CITY OF SOMERVILLE PLANNING BOARD APPLCATION

REVISION TO MOBILITY DIVISION DOCUMENTS

PREVIOUSLY FILED ON JUNE 12, 2023

APPLICANT:	SGL Development, Inc.
SUBJECT PROPERTY:	32-40-44 White Street, Somerville, Massachusetts
CASE NUMBER:	P&Z 22-054

The Applicant is replacing the previously submitted file entitled "White St 32-44-Mobility Division Documents-2023-6-12" with this new file entitled "White St 32-44-Mobility Division Documents-2023-6-23" to make the following changes:

- Revise Pages 11-16 of the Transportation Access Plan Sheets in response to PSUF comments to increase the size of the bioswale.

CITY OF SOMERVILLE

Inspectional Services • Planning Board • Zoning Board of Appeals

CERTIFICATION OF REQUIRED MATERIALS
BY CITY OF SOMERVILLE MOBILITY DIVISION

Development Site Address: 32, 40, and 44 White Street
Applicant Name: Adam Siegel, SGL Development

As required by the Somerville Zoning Ordinance and/or the City of Somerville's Development Review Submittal Requirements, I certify that I have received and approved the following materials for the development proposal identified above:

☒ Transportation Access Plan

☒ Transportation Impact Study
- Approved TIS Scoping Letter
- Final TIS Study

☒ Mobility Management Plan
- Mobility Management Plan
- Signed MMP Final Approval Letter

Signature: _____ Date: May 9th 2023

Mobility Division Representative

MEMORANDUM
TRANSPORTATION-ACCESS PLAN

32, 40, AND 44 WHITE STREET
SOMERVILLE, MASSACHUSETTS

March 21, 2023

Prepared for SGL Development

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

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TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

MEMORANDUM

Ref: 1611

To: Brad Rawson
Director, Mobility Division
City Hall
93 Highland Avenue, 3rd Floor
Waltham, Massachusetts 02452

From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
keh@teppllc.com

Subject: Transportation-Access Plan
32, 40, and 44 White Street
Somerville, Massachusetts

Date: March 21, 2023

PROJECT SUMMARY

SGL Development (the "Applicant") has retained TEPP LLC to prepare a Transportation Access Plan (TAP) for the proposed project at 32-44 White Street (the "Project") in the City of Somerville, Massachusetts. The Project consists of the demolition of the existing buildings and the construction of a four-story research and development/life science office building consisting of approximately 40,600 square feet of floor area excluding mechanical space. The Project will provide no vehicle parking on site but have approximately 15 bicycle parking spaces, comprised of 12 long-term covered spaces and secured and three short-term spaces.

The Project development site address is 32-44 White Street (Mid-Rise 4).

CONTACT INFORMATION

OWNERS

32 White Street (Lot 31-C-52)
Owner: Gary F Shea, Teresa A Grove

40 White Street (Lot 31-C-53)
Owner: Russell W Shea and Gary F Shea, Trustees of PJ Realty Trust

44 White Street (Lot 31-C-57)
Owner: ETS Family Investments LLC

TEPP

APPLICANT

SGL Development, Inc.
810 Memorial Drive, Suite 105
Cambridge, Massachusetts 02139
Adam Siegel, Principal
Telephone: (978) 314-7075
Email: adam@sgldevelopment.com

SITE ACCESS AND PLANS

The Project site is bounded by or near existing roadways, residential, commercial buildings, and the nearby Porter Square Shopping Center parking lot. The site is located in the Porter Square neighborhood along White Street, approximately 400 feet away from the Massachusetts Bay Transportation Authority (MBTA) Porter Square MBTA Station. The 32-44 White Street site is located on the corner of White Street and White Street Place and bounded by Elm Street to the east and Somerville Avenue to the west. The closest intersections to the Project site are:

- Somerville Avenue at White Street (signalized)
- Elm Street at White Street (unsignalized)

The Applicant proposes to close two curb openings at 32 and 40 White Street and proposes a curb opening for the loading dock on White Street Place. The loading entrance will serve as the access point for vehicular ground movements including access to the Project's loading and service operations like trash collection. White Street Place is a private way and a two-way roadway. White Street is a public one-way roadway from Elm Street to the Porter Square Shopping Center parking lot driveway, where White Street becomes two-way, which minimizes vehicular circulation through the neighborhood. Access to the site will be primarily pedestrian oriented. The main pedestrian entry will be recessed and located on the corner of White Street and White Street Place facing White Street, with a secondary pedestrian entry to the northeast of the main entrance on White Street.

No vehicle access to the site or parking on site is proposed. One loading dock will be located off White Street Place away from the entry corner.

ILLUSTRATIVE SITE PLAN

The Illustrative Site Plan shown in Appendix (Sheet TAP-1) depicts the general ground level floor and site landscape plan. The interior ground level floor plan color-differentiates each of the individual spaces, including the commercial space, lobby, shipping and receiving, trash and recycling, passenger elevator, and circulation. Additional research and development/life science office space will be located on the three upper floors. The basement and certain areas on the ground level will consist of circulation, flexible space, tenant space, and building operations.

TRANSPORTATION-ELEMENTS PLAN

The Transportation Elements Plan is shown in the Appendix (TAP-2). This plan identifies existing transportation elements to remain in gray, items to be removed in red, and proposed transportation elements in blue.

Proposed changes to signage will primarily consist of on-street parking modifications along White Street. The Applicant proposes a crosswalk across White Street Place on the corner of White Street and White Street Place to enhance pedestrian safety and mobility.

Bicycle improvements include new bike racks along White Street as well as new long-term and short-term bicycle storage spaces. Proposed street furniture, street trees and landscaping are included along the sidewalks on White Street and White Street Place.

PEDESTRIAN-ACCESS PLAN

Multiple pedestrian access points into the Project are proposed along White Street. The main entry leads to the lobby area and is internally connected as shown in the Appendix (TAP-3). Three pedestrian access points will be provided to the first-floor commercial space along White Street. A rear stairwell entry is located northeast of the main entrance on White Street.

The sidewalks along White Street and White Street Place adjacent to the site are proposed at a width of 12 feet. The wide sidewalks are consistent with the mid-rise district requirements and provide an improved level of comfort for the public realm.

BICYCLE-PARKING PLAN

Bicycle parking design and layout references and complies with the Somerville Zoning Ordinance. Bicycle parking, short- and long-term, will be provided at no cost or fee to users of the Project.

This Project will provide above-minimum short-term and long-term bicycle parking spaces for the proposed land used and size of the Project. As shown in the Appendix (TAP-4), the proposed bicycle parking will consist of covered long-term outdoor as well as short-term bicycle racks near the building's primary entrance. The Project will provide 12 secure covered bicycle parking spaces accessed from the west side of the building on White Street. The Project is exceeding the minimum requirements for bicycle parking.

Bicycle parking will be secure via key-fob access or similar and protected by security/monitoring. Locker rooms with shower facilities will be provided for tenant employees.

MOTOR-VEHICLE PARKING PLAN

The Project will not provide any on-site parking (see Sheet TAP-5 in Appendix).

VEHICLE-MOVEMENT PLAN

Loading and service operations will occur in the designated loading area near the southwest corner of the building. Vehicles will back into the loading bay via the private way along White Street Place to the west. The loading bay will be approximately 19 feet wide and accommodate a single 24-foot box truck. All vehicle movements exiting the loading area will also be forward-out, with a right turn to White Street Place northbound. As shown in the Appendix (TAP-6), the largest vehicles expected to use the loading area are 24-foot box trucks that are typical for a building of this size.

The loading bay will also provide access to the trash room to remove waste and recycling, a freight elevator, and a service corridor for efficient distribution of deliveries within the building. Garbage pick-up activity will also take place in the loading area with garbage trucks pulling onto White Street Place front-first from White Street before backing into the loading area.

The loading bay facility is not expected to have high turnover and is consistent with the minimums outlined in the Somerville Zoning Ordinance.

APPENDIX

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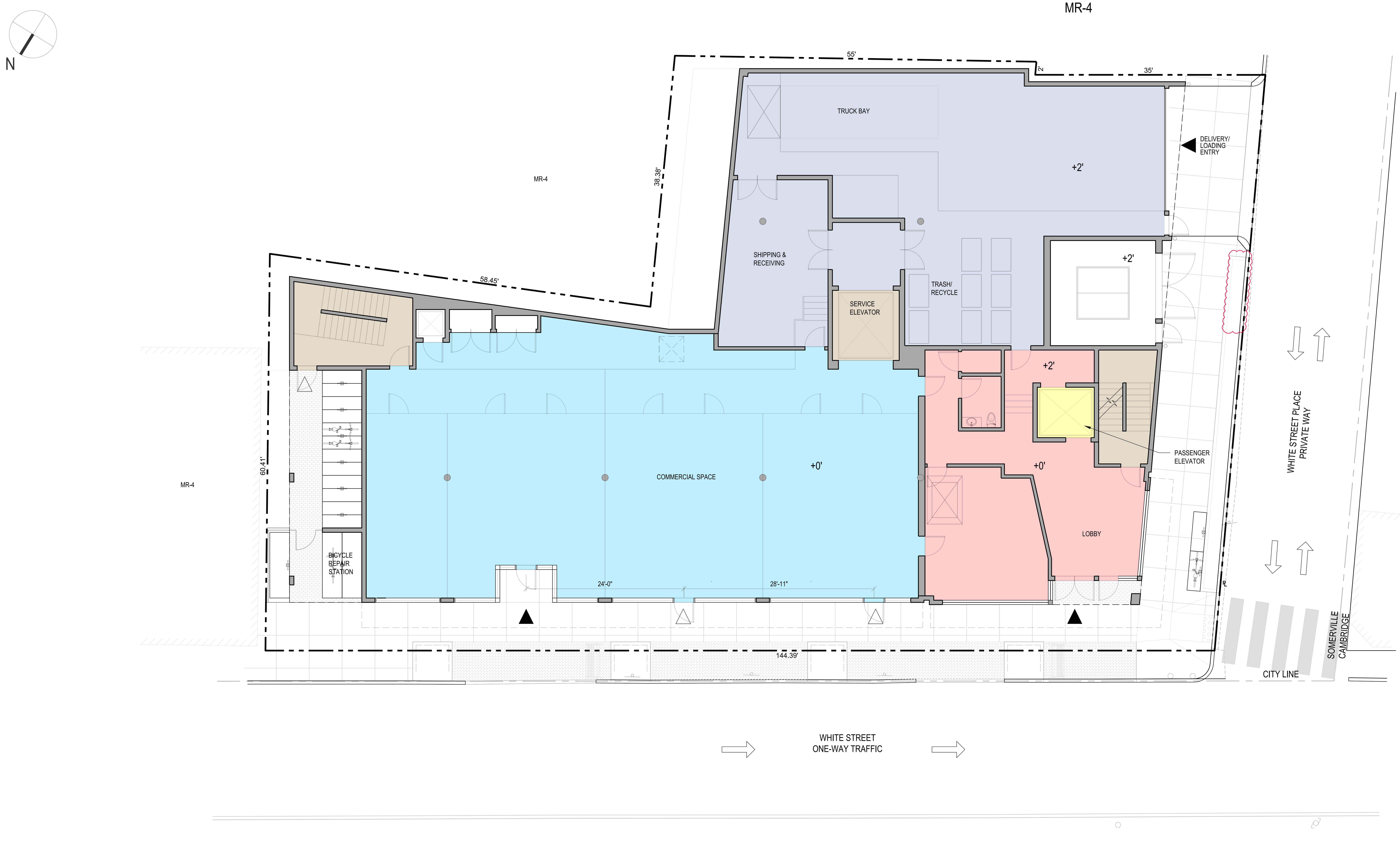


FOR CITY OF SOMERVILLE USE

SCHEMATIC CONCEPT DESIGN FOR DISCUSSION ONLY AND NOT FOR CONSTRUCTION

0 5 10 20 FEET

TRAVEL LANE	LOBBY
PRIMARY ACCESS	COMMERCIAL SPACE
SECONDARY ACCESS	DELIVERY/ LOADING/ TRASH AREAS
PROPERTY LINE	PASSENGER ELEVATOR
	CIRCULATION

Notes

1. Existing Lot No. 31-C-52, 31-C-53, 31-C-57.

STAMPED WITH RESPECT TO TRANSPORTATION ENGINEERING ONLY

COMMONWEALTH OF MASSACHUSETTS KIM ERIC HAZARVARTIAN CIVIL No. 32570 REGISTERED PROFESSIONAL ENGINEER

32-44 WHITE STREET

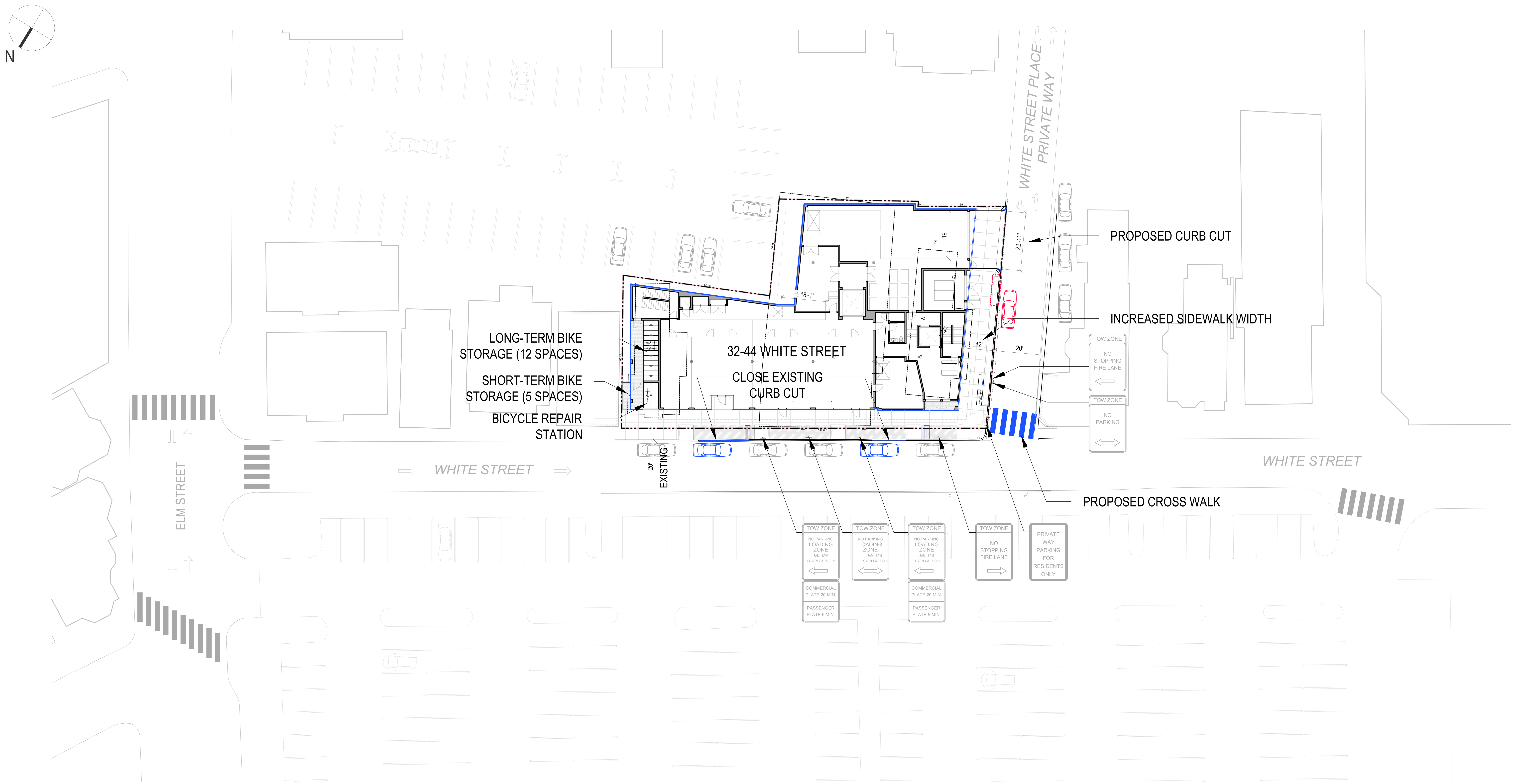
ILLUSTRATIVE SITE PLAN

TAP - 1

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
Email: tepp@teppllc.com
Web: www.teppllc.com

Date: June 23, 2023

Scale: 1/8" = 1' - 0"



FOR CITY OF SOMERVILLE USE

SCHEMATIC CONCEPT DESIGN FOR DISCUSSION ONLY AND NOT FOR CONSTRUCTION

0 10 20 40 80 FEET

EXISTING ELEMENTS TO BE REMOVED
EXISTING ELMENTS TO REMAIN
PROPOSED ELEMENTS
SIGN TO BE REMOVED
SIGN TO REMAIN
PROPOSED SIGN
PARKING TO BE REMOVED
EXISTING PARKING
PROPOSED BICYCLE RACK
PROPOSED BENCH

Notes
1. Existing Lot No. 31-C-52, 31-C-53, 31-C-57.

STAMPED WITH RESPECT TO TRANSPORTATION ENGINEERING ONLY

COMMONWEALTH OF MASSACHUSETTS KIM ERIC HAZARVARTIAN CIVIL No. 32570 REGISTERED PROFESSIONAL ENGINEER

32-44 WHITE STREET

TRANSPORTATION ELEMENTS PLAN

TAP - 2

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
Email: tepp@tepllc.com
Web: www.teppllc.com

Date: June 23, 2023

Scale: 1" = 20' - 0"

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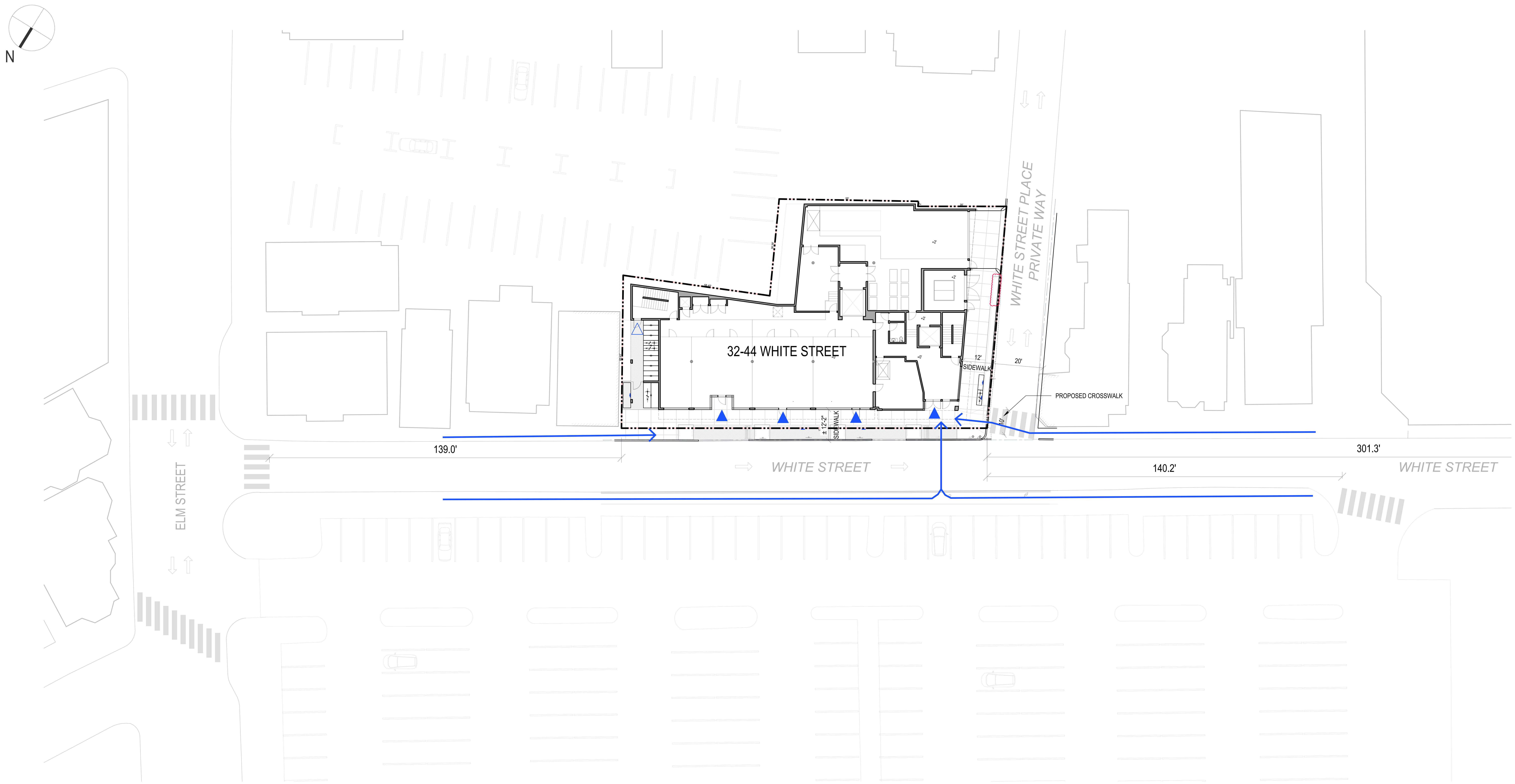

FOR CITY OF SOMERVILLE USE

SCHEMATIC CONCEPT DESIGN FOR DISCUSSION ONLY AND NOT FOR CONSTRUCTION

0 10 20 40 80 FEET

TRAVEL LANE

PRIMARY ACCESS (PUBLIC)

SECONDARY ACCESS (EMPLOYEES)

PROPERTY LINE

PEDESTRIAN PATH OF TRAVEL

Notes

1. Existing Lot No. 31-C-52, 31-C-53, 31-C-57.

STAMPED WITH RESPECT TO TRANSPORTATION ENGINEERING ONLY

COMMONWEALTH OF MASSACHUSETTS KIM ERIC HAZARVARTIAN CIVIL No. 32570 REGISTERED PROFESSIONAL ENGINEER

32-44 WHITE STREET

PEDESTRIAN ACCESS PLAN

TAP - 3

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
Email: tepp@tepplic.com
Web: www.tepplic.com

Date: June 23, 2023

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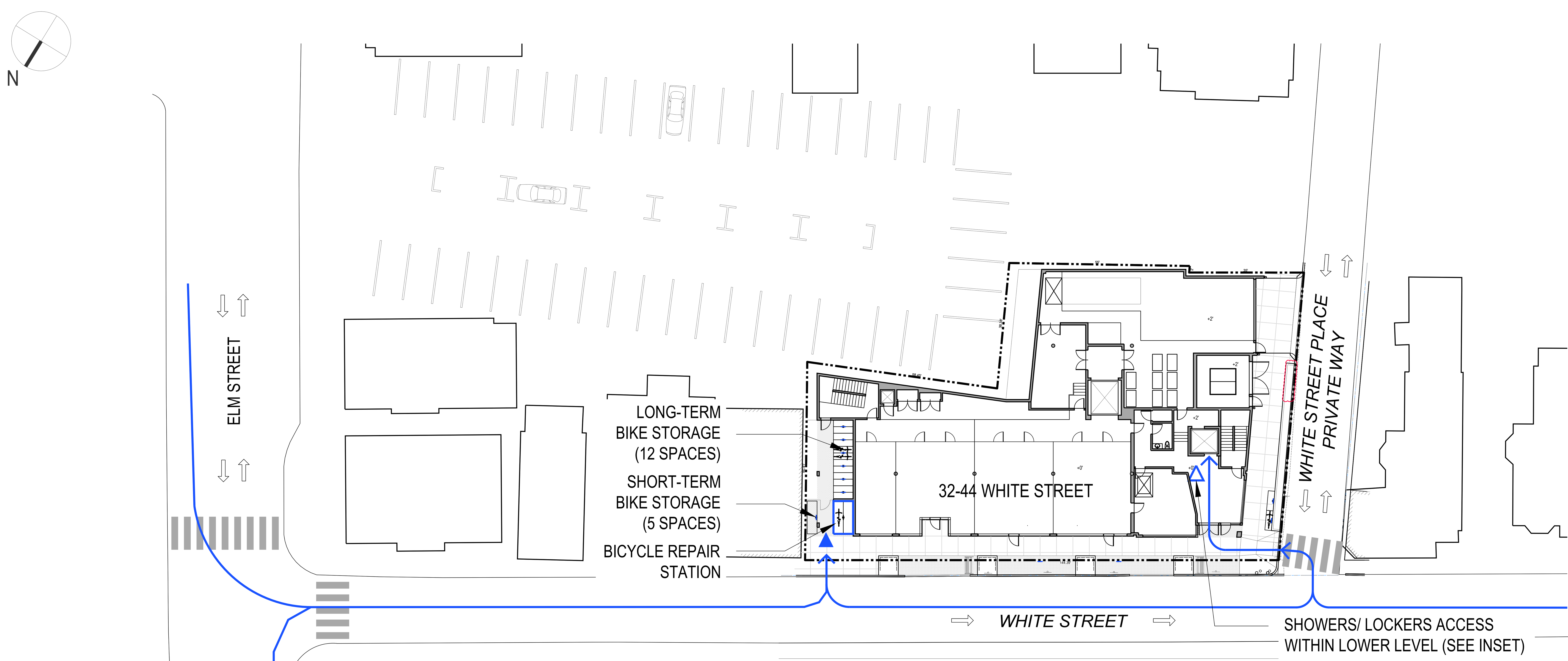
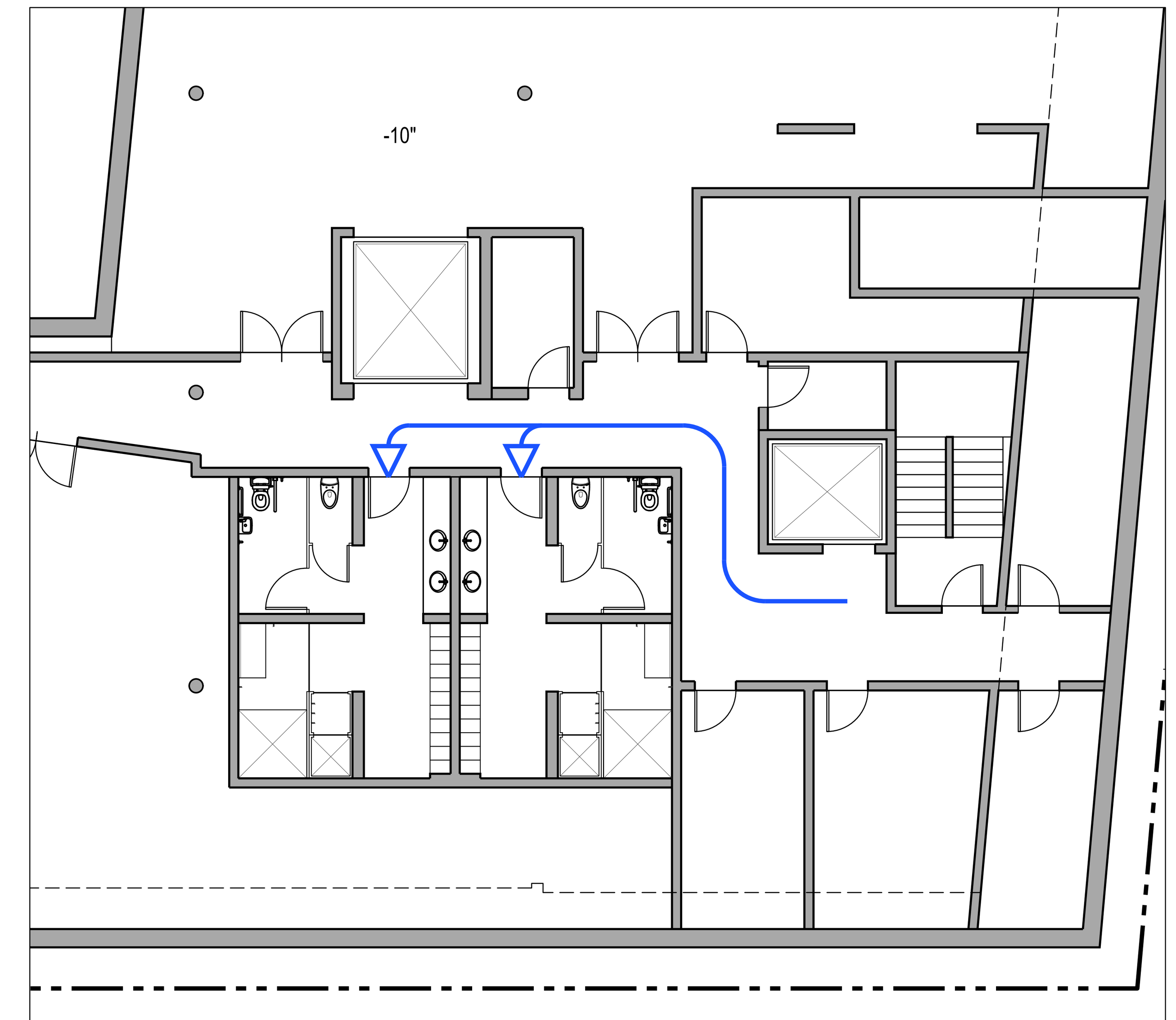
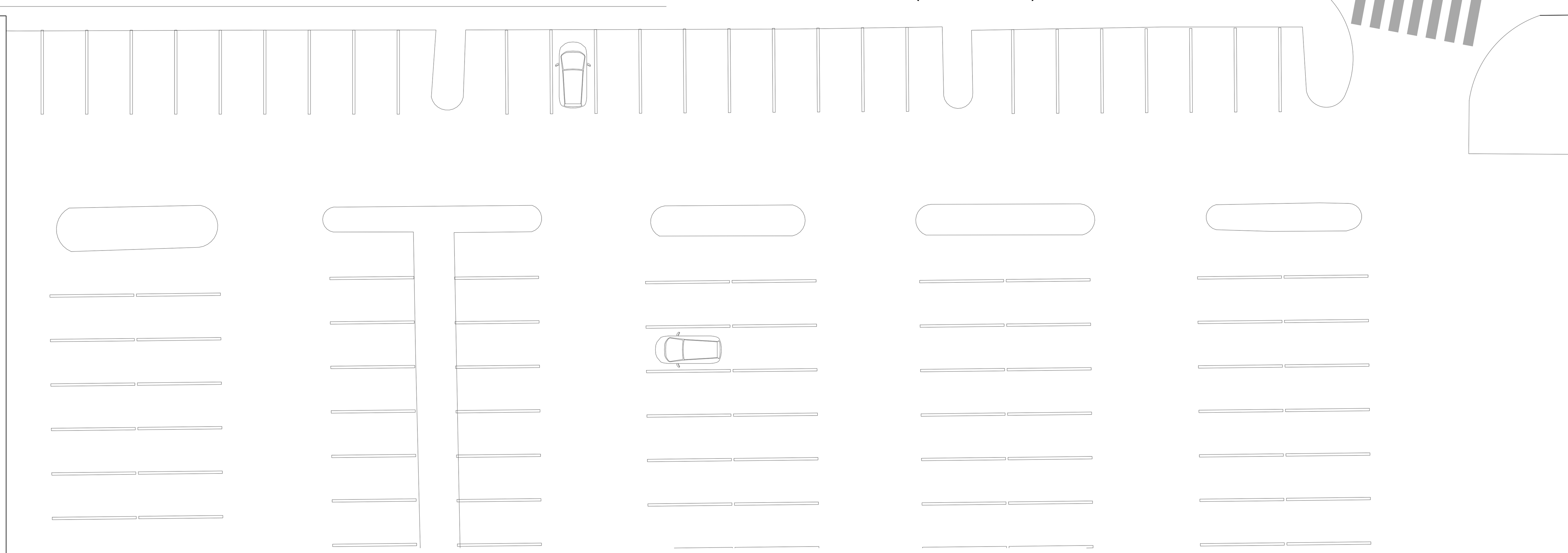
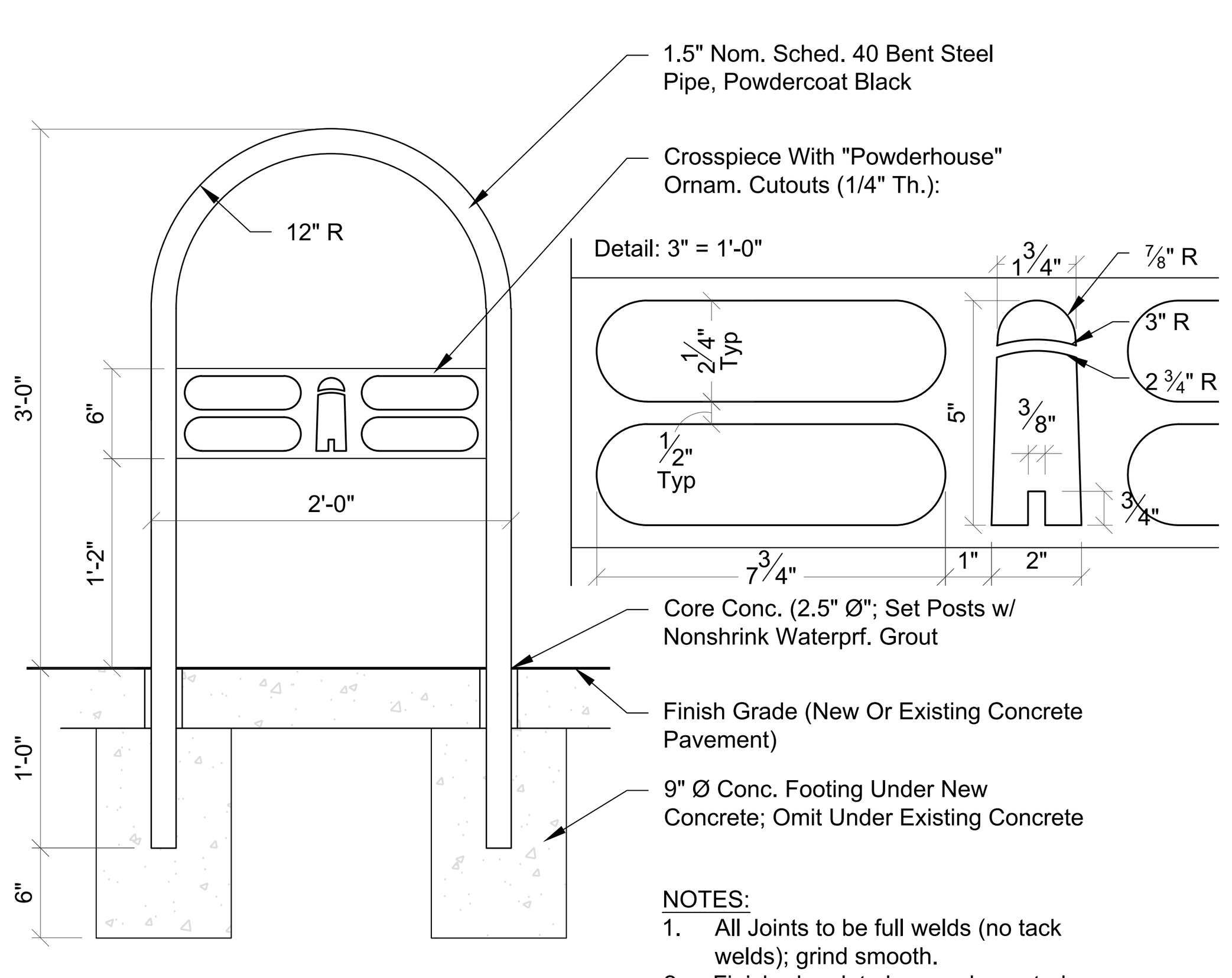




SHOWERS/LOCKERS ON LOWER LEVEL



Bike Rack



NOTES:
1. All Joints to be full welds (no tack welds); grind smooth.
2. Finished rack to be powdercoated; color to be black.

SOMERVILLE STANDARD BICYCLE RACK
SCALE: 1"=1'-0"

Bike Rack

Somerville Bike Racks Specs

2.00 Materials

A. Bicycle Racks shall be a "vintage style" with a Somerville custom "Powderhouse" rack plate as shown on the Drawings, manufactured by Cycle Safe Inc. of Ada, MI or Approved Equal. Submit Manufacturer's Shop Drawings.

B. The rack shall be composed of Schedule 40 Steel Pipe and ¼" Steel plate, according to 2.10, Metal Fabrications, above. All surfaces shall be smoothed and free from burrs, barbs, splinters, and sharpness, and all edges and ends rolled, rounded, or capped.

C. The entire rack shall be coated with an e-coat primer and then finished with a BLACK polyester powder coat.

3.00 Installation

A. The rack shall be installed so that the bottom of the custom rack plate is 14 inches above the ground surface and the top of the rack plate is 20 inches above the ground surface and that the top of entire rack is 36 inches above the ground surface, as shown on the Drawings.

1. Racks in new pavement areas shall be anchored in concrete to a depth of 18 inches below the surface as shown on the Drawings.
2. Racks in existing pavement shall be core-drilled and set so that the rack meets the dimensions noted above, and the posts are securely anchored. Avoid damage to existing paving.

B. Install bicycle racks level, plumb, true, and positioned at locations indicated on Drawings.

C. Post Setting: Set cast-in posts in concrete footing with smooth top, shaped to shed water. Protect portion of posts above footing from concrete splatter. Verify that posts are set plumb or at correct angle and are aligned and at correct height and spacing. Hold posts in position during placement and finishing operations until concrete is sufficiently cured.

D. Installation Tolerances; Install bicycle racks to comply with the foloowing maximum tolerance:

1. Location: Plus or minus ½ inch.
2. Height: Plus or minus ¼ inch.
3. Alignment of Adjacent Units: Plus or minus ½ inch in ten feet; 1 inch over total length.
4. Plumb: Plus or minus ¼ inch.
5. Level: Plus or minus ¼ inch.

NOTE: ACCESS TO BICYCLE RACKS DOES NOT REQUIRE LIFTING OR TRAVERSING STAIRS.

FOR CITY OF SOMERVILLE USE

SCHEMATIC CONCEPT DESIGN FOR DISCUSSION ONLY AND NOT FOR CONSTRUCTION

0 10 20 40 80 FEET

- TRAVEL LANE
- BICYCLE STORAGE POINT OF ACCESS
- SHOWERS/ LOCKERS POINT OF ACCESS
- PROPERTY LINE
- BICYCLE PATH OF TRAVEL
- PROPOSED BIKE RACK
- PROPOSED BICYCLE REPAIR STATION (6' X 10')

BICYCLE PARKING ZONING REQUIREMENTS		TOTAL BICYCLE PARKING PROVIDED	
SHORT-TERM / VISITOR	LONG-TERM	SHORT-TERM / VISITOR	LONG-TERM
1 SPACE PER 20,000-SF (0.5)	1 SPACE PER 5,000-SF (2)	5 SPACES	12 SPACES

Notes
1. Existing Lot No. 31-C-52, 31-C-53, 31-C-57.

STAMPED WITH RESPECT TO TRANSPORTATION ENGINEERING ONLY

COMMONWEALTH OF MASSACHUSETTS KIM ERIC HAZARVARTIAN CIVIL No. 32570 REGISTERED PROFESSIONAL ENGINEER

32-44 WHITE STREET

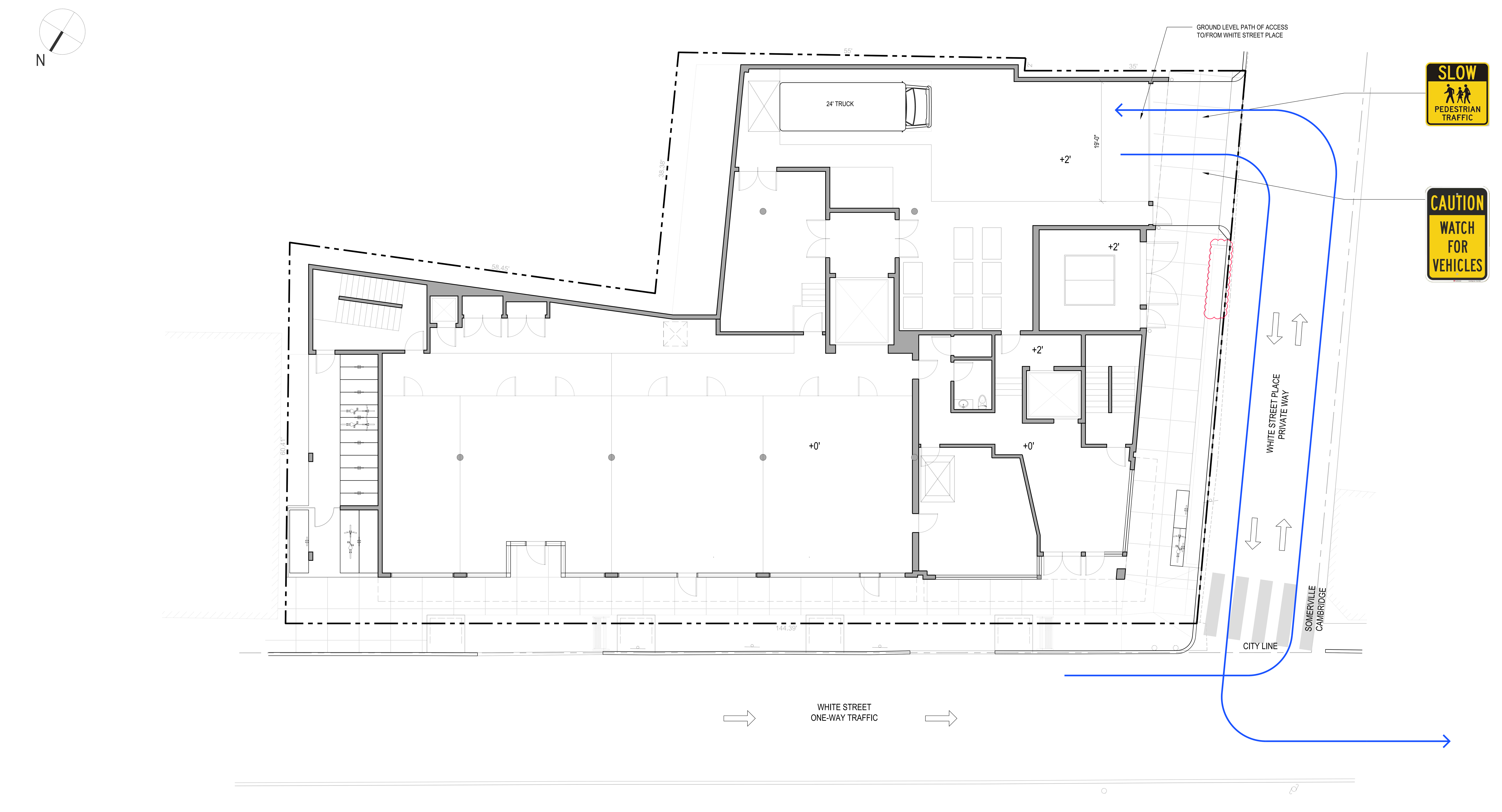
BICYCLE PARKING PLAN

TAP - 4

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
Email: tepp@tepplc.com
Web: www.teppllc.com

Date: June 23, 2023

Scale: 1" = 20' - 0"



FOR CITY OF SOMERVILLE USE

SCHEMATIC CONCEPT DESIGN FOR DISCUSSION ONLY AND NOT FOR CONSTRUCTION

0 5 10 20 FEET

FLOW OF TRAVEL

VEHICLE ACCESS

PROPERTY LINE

Notes

1. Existing Lot No. 31-C-52, 31-C-53, 31-C-57.

STAMPED WITH RESPECT TO TRANSPORTATION ENGINEERING ONLY

COMMONWEALTH OF MASSACHUSETTS
KIM ERIC HAZARVARTIAN
CIVIL
No. 32570
REGISTERED PROFESSIONAL ENGINEER

32-44 WHITE STREET

MOTOR VEHICLE PARKING PLAN

TAP - 5

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
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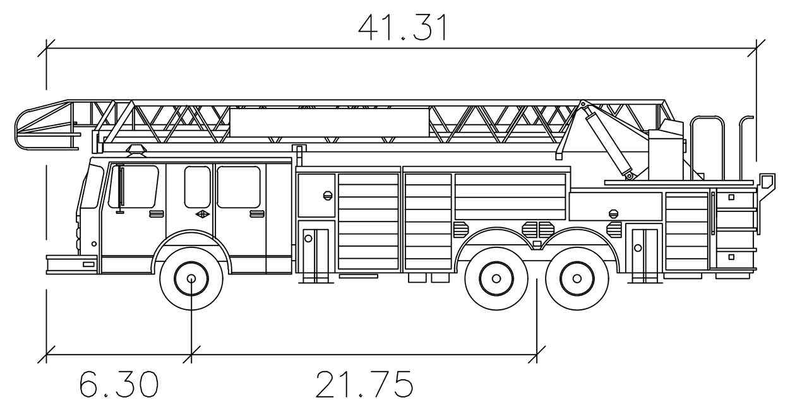
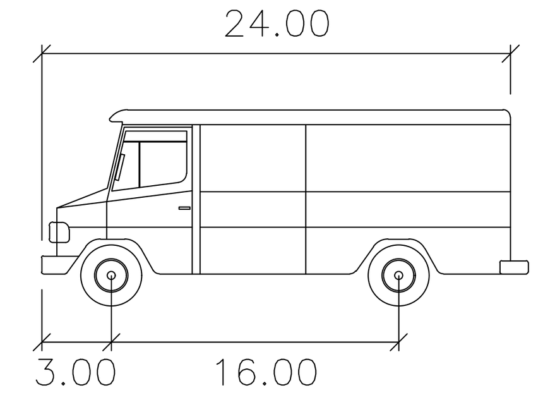


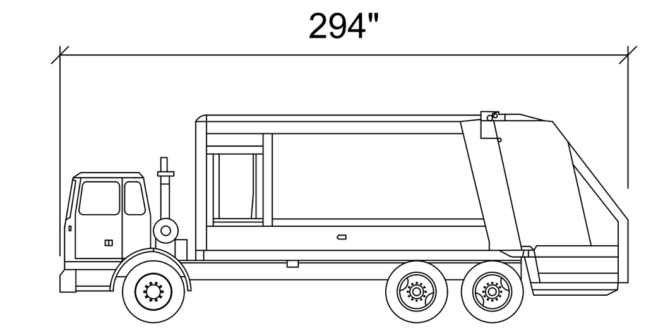
Ladder Truck

	feet
Width:	8.25
Track:	6.25
Lock to Lock Time:	6.0
Steering Angle:	37.3



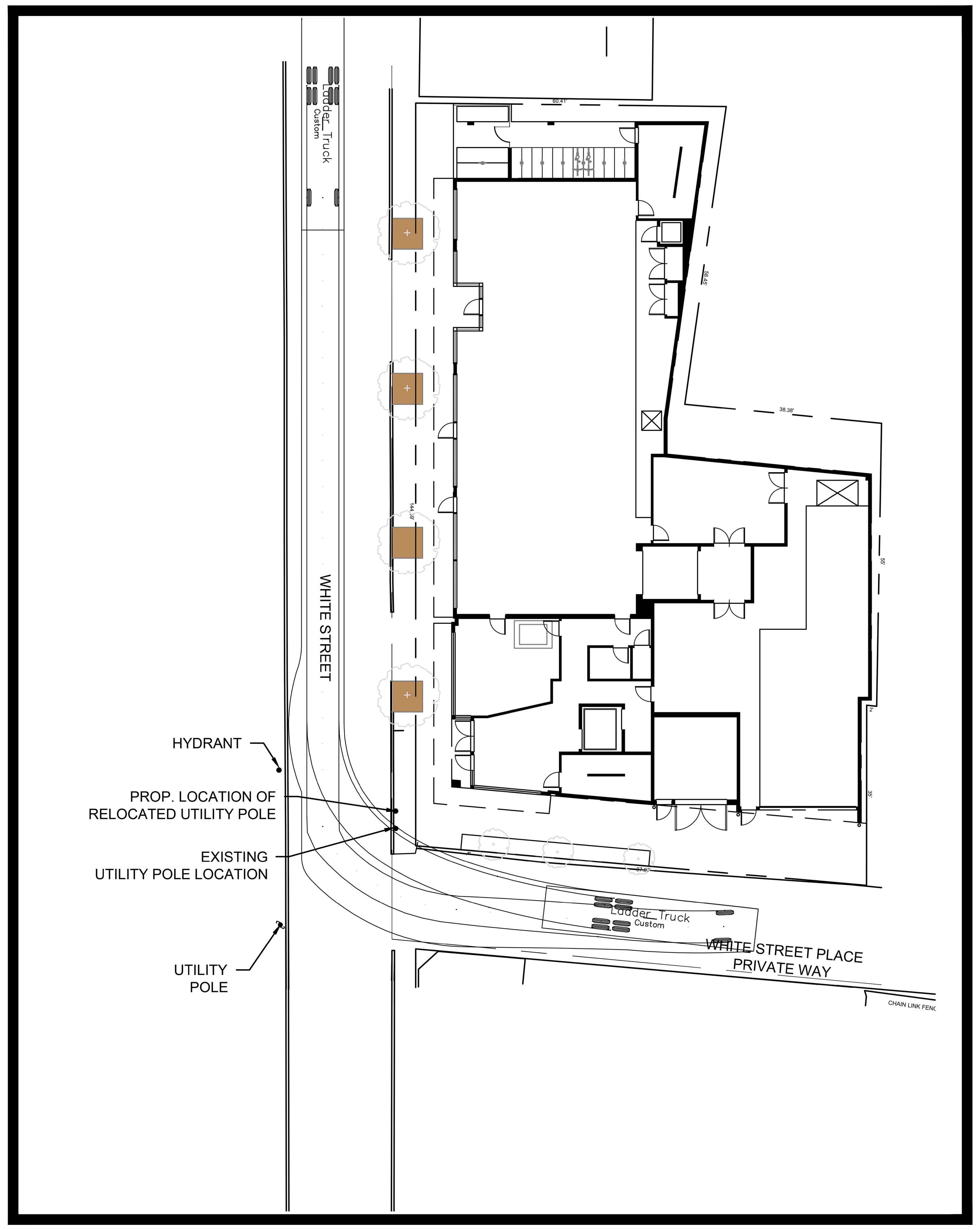
DL

	feet
Width:	7.50
Track:	7.50
Lock to Lock Time:	6.0
Steering Angle:	40.4



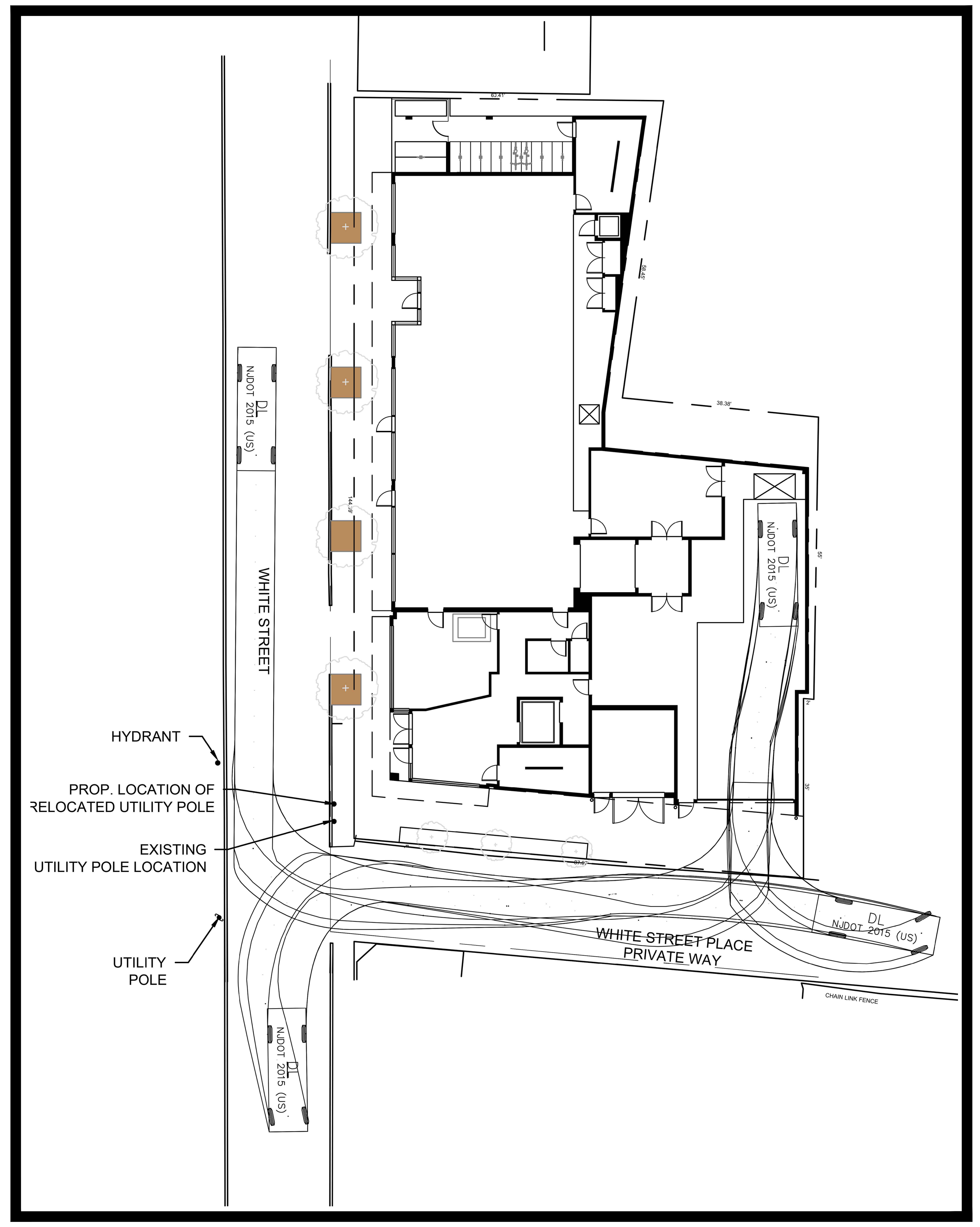
25 YD Rear-Load Garbage Truck

	feet
Width:	8.50
Track:	8.00
Lock to Lock Time:	6.0
Steering Angle:	27.4



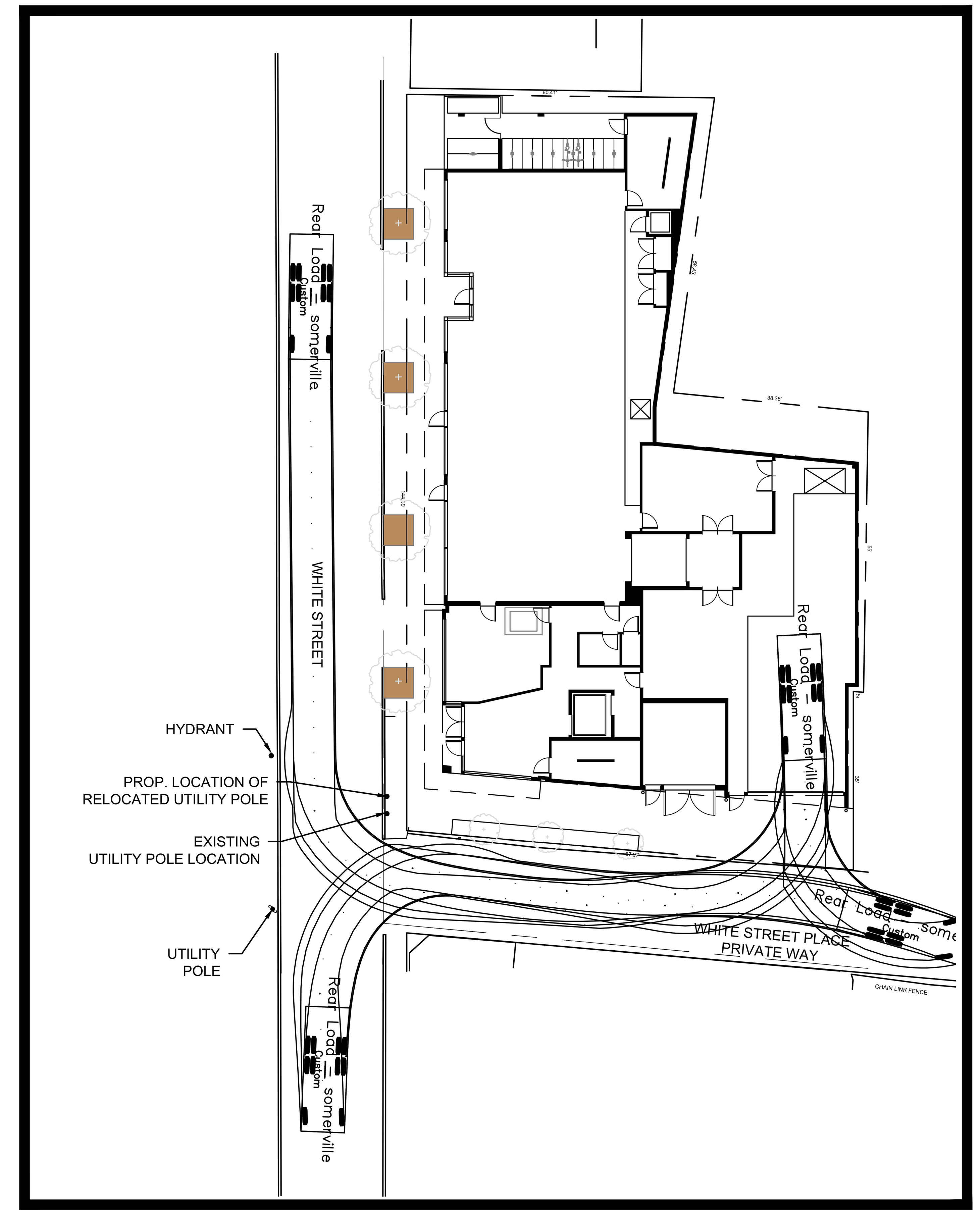
AERIAL FIRE TRUCK PLAN VIEW

0 20' 40'



BOX TRUCK PLAN VIEW

0 20' 40'



REAR LOAD GARBAGE TRUCK PLAN VIEW

0 20' 40'

N

FOR CITY OF SOMERVILLE USE

FINAL DESIGN PER

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN C. OSGOOD, JR.
CIVIL
No. 45891
REGISTERED PROFESSIONAL ENGINEER

3/15/2023

TRANSPORTATION ACCESS PLAN

32-44 WHITE STREET

VEHICLE MOVEMENT PLAN

TAP - 6

TEPP
TRANSPORTATION ENGINEERING, PLANNING AND POLICY
93 Stiles Road, Suite 201, Salem, NH 03079
800 Turnpike St, Suite 300, North Andover, MA 01845
Phone (603) 212-9133
Fax (603) 226-4108
Email: tepp@teppllc.com
Web: www.teppllc.com

Date: June 23, 2023

Scale: 1" = 20' - 0"

MOBILITY-MANAGEMENT PLAN

32, 40, AND 44 WHITE STREET
SOMERVILLE, MASSACHUSETTS

March 21, 2023

Prepared for SGL Development

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

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MOBILITY-MANAGEMENT PLAN STUDY

32, 40, AND 44 WHITE STREET
SOMERVILLE, MASSACHUSETTS

March 21, 2023

Prepared for SGL Development

TEPP LLC TRANSPORTATION ENGINEERING, PLANNING AND POLICY

93 Stiles Road, Suite 201, Salem, New Hampshire 03079 USA
800 Turnpike Street, Suite 300, North Andover, Massachusetts 01845 USA
Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@teppllc.com and Web www.teppllc.com

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CONTENTS

TABLES

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FIGURES

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INTRODUCTION

On behalf of SGL Development (the Applicant), TEPP LLC has prepared this Mobility-Management Plan (MMP) regarding the redevelopment of 32, 40, and 44 White Street in the City of Somerville, Massachusetts.

This MMP includes:

- contact information
- project description
- local transportation
- transportation assumptions
- trip distribution
- mobility-management commitments

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TEPP

CONTACT INFORMATION

OWNERS

32 White Street (Lot 31-C-52)
Owner: Gary F. Shea, Teresa A Grove

40 White Street (Lot 31-C-53)
Owner: Russell W. Shea and Gary F. Shea, Trustees of PJ Realty Trust

44 White Street (Lot 31-C-57)
Owner: ETS Family Investments LLC

APPLICANT

SGL Development, Inc.
810 Memorial Drive, Suite 105
Cambridge, Massachusetts 02139
Adam Siegel, Principal
Telephone: (978) 314-7075
Email: adam@sgldevelopment.com

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PROJECT DESCRIPTION

OVERVIEW

The Proponent is submitting this MMP to the City of Somerville in respect to the proposed redevelopment of 32-44 White Street (the "Project"), located at 32, 40, and 44 White Street in Somerville. The Project involves the redevelopment of approximately 0.26 acres across three parcels fronting on White Street and White Street Place in the Porter Square neighborhood. Figure 1 shows the site location. A project plan is in Appendix A.

Figure 1 shows the site location. Located in the heart of Porter Square, the Project is designed to meet the City of Somerville's goals to reduce motor vehicle trips and vehicle emissions and promote alternative modes of travel. The pedestrian connections between the Project and adjacent street network would facilitate access to the site by walking, nearby transit, including MBTA buses, subway, and commuter rail, as well as biking. A central component of the Project is that parking is not provided, which would further incentivize non- vehicular trips to the site and promote a multimodal environment. The Project would also seek Leadership in Energy and Environmental Design (LEED) Gold certification.

This redevelopment would include the demolition of the existing structures and construction of the four-story building. It would result in roughly 40,600 square feet (sf) of floor area excluding mechanical penthouse. When complete, the Project would accommodate approximately 80 employees.

Previous or existing land uses are:

- 32 White Street, one single-family-detached house with no driveway
- 40 White Street, one commercial building with a floor area of about 3,776 sf,1 which was occupied until recently by a printing company, with one driveway
- 44 White Street, one single-family-family detached house with one driveway

The Applicant has received approval for demolition of existing structures.

The Applicant proposes to provide:

[1] From City of Somerville, Assessor's Database, accessed August 13, 2022.

[redacted]

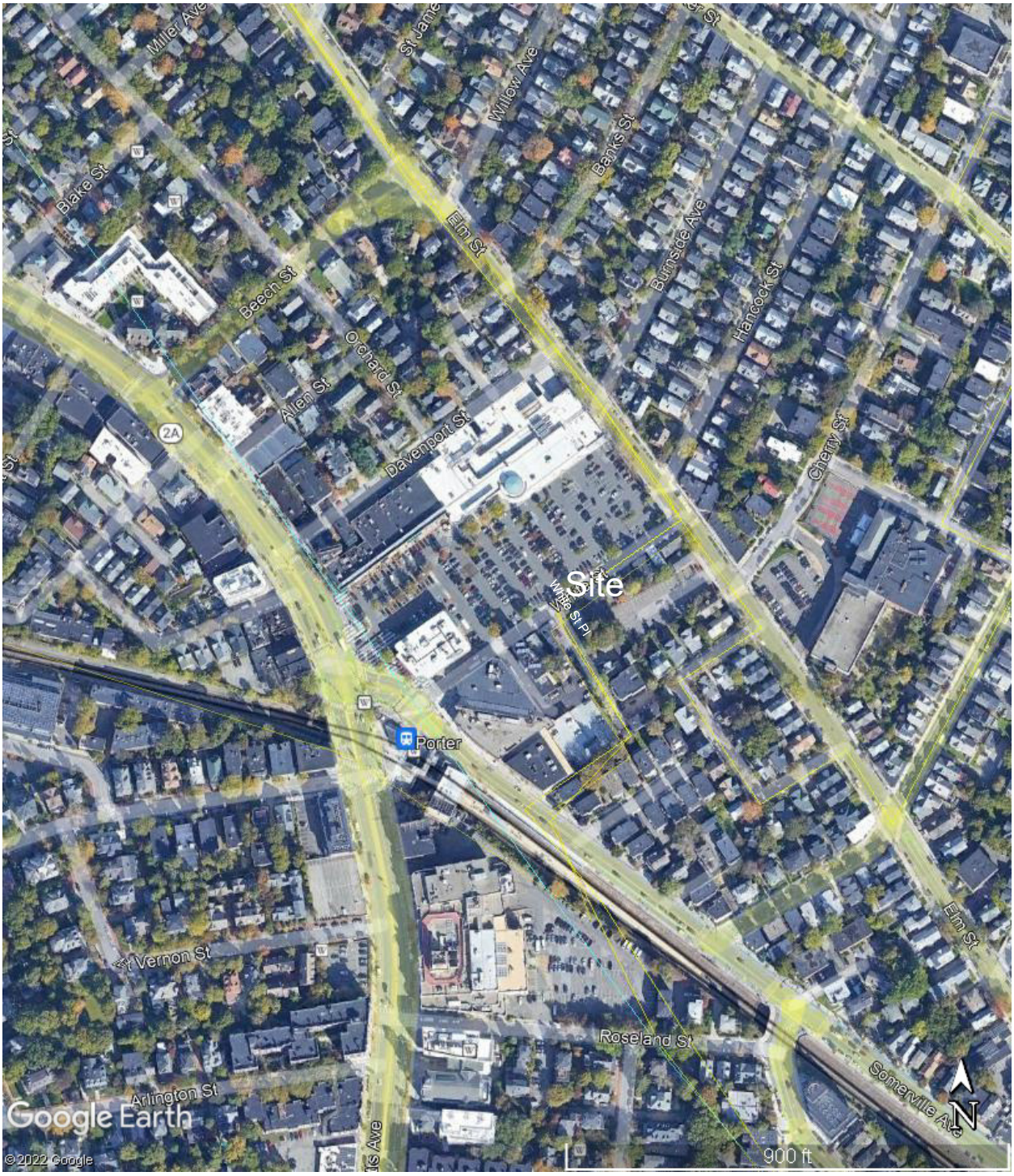

Figure 1. Site location.

- a primary site-access walkway on White Street near White Street Place
- a secondary site-access walkway along White Street closer to the neighboring property at 46 White Street
- an additional pedestrian access point between the primary walkways

PARKING

On-site parking is not proposed as part of the Project. With a location just a few hundred feet from the Porter Square T station, Commuter Rail and numerous bus lines, the Proponent envisions the Project as a transit-friendly hub of commercial activity embedded into the walkable streetscape that already exists in the neighborhood. As such, the Project would not include parking provided on site, as the Proponent expects the majority of traffic to arrive by foot, bicycle, or transit.

BICYCLE PARKING

The Project would provide three short-term bicycle parking spaces for patrons and 12 long-term bicycle parking spaces for employees. Short-term and long-term bicycle parking would be accessed via White Street to the northeast of the main entrance.

LOADING

Loading access would be provided on White Street Place via a loading dock curb opening. Deliveries would access the site by backing into the loading area and exit by pulling forward onto White Street Place. Garbage removal would be completed by a garbage truck, which would also enter by backing into the White Street Place loading area and exit by pulling forward onto White Street Place.

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LOCAL TRANSPORTATION

PUBLIC TRANSPORTATION OVERVIEW

Situated in close proximity to the Porter Square transit hub, the Project site benefits from a wealth of bus and train connections, including four bus routes and the Massachusetts Bay Transportation Authority (MBTA) Red Line within a two-minute walk.

PORTER SQUARE STATION

The MBTA Porter Square Station is located on the west side of Somerville Avenue opposite the west end of White Street. The Project site is located about 400 feet (ft) from Porter Station where users can access the MBTA Red Line, providing service between Cambridge and Braintree, including Harvard, Central and Kendall in Cambridge, and major stations in Boston: Park Street, Downtown Crossing, and South Station. The Project site is also located within the one-quarter mile of the bus stop pairs which site users can use to access the MBTA Green Line at Union Square and Lechmere.

COMMUTER RAIL

Porter Station provides access to the MBTA Commuter Rail system via the Fitchburg Line. In addition to its inbound destination at North Station in Boston, outbound trains from Porter Station travel to destinations including Belmont, Waltham, Concord, and Fitchburg.

As Tables 1 and 2 and Appendix B show, the MBTA operates the Fitchburg commuter rail line through Porter Square Station. The line provides service:

- to and from the west, the City of Fitchburg, Massachusetts (Wachusett Station)
- to and from the east, the City of Boston, Massachusetts (North Station)

SUBWAY RAPID TRANSIT

As Tables 1 and 2 and Appendix C show, the MBTA operates Red Line subway rapid transit through Porter Square Station. The line:

Table 1. MBTA transit summary.

Transit Name	Origins and Destinations	Weekday Headways	Average Weekday Ridership[a]
Commuter Rail, Fitchburg Line	Fitchburg (Wachusett Station) Boston (North Station)	Generally 1 hour	---
Subway Rapid Transit, Red Line	Cambridge (Alewife Station) Boston (North Station) Boston (Mattapan Station) Boston (Ashmont Station) Braintree	Generally 8 to 15 min	258,199
Bus 77	Arlington (Arlington Heights) Cambridge (Harvard Station)	Peak Periods 15 min	6,651
Bus 83	Cambridge (Rindge Avenue) Cambridge (Central Square)	Peak Periods 20 to 25 min	1,828
Bus 87	Somerville (Clarendon Hill) Arlington (Arlington Center) Cambridge (Lechmere Station)	Peak Periods 15 to 20 min	3,685
Bus 96	Medford (Medford Square) Cambridge (Harvard Station)	Peak Periods 30 min	2,088

[a] https://public.tableau.com/app/profile/mbta.office.of.performance.management.and.innovation/viz/RiderhsipViewer/Summary. Accessed October 27, 2022.

- to and from the west, connects with the City of Cambridge, Massachusetts (Alewife Station)
- to and from the east and south, connects with the City of Boston (North Station, Mattapan Station, and Ashmont Station) and the Town of Braintree, Massachusetts
- provides connections with other MBTA subway rapid transit lines

BUSES

Porter Square is a major bus hub, served by four MBTA bus routes (77, 83, 87, 96). Eight stop pairs are located within one-quarter mile of the Project site (five-minute walk), a typical distance people are willing to walk to access a bus stop. These routes provide access to numerous destinations, including Lechmere, Central and Harvard Squares in Cambridge, Davis Square and Union Square on the Red and Green MBTA Lines respectively and the downtown commercial districts of Arlington and Medford.

Table 2. MBTA stations and stops.

Transit Name Station or Stop	Walking Distance to/from Site[a]	Walking Time to/from Site (min)
Commuter Rail, Fitchburg Line		
Porter Square Station	400 ft	2
Subway Rapid Transit, Red Line		
Porter Square Station	400 ft	2
Bus 77		
Massachusetts Avenue at Davenport Street	0.1 mile	3
Massachusetts Avenue at Porter Square Station	0.1 mile	3
Bus 83		
Somerville Avenue at White Street	394 ft	2
Somerville Avenue at Massachusetts Avenue	417 ft	2
Bus 87		
Elm Street at Porter Square Shopping Center	330 ft	2
Elm Street at Hancock Street	350 ft	2
Bus 96		
Massachusetts Avenue at Upland Road	0.1 mile	3
Massachusetts Avenue at Porter Square Station	0.1 mile	3

[a] https://www.mbta.com/transit-near-me. Accessed October 28, 2022.

The bus routes within the vicinity of the Project are well utilized in the MBTA system. Route 77 is the most used bus in proximity to the Project Site, with a weekday ridership of 6,651 passengers per day, nearly double that of any of the other routes. As Tables 1 and 2 and Appendix D show, the MBTA operates the following buses in the site environs:

- Bus 77, between the Town of Arlington, Massachusetts (Arlington Heights) and the City of Cambridge (Harvard Station), along Massachusetts Avenue
- Bus 83, between the City of Cambridge (Rindge Avenue) and the City of Cambridge (Central Square), along Massachusetts Avenue and Somerville Avenue
- Bus 87, between the City of Somerville, Massachusetts (Clarendon Hill), the Town of Arlington (Arlington Center), and the City of Cambridge (Lechmere Station), along Elm Street
- Bus 96, between the City of Medford, Massachusetts (Medford Square) and the City of Cambridge (Harvard Station), along Elm Street, Beech Street, and Massachusetts Avenue

BICYCLES

The Porter Square area connects to or is within a short distance from a number of bicycle facilities, connecting to locations like the Davis and Alewife MBTA Stations (Red Line), Union Square (Green Line) and Harvard Square (Red Line) in Cambridge. The Project is located approximately 350 ft - about a two-minute walk - from a biking facility along Somerville Avenue merging with the path in Cambridge on Massachusetts Avenue in Porter Square which then leads to Minuteman Bikeway. The Massachusetts Avenue bicycle lanes are extensive, providing access to Cambridge in the Southeast and downtown Arlington to the Northwest. Another bikeway in the immediate proximity to the Project is along Elm Street merging into the Somerville Community Path in Davis Square.

Three Bluebikes bicycle share stations are also within the 0.2-mile distance from the Project site. The corner of White and Elm Street has 19 docks. The other two stations are in Porter Square and near Lesley University Porter Campus on Massachusetts Avenue and have a total of 34 docks. Beyond these three, all of which are within the quarter-mile walk of the Project site, two additional stations exist within a half-mile walk. Appendix E shows bicycle facilities.

Bluebikes public bicycle-sharing stations are:

- on the west side of Elm Street south of White Street (16 docks)
- on the east side of Massachusetts Avenue south of Hadley Street (18 docks)
- on the east side of Massachusetts Avenue at Porter Square Station (10 docks)
- on the east side of Massachusetts Avenue south of Roseland Street (15 docks)
- on the west side of Somerville Avenue north of Elm Street (14 docks)[2]

PEDESTRIANS

Pedestrian facilities, including sidewalks, curb ramps, and marked crosswalks, around the Project site are comprehensive, providing access from the site to the amenities and transportation resources of the surrounding Porter Square neighborhood. A destination like Davis Square can be reached within a 0.6-mile walk, while Massachusetts Avenue is in immediate proximity to the site.

Generally, sidewalk widths vary between approximately 7 to 10 ft along White Street, to approximately 10 ft along Elm Street. The Project would improve pedestrian facilities on White Street Place by creating a new sidewalk which goes 12 ft deep into the Project's site at 32 White Street and on White Street by enhancing the streetscape while making it ADA-accessible. The team is

[2] https://member.bluebikes.com/map/, accessed November 2, 2022.

proposing a new crosswalk at the corner of White Street and White Street Place to improve pedestrian safety and mobility.

LOCAL PARKING SUPPLY

While on-site parking is not provided as part of the Project, the Proponent is having discussions with operators of nearby parking facilities, including the public Leslie University lots on Massachusetts Avenue, the Porter Square Shopping Center, and the Porter Square Galleria parking lots. Overall parking demand is expected to be low due to the Project's extremely favorable location for pedestrians, bicyclists, and transit riders, who are expected to constitute the majority of trips to and from the Project site.

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TRANSPORTATION ASSUMPTIONS

TRANSPORTATION IMPACT STUDY

On behalf of the Applicant, TEPP LLC prepared the Transportation Impact Study (TIS) scoping request dated August 30, 2022, which was submitted to the City of Somerville Mobility Division. The City has set forth the scope for the TIS.

Multi-model transportation data for the TIS were collected Thursday to Saturday, October 27 to 29, 2022. TIS preparation is underway.

TRIP GENERATION: UNADJUSTED TRIPS

Table 3 shows the unadjusted trips for the previous land use, the proposed land uses, and the differences from existing to proposed.

The Institute of Transportation Engineers (ITE) publishes trip-generation information in the authoritative *Trip Generation Manual*.[3] This information is based on empirical data for a variety of land uses including:

- general light industrial, land use 110, based on floor area[4]
- research and development center, land use 760, based on floor area[5]

TRIP GENERATION: PERSON-TRIPS

Table 3 shows person-trips for the previous land use, the proposed land uses, and the differences from existing to proposed.

The unadjusted trips were multiplied by a 1.18 vehicle-occupancy ratio (VOR)[6] to yield person-trips. This VOR is national-level information and is appropriate to apply to the unadjusted trips, which is likewise national-level information.

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[3] ITE, *Trip Generation Manual*, 11th Edition (Washington DC, September 2021).

[4] ITE, *Trip Generation Manual*, Volume 3, pages 30 to 46.

[5] ITE, *Trip Generation Manual*, Volume 4, pages 854 to 872.

[6] Federal Highway Administration (FHWA), *Summary of Travel Trends, 2017 National Household Transportation Survey* (Washington DC, July 2018), Table 16.

Table 3. Calculated weekday trip generation.

Trip Types	Number of Trips[a] Daily	AM-Street-Peak Hour Total	AM-Street-Peak Hour In	AM-Street-Peak Hour Out	PM-Street-Peak Hour Total	PM-Street-Peak Hour In	PM-Street-Peak Hour Out
			Previous[b]				
Unadjusted[b]	65	6	5	1	4	1	3
Person (100 percent)[c]	77	7	6	1	5	1	4
Vehicle (32 percent)[d]	**25**	**2**	**2**	**0**	**2**	**0**	**1**
Transit (50 percent)[d]	**38**	**4**	**3**	**1**	**2**	**1**	**2**
Bicycle (5 percent)[d]	**4**	**0**	**0**	**0**	**0**	**0**	**0**
Walk (13 percent)[d]	**10**	**1**	**1**	**0**	**1**	**0**	**0**
			Proposed[e]				
Unadjusted[e]	642	61	50	11	59	9	50
Person (100 percent)[c]	758	72	59	13	70	11	59
Vehicle (32 percent)[d]	**242**	**23**	**19**	**4**	**22**	**3**	**19**
Transit (50 percent)[d]	**379**	**36**	**30**	**6**	**35**	**5**	**30**
Bicycle (5 percent)[d]	**38**	**4**	**3**	**1**	**3**	**1**	**3**
Walk (13 percent)[d]	**98**	**9**	**8**	**2**	**9**	**1**	**8**
			Differences from Existing to Proposed				
Unadjusted	577	55	45	10	55	8	47
Person	681	65	53	12	65	9	55
Vehicle	**218**	**21**	**17**	**4**	**21**	**3**	**18**
Transit	**340**	**32**	**27**	**6**	**32**	**5**	**28**
Bicycle	**34**	**3**	**3**	**1**	**3**	**0**	**3**
Walk	**89**	**8**	**7**	**2**	**8**	**1**	**7**

[a] May show rounding differences. Conservatively does not include the two existing single-family-detached houses.

[b] Unadjusted trips based on ITE, *Trip Generation Manual*, general light industrial, land use 110, 3,776-sf floor area.

[c] Person-trips are unadjusted trips multiplied by 1.18 occupants per vehicle. FHWA, Table 16.

[d] Percentages are derived from ACS, 2020, Five-Year Data, Census Tract 3510.01. The 17 percent that ACS showed as other modes or work at home were proportionally allocated to vehicle, transit, bicycle, and walk.

[e] Unadjusted trips based on ITE, *Trip Generation Manual*, research and development center, land use 760, 40,600-sf floor area.

CURRENT MODE SPLIT

Table 3 highlights person-trips divided into the following mode shares:

- vehicle, 32 percent
- transit, 50 percent
- bicycle, 5 percent
- walk, 13 percent

The mode shares reflect American Community Survey (ACS), 2020, Five-Year Data, Census Tract 3510.01. The 17 percent that ACS showed as other means or work at home were proportionally allocated to vehicle, transit, bicycle, and walk.

TRIP GENERATION PER MODE

Table 3 shows the following weekday vehicle-trips due to the proposed redevelopment:

- daily, 218 (total of both directions)
- AM-street-peak hour, 21 (17 in and 4 out)
- PM-street-peak hour, 21 (3 in and 18 out)

Table 3 shows the following weekday transit-trips due to the proposed redevelopment:

- daily, 340 (total of both directions)
- AM-street-peak hour, 32 (27 in and 6 out)
- PM-street-peak hour, 32 (5 in and 28 out)

Table 3 shows the following weekday bicycle-trips due to the proposed redevelopment:

- daily, 34 (total of both directions)
- AM-street-peak hour, 4 (3 in and 1 out)
- PM-street-peak hour, 3 (0 in and 3 out)

Table 3 shows the following weekday walk-trips due to the proposed redevelopment:

- daily, 89 (total of both directions)
- AM-street-peak hour, 9 (7 in and 2 out)
- PM-street-peak hour, 8 (1 in and 7 out)

TRIP DISTRIBUTION

A project plan is in Appendix A.

Vehicle-trips to the loading dock and Project area may travel:

- Elm Street northbound or southbound to
- White Street westbound

Vehicle-trips from the loading dock and Project area may travel:

- White Street Place northbound to
- White Street westbound

Transit trips will use the bus stops and the Porter Square Station described above.

Bicycle-trips will access the site and its bicycle parking via White Street or White Street Place.

Pedestrian trips will use the site-access walkways and access point described above. The area includes a well-developed sidewalk network, marked crosswalks, and pedestrian signals.

MOBILITY-MANAGEMENT COMMITMENTS

GENERAL

Reducing the number of vehicular trips to the site and supporting multimodal travel is an essential component of the Project. The Proponent is committed to undertaking efforts to help the City reach its goal of controlling the percentage of trips made to the site by motor vehicle. The Proponent has a mode share goal of greater than 50 percent for non-vehicle travel, consistent with SomerVision, and would implement several programs and services through lease agreements with future tenants to promote walking, biking, and transit use. As tenants have not yet been selected for the Project, the proposed mobility management commitments are focused on physical resources and future programs. The Proponent is committed to selecting tenants that would embrace these transportation demand management (TDM) and mobility management goals.

PHYSICAL DESIGN STRATEGIES

PEDESTRIAN-FRIENDLY DESIGN STRATEGIES

Not only does the Project's site design improve the public realm by improving the streetscape on White Street, but the Proponent would also create a new 12-foot sidewalk on White Street Place.

NO ON-SITE PARKING

Embedded in the transit-, bicycle-, and pedestrian-friendly environment of Porter Square, the Project would not be providing on-site parking, further embracing the goal of reducing vehicle travel.

TRANSIT INFORMATION BOARD

With many transit facilities within proximity to the Project site, ensuring existing transit is used is key to achieving the targeted mode share. The Proponent would provide a digital screen in the lobby with transit schedules and arrival/departure time information.

BICYCLE ACCOMMODATIONS

To allow for bicycle commuting to the Project site, the Proponent would provide bicycle parking on site in excess of the requirements. To improve the comfort of biking to the Project site, the Proponent would also install showers and changing rooms on site.

MOBILITY PROVIDE BY OWNER FOR TENANTS

As a property owner with a multi-tenant building with fifty (50) or more employees, the Proponent will provide the following for tenants:

On-site transportation coordination for the building: This person would be responsible for ensuring that mobility management strategies, programs, and reporting are implemented by tenants.

Annual mobility management educational meeting for tenants and employees: This meeting would provide an update on mobility management strategies and programs for both tenants and employees.

Posted and distributed mobility management information: Information on neighborhood options for walking, biking, and transit would be posted in a visible, accessible location.

Parking: Un-bundled parking is not applicable, as parking is not included as part of the site development.

MOBILITY MANAGEMENT PROVIDED BY TENANTS

The Proponent would work with selected tenants to implement additional, program-based mobility management strategies. The Proponent would encourage tenants to embrace transportation demand management approaches, including:

Employee commuter incentives/guaranteed ride home program: These include programs that make non-vehicle travel easier or more appealing to commuters and can include carpool matching services, guaranteed ride home service and flexible work hours.

Informational strategies: Tenants would be encouraged to post commuter information in key areas, provide relevant commute information to new employees, and participate in annual meetings related to transportation.

On-site transportation coordinator for the building: Tenants would be encouraged to hire an on-site transportation coordinator, someone who would organize TDM programs at large, liaise between the employer and the City, and distribute information to employees.

MONITORING AND ANNUAL REPORTING

The Proponent would undertake the following commitments to monitoring and annual reporting:

Annual Travel Survey: The Proponent would work with its tenants to develop and administer a travel survey each year, intended to determine the travel behavior of on-site employees and visitors.

Annual Updates: The Proponent would prepare a status report on its progress toward the mode share goal. The report should be submitted to the City of Somerville.

New Strategies: If it turns out that the Project is falling short of travel goals, the Proponent commits to develop and implement new strategies to reach the goal.

Biennial Counts of Motor Vehicle Trips Entering and Exiting: The Project does not have on-site parking to monitor.

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APPENDIX

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Appendix A: Project Plan

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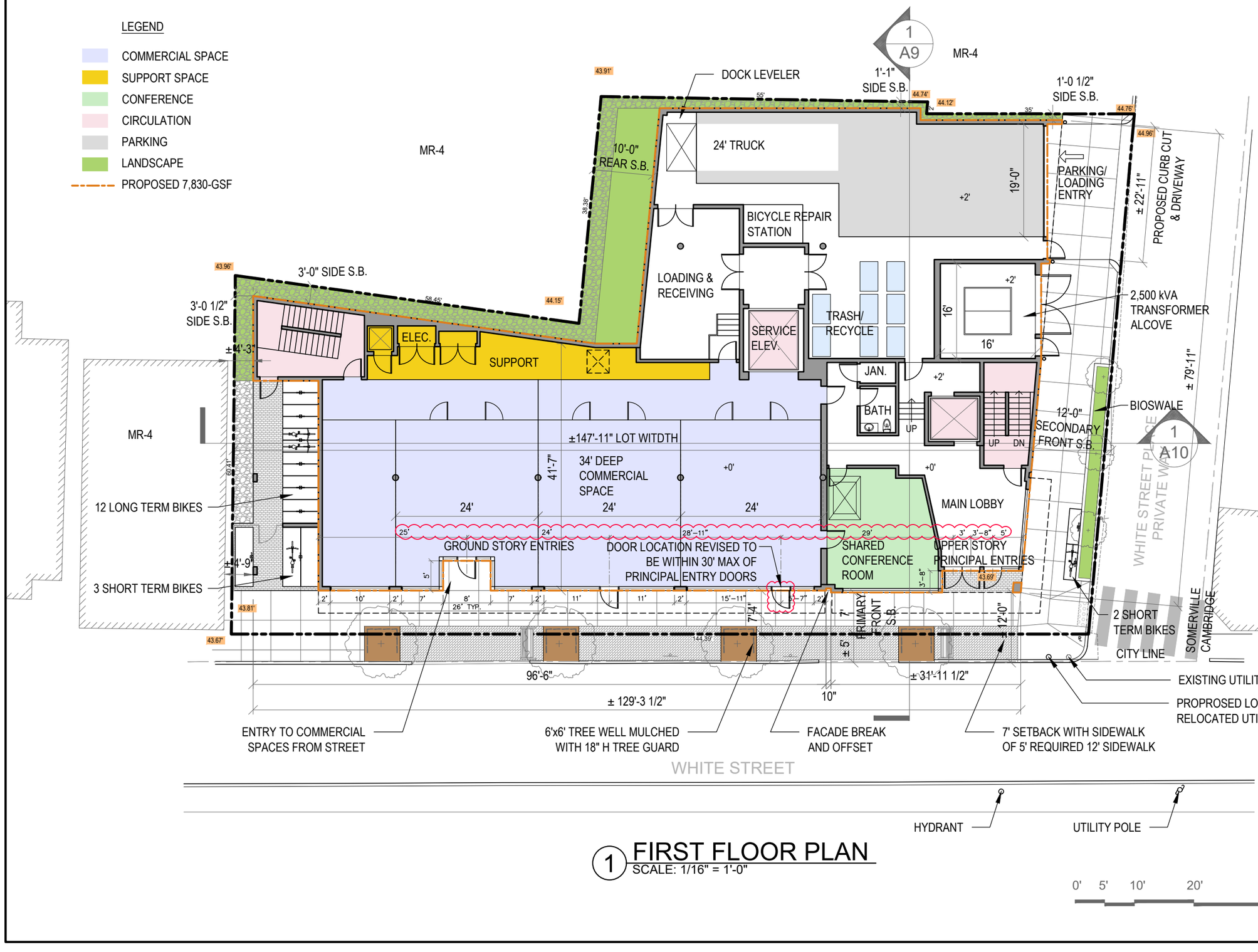

1 FIRST FLOOR PLAN

SCALE: 1/16" = 1'-0"

PETER QUINN ARCHITECTS

ARCHITECTURE
PLANNING
INTERIOR DESIGN

PETER QUINN ARCHITECTS LLC
259 ELM STREET, SUITE 301
SOMERVILLE, MA 02144
PH 617-354-3989

SEAL

REGISTERED ARCHITECT
PETER SAMUEL QUINN
No. 7510
CAMBRIDGE MA
COMMONWEALTH OF MASSACHUSETTS

CONSULTANT

PROJECT

32-44 WHITE

32-44 WHITE STREET
SOMERVILLE, MA 02144

PREPARED FOR

SGL DEVELOPMENT

810 MEMORIAL DRIVE,
SUITE 105
CAMBRIDGE, MA 02139

DRAWING TITLE

FIRST FLOOR PLAN

SCALE AS NOTED

REVISION	DATE
PB APPLIC SPSR REV	6/2/2023
NHOOD PRESENTATION	01/24/2023
UDC REV-1	11/17/2022
UDC	10/03/2022

DRAWN BY	REVIEWED BY
MN / YC	PQ

SHEET

A-2

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Appendix B: Commuter Rail Map and Schedule

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Massachusetts Bay Transportation Authority
Commuter Rail Map

All Commuter Rail stations have parking except:
Belmont, Boston Landing, Blue Hill Ave, Chelsea, Four Corners/Geneva, JFK/UMass, Lansdowne, Mishawum, Morton St, Newmarket, Newtonville, Pawtucket/Central Falls, Prides Crossing, Porter, Quincy Center, River Works, Talbot Ave, Uphams Corner, Windsor Gardens.

HAVERHILL
Bradford
Lawrence
Andover
Ballardvale
N. Wilmington
Reading
Wakefield
Greenwood
Melrose Highlands
Melrose Cedar Park
Wyoming Hill
HAVERHILL LINE

NEWBURYPORT
Rowley
Ipswich
Hamilton/ Wenham
N. Beverly
NEWBURYPORT LINE

ROCKPORT
Gloucester
W. Gloucester
Manchester
Beverly Farms
Prides Crossing
Montserrat
Beverly
Salem
Swampscott
Lynn
ROCKPORT LINE

LOWELL
N. Billerica
Wilmington
Anderson/Woburn RTC
Mishawum
Winchester
Wedgemere
W. Medford
LOWELL LINE
Wildcat Branch

OL OAK GROVE
Malden Center
Chelsea
SL3
River Works

RL ALEWIFE
Porter
Belmont
Waverley
Waltham
Brandeis/Roberts
Kendal Green
Hastings
Silver Hill
Lincoln
Concord
W. Concord
S. Acton
Littleton/Route 495
Ayer
Shirley
N. Leominster
Fitchburg
WACHUSETT
FITCHBURG LINE

BL WONDERLAND
Charlestown Navy Yard
GL E UNION SQ
NORTH STATION
Airport
Lewis Mall
BL BOWDOIN
Government Center
State
Park St
Long Wharf (North)
Long Wharf (South)
Rowes Wharf
Logan Ferry Terminal
SL1 AIRPORT TERMINALS
Logan International Airport
Downtown Crossing
BACK BAY
SOUTH STATION
SL4 SL5 NUBIAN
SL2 DESIGN CENTER
JFK/UMass
Hull/Hingham Ferry
Hingham Ferry

WORCESTER
Grafton
Westborough
Southborough
Ashland
Framingham
W. Natick
Natick Center
Wellesley Square
Wellesley Hills
Wellesley Farms
Auburndale
W. Newton
Newtonville
Boston Landing
Lansdowne
WORCESTER LINE

GL B BOSTON COLLEGE
GL C CLEVELAND CIRCLE
GL D RIVERSIDE
GL E HEATH ST

Ruggles
New-market
Uphams Corner
Four Corners/ Geneva
Talbot Ave
Morton St
Blue Hill Ave
Fairmount
Readville
Route 128
Canton Junction
Canton Center
STOUGHTON
Sharon
Mansfield
Attleboro
Providence
T.F. Green
WICKFORD JUNCTION
PROVIDENCE/STOUGHTON LINE
FAIRMOUNT LINE

OL FOREST HILLS
NEEDHAM LINE
NEEDHAM HEIGHTS
Needham Center
Needham Junction
Hersey
W. Roxbury
Highland
Bellevue
Roslindale Village
Hyde Park
Endicott
Dedham Corp. Center
Islington
Norwood Depot
Norwood Central
Windsor Gardens
Plimptonville
Walpole
Norfolk
Franklin/Dean College
FORGE PARK/ROUTE 495
Foxboro
FRANKLIN LINE

RL RL M ASHMONT
MATTAPAN
BRAINTREE
GREENBUSH LINE
Quincy Center
Weymouth Landing/ E. Braintree
E. Weymouth
Hingham
W. Hingham
Hull
Nantasket Jct
Cohasset
N. Scituate
GREENBUSH
Holbrook/Randolph
S. Weymouth
Montello
Abington
Brockton
Whitman
Campello
Hanson
Bridgewater
Halifax
MIDDLEBOROUGH/LAKEVILLE LINE
KINGSTON LINE
MIDDLEBOROUGH/ LAKEVILLE
KINGSTON

Legend

- COMMUTER RAIL LINES
- Terminus Station
- RL RED LINE
- M MATTAPAN LINE
- OL ORANGE LINE
- SL SILVER LINE and branches SL1 SL3 SL2 SL4 SL5
- GL GREEN LINE and branches B C D E
- BL BLUE LINE
- Accessible station
  All MBTA and Massport bus and ferry services are accessible
- Transfer station
- FERRY
- Free Logan Airport shuttle bus
- Amtrak service

Customer Communications & Travel Info
617-222-3200, 1-800-392-6100,
TTY 617-222-5146, www.mbta.com

MBTA Transit Police: **911**
TTY 617-222-1200

Elevator/escalator/lift updates: 800-392-6100

Not to scale

FITCHBURG LINE

FALL/WINTER SCHEDULE

Effective October 17, 2022

Monday to Friday

Inbound to Boston

ZONE	STATION	TRAIN #	AM								PM								
	Bikes Allowed		400	402	404	406	408	410	412	414	416	418	420	422	424	426	428	430	432
8	Wachusett	♿	4:25	5:25	6:25	7:33	8:33	9:33	10:33	11:33	-	1:33	-	3:33	4:28	5:28	6:25	7:25	9:25
8	Fitchburg	♿	4:33	5:33	6:33	7:41	8:41	9:41	10:41	11:41	-	1:41	-	3:41	4:36	5:36	6:33	7:33	9:33
8	North Leominster	♿	4:40	5:40	6:40	7:48	8:48	9:48	10:48	11:48	-	1:48	-	3:48	4:43	5:43	6:40	7:40	9:40
8	Shirley		4:48	5:48	6:48	7:56	8:56	f 9:56	f 10:56	f 11:56	-	f 1:56	-	f 3:56	f 4:51	f 5:51	f 6:48	f 7:48	f 9:48
8	Ayer		4:53	5:53	6:53	8:01	9:01	10:01	11:01	12:01	-	2:01	-	4:01	4:56	5:56	6:53	7:53	9:53
7	Littleton/Route 495	♿	5:01	6:01	7:01	8:09	9:09	10:09	11:09	12:09	1:09	2:09	3:09	4:09	5:04	6:04	7:01	8:01	10:01
6	South Acton	♿	5:07	6:07	7:07	8:16	9:16	10:16	11:16	12:16	1:16	2:16	3:16	4:16	5:10	6:10	7:07	8:07	10:07
5	West Concord	♿	5:12	6:12	7:12	8:29	9:29	f 10:29	f 11:29	f 12:29	f 1:29	f 2:29	f 3:29	f 4:29	f 5:15	f 6:15	f 7:12	f 8:12	f 10:12
5	Concord		5:17	6:18	7:18	8:34	9:34	f 10:34	f 11:34	f 12:34	f 1:34	f 2:34	f 3:34	f 4:34	f 5:20	f 6:20	f 7:17	f 8:17	f 10:17
4	Lincoln		5:24	6:25	7:25	8:41	9:41	f 10:41	f 11:41	f 12:41	f 1:41	f 2:41	f 3:41	f 4:41	f 5:27	f 6:27	f 7:24	f 8:24	f 10:24
3	Kendal Green		5:30	6:31	7:31	8:47	9:47	f 10:47	f 11:47	f 12:47	f 1:47	f 2:47	f 3:47	f 4:47	f 5:33	f 6:33	f 7:30	f 8:30	f 10:30
2	Brandeis/Roberts	♿	5:34	6:36	7:36	8:52	9:51	f 10:51	f 11:51	f 12:51	f 1:51	f 2:51	f 3:51	f 4:51	f 5:37	f 6:37	f 7:34	f 8:34	f 10:34
2	Waltham	♿	5:39	6:41	7:41	8:57	9:56	10:56	11:56	12:56	1:56	2:56	3:56	4:56	5:42	6:42	7:39	8:39	10:39
1	Waverley		5:44	6:46	7:46	9:02	10:01	f 11:01	f 12:01	f 1:01	f 2:01	f 3:01	f 4:01	f 5:01	f 5:47	f 6:47	f 7:34	f 8:44	f 10:44
1	Belmont		5:46	6:48	7:49	9:04	10:03	f 11:03	f 12:03	f 1:03	f 2:03	f 3:03	f 4:03	f 5:03	f 5:49	f 6:49	f 7:46	f 8:46	f 10:46
1A	Porter Square	♿	5:52	6:54	7:55	9:10	10:09	11:09	12:09	1:09	2:09	3:09	4:09	5:09	5:55	6:55	7:52	8:52	10:52
1A	North Station	♿	6:08	7:10	8:11	9:26	10:24	11:24	12:24	1:24	2:24	3:24	4:24	5:24	6:10	7:10	8:07	9:07	11:07

Monday to Friday

Outbound from Boston

ZONE	STATION	TRAIN #	AM							PM									
	Bikes Allowed		401	403	405	407	409	411	413	415	417	419	421	423	425	427	429	431	433
1A	North Station	♿	5:30	6:30	7:30	8:30	9:30	10:30	11:30	12:30	1:30	2:30	3:30	4:30	5:30	6:30	7:30	8:50	10:50
1A	Porter Square	♿	5:40	6:40	7:40	8:40	9:40	10:40	11:40	12:40	1:40	2:40	3:40	4:40	5:40	6:40	7:40	9:00	11:00
1	Belmont		f 5:45	f 6:45	f 7:45	f 8:45	f 9:45	f 10:45	f 11:45	f 12:45	f 1:45	f 2:45	3:45	4:45	5:45	6:45	f 7:45	f 9:05	f 11:05
1	Waverley		f 5:47	f 6:47	f 7:47	f 8:47	f 9:47	f 10:47	f 11:47	f 12:47	f 1:47	f 2:47	3:47	4:47	5:47	6:47	f 7:47	f 9:07	f 11:07
2	Waltham	♿	5:52	6:52	7:52	8:52	9:52	10:52	11:52	12:52	1:52	2:52	3:52	4:52	5:53	6:52	7:52	9:12	11:12
2	Brandeis/Roberts	♿	f 5:55	f 6:55	f 7:55	f 8:55	f 9:55	f 10:55	f 11:55	f 12:55	f 1:55	f 2:55	3:55	4:55	5:56	6:55	7:55	f 9:15	f 11:15
3	Kendal Green		f 5:59	f 6:59	f 8:00	f 9:00	f 10:00	f 11:00	f 12:00	f 1:00	f 2:00	f 3:00	4:00	4:59	6:00	6:59	7:59	f 9:19	f 11:19
4	Lincoln		f 6:04	f 7:04	f 8:06	f 9:06	f 10:06	f 11:06	f 12:06	f 1:06	f 2:06	f 3:06	4:06	5:04	6:05	7:04	8:04	f 9:24	f 11:24
5	Concord		f 6:09	f 7:09	f 8:12	f 9:12	f 10:12	f 11:12	f 12:12	f 1:12	f 2:12	f 3:12	4:12	5:09	6:10	7:09	8:09	f 9:29	f 11:29
5	West Concord	♿	f 6:13	f 7:13	f 8:17	f 9:17	f 10:17	f 11:17	f 12:17	f 1:17	f 2:17	f 3:17	4:17	5:14	6:15	7:13	8:13	f 9:33	f 11:33
6	South Acton	♿	6:18	7:18	8:23	9:23	10:23	11:23	12:23	1:23	2:23	3:23	4:23	5:19	6:20	7:18	8:18	9:38	11:38
7	Littleton/Route 495	♿	6:25	7:25	8:30	9:30	10:30	11:30	12:30	1:30	2:30	3:30	4:30	5:27	6:28	7:25	8:25	9:45	11:45
8	Ayer		f 6:33	f 7:33	f 8:38	f 9:38	f 10:38	f 11:38	-	f 1:38	-	f 3:38	4:38	5:35	6:36	7:33	8:33	f 9:53	f 11:53
8	Shirley		f 6:38	f 7:38	f 8:43	f 9:43	f 10:43	f 11:43	-	f 1:43	-	f 3:43	4:43	5:40	6:41	7:38	f 8:38	f 9:58	f 11:58
8	North Leominster	♿	6:47	7:47	8:52	9:52	10:52	11:52	-	1:52	-	3:52	4:52	5:49	6:50	7:47	8:47	10:07	12:07
8	Fitchburg	♿	L 6:57	L 8:00	L 9:02	L 10:02	L 11:02	L 12:02	-	L 2:02	-	L 4:02	L 5:02	L 6:00	L 7:01	L 7:57	L 8:57	L 10:17	L 12:17
8	Wachusett	♿	7:07	8:10	9:12	10:12	11:12	12:12	-	2:12	-	4:12	5:13	6:10	7:12	8:08	9:07	10:27	12:27

Weekend

Inbound to Boston

ZONE	STATION		AM			PM				
	SATURDAY TRAIN #		1400	1402	1404	1406	1408	1410	1412	1414
	SUNDAY TRAIN #		2400	2402	2404	2406	2408	2410	2412	2414
	Bikes Allowed									
8	Wachusett	♿	5:00	7:30	10:00	12:00	2:00	4:00	6:00	9:00
8	Fitchburg	♿	5:08	7:38	10:08	12:08	2:08	4:08	6:08	9:08
8	North Leominster	♿	5:15	7:45	10:15	12:15	2:15	4:15	6:15	9:15
8	Shirley		f 5:23	f 7:53	f 10:23	f 12:23	f 2:23	f 4:23	f 6:23	f 9:23
8	Ayer		5:28	7:58	10:28	12:28	2:28	4:28	6:28	9:28
7	Littleton/Rte495	♿	5:36	8:06	10:36	12:36	2:36	4:36	6:36	9:36
6	South Acton	♿	5:42	8:12	10:42	12:42	2:42	4:42	6:42	9:42
5	West Concord	♿	f 5:47	f 8:17	f 10:47	f 12:47	f 2:47	f 4:47	f 6:47	f 9:47
5	Concord		f 5:52	f 8:22	f 10:52	f 12:52	f 2:52	f 4:52	f 6:52	f 9:52
4	Lincoln		f 5:59	f 8:29	f 10:59	f 12:59	f 2:59	f 4:59	f 6:59	f 9:59
3	Kendal Green		f 6:05	f 8:35	f 11:05	f 1:05	f 3:05	f 5:05	f 7:05	f 10:05
2	Brandeis/Roberts	♿	f 6:09	f 8:39	f 11:09	f 1:09	f 3:09	f 5:09	f 7:09	f 10:09
2	Waltham	♿	6:14	8:44	11:14	1:14	3:14	5:14	7:14	10:14
1	Waverley		f 6:19	f 8:49	f 11:19	f 1:19	f 3:19	f 5:19	f 7:19	f 10:19
1	Belmont		f 6:21	f 8:51	f 11:21	f 1:21	f 3:21	f 5:21	f 7:21	f 10:21
1A	Porter Square	♿	6:27	8:57	11:27	1:27	3:27	5:27	7:27	10:27
1A	North Station	♿	6:42	9:12	11:42	1:42	3:42	5:42	7:42	10:42

Weekend

Outbound from Boston

ZONE	STATION		AM			PM				
	SATURDAY TRAIN #		1401	1403	1405	1407	1409	1411	1413	1415
	SUNDAY TRAIN #		2401	2403	2405	2407	2409	2411	2413	2415
	Bikes Allowed									
1A	North Station	♿	7:20	9:50	11:50	1:50	3:50	5:50	8:35	10:55
1A	Porter Square	♿	7:30	10:00	12:00	2:00	4:00	6:00	8:45	11:05
1	Belmont		f 7:35	f 10:05	f 12:05	f 2:05	f 4:05	f 6:05	f 8:50	f 11:10
1	Waverley		f 7:37	f 10:07	f 12:07	f 2:07	f 4:07	f 6:07	f 8:52	f 11:12
2	Waltham	♿	7:42	10:12	12:12	2:12	4:12	6:12	8:57	11:17
2	Brandeis/Roberts	♿	f 7:45	f 10:15	f 12:15	f 2:15	f 4:15	f 6:15	f 9:00	f 11:20
3	Kendal Green		f 7:49	f 10:19	f 12:19	f 2:19	f 4:19	f 6:19	f 9:04	f 11:24
4	Lincoln		f 7:54	f 10:24	f 12:24	f 2:24	f 4:24	f 6:24	f 9:09	f 11:29
5	Concord		f 7:59	f 10:29	f 12:29	f 2:29	f 4:29	f 6:29	f 9:14	f 11:34
5	West Concord	♿	f 8:03	f 10:33	f 12:33	f 2:33	f 4:33	f 6:33	f 9:18	f 11:38
6	South Acton	♿	8:08	10:38	12:38	2:38	4:38	6:38	9:23	11:43
7	Littleton/Rte495	♿	8:15	10:45	12:45	2:45	4:45	6:45	9:30	11:50
8	Ayer		f 8:23	f 10:53	f 12:53	f 2:53	f 4:53	f 6:53	f 9:38	f 11:58
8	Shirley		f 8:28	f 10:58	f 12:58	f 2:58	f 4:58	f 6:58	f 9:43	f 12:03
8	North Leominster	♿	8:37	11:07	1:07	3:07	5:07	7:07	9:52	12:12
8	Fitchburg	♿	L 8:47	L 11:17	L 1:17	L 3:17	L 5:17	L 7:17	L 10:02	L 12:22
8	Wachusett	♿	8:57	11:27	1:27	3:27	5:27	7:27	10:12	12:32

Keep in Mind:

This schedule will be effective from October 17, 2022 and will replace the schedule of May 23, 2022.

Holiday Service

On Thursday, November 24th, 2022 (Thanksgiving Day), Friday, November 25th, 2022 (day after Thanksgiving), Sunday, December 25th, 2022 (Christmas Day), Monday, December 26th, 2022 (Christmas Day observed), Sunday, January 1st, 2023 (New Year's Day), Monday, January 2nd, 2023 (New Year's Day observed) and on Monday, February 20th, 2023 (President's Day) all lines will operate on a weekend schedule.

On Monday, January 16th, 2023 (Martin Luther King Jr. Day) and on Monday, April 17th, 2023 (Patriot's Day), all lines will operate on a regular weekday schedule.

For all holiday schedules, please check MBTA.com/holidays or call 617-222-3200.

Times in purple with "f" indicate a flag stop: Passengers must tell the conductor that they wish to leave. Passengers waiting to board must be visible on the platform for the train to stop.

Times in blue with "L" indicate an early departure: The train may leave ahead of schedule at these stops.

Bikes: Bicycles are allowed on trains with the bicycle symbol shown below the train number.

High level platform and bridge plate available. Visit **mbta.com/accessibility** for more information.

Schedules may change in the event of severe weather

The MBTA and Keolis closely monitor weather forecasts to determine if conditions necessitate changes to the Commuter Rail schedule.

During weather events, the symbols below will communicate service level and impact on passengers. Service level for the following day will be announced mid-afternoon on the prior day.

REGULAR SCHEDULE
Trains will operate on a normal schedule.

STORM SCHEDULE
Major changes to the regular schedule. Schedules will be available on mbta.com, and in Boston stations.

NO SERVICE
No passenger service on Commuter Rail.

Appendix C: Subway Map and Schedule

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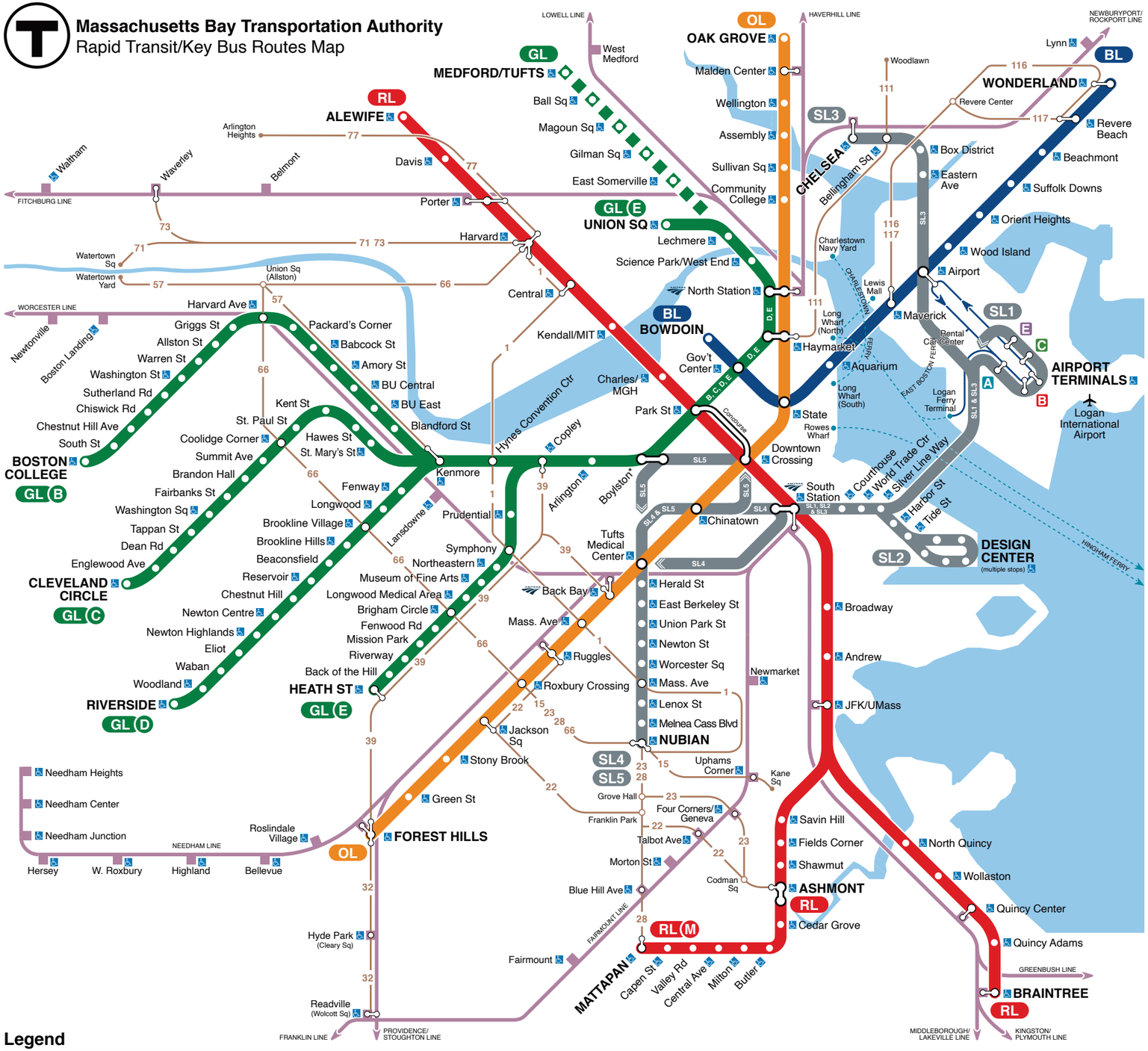
Massachusetts Bay Transportation Authority
Rapid Transit/Key Bus Routes Map



Legend

- RL RED LINE
- M MATTAPAN LINE
- OL ORANGE LINE
- BL BLUE LINE
- SL SILVER LINE and branches (SL1 SL3 SL2 SL4 SL5)
- GL GREEN LINE and branches
  - B Terminates at Gov't Ctr
  - C Terminates at Gov't Ctr
  - D Terminates at Union Sq
  - E Terminates at Medford/Tufts
- COMMUTER RAIL
- 000 KEY BUS ROUTE Frequent service
- FERRY
- Accessible station
  All MBTA and Massport bus and ferry services are accessible
- Rapid Transit transfer station
- Commuter Rail transfer station
- Free Logan Airport shuttle bus
- Amtrak service
  Back Bay, North & South Stations
- @MBTA
- /TheMBTA
- @TheMBTA
- /MBTAGM

*Boylston: Accessible for Silver Line only

Customer Communications & Travel Info
617-222-3200, 800-392-6100,
TTY 617-222-5146, www.mbta.com

MBTA Transit Police: **911**
TTY 617-222-1200

Elevator/escalator/lift updates: 800-392-6100

Not to scale

SILVER LINE

Weekday

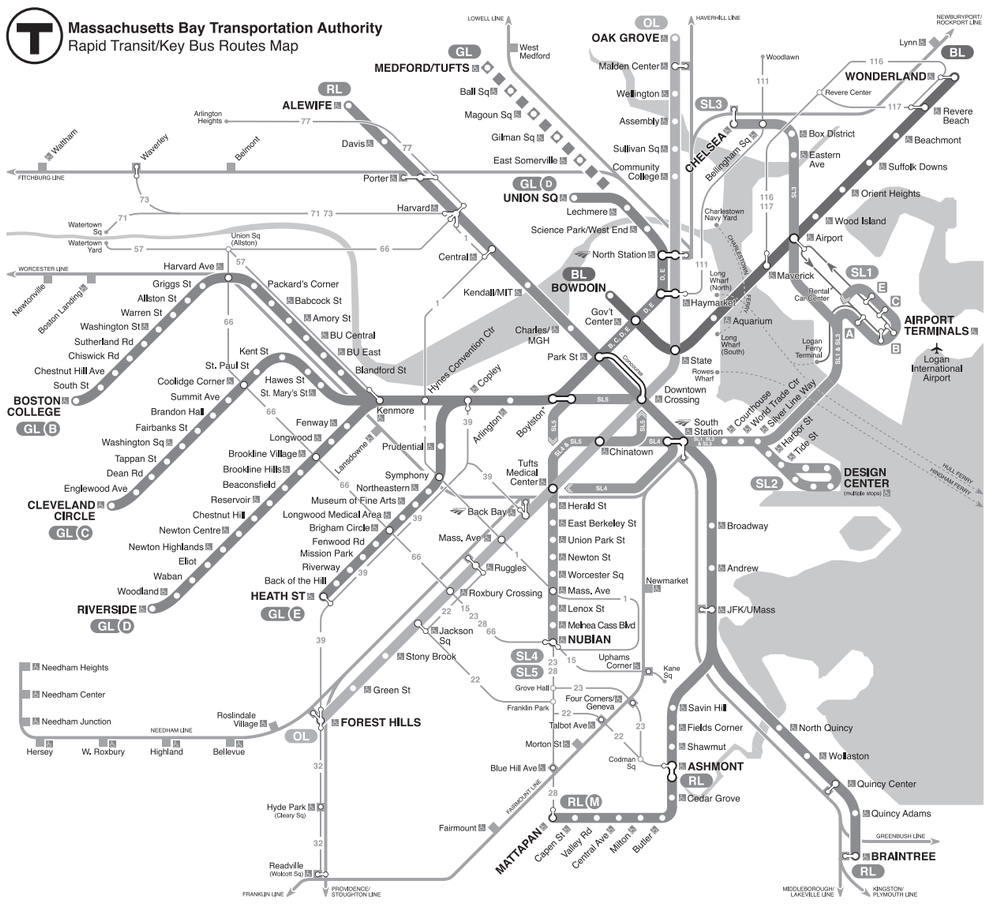
		First	Last	Every...
SL1	Logan Airport	5:51 AM	1:21 AM **	9-17 min
	South Station	5:32 AM	1:02 AM *	
SL2	Drydock	5:52 AM	12:21 AM	7-15 min
	South Station	5:34 AM	12:40 AM	
SL3	Chelsea Station	4:55 AM	12:57 AM **	9-12 min
	South Station	4:20 AM	12:27 AM *	
SL4	Nubian Station	5:17 AM	12:16 AM	11-20 min
	South Station	5:40 AM	12:34 AM	
SL5	Nubian Station	5:15 AM	12:44 AM	6-15 min
	Downtown Crossing	5:32 AM	1:07 AM *	

Saturday

		First	Last	Every...
SL1	Logan Airport	5:48 AM	1:15 AM **	10-12 min
	South Station	5:45 AM	12:59 AM *	
SL2	Drydock	6:06 AM	12:33 AM	14-16 min
	South Station	5:47 AM	12:45 AM	
SL3	Chelsea Station	5:30 AM	1:26 AM **	9-15 min
	South Station	4: 56 AM	12:55 AM *	
SL4	Nubian Station	5:23 AM	12:20 AM	13-20 min
	South Station	5:40 AM	12:40 AM	
SL5	Nubian Station	5:19 AM	12:43 AM	6-11 min
	Downtown Crossing	5:34 AM	1:00 AM *	

Sunday

		First	Last	Every...
SL1	Logan Airport	5:50 AM	1:12 AM **	10-12 min
	South Station	6:12 AM	1:00 AM *	
SL2	Drydock	6:51 AM	12:51 AM	15 min
	South Station	6:35 AM	12:39 AM	
SL3	Chelsea Station	6:26 AM	1:25 AM **	12-15 min
	South Station	5:56 AM	12:55 AM *	
SL4	Nubian Station	6:02 AM	12:20 AM	15-20 min
	South Station	6:20 AM	12:40 AM	
SL5	Nubian Station	6:00 AM	12:25 AM	9-12 min
	Downtown Crossing	6:16 AM	12:47 AM *	



Effective **August 28, 2022**

Replaces June, 2022

Rapid Transit

RED LINE

ORANGE LINE

GREEN LINE

BLUE LINE

SILVER LINE

mbta.com
@mbta
617-222-3200
617-222-5146 (TTY)

Massachusetts Bay Transportation Authority

RED LINE M

Weekday
every 8 mins within trunk, 15 mins on branches

	First	Last	Every...
Alewife	5:16 AM	12:30 AM *	8-15 min
Ashmont	5:16 AM	12:27 AM *	
Alewife	5:23 AM	12:25 AM	8-15 min
Braintree	5:09 AM	12:16 AM	
M Ashmont	5:14 AM	1:05 AM *	6-12 min
Mattapan	5:02 AM	12:53 AM	

Saturday
every 8 mins within trunk, 15 mins on branches

	First	Last	Every...
Alewife	5:21 AM	12:30 AM *	8-15 min
Ashmont	5:16 AM	12:30 AM *	
Alewife	5:28 AM	12:25 AM	8-15 min
Braintree	5:13 AM	12:15 AM	
M Ashmont	5:12 AM	1:05 AM *	13 min
Mattapan	5:02 AM	12:54 AM	

Sunday
every 8 mins within trunk, 15 mins on branches

	First	Last	Every...
Alewife	6:06 AM	12:30 AM *	8-15 min
Ashmont	6:00 AM	12:30 AM *	
Alewife	6:13 AM	12:25 AM	8-15 min
Braintree	5:56 AM	12:15 AM	
M Ashmont	6:00 AM	1:05 AM *	13 min
Mattapan	5:48 AM	12:55 AM	

Last Trips of the Night

Trips with * wait at some downtown stations for connections. Departure times approximate.

Northbound E trains leaving Heath Street after 12:29 AM or with ^ don't provide guaranteed bus or subway connections.

When exiting Ted Williams Tunnel, SL1 SL3 with ** stop only at Silver Line Way, World Trade Center and South Station via Summer Street.

ORANGE LINE

Weekday

	First	Last	Every...
Oak Grove	5:16 AM	12:30 AM *	6-11 min
Forest Hills	5:16 AM	12:28 AM *	

Saturday

	First	Last	Every...
Oak Grove	5:16 AM	12:30 AM *	9-10 min
Forest Hills	5:16 AM	12:28 AM *	

Sunday

	First	Last	Every...
Oak Grove	6:00 AM	12:30 AM *	12-13 min
Forest Hills	6:00 AM	12:28 AM *	

Green Line Service

First D train to Riverside leaves North Station at 5 AM on weekdays only.

*** service to Medford/Tufts begins late 2022

Once Medford/Tufts service begins, 4:52 AM D train from Riverside arrives at Medford Tufts at 6 AM

GREEN LINE B C D E

Weekday

	First	Last	Every...
B Boston College	5:01 AM	12:17 AM	6-12 min
Government Center	4:47 AM	12:57 AM *	
C Cleveland Circle	5:00 AM	12:21 AM	6-12 min
Government Center	5:33 AM	12:52 AM *	
D Riverside	4:45 AM	12:04 AM	6-12 min
Union Square	4:50 AM	12:38 AM *	
E Heath Street	5:45 AM	12:47 AM ^	6-12 min
Lechmere ***	5:02 AM	12:40 AM	

Saturday

	First	Last	Every...
B Boston College	4:45 AM	12:16 AM	6-12 min
Government Center	5:26 AM	12:52 AM *	
C Cleveland Circle	5:04 AM	12:22 AM	6-12 min
Government Center	5:21 AM	12:52 AM *	
D Riverside	4:51 AM	12:15 AM	6-12 min
Union Square	4:55 AM	12:34 AM *	
E Heath Street	5:41 AM	12:48 AM ^	6-12 min
Lechmere ***	5:00 AM	12:25 AM	

Sunday

	First	Last	Every...
B Boston College	5:20 AM	12:17 AM	6-12 min
Government Center	6:00 AM	12:54 AM *	
C Cleveland Circle	5:30 AM	12:25 AM	6-12 min
Government Center	6:02 AM	12:53 AM *	
D Riverside	5:25 AM	12:15 AM	6-12 min
Union Square	5:35 AM	12:39 AM *	
E Heath Street	6:15 AM	12:49 AM ^	6-12 min
Lechmere ***	5:32 AM	12:39 AM	

BLUE LINE

Weekday

	First	Last	Every...
Wonderland	5:13 AM	12:28 AM	7-9 min
Bowdoin	5:30 AM	1:00 AM *	

Saturday

	First	Last	Every...
Wonderland	5:25 AM	12:30 AM	9-14 min
Bowdoin	5:30 AM	1:00 AM *	

Sunday

	First	Last	Every...
Wonderland	5:58 AM	12:30 AM	9-15 min
Bowdoin	6:23 AM	1:00 AM *	

Holidays

SUN Memorial Day	SUN Christmas Day
SUN Independence Day	SUN Christmas Day Observed
SUN Labor Day	SAT New Year's Eve
SUN Thanksgiving Day	SUN New Year's Day

	CharlieCard	Cash on board	Reduced fare
Subway	$2.40	$2.40	$1.10
Subway + Bus	$2.40	$4.10	$1.10

Complete fare/pass rules and free/reduced fare eligibility: **mbta.com/fares** or call **617-222-3200**

- Transfer to bus/subway available on CharlieCard—good for 2 hours, pay fare difference.
- Children 11 & under ride free with a paying customer.

All MBTA buses are accessible to people with disabilities.

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Appendix D: Bus Maps and Schedules

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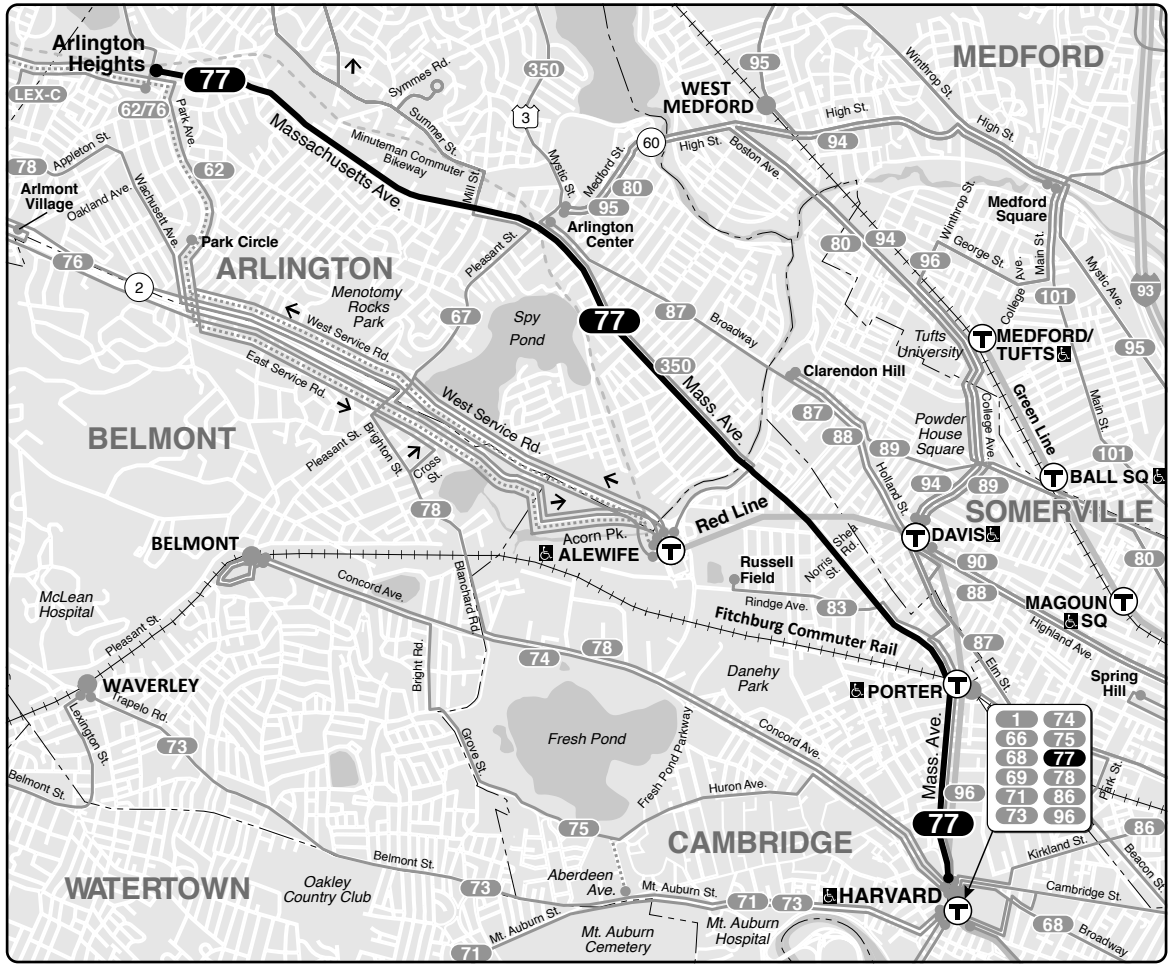
Effective **August 28, 2022** Replaces March 2022

77 Arlington Heights – Harvard Sta

Schedule Change – Weekday



Connections

RED LINE

FITCHBURG LINE

Frequency

20

Most buses every **20 minutes** or less

- Transfer to bus/subway available on CharlieCard—good for 2 hours, pay fare difference.
- Children 11 & under ride free with a paying customer.

All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Bus	**$1.70**	**$1.70**	**$0.85**
Bus + Subway	**$2.40**	**$4.10**	**$1.10**

Complete fare/pass rules and free/reduced fare eligibility:
mbta.com/fares or call **617-222-3200**

Information **617-222-3200**
Lost and Found **617-222-2229**
TTY **617-222-5146**

Realtime arrival information, maps, and more
mbta.com

A125-3-22.1

Weekday 77

Inbound

Arlington Heights	Arlington Center	Mass Ave & Norris St	Harvard Station
4:48	4:53	5:01	5:10
5:00	5:05	5:13	5:22
5:12	5:17	5:25	5:34
5:23	5:28	5:36	5:45
5:34	5:39	5:47	5:56
5:45	5:50	5:58	6:10
5:56	6:01	6:09	6:21
6:07	6:12	6:20	6:32
6:18	6:23	6:31	6:43
6:28	6:33	6:41	6:53
6:38	6:43	6:51	7:03
6:48	6:53	7:01	7:13
every **15** min or less			
2:23	**2:29**	**2:40**	**2:55**
2:35	**2:41**	**2:52**	**3:07**
2:47	**2:53**	**3:04**	**3:19**
2:59	**3:05**	**3:16**	**3:31**
S **-**	**3:09**	**3:20**	**3:35**
3:11	**3:17**	**3:28**	**3:43**
S **-**	**3:19**	**3:30**	**3:45**
3:23	**3:29**	**3:40**	**3:55**
3:35	**3:41**	**3:52**	**4:07**
3:47	**3:53**	**4:04**	**4:19**
3:57	**4:03**	**4:14**	**4:29**
4:06	**4:12**	**4:23**	**4:38**
every **15** min or less			
9:50	**9:55**	**10:04**	**10:15**
10:05	**10:09**	**10:17**	**10:28**
10:20	**10:24**	**10:32**	**10:43**
10:35	**10:39**	**10:47**	**10:58**
10:50	**10:54**	**11:02**	**11:13**
11:05	**11:09**	**11:17**	**11:28**
11:20	**11:24**	**11:31**	**11:40**
11:35	**11:39**	**11:45**	**11:54**
11:50	**11:54**	12:00	12:09
12:05	12:09	12:15	12:24
12:20	12:24	12:30	12:39
12:40	12:44	12:50	12:59

Outbound

Harvard Station	Mass Ave & Shea St	Arlington Center	Arlington Heights
5:10	5:17	5:23	5:31
5:20	5:27	5:33	5:41
5:30	5:37	5:43	5:51
5:41	5:48	5:54	6:02
5:52	5:59	6:05	6:13
6:04	6:11	6:17	6:25
6:15	6:22	6:28	6:37
6:26	6:33	6:40	6:49
6:37	6:44	6:51	7:00
6:48	6:55	7:02	7:11
7:00	7:07	7:14	7:26
7:12	7:21	7:30	7:42
every **15** min or less			
10:40	10:49	10:56	11:08
10:55	11:04	11:11	11:23
11:10	11:19	11:26	11:38
11:24	11:33	11:41	11:53
11:39	11:48	11:56	**12:08**
11:54	**12:03**	**12:11**	**12:23**
12:09	**12:18**	**12:26**	**12:38**
12:24	**12:33**	**12:41**	**12:53**
12:39	**12:48**	**12:56**	**1:09**
12:54	**1:03**	**1:11**	**1:24**
1:08	**1:17**	**1:25**	**1:38**
1:21	**1:30**	**1:38**	**1:51**
every **15** min or less			
10:20	**10:28**	**10:34**	**10:44**
10:35	**10:42**	**10:48**	**10:58**
10:50	**10:57**	**11:02**	**11:10**
11:05	**11:12**	**11:17**	**11:25**
11:20	**11:27**	**11:32**	**11:40**
11:35	**11:42**	**11:47**	**11:55**
11:50	**11:57**	12:02	12:10
12:05	12:12	12:17	12:25
12:20	12:27	12:32	12:40
12:35	12:42	12:47	12:55
12:50	12:57	1:02	1:10
W 1:05	1:12	1:17	1:25

Saturday 77

Inbound

Arlington Heights	Arlington Center	Mass Ave & Norris St	Harvard Station
4:48	4:52	4:59	5:07
5:05	5:09	5:16	5:24
5:22	5:26	5:33	5:41
5:39	5:43	5:50	5:58
5:56	6:01	6:08	6:17
6:13	6:18	6:25	6:34
6:30	6:35	6:42	6:51
6:46	6:51	6:58	7:08
7:03	7:08	7:15	7:25
7:20	7:25	7:32	7:42
7:37	7:42	7:49	7:59
7:54	7:59	8:06	8:16
every **17** min or less			
10:51	10:57	11:08	11:19
11:03	11:09	11:20	11:31
11:15	11:21	11:32	11:43
11:27	11:33	11:44	11:55
11:39	11:45	11:56	**12:07**
11:51	11:57	**12:08**	**12:19**
12:03	**12:09**	**12:20**	**12:31**
12:15	**12:21**	**12:32**	**12:43**
12:27	**12:33**	**12:44**	**12:55**
12:39	**12:45**	**12:56**	**1:07**
12:51	**12:57**	**1:08**	**1:19**
1:03	**1:09**	**1:20**	**1:31**
every **16** min or less			
9:34	**9:39**	**9:46**	**9:55**
9:50	**9:55**	**10:02**	**10:10**
10:07	**10:12**	**10:19**	**10:27**
10:25	**10:30**	**10:37**	**10:45**
10:41	**10:46**	**10:53**	**11:01**
10:57	**11:02**	**11:09**	**11:17**
11:14	**11:19**	**11:26**	**11:34**
11:31	**11:36**	**11:43**	**11:51**
11:48	**11:53**	12:00	12:08
12:05	12:10	12:17	12:25
12:22	12:27	12:34	12:42
12:39	12:44	12:51	12:59

Outbound

Harvard Station	Mass Ave & Shea St	Arlington Center	Arlington Heights
5:12	5:20	5:26	5:34
5:29	5:37	5:43	5:51
5:46	5:54	6:00	6:08
6:03	6:11	6:17	6:25
6:20	6:28	6:34	6:42
6:37	6:45	6:51	6:59
6:54	7:02	7:08	7:16
7:11	7:19	7:25	7:33
7:28	7:36	7:42	7:50
7:45	7:53	7:59	8:07
8:00	8:08	8:14	8:22
8:15	8:23	8:29	8:38
every **15** min or less			
10:50	10:59	11:08	11:19
11:02	11:11	11:20	11:31
11:14	11:23	11:32	11:43
11:26	11:35	11:44	11:55
11:38	11:47	11:56	**12:07**
11:50	11:59	**12:08**	**12:19**
12:02	**12:12**	**12:21**	**12:32**
12:14	**12:24**	**12:33**	**12:44**
12:26	**12:36**	**12:45**	**12:56**
12:38	**12:48**	**12:57**	**1:08**
12:50	**1:00**	**1:09**	**1:20**
1:02	**1:12**	**1:21**	**1:32**
every **17** min or less			
10:00	**10:08**	**10:14**	**10:22**
10:15	**10:23**	**10:29**	**10:37**
10:32	**10:40**	**10:46**	**10:54**
10:49	**10:57**	**11:03**	**11:11**
11:06	**11:14**	**11:20**	**11:28**
11:23	**11:31**	**11:37**	**11:45**
11:40	**11:48**	**11:54**	12:02
11:57	12:05	12:11	12:19
12:14	12:22	12:28	12:36
12:31	12:39	12:45	12:53
12:48	12:56	1:02	1:10
W 1:05	1:13	1:19	1:27

Sunday 77

Inbound

Arlington Heights	Arlington Center	Mass Ave & Norris St	Harvard Station
6:00	6:05	6:12	6:20
6:19	6:24	6:31	6:39
6:38	6:43	6:50	6:58
6:57	7:02	7:09	7:17
7:16	7:21	7:28	7:38
7:35	7:41	7:50	8:00
7:54	8:00	8:09	8:19
8:13	8:19	8:28	8:38
8:32	8:38	8:47	8:57
8:51	8:57	9:06	9:16
9:10	9:16	9:25	9:37
9:29	9:36	9:47	9:59
every **20** min or less			
11:58	**12:05**	**12:16**	**12:29**
12:16	**12:23**	**12:34**	**12:47**
12:34	**12:41**	**12:52**	**1:05**
12:52	**12:59**	**1:10**	**1:23**
1:10	**1:17**	**1:28**	**1:41**
1:28	**1:35**	**1:46**	**1:59**
1:46	**1:53**	**2:04**	**2:17**
2:05	**2:12**	**2:23**	**2:36**
2:24	**2:31**	**2:42**	**2:55**
2:42	**2:49**	**3:00**	**3:13**
3:01	**3:08**	**3:19**	**3:32**
3:19	**3:26**	**3:37**	**3:50**
every **20** min or less			
9:18	**9:23**	**9:32**	**9:43**
9:38	**9:42**	**9:50**	**10:01**
9:57	**10:01**	**10:09**	**10:20**
10:16	**10:20**	**10:28**	**10:38**
10:35	**10:38**	**10:45**	**10:55**
10:52	**10:55**	**11:02**	**11:12**
11:09	**11:12**	**11:19**	**11:29**
11:26	**11:29**	**11:36**	**11:46**
11:43	**11:46**	**11:53**	12:03
12:00	12:03	12:10	12:20
12:20	12:23	12:30	12:40
12:40	12:43	12:50	1:00

Outbound

Harvard Station	Mass Ave & Shea St	Arlington Center	Arlington Heights
6:25	6:33	6:38	6:47
6:45	6:53	6:58	7:07
7:05	7:13	7:18	7:27
7:25	7:33	7:38	7:47
7:45	7:53	7:58	8:07
8:05	8:13	8:19	8:28
8:25	8:33	8:39	8:48
8:45	8:53	8:59	9:09
9:05	9:13	9:19	9:29
9:25	9:34	9:41	9:51
9:45	9:54	10:01	10:11
10:05	10:14	10:21	10:31
every **20** min or less			
11:59	**12:09**	**12:16**	**12:27**
12:17	**12:27**	**12:34**	**12:45**
12:35	**12:45**	**12:52**	**1:03**
12:53	**1:03**	**1:10**	**1:21**
1:11	**1:21**	**1:28**	**1:39**
1:29	**1:39**	**1:46**	**1:57**
1:48	**1:58**	**2:05**	**2:16**
2:06	**2:16**	**2:23**	**2:34**
2:25	**2:35**	**2:42**	**2:53**
2:43	**2:53**	**3:00**	**3:11**
3:02	**3:12**	**3:19**	**3:30**
3:20	**3:30**	**3:37**	**3:48**
every **20** min or less			
9:46	**9:55**	**10:01**	**10:11**
10:05	**10:14**	**10:18**	**10:28**
10:24	**10:33**	**10:37**	**10:47**
10:42	**10:51**	**10:55**	**11:04**
11:00	**11:09**	**11:13**	**11:22**
11:17	**11:26**	**11:30**	**11:39**
11:34	**11:41**	**11:45**	**11:54**
11:51	**11:58**	12:02	12:11
12:08	12:15	12:19	12:28
12:25	12:32	12:36	12:45
12:45	12:52	12:56	1:04
W 1:05	1:12	1:16	1:23

S runs only on school days

W waits for last train to arrive station

PM times are **bold**

Information in this timetable is subject to change without notice. Traffic and weather may affect running times.

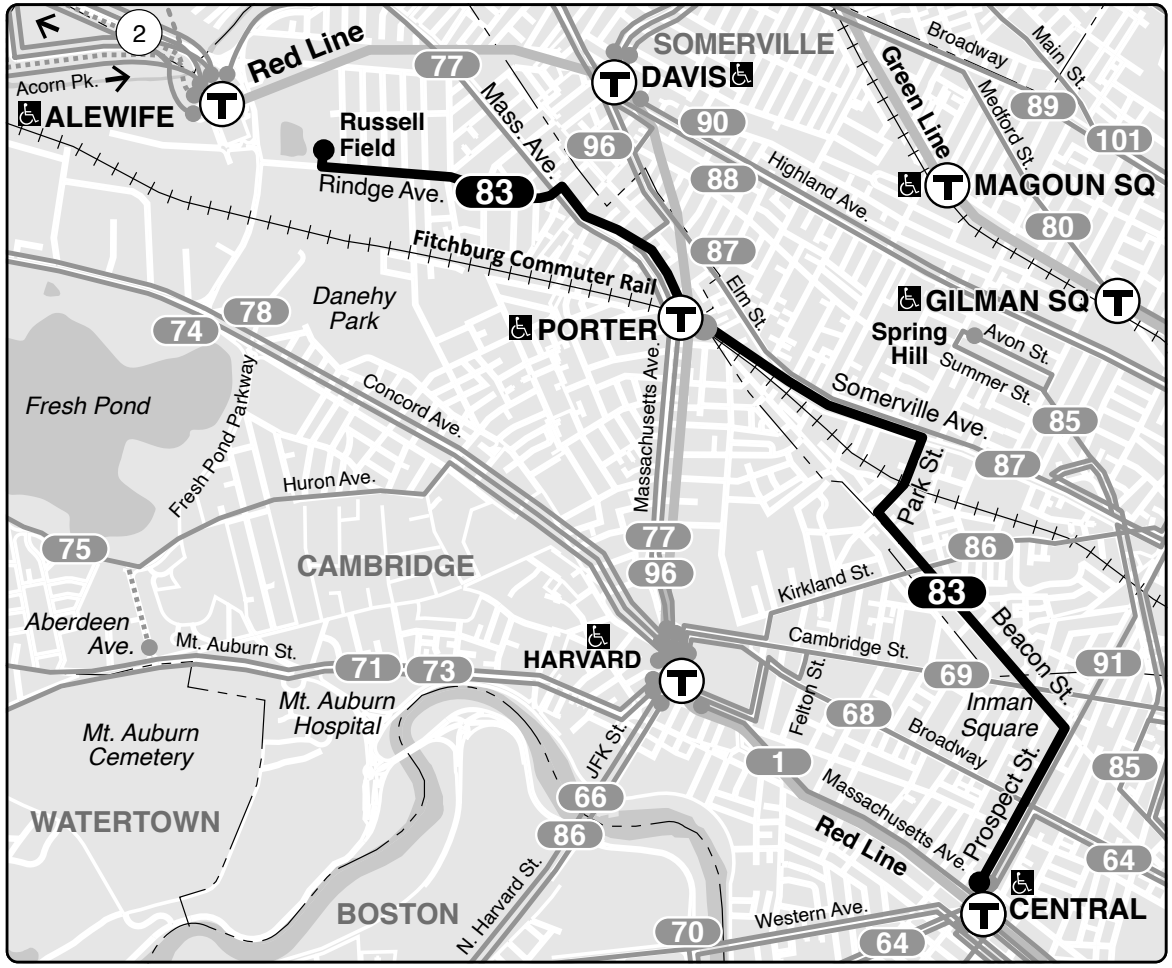
Always check bus destination signs before boarding. Some buses may only serve a part, or skip portions of this route.

2022 Holidays

- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SUN Thanksgiving Day
- SUN Christmas Day
- SUN Christmas Day Observed
- SAT New Year's Eve
- SUN New Year's Day

Effective **August 28, 2022** Replaces March 2022

83 Rindge Ave – Central Sq, Cambridge



Connections

RED LINE

FITCHBURG LINE

- Transfer to bus/subway available on CharlieCard—good for 2 hours, pay fare difference.
- Children 11 & under ride free with a paying customer.

♿ All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Bus	**$1.70**	**$1.70**	**$0.85**
Bus + Subway	**$2.40**	**$4.10**	**$1.10**

Complete fare/pass rules and free/reduced fare eligibility:
mbta.com/fares or call **617-222-3200**

Information **617-222-3200**
Lost and Found **617-222-2229**
TTY **617-222-5146**

Realtime arrival information, maps, and more
mbta.com

A125-3-22.1

Weekday 83

Inbound			Outbound		
Rindge Avenue	Porter Station	Central Sq, Cambridge	Central Sq, Cambridge	Porter Station	Rindge Avenue
5:10	5:15	5:28	5:30	5:39	5:47
5:30	5:35	5:48	5:50	5:59	6:07
5:50	5:55	6:09	6:15	6:24	6:32
6:10	6:15	6:29	6:35	6:44	6:52
6:35	6:40	6:54	7:00	7:12	7:21
6:55	7:00	7:18	7:25	7:37	7:46
7:15	7:20	7:38	7:45	7:57	8:07
7:35	7:40	7:58	8:05	8:18	8:28
7:55	8:00	8:23	8:28	8:41	8:51
8:15	8:21	8:44	8:50	9:03	9:13
8:35	8:41	9:04	9:10	9:23	9:33
8:55	9:01	9:21	9:30	9:43	9:53
9:20	9:25	9:45	10:00	10:13	10:23
9:40	9:45	10:05	10:30	10:43	10:53
10:00	10:05	10:25	11:00	11:13	11:23
10:30	10:35	10:55	11:30	11:43	11:53
11:00	11:05	11:25	**12:00**	**12:13**	**12:23**
11:30	11:35	11:55	**12:30**	**12:43**	**12:53**
12:00	**12:05**	**12:25**	**1:00**	**1:13**	**1:23**
12:30	**12:35**	**12:55**	**1:30**	**1:43**	**1:53**
1:00	**1:05**	**1:25**	**2:00**	**2:15**	**2:27**
1:30	**1:35**	**1:55**	**2:30**	**2:45**	**2:57**
2:00	**2:05**	**2:25**	**3:05**	**3:20**	**3:32**
2:35	**2:40**	**3:00**	S **-**	**3:28**	**3:42**
3:05	**3:10**	**3:30**	S **-**	**3:33**	**3:47**
3:40	**3:45**	**4:05**	**3:35**	**3:50**	**4:02**
4:10	**4:15**	**4:36**	**4:00**	**4:15**	**4:27**
4:40	**4:45**	**5:08**	**4:25**	**4:42**	**4:55**
5:05	**5:10**	**5:33**	**4:50**	**5:08**	**5:21**
5:30	**5:35**	**5:58**	**5:15**	**5:35**	**5:48**
5:55	**6:00**	**6:23**	**5:40**	**6:00**	**6:11**
6:20	**6:25**	**6:43**	**6:05**	**6:21**	**6:32**
6:40	**6:45**	**7:02**	**6:30**	**6:46**	**6:57**
7:10	**7:15**	**7:32**	**6:50**	**7:06**	**7:17**
7:40	**7:45**	**8:02**	**7:10**	**7:26**	**7:36**
8:35	**8:40**	**8:57**	**7:40**	**7:54**	**8:03**
9:30	**9:35**	**9:48**	**8:10**	**8:21**	**8:30**
10:20	**10:25**	**10:38**	**9:05**	**9:16**	**9:25**
11:10	**11:15**	**11:28**	**9:55**	**10:06**	**10:15**
12:00	12:05	12:18	**10:45**	**10:56**	**11:04**
12:45	12:50	1:03	**11:35**	**11:45**	**11:53**
			12:20	12:30	12:38
			W 1:05	1:13	1:21

Saturday 83

Inbound			Outbound		
Rindge Avenue	Porter Station	Central Sq, Cambridge	Central Sq, Cambridge	Porter Station	Rindge Avenue
5:10	5:14	5:27	5:32	5:42	5:50
5:55	5:59	6:12	6:17	6:27	6:35
6:40	6:44	6:57	7:02	7:12	7:20
7:25	7:29	7:43	7:47	7:57	8:05
8:10	8:15	8:29	8:32	8:42	8:50
8:55	9:00	9:16	9:00	9:12	9:21
9:30	9:35	9:53	9:30	9:42	9:51
10:00	10:05	10:23	10:00	10:12	10:21
10:30	10:35	10:53	10:30	10:42	10:51
11:00	11:05	11:23	11:00	11:13	11:23
11:30	11:35	11:56	11:30	11:43	11:53
12:00	**12:05**	**12:26**	**12:00**	**12:13**	**12:23**
12:30	**12:35**	**12:56**	**12:30**	**12:43**	**12:53**
1:00	**1:05**	**1:26**	**1:00**	**1:13**	**1:23**
1:30	**1:35**	**1:56**	**1:30**	**1:43**	**1:53**
2:00	**2:05**	**2:26**	**2:00**	**2:13**	**2:23**
2:30	**2:35**	**2:56**	**2:30**	**2:43**	**2:53**
3:00	**3:05**	**3:26**	**3:00**	**3:13**	**3:23**
3:30	**3:35**	**3:56**	**3:30**	**3:43**	**3:53**
4:00	**4:05**	**4:26**	**4:00**	**4:13**	**4:23**
4:30	**4:35**	**4:53**	**4:30**	**4:43**	**4:53**
5:00	**5:05**	**5:23**	**5:00**	**5:13**	**5:23**
5:30	**5:35**	**5:53**	**5:30**	**5:43**	**5:53**
6:00	**6:05**	**6:23**	**6:00**	**6:13**	**6:23**
6:30	**6:35**	**6:51**	**6:30**	**6:43**	**6:53**
7:00	**7:05**	**7:21**	**7:00**	**7:13**	**7:23**
7:30	**7:35**	**7:51**	**7:55**	**8:08**	**8:18**
8:25	**8:30**	**8:46**	**8:50**	**9:03**	**9:13**
9:20	**9:25**	**9:40**	**9:45**	**9:56**	**10:05**
10:10	**10:14**	**10:28**	**10:35**	**10:46**	**10:55**
11:05	**11:09**	**11:23**	**11:30**	**11:41**	**11:50**
11:55	**11:59**	12:13	12:20	12:29	12:36
12:45	12:49	1:03	W 1:15	1:24	1:31

S from Broadway & Felton Street on school days

W waits for last train to arrive Central Square Station

PM times are **bold**

Information in this timetable is subject to change without notice. Traffic and weather may affect running times.

Always check bus destination signs before boarding. Some buses may only serve a part, or skip portions of this route.

Sunday 83

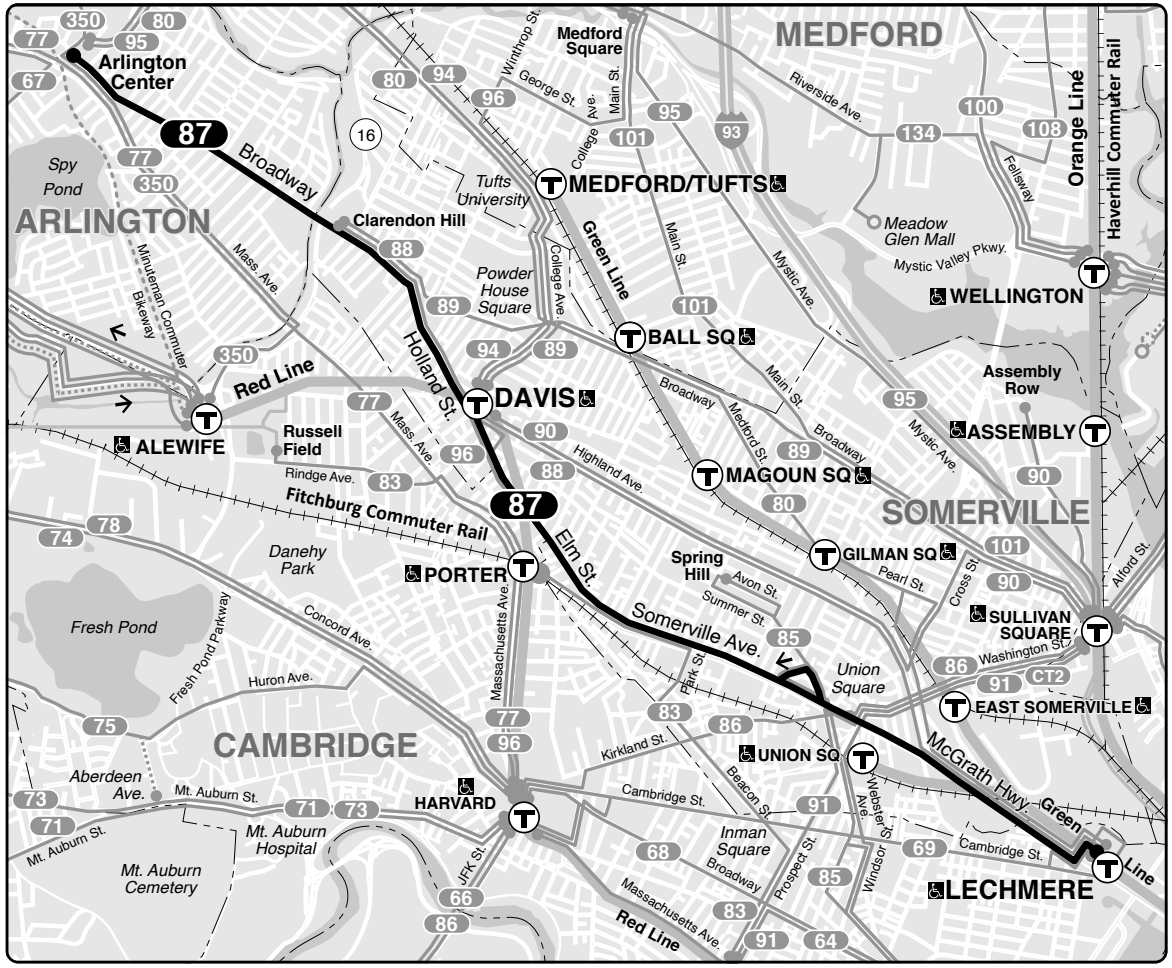
Inbound			Outbound		
Rindge Avenue	Porter Station	Central Sq, Cambridge	Central Sq, Cambridge	Porter Station	Rindge Avenue
7:46	7:51	8:05	7:25	7:36	7:43
8:36	8:41	8:57	8:15	8:26	8:33
9:31	9:36	9:52	9:05	9:16	9:24
10:26	10:31	10:48	10:00	10:13	10:22
11:21	11:26	11:43	10:55	11:08	11:17
12:16	**12:22**	**12:39**	11:50	**12:03**	**12:12**
1:11	**1:17**	**1:34**	**12:45**	**12:58**	**1:07**
2:06	**2:12**	**2:29**	**1:40**	**1:53**	**2:02**
3:01	**3:07**	**3:24**	**2:35**	**2:48**	**2:57**
3:56	**4:02**	**4:19**	**3:30**	**3:43**	**3:52**
4:51	**4:57**	**5:14**	**4:25**	**4:38**	**4:47**
5:46	**5:52**	**6:09**	**5:20**	**5:33**	**5:42**
6:41	**6:47**	**7:04**	**6:15**	**6:28**	**6:37**
7:36	**7:42**	**7:59**	**7:10**	**7:23**	**7:32**
8:31	**8:37**	**8:52**	**8:05**	**8:16**	**8:25**
9:26	**9:32**	**9:46**	**9:00**	**9:11**	**9:20**
10:16	**10:21**	**10:35**	**9:50**	**10:01**	**10:10**
11:06	**11:11**	**11:25**	**10:40**	**10:51**	**11:00**
11:56	12:01	12:13	**11:30**	**11:40**	**11:47**
12:46	12:51	1:03	12:20	12:30	12:37
			W 1:10	1:18	1:25

2022 Holidays

SUN Memorial Day	SUN Christmas Day
SUN Independence Day	SUN Christmas Day Observed
SUN Labor Day	SAT New Year's Eve
SUN Thanksgiving Day	SUN New Year's Day

Effective **August 28, 2022** Replaces March 2022

87 Clarendon Hill or Arlington Ctr – Lechmere Sta



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Bus + Subway	**$2.40**	**$4.10**	**$1.10**

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mbta.com/fares or call **617-222-3200**

Connections

RED LINE

GREEN LINE E

Information **617-222-3200**
Lost and Found **617-222-2229**
TTY **617-222-5146**

Realtime arrival information, maps, and more
mbta.com

A125-3-22.1

Weekday 87

Inbound

Arlington Center	Clarendon Hill	Davis Station	Lechmere Station
-	5:05	5:08	5:26
-	5:25	5:28	5:46
-	5:50	5:53	6:14
-	6:08	6:12	6:34
6:19	6:24	6:27	6:49
6:35	6:40	6:43	7:05
6:51	6:56	6:59	7:21
7:07	7:12	7:15	7:38
7:23	7:28	7:33	8:02
7:39	7:44	7:49	8:19
7:56	8:02	8:07	8:40
8:14	8:20	8:25	8:58
8:32	8:38	8:43	9:11
8:52	8:58	9:01	9:25
9:13	9:18	9:21	9:45
9:35	9:40	9:43	10:07
9:57	10:02	10:05	10:29
10:30	10:35	10:38	11:03
11:00	11:05	11:08	11:35
11:30	11:35	11:38	**12:05**
12:00	**12:05**	**12:08**	**12:35**
12:30	**12:35**	**12:38**	**1:05**
1:00	**1:05**	**1:08**	**1:35**
1:30	**1:35**	**1:38**	**2:05**
2:00	**2:05**	**2:08**	**2:35**
2:17	**2:22**	**2:25**	**2:54**
2:37	**2:42**	**2:45**	**3:14**
2:57	**3:02**	**3:05**	**3:34**
3:15	**3:20**	**3:23**	**3:52**
3:35	**3:40**	**3:43**	**4:12**
3:55	**4:00**	**4:03**	**4:32**
4:15	**4:20**	**4:23**	**4:52**
4:36	**4:41**	**4:44**	**5:14**
4:57	**5:02**	**5:05**	**5:35**
5:17	**5:22**	**5:25**	**5:55**
5:37	**5:42**	**5:45**	**6:15**
5:57	**6:02**	**6:05**	**6:34**
6:17	**6:22**	**6:25**	**6:51**
6:37	**6:42**	**6:45**	**7:09**
7:03	**7:07**	**7:10**	**7:30**
7:23	**7:27**	**7:30**	**7:50**
7:50	**7:54**	**7:57**	**8:15**
-	**8:25**	**8:28**	**8:46**
-	**8:55**	**8:58**	**9:16**
-	**9:25**	**9:28**	**9:46**
-	**9:55**	**9:58**	**10:14**
-	**10:25**	**10:28**	**10:44**
-	**10:55**	**10:58**	**11:13**
-	**11:30**	**11:33**	**11:48**
-	12:00	12:03	12:17
-	12:30	12:33	12:47
-	1:00	1:03	1:17

Outbound

Lechmere Station	Davis Station	Clarendon Hill	Arlington Center
5:29	5:42	5:48	-
5:50	6:03	6:09	6:13
6:14	6:27	6:33	6:37
6:34	6:47	6:53	6:57
6:54	7:09	7:15	7:21
7:14	7:30	7:36	7:42
7:29	7:45	7:51	7:57
7:47	8:04	8:13	8:19
8:06	8:23	8:32	8:38
8:27	8:44	8:53	8:59
8:49	9:06	9:15	9:21
9:11	9:28	9:37	9:43
9:33	9:50	9:59	10:05
9:53	10:10	10:19	10:25
10:22	10:39	10:48	10:54
10:52	11:10	11:20	11:25
11:22	11:40	11:50	11:55
11:52	**12:10**	**12:20**	**12:25**
12:22	**12:40**	**12:50**	**12:55**
12:52	**1:10**	**1:20**	**1:25**
1:22	**1:40**	**1:50**	**1:55**
1:52	**2:10**	**2:20**	**2:25**
2:22	**2:40**	**2:50**	**2:55**
2:48	**3:06**	**3:16**	**3:21**
3:08	**3:26**	**3:36**	**3:41**
3:28	**3:46**	**3:56**	**4:01**
3:48	**4:06**	**4:16**	**4:21**
4:09	**4:27**	**4:38**	**4:45**
4:30	**4:49**	**5:01**	**5:08**
4:50	**5:09**	**5:21**	**5:28**
5:10	**5:29**	**5:41**	**5:48**
5:30	**5:49**	**6:01**	**6:05**
5:50	**6:09**	**6:21**	**6:25**
6:10	**6:28**	**6:37**	**6:41**
6:30	**6:46**	**6:54**	**6:58**
6:50	**7:06**	**7:14**	**7:18**
7:10	**7:26**	**7:34**	**7:38**
7:30	**7:46**	**7:54**	**7:58**
7:55	**8:11**	**8:19**	**-**
8:25	**8:38**	**8:44**	**-**
8:55	**9:08**	**9:14**	**-**
9:25	**9:38**	**9:44**	**-**
9:50	**10:03**	**10:09**	**-**
10:20	**10:33**	**10:39**	**-**
10:50	**11:03**	**11:09**	**-**
11:20	**11:33**	**11:39**	**-**
11:55	12:07	12:13	-
12:25	12:37	12:43	-
12:55	1:07	1:13	-
W 1:22	1:34	1:40	-

Saturday 87

Inbound

Arlington Center	Clarendon Hill	Davis Station	Lechmere Station
-	5:15	5:18	5:31
-	5:45	5:48	6:02
6:10	6:15	6:18	6:34
6:40	6:45	6:48	7:04
7:10	7:15	7:18	7:34
7:40	7:45	7:48	8:05
8:10	8:15	8:18	8:35
8:40	8:45	8:48	9:05
9:13	9:19	9:22	9:39
9:43	9:49	9:52	10:15
10:10	10:16	10:20	10:43
10:35	10:41	10:45	11:08
11:07	11:13	11:17	11:43
11:35	11:41	11:45	**12:11**
12:00	**12:06**	**12:10**	**12:36**
12:25	**12:31**	**12:35**	**1:01**
12:50	**12:56**	**1:00**	**1:24**
1:15	**1:21**	**1:25**	**1:49**
1:41	**1:47**	**1:51**	**2:15**
2:06	**2:12**	**2:16**	**2:40**
2:31	**2:37**	**2:41**	**3:05**
2:56	**3:02**	**3:06**	**3:30**
3:21	**3:27**	**3:31**	**3:55**
3:46	**3:52**	**3:56**	**4:19**
4:11	**4:17**	**4:21**	**4:44**
4:36	**4:42**	**4:46**	**5:09**
5:01	**5:07**	**5:11**	**5:34**
5:26	**5:32**	**5:36**	**5:59**
5:51	**5:57**	**6:01**	**6:24**
6:16	**6:22**	**6:26**	**6:49**
6:45	**6:51**	**6:55**	**7:14**
7:25	**7:30**	**7:33**	**7:51**
8:00	**8:05**	**8:08**	**8:24**
-	**8:40**	**8:43**	**8:59**
-	**9:20**	**9:23**	**9:39**
-	**9:57**	**10:00**	**10:16**
-	**10:32**	**10:35**	**10:51**
-	**11:07**	**11:10**	**11:26**
-	**11:40**	**11:43**	**11:59**
-	12:20	12:23	12:37
-	12:55	12:58	1:12

Outbound

Lechmere Station	Davis Station	Clarendon Hill	Arlington Center
5:38	5:50	5:55	6:00
6:10	6:22	6:27	6:32
6:40	6:52	6:57	7:02
7:10	7:23	7:28	7:33
7:40	7:53	7:58	8:03
8:10	8:23	8:28	8:33
8:40	8:56	9:02	9:07
9:10	9:26	9:32	9:37
9:35	9:51	9:57	10:02
10:02	10:18	10:24	10:29
10:20	10:38	10:44	10:50
10:47	11:06	11:12	11:18
11:15	11:34	11:40	11:46
11:40	11:59	**12:05**	**12:11**
12:05	**12:24**	**12:30**	**12:36**
12:30	**12:49**	**12:55**	**1:01**
12:55	**1:14**	**1:20**	**1:26**
1:20	**1:39**	**1:45**	**1:51**
1:45	**2:04**	**2:10**	**2:16**
2:10	**2:29**	**2:35**	**2:41**
2:35	**2:54**	**3:00**	**3:06**
3:00	**3:19**	**3:25**	**3:31**
3:25	**3:44**	**3:50**	**3:56**
3:50	**4:09**	**4:15**	**4:21**
4:15	**4:34**	**4:40**	**4:46**
4:40	**4:58**	**5:04**	**5:10**
5:05	**5:23**	**5:29**	**5:35**
5:30	**5:48**	**5:54**	**6:00**
5:55	**6:13**	**6:19**	**6:25**
6:20	**6:36**	**6:42**	**6:48**
6:50	**7:05**	**7:11**	**7:17**
7:25	**7:40**	**7:46**	**7:52**
8:05	**8:20**	**8:26**	**-**
8:50	**9:05**	**9:11**	**-**
9:30	**9:45**	**9:51**	**-**
10:05	**10:20**	**10:25**	**-**
10:40	**10:55**	**11:00**	**-**
11:15	**11:30**	**11:33**	**-**
11:50	12:04	12:07	-
12:30	12:44	12:47	-
W 1:20	1:33	1:36	-

Sunday 87

Inbound

Clarendon Hill	Davis Station	Lechmere Station
6:00	6:03	6:18
7:00	7:03	7:18
8:00	8:03	8:18
8:55	8:58	9:13
9:30	9:33	9:48
10:05	10:08	10:26
10:45	10:48	11:07
11:25	11:29	11:50
12:05	**12:09**	**12:30**
12:45	**12:49**	**1:10**
1:25	**1:29**	**1:50**
2:05	**2:09**	**2:30**
2:45	**2:49**	**3:10**
3:25	**3:29**	**3:50**
4:05	**4:09**	**4:30**
4:45	**4:49**	**5:10**
5:25	**5:29**	**5:50**
6:05	**6:09**	**6:27**
6:45	**6:49**	**7:07**
7:30	**7:33**	**7:50**
8:30	**8:33**	**8:49**
9:25	**9:28**	**9:44**
10:15	**10:18**	**10:34**
11:05	**11:08**	**11:24**
11:55	**11:58**	12:11
12:45	12:48	1:01

Outbound

Lechmere Station	Davis Station	Clarendon Hill
6:38	6:52	6:58
7:38	7:52	7:58
8:38	8:52	8:58
9:35	9:50	9:57
10:15	10:30	10:38
10:55	11:13	11:21
11:35	11:53	**12:01**
12:15	**12:33**	**12:41**
12:55	**1:13**	**1:21**
1:35	**1:53**	**2:01**
2:15	**2:33**	**2:41**
2:55	**3:13**	**3:21**
3:35	**3:53**	**4:01**
4:15	**4:33**	**4:41**
4:55	**5:13**	**5:21**
5:35	**5:53**	**6:01**
6:15	**6:33**	**6:41**
7:00	**7:18**	**7:26**
7:55	**8:12**	**8:19**
8:55	**9:10**	**9:16**
9:50	**10:03**	**10:09**
10:40	**10:53**	**10:59**
11:30	**11:43**	**11:49**
12:20	12:32	12:38
W 1:18	1:29	1:35

W waits for last train to arrive station

PM times are **bold**

Information in this timetable is subject to change without notice. Traffic and weather may affect running times.

Always check bus destination signs before boarding. Some buses may only serve a part, or skip portions of this route.

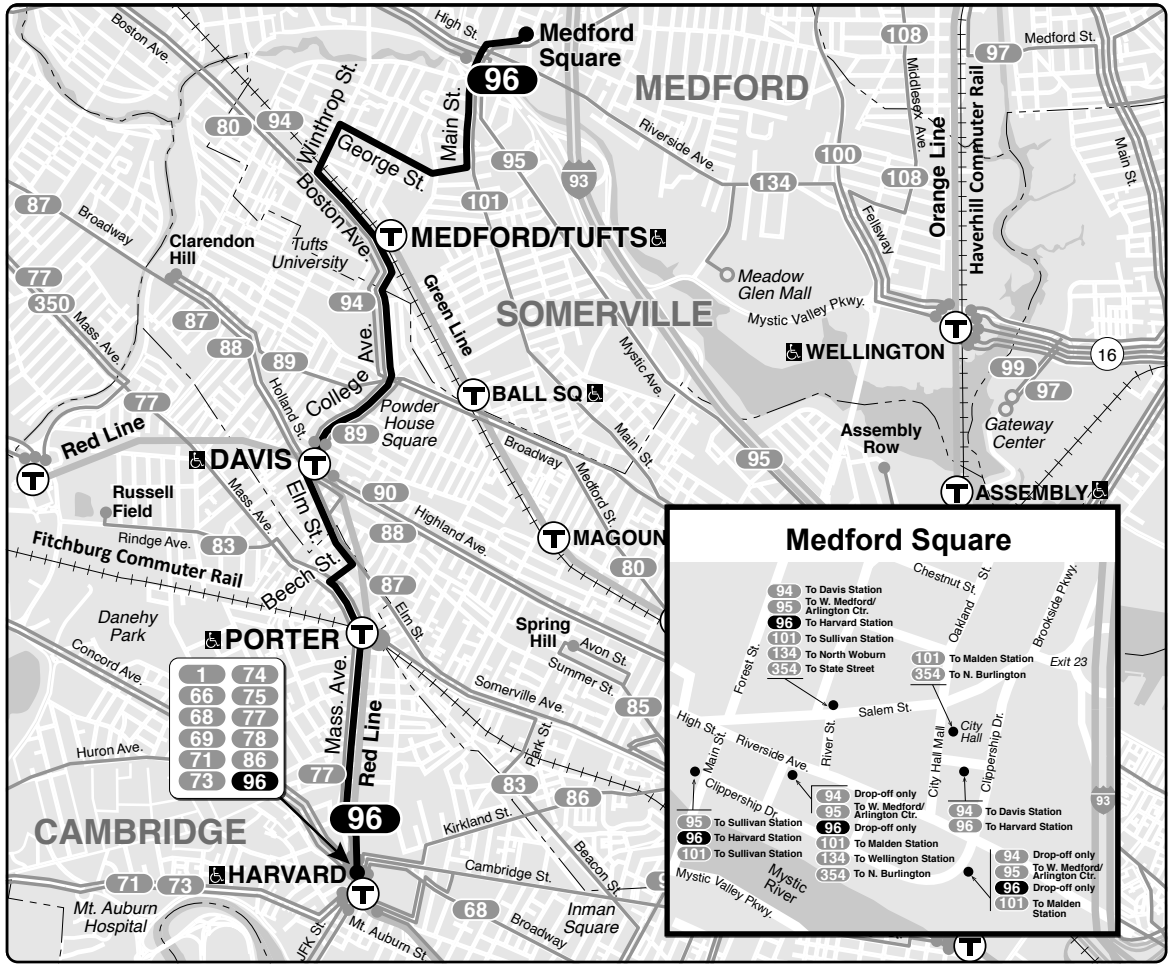
2022 Holidays

- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SUN Thanksgiving Day
- SUN Christmas Day
- SUN Christmas Day Observed
- SAT New Year's Eve
- SUN New Year's Day

Effective **August 28, 2022** Replaces March 2022

96 Medford Sq – Harvard Sta

Schedule Change – Saturday



Medford Square

- Transfer to bus/subway available on CharlieCard—good for 2 hours, pay fare difference.
- Children 11 & under ride free with a paying customer.

All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Bus	**$1.70**	**$1.70**	**$0.85**
Bus + Subway	**$2.40**	**$4.10**	**$1.10**

Complete fare/pass rules and free/reduced fare eligibility:
mbta.com/fares or call **617-222-3200**

Connections

RED LINE

FITCHBURG LINE

Information **617-222-3200**
Lost and Found **617-222-2229**
TTY **617-222-5146**

Realtime arrival information, maps, and more
mbta.com

A126-3-22.1

Weekday 96

Inbound			Outbound		
Medford Square	Davis Station	Harvard Station	Harvard Station	Davis Station	Medford Square
5:00	5:11	5:22	5:40	5:48	6:02
5:30	5:41	5:52	6:10	6:18	6:32
6:00	6:11	6:22	6:40	6:48	7:02
6:30	6:41	6:52	7:10	7:20	7:38
7:00	7:15	7:32	7:40	7:50	8:08
7:30	7:45	8:02	8:10	8:21	8:38
8:00	8:15	8:32	8:40	8:51	9:09
8:30	8:45	9:01	9:10	9:20	9:38
9:00	9:13	9:27	9:40	9:50	10:07
9:30	9:43	9:57	10:25	10:35	10:50
10:00	10:13	10:27	11:15	11:25	11:40
10:40	10:53	11:07	**12:05**	**12:15**	**12:31**
11:30	11:43	11:57	**12:55**	**1:05**	**1:21**
12:20	**12:33**	**12:47**	**1:45**	**1:55**	**2:15**
1:10	**1:23**	**1:37**	**2:30**	**2:41**	**3:02**
2:00	**2:13**	**2:27**	**3:05**	**3:18**	**3:40**
2:50	**3:03**	**3:18**	**3:35**	**3:48**	**4:10**
3:33	**3:46**	**4:01**	**4:05**	**4:18**	**4:40**
4:03	**4:16**	**4:31**	**4:35**	**4:48**	**5:10**
4:33	**4:46**	**5:01**	**5:05**	**5:18**	**5:40**
5:01	**5:17**	**5:34**	**5:37**	**5:50**	**6:12**
5:33	**5:49**	**6:06**	**6:10**	**6:23**	**6:45**
6:03	**6:16**	**6:32**	**6:37**	**6:50**	**7:08**
6:30	**6:43**	**6:59**	**7:05**	**7:14**	**7:30**
7:00	**7:11**	**7:24**	**7:35**	**7:44**	**8:00**
7:30	**7:41**	**7:54**	**8:20**	**8:29**	**8:45**
8:05	**8:13**	**8:25**	**9:20**	**9:28**	**9:41**
8:50	**8:58**	**9:09**	**10:20**	**10:28**	**10:41**
9:50	**9:58**	**10:09**	**11:20**	**11:28**	**11:41**
10:50	**10:58**	**11:09**	12:20	12:28	12:41
11:50	**11:58**	12:09	W 1:20	1:28	1:41
12:50	12:58	1:09			

Saturday 96

Inbound			Outbound		
Medford Square	Davis Station	Harvard Station	Harvard Station	Davis Station	Medford Square
5:45	5:53	6:04	6:15	6:22	6:33
6:45	6:53	7:04	7:15	7:22	7:33
7:45	7:53	8:04	8:15	8:22	8:33
8:45	8:54	9:06	9:15	9:24	9:38
9:45	9:56	10:09	10:15	10:24	10:38
10:45	10:58	11:12	11:15	11:26	11:43
11:25	11:38	11:52	**12:00**	**12:11**	**12:28**
12:05	**12:18**	**12:32**	**12:40**	**12:51**	**1:09**
12:45	**12:58**	**1:15**	**1:25**	**1:37**	**1:55**
1:35	**1:50**	**2:07**	**2:10**	**2:22**	**2:40**
2:20	**2:32**	**2:48**	**2:55**	**3:08**	**3:24**
3:05	**3:17**	**3:33**	**3:40**	**3:52**	**4:09**
3:50	**4:02**	**4:18**	**4:25**	**4:36**	**4:53**
4:35	**4:47**	**5:03**	**5:10**	**5:21**	**5:38**
5:20	**5:32**	**5:48**	**5:55**	**6:06**	**6:23**
6:05	**6:17**	**6:33**	**6:40**	**6:51**	**7:08**
6:50	**7:01**	**7:15**	**7:25**	**7:36**	**7:53**
7:42	**7:51**	**8:05**	**8:10**	**8:19**	**8:33**
8:40	**8:49**	**9:03**	**9:10**	**9:19**	**9:33**
9:40	**9:49**	**10:03**	**10:10**	**10:19**	**10:33**
10:40	**10:49**	**11:02**	**11:10**	**11:19**	**11:33**
11:40	**11:48**	12:00	12:10	12:19	12:33
12:40	12:48	1:00	W 1:20	1:28	1:40

Sunday 96

Inbound			Outbound		
Medford Square	Davis Station	Harvard Station	Harvard Station	Davis Station	Medford Square
6:00	6:08	6:19	6:30	6:37	6:47
7:00	7:08	7:19	7:30	7:37	7:47
8:00	8:09	8:21	8:30	8:37	8:47
9:00	9:11	9:23	9:30	9:39	9:52
10:00	10:13	10:27	10:30	10:39	10:52
11:00	11:13	11:27	11:30	11:41	11:57
12:00	**12:13**	**12:27**	**12:32**	**12:43**	**12:59**
1:02	**1:17**	**1:32**	**1:36**	**1:48**	**2:04**
2:08	**2:20**	**2:34**	**2:38**	**2:50**	**3:05**
3:08	**3:20**	**3:34**	**3:38**	**3:50**	**4:05**
4:08	**4:20**	**4:34**	**4:38**	**4:49**	**5:05**
5:08	**5:20**	**5:34**	**5:38**	**5:49**	**6:05**
6:08	**6:20**	**6:34**	**6:38**	**6:49**	**7:05**
7:08	**7:17**	**7:29**	**7:38**	**7:49**	**8:05**
8:08	**8:17**	**8:29**	**8:38**	**8:47**	**9:00**
9:08	**9:17**	**9:29**	**9:38**	**9:47**	**10:00**
10:08	**10:17**	**10:29**	**10:38**	**10:47**	**11:00**
11:08	**11:16**	**11:28**	**11:38**	**11:47**	12:00
12:08	12:16	12:28	12:31	12:40	12:53
12:57	1:05	1:17	W 1:20	1:28	1:39

2022 Holidays

- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SUN Thanksgiving Day
- SUN Christmas Day
- SUN Christmas Day Observed
- SAT New Year's Eve
- SUN New Year's Day

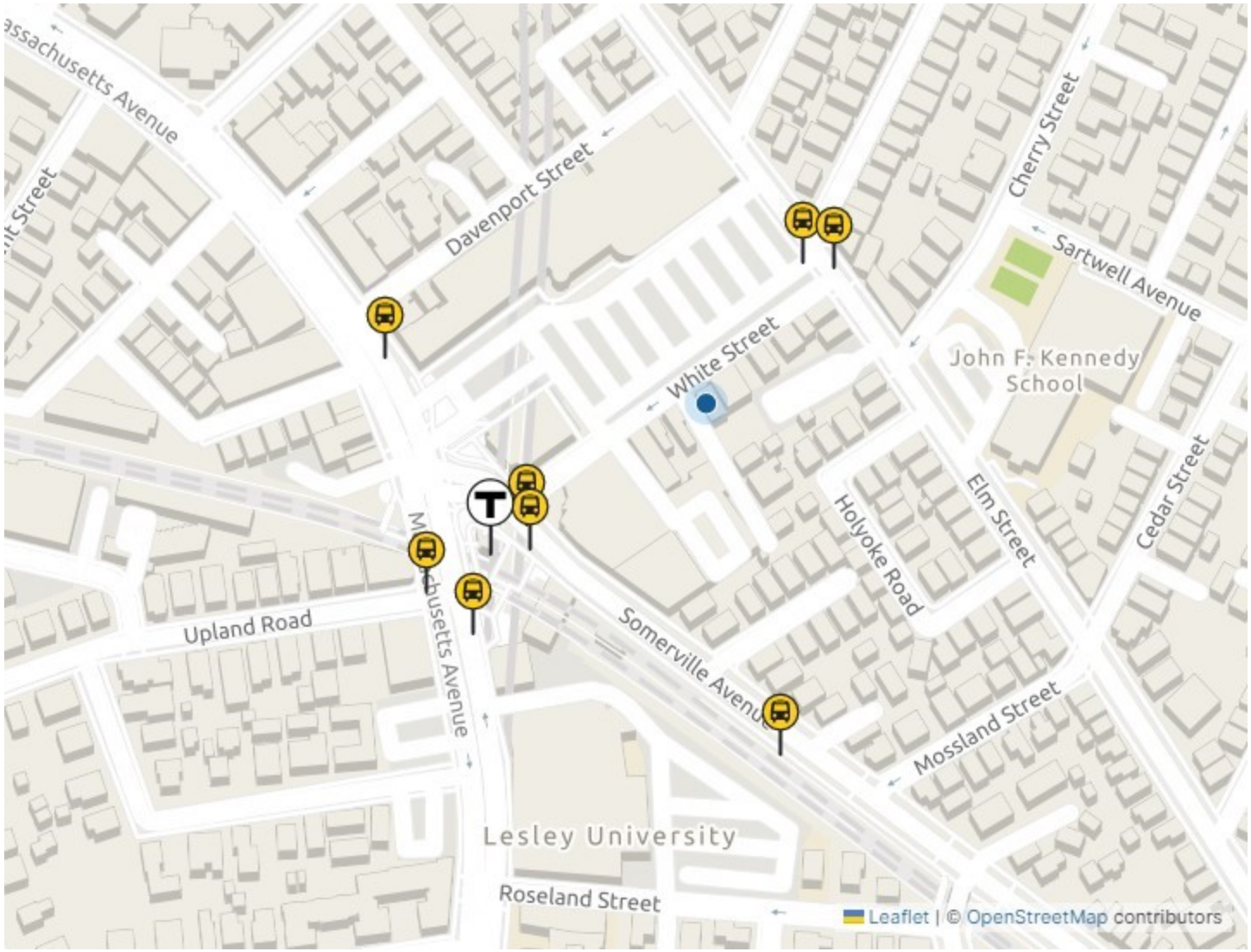
For additional service between Medford Square & Davis Square please refer to Route 94

W waits for last train to arrive station

PM times are **bold**

Information in this timetable is subject to change without notice. Traffic and weather may affect running times.

Always check bus destination signs before boarding. Some buses may only serve a part, or skip portions of this route.


Davenport Street
Cherry Street
Sartwell Avenue
John F. Kennedy School
White Street
Holyoke Road
Elm Street
Cedar Street
Upland Road
Somerville Avenue
Mossland Street
Lesley University
Roseland Street
Leaflet | © OpenStreetMap contributors

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Appendix E: Bicycle Facilities

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Somerville Bikes

Issued December 2017

MORE

Mixed Use Path / Protected Bike Lane

Bike Lane

Sharrow

LESS

COMFORT LEVEL

MEDFORD

CAMBRIDGE

EVERETT

BOSTON

Tufts University

Teele Square

Davis Square

Porter Square

Magoun Square

Ten Hills

Winter Hill

Assembly Square

Sullivan Square

East Somerville

Spring Hill

Union Square

Inner Belt

Inman Square

Lechmere

16

38

28

93

CURTIS ST

POWDER HOUSE BLVD

PACKARD AVE

COLLEGE AVE

BROADWAY

CAMERON AVE

HOLLAND ST

KIDDER AVE

MORRISON AVE

HIGHLAND RD

CEDAR ST

LOWELL ST

MEDFORD ST

TEMPLE ST

SCHOOL ST

GRAND UNION BLVD

COMMUNITY PATH

ELM ST

WILLOW AVE

HUDSON ST

HIGHLAND AVE

CENTRAL ST

PEARL ST

CROSS ST

WALNUT ST

TUFTS ST

WASHINGTON ST

SUMMER ST

SOMERVILLE AVE

BOW ST

JOY ST

PARK ST

DANE ST

BEACON ST

WASHINGTON ST

PROSPECT ST

MEDFORD ST

Neighborway (Quiet Useful Street)

Short Cut

Proposed Community Path Extension

2 Way Bike Traffic

1 Way Bike Traffic
(arrows point in direction of flow)

1 Direction Bike Lane, 1 Direction Sharrows

Steep Slopes
(Arrow points in direction of climb)

Hubway Station

Bike Repair Station

Red Line Station

Orange Line Station

Proposed Green Line Station

Under Construction for 2018 season

Prepared by Olivia Percy and Adam Polinski

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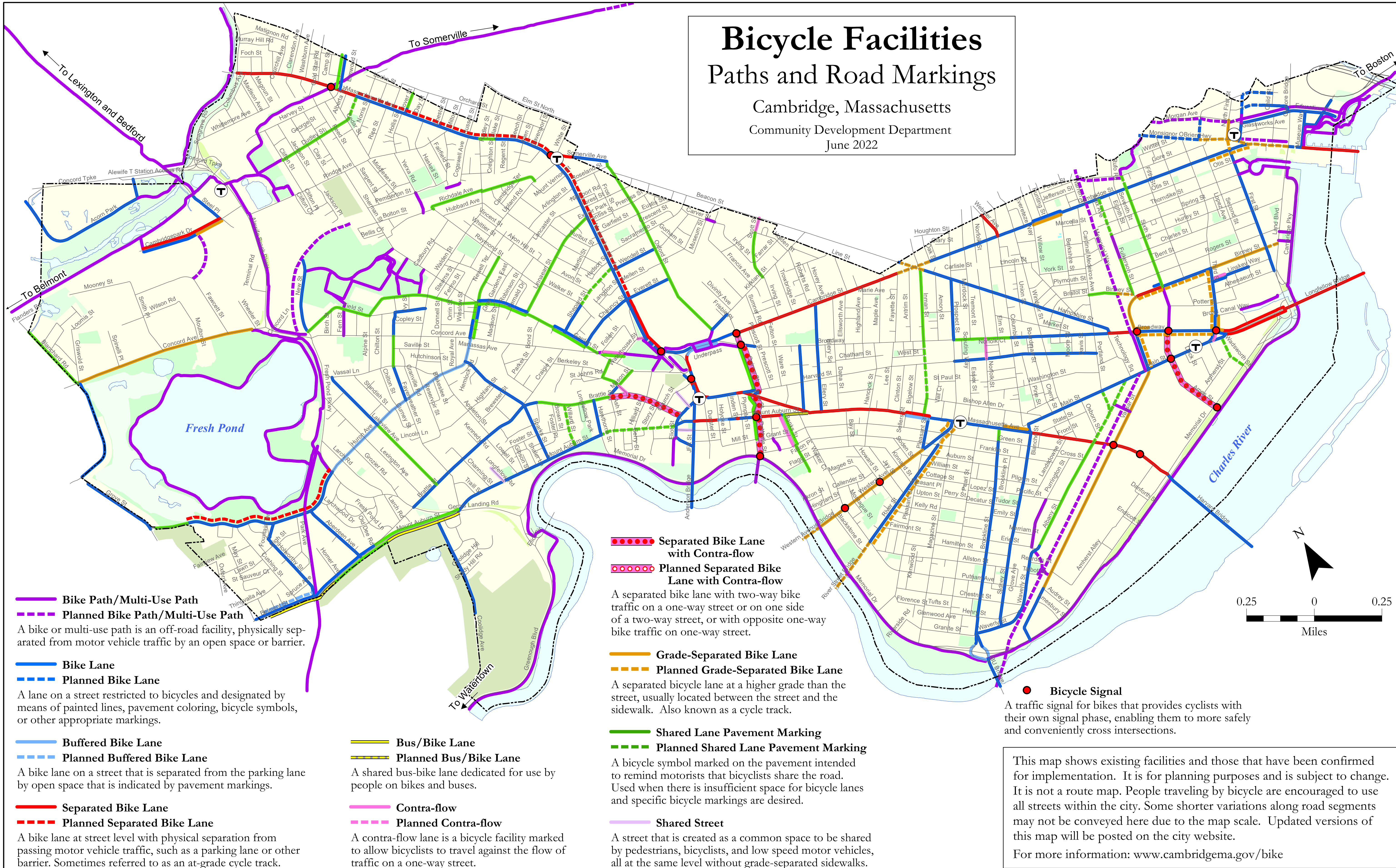
Bicycle Facilities

Paths and Road Markings

Cambridge, Massachusetts

Community Development Department
June 2022



Bike Path/Multi-Use Path
Planned Bike Path/Multi-Use Path
A bike or multi-use path is an off-road facility, physically separated from motor vehicle traffic by an open space or barrier.

Bike Lane
Planned Bike Lane
A lane on a street restricted to bicycles and designated by means of painted lines, pavement coloring, bicycle symbols, or other appropriate markings.

Buffered Bike Lane
Planned Buffered Bike Lane
A bike lane on a street that is separated from the parking lane by open space that is indicated by pavement markings.

Separated Bike Lane
Planned Separated Bike Lane
A bike lane at street level with physical separation from passing motor vehicle traffic, such as a parking lane or other barrier. Sometimes referred to as an at-grade cycle track.

Bus/Bike Lane
Planned Bus/Bike Lane
A shared bus-bike lane dedicated for use by people on bikes and buses.

Contra-flow
Planned Contra-flow
A contra-flow lane is a bicycle facility marked to allow bicyclists to travel against the flow of traffic on a one-way street.

Separated Bike Lane with Contra-flow
Planned Separated Bike Lane with Contra-flow
A separated bike lane with two-way bike traffic on a one-way street or on one side of a two-way street, or with opposite one-way bike traffic on one-way street.

Grade-Separated Bike Lane
Planned Grade-Separated Bike Lane
A separated bicycle lane at a higher grade than the street, usually located between the street and the sidewalk. Also known as a cycle track.

Shared Lane Pavement Marking
Planned Shared Lane Pavement Marking
A bicycle symbol marked on the pavement intended to remind motorists that bicyclists share the road. Used when there is insufficient space for bicycle lanes and specific bicycle markings are desired.

Shared Street
A street that is created as a common space to be shared by pedestrians, bicyclists, and low speed motor vehicles, all at the same level without grade-separated sidewalks.

Bicycle Signal
A traffic signal for bikes that provides cyclists with their own signal phase, enabling them to more safely and conveniently cross intersections.

This map shows existing facilities and those that have been confirmed for implementation. It is for planning purposes and is subject to change. It is not a route map. People traveling by bicycle are encouraged to use all streets within the city. Some shorter variations along road segments may not be conveyed here due to the map scale. Updated versions of this map will be posted on the city website.

For more information: www.cambridgema.gov/bike

Map prepared by Brendan Monroe on June 24, 2022. CDD GIS C:\Projects\BikePaths\Facilities11x17.mxd

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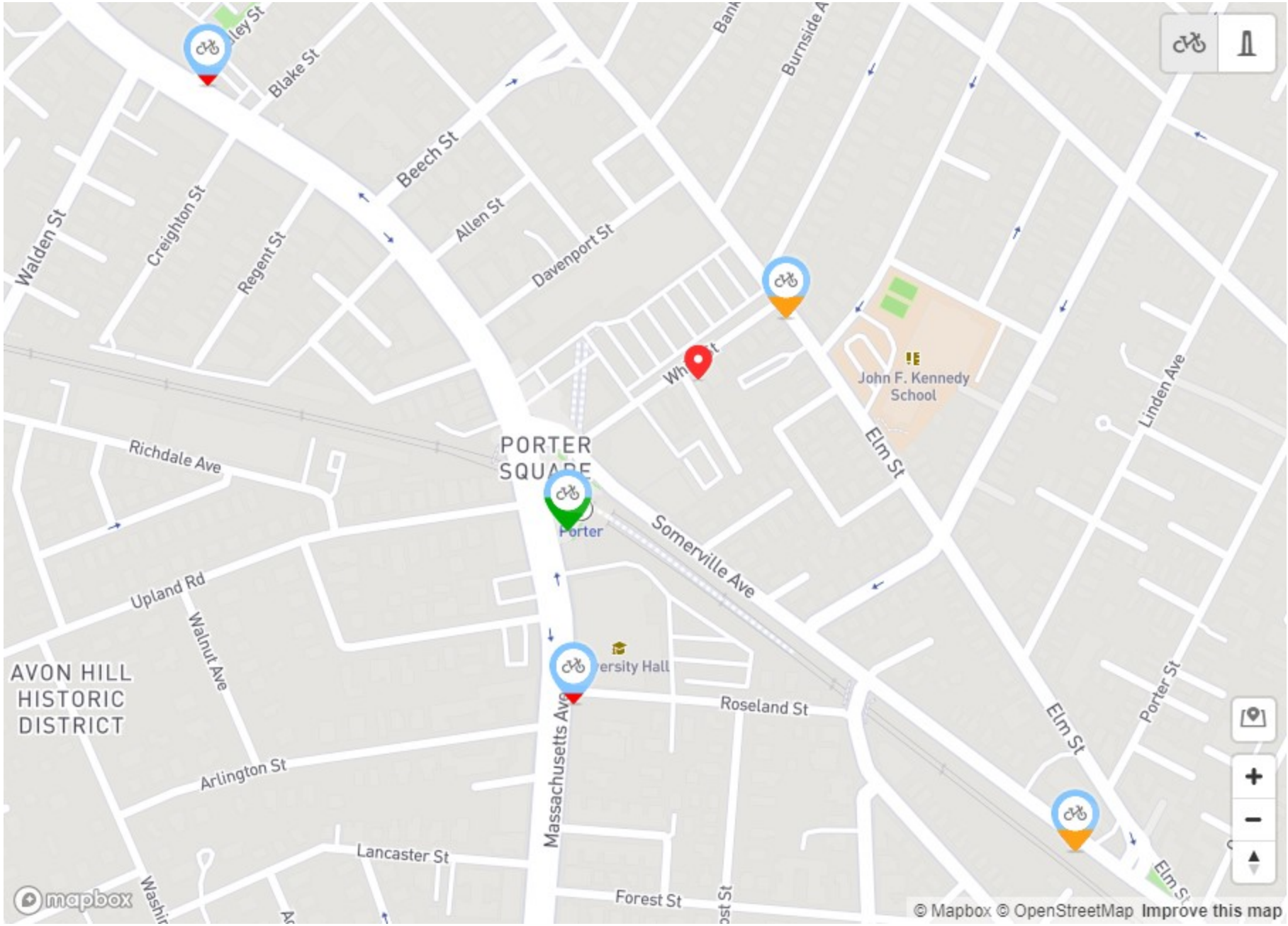
Blake St
Beech St
Allen St
Davenport St
Walden St
Creighton St
Regent St
Burnside A
John F. Kennedy School
Linden Ave
Elm St
Richdale Ave
PORTER SQUARE
Porter
Somerville Ave
Upland Rd
Walnut Ave
AVON HILL HISTORIC DISTRICT
Massachusetts Ave
Roseland St
Arlington St
Lancaster St
Forest St
Porter St
mapbox
© Mapbox © OpenStreetMap Improve this map

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Appendix F: Walking Map

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GROUNDWORK
CHANGING PLACES CHANGING LIVES
SHAPE UP SOMERVILLE
walkBoston
Somervillewalks
Joe Curtatone, Mayor
MUNICIPAL FREEDOM GIVES NATIONAL STRENGTH
SOMERVILLE, MASS.
5 min walk /.25 mi
existing path
proposed path
N
Meadow Glen Mall
WELLINGTON
Mystic Valley Pkwy
Mystic River Reservation
Mystic River
Mystic River Path
I-93
Mystic Ave
MEDFORD
EVERETT
ARLINGTON
CAMBRIDGE
BOSTON
SOMERVILLE
TUFTS UNIVERSITY
WALNUT HILL
TEELE SQUARE
POWDER HOUSE CIRCLE
BALL SQUARE
MAGOUN SQUARE
TEN HILLS
ASSEMBLY SQUARE
MOUNT BENEDICT
WINTER HILL
City Hall Annex
Fire Station Headquarters
Foss Park
Kensington underpass
Pedestrian underpass
SULLIVAN SQUARE
EAST SOMERVILLE
GILMAN SQUARE
City Hall
High School
Library
CENTRAL HILL
SPRING HILL
Somerville Hospital
Trum Field
Department of Public Works
TAB Building
Traffic & Parking
DAVIS SQUARE
Somerville Community Path
Linear Park
Minuteman Path
ALEWIFE
Alewife Brook Park
Dilboy Field
PORTER SQUARE
WILSON SQUARE
PROSPECT HILL
STRAWBERRY HILL
Ralph & Jenny Senior Center
School Department
Public Safety Building
UNION SQUARE
Somerville Community Path (proposed)
North Point
LECHMERE
INMAN SQUARE
TO CENTRAL SQUARE
TO KENDALL SQUARE
HARVARD SQUARE
Fresh Pond Reservation
Fresh Pond
Broadway
Massachusetts Ave
Highland Ave
Somerville Ave
Medford St
Washington St
McGrath Hwy
Cambridge St
5 min.
© WalkBoston 10/07

Plan a Walk

5-minute walks. We've labeled the city in 5-minute segments. Walk out 5 minutes and back 5 minutes and you have a 10-minute walk. Vary the route to keep it interesting. Then try walking out 10 minutes and back 10 minutes [20 minutes].

Enjoy Somerville and get healthy. Walking provides abundant benefits for your heart, lungs, muscles and energy. Walk at lunchtime, after dinner, or run neighborhood errands by foot.

Build stronger families and communities. Pedestrian activity makes residential areas more neighborly and commercial areas more vibrant. Shop/walk the squares with a friend, meet a neighbor or walk with a relative.

Participate in Walk/Ride Day. The last Friday of every month wear green and go car-free for the day. To enter raffles, and to learn more visit www.GoGreenStreets.org.

Places to Walk

Somerville is a compact city. Neighborhoods are close together, retail areas easy to find, and sidewalks go everywhere.

Less than 10 minutes:
- Sullivan Sq. to Assembly Sq.
- Inman Sq. to Union Sq.
- Tufts University to Ball Sq.
- Davis Square to Powderhouse Circle

Less than 15 minutes:
- Davis Sq. to Porter Sq.
- Teele Sq. to Davis Sq.
- Winter Hill to Mystic River
- Sullivan Sq. to Foss Park
- Union Sq. to City Hall

Less than 25 minutes:
- Davis Sq. to Alewife
- Union Sq. to Lechmere Stn.
- Magoun Sq. to Foss Park
- Sullivan Sq. to Union Sq.

Shape Up Approved Restaurants

Look for Shape Up Somerville window stickers in restaurants serving healthy food: fruit, vegetables, whole grains, smaller portion sizes, and low-fat dairy products. Walking combined with a balanced diet of foods low in fat and cholesterol can give you a lift for a lifetime. For more information: Nicole Rioles in the Health Dept: 617-625-6600 x2414 or nrioles@somervillema.gov www.somervillema.gov/Department.cfm?dept=Health

311—One Call to City Hall

Dial 311 from any phone to ask about health and recreation, walking opportunities/issues, traffic and parking problems, and to report unsafe sidewalks, potholes, and missed trash pick-ups.

Planeje uma Caminhada

Caminhadas de 5-minutos. Rotulamos a cidade em segmentos de 5 minutos. Ande durante 5 minutos e volte em 5 minutos e assim terá 10 minutos de caminhada. Varie o caminho para sair da rotina.

Construa famílias e comunidades mais fortes. Faça compras andando pelas praças com amigos, vá encontrar com um vizinho ou caminhe om um de seus parentes. Desfrute Somerville e figue saudável.

Participe do dia de caminhar/andar de bicicleta/transporte público. Na última sexta-feira do mês, vista-se de verde e não use o carro o dia todo. www.GoGreenStreets.org/

Locais para Andar

Somerville é uma cidade compacta. As vizinhanças são perto umas das outras, as lojas de varejo são fáceis de encontrar, e as calçadas levam você a todos os lugares.

Menos de 10 minutos:
- Sullivan Sq. até Assembly Sq.
- Inman Sq. até Union Sq.
- Tufts University até Ball Sq.
- Davis Square to Powderhouse Circle

Menos de 15 minutos:
- Davis Sq. até Porter Sq.
- Teele Sq. até Davis Sq.
- Winter Hill até Mystic River
- Sullivan Sq. até Foss Park
- Union Sq. até City Hall

Menos de 25 minutos:
- Davis Sq. até Alewife
- Union Sq. até Lechmere Stn.
- Magoun Sq. até Foss Park
- Sullivan Sq. até Union Sq.

Shape Up: Restaurantes Aprovados

Procure por adesivos do Shape Up Somerville nas janelas dos restaurantes que servem comidas saudáveis: frutas, legumes e verduras, grãos integrais, porções pequenas e produtos laticínios com baixo teor de gordura. As caminhas combinadas com uma dieta balanceada de alimentos com baixo teor de gordura e colesterol, podem lhe dar uma levantada para o resto da vida. Informações: Nicole Rioles no Departamento de Saúde (Health Dept.) 617-625-6600 X2414, nrioles@somervillema.gov www.somervillema.gov/Department.cfm?dept=Health

311 Ligue para a Prefeitura

Disque 311 de qualquer telefone para perguntar sobre saúde e recreação, oportunidades/assuntos relacionados a caminhadas, problemas de tráfego e de estacionamento e para relatar calçadas inseguras, buracos e lixo não retirado.

Planee una Caminata

Caminatas de 5 minutos. Hemos marcado la ciudad en segmentos de 5 minutos. Salga a caminar por 5 minutos y regrese en 5 minutos y ya caminó 10 minutos. Varíe su ruta para mantenerla entretenida.

Disfrute de Somerville y sea saludable. El caminar proporciona beneficios abundantes para su corazón, pulmones, músculos y energía. Camine al mediodía, después de la cena o camine para hacer sus diligencias por el vecindario. Ayude a crear familias y comunidades más fuertes. Salga de compras o camine por las plazas con sus amistades, reúnase con un vecino o camine con un familiar.

Participe en "Walk/Ride Day". El último viernes de cada mes, vístase de verde y no use su auto ese día.www.GoGreenStreets.org

Lugares para Caminar

Somerville es una ciudad compacta. Los vecindarios se encuentran cerca, las áreas comerciales son fáciles de encontrar y las aceras llevan a todas partes.

Menos de 10 minutos:
- Sullivan Sq. a Assembly Sq.
- Inman Sq. a Union Sq.
- Tufts University a Ball Sq.
- Davis Square to Powderhouse Circle

Menos de 15 minutos:
- Davis Sq. a Porter Sq.
- Teele Sq. a Davis Sq.
- Winter Hill a Mystic River
- Sullivan Sq. a Foss Park
- Union Sq. a City Hall

Menos de 25 minutos:
- Davis Sq. a Alewife
- Union Sq. a Lechmere Stn.
- Magoun Sq. a Foss Park
- Sullivan Sq. a Union Sq.

Shape Up: Restaurantes Aprobados

Busque las etiquetas de "Shape Up Somerville" en las ventanas de los restaurantes que sirven alimentos saludables: frutas, vegetales, granos enteros, porciones más pequeñas y productos lácteos bajos en grasa. La combinación de caminar y comer una dieta balanceada baja en grasa y colesterol, puede enriquecerle de por vida. Si desea información: Nicole Rioles en el Departamento de Salud al 617.625.6600 x2414, nrioles@somervillema.gov www.somervillema.gov/Department.cfm?dept=health

Llame a la Alcaldía al: 311-One Call

Marque 311 de cualquier teléfono y pregunte acerca de salud y recreación, oportunidades para caminar, asuntos relacionados con caminar, problemas de tráfico y estacionamiento y para reportar la necesidad de trabajo en el reparo de aceras, hoyos y basura no recogida.

Fè Plan pou w Mache

Mache pandan 5 minit. Nou make lavil la pa tranch 5 minit. Mache ale pandan 5 minit epi retounen pandan 5 minit ; sa ap fè w mache pandan 10 minit. Chanje wout la pou mache a ka toujou enteresan.

Jwi Somerville epi gen bòn sante. Mache bay anpil avantaj pou kè w, poumon w yo, vyann kò w yo ak enèji. Mache nan lè manje midi, apre w fin manje aswè oubyen fè virewon nan vwazinaj la a pye. Rete an bòn sante lè w mache.

Mache nan Jou Mache/Monte bisiklèt. Nan dènye vandredi chak mwa abiye an vè epi pa kondwi machin ou ditou pou jounen an. www.GoGreenStreets.org.

Kote pou w Mache Yo

Somerville se yon vil ki konsantre. Katye yo tou pre youn ak lòt. Li fasil pou w jwenn zòn kote k gen magazen k vann an detay yo, epi twotwa yo al toupatou.

Pi piti pase 10 minit:
- Sullivan Sq. a Assembly Sq.
- Inman Sq. a Union Sq.
- Tufts University a Ball Sq.
- Davis Square to Powderhouse Circle

Pi piti pase 15 minit:
- Davis Sq. a Porter Sq.
- Teele Sq. a Davis Sq.
- Winter Hill a Mystic River
- Sullivan Sq. a Foss Park
- Union Sq. a City Hall

Pi piti pase 25 minit:
- Davis Sq. a Alewife
- Union Sq. a Lechmere Stn.
- Magoun Sq. a Foss Park
- Sullivan Sq. a Union Sq.

Restoran Mete an Fòm Apwouve Yo

W wè etikèt Mete w an fòm Somerville nan fenèt restoran yo ki sèvi manje k bon pou lasante: fwi, legim, grenn konplè, kantite manje k pi piti, pwodwi k fèt ak lèt ki pa gen anpil grès. Mache asosye ansanm ak yon rejim balanse ki gen manje ki pa gen anpil grès ak kolestewòl ka ba w yon bourad pandan tout lavi w. Enfòmasyon: Nicole Rioles nan Depatman Lasante: 617.625.6600 Ekstansyon 2414, nrioles@somervillema.gov www.somervillema.gov/Department.cfm?dept=Health

Tel 311

Telefone 311- yon sèl kout fil pou lotèt de vil la. Make 311 nan ki nenpòt telefòn pou poze keksyon sou lasante, aktivite amizman, opòtinite/pwoblèm nan zafè mache, pwoblèm trafik ak pakin, epi pou w rapòte si gen twotwa ki danjere pou moun, twou nan lari yo, ak kote yo bliye pran fatra yo.

Map sponsored by the Robert Wood Johnson Foundation/Active Living by Design

Eat Smart. Move More. Live Better. Shape Up Somerville

Text: Bob Sloane | Design: Garfinkle Design—ninagarfinkle.com

CITY OF SOMERVILLE, MASSACHUSETTS
MAYOR'S OFFICE OF STRATEGIC PLANNING & COMMUNITY DEVELOPMENT
KATJANA BALLANTYNE
MAYOR

THOMAS F. GALLIGANI, JR.
EXECUTIVE DIRECTOR (ACTING)

May 5th, 2023

Adam Siegel
Principal
SGL Development
810 Memorial Drive, Suite 105
Cambridge, MA 02139
P: 978 314 7075
E: adam@sgldevelopment.com

Dear Mr. Siegel,

This letter is the Final Decision of the Director of Mobility for the Mobility Management Plan ('MMP') submitted by SGL Development, (the 'Applicant') for 32, 40, and 44 White Street as required by §11.4 Mobility Management of the Somerville Zoning Ordinance for a Development Review Application. The decision is an **Approval with Conditions**. This letter details the conditions necessary for the successful implementation of your plan.

Background & Applicability

The Proposed Project, located at 2, 40, and 44 White Street, would develop a research/laboratory office building with a floor area of about 40,600 square feet within the Mid-Rise 4 (MR4) Zoning District. The Applicant must provide long term and short-term bicycle parking as laid out in SZO Table 4.2.15.

	SZO Requirements	**Proposed by Applicant**
Long Term Bike Parking (min)	1 per 5,000 SF	12
Short Term Bike Parking (min)	1 per 20,000SF	3

The proposed project will meet the non-residential use with fifty (50) or more employees to trigger the MMP requirements.

Mobility Division Comments

The proposed development is located within a Transit Area approximately 500 feet from the Porter Square Red Line and Commuter Rail Station, and within .2 miles of bus stops for MBTA bus routes 83, 87, 77 and 96. The recently approved MBTA Bus Network Redesign proposes maintaining all four bus routes in this same catchment area and upgrading two (the 96 and 77) to High Frequency routes. The Site is also nearby existing biking and pedestrian amenities.

The Mobility Division supports the inclusion of 15 bicycle parking spaces. The City encourages the provision of long-term located on-site be designed with consideration for clear wayfinding, 24-hour access, secure bicycle racks, location close to entrances and access points, and separate pedestrian entries where possible. In addition, any bicycle parking that is constructed should comply with all design and access requirements in Article 11.1 of the SZO.

This property abuts a private way and in the case of any on streets changes made to White Street Place the Applicant must show that plans were coordinated with abutters.

The Mobility Division supports the absence of parking, the reduction of parking is the most effective tool for managing vehicle mode share. The Division notes the Applicant's intention of working with nearby parking facilities to facilitate some parking access for employees and does note that the SZO requirement for un-bundled parking will apply, with any tenant employees paying the full cost for the use of any nearby parking facilities.

Plan Commitments

Programs and Services Required by SZO

The Applicant has made the following commitments in relation to the mode share requirements for all mobility management plans:

- To making reasonable efforts to control the percentage of trips made by automobile at fifty percent (50%) or less and to implement additional mobility management programs and services if annual monitoring and reporting identifies a shortfall in meeting this goal.

The Applicant must make the following commitments for any development that has non-residential uses with a combined total of fifty (50) or more employees:

- To provide an on-site transportation coordinator,
- To post and distribute mobility management information, including information pertaining to pedestrian, cycling and transit access to the Project Site,
- To host an annual mobility management education meeting for tenants and their employees,

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(617) 625-6600 EXT. 2500 ● TTY: (617) 666-0001 ● FAX: (617) 625-0722
www.somervillema.gov

- To provide a Guaranteed Ride Home program,
- To provide Qualified Transportation Fringe Benefits,
- Unbundled Parking, if parking provided,
- Preferential Parking for Carpool/Vanpool, if parking provided.

The Applicant must require future tenants to provide the following to their employees through lease agreements:

- Guaranteed Ride Home Program,
- Qualified Transportation Fringe Benefits.

The Applicant has made the following additional commitments

- To provide a digital screen in the lobby with transit schedules and arrival/departure time information,
- To provide showers and changing rooms on site.

Approval Conditions

- **CONDITION #1:** The Applicant's initial vehicle mode share commitment will be 26% so that it is consistent with, and no more vehicle dependent than, the existing commuting characteristics in Census Tract 3510.01. The Applicant will implement additional mobility management programs and services if annual monitoring and reporting identifies a shortfall in meeting this goal.
- **CONDITION #2:** In order to meet the City's SomerVision 2040 goals, the Applicant shall make reasonable efforts to control the percentage of trips made by automobile at 25% or fewer by 2040. The Applicant will implement additional mobility management programs and services if annual monitoring and reporting identifies a shortfall in meeting this goal.
- **CONDITION #3:** The Applicant shall submit posted and distributed mobility management information to the Director of Mobility for review and approval. In addition to local transit maps and schedules, mobility management information must include the locations of nearby car-sharing stations, Bluebikes stations, and the availability of carpool/vanpool opportunities. After approval by the Director of Mobility and prior to the issuance of any Certificate of Occupancy for the building, mobility management information must be posted in building lobbies, on the project website, and on related media.
- **CONDITION #4:** In any lease agreement with all future tenants of any number of employees, the Applicant shall require tenant(s) to subsidize MBTA transit passes for employees by at least 90% of the pass cost, up to the federal maximum Qualified Transportation Fringe benefits per current U.S. Internal Revenue Code ($300 per month in 2023), subject to annual increases. Standard lease agreement language for subsidized MBTA transit passes must be approved by the Director prior to their execution in lease

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agreements. To verify ongoing conformance, the property owner or property manager must provide either a copy of executed lease agreements or an affidavit signed by the property owner and tenant(s) verifying that this language was included and agreed to in the lease or other agreement. Applicant may choose to provide these subsidies themselves directly to site employees and must provide these subsidies directly for employees of any tenant that does not comply with this condition.

- **CONDITION #5:** In any lease agreement with all future tenants of any number of employees, the Applicant shall require tenant(s) to enroll in the BlueBikes Bike Share Corporate Partner Program (or equivalent) and subsidize annual BlueBikes memberships for employees at the Gold subsidy level or higher (100% subsidy), subject to rate increases. Standard lease agreement language for subsidized BlueBikes annual passes must be approved by the Director prior to their execution in lease agreements. To verify ongoing conformance, the property owner or property manager must provide either a copy of executed lease agreements or an affidavit signed by the property owner and tenant(s) verifying that this language was included and agreed to in the lease or other agreement. Applicant may choose to provide these subsidies themselves directly to site employees and must provide these subsidies directly for employees of any tenant that does not comply with this condition.
- **CONDITION #6:** Provision of on-site real time transit information is required, consisting of two (2) connected TransitScreen displays (or equivalent service) in the building lobby, one internally and one facing the street
- **CONDITION #7:** A least one (1) bicycle repair facility must be provided for tenant employees in a convenient location such as the bike storage room and must be maintained in a state of good repair. Locker rooms with shower facilities must be provided for tenant employees and can be provided in a single space for all building users, in spaces for each tenant, or in multiple spaces shared amongst tenants. Locker room and shower capacity must meet expected employee demand. All bicycle parking must comply with SZO Requirements.
- **CONDITION #8:** For the purpose of reducing daily peak-hour vehicle trips, the Applicant shall, to the extent practicable, work with lessees, the City of Somerville's Economic Development Division, and the community to develop strategies to advertise employment opportunities and seek qualified candidates that live within Somerville. The Applicant shall provide annual reports of data on the compliance with this condition, including but not limited to employee's daily trip place of origin data (i.e. home city/town), and other relevant information as required by the Director of Mobility.
- **CONDITION #9:** The Applicant will provide a payment of $18,784.58 to the City of Somerville to fund the operations, maintenance, and/or expansion of the Bluebikes bike share system. Funds must be provided prior to issuance of any Building Permit for the Project.
- **CONDITION #10:** All loading activities will take place within the loading zone shown on the Transportation Access Plan and no vehicles larger than 24ft shall be used. All

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vehicles must back in and front out of loading zone for all activities as shown on the submitted Transportation Access Plan.

- **CONDITION #11:** Tenant employees must pay market rate directly for parking. Neither the Applicant nor tenants may not lease parking spaces or passes on behalf of tenant employees.

Monitoring and Reporting

The property owner has committed to Annual Reporting to track, assess, and report on the implementation of the Mobility Management, including:

- An annual statistically valid travel survey of employees and residents
- Biennial (every other year) counts of motor vehicles entering & exiting the parking facility
- Annual reporting of vehicle and bicycle parking utilization
- An annual update on the implementation of Mobility Management programs & services

All monitoring must be conducted at the same time each year, as determined by the Certificate of Occupