 2017



Raised planters protect trees and plantings from trampling and reduce salt exposure.



ASSEMBLY'S EDGE

McGrath Highway Streetscape Improvements:

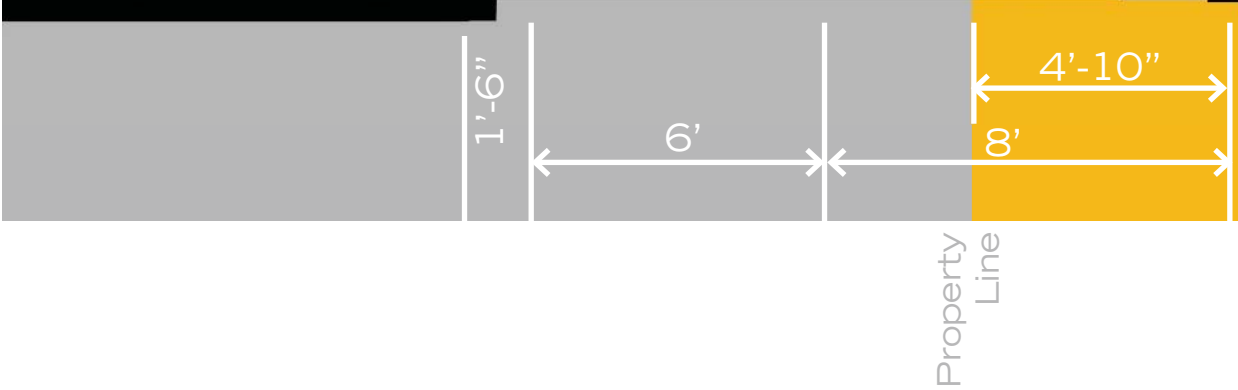
- Expanded sidewalk width
- Tree plantings in raised curb planters
- Short term bicycle parking
- Accent pavements at building entrances
- Street lights



Treegrates and planters with seatwalls



Continuous treegrates expand available rooting space for trees.



ASSEMBLY'S EDGE

- Middlesex Avenue
- Back in angle parking for pedestrian and bicycle safety
 - Expanded sidewalk width
 - Tree plantings in tree grates
 - Stormwater planters coordinated with tree plantings.
 - Small curbed planters with accent plantings and seatwalls
 - Short term bicycle parking
 - Accent pavements at building entrances
 - Street lights



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



STREETSCAPE SECTION
MIDDLESEX AVENUE SECTION
Figure 3.13
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



Pedestrian Way, Lawn and Trees



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



STREETSCAPE SECTION
KENSINGTON REMOVED
Figure 3.14
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



Assembly Square and surrounding developments have many different pavements and tree planting designs.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



STREETSCAPE
REFERENCE IMAGES
Figure 3.15
June 2017

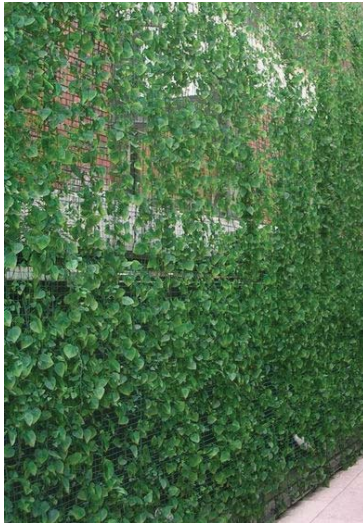


ASSEMBLY'S EDGE

PUD - PMP

AT ASSEMBLY SQUARE

DESIGN ELEMENTS



Greenscreens and vine plantings will extend plantings to help cover 2nd and 3rd floor garage facades.



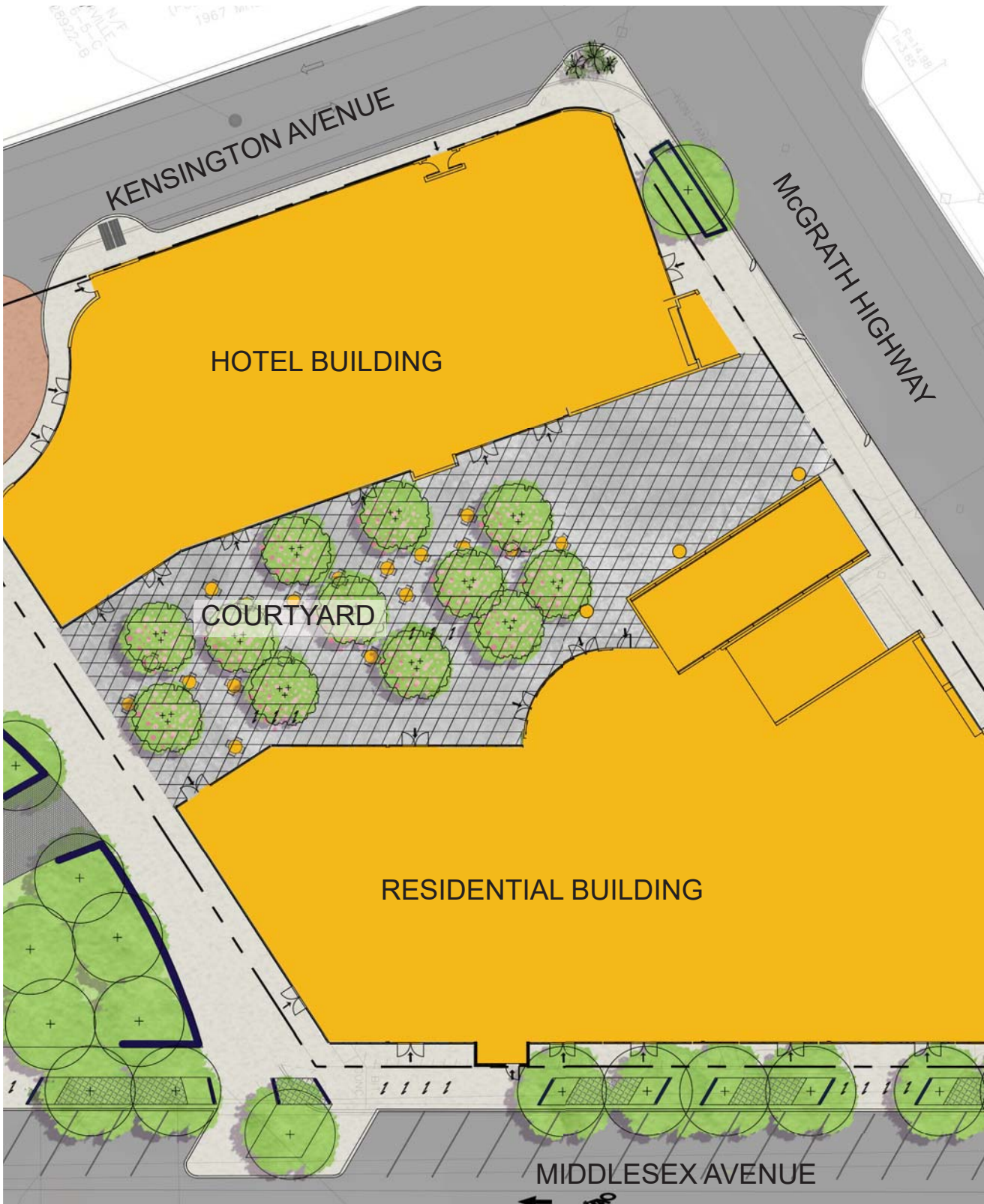
Contrasting foliage textures will accent courtyard



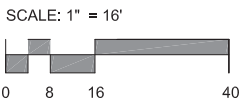
Moveable and permanent seating will foster public gathering and socializing



Courtyard will have a grid of colored pavements accented with an informal arrangement of cortan steel raised planters



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



COURTYARD PLAN

Figure 3.16
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



Lawn area for informal gatherings and performance space



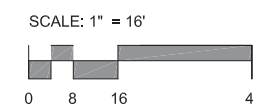
Seatwall and tree shaded path images



Seatwall



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



URBAN PARK PLAN

Figure 3.17
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



NOT TO SCALE

CONNECTOR PLAN

Figure 3.18
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP

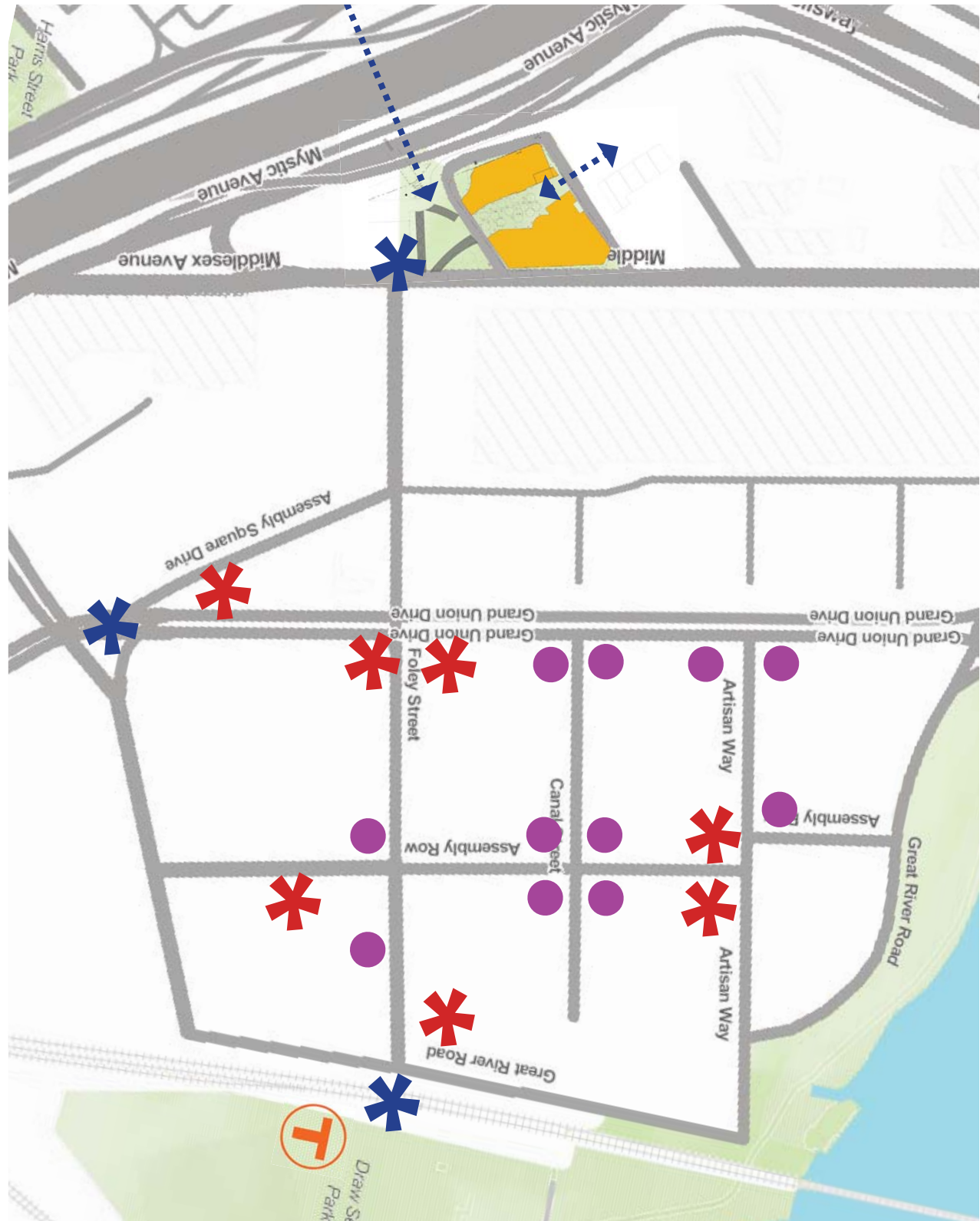




ASSEMBLY'S EDGE

PUD - PMP

AT ASSEMBLY SQUARE



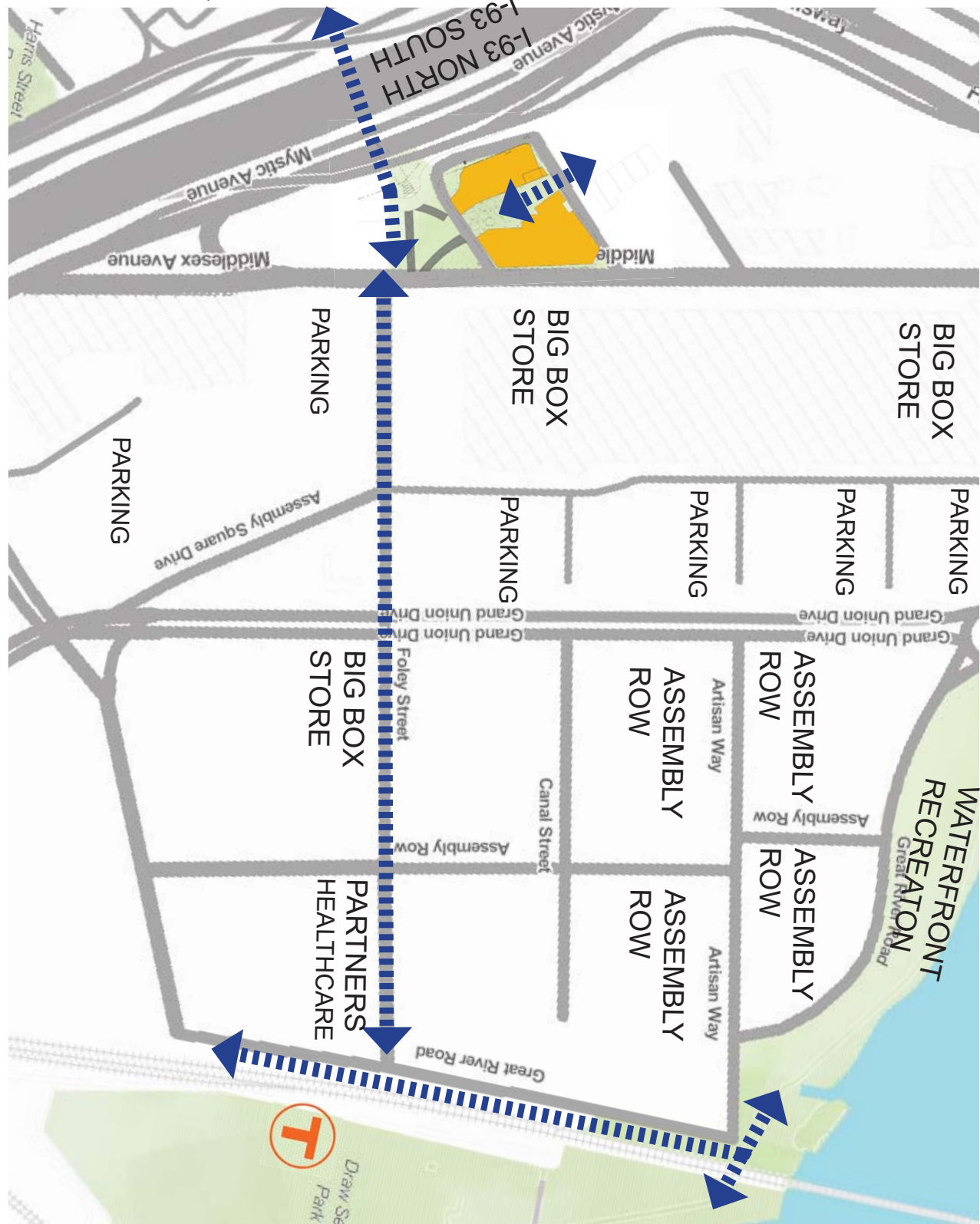
- District Gateway
- Significant Corners
- Secondary Corners
- Public Open Space
- Pedestrian Access
- Assembly Square Orange Line Station
- Proposed Assembly's Edge Development



ASSEMBLY'S EDGE

PUD - PMP

AT ASSEMBLY SQUARE



- Pedestrian Pathways
- Orange Line
- Public Open Space
- Proposed Assembly's Edge Development



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



NOT TO SCALE

ASSEMBLY'S EDGE
PEDESTRIAN LINKAGES
Figure 3.21
June 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP

PROGRAM LEGEND

- Retail
- Office
- Residential
- Hotel
- Civic
- Flex
- Site Outline



Original



Proposed



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Not To Scale



2009 Master Plan Conformity
Figure 3.22

September 2017

4

Zoning Compliance Narrative

This section briefly describes how the Proponent has fulfilled the various submission requirements as described in Article 5 - Special Permits, Special Permits with Site Plan Review, Site Plan Approval and Variances, and Article 16 - Planned Unit Development of the Somerville Zoning Ordinance adopted March 23, 1990, as amended through June 23, 2016 (the "Ordinance"). It also summarizes various applicable Ordinance provisions from which the Project requires zoning relief. The numbering used throughout this chapter follows the section numbering of the applicable Ordinance.

4.1 ARTICLE 5: SPECIAL PERMITS, SPECIAL PERMITS WITH SITE PLAN REVIEW, SITE PLAN APPROVAL AND VARIANCES

5.2.3.1 Name, addresses, and telephone numbers of the applicant, the owner, if other than the applicant, and other agents for the applicant, such as the architect, engineer and/or attorney and the name and address of the proposed project:

The name, address and telephone numbers for the Proponent, Engineer, Architect and Attorney are provided in Section 3.8 of the PUD-PMP.

5.2.3.2 Plot plan certified by land surveyor indicating total land area, boundaries, angles and dimensions of the site and a north arrow:

Please refer to Figure 3.3, Existing Conditions Plan, which contains land areas, boundaries, angles and dimensions of the Site and a north arrow.

5.2.3.3 Scaled site plan(s) certified by a registered land surveyor, architect, landscape architect or engineer showing:

3.a) present and proposed use of the existing land and existing buildings, if any:

The various sheets of the Site Plan set have been certified (stamped) by a registered land surveyor, engineer and/or landscape architect, as appropriate. Figure 3.3, Existing Conditions Plan, shows existing building and uses at the Site. Proposed uses are identified on Figure 3.5, PUD-PMP.

3.b) dimensions of existing and proposed building(s) or other structures including height, setback(s) from property lines and total square footages of all floors:

All existing buildings within the Project Site will be demolished. A Zoning Summary chart for the Project is located in [Section 6.4.6](#) of the Ordinance, and [Table 4-1](#) of this Chapter.

3.c) locations and dimensions of any easements and public or private rights of way, or other burdens, existing and proposed:

The locations of all existing and proposed easements are shown on Figure 6.1, Existing Conditions Plan and Figure 6.2, Grading, Draining and Utility Plan. Required utility easements will be coordinated with the corresponding utility when final alignments are confirmed; as such these are not shown on the Project plans at this time.

3.d) at-grade parking and loading areas showing number, location, and dimensions of the parking and loading spaces, driveways, access and sidewalks:

The locations of loading areas, garage ramps and sidewalks are shown on [Figure 3.7a](#). Parking and loading will be internal to the proposed buildings.

5.2.3.4 A brief written description of the proposed project, such as proposed construction or demolition, all uses, who the project is intended to serve, expected number of employees and/or occupants and methods and hours of operation, as applicable:

This application is for PUD-PMP approval and therefore no specific tenants are identified. Please refer to [Section 3.2](#) and [Table 3-1](#) for a description of the proposed Project.

5.2.3.5 The total floor area and ground coverage ratio of each proposed building and structure:

Please refer to [Section 3.2](#) and [Table 3-1](#) for the program Floor Area Ratio (FAR) and the size of the proposed buildings. As shown in [Figure 3.7a](#), the below grade parking is proposed to cover the entire footprint of the Project Site.

5.2.3.6 Front, side and rear elevations:

Please refer to [Figures 3.7a-d](#) for typical floor plans, Figures 3.8a-b for bird's eye views of the Project, and [Figures 3.9 and 3.10a-b](#) for Project Renderings. This application is for PUD-PMP approval, additional renderings and elevations will be provided in the Special Permit approval process.

5.2.3.7 Existing and proposed contour elevations in two foot increments:

Please refer to [Figures 6.1 – 6.3](#). Existing and proposed contour elevations are shown in more descriptive one (1)-foot increments across the Project Site.

5.2.3.8 Provisions for vehicular and pedestrian circulation:

Vehicular and pedestrian circulation are shown on [Figure 3.19](#).

5.2.3.9 Color, materials, and exterior features of proposed structures:

The application is for a PUD-PMP approval and as such no specific details have yet been designed for the buildings. Building design will be addressed during the Special Permit approval process. Façade treatment will be explored to address the height and massing of the Project, and to break down the scale into separate components that will be consistent with the *Assembly Row Design Guidelines at Assembly Square*.

5.2.3.10 Landscaping and screening, including trees, stones, walls, fences and other features to be retained and removed as well as color, size and type of landscape surface materials:

The application is for a PUD-PMP approval and as such no specific details have been provided for landscape materials. More detailed landscape plans will be provided during the Special Permit approval process; however, [Section 3.2.2](#) and [Figures 3.11-3.17](#) of the PUD-PMP include a general discussion and conceptual plans of open space and landscaping improvements.

5.2.3.11 Measures taken to preserve and protect natural resources:

No natural resources such as wetlands or other water features exist on the Project Site. The Project will minimize environmental impacts by locating the development on previously paved and/or otherwise disturbed land. It is also the intent of the proposed Project to revitalize the natural qualities and landscaping of the Site, while providing in excess of the required 25 percent total open space minimum and almost double the required 12.5 percent useable open space minimum.

5.2.3.12 Outdoor lighting, including location and intensity of lighting facilities:

This application is for approval of a PUD-PMP, and as such the lighting design for the Project Site will be addressed during the Special Permit approval process.

5.2.3.13 Dimensions and locations of signs, proposed and existing:

This application is for approval of a PUD-PMP and as such specific signage details will be addressed during the Special Permit approval process.

5.2.3.14 Location and significance of historic structures:

A review of the Massachusetts Historical Commission's (MHC) Inventory of the Historic and Archaeological Assets of the Commonwealth, available through the Massachusetts Cultural Resource Information System (MACRIS), indicated one previously inventoried property located in the Project area. A 1927 service station (SMV.1003) was recorded in 1990 along Middlesex Avenue, but has since been demolished. The property was recorded as part of the Assembly Square Area (SMV.I); in 2002 the MHC opined that the area did not retain enough integrity to be eligible for the National Register, and the area has recently been redeveloped.

5.2.3.15 Method of handling solid waste disposal, and screening of disposal facilities:

Solid waste disposal will be handled by private contractors. The disposal facilities (dumpsters and compactors) will be internal or screened accordingly. Specific measures will be detailed during the Special Permit approval process.

5.2.3.16 Description and location of all proposed mechanical and electrical system components including exhaust and ventilation system, transformers and satellite dishes:

This application is for approval of a PUD-PMP and as such a description of the electrical and mechanical systems will be provided during the Special Permit approval process for each building.

5.2.3.17 Locations of and adequacy of existing and proposed on-site public utilities, facilities, and conditions (water, sewerage, and drainage), showing size and direction of flows:

Please refer to [Chapter 6, Utility Analysis](#), and [Figures 6.1 - 6.3](#) for an analysis of existing and proposed utilities.

5.2.3.18 Demolition and construction procedures including impact mitigation measures; an estimate of the time period required for the completion of the development:

Please refer to [Section 3.3](#) for a summary of the Project schedule and phasing. Throughout the coming months, the Proponent expects to work diligently with the community and with the City to complete the PUD-PMP and Special Permit review and approval processes. The Proponent anticipates commencing Site preparation and utility relocation work in

the spring of 2018 for both buildings. Work for both the Hotel and Residential Buildings is anticipated to be complete by mid-to-late 2020 (approximately 20 months).

5.2.3.19 A traffic study including estimated peak hour traffic volumes generated by the proposed use in relation to existing volumes and projected future conditions or, if the project is 25,000 square feet or more, a traffic impact analysis which is prepared by a professional traffic engineer:

Please refer to Chapter 5, Transportation Impact and Access Study, which considers that the Project has been prepared as part of this PUD-PMP application. The analysis conducted as part of that assessment does indicate that there will be increased trip generation during the weekday morning and evening peak hours as a result of the proposed residential use. The study documents how these changes are appropriately accommodated by the surrounding transportation infrastructure.

5.2.3.20 General summary of existing and proposed easements or other burdens now existing or to be placed on the property:

The locations of all existing and proposed easements are shown on Figure 6.1, Existing Conditions Plan, Figure 6.2, Grading, Draining and Utility Plan and Figure 6.3, Layout and Materials Plan. Required utility easements will be coordinated with the corresponding utility when final alignments are confirmed; as such these are not shown on the Project plans at this time.

5.2.3.21 Wetlands, ponds, and surface water bodies, as defined under the Wetlands Protection Act, M.G.L. chapter 131, Section 40, and rules promulgated there under, 310 C.M.R. 10.00:

There are no wetlands on the Project Site that will be altered by the Project.

5.2.3.22 Photographs of at least eight (8) by ten (10) inches, showing the development site and surrounding parcels:

Please refer to Figures 3.4a-d for existing conditions Site photographs.

5.2.3.23 Names and addresses of all property owners within three hundred (300) feet of the site boundaries:

Please refer to Section 2.3 for a copy of the Abutter's list of all property owners within three hundred feet of the Site boundaries.

4.2 ARTICLE 6: ESTABLISHMENT OF ZONING DISTRICTS

6.4.6. Dimensional Requirements. ASMD Table of Dimensional Requirements

The Project Site is located within a PUD-A district and per Section 6.4.6 – Assembly Square Mixed Use District (“ASMD”) Table of Dimensional Requirements – the Project Site is located more than 350 feet from the Mystic River Bank and more than 1,000 feet from an MBTA Orange Line entrance, therefore the maximum building height requirement for “all other locations” is 125 feet. Relief is sought for both buildings, which currently exceed the maximum building height requirement of 125 feet.

Table 4-1 Zoning Compliance Program Table

Requirement	Allowed/Required within a PUD-A	Proposed	Status
Minimum Lot Area	20,000	37,075 (0.85 acre)	Complies
Floor Area Ratio, (sf)	10.0	9.96 (350,565)	Complies
Building Height Residences (ft) ¹	125'	235'	<i>Does Not Comply</i>
Building Height Hotel (ft) ¹	125'	147'	<i>Does Not Comply</i>
Min Lot Area/Dwelling Unit: 10 or more units (sf)	No Minimum	37,075	Complies
Total Open Space (sf)	25% (9,269 sf min)	29% (10,613 sf)	Complies
Useable Open Space (sf)	12.5% (4,634 sf min)	23% (8,542 sf)	Complies
Min. Yard Setbacks	No Minimums	0'	Complies
Vehicle Parking	315	293	<i>Does Not Comply</i>

6.4.7. A Development Standards and Design Guidelines for Developments in the ASMD

A.1) Transportation Analysis. All new developments shall conform to the requirements set forth in any Transportation Study, subject to the approval of the SPGA.

A traffic narrative is included as part of this PUD-PMP submission package. The updated analysis conducted as part of this submission indicates that the overall Project trip generation will increase on weekends, and on a weekday daily basis. However, the capacity analysis conducted as part of that assessment indicates that the additional traffic generated by the Project during the weekday morning and evening commuter peak hour can be accommodated by the surrounding transportation infrastructure.

A.2) *Parking Requirements.* Developments shall meet the parking requirements set forth in Section 9.16.

The Project as presented in the PUD-PMP will meet the minimum parking requirements set forth in Section 9.16. The Ordinance requires the Project to provide 315 total parking spaces. The Project currently proposes 293 total structured parking spaces on-site. It is possible that these numbers will change slightly as the Project advances, however the Project may require a Special Permit from Section 9.16, Parking Space and Loading Area Requirements in the ASMD. As a result, a parking waiver request has been included as part of Section 2.3 of the PMP.

The Project will also provide up to approximately 24 short-term, back in angled vehicle parking spaces to support the ground level retail space along Middlesex Avenue, resulting in up to 317 total Project parking spaces.

Please refer to Figure 3.5 and Figures 3.7a-b for plans showing a typical below-grade and above-grade garage floor plate. Detailed floor plans, including parking layouts will be provided during the Special Permit approval process.

A.3) *Landscaping Requirements.* Developments shall conform to the applicable landscaping requirements set forth in Article 10. Open spaces shall be contiguous to the extent practical, in the opinion of the SPGA.

This application is for a PUD-PMP approval. Please refer to Section 3.2.2 and Figures 3.11 through 3.17 for a general discussion and conceptual plans of open space and landscaping improvements. Specific landscaping requirements will be reviewed during the Special Permit approval process.

A.4) *Pedestrian Connections.* Continuous pedestrian connections shall be supported between all major points of pedestrian activity on the Development Site, including, but not limited to, connections to the Mystic River waterfront, connections to all public and private ways abutting the Development Site, and any transit stops. Developments shall support improved access.

As described in Sections 3.2.1 and 3.2.2, the open space, pedestrian pathways and sidewalk connections to be provided as part of the Project, will be designed to complete and improve connections with the existing network of parks and pathways in the vicinity of the Project Site, including improving the connection between Assembly Row, the Mystic River area and development to the west of the Kensington Underpass and I-93.

B) *Design Guidelines.* In reviewing a Development of more than 10,000 square feet, the SPGA/DRC shall consider the following design guidelines. These guidelines are intended to serve as a general basis for the SPGA and Applicant alike to discuss the design merits of a Development, but are not intended to inhibit design creativity when the application otherwise conforms to all other substantive review criteria. These guidelines are not intended to discourage innovative architectural design solutions. Rather, they provide general standards for the massing, siting and articulation of Buildings for developers and architects to work from. They also provide parameters for dialogue between the Applicant and SPGA on design issues for Developments. These Guidelines are intended to supersede the guidelines set forth in Section 5.2.4. It is understood that existing Buildings and Structures will not be able to comply with all of the following Guidelines:

B.1) *Street and Sidewalk Design.* Street and sidewalk design shall be based on the Assembly Square Public Realm Design Guidelines and applicable engineering standards, provided that any street shown in such Guidelines as running through an existing Building is not required to be constructed until such Building is demolished.

The design of streets and sidewalks will respond appropriately to the Street and Sidewalk Design Criteria of the Assembly Square Public Realm Design Guidelines. The design team has been proactive in researching the recently completed conditions at the nearby Assembly Row and the Assembly Row Design Guidelines. These will be incorporated into the Project as the building design advances. For additional information, please refer to [Section 3.2.2](#).

B.2) *Building Design.* Buildings shall be designed to the highest architectural standards and shall be sited appropriately on the Lot. Specifically, all construction shall:

This application is for approval of a PUD-PMP. The final design of the proposed buildings is not complete. Additional details on building design and materials will be provided during the Special Permit approval process. Please refer to Figures 3.9 and 3.10a-b for conceptual Project renderings.

B.2.a) Be located to create a presence on existing street edges or along major internal circulation routes. Maximum building setbacks of five feet shall be encouraged, except in special circumstances, where greater setbacks would enhance the pedestrian-friendly experience of the ASMD, such as dedicated open space. Buildings shall be located to reinforce both existing and future circulation patterns that may serve more than one Site:

This application is for PUD-PMP approval, and as such the final design of the proposed buildings is not complete. A description of the building setback will be provided in the Special Permit Application. However, the Project currently contemplates proposed zero (0) foot setbacks and will be located to create a presence on existing street edges and internal circulation routes. The retail spaces along McGrath Highway, Middlesex Avenue, and the new Pedestrian Street at the discontinued Kensington Avenue will be setback five (5) feet, while the upper stories are at a zero (0) foot setback. This provides an opportunity for the retail to engage with the upgraded streetscape as described in [Section 3.2.2](#).

B.2.b) Create interesting entrance areas that are visible and directly accessible from major public access points, streets and circulation patterns. Extensive areas of glass and window, providing visual access to interior uses, shall be part of all street facades and will accompany building entrances. Multiple and frequent entrances oriented to streets are encouraged. Building entrances shall be clearly defined, through the use of elements such as canopies, porticos; overhangs, peaked roof forms, arches. Entries set back from the street shall have outdoor patios, tile work, moldings, integral planters or wing walls with landscaped areas, or places for sitting:

This application is for PUD-PMP approval, and as such the final design of the proposed buildings is not complete. All building entries will be clearly defined via signage and through the intentional use of different materials and elements. Additional details on building entrances will be provided during the Special Permit approval process. Please refer to Figures 3.9 and 3.10a-b for conceptual Project renderings.

B.2.c) Clearly define the pattern of bays, rhythms, and dimensions to create continuous visual interest and variety in the design of all faces:

This application is for PUD-PMP approval, and as such the final design of the proposed buildings is not complete. As the design advances, facade treatment will be explored to address the height and massing of the Project, and to break down the scale into separate components that will be consistent with the *Assembly Row Design Guidelines at Assembly Square*. Per the suggestion of the City's Planning Board, the Project's buildings will have a clearly defined base, middle, and top. Additional details on the building composition and orientation will be provided during the Special Permit approval process.

B.2.d) Break down the overall scale of development to respond to the pedestrian-scale use of Open Space:

This application is for PUD-PMP approval and as such the final design of the proposed buildings is not complete. A description of the building

composition and orientation will be provided during the Special Permit approval process.

B.2.e) Use materials and colors consistent with traditional Buildings in the area with historic merit:

There are no existing buildings of historic significance or merit in the vicinity of the Project Site. This application is for PUD-PMP approval and as such the final design of the proposed buildings is not complete. A description of the building materials and building composition will be provided during the Special Permit approval process. The conditions and materials of nearby developments (existing and approved) will be taken into consideration as the Project design progresses. Please refer to Figures 3.9 and 3.10a-b for conceptual Project renderings.

B.2.f) Locate building equipment and service areas away from Public Ways or major interior circulation routes and provide screening. Enclose all storage of inventory unless it is completely screened from public view with architectural elements meeting these guidelines:

This application is for PUD-PMP approval and as such the final design of the proposed buildings is not complete. The description and location of electrical and mechanical systems will be provided during the Special Permit approval process. However, the Project will be carefully designed, well organized or visually screened from its surroundings, and mechanical equipment will be acoustically buffered from neighbors to the extent practicable. Reasonable attempts will be made to avoid exposing rooftop mechanical equipment to public view from City streets. Parapet walls, and mechanical partition screening, will be designed to fit within the character of the overall building design. The Project will comply with the spirit of this design guideline.

B.2.g) Show preference for vertical integration of uses. Developments shall ensure that development patterns provide active uses on the Ground Floor that take advantage of the waterfront views and open spaces, and that add presence to public ways and sidewalks:

As described in Section 3.2, the proposed buildings include active ground floor uses, including ground floor retail and hotel lobby space. Upper floors of both buildings will include above-grade structured parking and residential and hotel uses. The above grade parking will utilize architectural or vegetative screening techniques where practicable.

B.2.h) Not have any uninterrupted or un-fenestrated length of its façade exceeding thirty-five (35) horizontal feet. Facades greater than one hundred (100) feet in length, measured horizontally, shall incorporate wall plane projections or recesses having a depth of at

least three (3) percent of the length of the façade and extending at least twenty (20) percent of the length of the façade; and

This application is for PUD-PMP approval, and as such the final design of the proposed buildings is not complete. A description of the building composition and orientation will be provided during the Special Permit approval process. The Project will comply with the spirit of this design guideline.

B.2.i) Have windows providing visual access to the interior space, arcades, display windows, entry areas, awnings, or other such features no less than seventy (70) percent of their horizontal length on all Ground Floor facades that face Public Ways or the Mystic River. Forty percent (40%) of this activated façade area on the Ground Floor of Building walls along primary and secondary streets shall consist of windows or doors meant for public entry and exit.

This application is for PUD-PMP approval, and as such the final design of the proposed buildings is not complete. Through the use of glass facades wherever possible, the Project will provide transparency and create an inviting and safe ground-level experience for pedestrians. A description of each building design, including building materials will be provided during the Special Permit approval process. The Project will comply with the spirit of this design guideline.

B.3) *Parking Lot Design.* Refer to Section 9.16 for parking requirements. Parking Lots shall avoid large expanses that are unbroken by Buildings or substantial landscaped Open Spaces, as set forth in Section 10.4 of this Ordinance.

In an effort to create a pedestrian-friendly environment, the Project does not include surface parking, although it does include up to approximately 24 short-term, back in angled vehicle parking spaces to support the ground level retail space proposed along Middlesex Avenue.

As described in Section 3.2.4, the Project will also provide up to approximately 293 parking spaces on one (1) below-grade parking deck, and three (3) above-grade parking floors in the Hotel Building and Residential Building. Additional details on parking will be provided during the Special Permit approval process.

4) *Open Space.*

4.a) Landscaping strips required in parking areas (Article 10) shall not apply to Usable Open Space calculations.

As described above, in an effort to create a pedestrian-friendly environment, the Project does not include any on-site surface parking.

4.b) Developments are encouraged to make significant contributions to Open Space along the Mystic River adjacent to the ASMD. These

contributions shall be designed and developed with special attention to the provision of wildlife habitat and contiguous migration corridors, and to help reduce the level of stormwater runoff into the Mystic River.

The Project is not located along the Mystic River, but as described in Section 3.2.2, and as shown in Figures 3.11 – 3.17, it will provide new, ample, and upgraded open space on Site with approximately 10,613 square feet (29 percent) of on-site open space. Additional details on landscaping and open space will be provided during the Special Permit approval process.

5) *Efficiency of Design.* Every effort shall be made to design Buildings and use materials and construction techniques to optimize daylight in building interiors, natural ventilation, energy efficiency, and to minimize exposure to and consumption of toxics and non-renewable resources and incorporate appropriate "green" design techniques. In accordance with this principle all Developments within the ASMD in excess of ten thousand (10,000) square feet shall be required to complete an Leadership in Energy & Environmental Design (LEED) worksheet and submit the worksheet to the SPGA with permit application materials. This worksheet shall be considered in evaluating whether a proposed Development meets the applicable standards set forth elsewhere in this Ordinance. However, consistency with the LEED standards shall not be a factor in whether or not to permit a Development.

The Project will comply with the spirit of this design guideline. The Project is currently targeting a goal of Leadership in Energy and Environmental Design® ("LEED") Version 4 Certified rating. The Proponent will provide a LEEDv4 checklist as part of the Special Permit Application.

6) *Contributions.* Contributions for Infrastructure and Open Space related to a Development made by an Applicant to the City or its constituent agencies in other agreements or permits shall be credited by the SPGA toward any applicable requirements hereunder for a Special Permit.

The Proponent will work closely with the City to provide additional details during the Special Permit approval process on any proposed contributions for infrastructure and open space.

7) *Loading Spaces.* To the extent possible, loading spaces shall be located away from major Public Ways, the Mystic River and other highly visible locations. Every effort shall be made to incorporate creative design to reduce the negative visual impacts of the Loading space.

Please refer to Section 5.11 for a summary of service and loading. This application is for PUD-PMP approval and as such the final description of service and loading for each building will be provided during the Special Permit approval process.

6.4.12. Powers of the SPGA in the ASMD. In the ASMD the Planning Board shall serve as the Special Permit Granting Authority (SPGA). The SPGA may approve, approve with conditions, or deny any application for a SPSR-A, or a PUD-A after consideration of the criteria set forth above and criteria set forth in any other Sections of this Ordinance referred to herein. The SPGA shall administer Site Plan Approval-A for Priority Permitted Uses as set forth in Subsection 6.4.11 above.

A) Relief from Requirements. Notwithstanding any other provisions of this Ordinance, the SPGA may, as part of an application for a SPSR-A, a PUD-A or Site Plan Approval-A grant relief from Development Standards, and any other requirements of the ASMD outlined in Sections 6.4.6 through 6.4.11. In such cases, in granting such relief, the SPGA must find that:

A.1) Strict enforcement of such standards or requirements would run counter to achieving the objectives of the Assembly Square District Plan (the "ASD Plan");

This section is not applicable to the Project.

A.2) The application is substantially consistent with the objectives of the ASD Plan and advances the objectives of the ASD Plan;

The Project will achieve the objectives of the ASD Plan by developing a true mixed-use program, incorporating pedestrian and transit-oriented planning, and creating a series of new pedestrian-oriented public spaces, while minimizing environmental impacts by locating development on previously paved and/or otherwise disturbed land.

A.3) In the case of any Alteration of a Nonconforming Structure, a Change of Nonconforming Use, or a Major Amendment to an Approved PUD, such alteration, change or amendment shall conform, to the extent feasible, to the objectives of the ASD Plan; and

This section is not applicable to the Project.

A.4) In the case of waivers from the landscaping requirement, the SPGA must determine that such a level of landscaping is incompatible with the objectives of the ASD Plan.

This section is not applicable to the Project.

B) *Exceptions.* Notwithstanding the foregoing, the SPGA may not grant relief from any of the following standards, guidelines or requirements:

B.1) Section 6.4.8, regarding Large Developments being developed pursuant to the PUD-A provisions of Article 16 unless as part of a Priority Development Process; and

This section is not applicable to the Project.

B.2) Section 6.4.8.D.2 regarding a Large Retail Project providing a non-retail component.

This section is not applicable to the Project.

4.3 ARTICLE 7: PERMITTED USES

7.11. Table of Permitted Uses

The following are uses that the Proponent may request relief for with regards to the Project. Please note that a majority of Retail Uses are Allowed Uses in the ASMD at less than 10,000 square feet of gross floor area and a majority of Restaurant Uses are Allowed Uses in the ASMD at less than 5,000 square feet of gross floor area.

- › Residential Use – Dwellings, multiple (7 or more units) – Use No. 1-1(c) - SPSR-A - Special Permit with Site Plan Review.
- › Hotel Use – 10,000 sf or more of gross floor area – Use No. 10-5(b) - SPSR-A - Special Permit with Site Plan Review.

4.4 ARTICLE 16: SPECIAL PERMITS, SPECIAL PERMITS WITH SITE PLAN REVIEW, SITE PLAN APPROVAL AND VARIANCES

16.5.1 *Dimensional Requirements:* Within a PUD-A, refer to the dimensional requirements of Section 6.4.6.

Please refer to Section 6.4.6 of the Ordinance for a summary of the Project's compliance with Dimensional Requirements.

16.5.4. *Waiver of dimensional standards.* In order to maximize flexibility in the application of design standards to PUD projects, the SPGA may waive strict compliance with the standards of Section 16.5 upon making a determination that: (a) such a waiver would result in a better site plan than strict compliance with the stated standards; (b) the proposed PUD design furthers the Purpose and PUD Design Guidelines of this section; and (c) the granting of such a waiver will not cause detriment to the surrounding neighborhood.

This section is not applicable to the Project.

16.7 ***PUD Design Guidelines***

PUD design shall comply with the purpose, general requirements and features, and standards for a PUD outlined in this Article, as well as with the special permit with site plan review requirements elsewhere in this Ordinance. The following design guidelines shall also be adhered to:

a) PUD architecture should demonstrate the cohesive planning of the development and present a clearly identifiable design feature throughout. It is not intended that buildings be totally uniform in appearance or that designers and developers be restricted in their creativity. Rather, cohesion and identity can be demonstrated in similar building scale or mass; consistent use of facade materials; similar ground level detailing, color or signage; consistency in functional systems such as roadway or pedestrian way surfaces, signage, or landscaping; the framing of outdoor open space and linkages, or a clear conveyance in the importance of various buildings and features on the site;

The first, second, third, fourth and fifth floors of the Project's Hotel and Residential Buildings will be consistent throughout this PUD, providing both buildings with a common base. Additionally, the upper floors of both the Hotel Building and Residential Building will have individual design elements that respond to the other. The Special Permit Application will show the relationship between the two (2) buildings in more detail. Furthermore, the conditions of nearby developments (existing & approved) will be taken into consideration as the Project design progresses.

b) Buildings adjacent to usable open space should generally be oriented to that space, with access to the building opening onto the open space;

As described in Section 3.2.2, the Hotel and Residential Buildings create an interior Courtyard over below-grade parking. The multi-functional Courtyard will serve as a convenient public passage through the Site, a prominent gathering area for ground level commercial space, and as an entry for the Hotel Building. The Courtyard opens to the new Urban Park to the east, and connects under the Garage Connector to McGrath Highway, establishing permeability throughout the Site and important pedestrian connections to the surrounding neighborhood.

c) When a building is proposed to exceed the base district height limit, it is intended that buildings be of slender proportions emphasizing the vertical dimension;

Because of the Site constraints, the Buildings will be more slender than nearby developments of the same height. The skinnier sides of the

buildings are oriented towards I-93, which gives the appearance of being more slender, particularly at the most visible portion of the development. As the design advances, the façade composition will accentuate the verticality, reducing the impact of the height.

d) It is strongly encouraged that landscaped space, and particularly usable open space, be designed and located to connect as a network throughout the PUD. It is also generally intended that said space be designed and located to connect with existing off-site usable open space, and provide potential for connection with future open space by extending to the perimeter of the PUD, particularly when a plan exists for the location and networking of such future open space;

As described in [Section 3.2.2](#), the open space, pedestrian pathways and sidewalk connections to be provided as part of the Project will be designed to complete and improve connections with the existing network of parks and pathways in the vicinity of the Project Site, including improving the connection between Assembly Square, the Mystic River, and development to the east of I-93.

e) It is intended that no non-residential structure cause a casting of any shadow on any residential lands between 10:00 AM and 2:00 PM, solar time, on the vernal equinox (March 21); and that any shadow cast by a PUD structure on public usable open space be of minimal impact on the desired functional use of said open space, particularly in the period from March 21 to September 21;

Please refer to Appendix B for the Project's shadow studies and a summary of the net new shadows created by the Project.

f) Vehicular access to and from public roads is intended to be consolidated. Vehicular access to PUD lands from a public roadway shall generally be limited to one (1) access point, particularly when PUD frontage along said roadway is three hundred (300) feet or less. When a PUD has more than six hundred (600) feet of frontage on a public road, separation between existing, approved, and proposed curb cuts, whether on or off-site, shall average a minimum of two hundred (200) feet. Consolidation to a minimal number of access points is strongly encouraged;

As described in [Section 3.2.1](#), the primary vehicular point of entry to the Site will be at the intersection of Middlesex Avenue and McGrath Highway. As described in [Section 3.2.2](#), and as shown on [Figure 3.7a-b](#), on-site structured vehicle parking, short-term hotel drop-off and valet parking, and service and loading areas will all be accessible from McGrath Highway and Kensington Avenue.

g) Internal PUD streets shall consist of local and collector roadways, designed in accordance with standard traffic engineering practice.

Any street proposed for public dedication shall meet the standards of the City's Director of Traffic and Parking.

Please refer to [Figure 3.5](#). The Project Site is 0.85 acres, and therefore is not large enough to require an internal street network.

h) PUD block sides should reflect average city block size of Somerville, to maximize a pedestrian-friendly scale in the street grid. Alight streets to give building energy-efficient orientations.

Please refer to [Figure 3.5](#). The Project Site is 0.85 acres, and therefore does not require an internal street network.

i) The PUD design should preserve and enhance natural features such as topography, waterways, vegetation, and drainage ways.

The Project will be located on a previously paved and/or otherwise disturbed site, and does not currently contain any natural features to be preserved or enhanced.

j) The PUD design should minimize impervious surfaces and incorporate other design features to minimize storm water runoff.

This Project will increase the Site's total impervious surface by approximately 8,015 square feet. However, best management practices ("BMP's") such as blue roofs, ground water infiltration on abutting properties and green infrastructure are currently being evaluated to reduce peak flows below current conditions.

If the Proponent reaches an agreement with the City to utilize the adjacent City-owned property for stormwater infiltration, the Project will reduce total volume of runoff from the Site. Green infrastructure BMPs, such as pervious pavements, raised stormwater planters and tree box filters are being evaluated to improve the water quality of runoff from the Project.

k) PUDs should maximize pedestrian transit-oriented development. Specifically they should use "traffic-calming" techniques liberally; provide networks for pedestrians as good as the networks for motorists; provide pedestrians and bicycles with shortcuts and alternatives to travel along high-volume streets, and emphasize safe and direct pedestrian connections to transit stops and other commercial and/or employment nodes; provide long-term, covered, bicycle parking areas; provide well-lit, transit shelters; incorporate transit-oriented design features; and establish Travel Demand Management programs at employment centers.

The Project will provide wide sidewalks for pedestrians as well as access to the Kensington Underpass and to the nearby commercial and retail spaces. Long-term, covered bicycle parking spaces will be provided on-

site. TDM measures will be implemented as part of the Project, and can be found in [Section 5.13](#).

I) Make shopping centers and business parks into all-purpose activity centers.

This section is not applicable to the Project.

16.8.2 PUD Preliminary Master Plan Contents. Any application for PUD preliminary master plan approval shall be accompanied by the following supportive information:

2.A) Neighborhood Context Plan and Narrative

Please refer to [Sections 3.1 and 3.2](#) for a summary of the existing Site conditions, neighborhood conditions, and a description of the proposed Project. Please refer to [Figure 3.2](#) for a Neighborhood Context Plan.

2.B) Conceptual Site Plan

Please refer to [Figure 3.5](#) for the Conceptual Project Site Plan.

2.C) Analysis of Compliance

Please refer to [Chapter 4, Zoning Compliance Narrative](#), and [Table 4-1](#) for a summary of the Project's compliance with applicable zoning requirements and dimensional standards.

2.D) Names of Property Owners within 300 Feet of PUD

Please refer to [Section 2.4](#) for a copy of the abutter's list of all property owners within three hundred feet of the Site boundaries.

2.E) Narrative on Maintenance of Landscaping, Open Space and Drainage

Please refer to [Section 3.2.2](#) and [Figures 3.11-3.17](#) for a summary of conceptual landscaping and open space to be provided by the Project. Please refer to [Section 6.4](#) for a summary of existing and proposed stormwater management strategies. A final open space and landscaping plan, along with a final stormwater management plan will be provided during the Special Permit approval process.

The Proponent (which term shall include each and every successor in interest to the original Proponent) will be responsible for maintenance of the open space and public realm improvements on the Project Site. The Proponent will work closely with the City to provide additional details during the Special Permit approval process regarding the maintenance of the proposed off-site improvements to City-owned property.

2.F) Traffic

Please refer to [Chapter 5, Transportation Impact and Access Study](#), which has been prepared and submitted as part of this PUD-PMP application.

2.G) Utility Analysis

Please refer to Chapter 6, *Utility Analysis*, which has been prepared and submitted as part of this PUD-PMP application. Please refer to Figures 6.1 - 6.3, which show existing and proposed utilities.

5

Transportation Impact and Access Study

This chapter presents a summary of the evaluation of the transportation and parking aspects of the Project, as described in detail in Chapter 3, *Project Overview* and illustrated in Figures 3.7, 3.8a-b, 3.9 and 3.10a-b. Specifically, this evaluation includes the following elements:

- › Definition and presentation of existing traffic, including roadway volume to capacity ratios, parking, transit, pedestrian and bicycle volumes, loading and overall Project Site conditions.
- › An evaluation of the Project's long-term impacts of traffic, including roadway capacities, transit, loading and overall Assembly Square area conditions.
- › A detailed summary of the proposed TDM measures the Project will contribute to the ASMD to help reduce the transportation impacts and improve overall accessibility to and from the area.

Additional detail and supporting information is provided in Appendix A, which is provided electronically on the enclosed CD-ROM due to size. Hardcopies of any or all of these supporting materials are available upon request.

5.1 Project Description

Located in the Assembly Square area of Somerville, the approximately 0.85-acre Project Site is bounded by McGrath Highway to the north, Middlesex Avenue to the east, Kensington Avenue and the I-93 Off-Ramp, to the west and an existing Public Storage building to the south. Kensington Avenue cuts through the middle of the Project Site and creates a vehicular and pedestrian connection between Middlesex Avenue and McGrath Highway.

The portion of the Project Site to the north of Kensington Avenue includes a vacant lot consisting of pavement remnants and broken pavement, and a 5,506 sf structure and parking lot associated with the existing Dunkin Donuts and Caribbean Restaurant. The portion of the Project Site to the south of Kensington Avenue is currently being used as passive open space directly adjacent to the Public Storage building.

As described in Section 3.2, the Project will include the construction of two buildings containing up to approximately 215 residential units, approximately 9,515 sf of ground floor retail and/or restaurant space, an up to 180 room hotel, and approximately 293 below- and above-grade structured parking spaces. As originally proposed, the Project was to include 180 residential apartment units, 45 residential

condominiums, approximately 13,000 square feet of retail and restaurant space, an up to 180 room hotel, and approximately 239 below-grade and above-grade structured parking spaces. The trip generation and capacity analysis reflect the original design, which represents a more conservative analysis as compared to the new design. Consequently, the original traffic analysis has been included in the final report. Refer to Figure 5.1 for a locus map.

Land use surrounding the Site is mostly commercial with existing large box retail uses in the immediate area (e.g. Kmart, TJ Maxx, and the Assembly Square Marketplace).

5.2 Study Area

In order to analyze the existing traffic conditions of the Project Site, the study area includes 17 intersections in Somerville. This study area was chosen based on the study areas of recent projects of similar size. The number of study intersections for any given project is based primarily on the size and land use the project. For the Project, it was concluded that 17 intersections are sufficient to accurately analyze the expected impacts. A list of the study intersections is provided in Section 5.3.1.

Figure 5.1 is a locus map, showing the Project location in relation to the greater Boston region. Figure 5.2 highlights each of the study intersections in relation to the Project Site. Both Figures are provided at the end of the chapter. Section 5.4 contains a detailed description of existing conditions.

5.3 Transportation Analysis Methodology

For each study intersection, traffic counts were collected during weekday morning, weekday evening, and Saturday midday peak hours. The raw traffic counts were adjusted and calibrated to reflect a typical day on the calendar.

Capacity analyses of 2017 Existing, 2024 No-Build, and 2024 Build traffic conditions were carried out to assess traffic operations in the vicinity of the Project Site. Tables 5-1 and 5-2 summarize the capacity analyses results for each study intersection.

A safety analysis of the most recent three (3) years of crash data was completed to identify possible existing safety issues near the Site that may need to be addressed as part of the traffic study. Based on the collected data, it was determined that all of the intersections studied have a crash rate below the District 4 and Statewide averages. Given the limited location and high number of crashes per year at the intersection of Route 28 at Mystic Avenue, a crash rate could not be determined and this interchange has been identified by Massachusetts Department of Transportation (MassDOT) as a Top 200 crash location in the Commonwealth. A detailed safety analysis can be found in Section 5.4.5.

Table 5-1 Level-of-Service Summary

ID	East-West Road	North-South Road	Lane	2017 Existing			2024 No-Build			2024 Build		
				AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour
1	Foley St	Middlesex Ave	WB L	B	B	B	B	B	B	B	B	B
			WB R	A	A	A	A	A	A	A	A	A
			NB T	B	B	B	B	B	B	B	B	B
			NB R	A	A	A	A	A	A	A	A	A
			SB L	A	A	A	A	A	A	A	A	A
			SB T	A	A	A	A	A	A	A	A	A
			Overall	A	A	A	A	A	A	A	A	A
2^	Middlesex Ave	Mystic Ave	SB R	--	-	-	-	-	-	-	-	-
			NW T	A	A	A	A	A	A	A	A	A
			NW R	--	-	-	-	-	-	-	-	-
			Overall	--	--	--	--	--	--	--	--	--
3^^	Foley St	Grand Union Blvd.	EB LT	A	B	B	B	B	C	B	B	C
			EB R	B	A	A	A	A	A	A	A	A
			WB LT	A	A	B	C	B	B	B	B	B
			WB R	A	A	A	A	A	A	A	A	A
			NB L	A	A	A	A	B	B	B	B	B
			NB TR	A	C	C	A	B	B	A	B	B
			SB L	A	A	A	A	B	B	A	B	B
			SB TR	C	B	B	B	A	A	B	A	A
			Overall	--	--	--	B	B	B	B	B	B
4	Revolution Drive	Grand Union Blvd./ Assembly Square Dr	NB L	C	B	B	C	C	B	C	B	B
			NB TR	C	C	C	C	C	C	C	C	C
			SB L	B	B	B	B	B	B	B	B	B
			SB T	B	B	B	B	B	B	B	B	B
			SB R	A	B	B	A	B	B	A	B	B
			NE L	C	C	C	C	C	C	C	C	C
			NE TR	B	B	B	B	B	B	B	B	B
			SW L	C	C	C	C	C	C	C	C	C
			SW T	C	C	C	C	C	C	C	C	C
			SW R	A	A	A	A	A	A	A	A	A
			Overall	B	B	B	B	B	C	B	B	C
5	Revolution Drive	Mystic Ave	NW T	A	A	A	A	B	A	A	B	A
			NW R	A	A	A	A	A	A	A	A	A
			SW R	A	C	A	A	C	B	A	C	B
			Overall	A	B	A	A	B	A	A	B	A
6	Grand Union Blvd	Fellsway	WB L	D	D	D	D	D	D	D	D	D
			WB R	A	A	A	A	A	A	A	A	A
			NB T	C	F	F	D	F	F	D	F	F
			NB R	A	A	A	A	A	A	A	A	A
			SB L	D	D	E	E	D	F	E	D	F
			SB T	F	B	B	F	B	B	F	B	B
			Overall	F	F	E	F	F	E	F	F	E
7	Middlesex Ave	Fellsway	WB L	D	D	D	D	D	D	D	D	D
			WB R	A	A	A	A	A	A	A	A	A
			NB T	E	F	F	F	F	F	F	F	F
			NB R	A	A	A	A	A	A	A	A	A
			SB L	D	D	D	D	D	D	D	D	D
			SB T	D	A	A	D	A	A	D	A	A
			Overall	D	F	E	E	F	E	E	F	E

^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and will be signalized in the future; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

LEGEND

	LOS F during Existing Conditions
	Declined from Existing to No-Build
	Declined from No-Build to Build

5-2 Level-of-Service Summary (Continued)

ID	East-West Road	North-South Road	Lane	2017 Existing			2024 No-Build			2024 Build		
				AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour	AM Peak Hour	PM Peak Hour	SAT Peak Hour
8	Alfred A. Lombardi St/Assembly Square Dr	Mystic Ave	NWB L	C	C	C	C	C	C	C	C	C
			NWB TR	C	C	C	C	E	C	C	F	C
			NEB L	D	D	D	D	D	D	D	D	D
			NEB T	A	B	B	A	B	B	A	B	B
			SWB TR	D	D	D	D	D	D	D	D	D
			Overall	C	C	C	C	E	C	C	E	C
9	Broadway	Alfred A. Lombardi St/Mt Vernon St	EB L	C	E	D	D	E	D	D	E	D
			EB T	C	F	E	F	F	F	F	F	F
			NB LTR	F	E	E	F	F	F	F	F	F
			SB L	F	D	E	F	E	E	F	E	E
			SB R	A	A	A	A	A	A	A	A	A
			Overall	E	E	D	F	E	D	F	E	E
10	I-93 SB Ramp	Alfred A. Lombardi St	SE L	C	C	C	C	C	C	C	C	C
			SE R	A	A	A	A	A	A	A	A	A
			NE T	A	A	A	A	A	A	A	A	A
			SW T	B	B	B	B	B	B	B	B	B
			Overall	A	A	A	B	A	A	B	A	A
11	I-93 SB Off-Ramp U-Turn	Mystic Ave	NB L	C	D	C	C	D	D	C	D	C
			NW T	A	A	A	A	B	A	A	B	A
			Overall	A	A	B	A	B	A	A	B	A
12	Mystic Ave	Wheatland St/Bailey Rd U-Turn	SE T	F	D	D	F	D	D	F	D	D
			NW T	A	B	A	A	C	A	A	C	A
			NE LTR	A	A	A	A	A	A	A	A	A
			Overall	F	C	C	F	C	C	F	C	C
13	Bailey Rd	Fellsway	WB T	C	C	C	C	C	C	C	C	C
			SB L	C	C	C	D	C	C	D	C	C
			SB TR	D	C	C	D	C	C	D	C	C
			Overall	C	C	C	D	C	C	D	C	C
14	Mystic Ave**	Fellsway /McGrath Highway**	SB T	A	A	A	B	A	A	B	A	A
			SE T	E	B	C	C	B	B	C	B	B
			SE R	D	C	C	C	C	B	C	C	B
			NW T	A	E	A	C	E	C	C	E	C
			Overall	C	C	B	B	C	B	B	C	B
15	Mystic Ave**	McGrath Highway NB**	SE T	E	B	B	B	A	B	B	A	B
			NE L	F	F	F	E	F	C	E	F	C
			NE R	A	A	A	A	A	A	A	A	A
			Overall	E	F	C	C	F	B	C	F	B
16	Broadway	McGrath Highway	EB L	D	E	E	E	E	E	E	E	E
			EB T	D	D	D	D	D	D	D	D	D
			EB R	D	D	D	D	D	D	D	D	D
			WB L	E	E	E	E	E	E	E	E	E
			WB T	D	E	E	D	E	E	D	E	E
			WB R	A	A	A	A	A	A	A	A	A
			NE L	E	E	E	E	E	E	E	E	E
			NE TR	D	F	E	D	F	E	D	F	E
			SW L	E	E	E	E	E	E	E	E	E
			SW TR	F	F	D	F	F	E	F	F	E
			Overall	F	F	D	F	F	E	F	F	E
17	U-Turn to I-93 SB On-Ramp*	I-93 SB On-Ramp*	SB T	N/A	N/A	N/A	C	B	C	C	B	C
			SEB R	N/A	N/A	N/A	C	A	C	C	A	C
			Overall	N/A	N/A	N/A	C	A	C	C	A	C

^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and will be signalized in the future; *Will be constructed and is analyzed as part of the No-Build and Build scenarios; **Improvement in LOS from Existing to No-Build is result of construction of Intersection 17; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

LEGEND

	LOS F during Existing Conditions
	Declined from Existing to No-Build
	Declined from No-Build to Build

Conclusion

The overall purpose of this Transportation Impact Assessment Study (TIAS) is to analyze the impact that the Project will have on surrounding traffic networks. This Project is located in a rapidly developing area in Somerville. A safety analysis of the most recent crash data has shown that all study intersections have below average crash rates. Given the limited location and high number of crashes per year at the intersection of Route 28 at Mystic Avenue, a crash rate could not be determined and this interchange has been identified by MassDOT as a Top 200 crash location in the Commonwealth and is being studied for potential improvements. As such, there are no salient existing safety issues within the study area that need to be addressed as part of this Project. The Project's proximity to the Massachusetts Bay Transportation Authority (MBTA) Assembly Square Orange Line Station will facilitate a higher percentage of non-vehicular trips. This is reflected in this trip generation analysis. Nonetheless, there will be an impact to surrounding traffic networks, as the development will generate sufficient amounts of traffic to slightly increase delay on the network.

5.3.1 Study Area Locations

The study area is located in a commercial and industrial area in the east part of Somerville, Massachusetts. The Project is located at 845 McGrath Highway, adjacent to the Assembly Row development. The following intersections were selected for analysis as part of this study:

- › Middlesex Avenue at Foley Street
- › Mystic Avenue at Middlesex Avenue
- › Foley Street at Grand Union Boulevard
- › Grand Union Boulevard at Revolution Drive and Assembly Square Drive
- › Mystic Avenue at Revolution Drive
- › Fellsway (Route 28) at Grand Union Boulevard
- › Fellsway (Route 28) at Middlesex Avenue
- › Mystic Avenue at Assembly Square Drive
- › Broadway at Lombardi Street and Mt. Vernon Street
- › I-93 Southbound Off-Ramp at Lombardi Street
- › I-93 Southbound Off-Ramp U-Turn at Mystic Avenue
- › Mystic Avenue at Wheatland Street
- › Route 28 at Mystic Avenue (includes Fellsway at Bailey Road, Fellsway at Mystic Avenue, and McGrath Highway at Mystic Avenue)
- › Broadway at McGrath Highway
- › U-Turn to I-93 southbound On-Ramp to I-93 southbound On-Ramp (Not yet constructed; analyzed as part of the No-Build and Build scenarios)

5.3.2 Roadways

Middlesex Avenue is classified as an Urban Minor Arterial that runs in an approximate north-south direction. Middlesex Avenue spans approximately 0.5 miles and its southern limit is its intersection with Mystic Avenue, and its northern limit is its intersection with Fellsway. Middlesex Avenue has one travel lane in each direction with parking allowed on both sides of the street. The MBTA bus route 92 runs along Middlesex Avenue with stops at Foley Street, Cummings Street and Fellsway. Surrounding land use on Middlesex Avenue is commercial. There are no designated bicycle facilities along Middlesex Avenue and sidewalks are present on both sides of the roadway along its entire stretch. The posted speed limit on Middlesex Avenue is 30 miles per hour (mph).

Fellsway (Route 28) is classified as an Urban Principal Arterial under Department of Conservation and Recreation (DCR) jurisdiction that travels generally north-south. It carries the designation of State Route 28 and spans from its intersection with Mystic Avenue in the south to its intersection with Charles Street in the north in Medford, where it splits to form Fellsway East and Fellsway West. Within the study area, Fellsway carries three travel lanes in each direction, separated by a raised median. There are no designated bicycle facilities along Fellsway. There are sidewalks along its entire length on both sides of the roadway. The posted speed limit along Fellsway is 35 mph.

McGrath Highway (Route 28) is classified as a Principal Arterial under MassDOT jurisdiction that runs generally north-south through the study area. It carries the designation of State Route 28 south of its intersection with Fellsway and Mystic Avenue. McGrath Highway carries three travel lanes in either direction, separated by a raised median. Its southern limit is in East Cambridge where it becomes Monsignor O'Brien Highway, but maintains the designation of Route 28. Its northern limit is its intersection with Mystic Avenue. Land use along McGrath Highway varies between residential and commercial. There are no bicycle facilities along McGrath Highway in the vicinity of the Project Site. There are plans to reconstruct McGrath Highway between Broadway and Third Street in Cambridge, which will include the addition of bicycle facilities and the grounding of the McCarthy Overpass. Currently, there are sidewalks along the entire length of McGrath Highway on each side of the roadway.

Broadway is classified as an Urban Minor Arterial west of its intersection with McGrath Highway and as an Urban Principal Arterial east of its intersection with McGrath Highway. Broadway is under City of Somerville jurisdiction east of its intersection with Alewife Brook Parkway, and under Town of Arlington jurisdiction west of its intersection with Alewife Brook Parkway. Broadway travels in a southeast-northwest direction. Broadway's western limit is its intersection with Massachusetts Avenue in Arlington and its eastern limit is its intersection with Route 38 in Somerville, and is approximately 4.3 miles long. Within the study area, Broadway has two travel lanes in either direction, except east of its intersection with Cross Street, where it is reduced to one travel lane in each direction. Within the study area, there is a median separating directions of travel. There are designated bicycle lanes in both directions between Mt. Vernon Street and McGrath Highway, and sidewalks are

present along the entire length of Broadway on each side of the street. There are currently plans to add bicycle facilities along central Broadway. The posted speed limit on Broadway is 30 mph within the study area.

Lombardi Street is classified as an Urban Collector under DCR jurisdiction. Lombardi Street runs north-south and spans approximately 350 feet. Lombardi Street connects Broadway with Mystic Avenue northbound and Mystic Avenue southbound. Lombardi Street carries two lanes in each direction with a median separating each direction.

Mystic Avenue is classified as an Urban Minor Arterial under MassDOT jurisdiction that spans for approximately three miles in a generally northwest-southeast direction. Within the study area, it carries the designation of Route 38. Its northern limit is at its intersection with Main Street in Medford, and its southern limit is at its intersection with Main Street in Somerville. Land use along Mystic Avenue is primarily commercial, but surrounding land use is increasingly residential as the road travels north. There are no designated bicycle facilities along Mystic Avenue. There are sidewalks present on each side of the roadway along its entire length.

Revolution Drive is classified as a Local Road under City of Somerville jurisdiction that travels in a generally northeast-southwest direction. It spans approximately 600 feet and is primarily an access road for the surrounding businesses and stores. It connects Middlesex Avenue with businesses north of Assembly Square Drive. There are sidewalks present on both sides of Revolution Drive.

Assembly Square Drive is classified as an Urban Collector under City of Somerville jurisdiction and provides access to the Assembly Row development area. Surrounding land use is commercial and industrial. It spans approximately 1,800 feet from its intersection in the east with Mystic Avenue to its intersection with Revolution Drive, after which it becomes Grand Union Boulevard. Assembly Square Drive is used primarily as an access road for the surrounding businesses and stores, and for access to the MBTA station. There is a planted median separating directions of travel, and there are designated bicycle lanes in each direction. There is also a bicycle path adjacent to the roadway. There are sidewalks present along the entire length of Assembly Square Drive on both sides of the roadway.

Foley Street is classified as a Local Road under City of Somerville jurisdiction that runs in a general east-west direction. It is approximately 1,500 feet long and provides access from Middlesex Avenue to the commercial area at Assembly Row as well as the Assembly stop on the MBTA Orange Line.

Grand Union Boulevard is classified as an Urban Collector under City of Somerville jurisdiction and runs in a general north-south direction. It spans approximately 0.5 miles and is primarily an access road for the surrounding businesses and stores. Its southern limit is its unsignalized intersection with Foley Street and Assembly Square Drive, and its northern limit is at the signalized intersection with Fellsway. There are designated bicycle lanes in each direction and sidewalks are present on both sides of the roadway along its entire stretch. Parking is permitted on both sides of the roadway between Revolution Drive and Great River Road.

5.3.3 Intersections

There are 16 existing intersections that comprise the study area. Fourteen are signalized and two are unsignalized. Figure 5.2 at the end of the chapter identifies each of these study intersections and depicts their location relative to the Project Site.

The intersection of **Middlesex Avenue at Foley Street** is a three-way, signalized intersection. Middlesex Avenue carries two exclusive through lanes and one exclusive right-turn lane in the northbound direction and one exclusive through lane and one exclusive left-turn lane in the southbound direction. The Foley Street approach carries one exclusive left-turn lane and one exclusive right-turn lane. There are striped crosswalks across the Foley Street approach and Middlesex Avenue southbound approach and there is an exclusive pedestrian phase. There is a designated bicycle lane along Foley Street in the westbound direction.

The intersection of **Mystic Avenue at Middlesex Avenue** is an unsignalized intersection. The Mystic Avenue approach does not operate under any traffic control and the Middlesex Avenue approach is stop-controlled. Vehicles may make the slight right off Mystic Avenue onto Middlesex Avenue, but southbound traffic on Middlesex Avenue must enter Mystic Avenue via a U-turn lane, just north of the intersection. At the intersection, Mystic Avenue and Middlesex Avenue are both two lanes with sidewalks on the east side of the roadway. There are no marked crosswalks at the intersection.

The intersection of **Foley Street at Grand Union Boulevard** is a four-legged, stop-controlled intersection. Each approach on Grand Union Boulevard carries one through/right-turn lane and one exclusive left-turn lane. The eastbound approach on Foley Street carries one left-turn/through lane and one exclusive right-turn lane. The westbound approach on Foley Street carries one left-turn/through lane and one through/right-turn lane. There are marked crosswalks across each approach. There are designated bicycle lanes in both directions along Grand Union Boulevard and shared lane markings ("sharrows") in both directions along Foley Street east of the intersection.

The intersection of **Revolution Drive at Assembly Square Drive and Grand Union Boulevard** is a four-way, signalized intersection. The Assembly Square Drive approach has one exclusive left-turn lane and one through/right-turn lane. The Grand Union Boulevard approach carries one exclusive left-turn lane, one exclusive through lane, and one exclusive right-turn lane. Revolution Drive carries one exclusive left-turn lane and through/right-turn lane in the eastbound direction and one exclusive left-turn lane, one exclusive through lane, and one exclusive right-turn slip lane in the westbound direction. There are designated bicycle lanes in both directions along Assembly Square Drive, both directions along Revolution Drive, and in the westbound direction along Grand Union Boulevard. There are marked crosswalks across each approach with an exclusive pedestrian phase.

The intersection of **Mystic Avenue at Revolution Drive** is a three-legged, signalized intersection. Mystic Avenue carries three through lanes and a right-turn

slip lane onto Revolution Drive, as well as three receiving lanes. Revolution Drive carries two lanes in each direction, separated by a planted median. Both approach lanes on Revolution Drive are exclusive right-turn lanes onto Mystic Avenue. There is a striped crosswalk across the Revolution Drive approach and the pedestrian phase runs concurrently with the Mystic Avenue phase.

The intersection of **Fellsway (Route 28) at Grand Union Boulevard** is a three-way, signalized intersection. Fellsway carries three exclusive through lanes in both directions, and in addition there is a yield-controlled slip lane for the northbound right-turn movement, and two exclusive left-turn lanes in the southbound direction. The entrance to the southbound left-turn lanes is roughly 165 feet before the stop line. Grand Union Boulevard carries two exclusive left-turn lanes onto Fellsway and a yield-controlled slip lane for the right-turn movement. There are marked crosswalks across the Grand Union Boulevard approach and the Fellsway southbound approach.

The intersection of **Fellsway (Route 28) at Middlesex Avenue** is a three-way, signalized intersection. Fellsway carries three exclusive through lanes in both directions, and in addition there is a yield-controlled slip lane for the northbound right-turn movement and two exclusive left-turn lanes in the southbound direction. Middlesex Avenue carries two exclusive left-turn lanes onto Fellsway and a yield-controlled slip lane for the right-turn movement. There are marked crosswalks across the Middlesex Avenue approach and the Fellsway southbound approach.

The intersection of **Mystic Avenue at Assembly Square Drive and Lombardi Street** is a signalized intersection. At the northwesterly Mystic Avenue approach, there is one exclusive left-turn lane, two exclusive through lanes, and one through/right-turn lane. There are three receiving lanes on Mystic Avenue. Assembly Square Drive has one lane in each direction, separated by a planted median. The southwesterly movement on Assembly Square Drive is a through/right-lane. There is a striped crosswalk to cross Mystic Avenue at the south end of the intersection, and a brick crosswalk for pedestrians crossing Assembly Square Drive on the east side of the intersection.

The intersection of **Broadway at Alfred A. Lombardi Street and Mount Vernon Street** is a four-way, signalized intersection. Broadway runs in a general east-west direction, Lombardi Street runs in a general north-south direction, and Mount Vernon Street is a one-way street in the northbound direction. Broadway only has approach lanes in the eastbound direction, and is one-way in the eastbound direction east of the intersection. At the eastbound approach, Broadway carries an exclusive left-turn lane and one through lane. Lombardi Street carries an exclusive right-turn lane and one exclusive left-turn lane at its southbound approach to the intersection. There are two receiving lanes on Lombardi Streets northbound departure from the intersection. Mount Vernon Street carries one shared left-turn/through/right-turn lane. The eastbound left-turn and eastbound through movement operate in conjunction with a protected right-turn phase in the southbound direction. The northbound and southbound phases run concurrently with permitted left-turns. There is an exclusive pedestrian phase at the intersection, and crosswalks are installed across each approach to the intersection.

The intersection of **Alfred A. Lombardi Street at the I-93 SB / Rte. 38 EB off-ramp** is a three-way, signalized intersection that is directly north of the intersection of Broadway at Lombardi Street and Mt. Vernon Street. The off-ramp approaches from the west, while Lombardi Street runs northeast-southwest. The off-ramp is one-way in the eastbound direction and carries one exclusive left-turn lane and one exclusive right-turn lane. West of the intersection on the off-ramp approach, vehicles are provided with the option to take a U-turn ramp to access Mystic Avenue westbound. The southbound approach on Lombardi Street carries two through lanes. There is a raised sidewalk along Lombardi Street, but only on the south side of the road. There is no exclusive pedestrian phase and no crosswalks provided at any approach.

The intersection of **Mystic Avenue at the I-93 SB / Route 38 EB U-turn ramp** is a signalized intersection, west of the Mystic Avenue at Assembly Square Drive and Lombardi Street intersection. The U-turn ramp carries two lanes and provides access to Mystic Avenue westbound for vehicles traveling eastbound on Mystic Avenue. The U-turn receives its green time along with the Lombardi Street through movement.

The intersection of **Mystic Avenue (Route 38) at Wheatland Street** is a signalized intersection. It is part of the larger Route 28 / Route 38 / I-93 intersection. Mystic Avenue (Route 38) runs in a general east-west direction and Wheatland Street runs in a general north-south direction. The Wheatland Street approach from the north is accessed from Route 28 southbound and Route 38 eastbound. South of the intersection, Wheatland Street is a one-way road in the northbound direction. Mystic Avenue carries two through lanes in both directions. There are marked crosswalks across the Wheatland Street southbound approach, and Mystic Avenue eastbound approach and there is an exclusive pedestrian phase.

The intersection of **Fellsway (Route 28) at Bailey Road (Route 38)** is a signalized intersection. It is part of the larger Route 28 / Route 38 / I-93 intersection. Bailey Road is a two-lane, one-way roadway that runs in a general westbound direction. At this intersection, Fellsway only travels southbound and carries two channelized lanes for access to I-93 southbound, three channelized lanes to continue on Route 28 southbound, and one channelized right-turn lane for access to Bailey Road. There is a striped crosswalk across the Fellsway approach.

The intersection of **Mystic Avenue (Route 38) at McGrath Highway and Fellsway (Route 28)** [adjacent to Foss Park] is a signalized intersection part of the larger Route 28 / Route 38 / I-93 intersection. This intersection is located at the northeast corner of Foss Park. Route 38 westbound carries two exclusive through lanes and Route 38 eastbound carries one exclusive through lane, one through/right-turn lane, and one exclusive right-turn lane. The westbound approach to this intersection is access from Route 28 northbound to Route 38 westbound. Fellsway approaches from the north, and carries three lanes of travel. The southbound departure carries three lanes of traffic, and becomes McGrath Highway but maintains the designation of Route 28. There is a striped crosswalk across the Mystic Avenue eastbound approach and the Fellsway southbound approach.

The intersection of **Mystic Avenue (Route 38) at McGrath Highway (Route 28) northbound** [adjacent to Stop & Shop] is a signalized intersection that is a part of the larger Route 28 / Route 38 / I-93 intersection. Vehicles traveling northbound on Route 28 wishing to continue northbound travel below grade to bypass this intersection. The northbound approach to this intersection provides two signalized lanes for vehicles making a left-turn onto Route 38 westbound, and one yield-controlled lane for vehicles turning right onto Route 38 eastbound, where they may also access I-93 southbound. The Mystic Avenue approach carries two exclusive through lanes through the intersection. There are marked crosswalks across all approaches at the intersection.

The intersection of **Broadway at McGrath Highway (Route 28)** is a four-way, signalized intersection. The eastbound approach on Broadway carries one exclusive left-turn lane, one left-turn/through lane, one exclusive through lane, and one exclusive right-turn lane. The westbound approach on Broadway carries one exclusive left-turn lane, one left-turn/through lane, one exclusive through lane, and a channelized slip lane for the right-turn movement. The westbound departure from the intersection has two receiving lanes and the eastbound departure has three receiving lanes. Both approaches on McGrath Highway carry one exclusive left-turn lane, two exclusive through lanes and one through/right-turn lane. Both departures on McGrath Highway have three receiving lanes. There are sidewalks and marked crosswalks at each approach.

5.4 Existing Conditions Assessment

5.4.1 Existing Study Area Traffic Volumes

Turning movements were collected in January 2017 at all study intersections. In order to provide accurate analysis for separate peak hours during the day, data was collected during the morning (7am to 9am), evening (4pm to 6pm), and Saturday (11am to 1pm) peak periods for all study intersections on a typical Thursday and Saturday. The traffic counts include cars, heavy vehicles, pedestrians and bicycles. Existing pedestrian counts can be found in Figure 5.5 and existing bicycle volumes can be found in Figure 5.6. All traffic counts are provided in Appendix A.

In compliance with MassDOT Transportation Impact Assessment (TIA) Guidelines, Automatic Traffic Recorder (ATR) counts were collected on three consecutive non-holiday days during a Tuesday to Thursday period in January 2017. The ATR data included traffic volume data, vehicular speed data, and vehicle classification data. The counts are summarized in 15-minute, hourly, and daily intervals. ATR data was collected at the following locations:

- › Middlesex Avenue, south of Foley Street
- › Foley Street, east of Middlesex Avenue

The ATR data collected at the above locations are summarized in Table 5-3.

Table 5-3 Existing ATR Data Collection Summary

Location	Weekday (vpd) ¹	Saturday (vpd) ¹	Weekday AM Peak Hour			Weekday PM Peak Hour			Saturday Midday Peak Hour		
			Volume (vph) ²	"K" Factor ³	Peak Direction	Volume (vph) ²	"K" Factor ³	Peak Direction	Volume (vph) ²	"K" Factor ³	Peak Direction
Middlesex Avenue south of Foley Street	8783	7960	571	7%	54.1% NB	683	8%	72.2% NB	786	10%	50.4% NB
Foley Street east of Middlesex Avenue	6389	6523	461	7%	83.3% EB	496	8%	50.6% WB	665	10%	61.6% EB

1 - Daily Traffic expressed in vehicles per day; 2 - Peak hour volumes expressed in vehicles per hour; 3 - Percent of daily traffic, which occurs during the peak hour; **Notes: EB = eastbound, WB = westbound, NB = northbound. Peak hours do not necessarily coincide with the peak hours of the turning movement counts**

As shown in Table 5-3, Middlesex Avenue carries approximately 8,783 vehicles during a typical weekday with seven (7) percent occurring during the morning peak hour and 8 percent occurring during the evening peak hour. Additionally, Middlesex Avenue carries approximately 7,960 vehicles during a typical Saturday, with 10 percent of the traffic occurring during the midday peak hour.

Foley Street carries approximately 6,389 vehicles during a typical weekday with seven (7) percent of the traffic occurring during the morning peak hour and eight (8) percent occurring during the evening peak hour. Additionally, Foley Street carries approximately 6,523 vehicles during a typical Saturday, with 10 percent of the traffic occurring during the midday peak hour.

Traffic Volume Adjustments

On the basis of the MassDOT TIA and Traffic and Safety Engineering 25 percent Design Submission Guidelines, a seasonal factor was applied to the traffic volume. This seasonal factor was calculated by collecting monthly volumes from MassDOT Permanent Counting Stations 82 and 8011 on Interstate 93. It was determined that traffic levels at these locations are 1.48 percent lower in January when compared to the Annual Average Daily Traffic (AADT). Therefore, the existing traffic volumes were increased by 1.48 percent.

The MassDOT data examined for this seasonal adjustment is included in Appendix A. These seasonally adjusted volumes were utilized during the Existing Conditions capacity analysis. The existing morning, evening and Saturday peak hour traffic volumes, which have been updated with a seasonal factor, are shown in Figures 5.7 to 5.9 provided at the end of the chapter.

5.4.2 Pedestrian and Bicycle Facilities

Pedestrian Facilities

Pedestrian connectivity in the area is facilitated by existing sidewalks along the roadways within the area, as noted in Section 5.3.2. Many of the study intersections

have marked crosswalks for pedestrians as well as exclusive pedestrian phases to enhance safety. A pedestrian-specific connection under the Interstate 93 overpass exists in the form of the Kensington Underpass. The debris in the underpass makes for less-than-ideal conditions, although it is heavily used by cyclists and pedestrians.

Bicycle Facilities

There are designated bicycle lanes located along Grand Union Boulevard/Assembly Square Drive between Great River Road and Mystic Avenue, along Foley Street in the westbound direction between Grand Union Boulevard and Middlesex Avenue, and in both directions along Broadway between McGrath Highway and Lombardi Street. The designated bicycle lanes on Grand Union Boulevard provide an important connection between East Somerville and the path along the Mystic River. Through its intersection with Revolution Drive, the bicycle lanes are painted solid green to warn cyclists and drivers of the conflict zone. The designated bicycle lanes along Broadway are painted green in both directions. Lombardi Street has a four-foot shoulder in each direction that can accommodate bicycle travel. At its intersection with the I-93 southbound off-ramp and with Broadway, Lombardi Street has bicycle detection loops on each lane with a bicycle detector pavement marking. When a bicycle is present, that movement receives a green light to allow both vehicles and bicycles to proceed through the intersection. These facilities provide a connection from Assembly Square to East Somerville.

The Mystic River Reservation Bike Path runs along the Mystic River and connects the Assembly Square area to Medford and other parks in the area. The path provides a safer alternative to walking along Mystic Avenue, which is a higher speed roadway that receives a high volume of traffic during the peak hours.

5.4.3 Public Transportation

Within an approximate 0.5 mile radius of the Project Site, the MBTA services the area with bus routes 89, 90, 92, 93, 95, and 101. Additionally, there are two MBTA Orange Line stations located within walking distance of the Project Site: Assembly Square Station and Sullivan Square Station. Detailed maps and schedules can be found in Appendix A. Figure 5.3 illustrates the available public transportation in the vicinity of the Project Site.

- › Bus Route 89 runs between Clarendon Hill Busway in Somerville to Sullivan Square Station. There is a stop at the intersection of Broadway at McGrath Highway, which is approximately 0.40 miles from the Project Site. During both the morning and evening peak hours, Route 89 runs at approximately 15 minute intervals.
- › Bus Route 90 runs between Davis Square, a stop on the MBTA Red Line and Wellington Station, a stop on the MBTA Orange Line. There is a stop at the intersection of Foley Street at Grand Union Boulevard, which is approximately 1,000 feet from the Project Site. During both the morning and evening peak hours, Route 90 runs at approximately 45 minute intervals.

- › Bus Route 92 runs between Assembly Square and downtown Boston, with stops at Sullivan Square and Haymarket, both stops on the MBTA Orange Line. Bus Route 92 runs along Middlesex Avenue, with a stop approximately 450 feet from the Project Site. During both the morning and evening peak hours, Route 92 does not stop in Assembly Square, but rather has its terminus at Sullivan Square Station, which is approximately 0.85 miles from the Project Site, and runs at 15 minute intervals.
- › Bus Route 93 runs between Sullivan Square Station and downtown Boston, with a stop at State Street, a stop on the MBTA Orange Line. The closest stop is located at the intersection of Broadway at McGrath Highway. During both the morning and evening peak hours, Route 93 runs at approximately 5 to 10 minute intervals.
- › Bus Route 95 runs between Playstead Road in West Medford and Sullivan Square. The closest stop is located along Mystic Avenue southbound, which is approximately 900 feet from the Project site. During the morning peak hour, it runs at approximately 25 to 30 minute intervals and during the evening peak hour it runs at approximately 15 to 25 minute intervals.
- › Bus Route 101 runs between Malden Center Station, a stop on the MBTA Orange Line, and Sullivan Square Station. The closest stop to the Project Site is located at the intersection of Broadway at McGrath Highway. During both the morning and evening peak hours, Route 101 runs at approximately 10 to 15 minute intervals.
- › The Assembly Square Station is approximately 0.35 miles from the Project Site via Foley Street. Sullivan Square Station is approximately 0.85 miles south of the Project Site via Assembly Square Drive and Main Street, and is also a hub for several bus routes through the area. The Orange Line provides rapid transit connection from Oak Grove in Malden through Somerville, downtown Boston and neighborhoods south including Roxbury and Jamaica Plain.

5.4.4 Car and Bicycle Sharing

Within an approximate one-half mile radius of the Project Site, there are car-sharing and bicycle-sharing options available to residents and visitors of the area for use. These options allow users to rent a vehicle or a bicycle in order to travel. Figure 5.4 at the end of the chapter illustrates the available car- and bicycle-sharing options within the vicinity of the Project Site. In 2018, Hubway, a bicycle-sharing company, will be adding a station or stations within Assembly Square.

5.4.5 Motor Vehicle Safety Analysis

Crash Data

In order to identify potential crash trends and/or roadway deficiencies within the project study area, crash data from MassDOT for years 2012 to 2014 was reviewed within the jurisdiction of Somerville. This data represents the most recent three years of data available through the MassDOT crash database. The MassDOT crash records offered the following information:

- › Crash Location (General or Specific) / Direction of vehicle(s)
- › Date / Time
- › Roadway surface conditions / Light conditions / Weather conditions
- › Crash Severity / Manner of Collision

Crash rates are calculated based on the number of crashes at an intersection and the volume of vehicular traffic traveling through that intersection on a daily basis. Rates that exceed MassDOT's average for accidents at any given intersection in the district the city or town is located (Somerville is in District 4) could indicate safety or geometric issues. The latest published crash rate for MassDOT District 4 is 0.73 for signalized intersections and 0.56 for unsignalized intersections. These rates imply that, on average, 0.73 crashes occurred per million vehicles entering signalized intersections throughout District 4 and 0.56 crashes occurred per million vehicles entering unsignalized intersections.

While it may be assumed that all relevant crash attributes should be reported and provided in recordkeeping, a portion of the individual crash records have only partial information available. Among various reasons for this, missing crash information might be attributed to the type of police reports filled out and provided to MassDOT.

Locations of the crashes in the area of the study intersections were general and approximated in many cases. This lack of specificity can sometimes hinder the engineer's ability to identify statistically significant trends and diagnose potential safety problems. However, combined with engineering judgement, the synthesized data has yielded a summary of crashes that may be used to speculate on a variety of general crash patterns.

The summary of the State crash analysis are shown in Tables 5-4 and 5-5. Detailed crash analysis worksheets for each intersection for years 2012 to 2014 are provided in Appendix A.

Table 5-4 MassDOT Intersection Crash Conditions

	<i>Middlesex Avenue at Foley Street</i>	<i>Mystic Avenue at Middlesex Avenue</i>	<i>Foley Street at Grand Union Boulevard</i>	<i>Revolution Drive at Assembly Square Drive</i>	<i>Mystic Avenue at Revolution Drive</i>	<i>Fellsway at Grand Union Blvd.</i>	<i>Fellsway at Middlesex Ave.</i>
<i>Crash Severity</i>							
Property Damage Only	1	3	2	2	1	3	6
Non-fatal Injury	0	1	0	1	1	1	2
Fatal Injury	0	0	0	0	0	0	0
Not Reported, Unknown	3	0	0	0	0	0	2
<i>Total</i>	4	4	2	3	2	4	10
<i>Manner of Collision</i>							
Sideswipe, Same Direction	0	0	0	0	0	0	1
Sideswipe, Opposite Direction	0	0	0	0	0	0	0
Angle	3	0	2	2	0	2	2
Rear-end	1	1	0	0	1	1	4
Head-on	0	1	0	0	1	0	1
Single Vehicle	0	2	0	1	0	1	2
Other, not reported	0	0	0	0	0	0	0
<i>Total</i>	4	4	2	3	2	4	10
<i>Crash Averages</i>							
Avg. Crashes per Year	1.33	1.33	0.67	1.00	0.67	1.33	3.33
Avg. Crash Rate (per MEV)	0.42	0.46	0.17	0.25	0.07	0.07	0.18

Table 5-5 MassDOT Intersection Crash Conditions (Continued)

	<i>Mystic Avenue at Assembly Square Drive</i>	<i>Broadway at Lombardi St. and Mt. Vernon Street</i>	<i>I-93 SB Off Ramp at Lombardi St.</i>	<i>I93 SB U-Turn at Mystic Avenue</i>	<i>Wheatland Street at Mystic Avenue</i>	<i>Route 28 at Mystic Avenue^a</i>	<i>Broadway at McGrath Highway</i>
Crash Severity							
Property Damage Only	4	5	0	0	0	54	22
Non-fatal Injury	3	5	0	0	0	43	14
Fatal Injury	0	0	0	0	0	1	0
Not Reported, Unknown	1	1	0	0	0	8	2
<i>Total</i>	8	11	0	0	0	106	38
Manner of Collision							
Sideswipe, Same Direction	0	0	0	0	0	5	3
Sideswipe, Opposite Direction	0	0	0	0	0	4	0
Angle	5	6	0	0	0	53	6
Rear-end	2	0	0	0	0	33	25
Head-on	0	0	0	0	0	5	0
Single Vehicle	1	3	0	0	0	6	3
Other, not reported	0	2	0	0	0	0	1
<i>Total</i>	8	11	0	0	0	106	38
Crash Averages							
Avg. Crashes per Year	2.67	3.67	0.00	0.00	0.00	35.33	12.67
Avg. Crash Rate (per MEV)	0.26	0.68	0.00	0.00	0.00	N/A	0.63

N/A Indicates multiple locations; crash rate could not be calculated

a Includes crashes occurring at Fellsway (Route 28) at Bailey Road, Fellsway (Route 28) at Mystic Avenue, or McGrath Highway (Route 28) at Mystic Avenue

Note that the Route 28 at Mystic Avenue interchange was excluded from further safety analysis. Given the limited location and high number of crashes per year, MassDOT has been involved with the study of this intersection, and this interchange has been identified as a Top 200 crash location in the Commonwealth. Review of the data at this location shows that 106 crashes occurred during the three-year period from 2012 to 2014 based on data collected from MassDOT. Of those, 53 of the crashes were angled collisions and 33 of the crashes were rear-end collisions. A reason for the high number of rear-end collisions could be related to the high number of vehicles on the roadway during the peak hour and driver inattention to

the vehicle in front of them. Of the 106 crashes, many occurred outside of the morning and evening peak periods, when less traffic is on the roadway. A reason for the high number of crashes could be high-speeds on the roadway and then vehicles braking suddenly at a red light.

At the intersection of **Middlesex Avenue and Foley Street**, there were four (4) reported crashes based on data collected from MassDOT from 2012 to 2014. One of the crashes resulted in property damage only and the severity of three of the crashes were not reported. Three of the crashes were angled collisions and one was a rear-end collision. The four crashes resulted in an average of 1.33 crashes per year and a crash rate of 0.42 crashes per million entering vehicles (MEV). This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections.

At the intersection of **Mystic Avenue and Middlesex Avenue**, there were four (4) reported crashes based on data collected from MassDOT from 2012 to 2014. Three of the crashes resulted in property damage only and one resulted in a non-fatal injury. Of the four reported crashes, one was a rear-end collision, one was a head-on collision, and two were single-vehicle crashes. The four crashes resulted in an average of 1.33 crashes per year and a crash rate of 0.16 crashes per MEV. This crash rate is under the MassDOT District 4 and Statewide averages for unsignalized intersections.

At the intersection of **Foley Street and Grand Union Boulevard**, there were two (2) reported crashes based on data collected from MassDOT from 2012 to 2014. Both crashes resulted in property damage only and both were angled collisions. The two crashes resulted in an average of 0.67 crashes per year and a crash rate of 0.17 crashes per MEV. This crash rate is under the MassDOT District 4 and Statewide averages for unsignalized intersections.

At the intersection of **Revolution Drive and Assembly Square Drive**, there were three (3) reported crashes based on data collected from MassDOT from 2012 to 2014. Two of the crashes resulted in property damage only and one resulted in a non-fatal injury. Two of the crashes were angled collisions and one was a single-vehicle crash. The three crashes resulted in an average of 0.33 crashes per year and a crash rate of 0.25 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections.

At the intersection of **Mystic Avenue and Revolution Drive**, there were two (2) reported crashes based on data collected from MassDOT from 2012 to 2014. One crash resulted in property damage only and one resulted in a non-fatal injury. One of the crashes was a head-on collision and one was a rear-end collision. The two crashes resulted in an average of 0.67 crashes per year and a crash rate of 0.07 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections.

At the intersection of **Fellsway (Route 28) at Grand Union Boulevard**, there were four (4) reported crashes based on data collected from MassDOT from 2012 to 2014. Three of the crashes resulted in property damage only, and one resulted in a non-fatal injury. Two of the crashes were angled collisions, one was a rear-end collision,

and one was a single-vehicle collision. The four crashes resulted in an average of 1.33 crashes per year and a crash rate of 0.07 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections.

At the intersection of **Fellsway (Route 28) at Middlesex Avenue**, there were 10 reported crashes based on data collected from MassDOT from 2012 to 2014. Six of the crashes resulted in property damage only, two resulted in non-fatal injuries, and two had non-reported severities. Of the 10 crashes, one was a sideswipe in the same direction, two were angled collisions, four were rear-end collisions, one was a head-on collision, and two were single-vehicle collisions. The 10 crashes resulted in an average of 3.33 crashes per year and a crash rate of 0.18 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections. A collision diagram of all crashes at the intersection from 2012 to 2014 is located in Appendix A.

At the intersection of **Mystic Avenue and Assembly Square Drive**, there were eight (8) reported crashes based on data collected from MassDOT from 2012 to 2014. Four of these crashes resulted in property damage only, three resulted in non-fatal injuries, and one crash had a non-reported severity. Of the eight crashes, five were angled collisions, two were rear-end collisions, and one was a single-vehicle collision. The eight crashes resulted in an average of 2.67 crashes per year and a crash rate of 0.26 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections.

At the intersection of **Broadway at Lombardi Street and Mt. Vernon Street**, there were 11 reported crashes based on data collected from MassDOT from 2012 to 2014. Five of these crashes resulted in property damage only, five resulted in non-fatal injuries, and one crash had a non-reported severity. Of the 11 crashes, six were angled collisions, three were single-vehicle collisions, and two had a non-reported manner of collision. The 11 crashes resulted in an average of 3.67 crashes per year and a crash rate of 0.68 crashes per million entering vehicles (MEV). This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections. A collision diagram of all crashes at the intersection from 2012 to 2014 is located in Appendix A.

The intersection of **Lombardi Street with the I-93 SB / Rte. 38 WB off-ramp** had zero reported crashes from 2012 to 2014 according to crash data collected from MassDOT.

The intersection of **Mystic Avenue and I-93 SB Off-Ramp U-Turn** had zero reported crashes from 2012 to 2014 according to crash data collected from MassDOT.

The intersection of **Wheatland Street and Mystic Avenue (Route 38) SB** had zero reported crashes from 2012 to 2014 according to crash data collected from MassDOT.

At the intersection of **Broadway and McGrath Highway**, there were 38 reported crashes based on data collected from MassDOT from 2012 to 2014. This intersection

is ranked 180th in the 2014 Top Crash Location Report published by MassDOT in 2016. Twenty-two (22) of these crashes resulted in property damage only, 14 resulted in non-fatal injuries, and two had non-reported severities. Of the 38 crashes, three were sideswipes in the same direction, six were angled collisions, 25 were rear-end collisions, three were single-vehicle collisions, and one had a non-reported manner of collision. The 38 crashes resulted in an average of 12.67 crashes per year and a crash rate of 0.63 crashes per MEV. This crash rate is under MassDOT District 4 and Statewide averages for signalized intersections. A collision diagram of all crashes at the intersection from 2012 to 2014 is located in Appendix A.

Conclusion

Based on the safety analysis of crash data collected from MassDOT 2012 and 2014, all of the intersections analyzed as part of this safety analysis have crash rates below District 4 and Statewide averages. As previously mentioned, the Route 28/Mystic Avenue interchange was omitted from crash rate calculations. This interchange has been identified by MassDOT as a Top 200 crash location in the Commonwealth. Existing conditions and geometries for the intersections analyzed do not show any significant safety issues that need to be addressed as part of this traffic study.

5.5 Future Conditions Analysis

Traffic growth occurs due to land development in the immediate area and the surrounding region. Two methods are typically employed to estimate this growth. The first method is to use an annual percentage increase in traffic growth, which is applied to all traffic volumes under study. This method generally covers traffic growth due to regional developments outside the study area or developments not yet permitted but in the pipeline. The second method identifies planned and permitted developments in the near vicinity of the study area. For these specific developments, traffic estimates are generated and assigned to the study network. Both methods were used and summed together to define the "No-Build" traffic volumes for this study.

5.6 2024 No-Build Conditions

Traffic volumes in the study area were projected to the year 2024, which reflects a planning horizon from the year 2017, consistent with MassDOT's Traffic Impact Assessment (TIA) Guidelines. The traffic conditions for the year 2024 No-Build conditions were examined independent of the proposed Project, including all existing traffic, new traffic resulting from background growth, and traffic from specific development projects in the vicinity of the study area. Anticipated Project-generated traffic volumes for the Project were superimposed upon the No-Build traffic volumes to reflect the Build traffic volumes for the Project.

5.6.1 General Background Traffic Growth

Based on discussions with the Central Transportation Planning Staff (CTPS), and based on traffic volume data compiled by MassDOT from count stations, an annual traffic growth rate for this area of Somerville was chosen for analysis purposes. In order to provide an accurate and conservative analysis, a 0.80 percent compounded annual growth rate was used to account for general background traffic growth and development by others not yet identified. This number is based on the CTPS Long Range Transportation Plan published in 2011, and updated in 2013. The 0.80 percent growth rate was verified by the Director of Technical Services at MAPC in conjunction with the Travel Model Development and Transportation Systems Analysis divisions. The 0.80 percent growth rate was applied to all existing volumes to the year 2024.

5.6.2 Specific Development By Others

Design Consultants Inc. (DCI) has coordinated with the Planning Department of the City of Somerville, the Boston Region Metropolitan Planning (MAPC), and the organization known as the Central Transportation Planning Staff (CTPS) to determine which upcoming, approved projects in the area will have an impact on the traffic network. The following projects were identified as developments that will have a significant impact in the vicinity of the study area, and their associated traffic volumes, if applicable, were summed together and incorporated into the No-Build traffic volumes.

Wynn Casino- The Wynn Casino project is a proposed casino and resort in Everett, Massachusetts. This project is located on Horizon Way off Lower Broadway (Route 99) in Everett. The proposed project will be approximately 2.6 million square feet, including a 500-room luxury hotel, gaming area, retail space, food and beverage outlets, convention and meeting spaces, a spa and gym, and nightclub. The traffic volumes generated by the Wynn Everett Casino and Resort were obtained from the Draft Environmental Impact (DEIR) filed, EOE # 15060. It should be noted that due to the nature and expected use of a casino, trip generation was not carried out for the weekday AM peak hour. It was assumed during the traffic study for the Wynn Casino that it would not create a significant impact on AM traffic operations. The predicted trip volumes associated with the Wynn Casino are provided in Appendix A.

Assembly Square Development Block 5 - This project is part of the larger Assembly Row Development Project, which is one of the largest projects in New England, containing retail, restaurant, hotel, and residential use. Blocks 1, 2, 3 and 4 have already been built and are open to the public. Block 5 will be built on a parcel of approximately 115,382 square feet of land bordered by Assembly Row, Canal Street, Foley Street, and Grand Union Boulevard. The project consists of the construction of a 257,300 GSF multi-level building (not including parking garage) with 155 hotel units, 104 residential units and approximately 22,000 SF of retail and restaurant space. The project area is currently in construction and an interim lot providing parking for retail and hotel uses until the full-build of Block 5 is complete.

The proposed surface lot contains 86 parking spaces to be shared between hotel, retail, and restaurant uses. The predicted trip volumes associated with the Assembly Square Block 5 Development are provided in Appendix A.

Assembly Square Development Block 6 - This project is also part of the larger Assembly Row Development Project. The project on Block 6 will be built on a parcel of approximately 116,205 square feet of land bordered by Assembly Row, Canal Street, Foley Street, and Great River Road. The project consists of the construction of a 557,000 GSF multi-level building (810,000 GSF including parking garage) on Block 6 to be used for 447 residential units and approximately 40,000 GSF of retail and restaurant space. The project will also include 671 structured parking spaces within the building, of which 447 are proposed for residential use and 224 are proposed for retail and restaurant use. The predicted trip volumes associated with the Assembly Square Block 6 Development are provided in Appendix A.

67 Broadway - This project consists of renovating an office space and two residential units to a 4,400 square foot Registered Marijuana Dispensary.

5.6.3 Transportation Improvement Projects

Roadway Improvement Projects

Route 28 at Mystic Avenue Northbound – Proposed U-turn

As part of the larger scale Assembly Square District master plan, several mitigation measures were presented to alleviate traffic congestion and ease connectivity. Part of this mitigation is aimed at the anticipated increase in exiting left-turn demand from Assembly Square onto Route 28 to access I-93 southbound. A U-turn slot will be constructed to the east of the Route 28 and Mystic Avenue intersection, allowing vehicles to reverse direction on Mystic Avenue without traveling through the Route 28/Mystic Avenue signal. This will provide better access from Assembly Square to I-93 southbound, allowing vehicles to bypass two signals, thereby alleviating congestion. This U-turn ramp could be accessed via the Grand Union Boulevard and Mystic Avenue intersection, the Revolution Drive and Mystic Avenue intersection, or via Middlesex Avenue.

A new actuated signal head will also be installed at the U-turn location. The signal will use the same signal plan and operate by same signal controller at the intersection of Mystic Ave/Fellsway/McGrath Highway. Given these multiple access points, anticipated congestion at the Route 28 and Mystic Avenue intersection will be alleviated. Given this planned construction, volumes for the No-Build and Build conditions will be adjusted. Left turn volumes at selected intersections will be reduced to account for the addition of the proposed U-turn slot.

This proposed U-Turn has been accommodated into the capacity analysis for future scenarios (No-Build and Build). It is justified from the Assembly Square NPC that 34 percent of vehicles will use the U-Turn during weekday morning peak hour, 37 percent of vehicles will use the U-Turn during the weekday evening peak hour, and 40 percent of vehicles will use the U-Turn during the Saturday midday peak hour.

Public Transportation Improvement Projects

In addition to any planned roadway construction in the area of the Project site, there are public transportation improvements planned in the Somerville area. It should be noted that these projects are mentioned for completeness and that no trip reduction has been assumed (i.e. no credit was taken) as a result of these projects.

Urban Ring Project

The Urban Ring Project is an initiative of the MBTA in order to improve the regional transportation system in and around Boston. The project is planned to connect existing radial transit lines with a multi-modal transit system to facilitate radial travel. The Urban Ring route extends within a 15-mile corridor from Logan Airport westward through Chelsea, Everett, and Medford, southward through Somerville, Cambridge, and Brookline, eastward towards UMass Boston, and northward back to Logan Airport. The Urban Ring project is proposed to be implemented in three distinct phases. Phase 1 consists of implementation of new and improved crosstown and express commuter bus routes. It also includes coordination with local jurisdictions and agencies to preserve rights-of-way along the corridor critical to future Urban Ring service. This phase is currently being implemented and is expected to span a five-year time horizon. Phase 2, scheduled for the subsequent five years, consists of adding bus rapid transit service, adding new and improving existing commuter rail stations, and connecting to rail and bus lines. Finally, Phase 3 involves adding rail transit service in the most heavily traveled portion of the corridor between Assembly Square and Dudley Square.

Currently, no additional service is projected for Assembly Square as part of the Urban Ring Phase 1. However, final Urban Ring Phase 1 routings and frequencies will be determined by the ongoing MBTA service planning process subject to the availability of capital and operating funds.

Urban Ring Phase 2 currently has four alternatives being considered. In three of those alternatives, a Bus Rapid Transit (BRT) line is proposed to service Assembly Square. One of the alternatives does not propose service through Assembly Square. No detailed updates have been provided regarding Phase 3.

Green Line Extension

The Green Line Extension (GLX) project proposes to extend the existing MBTA Green Line Service from a relocated Lechmere Station in East Cambridge to Union Square in Somerville and to College Avenue in Medford. This project is a major transportation priority of the Commonwealth and would offer a "one-seat" ride along the project corridor to downtown Boston. It would eliminate the need for transfers at Lechmere Station and at Orange and Red Line stations, and improve travel times within the project corridor. The new transit stations would meet or exceed the Americans with Disabilities Act (ADA) and Massachusetts Architectural Access Board (MAAB) standards. Mitigation measures during construction would reduce existing noise and vibration impacts from area railroads. Once completed, trains would operate every five to six minutes during the peak periods, providing

more efficient service to and from downtown Boston. The current anticipated completion date for this project is 2021.

While this project would increase the public transportation availability in the City of Somerville, it would have no direct impact on Assembly Square as these routes are located on a different sector of the City.

No-Build Traffic Volumes

The final year 2024 No-Build traffic volumes, including projects identified in Section 5.3.1, are shown in Figures 5.10 to 5.12 at the end of the chapter. These are the volumes utilized for the 2024 No-Build capacity analyses.

5.7 2024 Build Conditions

5.7.1 Trip Generation Methodology

This section has been prepared to analyze the trip generation for the Project. Traffic generated by any given project affects traffic operations on the surrounding network. The rate at which any development generates traffic is dependent upon a number of factors such as size, location, and concentration of surrounding development. For the purpose of this Project, generated trips were determined in the steps in Sections 5.7.2 to 5.7.7. The trip generation analysis methodology for Multi-Use Development used in this Project is in accordance with the *Trip Generation Handbook, 3rd Edition* published by ITE in 2014.

5.7.2 Base Trip Rates

The base trip generation rates were gathered from the *Trip Generation Manual, 9th Edition* published by the Institute of Transportation Engineers (ITE) in 2012. The following four Land Use Codes (LUC) were used for this section. The original base trip generation calculation is attached in Appendix A.

- › LUC 220 – Apartment
- › LUC 230 - Condo
- › LUC 310 – Hotel
- › LUC 932 – High-Turnover (Sit-Down) Restaurant

These trip rates are unadjusted, as they only account for single-use projects. Therefore calibration was necessary. Due to the fact that this Project includes multiple land uses, internal trip capture was performed in separate steps and non-vehicle trips and pass-by trips were also deducted from the base trips when calculating Build volumes.

The Project is expected to include a Dunkin Donuts restaurant. Due to the fact that a Dunkin Donuts restaurant currently exists at the Site, the number of vehicle-trips associated with the proposed Site was assumed to be equal to the existing Site.

Table 5-6 shows the number of vehicle-trips associated with the existing Site. The total square footage of the proposed Dunkin Donuts (2,001 square feet) was deducted from the total proposed retail space square footage for further trip generation calculations. Empirical data was collected on-site on Thursday, April 13th and Saturday, April 15th, and are attached in Appendix A.

Table 5-6 Existing Dunkin Donuts Vehicle Trips

<i>Dunkin Donuts Vehicle-Trips</i>	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Existing Vehicle-Trips	170	35	N/A	46	N/A
Proposed Vehicle-Trips	170	35	N/A	46	N/A
Net Vehicle-Trips	0	0	N/A	0	N/A

5.7.3 Internal Trips

Site-generated trips were adjusted for internal trips. Internal trip capture represents the portion of trips generated by a mixed-use development that both begin and end within the development. A mixed-use development that generates a given number of total trips creates less demand on the external road system than single-use developments generating the same number of trips. Internal trips were subtracted before pass-by trip reduction was applied.

The estimated number of shared-trips between residential, office, hotel and retail land use for the proposed Project were calculated, and are shown in Table 5-7. The proposed buildings will be located on the same Site as the existing building. Given that the proposed land uses will be located on the same site as each other, there will be significant numbers of trips between them throughout the day. The office space creates a need for retail. Given that the retail option is in close proximity and is an attractive destination, the new buildings will generate internal trips within the Site.

Table 5-7 Internal Trips Capture

845 McGrath Highway	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Base Trips	327	352	4328	400	4622
Internal Trips	8	46	394	70	476
Total External Trips	319	306	3934	330	4146

5.7.4 Pass-By Trips

There are a portion of trips attracted by retail land uses within the development. Pass-by trips come from traffic passing the site on the way to an ultimate destination that is not the Project Site. These pass-by trips were not added to the Project-generated trips. The ITE Trip Generation Handbook gives a pass-by percentage of 43 percent for LUC 932 for the evening peak hour. Although the

Handbook does not give a pass-by percentage for the other time periods, it was determined that they would experience a similar pass-by trip percentage. Consequently, a 43 percent pass-by trip percentage was applied to the retail space.

The total sum of the trips was adjusted by deducting internal trips for the retail space. A summary of the pass-by trip adjustments are shown below in Table 5-8. Detailed pass-by trip calculations are attached in Appendix A.

Table 5-8 Pass-By Trip Reduction

845 McGrath Highway	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Total External Trips	319	306	3934	330	4146
Total Pass-By Trips	49	37	526	52	656
Adjusted Total Trips	270	269	3408	278	3490

The Project is expected to generate 270 trips during the morning peak hour, 269 trips during the evening peak hour, and 3,408 daily weekday trips. Additionally, the Project is expected to generate 278 trips during the Saturday mid-day peak hour and 3,490 trips during a typical Saturday.

5.7.5 Travel Mode Shares

Trip Generation rates set forth by the ITE are typically based on data from suburban developments with no nearby transit service and no appreciable share of people walking or bicycling to or from the site. If a project is located in an area with transit service or a substantial share of trips made by bicycle or on foot, these non-vehicle trips should be estimated and deducted to get the predicted vehicle volume. The Assembly Square Station on the MBTA Orange Line is approximately 0.35 miles from the Project site. Assembly Station serves the MBTA Orange Line, a major commuting route for people traveling in and out of Assembly Square, Somerville, downtown Boston, and neighborhoods south of Boston. MBTA bus routes 89, 90, 92, 93, 95 and 101 also service the area. The estimated trips via transit service were deducted from the predicted vehicular traffic.

Commuting characteristics were analyzed from the 2011 to 2015 American Community Survey 5-Year Estimates. Census Tract 3514.03, which covers the neighborhood just west of Sullivan Square, was analyzed and used estimate mode splits for journeys to work mode in the Project area. Since the Assembly Square neighborhood is still in development and transit services could increase as the area becomes more developed, data for the Census Tract nearest to Sullivan Square, an already developed transit hub, was used. Moreover, most of the Assembly Square Census Tract data predates the MBTA station. Table 5-9 displays estimated mode splits for non-vehicle trips and the land use associated with each trip.

Table 5-9 Mode Split Percentages

	Retail	Residential	Hotel
Public Transportation	20.0 percent	41.4 percent	25.0 percent
Bike/Walked	8.3 percent	8.3 percent	0.0 percent

As shown in Table 5-9, the majority of users on public transit are using it to get to or from their residences. The mode split for public transportation for the residential units, as well as the bike/walking percentage for all four land uses, were determined based on the mode split data from the Census Tract previously mentioned. The retail space and the hotel will typically have the smallest public transportation mode split due to Assembly Square's proximity to the Interstate highway. However, with the potential growth of Assembly Square, the analysis assumes that 25 percent of trips for the hotel and 20 percent of trips for the retail space will be by public transportation. It was determined that visitors to the hotel will not be traveling during the peak hours by bicycle or by walking.

5.7.6 Adjusted Trips

As described above, adjustments were made to the base trips, taking into account internal trips, pass-by trips, and the US Census Tract data. By applying the non-vehicular mode split to the Trip Generation calculations, the amount of expected vehicle traffic associated with the Project is reduced. The resulting adjusted vehicular traffic on the surrounding roadways were estimated and are summarized in Table 5-10.

Table 5-10 Adjusted Trip Summary

845 McGrath Highway	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Trips (Base - Internal - Pass-By)	270	269	3408	278	3490
Total Person-Trips	329	327	4311	345	4469
Total Person-Vehicle-Trips	212	209	2822	230	2957
Total Vehicle-Trips	193	191	2564	210	2688
Entering Vehicle-Trips	90	109	1282	114	1344
Exiting Vehicle-Trips	103	82	1282	96	1344
Total Public Transportation Trips	98	100	1259	97	1270
Total Bicycle Trips	3	3	37	3	39
Total Walking Trips	14	13	168	13	180
Total Other Trips	2	2	25	2	23

As indicated in Table 5-10, the Project is expected to generate **193 vehicle-trips** during the weekday morning peak hour, **191 vehicle-trips** during the weekday evening peak hour and, **2,564 vehicle-trips** during a typical weekday. It is also

expected to generate **210 vehicle-trips** during the Saturday midday peak hour and **2,688 vehicle-trips** during a typical Saturday. Generated public transportation trips are expected to be 98 trips during the weekday morning peak hour, 100 trips during the weekday evening peak hour, 1,259 trips during a typical weekday, 97 trips during the Saturday midday peak hour, and 1,270 trips during a typical Saturday. Bicycle trips are expected to be three (3) trips during the morning peak hour, three (3) trips during the evening peak hour, 37 trips during a typical weekday, three (3) trips during the Saturday midday peak hour, and 39 trips during a typical Saturday. Pedestrian trips are expected to be 14 trips during the weekday morning peak hour, 13 trips during the weekday evening peak hour, 168 trips during a typical weekday, 13 trips during the Saturday midday peak hour, and 180 trips during a typical Saturday.

5.7.7 Existing Vehicle Trip Reduction

In addition to internal trip capture and pass-by trip reduction, a third reduction is necessary to determine the net number of vehicle-trips that the proposed Project is expected to generate. The vehicle-trip data was collected on-site during from 7am to 9am and 4pm to 6pm on a typical Thursday. As previously mentioned, the vehicle-trips associated with the current Dunkin Donuts restaurant was assumed to be equal to the proposed restaurant. Table 5-11 shows the number of vehicle-trips associated with the Sunrise Cuisine restaurant. The peak hour vehicle-trips for the existing Sunrise Cuisine restaurant were deducted from the vehicle-trips expected to be generated by the Project, as shown in Table 5-12. Empirical traffic counts are included in Appendix A.

Table 5-11 Existing Sunrise Cuisine Vehicle Trips

<i>Existing Vehicle-Trips</i>	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Total Existing Vehicle-Trips	170	50	N/A	57	N/A
Dunkin Donuts Vehicle-Trips	170	35	N/A	46	N/A
Sunrise Cuisine Vehicle-Trips	0	15	N/A	11	N/A

Table 5-12 Existing Vehicle-Trip Reduction

845 McGrath Highway	Weekday AM Peak Hour	Weekday PM Peak Hour	Weekday Daily	Sat. Midday Peak	Saturday Daily
Total Proposed Vehicle-Trips	193	191	2564	210	2688
Sunrise Cuisine Vehicle-Trips	0	15	N/A	11	N/A
Net New Vehicle-Trips	193	176	2564	199	2688
Entering Vehicle-Trips	90	100	1282	107	1344
Exiting Vehicle-Trips	103	76	1282	92	1344

As shown in Table 5-12, the proposed Project is expected to generate 193 net new vehicle-trips during the morning peak hour, 176 net new vehicle-trips during the evening peak hour, and 2,564 net new vehicle-trips during a typical weekday. The Project is also expected to generate 199 net new vehicle-trips during the Saturday midday peak hour and 2,688 net new vehicle-trips during a typical Saturday.

5.7.8 Public Transportation Trips

Aside from the internal trip capture and pass-by trips, the next important step is to forecast and analyze the impact of the Project-generated transit trips. The MBTA Orange Line Assembly Station is located east of the Project Site, approximately 1,600 feet away. The MBTA Orange Line connects Somerville to Malden, Medford, downtown Boston, and other surrounding cities and towns. As discussed in the Travel Mode Share section, the proposed Project will generate transit trips from each of the Site's different land uses.

It is important to know the number of peak hour transit passengers per Orange Line car at the Assembly Square MBTA station. The MBTA Orange Line operates at a 6-minute headway during the morning (6:30am to 9:00am) and evening (3:30pm to 6:30pm) peak hours, which means there are 10 trains passing through the station in an hour. During the morning and evening rush hour, one Orange Line train will take 10 cars per ride, therefore, there are 100 train-cars passing through Assembly Square Station during the peak hour.

Based on the mode split percentages mentioned in the previous section, the total number of transit passengers for each land use is calculated by multiplying the mode split percentage with the external trips. The number of passenger trips per train-car at Assembly Square can be calculated dividing the total transit passengers by the number of cars during the peak hour. The Project-generated transit trips per car are shown in Table 5-13.

Table 5-13 Transit Trips

Transit Trips per Train-Car	Hotel	Residential	Retail	Total
Morning Peak Hour	0.30	0.51	0.17	0.98
Evening Peak Hour	0.34	0.53	0.13	1.00
Saturday Peak Hour	0.40	0.39	0.18	0.97

As shown in Table 5-13, the Project is expected to generate 0.30 trips per train-car from the hotel, 0.51 trips per train-car from residential units, and 0.17 trips per train-car from the retail space, for a total of 0.98 trips per train-car in total during morning peak hour at Assembly Square Station. During the evening peak hour, the Project is expected to generate 0.34 trips per train-car from hotel, 0.53 trips per train-car from residential units, and 0.13 trips per train-car from the retail space, for a total of 1.00 trips per train-car. During the Saturday peak hour, the Project is expected to generate 0.40 trips per train-car from the hotel, 0.39 trips per train-car from the residential units, and 0.18 trips per train-car from the retail space, for a total of 0.97

trips per train-car. With approximately one extra passenger per train-car being generated at Assembly Square Station during the morning, evening, and Saturday peak hours, there will be minimal impact on transit operations. There will be minimal impact on transit operations.

5.7.9 Conclusion

The proposed Site-generated trips are estimated to be 193 net new vehicle-trips during the morning peak hour, 176 net new vehicle-trips during the evening peak hour, and 2,564 net new vehicle-trips during a typical weekday. The Project is also expected to generate 199 net new vehicle-trips during the Saturday midday peak hour and 2,688 net new vehicle-trips during a typical Saturday.

5.8 Trip Distribution and Assignment

The directional distribution of traffic approaching and departing the Project is a function of several different variables. These variables include population densities, population demographics, shopping opportunities, competing uses, existing travel patterns, and the efficiency of the roadways leading to the Site.

DCI estimated the trip distribution that will be generated by the Project to the study area in the year 2024 based on the Trip Generation calculations. The trips were distributed onto Middlesex Avenue based on the existing ATR data collected along Middlesex Avenue, as mentioned in Section 5.4.1. The more localized trip distribution at each study intersection was developed based on existing travel patterns.

There will be one main vehicular access point to the Site – Middlesex Avenue at McGrath Highway. This intersection will provide further access to two driveways to access the parking spaces. The design of the Site calls for vehicular access along Kensington Avenue to be shut off to Middlesex Avenue. This design will direct all vehicular traffic to and from the Site to the intersection of Middlesex Avenue at McGrath Highway. The trip distribution percentages entering and exiting the Site were summed together at the intersection of Middlesex Avenue at McGrath Highway.

Standard practice is to employ the same trip distribution and assignment percentages for both inbound and outbound movements, acknowledging that the trip counts are estimates at this time. This technique accounts for nuances in estimating the future numbers. These nuances can include proximity to the Central Business District (CBD) and transportation and roadway network intricacies. The trip distribution for this Project is shown graphically in Figures 5.13 to 5.15, and Site specific Project trips are shown in Figures 5.16 to 5.18. All figures are shown at the end of the chapter.

5.9 2024 Build Conditions

In order to analyze future traffic conditions following the completion of the mixed-use development at 845 McGrath Highway, the year 2024 Build Scenario traffic volumes were calculated. To develop year 2024 Build traffic volumes, the No-Build traffic volumes (Figures 5.9 to 5.11) were summed with the calculated Site-generated trips (Figure 5.15 to 5.17). The resulting volumes are shown in Figures 5.19 to 5.21, which are provided at the end of the chapter. These volumes were used to carry out traffic analysis for the 2024 Build conditions.

5.10 Parking Supply

After construction of the Project, there will be a total of 293 parking spaces on-site on four different levels. There will be 94 parking spaces provided below-grade, with 70 of those parking spaces being compact. There will be a total of 199 parking spaces provided above grade: 55 on the second level, 72 on the third level and 72 on the fourth level.

5.11 Service and Loading

Loading needs for the Project will be accommodated by a clearly defined loading area immediately adjacent to the north side of the building. This loading area will be located at the center of the building and will consist of three separate 12-foot wide, 30-foot long loading spaces. Deliveries will arrive on Middlesex Avenue leading to its intersection with McGrath Highway to access the loading area.

A waiver is requested from the loading bay requirement stated in Section 9.16 and Section 9.7, and described in Section 16.5.5. As encouraged in Section 9.16.3, the Applicant is proposing a shared loading approach for the retail, hotel and residential uses. The Project design includes three loading bay spaces located off of McGrath Highway between the two buildings, appropriately screened from the public right of way, each of which complies with the minimum dimensional requirements of 12-feet wide, 30-feet long, and 14-feet tall. The total number of loading bays required for a project varies depending on the mix of retail, restaurant and residential space within the building. Based on the zoning requirements, the maximum loading need for the Project would be five loading spaces through a combination of retail, residential and hotel uses. From a functional perspective, this amount of loading spaces should not be necessary based on several factors. Individual tenant use of the loading bays by the three primary uses will be for supply deliveries and may be from smaller trucks rather than longer trailer trucks. Accordingly, some shorter-term deliveries will be able to occur with two small vans simultaneously utilizing a loading area only allocated for one larger truck per the zoning standards. Most deliveries will likely occur in the weekday morning hours. As part of the overall Site management, deliveries being made to the Project or residents moving in and out of the building will be scheduled to help minimize any shared loading conflicts.

5.12 Traffic Operations Analysis

5.12.1 Methodology

According to the TIA guidelines, both signalized intersection capacity analyses and stop- and yield-controlled intersection capacity analyses should be used for traffic impact studies. The 2010 Highway Capacity Manual (HCM) published by Transportation Research Board provides methodologies on how to calculate motor vehicle Level of Service (LOS), average delay, and volume-to-capacity ratios. Those terms are commonly used to measure performance levels for freeway sections, ramp junctions, weave sections, and intersections, both signalized and unsignalized.

In this study, intersection performance measures were calculated in the form of volume to capacity (v/c) ratio, average intersection delay, 50th and 95th percentile queue lengths, level-of-service (LOS) of overall intersection, and the LOS of each approach. *Synchro 9.0 was the software used to execute the intersection analysis.* *Synchro 9.0*, a software program from Trafficware, uses the methodologies and thresholds outlined within the HCM. This is the preferred/recommended software of MassDOT. Traffic volume represents the travel demand observed and capacity represents the amount of traffic the intersection can accommodate under prevailing conditions. Volume to capacity ratio that approaches or exceeds 1.0 indicates traffic congestion or poor operating conditions.

Three types of Synchro reports were created to analyze and compare intersection performance in this study:

- › Main report – “Int: Lanes, Volumes, Timings”;
- › Queuing Analysis Report; and
- › HCM Signalized/Unsignalized Report.

For signalized intersections, LOS is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. For unsignalized intersections, the analysis assumes that the traffic on the mainline is not affected by traffic on the side street. The LOS for each movement is calculated by determining the length of gaps that are available in the conflicting traffic stream.

5.12.2 Level of Service Analysis Results

Level of Service (LOS) is a term used to denote different operating conditions that occur under various traffic volume loads. It is a qualitative measure of the effect of a number of factors including geometrics, speed, travel delay, freedom to maneuver, and safety. The LOS is divided into a range of six letter grades, ranging from A to F, with A being the best and F the worst. LOS E and F are generally considered inadequate traffic operations in suburban and urban areas. The delay ranges differ slightly between unsignalized and signalized intersections due to driver expectations and behavior for each LOS. Table 5-14 summarizes the LOS criteria.

Table 5-14 Level-of-Service Criteria for Intersections

LOS	Signalized	Unsignalized
	Control Delay (sec/veh)	Control Delay (sec/veh)
A	0-10	0-10
B	>10-20	>10-15
C	>20-35	>15-25
D	>35-55	>25-35
F	>80	>50

Source: 2010 Highway Capacity Manual

It should be noted that the analytical methodologies typically used for the analysis of unsignalized intersections use conservative analysis parameters, such as long critical gaps. Field observations indicate that drivers on minor streets generally accept shorter gaps in traffic than those used in the analysis procedures and therefore experience less delay than report by the analysis software. The analysis methodologies also do not fully take into account the beneficial grouping effects caused by nearby signalized intersections. The net effect of these analysis procedures is the over-estimation of calculated delays at unsignalized intersections in the study area. Cautious judgment should be exercised when interpreting the capacity analysis results at unsignalized intersections.

For signalized intersections, LOS is defined in terms of delay, which is a measure of driver discomfort and frustration, fuel consumption, and lost travel time. For unsignalized intersections, the analysis assumes that the traffic on the mainline is not affected by traffic on the side street. The LOS for each movement is calculated by determining the length of gaps that are available in the conflicting traffic stream.

5.12.3 Existing Conditions

The study intersections were analyzed for existing traffic conditions during the weekday morning, weekday evening, and Saturday peak hours. Existing intersection lane configurations and signal sequence were modelled the same as the current traffic operations, which were field observed. As a macroscopic analysis tool, Synchro can be used to determine macro level LOS and delays, but then needs to be calibrated. In order to better replicate existing delays, five signalized intersections were calibrated. This gives more realistic delays and levels of service. The same five signalized intersections were calibrated during the No-Build and Build scenarios as well. This maintains consistency across all three analysis periods and provides the most accurate representation of the effect of the Project, which is illustrated by any change from the No-Build to the Build scenarios. The signal phasing at the fourteen signalized intersections was replicated in all existing conditions analyses. Stop controlled intersections were also replicated. The results of the existing conditions analysis are shown in Tables 5-15 and 5-16. Detailed capacity analysis worksheets are included in Appendix A.

Table 5-15 Capacity Analysis Summary, Existing Conditions

ID	East-West Road	North-South Road	Lane	2017 Existing Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
1	Foley St	Middlesex Ave	WB L	0.08	17.3	B	0.17	16.2	B	0.25	18.1	B
			WB R	0.12	2.0	A	0.31	2.2	A	0.22	1.8	A
			NB T	0.14	13.7	B	0.40	13.5	B	0.30	14.7	B
			NB R	0.03	3.5	A	0.04	2.1	A	0.08	2.2	A
			SB L	0.57	7.8	A	0.36	6.3	A	0.50	7.8	A
			SB T	0.02	3.2	A	0.02	3.6	A	0.03	3.8	A
			Overall		8.1	A		8.1	A		8.7	A
2^	Middlesex Ave	Mystic Ave	SB R	0.03	0.0	--	0.04	0.0	-	0.05	0.0	-
			NW T	0.15	7.7	A	0.28	8.1	A	0.22	7.8	A
			NW R	0.08	0.0	--	0.22	0.0	-	0.16	0.0	-
			Overall		--	--		--	--		--	--
3^	Foley St	Grand Union Blvd.	EB LT	0.12	9.4	A	0.31	11.6	B	0.40	13.2	B
			EB R	0.38	10.5	B	0.17	8.9	A	0.19	9.2	A
			WB LT	0.05	9.6	A	0.10	9.6	A	0.12	10.1	B
			WB R	0.01	7.8	A	0.04	8.3	A	0.07	8.7	A
			NB L	0.07	9.0	A	0.20	9.5	A	0.17	9.6	A
			NB TR	0.15	8.9	A	0.74	20.9	C	0.77	23.5	C
			SB L	0.04	8.1	A	0.05	8.8	A	0.06	9.1	A
			SB TR	0.78	22.7	C	0.36	10.9	B	0.43	12.3	B
			Overall		--	--		--	--		--	--
4	Revolution Drive	Grand Union Blvd./ Assembly Square Dr	NB L	0.06	21.5	C	0.28	19.4	B	0.11	19.1	B
			NB TR	0.16	20.9	C	0.59	22.4	C	0.55	22.6	C
			SB L	0.28	10.9	B	0.06	11.9	B	0.03	15.2	B
			SB T	0.42	12.0	B	0.20	12.1	B	0.25	15.6	B
			SB R	0.07	9.8	A	0.11	11.7	B	0.22	15.4	B
			NE L	0.21	26.6	C	0.40	30.2	C	0.53	26.9	C
			NE TR	0.25	13.0	B	0.21	13.0	B	0.16	10.5	B
			SW L	0.08	25.5	C	0.08	27.5	C	0.05	22.1	C
			SW T	0.14	24.8	C	0.20	25.9	C	0.03	21.8	C
			SW R	0.09	0.5	A	0.22	8.1	A	0.05	0.1	A
			Overall		13.7	B		18.9	B		19.5	B
5	Revolution Drive	Mystic Ave	NW T	0.35	4.9	A	0.65	8.9	A	0.39	4.7	A
			NW R	0.09	0.1	A	0.14	0.2	A	0.17	0.2	A
			SW R	0.23	2.5	A	0.63	25.0	C	0.31	8.7	A
			Overall		4.1	A		10.6	B		4.4	A
6	Grand Union Blvd	Fellsway	WB L	0.16	36.0	D	0.33	38.5	D	0.38	39.3	D
			WB R	0.07	0.1	A	0.50	1.4	A	0.37	0.9	A
			NB T	0.96	28.0	C	1.62	>120	F	1.25	>120	F
			NB R	0.09	0.0	A	0.11	0.0	A	0.21	0.0	A
			SB L	0.79	51.9	D	0.44	40.4	D	0.90	61.2	E
			SB T	1.21	>120	F	0.58	13.4	B	0.69	15.7	B
			Overall		85.9	F		>120	F		60.6	E
7	Middlesex Ave	Fellsway	WB L	0.12	35.5	D	0.27	37.5	D	0.36	39.0	D
			WB R	0.09	0.2	A	0.35	0.8	A	0.24	0.5	A
			NB T	1.00	75.9	E	1.46	>120	F	1.25	>120	F
			NB R	0.26	0.5	A	0.18	0.3	A	0.28	0.5	A
			SB L	0.24	47.1	D	0.11	36.8	D	0.12	41.2	D
			SB T	0.95	41.2	D	0.50	6.6	A	0.61	7.1	A
			Overall		46.9	D		110.2	F		61.3	E

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

Table 5-16 Capacity Analysis Summary, Existing Conditions (Continued)

ID	East-West Road	North-South Road	Lane	2017 Existing Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
8	Alfred A. Lombardi St/ Assembly Square Dr	Mystic Ave	NWB L	0.32	22.8	C	0.52	24.0	C	0.29	20.0	C
			NWB TR	0.63	24.6	C	0.92	34.0	C	0.56	20.6	C
			NEB L	0.47	39.0	D	0.51	41.1	D	0.51	40.6	D
			NEB T	0.04	9.8	A	0.10	12.5	B	0.09	12.6	B
			SWB TR	0.79	41.9	D	0.60	37.0	D	0.59	36.3	D
			Overall		28.6	C		32.3	C		23.6	C
9	Broadway	Alfred A. Lombardi St/ Mt Vernon St	EB L	0.13	26.0	C	0.71	61.4	E	0.49	50.1	D
			EB T	0.52	33.8	C	1.14	>120	F	0.85	75.1	E
			NB LTR	1.26	>120	F	0.90	76.5	E	0.85	72.1	E
			SB L	0.91	92.0	F	0.81	52.3	D	0.85	56.1	E
			SB R	0.40	2.4	A	0.56	4.2	A	0.47	3.4	A
			Overall		69.4	E		58.7	E		45.6	D
10	I-93 SB Ramp	Alfred A. Lombardi St	SE L	0.20	26.9	C	0.26	27.4	C	0.29	29.0	C
			SE R	0.38	5.8	A	0.42	5.9	A	0.43	4.1	A
			NE T	0.07	2.9	A	0.12	3.1	A	0.10	2.8	A
			SW T	0.38	11.8	B	0.34	11.5	B	0.26	10.2	B
			Overall		9.6	A		8.8	A		7.7	A
11	I-93 SB Off-Ramp U-Turn	Mystic Ave	NB L	0.22	26.0	C	0.61	35.9	D	0.63	35.7	C
			NW T	0.45	1.7	A	0.69	4.0	A	0.41	1.9	A
			Overall		4.8	A		9.2	A		10.2	B
12	Mystic Ave	Wheatland St/Bailey Rd U-Turn	SE T	1.26	>120	F	0.81	37.4	D	0.83	38.9	D
			NW T	0.41	2.1	A	0.76	17.5	B	0.38	1.8	A
			NE LTR	0.18	4.0	A	0.11	1.1	A	0.08	0.2	A
			S L	0.35	31.9	C	0.37	30.8	C	0.37	31.5	C
			Overall		100.1	F		27.3	C		27.4	C
13	Bailey Rd	Fellsway	WB T	0.46	24.7	C	0.68	30.0	C	0.59	29.1	C
			SB L	0.82	34.4	C	0.48	24.5	C	0.71	29.7	C
			SB TR	0.89	36.4	D	0.54	24.0	C	0.54	23.4	C
			Overall		33.8	C		26.2	C		27.1	C
14	Mystic Ave	Fellsway /McGrath Highway	SB T	0.83	9.2	A	0.44	5.7	A	0.44	6.5	A
			SE T	0.79	71.7	E	0.50	16.8	B	0.64	21.2	C
			SE R	0.92	40.4	D	0.62	22.1	C	0.71	24.6	C
			NW T	0.34	3.7	A	0.60	57.4	E	0.30	1.5	A
			Overall		29.0	C		25.8	C		13.1	B
15	Mystic Ave	McGrath Highway NB	SE T	0.64	63.3	E	0.32	11.2	B	0.40	15.8	B
			NE L	1.02	97.5	F	1.97	>120	F	1.01	95.2	F
			NE R	0.32	0.7	A	0.32	0.7	A	0.38	0.9	A
			Overall		58.8	E		>120	F		32.7	C
16	Broadway	McGrath Highway	EB L	0.73	54.2	D	0.80	65.0	E	0.82	61.8	E
			EB T	0.62	41.4	D	0.56	45.2	D	0.50	40.7	D
			EB R	0.59	46.5	D	0.52	49.0	D	0.52	45.3	D
			WB L	0.61	59.8	E	0.53	55.5	E	0.64	63.9	E
			WB T	0.62	52.2	D	0.74	57.9	E	0.65	56.2	E
			WB R	0.12	0.2	A	0.13	0.2	A	0.14	0.2	A
			NE L	0.59	61.2	E	0.82	74.1	E	0.66	66.5	E
			NE TR	0.69	39.0	D	1.34	>120	F	0.94	56.0	E
			SW L	0.66	61.3	E	0.74	71.0	E	0.76	68.6	E
			SW TR	1.27	>120	F	1.07	87.6	F	0.91	49.3	D
			Overall		90.7	F		111.9	F		50.6	D

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

The majority of the movements and overall intersections included in the 2017 Existing Conditions analysis currently operate under capacity, and were found to have adequate levels of service. However, there were several operational concerns at the following intersections. These concerns are noted where specific movements or overall intersection operations are at a LOS of F.

Weekday AM Peak Hour

Fellsway at Grand Union Boulevard

The southbound through movement along Fellsway operates with a delay greater than 120 seconds per vehicle.

The overall intersection operates with an average delay of 85.9 seconds per vehicle.

Broadway at Alfred A. Lombardi Street and Mt. Vernon Street

The northbound left-turn/through/right-turn movement along Mt. Vernon Street operates with a delay of greater than 120 seconds per vehicle.

The southbound left-turn movement along Lombardi Street operates with a delay of approximately 92.0 seconds per vehicle.

Mystic Avenue at Wheatland Street/Bailey Road U-Turn

The southeast-bound through movement along Mystic Avenue operates with a delay greater than 120 seconds per vehicle.

The southbound overall intersection operates with a delay of 100.1 seconds per vehicle.

Mystic Avenue at McGrath Highway NB

The northeast-bound left-turn movement operates with a delay of approximately 97.5 seconds per vehicle.

McGrath Highway at Broadway

The southwest-bound through/right-turn movement along McGrath Highway operates with an average delay greater than 120 seconds per vehicle.

The overall intersection operates with an average delay of 90.7 seconds per vehicle.

Weekday PM Peak Hour

Fellsway at Grand Union Boulevard

The northbound through movement along Fellsway operates with an average delay greater than 120 seconds per vehicle.

The overall intersection operates with an average delay greater than 120 seconds per vehicle.

Fellsway at Middlesex Avenue

The northbound through movement along Fellsway operates with an average delay greater than 120 seconds per vehicle.

The overall intersection operates with a delay of approximately 110.2 seconds per vehicle.

Broadway at Alfred A. Lombardi Street and Mt. Vernon Street

The eastbound through movement along Broadway operates with a delay greater than 120 seconds per vehicle.

Mystic Avenue at McGrath Highway NB

The northeast-bound left-turn movement along McGrath Highway operates with a delay greater than 120 seconds per vehicle.

The overall intersection operates with an average delay greater than 120 seconds per vehicle.

McGrath Highway at Broadway

The northeast-bound through/right-turn movement along McGrath Highway operates with a delay greater than 120 seconds per vehicle.

The southwest-bound through/right-turn movement along McGrath Highway operates with a delay of 87.6 seconds per vehicle.

The overall intersection operates with a delay of 111.9 seconds per vehicle.

Midday Saturday Peak HourFellsway at Grand Union Boulevard

The northbound through movement along Fellsway operates with an average delay greater than 120 seconds per vehicle.

Fellsway at Middlesex Avenue

The northbound through movement along Fellsway operates with an average delay greater than 120 seconds per vehicle.

Mystic Avenue at McGrath Highway NB

The northeast left-turn movement along McGrath Highway operates with an average delay of 95.2 seconds per vehicle.

5.12.4 2024 No-Build Conditions

The study intersections were analyzed for 2024 No-Build peak hour traffic conditions during the weekday morning and evening peak hours. Existing intersection lane configurations and traffic control were applied in the analysis for all intersections except the intersection of Grand Union Boulevard at Foley Street and Assembly Square Drive. This intersection will be fully signalized in the future, and was modeled

as such for the purpose of this Project. Additionally, the U-Turn from Mystic Avenue to the I-93 SB On-Ramp was included into the No-Build analysis as part of the proposed roadway improvements in the area. The results of this analysis are shown in Tables 5-17 and 5-18. Detailed analysis worksheets are included in Appendix A.

Table 5-17 Capacity Analysis Summary, No-Build Conditions

ID	East-West Road	North-South Road	Lane	2024 No-Build Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
1	Foley St	Middlesex Ave	WB L	0.12	18.1	B	0.19	17.0	B	0.28	18.8	B
			WB R	0.14	1.8	A	0.33	2.3	A	0.24	1.7	A
			NB T	0.15	14.5	B	0.41	13.7	B	0.32	15.3	B
			NB R	0.04	3.5	A	0.05	2.0	A	0.09	2.2	A
			SB L	0.59	8.1	A	0.38	6.5	A	0.52	8.2	A
			SB T	0.02	3.2	A	0.02	3.6	A	0.03	3.9	A
			Overall		8.4	A		8.3	A		8.9	A
2^	Middlesex Ave	Mystic Ave	SB R	0.03	0.0	-	0.04	0.0	-	0.05	0.0	-
			NB T	0.16	7.7	A	0.30	8.2	A	0.23	7.9	A
			NB R	0.08	0.0	-	0.24	0.0	-	0.17	0.0	-
			Overall		--	--		--	--		--	--
3^^	Foley St	Grand Union Blvd.	EB LT	0.29	18.5	B	0.48	18.9	B	0.56	20.6	C
			EB R	0.49	6.7	A	0.22	4.4	A	0.22	4.7	A
			WB LT	0.37	20.4	C	0.23	14.7	B	0.23	14.5	B
			WB R	0.01	0.0	A	0.05	0.2	A	0.08	0.3	A
			NB L	0.12	9.2	A	0.20	11.5	B	0.17	11.6	B
			NB TR	0.13	7.1	A	0.53	14.6	B	0.53	14.9	B
			SB L	0.04	7.9	A	0.06	10.4	B	0.07	10.9	B
			SB TR	0.64	14.4	B	0.24	9.4	A	0.28	9.4	A
			Overall		12.4	B		12.8	B		13.1	B
4	Revolution Drive	Grand Union Blvd./ Assembly Square Dr	NB L	0.10	21.9	C	0.30	20.1	C	0.12	19.2	B
			NB T	0.25	21.9	C	0.62	23.6	C	0.58	23.4	C
			SB L	0.31	11.1	B	0.06	12.4	B	0.03	15.4	B
			SB T	0.45	12.4	B	0.22	12.6	B	0.26	15.9	B
			SB R	0.08	9.8	A	0.14	12.1	B	0.24	15.7	B
			EB L	0.25	27.8	C	0.43	30.7	C	0.56	28.1	C
			EB T	0.26	13.0	B	0.21	12.8	B	0.16	10.8	B
			WB L	0.08	26.3	C	0.08	27.4	C	0.06	22.9	C
			WB T	0.15	25.4	C	0.20	25.9	C	0.03	22.7	C
			WB R	0.10	0.6	A	0.23	8.1	A	0.05	0.1	A
			Overall		14.2	B		19.5	B		20.2	C
5	Revolution Drive	Mystic Ave	NB T	0.37	5.0	A	0.71	10.2	B	0.48	5.5	A
			NB R	0.10	0.1	A	0.15	0.2	A	0.19	0.3	A
			WB R	0.26	4.0	A	0.68	27.5	C	0.39	14.5	B
			Overall		4.3	A		12.0	B		5.6	A
6	Grand Union Blvd	Fellsway	WB L	0.21	36.6	D	0.36	39.0	D	0.43	40.1	D
			WB R	0.13	0.2	A	0.54	1.7	A	0.42	1.0	A
			NB T	1.02	41.1	D	1.72	>120	F	1.33	>120	F
			NB R	0.10	0.0	A	0.13	0.0	A	0.23	0.0	A
			SB L	0.89	59.5	E	0.53	42.3	D	1.02	83.4	F
			SB T	1.28	>120	F	0.64	14.4	B	0.76	17.4	B
			Overall		106.2	F		>120	F		74.4	E
7	Middlesex Ave	Fellsway	WB L	0.14	35.7	D	0.29	37.8	D	0.39	39.4	D
			WB R	0.10	0.2	A	0.37	0.9	A	0.26	0.5	A
			NB T	1.06	97.5	F	1.55	>120	F	1.32	>120	F
			NB R	0.28	0.6	A	0.19	0.3	A	0.30	0.6	A
			SB L	0.26	47.1	D	0.12	39.1	D	0.14	42.6	D
			SB T	1.01	52.5	D	0.54	6.8	A	0.67	7.4	A
			Overall		59.2	E		>120	F		72.6	E

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and is now signal controlled; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

Table 5-18 Capacity Analysis Summary, No-Build Conditions (Continued)

ID	East-West Road	North-South Road	Lane	2024 No-Build Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
8	Alfred A. Lombardi St/ Assembly Square Dr	Mystic Ave	NWB L	0.35	24.1	C	0.56	25.8	C	0.32	21.2	C
			NWB TR	0.70	27.0	C	1.05	74.7	E	0.69	24.4	C
			NEB L	0.49	39.7	D	0.55	43.3	D	0.51	40.3	D
			NEB T	0.05	9.5	A	0.10	12.1	B	0.09	12.0	B
			SWB TR	0.82	43.3	D	0.61	36.6	D	0.61	36.5	D
			Overall		30.5	C		59.8	E		25.9	C
9	Broadway	Alfred A. Lombardi St/ Mt Vernon St	EB L	0.29	44.5	D	0.77	66.5	E	0.53	51.9	D
			EB T	1.13	>120	F	1.25	>120	F	0.94	91.2	F
			NB LTR	1.38	>120	F	0.98	94.5	F	1.00	103.9	F
			SB L	0.92	105.0	F	0.85	55.8	E	0.85	56.2	E
			SB R	0.48	3.7	A	0.58	4.4	A	0.48	3.5	A
			Overall		101.6	F		70.7	E		54.1	D
10	I-93 SB Ramp	Alfred A. Lombardi St	SE L	0.19	25.4	C	0.25	26.1	C	0.29	28.2	C
			SE R	0.40	7.1	A	0.44	7.1	A	0.46	5.2	A
			NE T	0.07	3.3	A	0.13	3.5	A	0.11	3.1	A
			SW T	0.42	12.9	B	0.37	12.4	B	0.28	10.7	B
			Overall		10.5	B		9.5	A		8.3	A
11	I-93 SB Off-Ramp U-Turn	Mystic Ave	NB L	0.22	25.5	C	0.62	35.3	D	0.64	35.4	D
			NW T	0.49	2.0	A	0.79	11.6	B	0.49	2.1	A
			Overall		4.9	A		15.2	B		9.6	A
12	Mystic Ave	Wheatland St/Bailey Rd U-Turn	EB T	1.33	>120	F	0.85	40.3	D	0.88	42.4	D
			WB T	0.43	7.8	A	0.81	21.3	C	0.40	7.8	A
			NB LTR	0.19	4.6	A	0.11	1.3	A	0.08	0.2	A
			SB L	0.26	30.6	C	0.14	26.5	C	0.20	27.5	C
			Overall		>120	F		29.7	C		30.2	C
13	Bailey Rd	Fellsway	WB T	0.43	26.0	C	0.58	28.8	C	0.50	27.3	C
			SB L	0.88	39.3	D	0.55	25.8	C	0.79	32.7	C
			SB T	0.95	42.7	D	0.57	24.1	C	0.57	23.9	C
			Overall		39.1	D		25.9	C		27.9	C
14	Mystic Ave	Fellsway /McGrath Highway	SB T	0.89	12.4	B	0.47	5.8	A	0.46	6.5	A
			EB T	0.78	24.2	C	0.43	11.8	B	0.58	14.7	B
			EB R	0.94	26.3	C	0.59	25.4	C	0.67	11.9	B
			WB T	0.36	31.2	C	0.63	58.2	E	0.32	28.3	C
			Overall		19.5	B		26.0	C		13.5	B
15	Mystic Ave	McGrath Highway NB	EB T	0.70	14.9	B	0.23	6.4	A	0.44	11.9	B
			NB L	0.96	71.5	E	2.09	>120	F	0.70	34.1	C
			NB R	0.35	0.8	A	0.34	0.8	A	0.40	1.0	A
			Overall		25.5	C		>120	F		15.0	B
16	Broadway	McGrath Highway	EB L	0.76	57.0	E	0.82	67.8	E	0.84	64.7	E
			EB T	0.64	42.6	D	0.59	46.5	D	0.52	41.6	D
			EB R	0.62	48.2	D	0.54	50.1	D	0.54	46.3	D
			WB L	0.62	60.8	E	0.53	55.5	E	0.67	66.0	E
			WB T	0.63	53.4	D	0.77	59.4	E	0.68	57.7	E
			WB R	0.13	0.2	A	0.14	0.2	A	0.14	0.2	A
			NB L	0.62	63.2	E	0.85	78.5	E	0.68	67.9	E
			NB TR	0.74	41.6	D	1.46	>120	F	1.02	74.4	E
			SB L	0.68	64.1	E	0.77	74.4	E	0.79	71.6	E
			SB TR	1.37	>120	F	1.17	>120	F	0.99	63.3	E
17	U-Turn to I-93 SB On-Ramp*	I-93 SB On-Ramp*	SB T	0.07	21.2	C	0.15	10.4	B	0.12	21.8	C
			SEB R	1.02	34.6	C	0.56	2.1	A	0.97	25.9	C
			Overall		33.7	C		3.7	A		25.4	C

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and is now signal controlled; *Will be constructed and is analyzed as part of the No-Build and Build scenarios; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

It is expected that any operational concerns noted during the Existing Conditions analysis will continue through the No-Build Conditions with the addition of higher volumes. There are some movements that experience a high enough increase in delay that it changes the level of service. However, this increase in level of service is not an effect of the Project. The expected impact due specifically to the Project is reflected in any changes from the 2024 No-Build to the 2024 Build scenarios.

5.12.5 2024 Build Conditions

The study intersections were analyzed for 2024 Build peak hour traffic conditions during the weekday morning and evening peak hours. Existing intersection lane configurations and traffic control were applied in the analysis for all intersections except the intersection of Grand Union Boulevard at Foley Street and Assembly Square Drive. This intersection will be fully signalized in the future, and was modeled as such for the purpose of this Project. Additionally, the U-Turn from Mystic Avenue to the I-93 SB On-Ramp was included into the Build analysis as part of the proposed roadway improvements in the area. The results of the 2024 Build analysis are shown in Tables 5-19 and 5-20. Detailed analysis worksheets are included in Appendix A.

Table 5-19 Capacity Analysis Summary, Build Conditions

ID	East-West Road	North-South Road	Lane	2024 Build Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
1	Foley St	Middlesex Ave	WB L	0.12	18.8	B	0.19	17.3	B	0.28	19.1	B
			WB R	0.15	1.7	A	0.36	2.4	A	0.26	1.8	A
			NB T	0.19	15.2	B	0.46	14.0	B	0.35	15.7	B
			NB R	0.04	3.8	A	0.05	1.9	A	0.09	2.2	A
			SB L	0.64	8.9	A	0.39	6.6	A	0.55	8.5	A
			SB T	0.04	3.2	A	0.05	3.7	A	0.04	3.9	A
			Overall		9.0	A		8.4	A		9.2	A
2^	Middlesex Ave	Mystic Ave	SB R	0.04	0.0	-	0.07	0.0	-	0.06	0.0	-
			NB T	0.17	7.7	A	0.30	8.2	A	0.23	7.9	A
			NB R	0.10	0.0	-	0.27	0.0	-	0.19	0.0	-
			Overall		--	--		--	--		--	--
3^^	Foley St	Grand Union Blvd.	EB LT	0.28	17.9	B	0.48	19.1	B	0.56	20.6	C
			EB R	0.56	8.6	A	0.22	4.4	A	0.26	4.6	A
			WB LT	0.35	19.7	B	0.23	14.8	B	0.23	14.5	B
			WB R	0.01	0.0	A	0.05	0.2	A	0.08	0.3	A
			NB L	0.16	10.2	B	0.25	12.0	B	0.20	12.0	B
			NB TR	0.13	7.4	A	0.52	14.5	B	0.53	14.9	B
			SB L	0.04	8.4	A	0.06	10.3	B	0.07	10.9	B
			SB TR	0.67	15.3	B	0.23	9.4	A	0.28	9.4	A
			Overall		13.1	B		12.8	B		13.0	B
4	Revolution Drive	Grand Union Blvd./ Assembly Square Dr	NB L	0.10	21.7	C	0.28	19.8	B	0.11	19.1	B
			NB T	0.27	21.8	C	0.63	23.7	C	0.60	23.6	C
			SB L	0.31	10.9	B	0.07	12.4	B	0.03	15.2	B
			SB T	0.49	12.8	B	0.22	12.5	B	0.28	15.9	B
			SB R	0.09	9.6	A	0.13	12.0	B	0.25	15.7	B
			EB L	0.25	28.4	C	0.43	31.5	C	0.56	28.7	C
			EB T	0.26	13.4	B	0.21	13.0	B	0.16	11.0	B
			WB L	0.08	27.1	C	0.08	27.9	C	0.06	23.4	C
			WB T	0.15	26.1	C	0.21	26.5	C	0.03	23.0	C
			WB R	0.10	0.6	A	0.23	8.2	A	0.05	0.1	A
			Overall		14.4	B		19.7	B		20.4	C
5	Revolution Drive	Mystic Ave	NB T	0.38	5.0	A	0.72	10.5	B	0.49	5.6	A
			NB R	0.10	0.1	A	0.15	0.2	A	0.19	0.3	A
			WB R	0.28	4.8	A	0.68	27.8	C	0.40	15.3	B
			Overall		4.4	A		12.2	B		5.8	A
6	Grand Union Blvd	Fellsway	WB L	0.21	36.6	D	0.36	39.0	D	0.43	40.1	D
			WB R	0.13	0.2	A	0.54	1.7	A	0.42	1.0	A
			NB T	1.05	51.6	D	1.75	>120	F	1.36	>120	F
			NB R	0.10	0.0	A	0.13	0.0	A	0.23	0.0	A
			SB L	0.89	59.5	E	0.53	42.3	D	1.02	83.4	F
			SB T	1.29	>120	F	0.65	14.7	B	0.76	17.6	B
			Overall		110.1	F		>120	F		79.2	E
7	Middlesex Ave	Fellsway	WB L	0.17	36.2	D	0.31	38.0	D	0.44	40.3	D
			WB R	0.14	0.3	A	0.41	1.1	A	0.29	0.6	A
			NB T	1.06	97.6	F	1.55	>120	F	1.32	>120	F
			NB R	0.31	0.6	A	0.20	0.4	A	0.35	0.7	A
			SB L	0.29	47.4	D	0.17	39.7	D	0.16	42.8	D
			SB T	1.01	52.5	D	0.54	6.7	A	0.67	7.4	A
			Overall		58.2	E		>120	F		71.0	E

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and is now signal controlled; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

Table 5-20 Capacity Analysis Summary, Build Conditions (Continued)

ID	East-West Road	North-South Road	Lane	2024 Build Conditions								
				AM Peak Hour			PM Peak Hour			SAT Peak Hour		
				v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³	v/c ¹	Delay ²	LOS ³
8	Alfred A. Lombardi St/ Assembly Square Dr	Mystic Ave	NWB L	0.37	24.8	C	0.56	25.9	C	0.33	21.8	C
			NWB TR	0.75	28.8	C	1.08	81.7	F	0.72	25.6	C
			NEB L	0.49	39.8	D	0.56	44.2	D	0.51	40.4	D
			NEB T	0.05	9.4	A	0.11	12.1	B	0.09	11.7	B
			SWB TR	0.86	46.5	D	0.61	36.5	D	0.62	36.4	D
			Overall		32.5	C		64.7	E		26.7	C
9	Broadway	Alfred A. Lombardi St/ Mt Vernon St	EB L	0.30	44.7	D	0.79	69.0	E	0.55	52.5	D
			EB T	1.13	>120	F	1.25	>120	F	0.94	91.2	F
			NB LTR	1.50	>120	F	1.00	98.9	F	1.04	114.1	F
			SB L	0.94	109.4	F	0.85	55.8	E	0.86	57.0	E
			SB R	0.49	3.8	A	0.58	4.4	A	0.49	3.5	A
			Overall		110.5	F		71.9	E		56.0	E
10	I-93 SB Ramp	Alfred A. Lombardi St	SE L	0.19	24.9	C	0.26	26.4	C	0.30	28.3	C
			SE R	0.40	7.8	A	0.44	7.1	A	0.46	5.5	A
			NE T	0.08	3.4	A	0.14	3.5	A	0.11	3.1	A
			SW T	0.45	13.6	B	0.37	12.4	B	0.29	10.9	B
			Overall		11.1	B		9.5	A		8.5	A
11	I-93 SB Off-Ramp U-Turn	Mystic Ave	NB L	0.22	25.0	C	0.62	35.4	D	0.63	34.7	C
			NW T	0.51	2.0	A	0.80	16.0	B	0.51	2.2	A
			Overall		4.9	A		19.0	B		9.5	A
12	Mystic Ave	Wheatland St/Bailey Rd U-Turn	EB T	1.33	>120	F	0.85	40.3	D	0.88	42.4	D
			WB T	0.43	7.8	A	0.81	21.3	C	0.40	7.8	A
			NB LTR	0.19	4.6	A	0.11	1.3	A	0.08	0.2	A
			SB L	0.26	30.6	C	0.14	26.5	C	0.20	27.5	C
			Overall		>120	F		29.7	C		30.2	C
13	Bailey Rd	Fellsway	WB T	0.43	26.0	C	0.58	28.8	C	0.50	27.3	C
			SB L	0.88	39.3	D	0.55	25.8	C	0.79	32.7	C
			SB T	0.96	44.2	D	0.57	24.2	C	0.58	24.1	C
			Overall		39.9	D		26.0	C		28.0	C
14	Mystic Ave	Fellsway /McGrath Highway	SB T	0.89	13.3	B	0.47	5.8	A	0.47	6.5	A
			EB T	0.78	24.2	C	0.43	11.8	B	0.58	14.9	B
			EB R	0.94	26.3	C	0.59	25.4	C	0.67	11.9	B
			WB T	0.36	31.2	C	0.63	58.2	E	0.32	28.3	C
			Overall		19.9	B		25.9	C		13.5	B
15	Mystic Ave	McGrath Highway NB	EB T	0.70	14.9	B	0.23	6.4	A	0.44	11.9	B
			NB L	0.96	71.8	E	2.09	>120	F	0.70	34.1	C
			NB R	0.35	0.8	A	0.34	0.8	A	0.40	1.0	A
			Overall		25.6	C		>120	F		15.0	B
16	Broadway	McGrath Highway	EB L	0.76	57.1	E	0.82	67.9	E	0.84	64.7	E
			EB T	0.64	42.6	D	0.59	46.5	D	0.52	41.5	D
			EB R	0.61	48.0	D	0.54	50.1	D	0.53	46.0	D
			WB L	0.62	60.8	E	0.53	55.5	E	0.67	66.3	E
			WB T	0.63	53.4	D	0.77	59.5	E	0.68	58.0	E
			WB R	0.13	0.2	A	0.14	0.2	A	0.15	0.2	A
			NB L	0.62	63.2	E	0.85	78.5	E	0.68	68.3	E
			NB TR	0.75	42.1	D	1.46	>120	F	1.04	79.7	E
			SB L	0.69	64.5	E	0.77	74.4	E	0.79	72.0	E
			SB TR	1.38	>120	F	1.85	>120	F	1.01	67.3	E
17	U-Turn to I-93 SB On-Ramp*	I-93 SB On-Ramp*	SB T	0.08	21.3	C	0.17	10.5	B	0.13	21.9	C
			SEB R	1.02	34.6	C	0.58	2.8	A	0.97	25.9	C
			Overall		33.5	C		4.5	A		25.4	C

1 v/c = volume-to-capacity ratio; 2 Delay = average delay in seconds per vehicle; 3 LOS = Level of Service; ^ Intersection operates under Stop control; ^^ Intersection was Stop-controlled in the Existing Conditions and will be signalized in the future; *Will be constructed and is analyzed as part of the No-Build and Build scenarios; R = right-turn movement, L = left-turn movement, T = through movement; WB = westbound, EB = eastbound, NB = northbound, SB = southbound, NE = northeast-bound, SE = southeast-bound, SW = southwest-bound, NW = northwest-bound

Compared with Tables 5-17 and 5-18 in the previous section, Tables 5-19 and 5-20 illustrate the changes in delay from the No-Build to Build condition. As noted during the No-Build intersection analysis, it is expected that operational issues identified during the previous scenario will continue, given the increase in traffic volumes. There are three (3) movements that decline in Level of Service from the No-Build to Build conditions, and they are noted below. One movement declines from LOS A to LOS B, one movement declined from LOS D to LOS E, and one movement declines from LOS E to LOS F.

Weekday Morning Peak Hour

Grand Union Boulevard at Foley Street and Assembly Square Drive

The northbound left-turn along Assembly Square Drive movement drops from an LOS A to an LOS B. This represents an increase in delay of 1.0 seconds per vehicle.

Weekday Evening Peak Hour

Mystic Avenue at Lombardi Street and Assembly Square Drive

The northwest-bound through/right-turn movement along Mystic Avenue drops from an LOS E to an LOS F. This represents an increase in delay of 7.0 seconds per vehicle. The average delay of 81.7 seconds in the Build scenario is only 1.7 seconds over the LOS F threshold.

Saturday Midday Peak Hour

Broadway at Lombardi Street and Mt Vernon Street

The overall intersection drops from an LOS D to an LOS E. This represents an increase in delay of 1.9 seconds per vehicle.

5.12.6 Vehicle Queue Analysis Results

In the Queuing Analysis Report, 50th percentile queue length and 95th percentile queue length are both estimated. The 50th percentile queue is defined as the queue length that will have a 50 percent chance of being exceeded during the analysis time period (average). The 95th percentile queue is defined as the queue length that has only a five percent probability of being exceeded during the analysis time period, which in this case is the peak hour. Both the 95th percentile and 50th percentile queue lengths are shown in Tables 5-21 to 5-26, as well as within the Synchro reports in Appendix A.

Table 5-21 Queue Analysis Summary

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
1	Foley St	Middlesex Ave	Morning	WB L	4	14	6	19	6	19
				WB R	0	10	0	11	0	11
				NB T	11	29	12	32	16	40
				NB R	0	3	0	4	0	4
				SB L	40	79	44	9	50	101
				SB T	2	5	2	6	3	8.0
			Evening	WB L	9	24	10	27	10	28
				WB R	0	16	0	17	0	19
				NB T	32	60	34	64	40	72
				NB R	0	7	0	8	0	8
				SB L	16	36	17	39	17	39
				SB T	1	6	2	6	4	12
			Saturday	WB L	15	39	16	44	17	45
				WB R	0	15	0	15	0	16
				NB T	23	51	25	55	29	62
				NB R	0	9	0	10	0	10
				SB L	29	67	32	75	34	79
				SB T	2	8	2	9	3	12
2^	Middlesex Ave	Mystic Ave	Morning	SB R	--	0	--	0	--	0
				NB T	--	14	--	15	--	15
				NB R	--	0	--	0	--	0
			Evening	SB R	--	0	--	0	--	0
				NB T	--	29	--	32	--	32
				NB R	--	0	--	0	--	0
			Saturday	SB R	--	0	--	0	--	0
				NB T	--	21	--	22	--	23
				NB R	--	0	--	0	--	0
3^^	Foley St	Grand Union Blvd.	Morning	EB LT	--	--	15	19	15	19
				EB R	--	--	0	44	7	57
				WB LT	--	--	18	27	18	27
				WB R	--	--	0	0	0	0
				NB L	--	--	5	18	7	24
				NB TR	--	--	10	29	10	31
				SB L	--	--	3	13	3	14
				SB TR	--	--	91	156	91	168
			Evening	EB LT	--	--	36	55	37	55
				EB R	--	--	0	14	0	14
				WB LT	--	--	16	35	16	35
				WB R	--	--	0	0	0	0
				NB L	--	--	18	42	24	51
				NB TR	--	--	91	#242	91	#242
				SB L	--	--	4	12	4	12
				SB TR	--	--	29	59	29	59
			Saturday	EB LT	--	--	46	83	46	83
				EB R	--	--	0	25	0	27
				WB LT	--	--	18	28	18	28
				WB R	--	--	0	0	0	0
				NB L	--	--	16	42	19	49
				NB TR	--	--	95	#233	95	#233
				SB L	--	--	5	16	5	16
				SB TR	--	--	33	79	33	79

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

Table 5-22 Queue Analysis Summary (Continued)

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
4	Revolution Drive	Grand Union Blvd./ Assembly Square Dr	Morning	NB L	4	21	4	23	4	22
				NB T	19	72	22	79	25	85
				SB L	20	112	23	120	23	120
				SB T	60	218	68	243	78	271
				SB R	8	49	10	56	11	59
				EB L	10	29	12	35	12	37
				EB T	4	31	5	33	5	34
				WB L	4	26	4	29	4	30
				WB T	10	29	11	33	11	34
				WB R	0	0	0	0	0	0
			Evening	NB L	18	118	20	127	20	127
				NB T	64	342	72	377	78	403
				SB L	3	21	3	22	3	22
				SB T	22	93	26	105	26	105
				SB R	12	54	14	64	15	64
				EB L	24	136	28	146	29	146
				EB T	4	52	5	53	5	53
				WB L	4	40	5	42	5	42
				WB T	17	93	18	97	19	97
				WB R	0	38	0	41	0	41
			Saturday	NB L	6	30	8	32	8	32
				NB T	59	291	69	312	75	330
				SB L	2	8	2	8	2	8
				SB T	25	118	29	127	32	135
				SB R	22	89	26	96	29	102
				EB L	39	228	46	255	48	258
				EB T	4	31	4	32	4	32
				WB L	3	12	4	14	4	14
				WB T	2	17	3	19	3	19
				WB R	0	0	0	0	0	0
5	Revolution Drive	Mystic Ave	Morning	NB T	31	46	33	50	34	54
				NB R	0	0	0	0	0	0
				WB R	0	7	0	12	1	15
			Evening	NB T	131	216	167	275	175	287
				NB R	0	0	0	0	0	0
				WB R	69	96	82	106	83	106
			Saturday	NB T	42	70	53	96	57	100
				NB R	0	0	0	0	0	0
				WB R	5	26	13	42	14	46

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

Table 5-23 Queue Analysis Summary (Continued)

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
6	Grand Union Blvd	Fellsway	Morning	WB L	34	46	45	58	45	58
				WB R	0	0	0	0	0	0
				NB T	106	m107	~124	m109	~400	m#121
				NB R	0	m0	0	m0	0	m0
				SB L	203	247	234	#293	234	#293
				SB T	~1081	#1164	~1187	#1267	~1196	#1276
			Evening	WB L	73	84	81	92	81	92
				WB R	0	0	0	0	0	0
				NB T	~865	m#556	~943	m#568	~968	m#594
				NB R	0	m0	0	m0	0	m0
				SB L	103	145	125	173	125	173
				SB T	228	270	263	311	271	320
			Saturday	WB L	88	115	99	128	99	128
				WB R	0	0	0	0	0	0
				NB T	~569	m#419	~629	m#428	~653	m#452
				NB R	0	m0	0	m0	0	m0
				SB L	241	#332	~290	#401	~290	#401
				SB T	303	358	357	420	360	424
7	Middlesex Ave	Fellsway	Morning	WB L	23	40	27	45	34	53
				WB R	0	0	0	0	0	0
				NB T	~371	#483	~436	#533	~436	#533
				NB R	0	0	0	0	0	0
				SB L	53	m45	57	m45	63	m50
				SB T	117	m97	~135	m102	~135	m102
			Evening	WB L	59	92	64	98	68	103
				WB R	0	0	0	0	0	0
				NB T	~761	#857	~833	#929	~833	#929
				NB R	0	0	0	0	0	0
				SB L	19	34	21	m37	31	50
				SB T	78	86	86	94	85	93
			Saturday	WB L	82	98	89	105	101	117
				WB R	0	0	0	0	0	0
				NB T	~595	#692	~657	#754	~657	#754
				NB R	0	0	0	0	0	0
				SB L	23	m36	27	m38	31	m43
				SB T	97	105	107	115	107	115

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

Table 5-24 Queue Analysis Summary (Continued)

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
8	Alfred A. Lombardi St/ Assembly Square Dr	Mystic Ave	Morning	NB L	81	128	93	136	95	136
				NB T	192	247	224	267	236	276
				EB L	70	117	74	125	76	127
				EB T	8	16	8	17	8	18
				SB TR	217	251	232	273	256	303
			Evening	NB L	147	263	160	291	161	291
				NB T	351	#541	~474	#666	~499	#689
				EB L	95	146	102	156	105	159
				EB T	26	37	28	37	30	39
				SB TR	132	177	141	184	141	184
			Saturday	NB L	82	156	88	167	88	168
				NB T	177	256	228	#337	236	#367
				EB L	78	136	84	144	85	146
				EB T	22	27	29	27	24	28
				SB TR	134	190	144	201	151	209
9	Broadway	Alfred A. Lombardi St/ Mt Vernon St	Morning	EB L	30	53	43	74	44	75
				EB T	143	225	~222	#388	~222	#388
				NB LTR	~223	#267	~251	#290	~259	#296
				SB L	284	#388	302	#432	321	#462
				SB R	0	11	0	22	0	22
			Evening	EB L	117	172	128	#199	133	#208
				EB T	~228	#306	~267	#344	~267	#344
				NB LTR	180	#438	197	#474	~204	#485
				SB L	220	290	237	310	237	310
				SB R	0	40	0	41	0	41
			Saturday	EB L	74	120	82	131	85	133
				EB T	150	#278	169	#317	169	#317
				NB LTR	156	#334	~186	#354	~199	#363
				SB L	247	285	258	309	261	313
				SB R	0	36	0	36	0	37
10	I-93 SB Ramp	Alfred A. Lombardi St	Morning	SE L	13	35	14	35	14	35
				SE R	13	43	23	52	28	56
				NE T	6	15	7	18	8	20
				SW T	66	101	76	115	84	126
			Evening	SE L	19	36	20	36	21	37
				SE R	16	53	26	62	26	62
				NE T	13	30	15	34	16	35
				SW T	61	112	69	125	69	125
			Saturday	SE L	21	40	22	40	23	42
				SE R	0	28	11	37	13	39
				NE T	10	21	11	24	11	25
				SW T	46	83	50	93	51	95

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

Table 5-25 Queue Analysis Summary (Continued)

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
11	I-93 SB Off-Ramp U-Turn	Mystic Ave	Morning	NB T EB L	42 14	63 15	43 18	67 17	43 17	68 16
			Evening	NB T EB L	112 28	144 35	118 32	148 72	120 33	150 m79
			Saturday	NB T EB L	119 20	149 24	125 23	155 28	127 23	156 29
12	Mystic Ave	Wheatland St/Bailey Rd U-Turn	Morning	EB T WB T NB LTR SB L	~732 1 0 95	#871 30 33 m132	~801 19 3 71	#941 24 37 m96	~801 19 3 71	#941 24 37 m96
				EB T WB T NB LTR SB L	331 83 0 117	421 112 7 144	360 87 0 41	456 135 9 61	360 87 0 41	456 135 9 61
			Saturday	EB T WB T NB LTR SB L	347 0 0 113	440 34 0 158	378 17 0 59	#491 22 0 89	378 17 0 59	#491 22 0 88
				EB T WB T NB LTR SB L	181 423 508	235 498 582	172 477 562	222 559 #686	172 477 572	222 559 #697
			Evening	WB T SB L SB T	324 205 236	401 259 280	264 241 252	330 302 299	264 241 255	330 302 302
				WB T SB L SB T	268 343 230	334 421 275	217 404 249	275 494 296	217 404 256	175 494 304
			Morning	SB T EB T EB R WB T	52 170 196 8	94 m151 m148 m8	66 154 160 144	100 m129 m81 190	72 154 160 144	100 m129 m81 190
				SB T EB T EB R WB T	31 88 70 128	34 112 m129 m0	34 33 94 151	36 m81 m130 m0	34 34 94 151	36 m81 m130 m0
			Saturday	SB T EB T EB R WB T	37 123 102 0	41 181 143 m0	39 70 74 127	42 m121 m78 167	39 72 74 127	42 m122 m78 167

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

Table 5-26 Queue Analysis Summary (Continued)

ID	East-West Road	North-South Road	Peak Period	Lane	2017 Existing		2024 No-Build		2024 Build	
					50th	95th	50th	95th	50th	95th
15	Mystic Ave	McGrath Highway NB	Morning	EB T	362	414	244	311	246	313
				NB L	~195	#301	161	#339	161	#340
				NB R	0	0	0	0	0	0
			Evening	EB T	134	194	52	92	52	92
				NB L	~558	#685	~602	#730	~602	#730
				NB R	0	0	0	0	0	0
			Saturday	EB T	215	301	96	133	96	133
				NB L	~185	#290	107	#181	107	#181
				NB R	0	0	0	0	0	0
16	Broadway	McGrath Highway	Morning	EB L	172	319	194	345	196	347
				EB T	141	217	159	234	160	235
				EB R	122	229	137	247	137	247
				WB L	89	160	98	168	98	168
				WB T	91	152	103	159	103	159
				WB R	0	0	0	0	0	0
				NB L	74	145	82	153	83	153
				NB TR	213	330	242	360	246	#368
				SB L	92	172	103	184	105	186
				SB TR	~615	#891	~704	#990	~715	#998
			Evening	EB L	218	#354	237	#408	238	#408
				EB T	147	202	162	220	163	220
				EB R	122	183	132	197	132	197
				WB L	110	168	119	173	119	173
				WB T	163	216	183	232	183	232
				WB R	0	0	0	0	0	0
				NB L	174	#297	193	#328	194	#328
				NB TR	~747	#1009	~879	#1105	~882	#1107
				SB L	132	168	144	177	144	177
				SB TR	~461	#637	~550	#710	~1104	#1290
			Saturday	EB L	241	#439	266	#483	270	#496
				EB T	137	197	153	215	155	217
				EB R	127	191	139	203	139	203
				WB L	107	132	119	142	119	142
				WB T	112	148	123	158	123	158
				WB R	0	0	0	0	0	0
				NB L	99	144	107	152	107	152
				NB TR	350	#521	~419	#582	~430	#594
				SB L	141	#237	152	#270	152	#270
				SB TR	365	#532	406	#606	413	#618
17			Morning	SB T	N/A	N/A	23	41	27	46
				SE R	N/A	N/A	~106	#721	~106	#721
			Evening	SB T	N/A	N/A	20	38	23	42
				SE R	N/A	N/A	0	17	0	28
			Saturday	SB T	N/A	N/A	42	66	46	72
				SE R	N/A	N/A	113	#660	113	#660

M = Volume for 95th percentile queue is metered by upstream signal; ~ = Volume exceeds capacity, queue is theoretically infinite; # = 95th percentile volume exceeds capacity, queue may be longer; NOTE: Queue shown is maximum after two cycles

5.13 TDM Plan

Transportation Demand Management (TDM) refers to measures that can be put in place to minimize or lessen the impact of vehicular traffic to an area. Given the Site's proximity to the new MBTA Assembly Square Station, and Somerville's already low levels of automobile use, the Project Site is an excellent candidate for the implementation of TDM. The Site is approximately 0.35 miles from Assembly Square Station on the MBTA Orange Line. TDM plans are generally most effective with residential or office developments, where the same people are regularly at a given site. Retail uses are less compatible with TDM planning, though retail traffic can be managed to a certain degree. The most important objective in implementing a TDM is to provide appropriate and feasible alternatives to the single-occupant motor vehicle as the principal mode of travel to and from the Site. A broad range of TDM strategies and tools are available. The Proponent is committed to implementing a TDM plan that includes tools and measurements, the extent of which will comply with the proposed land use and the geographic context.

With the proposed Project being a mix of hotel, residential, and retail space, there is an opportunity for several effective TDM measures to be implemented as part of the Project. The proximity to existing public transportation facilities (1,000 feet from the MBTA Orange Line Station), balanced mix of uses, and the development of the dense street environment will all help promote alternative modes of travel and reduce the number of vehicles traveling to and from the site.

5.13.1 General TDM Measures

Although not a direct part of the TDM program, the mixed-use nature of this site could help reduce the need for employees and residents to travel off-site. The following specific TDM measures will be implemented for the Project as a whole:

- › Post MBTA bus and commuter rail schedules and maps in common areas of the proposed building to inform tenants about nearby public transportation.
- › Provide tenants with information and maps for nearby bicycle and pedestrian facilities in the area to promote pedestrian and bicycle travel.
- › Pedestrian facility improvements along Middlesex Avenue, McGrath Highway extension, and Kensington Avenue to encourage pedestrian activity.
- › Priority parking spaces for carpools / ride-sharing vehicles for residents and employees.
- › Contact a car-sharing service (i.e. Zipcar®) to reduce trips, demand for parking, and automobile dependence. The Proponent will provide at least one car-sharing space in the garage.
- › Safe, secure bicycle storage conveniently located to encourage bicycle usage and to protect bicycles from inclement weather.
- › Provide visitor bicycle parking spaces outside of the building to support and encourage bicycle usage amongst visitors to the Site.

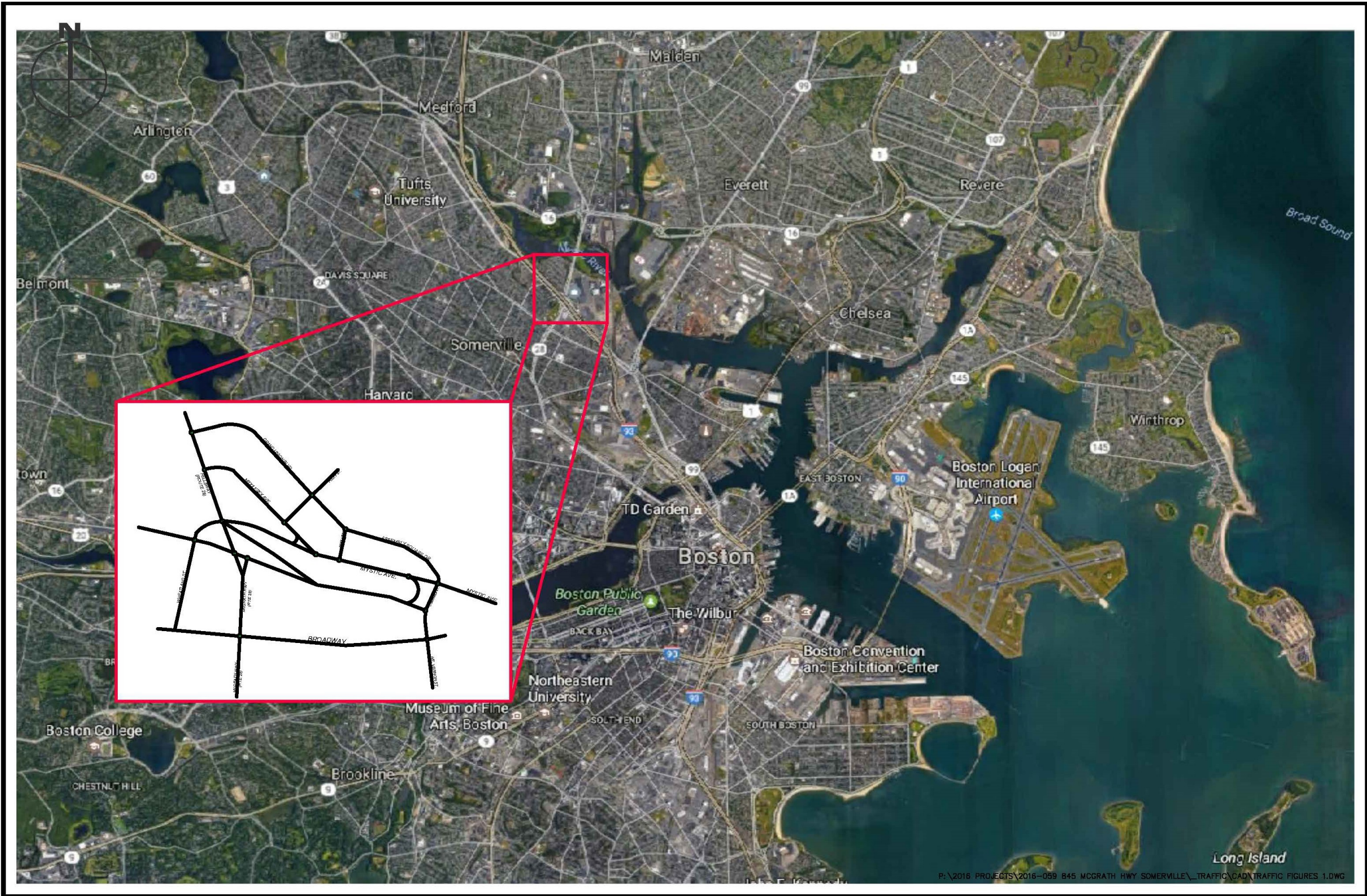
- › Provide extensive wayfinding signs to guide pedestrians from the Site to the MBTA Orange Line Station, MBTA bus stops, and surrounding points of interest.
- › Provide ADA compliant facilities around the Site to improve pedestrian safety for all users.

5.14 Conclusion

The Project Site is located in the heart of Assembly Square, a rapidly developing neighborhood in Somerville, Massachusetts. This chapter was prepared to analyze the existing traffic conditions in the vicinity of the proposed Project Site. The portion of the Project Site to the north of Kensington Avenue includes a vacant lot consisting of pavement remnants and broken pavement, and a 5,506 sf structure and parking lot associated with the existing Dunkin Donuts and Caribbean Restaurant. The Project will consist of the construction of a mixed-use development that will include a 180-room hotel, 215 residential dwelling units, and 9,515 square feet of retail space. There will be 94 parking spaces provided below-grade, with 70 of those parking spaces being compact. There will be a total of 199 parking spaces provided above grade: 55 on the second level, 72 on the third level and 72 on the fourth level.

The safety analysis, based on data collected from MassDOT from 2012 to 2014, shows that there are no significant issues in the existing conditions for the included study intersections. The analysis shows that all of the intersections included in the analysis have crash rates below the District 4 and Statewide averages. As noted, the Route 28 at Mystic Avenue interchange was excluded from further safety analysis. Given the limited location and high number of crashes per year, MassDOT has been involved with the study of this intersection, and this interchange has been identified as a Top 200 crash location in the Commonwealth.

The capacity analyses were carried out on 17 nearby study intersections for the weekday morning, weekday evening, and Saturday midday peak periods. The Project is expected to generate 193 net new vehicle-trips during the morning peak hour, 176 net new vehicle-trips during the evening peak hour, and 199 net new vehicle-trips during the Saturday midday peak hour. Analyses were carried out for the 2017 Existing, 2024 No-Build, and 2024 Build conditions. A total of three (3) movements decline from No-Build to Build. As such, the Project-related traffic impact is expected to be minimal.



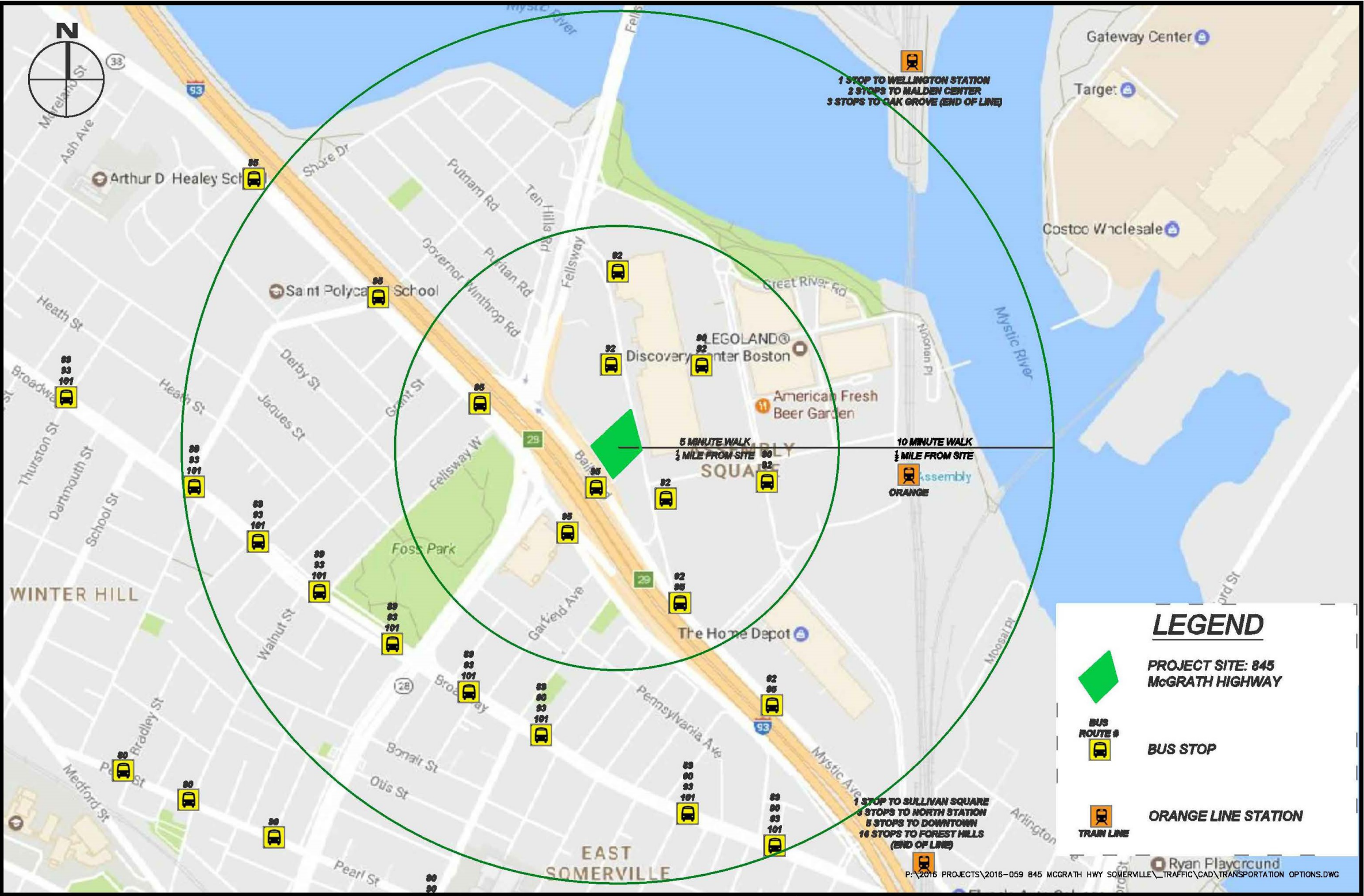


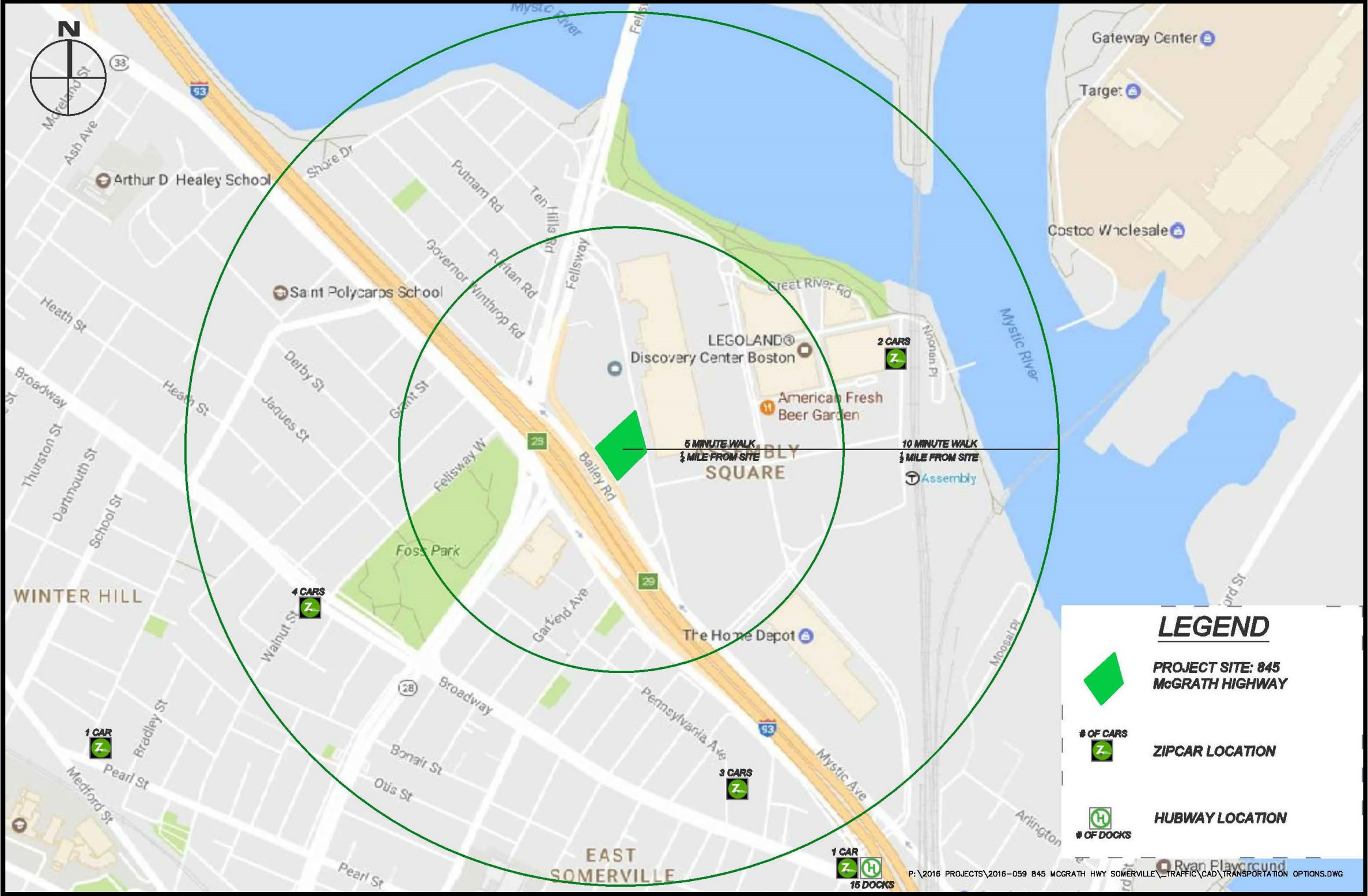
AT ASSEMBLY SQUARE





AT ASSEMBLY SQUARE



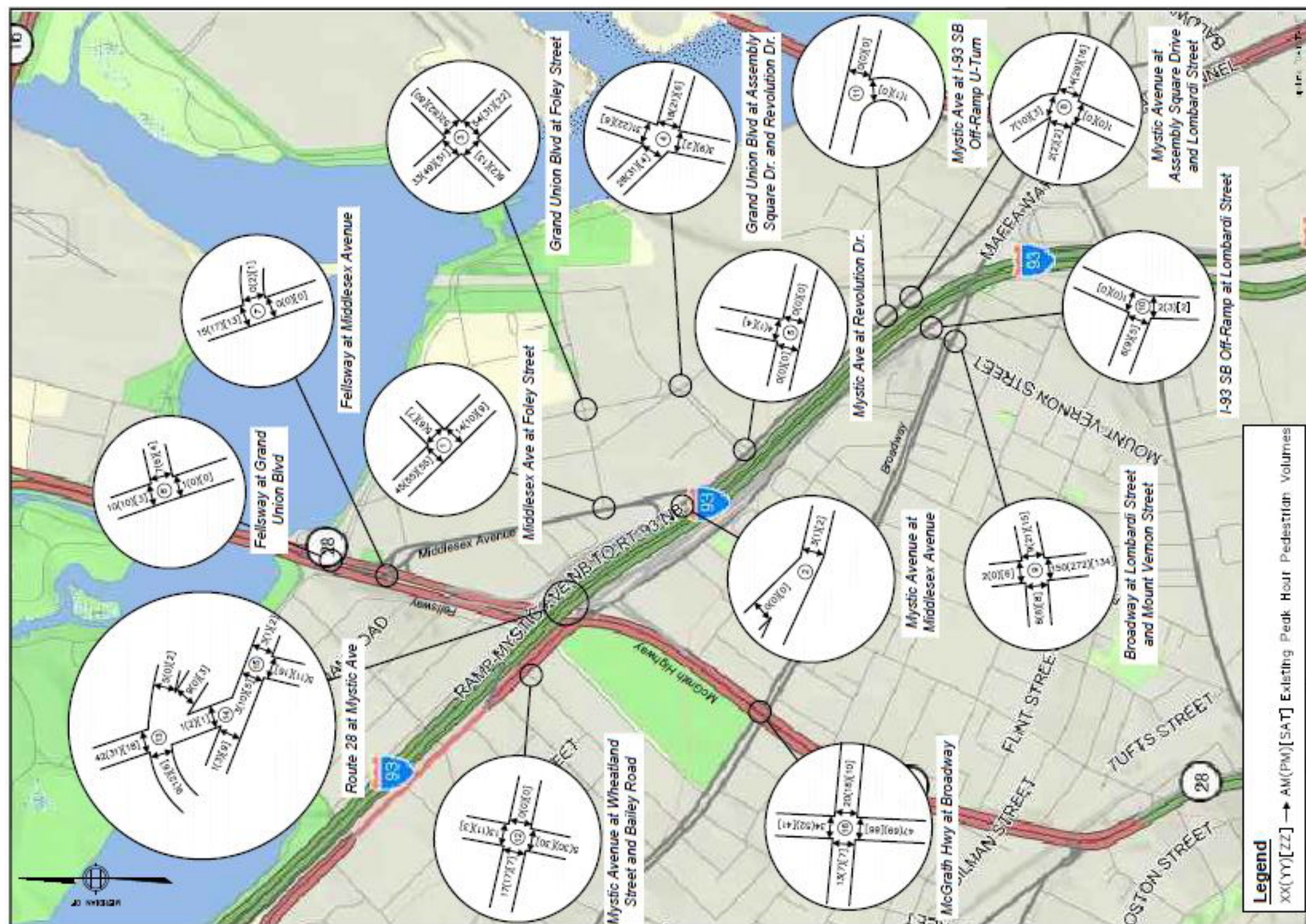




ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



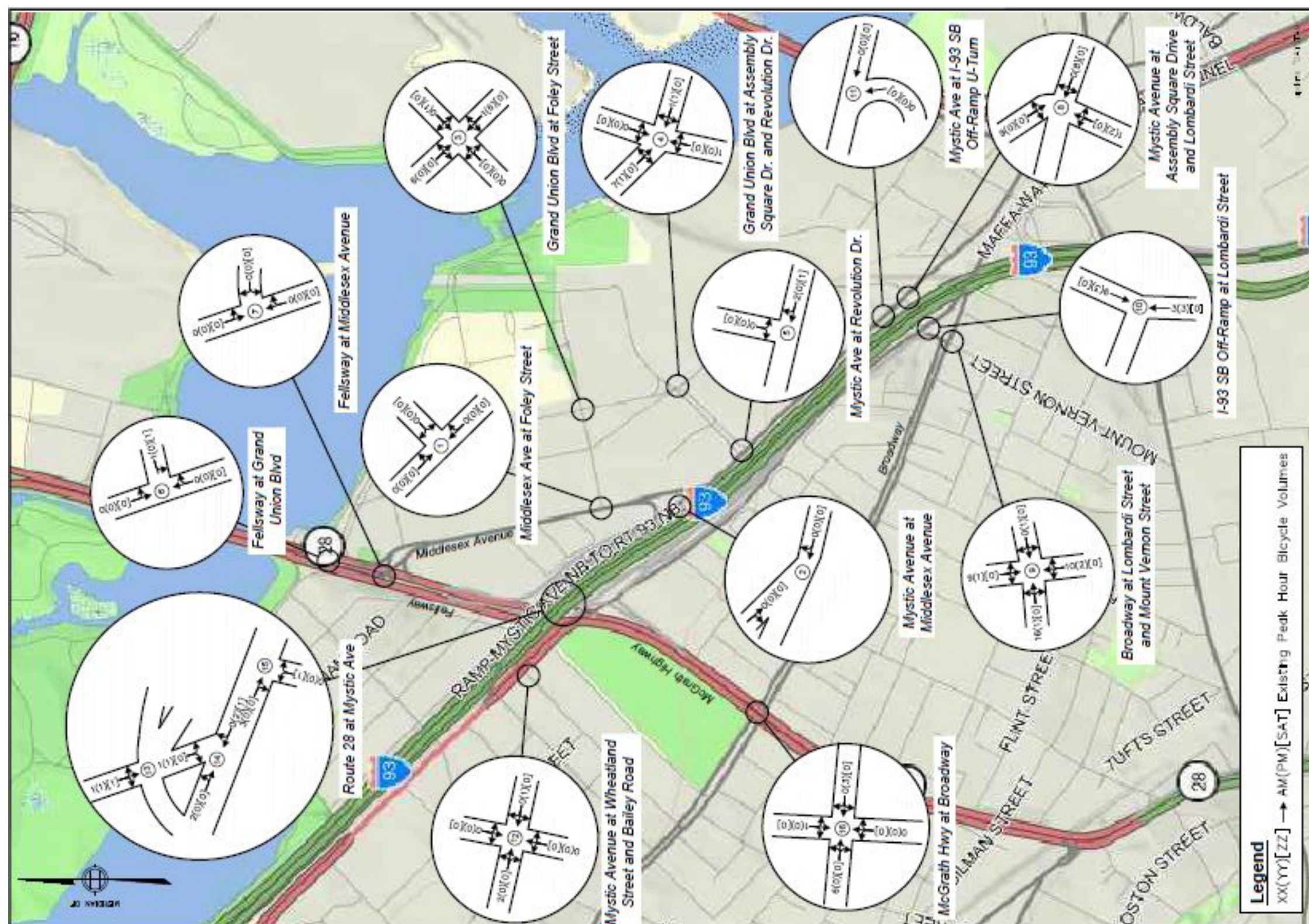
ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

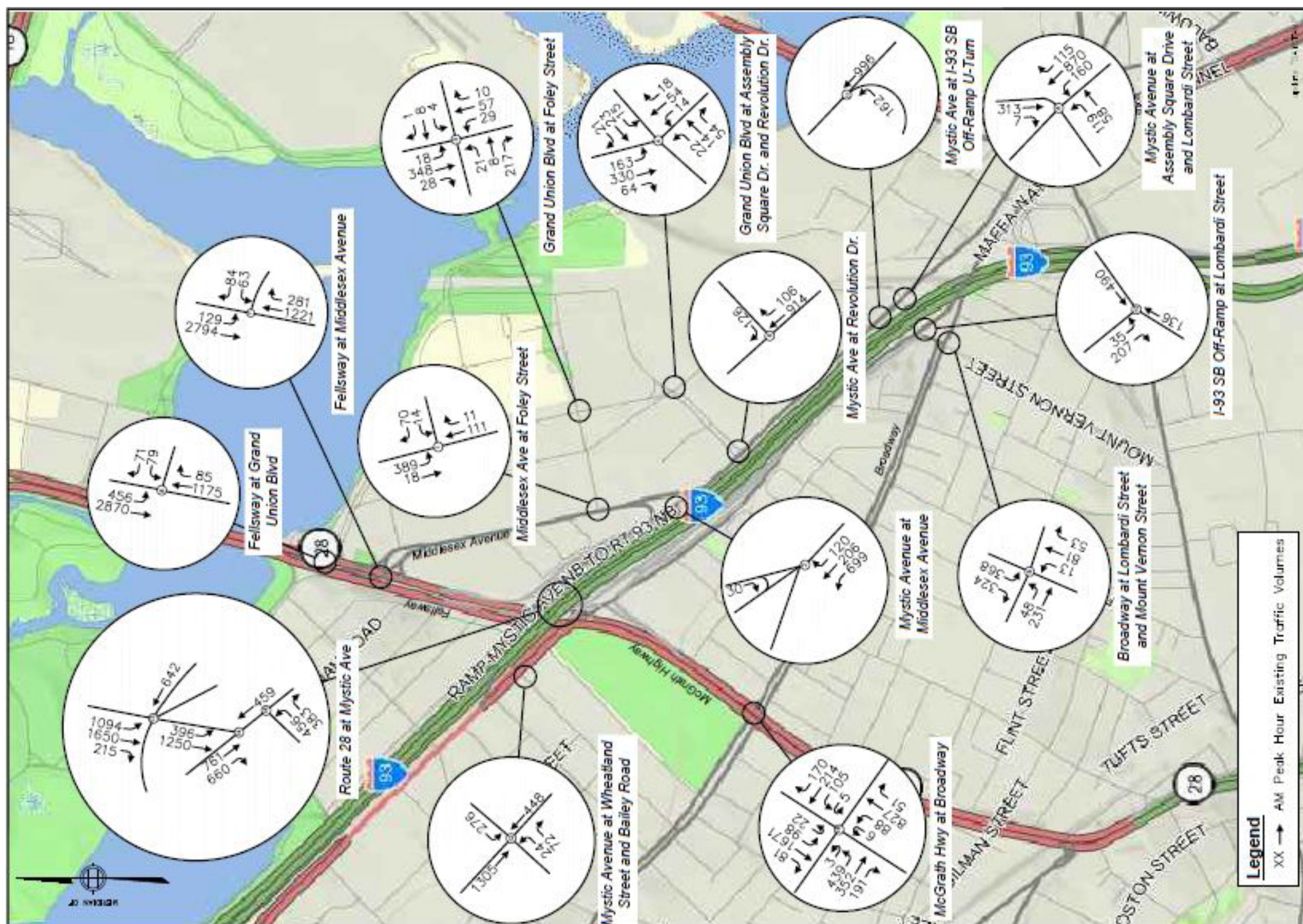


McDERMOTT
QUILTY &
MILLER LLP

Existing Pedestrian
Volumes

Figure 5.5
September 2017







PUD - PMP



McDERMOTT
QUILTY &
MILLER LLP

Existing Traffic
Volumes - PM

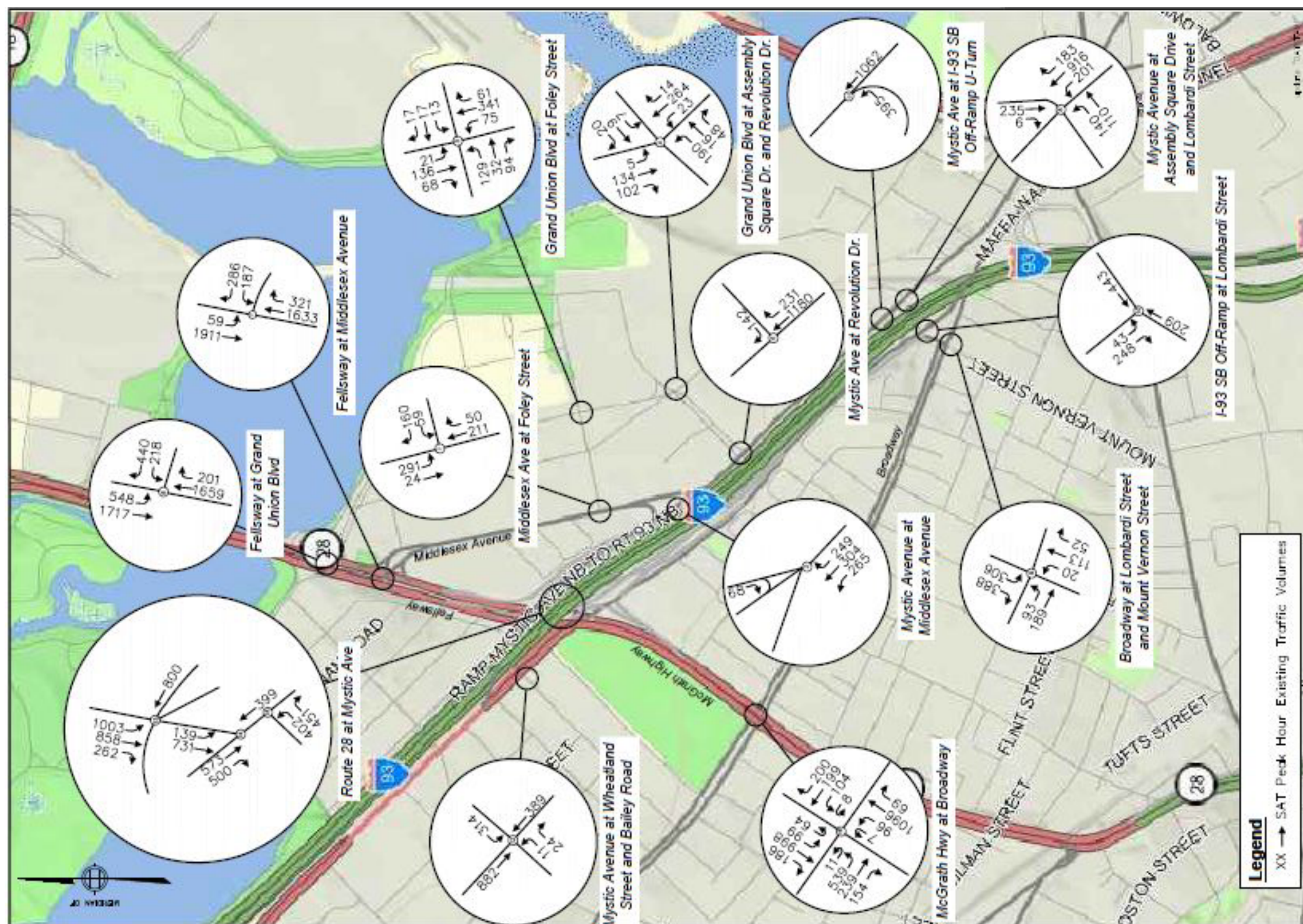
Figure 5.8
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP

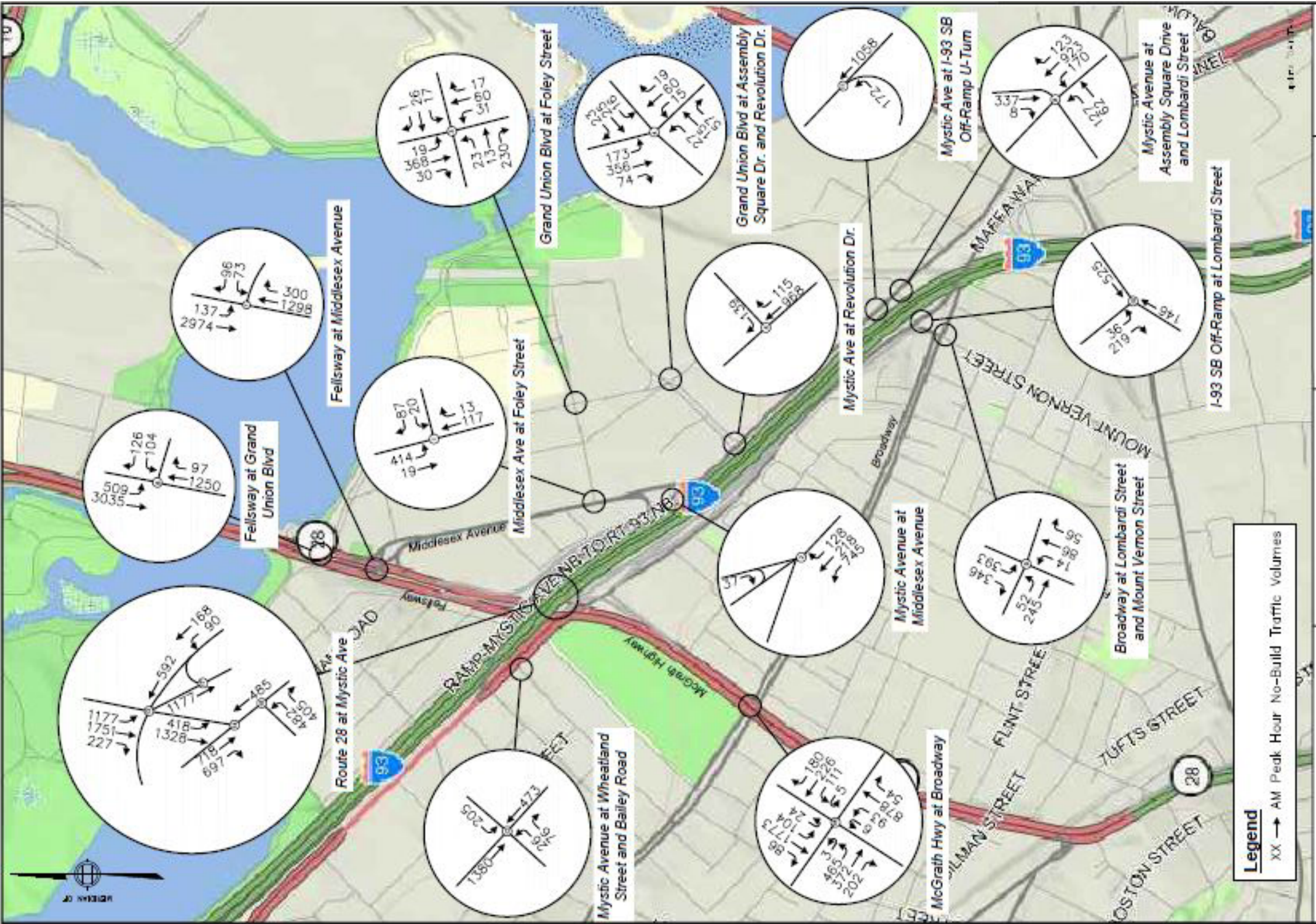


ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



McDERMOTT
QUILTY &
MILLER LLP

Existing Traffic
Volumes - SAT
Figure 5.9
September 2017

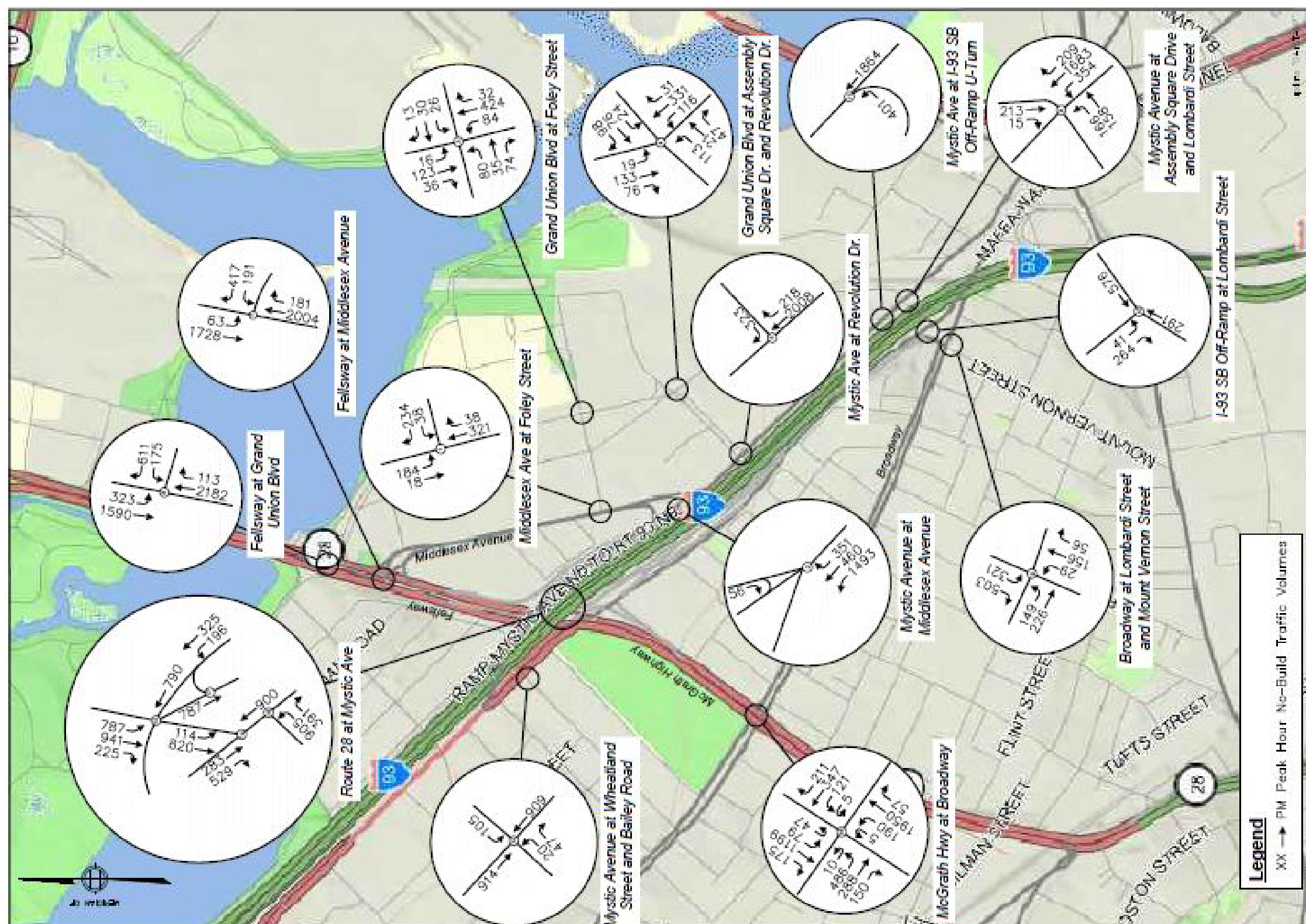




ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



No Build Volumes
-PM

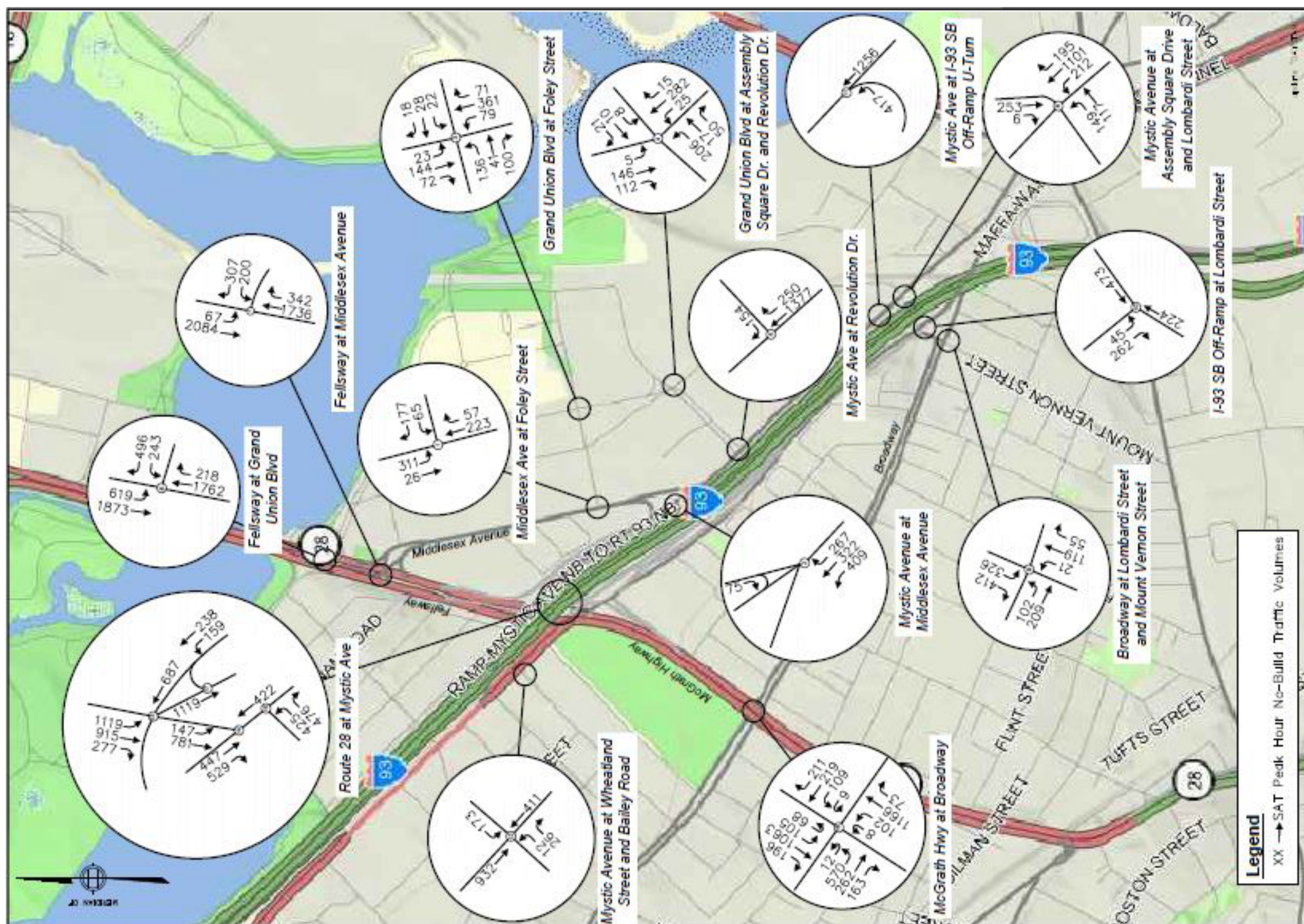
Figure 5.11
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



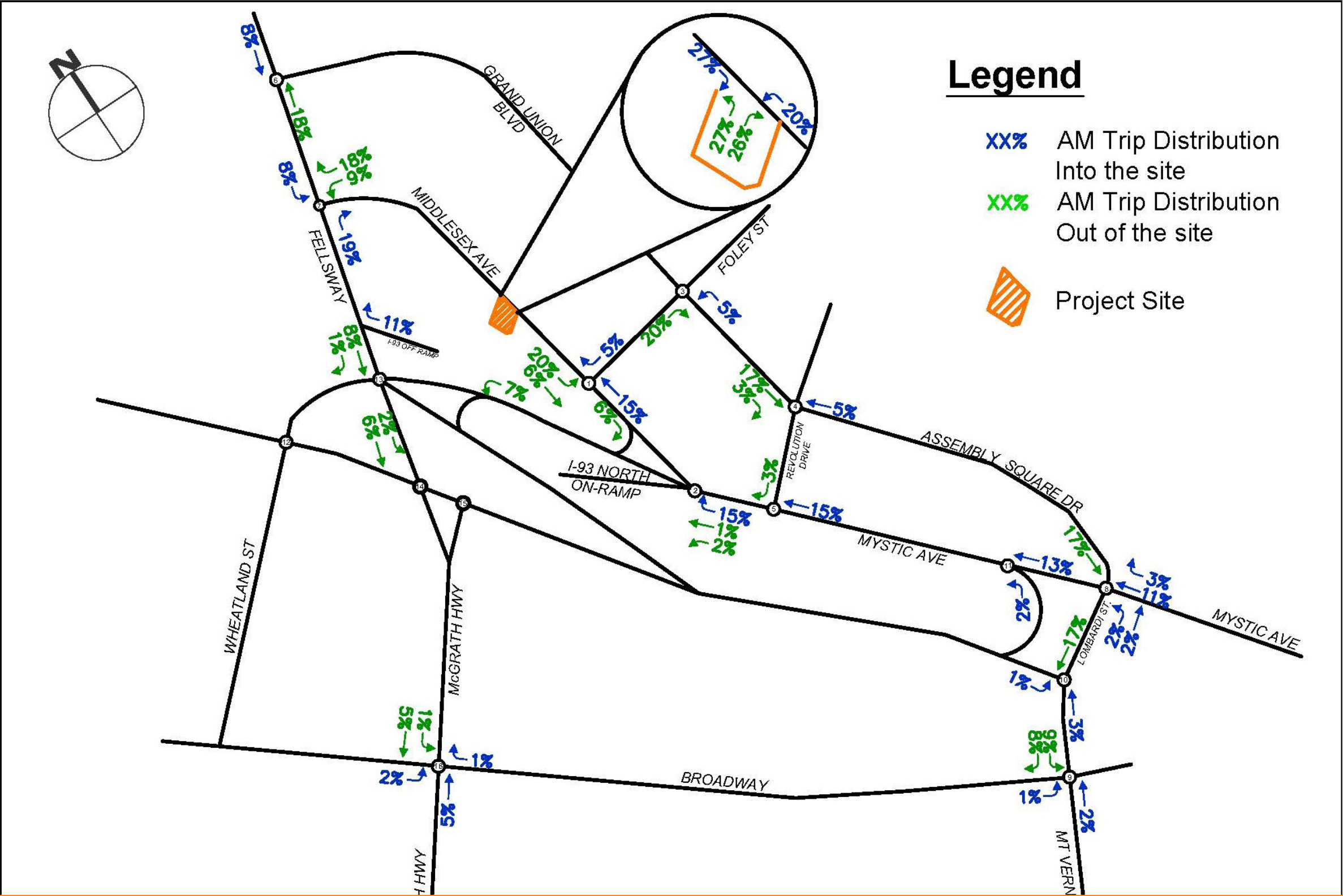
McDERMOTT
QUILTY &
MILLER LLP

No Build Volumes
-SAT

Figure 5.12
September 2017

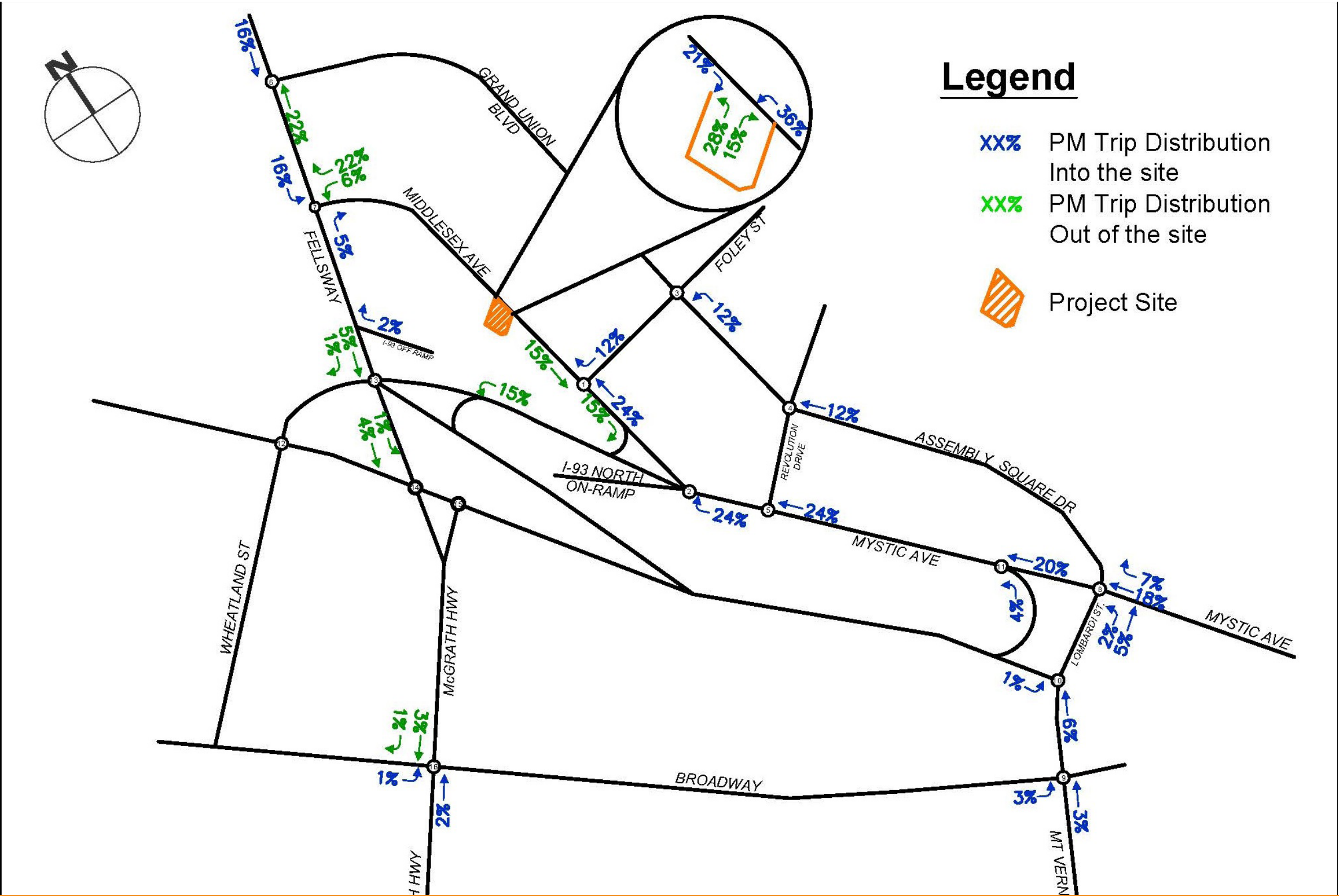


AT ASSEMBLY SQUARE



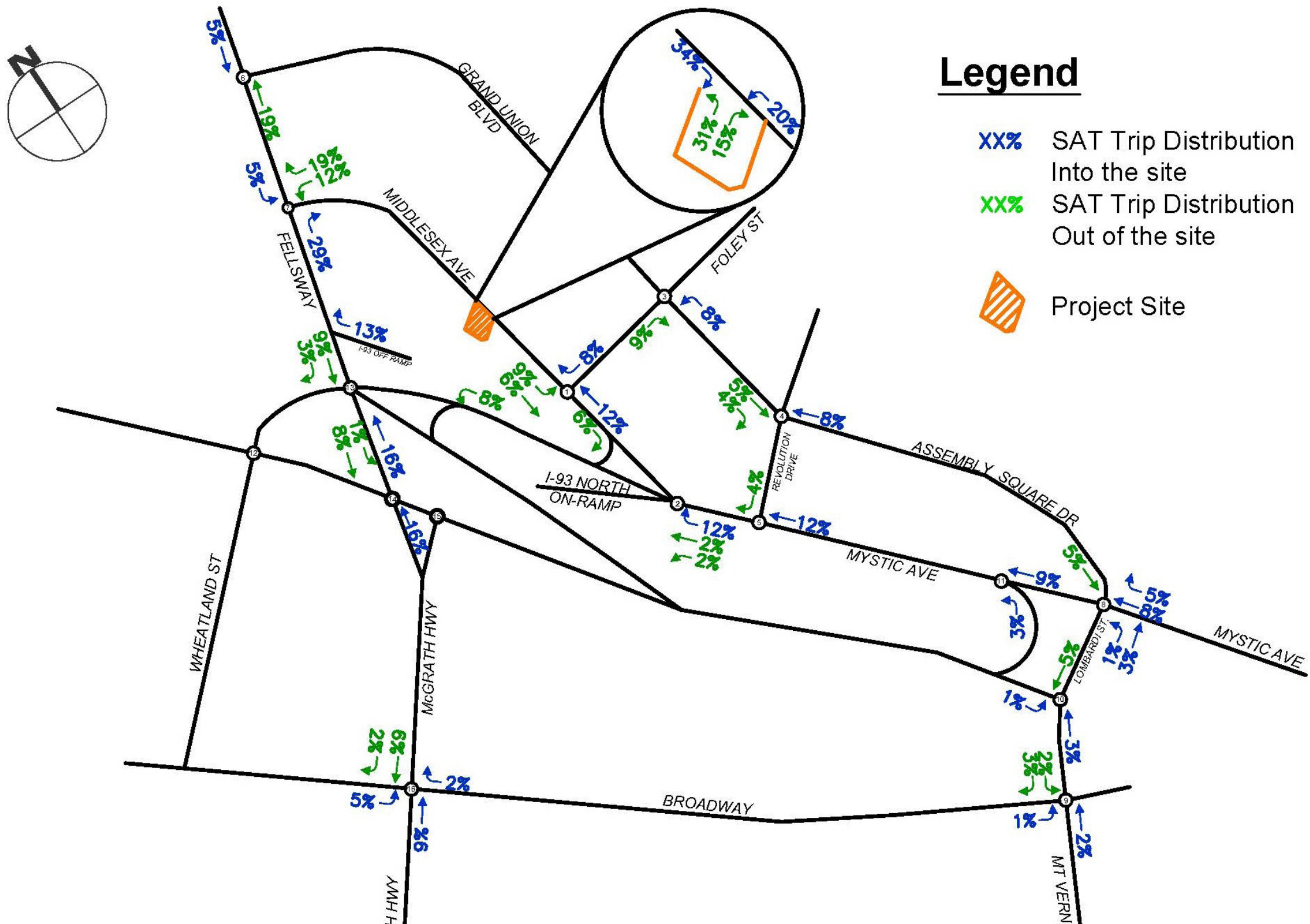


AT ASSEMBLY SQUARE





AT ASSEMBLY SQUARE

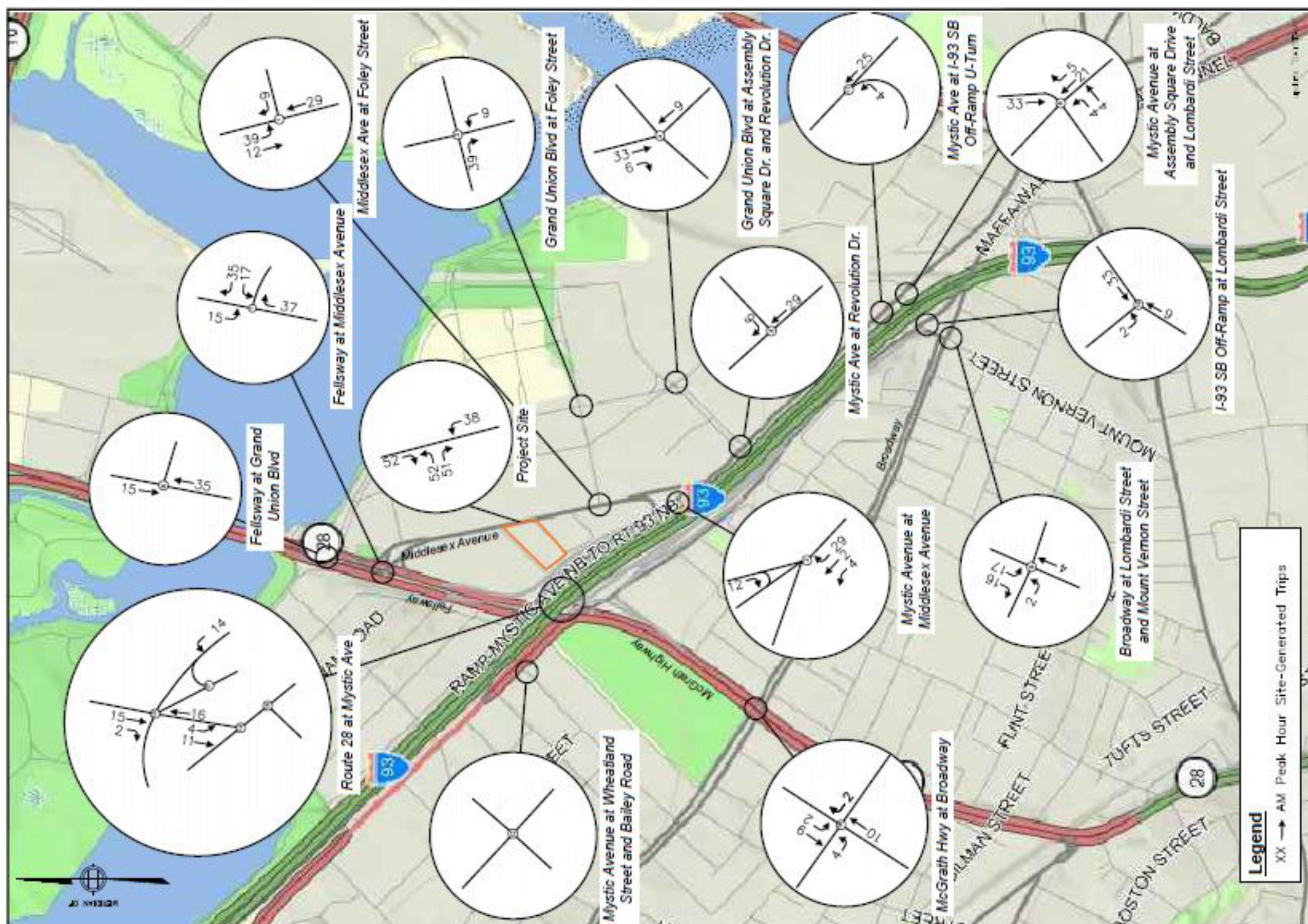




ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP

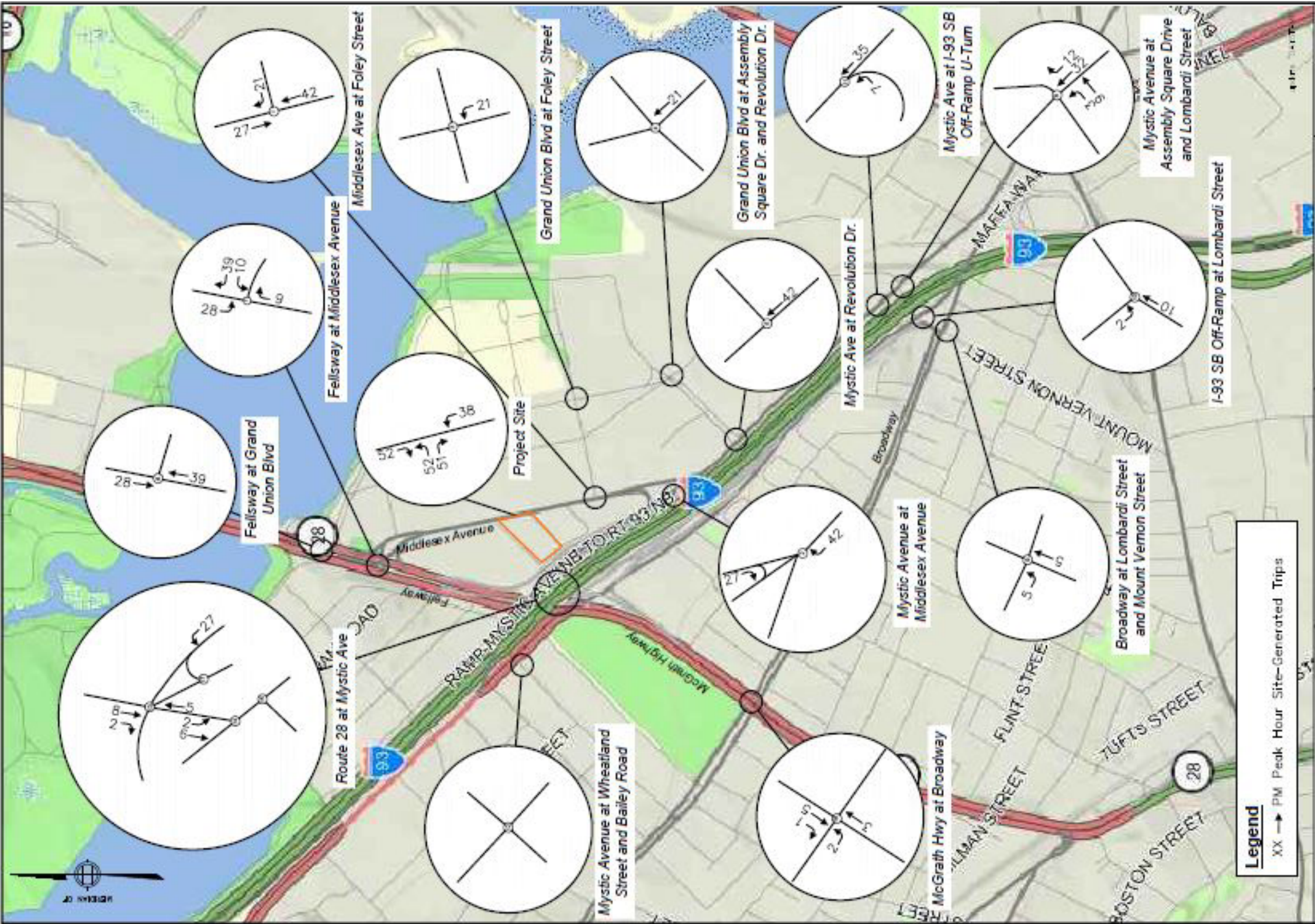


ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Site-Generated Trips
-AM

Figure 5.16
September 2017

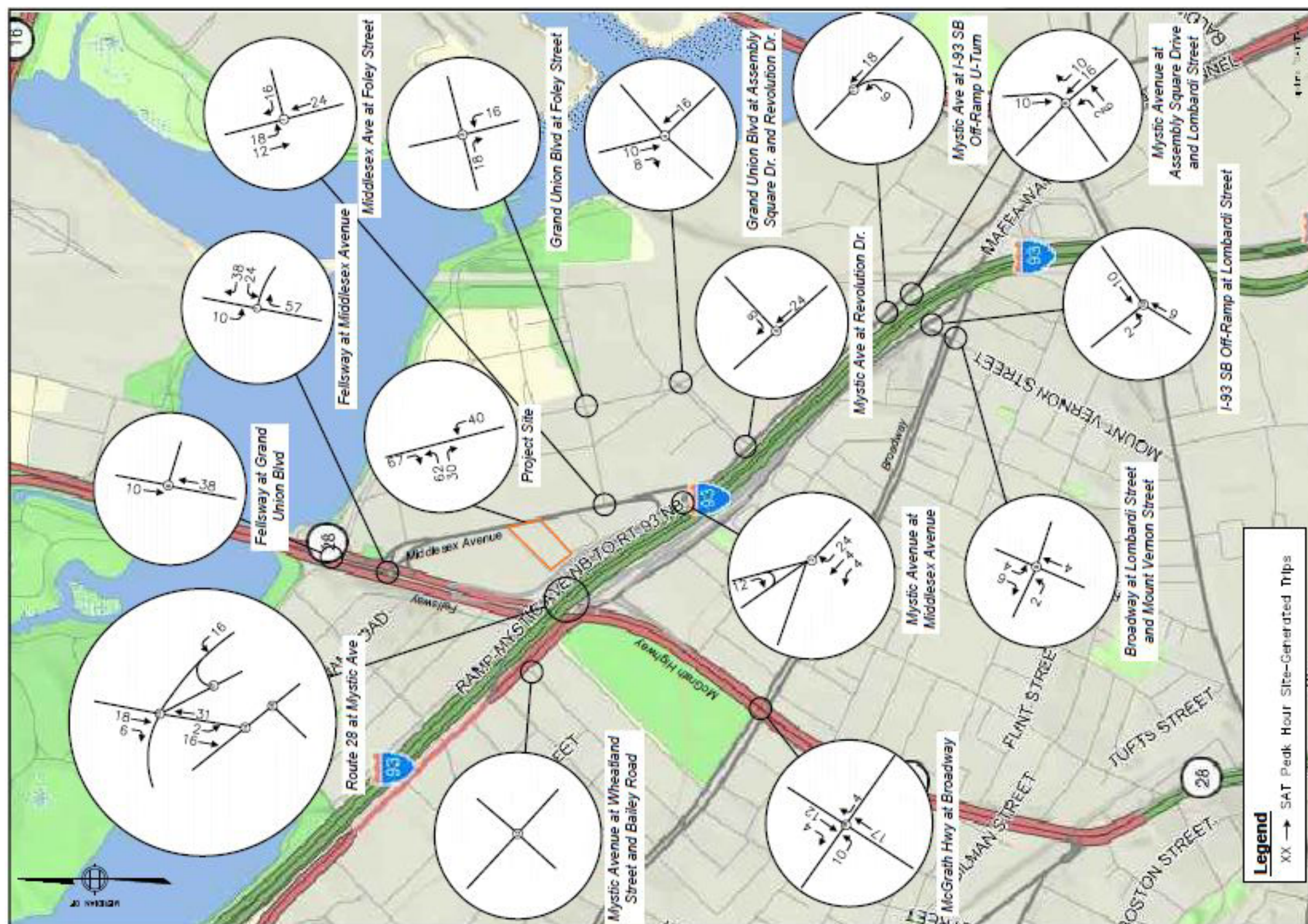




ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Site-Generated Trips
-SAT

Figure 5.18
September 2017



PUD - PMP



Build Volumes -AM

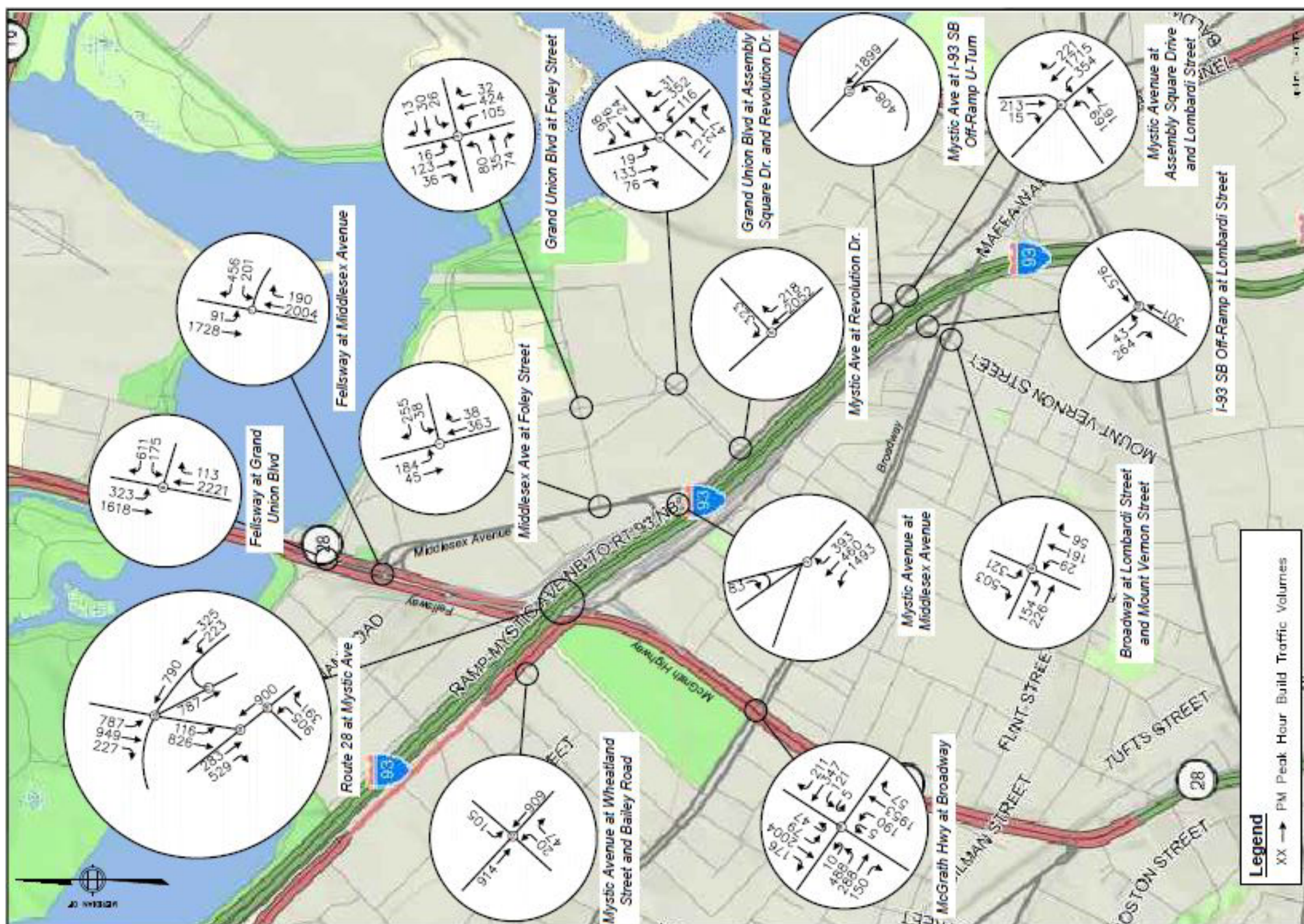
Figure 5.19
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



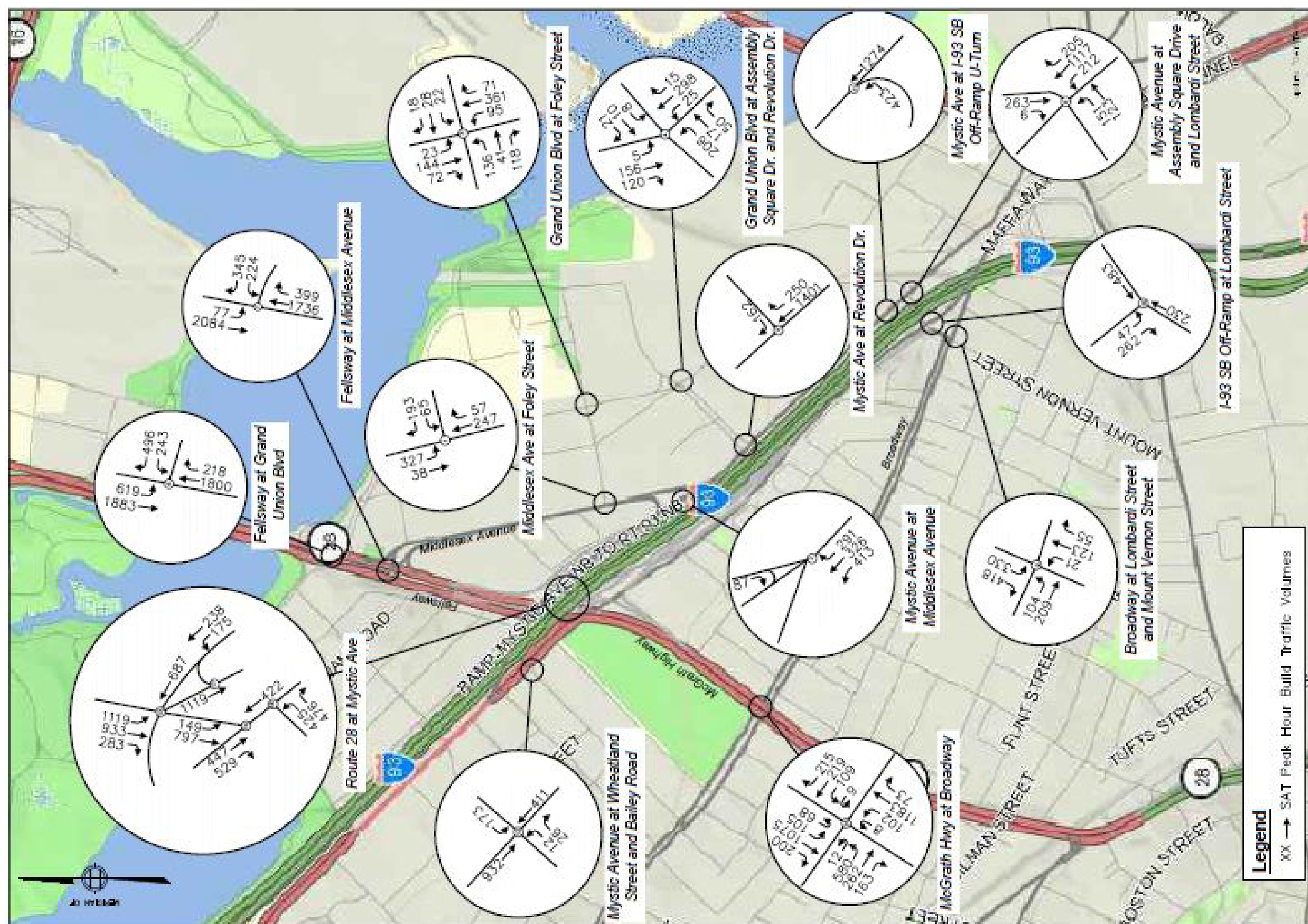
ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



McDERMOTT
QUILTY &
MILLER LLP

Build Volumes
-PM

Figure 5.20
September 2017



6

Utility Analysis

This chapter presents an analysis of the infrastructure aspects of the Project, as described in detail in Chapter 3, *Project Overview*, and illustrated in Figures 3.7, 3.8a-b, 3.9 and 3.10a-b. Specifically, this evaluation includes the following elements:

- › Existing and proposed water distribution system;
- › Existing and proposed sanitary sewer system;
- › Existing and proposed stormwater management system; and
- › Utilities analysis.

For existing utilities referenced in this Chapter please refer to Figure 6.1. For proposed utilities referenced in this Chapter please refer to Figure 6.2.

6.1 Study Description

This information was developed following review of available information provided by the City of Somerville and other resources obtained from the private utility companies. During an initial meeting with City Engineer on June 5, 2017 the existing infrastructure, and the Project's water and sewer needs were reviewed to determine existing conditions at the Project Site and parameters for design. No issues relative to existing sewer capacity are anticipated for the Project

6.2 Water Supply and Distribution

6.2.1 Existing Water Supply and Distribution System

The City's Water and Sewer Division ("SWSD") owns, operates and maintains the public water supply distribution system in the Project area. This public water supply distribution system will provide both the domestic and fire protection flows for the Project. The City purchases all of its water from the Massachusetts Water Resources Authority ("MWRA"). The water is delivered through seven MWRA master meters into the City's distribution system. The system consists of pipes, valves, hydrants and service lines. Somerville's distribution system is comprised of approximately 120 miles of water mains ranging from four inches to twenty inches in diameter. The majority of this system was installed in the late 1800s to early 1900s. To maintain the system, the City rehabilitates and replaces older unlined water mains. During 2015, the City replaced approximately 8,100 ft. of older water main and cleaned and lined approximately 1,200 ft. of various sized mains. In addition, the City flushed approximately 182,135 ft. of pipe to maintain water quality and fire flows.

A 20-inch main is currently located on the Project side of Middlesex Avenue which supplies water to the existing structures on the Project Site.

Existing Water System Demands

The current on-site user consists of a Restaurant (i.e. Dunkin Donuts). The current usage at the Site is estimated to be 980 gallons per day.

Existing Water System Analysis

There is an existing 20-inch main located along underneath the Project's sidewalk along Middlesex Avenue. Through discussions with the City Engineer it has been determined that this existing main has adequate capacity and pressure to serve the Project.

6.2.2 Proposed Water System

Proposed Water System Demands

The Project, as currently proposed is estimated to use 64,850 gallons per day (GPD). This is a net increase of 63,870 GPD at the Site.

Proposed Water System Analysis

System Analysis – Based on a preliminary meeting with the City Engineer, the existing 20-inch water main located on the Project Site along Middlesex Avenue is likely to provide adequate flow and pressure for the Project. A flow test will be completed as the design progress to verify that adequate flow and pressure are needed.

Proposed Water System Improvements

The Project proposes a new four-inch domestic water main and a new eight-inch fire protection water main from the existing 20-inch water main in Middlesex Avenue to the building.

6.3 Sanitary Sewer

6.3.1 Existing Sewer System

The existing sanitary sewer system consists of an eight-inch sewer in Kensington Avenue flowing to an eight-inch vitrified clay sewer in McGrath Highway, ultimately flowing to the sewer collection system in Middlesex Avenue.

Existing Sewer System Analysis

The existing sewer system consists of an eight-inch vitrified clay pipe. The local system connects to a sewer manhole located at the intersection of Kensington

Avenue and McGrath Highway. Flow from this manhole travels to the east across the MassDOT right of way ("ROW") (I-93) to the Massachusetts Water Resources Authority (MWRA) sewer located on the east side of the ROW. A review of existing information has determined that this line has a capacity of 1.38 cubic feet per second. Currently, the estimated existing peak flow is 0.27 cubic feet per second ("CFPS"). The average daily flow is estimated to be 30,635 GPD.

6.3.2 Proposed Sewer System

Based on the current building program, the Project is expected to generate 64,850 GPD of sanitary sewer discharge from the Project Site. The sanitary sewer peak flow rates have been calculated by multiplying the average daily flow by a peaking factor of 5.6, resulting in a peak flow of 363,000± GPD. The determination of flows was completed in accordance with the New England Interstate Water Pollution Controls Guide, "Guides for the Design of Wastewater Treatment Works, TR-16, Revised 2011".

Proposed Sewer System Analysis

Based upon the proposed flows, the peak flow (net increase) from the Project is estimated to be 0.56 cubic feet second. The total proposed flows from the Project is 0.83 cubic feet per second, which is substantially less than the existing capacity of the system (1.38 cubic feet per second).

Proposed Sewer System Improvements

The Project proposes a new, eight-inch PVC sewer pipe from the Project to the sewer manhole located at the intersection of Kensington Avenue and McGrath Highway.

Sewer Mitigation / Infiltration and Inflow (I/I)

The SWSD requires all new sewer connections or expansions of existing connections that exceed 2,000 gallons per day of wastewater to mitigate the impacts of the development by removing four (4) gallons of infiltration and inflow (I/I) for each new gallon of wastewater flow. The Proponent will comply with this requirement and develop an I/I mitigation plan through coordination with SWSD that removes approximately 260,000 GPD of I/I.

6.4 Stormwater Drainage System

6.4.1 Existing Drainage Conditions

Currently, several catch basins on the abutting streets collect stormwater and ultimately discharge to a 7.5 foot deep by 10 foot wide MWRA storm drain that outfalls to the Mystic River. This MWRA drain also passes wet weather sewage and combined stormwater overflow from the MWRA's sewer collection system. The

Somerville Marginal facility, located to the south of the Project underneath I-93, Combined wastewater flows enter and leave the Somerville Marginal facility, located to the south of the Project underneath I-93 by gravity, not pumping. The wastewater is screened, chlorinated and dechlorinated. The disinfected wastewater overflows into its receiving water (Mystic River) as quickly as it arrives at the facility.

One catch basin on McGrath Highway collects stormwater, which flows through a 10-inch pipe into the MWRA storm drain. One catch basin on Kensington Avenue collects stormwater, which flows through a 12-inch reinforced concrete pipe into the MWRA storm drain. Two catch basins on Kensington Avenue collect stormwater, which flows through a 10-inch drain (located under the sewer line, to a 36-inch drain in Baily Road. The Bailey Road drain discharges to the same MWRA storm drain.

6.4.2 Proposed Stormwater Management System

The proposed stormwater management plan consists of reducing peak flow, and hopefully, to the City of Somerville's drainage collection system. The concept consists of:

1. **Water Quality Control** – The Project will collect and infiltrate runoff from the building roof tops, the Courtyard, the sidewalks and other on-site impervious areas, to infiltration chambers in the Urban Park adjacent to the Project Site. The Project Team will continue to evaluate stormwater best management practices (BMPs) to improve run-off quality from Kensington Street and McGrath Highway, and reduce peak flows to the City system. Several options are continuing to be explored for retention and/or reuse, which include a combination of green roof, blue roof, tree box filters and bio retention.

The Project will replace existing catch basins that do not have four-foot deep sumps and an outlet hood. The sump captures coarse grained sediment and the hood prevents floatables from being transported to the receiving water. The catch basins with deep sumps and hoods receive a 25 percent total suspended solids (TSS) removal credit.

Roof top runoff will either be detained by a blue roof, or infiltrated underneath the improved Urban Park adjacent to the Project Site. Roof top run off does not require treatment, and will be discharged to the MWRA drain directly or as overflow from the proposed infiltration system.

The infiltration system will be designed to infiltrate the runoff thereby reducing total runoff volume. Runoff from paved surfaces will be pretreated by a deep sump catch basin before being discharged to the infiltration system. The installation of the infiltration system under the Urban Park is dependent on receiving drainage easements from the City. Infiltration systems receive an 80 percent suspended solids credit.

Porous paving is being considered for on-site hardscape surfaces outside of the garage footprint. Porous pavers would infiltrate stormwater in-place, and reduce the flow and volume of run-off from these paved surfaces. In addition, sidewalk stormwater planters are being evaluated to reduce and treat sidewalk run-off

prior to discharge. Stormwater planters would receive a 90 percent TSS removal credit.

Tree box filters are also evaluated for capturing and treating runoff on McGrath Highway and Kensington Avenue. These systems would receive a 90 percent TSS removal credit.

2. **Water Quantity Control** - The stormwater management system will be designed to release flows less than or equal to the existing condition. In the event, the Project receives drainage easements from the City, total volumes leaving the site will be reduced to meet the existing condition.
3. **Operations and Maintenance** – A Long-Term Operations and Maintenance (O&M) Plan will be prepared which provides detailed procedures and a schedule for maintaining each of the BMPs. It is anticipated that the O&M plan will be formalized in an agreement with the City to maintain the proposed BMPs.

6.5 Utilities

6.5.1 Gas Distribution System

National Grid provides natural gas in Somerville. The nearest gas source to the Project is a six-inch gas main in Middlesex Avenue with a stub of six-inches down McGrath Highway to serve the LaQuinta. A six-inch stub down Kensington Avenue services the Dunkin Donuts.

6.5.2 Electrical Distribution System

NSTAR supplies electricity to the area. The Project team will work with NSTAR and the Project's Electrical Engineer to determine the size, source and costs for the Project's electrical system. The Electrical Engineer will design the electrical infrastructure for the Project.

6.5.3 Telephone Distribution System

Verizon supplies telephone services to the Project area. The system consists of above and below ground infrastructure. The Project team will work with Verizon and the Project's Electrical Engineer to determine the size, source and costs for the Project's electrical system. The Electrical Engineer will design the telephone infrastructure for the Project.

6.5.4 Fire Alarm System

The City's Department of Public Works (DPW) Electric Lights and Lines Division manage fire alarms in the City. The Project team will work with the City and the Project's Electrical Engineer to determine the size, source and costs for the project's fire alarm system. The Electrical Engineer will design the fire alarm infrastructure for the Project.

In order to provide sufficient coverage for the Project, the Project team and the electrical engineer will coordinate with the City's Fire Chief to meet the City's requirements.

6.5.5 Cable Television System

Comcast provides cable TV/Internet Service to the Project area. The Project team will work with the Comcast and the Project's Electrical Engineer to determine the size, source and costs for the project's Cable TV/Internet Service. The Electrical Engineer will design the cable TV/ Internet infrastructure for the Project.



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



McDERMOTT
QUILTY &
MILLER LLP

Existing Conditions Plan

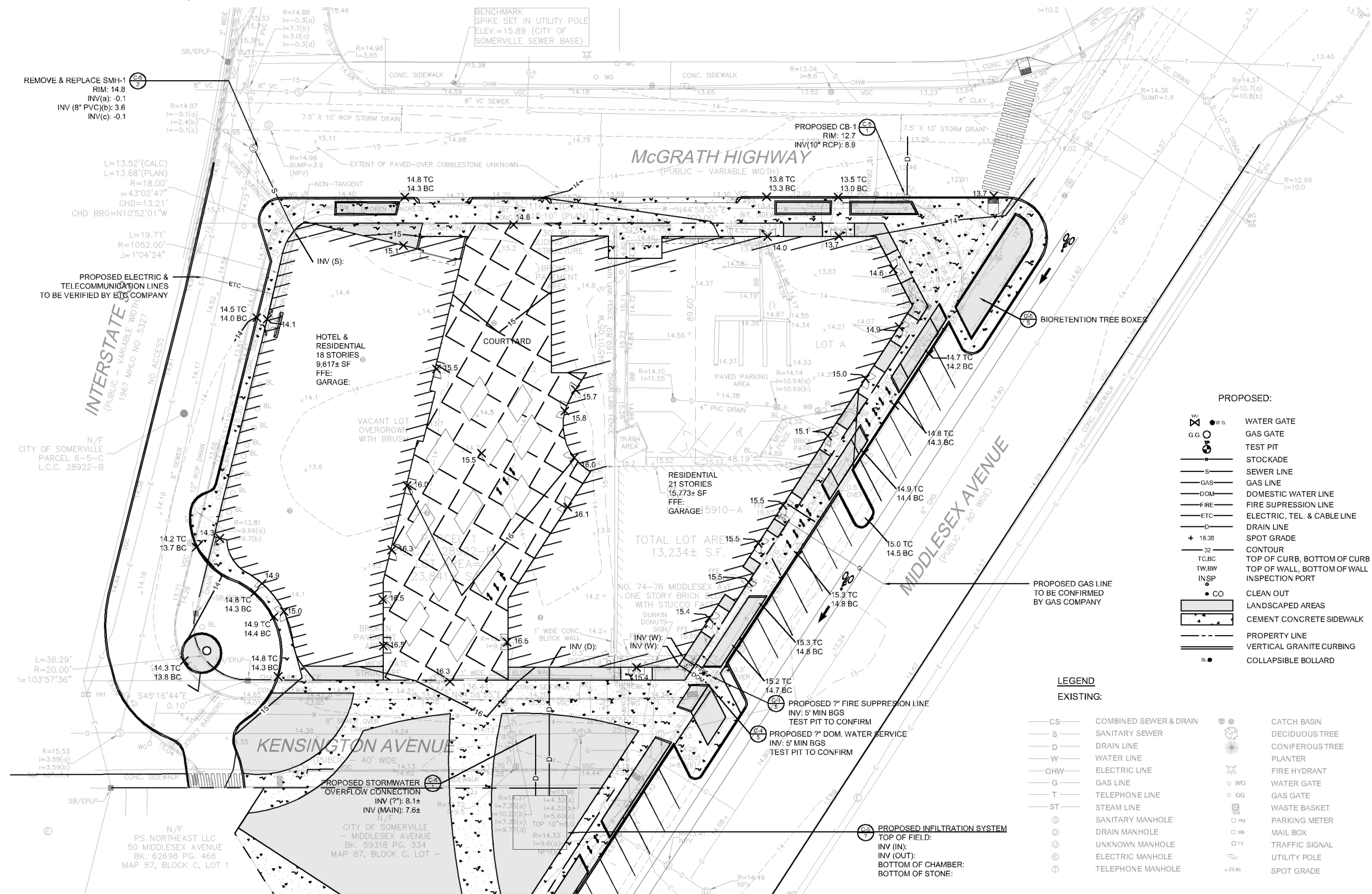
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



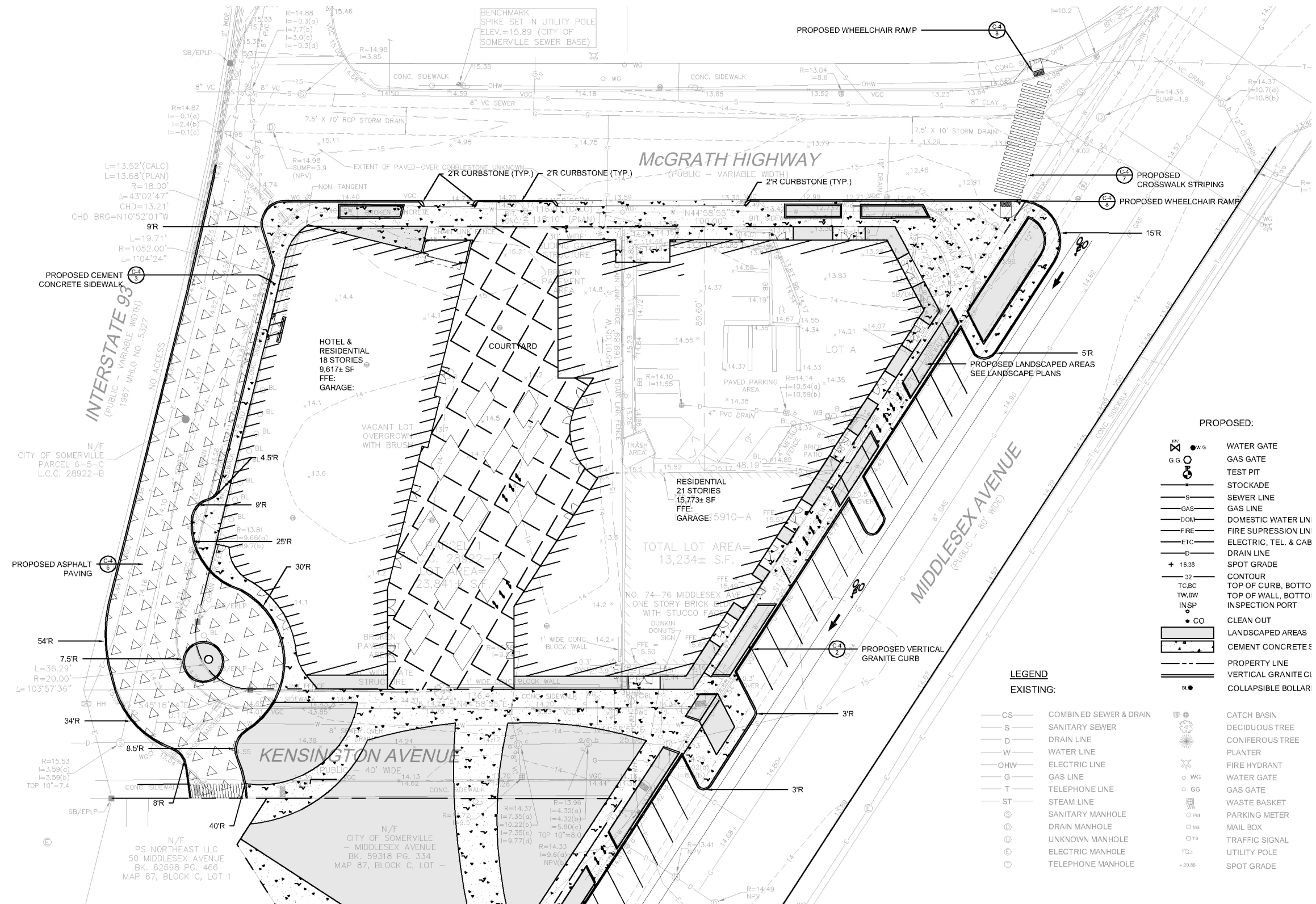
Grading, Drainage &
Utility Plan
Figure 6.2
September 2017



ASSEMBLY'S EDGE

AT ASSEMBLY SQUARE

PUD - PMP



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Materials & Layout
Plan

Figure 6.3
September 2017

APPENDIX A: Transportation Supporting Documentation

Materials are provided on the enclosed CD-ROM.

Multi-Modal Transportation

Traffic Counts

Historical Data

Background Trips

Trip Generation

Safety Analysis

Capacity Analysis

APPENDIX B: Shadow Studies

APPENDIX B: SHADOW STUDIES

1.1 Shadow Analysis

1.1.1 Regulatory Context

An analysis of the shading impact is a requirement of Article 16 of the Ordinance. Specifically, section 16.7.e states the following:

It is intended that no non-residential structure cause a casting of any shadow on any residential lands between 10:00 AM and 2:00 PM, solar time, on the vernal equinox (March 21); and that any shadow cast by a PUD structure on public usable open space be of minimal impact on the desired functional use of said open space, particularly in the period from March 21 to September 21.

1.1.2 Methodology

The following shadow impact analysis has been prepared using methodologies generally consistent with accepted practices for such studies.

A shadow analysis conducted in an urban area typically compares the shadows cast by existing buildings with those estimated to result from the Project when considering proposed buildings and topography.

The study was accomplished by using a three-dimensional CAD model of the Project area using survey and design data for the Site and actual proposed building massing prepared by Project designers.

The study used standard sun altitude and azimuth data for each study date estimated to occur at the Project times were adjusted for daylight savings time as appropriate. The proposed shadows cast by the Project were estimated for the spring and fall equinoxes and the summer and winter solstices. Shadows were estimated for each study date at 10:00 AM, 12:00 PM, 2:00 PM and 4:00 PM. The impact of net new shadow cast by the proposed Project is shown in dark blue in Figures B1-B6, while existing shadows are shown in gray.

1.1.3 Results

The following section describes the estimated shadows under the proposed conditions and anticipated impacts these shadows may have on the nearby open spaces and major pedestrian ways.

June 21

June 21 is the summer solstice, the first day of summer and has the longest day of the year. The sun rises at 5:08 AM and sets at 8:25 PM; Daylight Savings Time is in effect.

At 10:00 AM on the summer solstice, net new shadow from the Project will extend north over McGrath Highway and Kensington Avenue. Net new shadow cast by the Project will also extend over a small portion of the internal Courtyard.

At 12:00 PM, the Project will cast net new shadow to the northeast towards McGrath Highway. The Project will also cast net new shadow over an incremental portion of the internal Courtyard.

At 2:00 PM, the Project will cast net new shadow to the east towards Middlesex Avenue and the big box stores on the adjacent property. Net new shadows will also be cast on the internal Courtyard.

At 4:00 PM, the Project will cast net new shadow to the east towards Middlesex Avenue and a portion of the big box stores on the neighboring property. Net new shadows will also be cast on the internal Courtyard and the Urban Park.

March 21 and September 21

March 21 is the vernal equinox, when the length of day and night are equal. Daylight Savings Time is in effect. The sun rises at 6:46 AM in the south-southeast. September 21 is the autumnal equinox and the daytime and nighttime hours are equal. The sun rises at 6:31 AM EDT in the southeastern sky and sets at 6:42 PM EDT. The shadows cast on this date are almost identical to those on March 21, the vernal equinox.

At 10:00 AM, the Project will cast net new shadow to the northwest over McGrath Highway and the 99 Restaurant located to the north of the Project.

At 12:00 PM, the Project will cast net new shadow to the north over McGrath Highway and over an incremental portion of the 99 Restaurant located to the north of the Project. Net new shadows will also be cast on the internal Courtyard.

At 2:00 PM, the Project will cast net new shadow to the northeast over Middlesex Avenue and an incremental portion of the big box stores on the adjacent property. There will also be shadows cast on the internal Courtyard located on the Site. Net new shadows will also be cast on the internal Courtyard.

December 21

December 21 is the winter solstice and the shortest day of the year. The sun is at its lowest inclination above the horizon at each hour of the day. Even low buildings cast long shadows in northerly latitudes such as Somerville's. The sun rises at 7:10 AM EST and sets at 4:15 PM EST.

At 10:00 AM, the Project will cast net new shadow to the north towards McGrath Highway, the 99 Restaurant and the La Quinta Hotel.

At 12:00 PM, the Project will cast net new shadow to the north towards McGrath Highway, the 99 Restaurant and the La Quinta Hotel. Net new shadow will also fall onto Middlesex Avenue and the loading/service area affiliated with the big box stores on the adjacent property. Net new shadows will also be cast on the internal Courtyard.

At 2:00 PM, the Project will cast net new shadow to the northeast over Middlesex Avenue and the big box stores on the neighboring property. Net new shadows will also be cast on the internal Courtyard, and on a portion of the McGrath Highway.

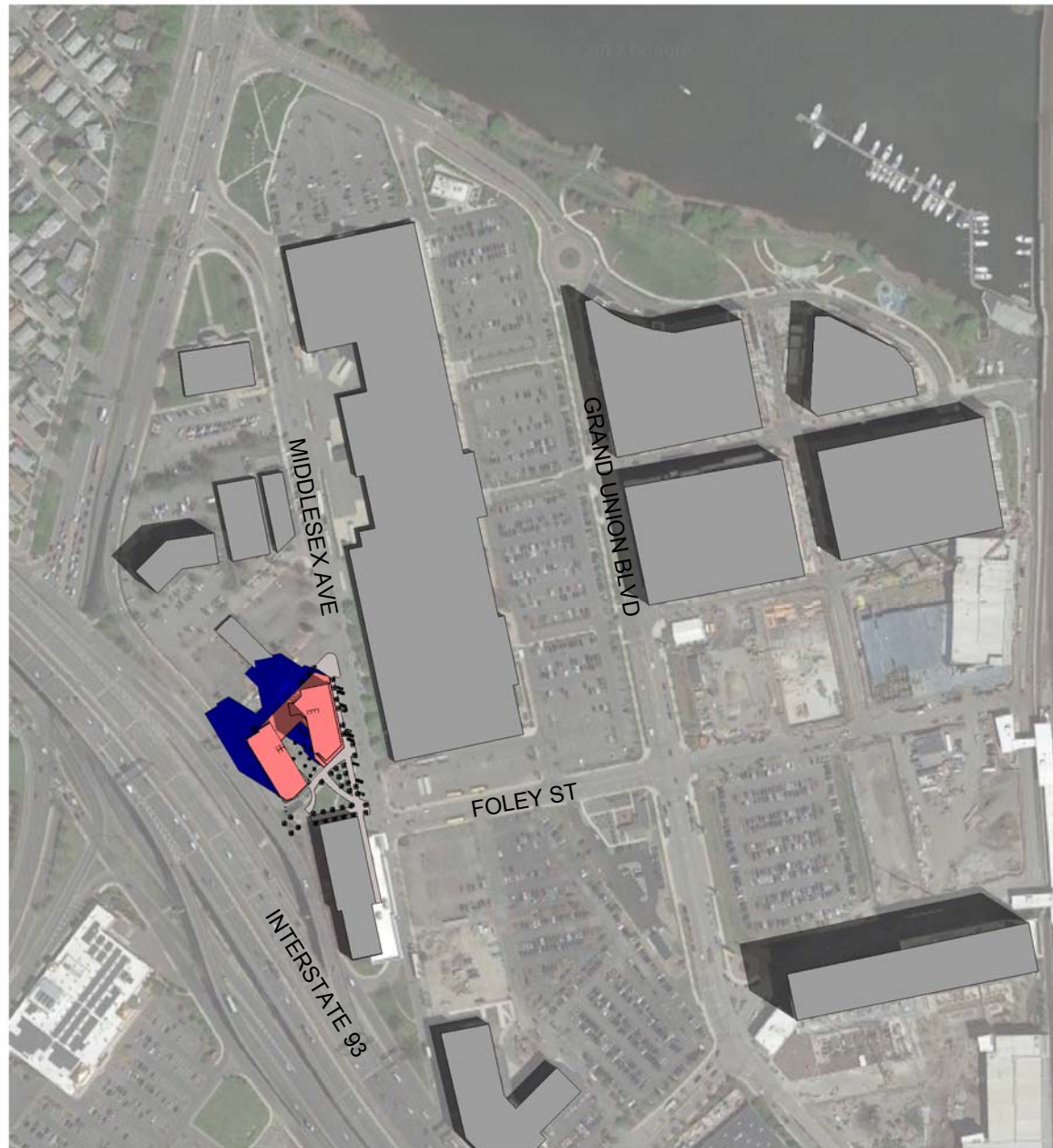
1.1.4 Conclusion

The shadow impact analysis looked at net new shadow created by the Project during 10 time periods. The net new shadows produced are not expected to have any material effect on residential areas or public open space in the vicinity of the Project Site. The majority of net new shadows will be cast to the north and east, towards existing commercial development and paved areas.



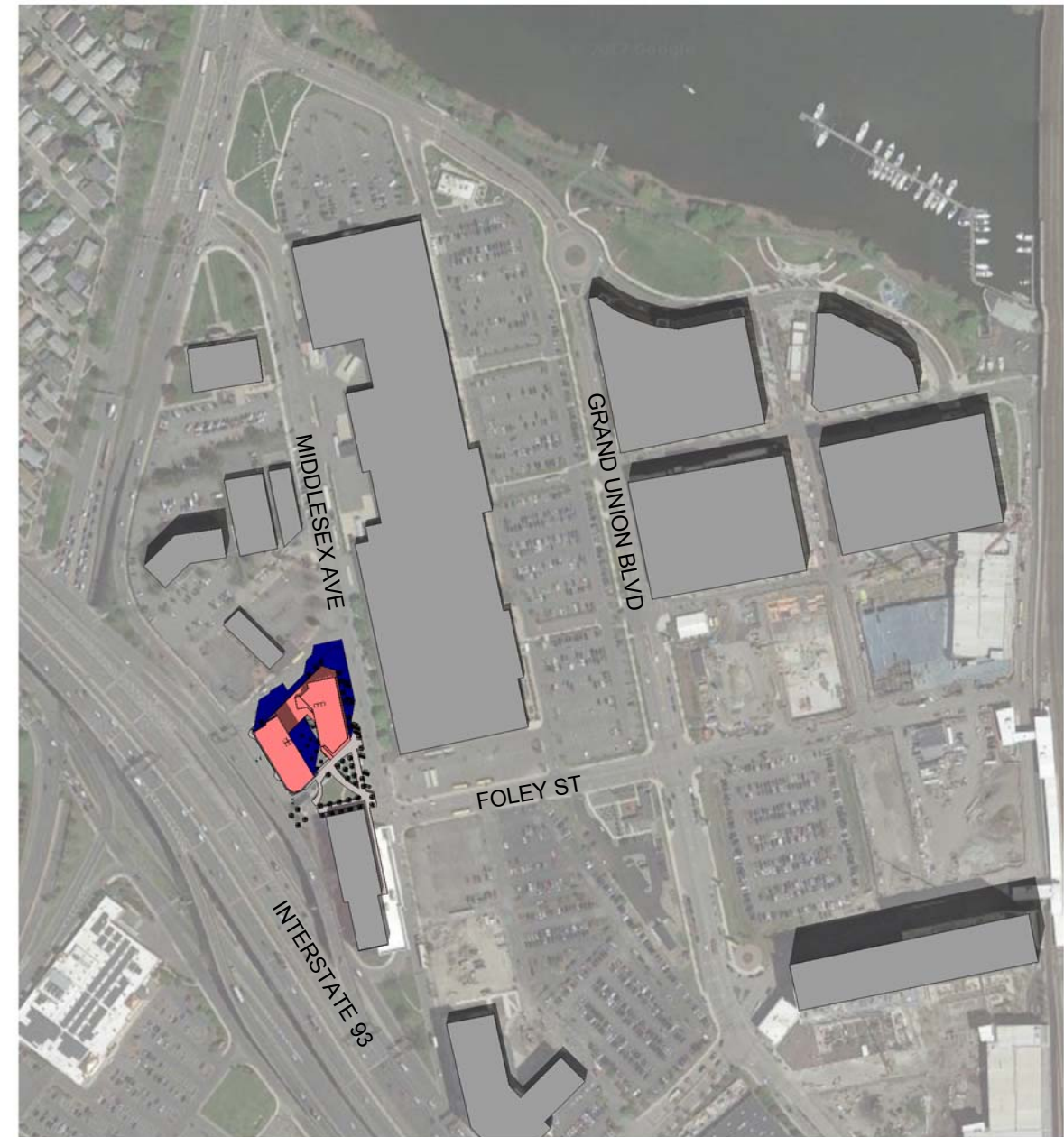
ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



SUMMER SOLSTICE (JUNE 21): 10 AM

- PROPOSED BUILDINGS
- PROPOSED SHADOWS
- EXISTING SHADOWS



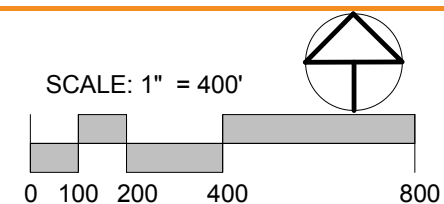
SUMMER SOLSTICE (JUNE 21): 12 NOON



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



MCDERMOTT
QUILTY &
MILLER LLP

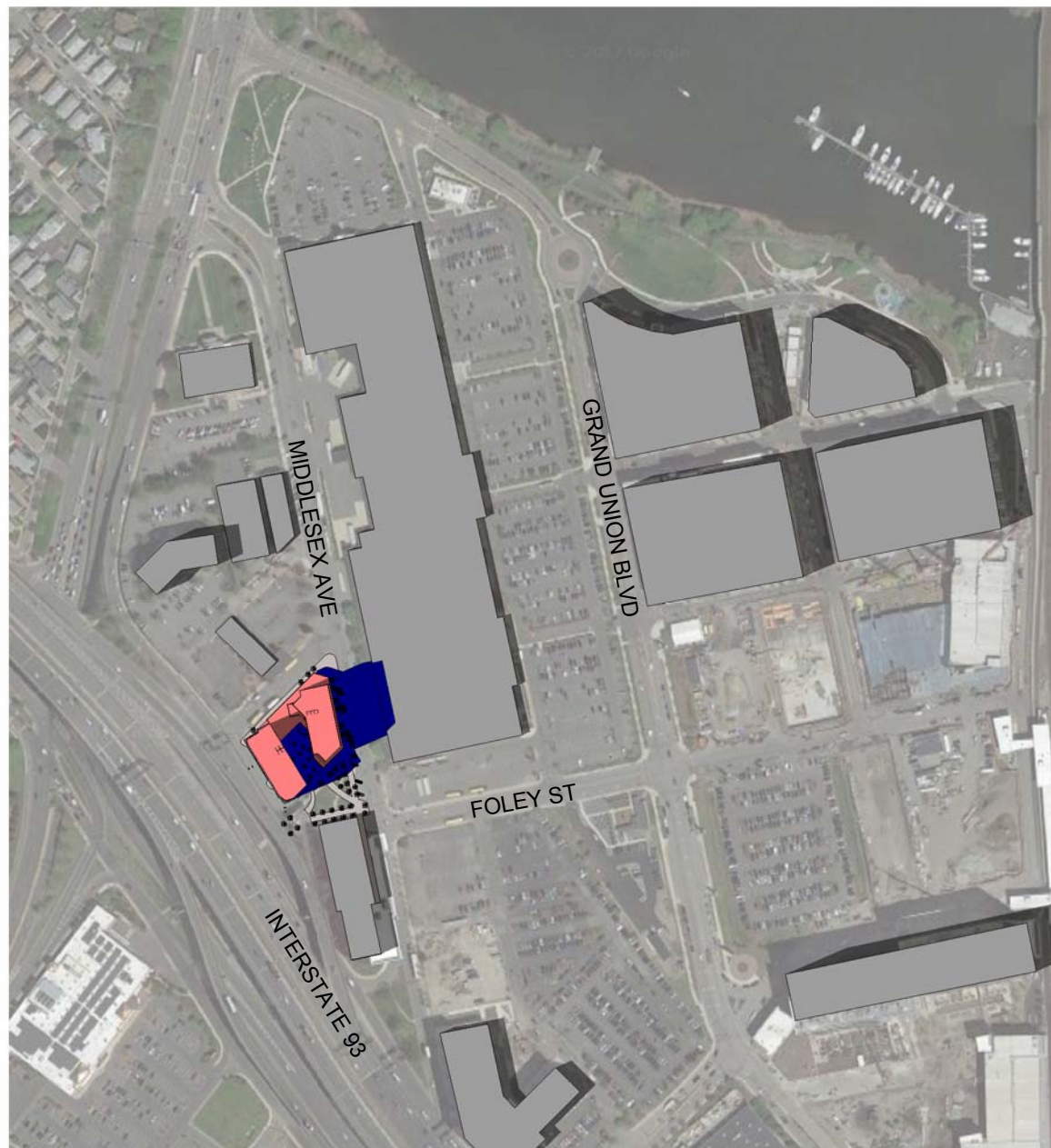


Shadow Study-Summer
Solstice
Figure B.1
June 2017

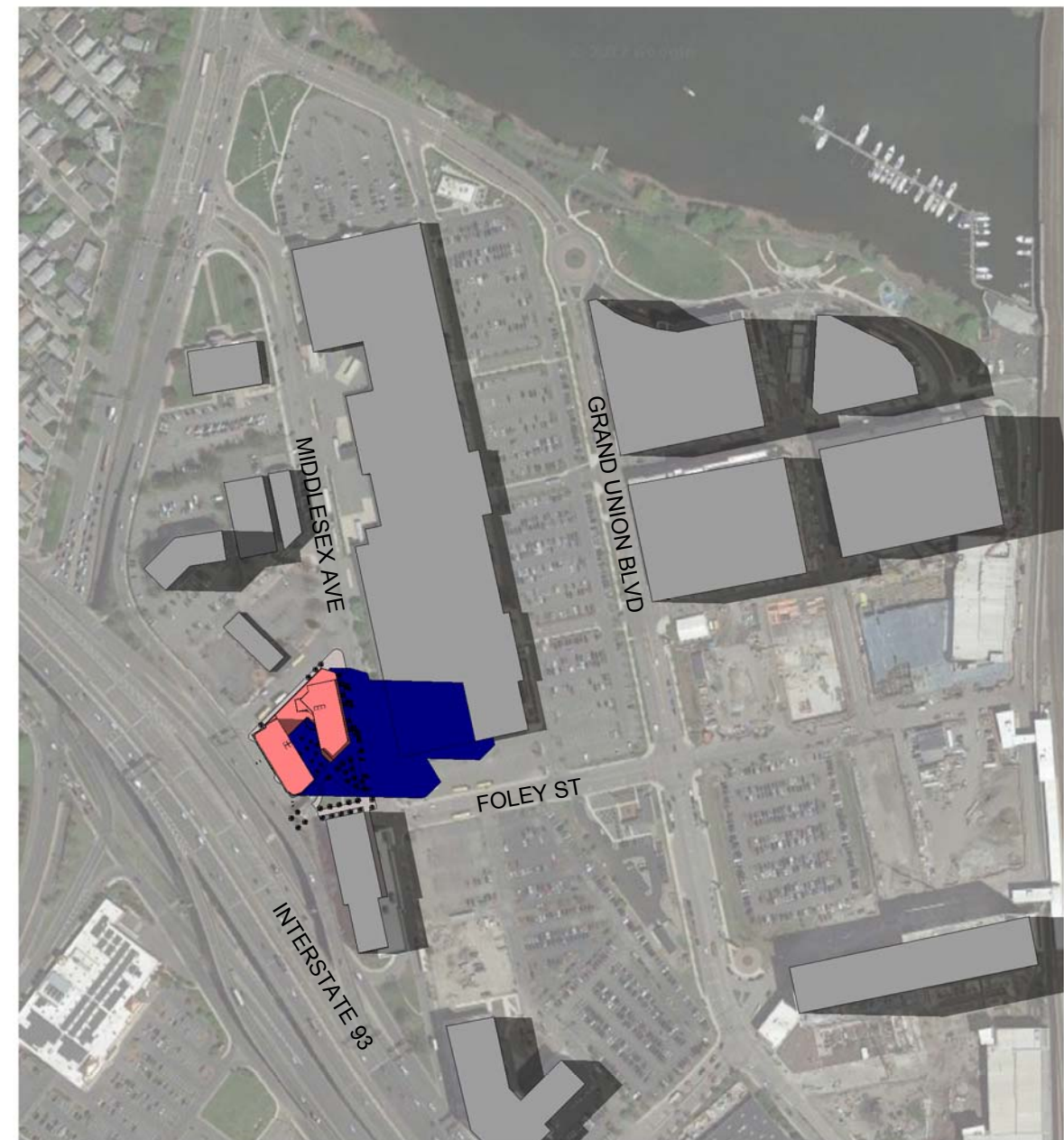


ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



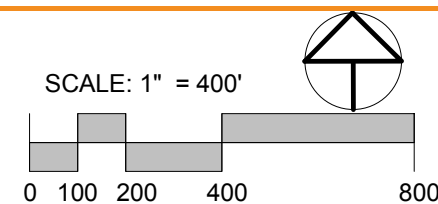
SUMMER SOLSTICE (JUNE 21): 2 PM



SUMMER SOLSTICE (JUNE 21): 4 PM



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

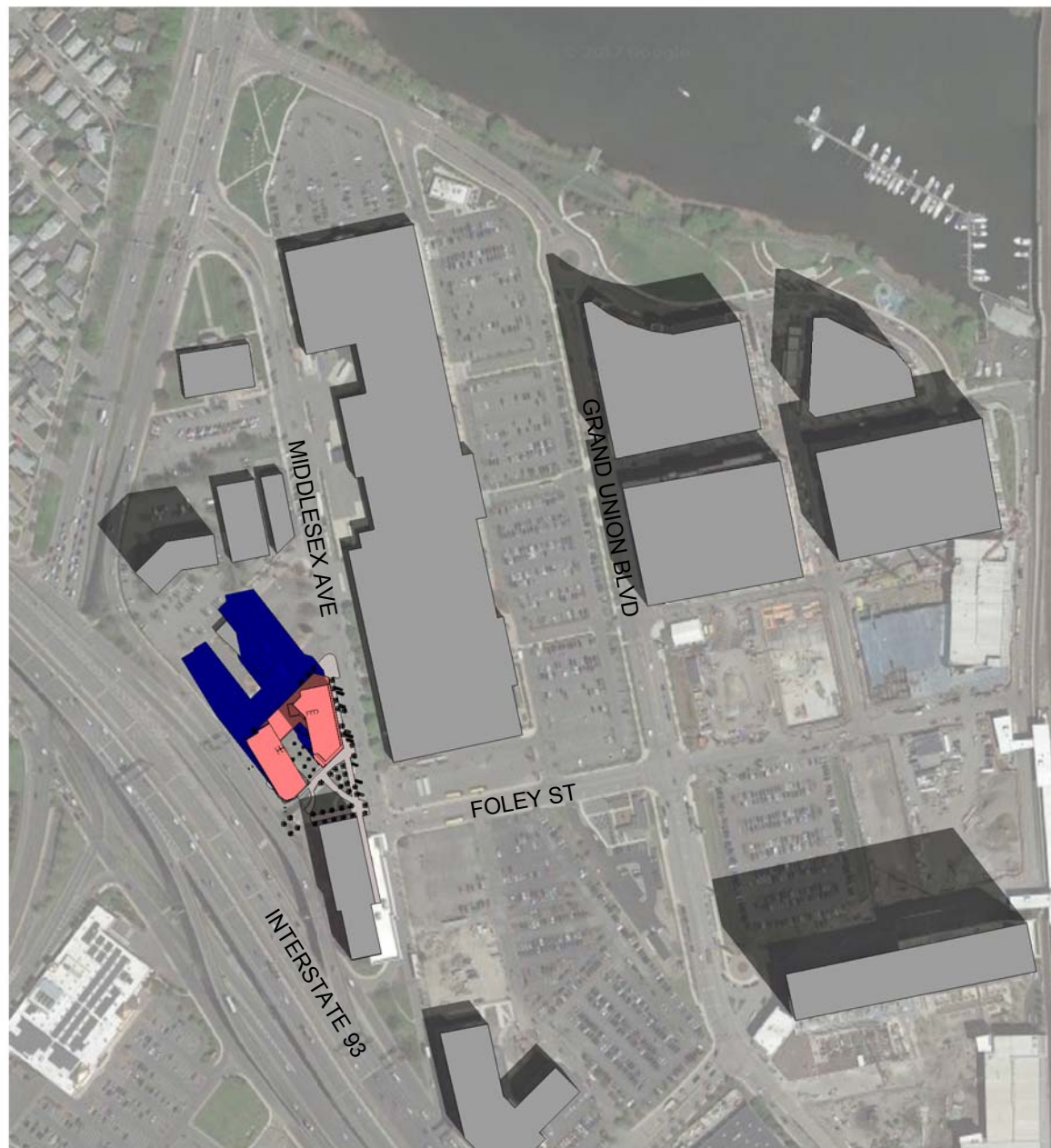


Shadow Study - Summer
Solstice
Figure B.2
June 2017

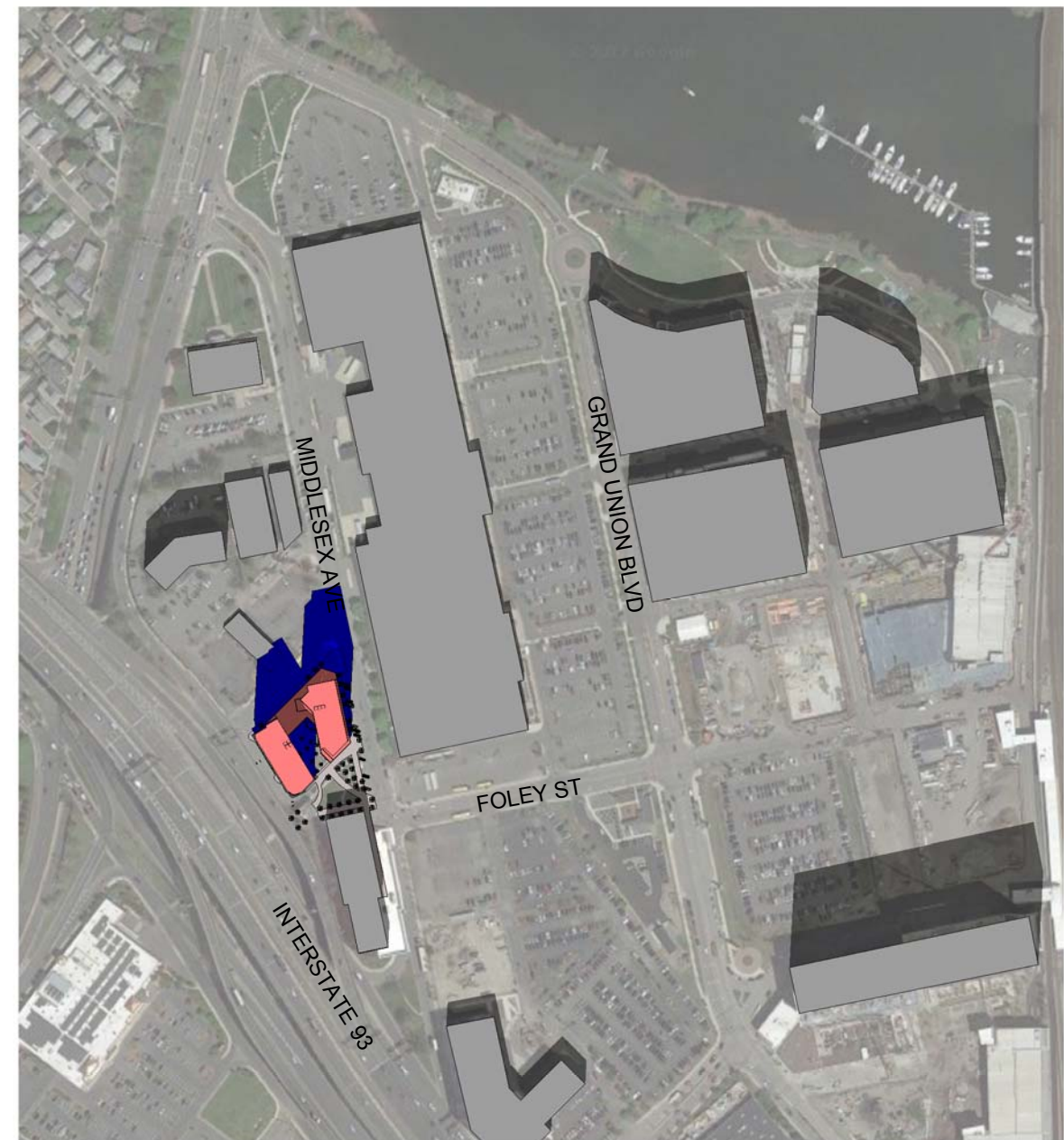


ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



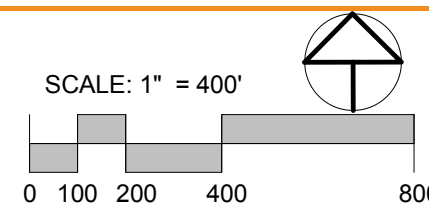
FALL & SPRING EQUINOX (MARCH 21 & SEPTEMBER 21): 10 AM



FALL & SPRING EQUINOX (MARCH 21 & SEPTEMBER 21): 12 NOON



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

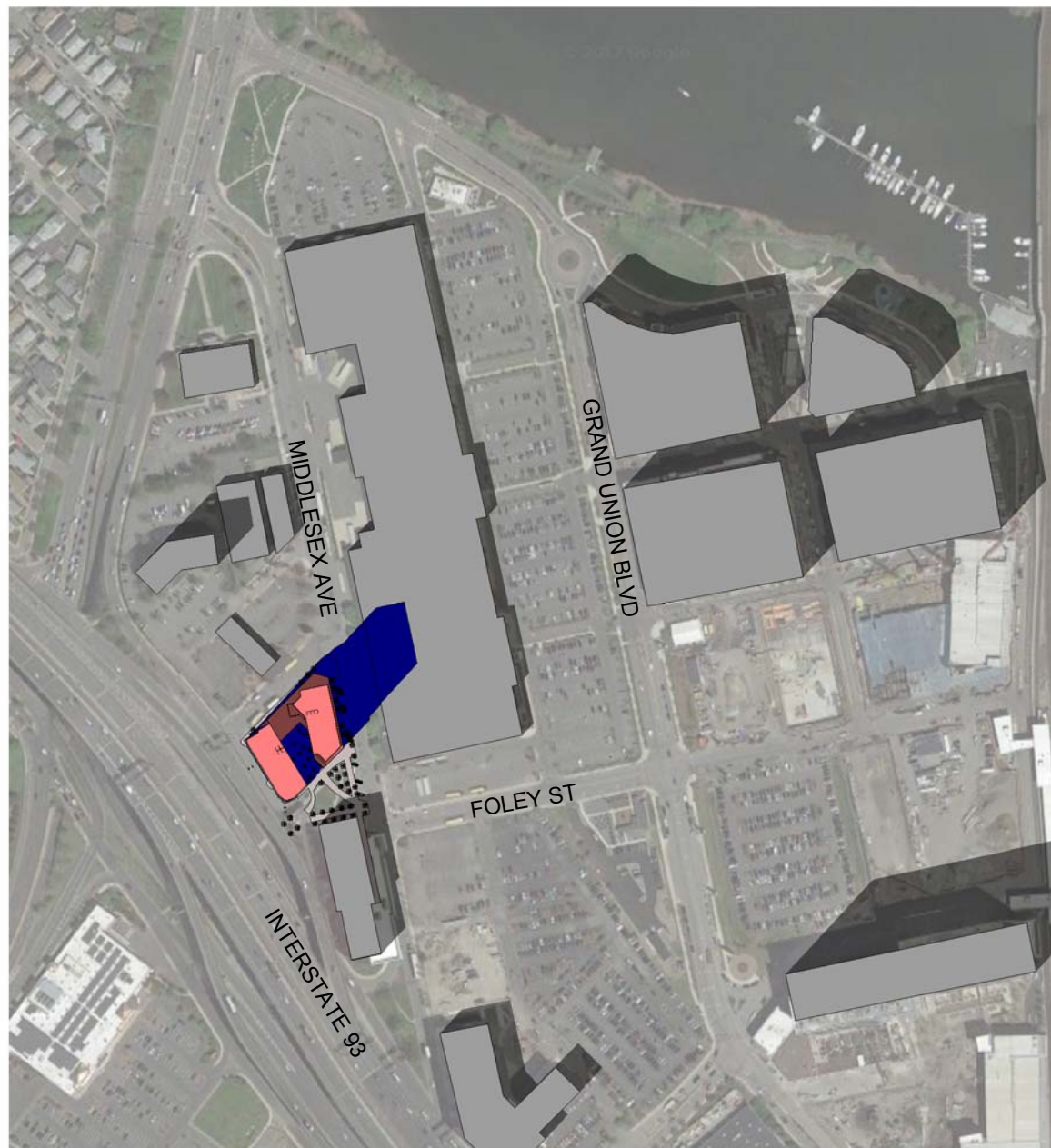


Shadow Study -
Fall & Spring Equinox
Figure B.3
June 2017



ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

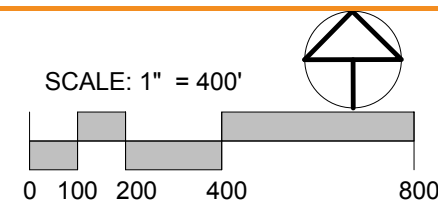
PUD - PMP



FALL & SPRING EQUINOX (MARCH 21 & SEPTEMBER 21): 2 PM



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

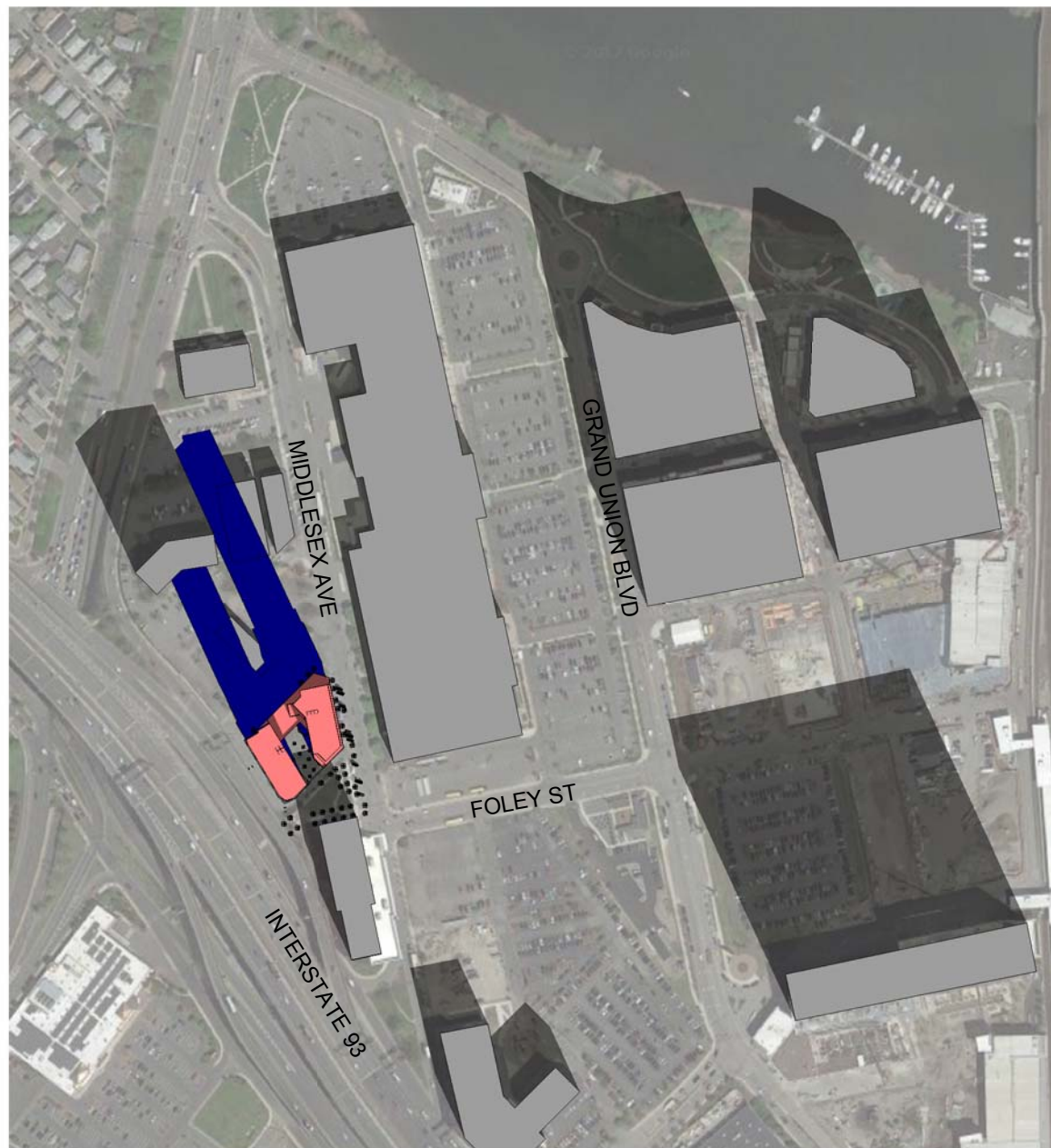


Shadow Study -
Fall & Spring Equinox
Figure B.4
June 2017

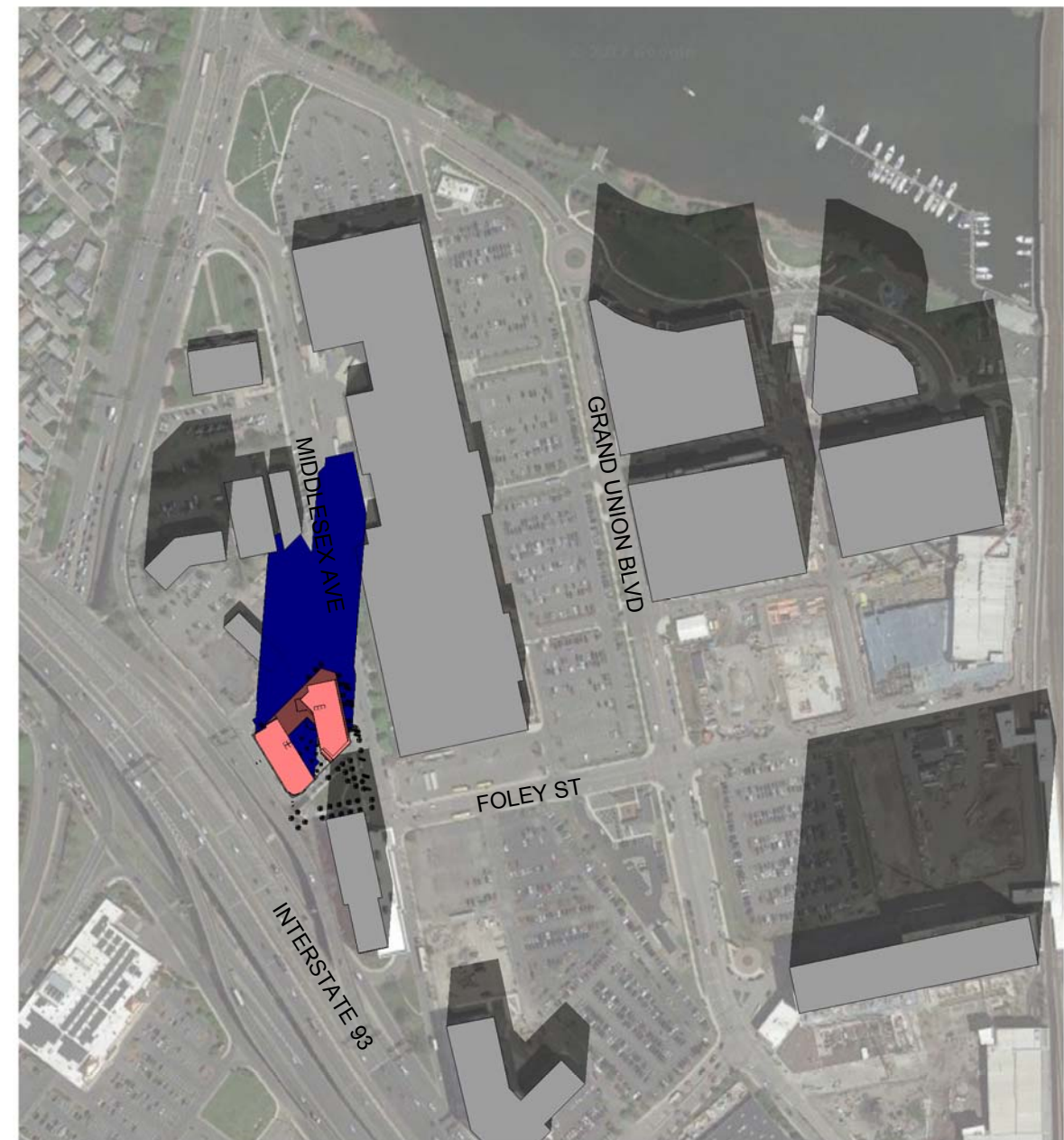


ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

PUD - PMP



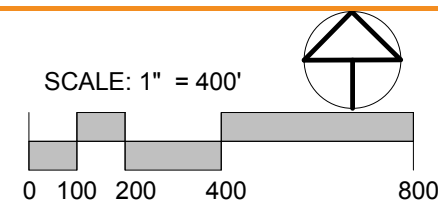
WINTER SOLSTICE (DECEMBER 21): 10 AM



WINTER SOLSTICE (DECEMBER 21): 12 NOON



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145

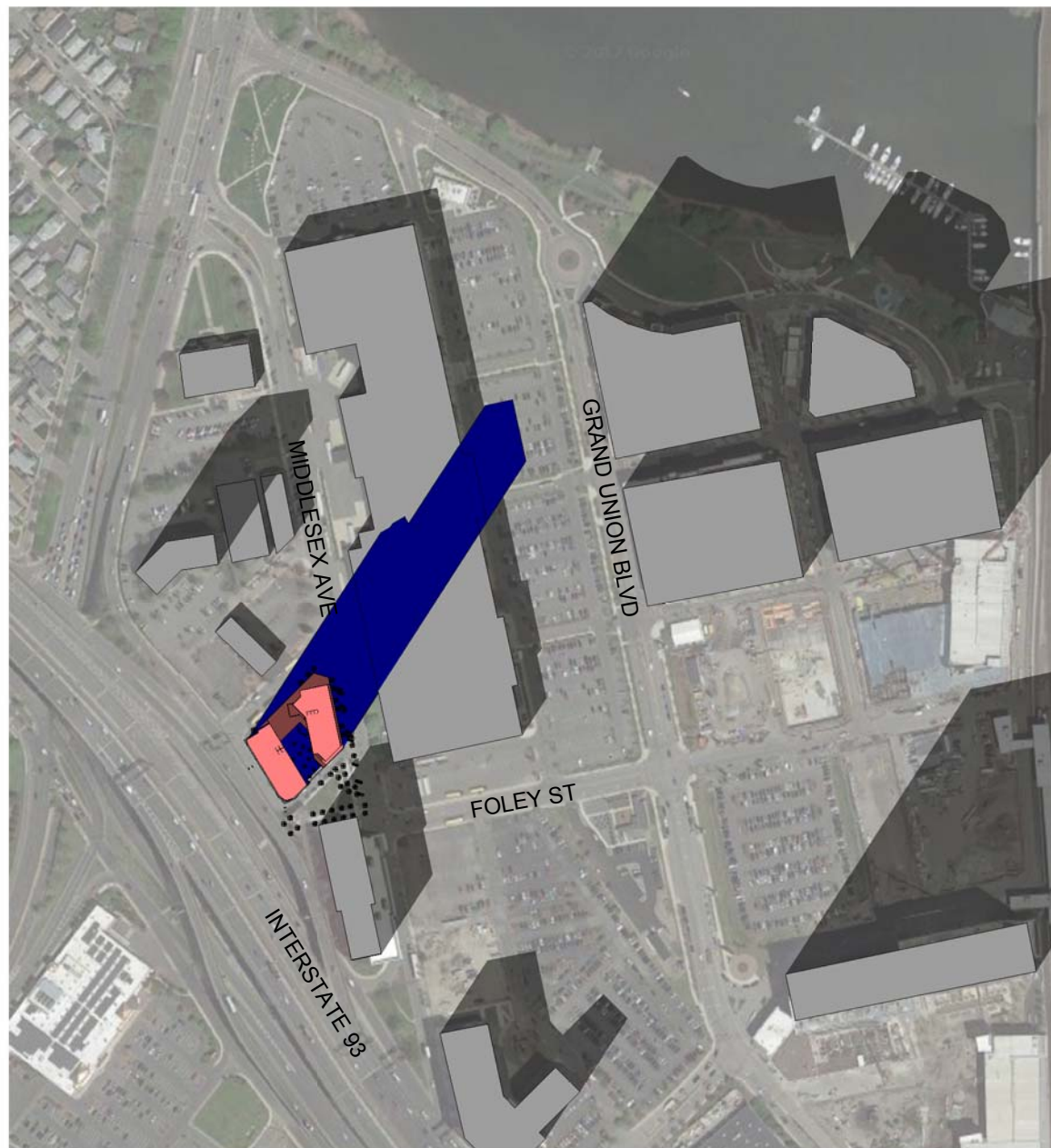


Shadow Study - Winter
Solstice
Figure B.5
June 2017



ASSEMBLY'S EDGE AT ASSEMBLY SQUARE

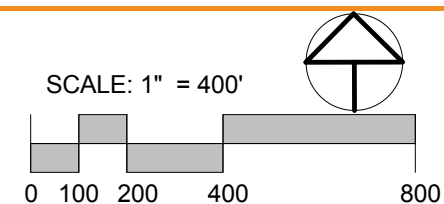
PUD - PMP



WINTER SOLSTICE (DECEMBER 21): 2 PM



ASSEMBLY'S EDGE
MAP 87 / BLOCK B
CITY OF SOMERVILLE
MASSACHUSETTS 02145



Shadow Study - Winter
Solstice
Figure B.6
June 2017

APPENDIX C: Property Documentation

845 McGrath Highway Deed and Corporate Articles of Organization

74 Middlesex Avenue Deed and Corporate Articles of Organization

845 McGrath Highway Deed and Corporate Articles of Organization

843-847 McGrath Hwy, Somerville



2017 01759115
Bk: 1507 Pg: 55 Cert#: 264781
Doc: DEED 04/28/2017 03:25 PM

DEED

McGrath 845 Investments, LLC, a Delaware limited liability company and having a usual place of business at 647 Sanctuary Drive, Boca Raton, FL 33431, for full consideration paid of Three Million Seven Hundred Fifty Thousand (\$3,750,000.00) Dollars

hereby grants to 845 Riverview, LLC a Massachusetts limited liability company having an address of 200 Broadway Suite 103, Lynnfield, MA 01940.

with quitclaim covenants a certain lot of land situate, lying and being in the City of Somerville, County of Middlesex, State of Massachusetts, bounded and described as follows:

Northwesterly	by the Southeasterly line of McGrath Highway, one hundred fifteen and 10/100 feet;
Northeasterly	by land now or formerly of Irene Craig, one hundred sixty-nine and 89/100 feet;
Southeasterly	by the Northwesterly line of Kensington Avenue, one hundred thirty-six and 41/100 feet; and

MASSACHUSETTS EXCISE TAX
Southern Middlesex District ROD # 001
Date: 04/28/2017 03:25 PM
Ctrl# 260879 21582 Doc# 01759115
Fee: \$17,100.00 Cons: \$3,750,000.00

216971
1215-21

24

Southerly and

Southwesterly by parcel 6-5-C, as shown on the plan hereinafter mentioned, one hundred eighty-seven and 99/100 feet.

Said parcel is shown as Lot 1 on said plan (Plan No. 28922 ^B). ✓

All of said boundaries are determined by the Land Court to be located as shown on a subdivision plan, as approved by the Land Court, filed in the Land Registration Office, a copy of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 773, Page 7, with Certificate 128557.

The above described land is subject to an easement as set forth in a grant made by University Overland Express, Inc. to the Boston Edison Company, dated September 29, 1947, duly recorded in Book 7217 Page 557.

The entity is not classified as a corporation for federal income tax purposes for the taxable year in which the sale is made.

The premises do not constitute homestead property of the grantor or any other person.

Being the same premises described on Certificate of Title No. 216971 Registered in Book 1215 Page 21.

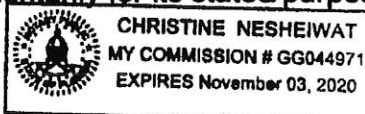
IN WITNESS WHEREOF, the said McGrath 845 Investments, LLC has caused its seal to be affixed and these presents to be signed, acknowledged and delivered in its name and behalf by Roberts S. Abrams acting in his capacity as Manager of McGrath 845 Investments, LLC, thereto duly authorized, this 17 day of April, 2017.

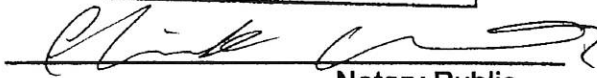

McGrath 845 Investments, LLC
By: Robert S. Abrams
Title: Manager

STATE OF FLORIDA

Palmdale, ss. (County)

On this 17 day of April, 2017 before me, the undersigned Notary Public, personally appeared Robert S. Abrams, Manager who proved to me through satisfactory evidence of identification, which was Florida Driver License to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose on behalf of McGrath 845 Investments, LLC.




, Notary Public

My Commission Expire: 11/3/2020

DOCUMENT 01759115 1

Southern Middlesex Land Court

Registry District

RECEIVED FOR REGISTRATION

On: Apr 28, 2017 at 03:25P

Document Fee: 125.00
Receipt Total: \$17,830.00

NEW: CERT 264781 BK 01507 PG 55

OLD: CERT 216971 BK 1215 PG 21



The Commonwealth of Massachusetts
Secretary of the Commonwealth
State House, Boston, Massachusetts 02133

William Francis Galvin
Secretary of the
Commonwealth

April 14, 2017

TO WHOM IT MAY CONCERN:

I hereby certify that a certificate of organization of a Limited Liability Company was filed in this office by

845 RIVERVIEW, LLC

in accordance with the provisions of Massachusetts General Laws Chapter 156C on **March 24, 2016.**

I further certify that said Limited Liability Company has filed all annual reports due and paid all fees with respect to such reports; that said Limited Liability Company has not filed a certificate of cancellation or withdrawal; and that said Limited Liability Company is in good standing with this office.

I also certify that the names of all managers listed in the most recent filing are:
EDWARD DOHERTY

I further certify, the names of all persons authorized to execute documents filed with this office and listed in the most recent filing are: **EDWARD DOHERTY**

The names of all persons authorized to act with respect to real property listed in the most recent filing are: **EDWARD DOHERTY**



In testimony of which,

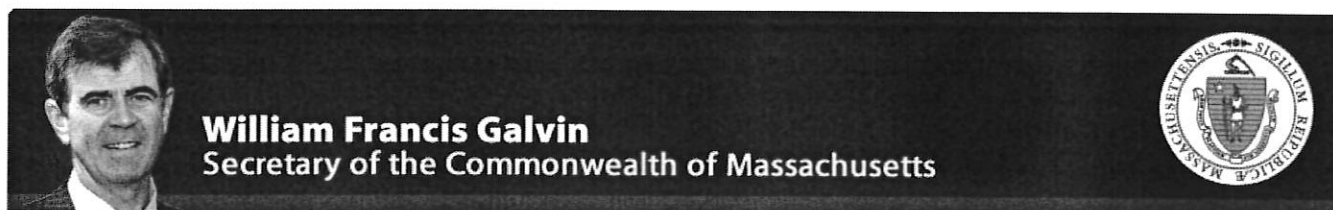
I have hereunto affixed the

Great Seal of the Commonwealth

on the date first above written.

William Francis Galvin

Secretary of the Commonwealth



William Francis Galvin
Secretary of the Commonwealth of Massachusetts

Corporations Division

Business Entity Summary

ID Number: 001215835

[Request certificate](#)

[New search](#)

Summary for: 845 RIVERVIEW, LLC

The exact name of the Domestic Limited Liability Company (LLC): 845 RIVERVIEW, LLC

Entity type: Domestic Limited Liability Company (LLC)

Identification Number: 001215835

Date of Organization in Massachusetts:
03-24-2016

Last date certain:

The location or address where the records are maintained (A PO box is not a valid location or address):

Address: 200 BROADWAY SUITE 103

City or town, State, Zip code, LYNNFIELD, MA 01940 USA

Country:

The name and address of the Resident Agent:

Name: EDWARD DOHERTY

Address: 200 BROADWAY SUITE 103

City or town, State, Zip code, LYNNFIELD, MA 01940 USA

Country:

The name and business address of each Manager:

Title	Individual name	Address
MANAGER	EDWARD DOHERTY	200 BROADWAY SUITE 103 LYNNFIELD, MA 01940 USA

In addition to the manager(s), the name and business address of the person(s) authorized to execute documents to be filed with the Corporations Division:

Title	Individual name	Address
SOC SIGNATORY	EDWARD DOHERTY	200 BROADWAY SUITE 103 LYNNFIELD, MA 01940 USA

The name and business address of the person(s) authorized to execute, acknowledge, deliver, and record any recordable instrument purporting to affect an interest in real property:

Title	Individual name	Address

REAL PROPERTY	EDWARD DOHERTY	200 BROADWAY SUITE 103 LYNNFIELD, MA 01940 USA	
<input type="checkbox"/> Consent	<input type="checkbox"/> Confidential Data	<input type="checkbox"/> Merger Allowed	<input type="checkbox"/> Manufacturing
View filings for this business entity:			
<div>ALL FILINGS Annual Report Annual Report - Professional Articles of Entity Conversion Certificate of Amendment Certificate of Cancellation</div> <div>View filings</div>			
Comments or notes associated with this business entity:			
<div></div>			
<div>New search</div>			



The Commonwealth of Massachusetts
William Francis Galvin

Minimum Fee: \$500.00

Secretary of the Commonwealth, Corporations Division
 One Ashburton Place, 17th floor
 Boston, MA 02108-1512
 Telephone: (617) 727-9640

Certificate of Organization

(General Laws, Chapter)

Identification Number: 001215835

1. The exact name of the limited liability company is: 845 RIVERVIEW, LLC

2a. Location of its principal office:

No. and Street: 5 DRAPER STREET

SUITE B

City or Town: WOBURN State: MA Zip: 01801 Country: USA

2b. Street address of the office in the Commonwealth at which the records will be maintained:

No. and Street: 5 DRAPER STREET

SUITE B

City or Town: WOBURN State: MA Zip: 01801 Country: USA

3. The general character of business, and if the limited liability company is organized to render professional service, the service to be rendered:

THE GENERAL PURPOSE OF THE BUSINESS OF THE LLC SHALL BE TO INVEST IN, HOLD, MA
 NAGE, LEASE, DEVELOP AND SELL REAL ESTATE, BUT SHALL NOT BE LIMITED TO THE SAM
 E, AND FOR ANY OTHER PURPOSE PERMITTED UNDER THE ACT.

4. The latest date of dissolution, if specified:

5. Name and address of the Resident Agent:

Name: FRANK FODERA, SR

No. and Street: 5 DRAPER STREET

SUITE B

City or Town: WOBURN State: MA Zip: 01801 Country: USA

I, FRANK FODERA, SR resident agent of the above limited liability company, consent to my appointment as the resident agent of the above limited liability company pursuant to G. L. Chapter 156C Section 12.

6. The name and business address of each manager, if any:

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
MANAGER	FRANK FODERA SR	5 DRAPER STREET WOBURN, MA 01801 USA

7. The name and business address of the person(s) in addition to the manager(s), authorized to execute documents to be filed with the Corporations Division, and at least one person shall be named if there are no managers.

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code

8. The name and business address of the person(s) authorized to execute, acknowledge, deliver and record any recordable instrument purporting to affect an interest in real property:

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
REAL PROPERTY	FRANK FODERA SR.	5 DRAPER STREET WOBURN, MA 01801 USA

9. Additional matters:

SIGNED UNDER THE PENALTIES OF PERJURY, this 24 Day of March, 2016,
FRANK FODERA, SR.

(The certificate must be signed by the person forming the LLC.)

THE COMMONWEALTH OF MASSACHUSETTS

I hereby certify that, upon examination of this document, duly submitted to me, it appears that the provisions of the General Laws relative to corporations have been complied with, and I hereby approve said articles; and the filing fee having been paid, said articles are deemed to have been filed with me on:

March 24, 2016 09:09 AM

A handwritten signature in black ink, reading "William Francis Galvin". The signature is written in a cursive style with a large, stylized 'G' at the end.

WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth



The Commonwealth of Massachusetts
William Francis Galvin

No Fee

Secretary of the Commonwealth, Corporations Division
One Ashburton Place, 17th floor
Boston, MA 02108-1512
Telephone: (617) 727-9640

Statement of Change of Resident Agent/Resident Office

(General Laws, Chapter 156C, Section 5A and Section 51)

Exact name of limited liability company: 845 RIVERVIEW, LLC

Current resident agent name: FRANK FODERA, SR

Current resident agent office address: 5 DRAPER STREET SUITE B, WOBURN, MA 01801

New resident agent office address in the commonwealth and the name of the appointed resident agent at that office:

(The company may not appoint itself resident agent. Resident agent may be an individual or a different business entity.)

Name: EDWARD DOHERTY

No. and Street: 200 BROADWAY

SUITE 103

City or Town: LYNNFIELD

State: MA

Zip: 01940

Country: USA

The street address of the resident office of the limited liability company and the business address of the resident agent are identical as required by General Laws, Chapter 156C, Section 51 and GL. Chapter 156D Section 15.08.

Consent of resident agent:

I, EDWARD DOHERTY, consent to my appointment as the resident agent of the above limited liability company pursuant to G. L. Chapter 156C Section 5A and Section 51.

This statement is effective at the time and on the date approved by the Division.

SIGNED UNDER THE PENALTIES OF PERJURY, this 4 Day of April, 2017,
EDWARD DOHERTY, Signature of Authorized Signatory.

THE COMMONWEALTH OF MASSACHUSETTS

I hereby certify that, upon examination of this document, duly submitted to me, it appears that the provisions of the General Laws relative to corporations have been complied with, and I hereby approve said articles; and the filing fee having been paid, said articles are deemed to have been filed with me on:

April 04, 2017 03:58 PM

A handwritten signature in black ink, reading "William Francis Galvin". The signature is written in a cursive, flowing style with a large initial 'W' and 'G'.

WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth

74 Middlesex Avenue Deed and Corporate Articles of Organization

Herbert L. Shulman, as Trustee of the Parkman Realty, Inc., Liquidating Trust, dated June 30, 1982, registered with the Middlesex South Registry District of the Land Court as Document No. 629921 and recorded with the Middlesex South Registry of Deeds at Book , Page , of Boston, Suffolk County, Massachusetts,

~~xxxxxx~~ for consideration paid of \$75,000.00 (Seventy-five Thousand Dollars),

grants to Jordan L. Rittenberg, of Newton, Middlesex County, Massachusetts, and Jerome M. Tuck, of Needham, Norfolk County, Massachusetts, as tenants in common, each with an undivided one-half (1/2) interest in the property, having a mailing address at 25 Boundbrook Road, Newton Highlands, Massachusetts 02161,

with quitclaim covenants,

~~xxxxxx~~ two certain parcels of land located in Somerville, Middlesex County, Massachusetts, bounded and described as follows:

(Description and encumbrances, if any)

PARCEL ONE: A certain parcel of registered land, together with the buildings thereon, situated in Somerville, Middlesex County, Massachusetts, bounded and described as follows:

EASTERLY by the westerly line of Middlesex Avenue, Ninety-five and 76/100 (95.76) feet;
SOUTHEASTERLY by the northwesterly line of Kensington Avenue, Twenty-five and 98/100 (25.98) feet;
SOUTHWESTERLY by land now or formerly of Nora Cotter et al, One hundred sixty-nine and 89/100 (169.89) feet;
NORTHWESTERLY by the southeasterly line of McGrath Highway, Thirty (30) feet;
NORTHEASTERLY Eighty-nine and 60/100 (89.60) feet; and
NORTHWESTERLY Forty-eight and 19/100 (48.19) feet, by land now or formerly of Joseph W. Crowell.

All of said boundaries are determined by the Court to be located as shown on a plan, as modified and approved by the Court, filed in the Land Registration Office, a copy of a portion of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 239, Page 581 with Certificate 35042.

Being the same premises registered in the name of Herbert L. Shulman as Trustee of the Parkman Realty, Inc. Liquidating Trust with Certificate of Title No. 165902, registered with the Middlesex South Registry District of the Land Court, Book 959, Page 152.

PARCEL TWO: A certain parcel of land, ^{unregistered,} together with the buildings thereon, situated in Somerville, Middlesex County, Massachusetts, bounded and described as follows: adjacent to the aforesaid Parcel One,

NORTHWESTERLY by McGrath Highway seventy (70) feet;
NORTHEASTERLY by the same thirty-five and 15/100 (35.15) feet;
EASTERLY by Middlesex Avenue seventy (70) feet;
SOUTHEASTERLY by a parcel of land registered in the name of the Grantor herein as Certificate of Title No. 165902 in Book 959, Page 152 of the Middlesex South Registry District of the Land Court forty-seven and 65/100 (47.65) feet; and
SOUTHWESTERLY by the same eighty-nine and 6/10 (89.6) feet.

Being lot A on a plan by Everett M. Brooks - Civil Eng. dated October 27, 1939 recorded with Middlesex South District Deeds in Book 7376, Page 551 and containing six thousand two hundred eighty-five and 4/10 (6285.4) square feet according to said plan.

Being the same premises conveyed to Herbert L. Shulman as Trustee of the Parkman Realty, Inc. Liquidating Trust, by deed dated June 30, 1982, and recorded with the Middlesex South Registry of Deeds in Book 14755, Page 122.

The grantor hereby assigns to the grantees, as part of the within conveyance, the landlord's interest in the lease of the premises from Parkman Realty, Inc., to Dunkin' Donuts of Mass., Inc., dated August 26, 1969, recorded at Book 13201, Page 378.

Excise stamps for within conveyance affixed to deed recorded hereunto.

630958

630958

Witness...my...hand and seal this 19th day of...November...1982

Herbert L. Shulman

Herbert L. Shulman as Trustee as Aforesaid

The Commonwealth of Massachusetts

SUFFOLK

ss.

November 19, 1982

Then personally appeared the above named Herbert L. Shulman

and acknowledged the foregoing instrument to be his free act and deed, before me

Stephen B. Goldenberg
Notary Public
Stephen B. Goldenberg
My Commission Expires 9-9-1988



CHAPTER 183 SEC. 6 AS AMENDED BY CHAPTER 497 OF 1969

Every deed presented for record shall contain or have endorsed upon it the full name, residence and post office address of the grantee and a recital of the amount of the full consideration thereof in dollars or the nature of the other consideration therefor, if not delivered for a specific monetary sum. The full consideration shall mean the total price for the conveyance without deduction for any liens or encumbrances assumed by the grantee or remaining thereon. All such endorsements and recitals shall be recorded as part of the deed. Failure to comply with this section shall not affect the validity of any deed. No register of deeds shall accept a deed for recording unless it is in compliance with the requirements of this section.

2-3

630958
filed by LEMIEUX
checked by J. MACKAY

DOCUMENT NO. 630958

195704 0122	
NOV 19 1982	
NOTED ON CERT. NO. 161902 REG. BK. 914 PAGE 1126 JOHN F. ZAMPARELLI-ASSISTANT RECORDER	
TRANSFER CERTIFICATE OF TITLE ISSUE AND TRANSCRIBED INTO REGISTRATION BOOK 912 PAGE 177 BEING CERTIFICATE NO. 160527 MIDDLESEX SOUTH REGISTRY DISTRICT	
Ph. 2520	
John. 6487	

REGISTRANT
NAME Frank D. Aronson, Esq. TEL 352-5200
STREET ADDRESS 201 Devonshire Street
Boston, Mass. 02110
CITY OR TOWN

Doc 01750218

2

Southern Middlesex Land Court
Registry District

RECEIVED FOR REGISTRATION

On: Dec 27, 2016 at 03:05P

Document Fee 75.00

Receipt Total: \$300.00

NOTED ON: CERT 166527 BK 00962 PG 177

ALSO NOTED ON:

Dup
Rec

From the office of:

Richard J. Levin, Esq.
Cumsky & Levin LLP
6 University Road
Cambridge, MA 02138

Deed - N

DEED

Jerome M. Tuck, an individual with a place of business c/o The Blakely Group, 68 Harvard Avenue, Brookline, Massachusetts 02445, owning a fifty (50%) percent tenancy in common interest, for nominal consideration of less than One Hundred Dollars (\$100.00),

CARE
Partial

grant to **Richard L. Tuck as Trustee of Middlesex Ave 76 Realty Trust under Declaration of Trust dated as of January 2, 2016** (and recorded immediately prior hereto) having a business address of c/o The Blakely Group, 68 Harvard Avenue, Brookline, Massachusetts 02445

(herewith)

with quitclaim covenants, my entire fifty (50%) percent tenancy in common interest in and to the following premises:

two certain parcels of land, now known and numbered 74-76 Middlesex Avenue, in Somerville, Middlesex County, Massachusetts, bounded and described as follows:

PARCEL ONE: A certain parcel of registered land, together with the buildings thereon, situated in Somerville, Middlesex County, Massachusetts, bounded and described as follows:

EASTERLY by the westerly line of Middlesex Avenue, Ninety-five and 76/100 (95.76) feet;

SOUTHEASTERLY by the northwesterly line of Kensington Avenue, Twenty-five and 98/100 (25.98) feet;

SOUTHWESTERLY by land now or formerly of Nora Cotter et al, One hundred sixty-nine and 89/100 (169.89) feet;

NORTHWESTERLY by the southeasterly line of McGrath Highway, Thirty (30) feet;

NORTHEASTERLY Eighty-nine and 60/100 (89.60) feet; and

1

166527

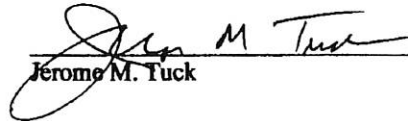


2016 01750218
Bk: 00962 Pg: 177 Cert#: 186527
Doc: DEED 12/27/2016 03:05 PM

Property Address: 74-76 Middlesex Avenue, Somerville, MA

IN WITNESS WHEREOF, the said undersigned has executed this deed under seal as my free act and deed as of January 2, 2016.

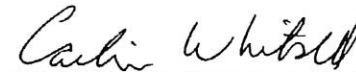



Jerome M. Tuck

STATE OF FLORIDA

Dade County, ss

On this 22nd day of December, 2016, before me, the undersigned notary public, personally appeared Jerome M. Tuck proved to me through satisfactory evidence of identification, which was ☐ a State driver's license or ☒ personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose.


Notary Public
My commission expires: 7/31/20

NORTHWESTERLY Forty-eight and 19/100 (48.19) feet, by land now or formerly of Joseph W. Crowell.

All of said boundaries are determined by the Court to be located as shown on a plan, as modified and approved by the Court, filed in the Land Registration Office, a copy of a portion of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 239, Page 581 with Certificate 35092.

Being the same premises registered in the name of Jerome M. Tuck and Jordan L. Rittenberg with Certificate of Title No. 166527, registered with the Middlesex South Registry District of the Land Court, Book 962, Page 177.

PARCEL TWO: A certain parcel of land, unregistered, together with the buildings thereon, situated in Somerville, Middlesex County, Massachusetts, adjacent to the aforesaid Parcel One, bounded and described as follows:

NORTHWESTERLY by McGrath Highway seventy (70) feet;

NORTHEASTERLY by the same thirty-five and 15/100 (35.15) feet;

EASTERLY by Middlesex Avenue seventy (70) feet;

SOUTHEASTERLY by a parcel of land registered in the name of the Grantor herein as Certificate of Title No. 166527, in Book 962, Page 177 of the Middlesex South Registry District of the Land Court forty-seven and 65/100 (47.65) feet; and

SOUTHWESTERLY by the same eighty-nine and 6/10 (89.6) feet.

Being lot A on a plan by Everett M. Brooks – Civil Eng. Dated October 27, 1939 recorded with Middlesex South District Deeds in Book 7376, Page 551 and containing six thousand two hundred eighty-five and 4/10 (6285.4) square feet according to said plan.

Being the same premises conveyed to Jerome M. Tuck and Jordan L. Rittenberg by deed from Parkman Realty, Inc. and recorded with the Middlesex South Registry of Deeds in Book 14793, Page 496.

[This Page Ends Here – Signature Page Follows]



2016 01750219

Bk: 962 Pg: 177 Cert#: 166527

Doc: TRUST 12/27/2016 03:05 PM

From the office of:

Richard J. Levin, Esq.
Cumsky & Levin LLP
6 University Road
Cambridge, MA 02138

**DECLARATION OF TRUST
OF
MIDDLESEX AVE 76 REALTY TRUST**

This Declaration of Trust is made as of January 2, 2016 by **RICHARD L. TUCK** of Newton, Massachusetts, so long as he continues to serve as Trustee, a "Trustee," and such persons, and all such persons, whether one or more, are serving as a Trustee, being referred to collectively, with any other or successor Trustees then serving the "Trustees," and the terms Trustee or Trustees and any pronoun referring thereto, shall be deemed to include his, her or their successors in trust hereunder and mean the Trustee or Trustees for the time being hereunder, wherever the context so permits).

WITNESSETH

1. The Trust hereby created shall be known as the **MIDDLESEX AVE 76 REALTY TRUST** and under that name so far as legal, convenient and practical, shall all acts of the Trustees be made and all instruments in writing by the Trustee be executed. The Trust shall have a place of business c/o Richard L. Tuck, The Blakely Group, 68 Harvard Avenue, Brookline, Massachusetts 02445.

2. All property, real and personal, tangible and intangible, conveyed to the Trustees hereunder (hereinafter called the "**Trust Property**") shall vest in the Trust or Trustees as Trustees of this Trust, in Trust to manage, administer and dispose of the same for the sole benefit of the beneficiary or beneficiaries from time to time hereof, within the powers and subject to the limitations hereinafter contained concerning the same.

3. The original beneficiaries of this Trust are the persons listed as beneficiaries of this Trust in the Schedule of Beneficial Interests (hereinafter individually called a "**beneficiary**" and collectively called the "**beneficiaries**"), executed this day by them and filed with the Trustees, and their interests are as therein stated. The original beneficiaries and/or any subsequent beneficiaries shall have the right to assign and transfer the beneficial interest of such beneficiary hereunder in whole or in part, by instrument in writing and under seal, executed by the beneficiary so assigning and transferring, designating the beneficial interests so assigned and transferred and the person to whom the same is so assigned and transferred, and any such transfer shall, for all purposes take effect upon the receipt thereof by the Trustee or Trustees then in office hereunder. The beneficiary or beneficiaries hereof at any time and from time to time shall be entitled to receive and collect all of the income and profits of the Trust and/or the Trust property and assets then held by the Trustee or Trustees. The Trustees shall distribute to the beneficiaries not later than December 31 of each year, the net income of said Trust unless otherwise directed by

beneficiaries owning at least Seventy-five (75%) percent of the beneficial interest. Any distributions of or from the Trust property among the beneficiaries hereof, if more than one, shall be according to the percentage of beneficial interests held by them respectively.

A certificate or other writing signed by any of the persons appearing from the records of the Registry of Deeds in the County in which this Declaration of Trust is recorded or filed (the "**Registry**") to be the then Trustees hereof: (i) certifying or asserting to the identities of the beneficiaries, (ii) stating whether or not this Declaration of Trust has been amended or terminated, or (iii) stating that any action has been approved or taken by the beneficiaries owning at least Seventy-five (75%) percent of the beneficial interest of the Trust (without any requirement that such certificate identify the beneficiaries), shall be conclusive in favor of any person dealing with the Trustees or with any of the trust property, and any such person may rely thereon without further inquiry. Execution, delivery or recording of such certificate shall not be a condition precedent to the validity of any transaction of the Trust.

Each original Trustee and any successor Trustee, may, without impropriety, become a beneficiary hereunder and exercise all rights of a beneficiary with the same force and effect as though he were not a Trustee. The parties hereunder recognize that if a sole Trustee and a sole Beneficiary are one and the same person, legal and equitable title hereunder shall merge as a matter of law.

4. Insofar as third persons dealing with the Trustees are concerned, the following provisions shall govern:

(a) Except as hereinafter provided in case of termination of this Trust, always subject to the direction of the beneficiaries owning at least a seventy-five (75%) percent beneficial interest in the Trust (and as to such direction a certificate delivered pursuant to Section 3 hereof shall be conclusive), the Trustees, and each of them alone, shall have full right, power and authority to deal with any trust property held by them as Trustees hereunder, with the same force and effect as though such trust property were individually owned by them; and without limiting the generality of the foregoing, the Trustees, and any of them acting alone, shall have full right, power and authority to (i) execute and deliver any and all instruments, such as deeds, mortgages, security instruments, guaranties, leases and the like with respect to the trust property, as the Trustees shall from time to time determine; (ii) purchase or otherwise acquire title to the trust property; (iii) rent, lease or hire from others any property or rights to property, real or personal, and to own and hold such property and such rights, real or personal; (iv) borrow money and to execute and deliver notes or other evidence of such borrowing with respect to the trust property, or guaranty the indebtedness of third persons; (v) grant or acquire rights or easements with respect to the trust property; (vi) enter into agreements or arrangements for the use or occupation including, without limitation thereof, leases, subleases, licenses or concessions, with respect to the trust property or any part or parts thereof; and (vii) sell, convey, assign, mortgage or otherwise dispose of all or any part of the trust property;

(b) Any and all instruments executed by the Trustees, or any of them acting singly, may create obligations extending over periods of time, including periods extending beyond the date of any possible termination of this Trust;

(c) A direction to the Trustees by the Beneficiaries may be by a Durable Power of Attorney;

(d) No person dealing with the Trustees, or any of them alone, shall be under any obligation to inquire as to the propriety of any action or omission by the Trustees, and such person shall be conclusively protected in assuming without further inquiry that any action taken by the Trustees,

and either of them alone, including the execution of any deed, note, mortgage, lease or other instrument, is valid and duly authorized hereunder; and

(e) The Trustees, or any of them alone, shall have the right to delegate to any person or persons (natural or corporate), authority to execute any and all instruments or take any and all other action which the Trustees are authorized and empowered so to do by the terms of this instrument.

5. Solely as between the Trustees on the one hand, and the beneficiaries on the other, it is understood and agreed that the Trustees shall:

(a) Execute only such instruments, including but without limitation, deeds, notes, guaranties, mortgages and leases of trust property, as the Trustees may from time to time be specifically directed by the persons who at the time may be the beneficiaries of the Trust;

(b) Take any such action with respect to the trust property as may from time to time be specifically directed by the beneficiaries;

(c) Do any such other things as the Trustees may be specifically authorized or specifically directed to do by the terms of this instrument; except that no Trustee shall be required to take any action which would, in the opinion of such Trustee, involve the Trustees in any personal liability unless the Trustees shall have first been indemnified to their satisfaction; and

(d) Execute only such instruments and take only such action as shall have been authorized and directed by the beneficiaries thereof.

The provisions of this Paragraph 5 shall be applicable only as between the Trustees on the one hand and the beneficiaries on the other; but the limitations set forth in this Paragraph 5 shall in no way derogate from the apparent authority conferred upon the Trustees, pursuant to the provisions of Paragraph 4 above, insofar as third persons are concerned.

PROVIDED, ALWAYS, that the Trustees shall have no power or authority, by virtue of any provision anywhere in this instrument contained or otherwise, either

A. To borrow money on the credit, or on behalf of the beneficiary or beneficiaries hereof or any of them personally, or to make any contract on behalf of, or binding on, the beneficiary or beneficiaries hereof or any of them personally, or to incur any liability whatever on behalf of, or binding on, the beneficiary or beneficiaries hereof or any of them personally, or otherwise to bind the beneficiary or beneficiaries hereof or any of them personally; or

B. To maintain a bank account, collect or receive rent or other payments, make disbursements or pay bills, distribute income or other property, maintain books, own other assets other than as nominee, or to engage in any activity which would subject this Trust to Massachusetts or Federal taxation; it being expressly provided that any provision anywhere in this instrument contained which may be construed as contrary to this clause shall be null and void and of no effect whatsoever.

6. This Trust shall be terminated at any time by the beneficiary (or, if more than one, by beneficiaries owning more than seventy-five (75%) percent of the beneficial interest in this Trust, by notice in writing to the Trustees, signed and duly acknowledged, provided such termination shall be effective only when a certificate thereof, signed by the Trustees, shall be recorded with the Registry; but

in no event shall the trust hereby created last beyond the earlier of the expiration of the period of ninety (90) years from the date hereof or termination by action of the beneficiary. Upon such termination, the Trustees shall transfer and convey the specific assets constituting the trust property, subject to any leases, mortgages, contracts or other encumbrances on the trust property, to the beneficiary or beneficiaries hereof (as tenants-in-common) in proportion to their respective beneficial interests if more than one; or as otherwise directed by all of the beneficiaries if more than one.

7. Any Trustee hereunder may resign by written instrument signed and acknowledged by such Trustee and recorded with the Registry, a copy prior thereto having been furnished to each then beneficiary hereunder and all remaining Trustees. The then beneficiaries shall have the right to appoint a succeeding Trustee or remove any then Trustee by a writing signed and acknowledged by all of such beneficiaries. Such appointment or removal may be evidenced either by: (i) a certificate signed by the persons who, in such certificate, represent and warrant that they are all of the then beneficiaries hereof, which certificate shall be filed with said Registry, or (ii) a certificate of the continuing Trustees or the newly designated Trustee that such appointment or removal has been effected by all of the then beneficiaries hereof and in the case of an appointment, the acceptance in writing by the Trustee (or Trustees) appointed which certificate shall be filed with said Registry; and the facts set forth in either such certificate shall be conclusive and may be relied upon by all third persons thereafter dealing with this Trust.

Upon appointment of any new or succeeding Trustee, title to the trust property and all portions thereof shall thereupon be vested in said new or succeeding Trustee, jointly with the remaining Trustees, if any, without the necessity of any conveyance or instrument. Each new or succeeding Trustee shall have all of the rights, powers, authority, and privileges as if named as an original Trustee hereunder; and no Trustee, original or successor, shall be required to furnish any bond or surety or other security for the performance of any of his duties hereunder.

8. This Declaration of Trust may be amended from time to time by an instrument in writing, signed by beneficiaries owning One Hundred (100%) of the beneficial interest in this Trust and by the then Trustees hereof; provided that such amendment shall not be effective until a certificate of such amendment, signed and acknowledged either (i) by the then Trustees hereof or (ii) by the persons who, in such certificate, represent and warrant that they are all of the then beneficiaries hereof, is filed with the aforesaid Registry, which certificate shall conclusively establish such amendment.

9. The Trustees hereunder shall not be liable for any error of judgment nor for any loss arising out of any act or omission in good faith, but shall be responsible only for his own willful breach of trust, and not for the acts, receipts, neglects or defaults of any other Trustee, or any person employed by him, nor of any bank, trust company, broker or other person with whom or into whose hand any monies or other things of value may be deposited or come, nor for any defect in title of any property acquired. Subject to the provisions of this Paragraph 9, the Trustees hereunder shall be entitled to indemnity out of the assets of the Trust against liability incurred in the execution of the terms and provisions hereof.

No license of court shall be requisite to the validity of any transaction entered into by the Trustees. No purchaser or lender shall be under any liability to see the application of the purchase money or of any money or property loaned or delivered to any Trustee, or to see that the terms and conditions of this Trust have been complied with.

Every agreement, lease, deed, mortgage or other instrument executed by all the Trustees, acting together, or executed by any one Trustee shall be conclusive evidence in favor of every person relying thereon or claiming thereunder that, at the time of the delivery thereof, this Trust was in full force and effect and that the execution and delivery thereof was duly directed by the beneficiaries.

Any person dealing with the trust property or the Trustees may always rely, without further inquiry, on a certificate signed by any person(s), appearing from the records of said Registry, to be a Trustee hereunder as to who are the Trustees or the beneficiaries hereunder, or as to the authority of the Trustees to act, or as to the existence or non-existence of any fact or facts which constitute conditions precedent to acts by the Trustees, or which are in any other manner germane to the affairs of this Trust.

10. Any person contracting or otherwise dealing in any manner with the Trustees or any of them alone or any agent or representative of the Trust, having any debt, judgment or claim of whatever nature against the Trustees, Trust, Trust Estate or beneficiaries or any of them shall look only to the funds and property of this Trust for payment or satisfaction, and shall not hold responsible any Trustee individually nor any beneficiary of said Trust. No Trustee, beneficiary, agent, employee or representative of this Trust shall ever be personally liable for or on account of any contract, debt, tort, claim, damage, judgment, decree, or any other obligation that is or may otherwise become due or payable arising out of or in connection with the Trust Property or the conduct of the business in this Trust. In every contract and instrument made or executed by the Trustees, reference shall be made to this Trust, and by such reference a provision shall be deemed included therein that the same is executed by the Trustees with the express understanding and agreement that nothing therein contained shall be construed as creating any personal liability or obligation on the part of the Trustees or the Beneficiaries and that every person now or hereafter claiming any right or security under any such instrument shall look solely to the Trust property for the payment thereof and the enforcement of any lien thereby created or the enforcement of any covenant, condition, obligation or agreement contained therein.

11. In the construction hereof, whether or not so expressed, words used in the singular or in the plural, respectively, include females and words denoting persons include individuals, firms, associations, companies, trusts and corporations, unless a contrary intention is to be inferred from or required by the subject matter or context. Nothing contained in this Trust is to be construed in any way whatsoever to allow the Trustees to own other assets other than as nominee hereunder. It is the further intent of all parties that this is not to be considered as a business or commercial trust and that the Trustees are not to conduct any business enterprise or carry on any profit-making activity. This Trust is merely to hold title to the trust property and to protect and conserve the trust property by signing deeds, leases, notes or other necessary documents and to otherwise act as directed by the beneficiaries.

All the trusts, powers and provisions herein contained shall take effect and be construed in accordance with the law of the Commonwealth of Massachusetts.

[This Page Ends Here – Signature Page Follows]

WITNESS the execution hereof, under seal, in any number of counterpart copies, each of which counterpart copies shall collectively be deemed one instrument for all purposes, as of the date and year first written above.

MIDDLESEX AVE 76 REALTY TRUST

By: [Signature]
Richard L. Tuck, Trustee

THE COMMONWEALTH OF MASSACHUSETTS

Norfolk, ss

On this 22 day of December, 2016 before me, the undersigned notary public, personally appeared Richard L. Tuck, proved to me through satisfactory evidence of identification, which was ☐ a State driver's license or ☐ personal knowledge, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed it voluntarily for its stated purpose individually and as Trustee of Middlesex Ave 76 Realty Trust.



[Signature]
Notary Public

My commission expires: 01/04/2019

Doc 017502

Southern Middlesex Land
Registry District

RECEIVED FOR REGISTRATION

On: Dec 27, 2016 at 03:05P

Document Fee 225.00

Receipt Total: \$300.00

NOTED ON: CERT 166527 BK 00962 PG 177

ALSO NOTED ON:

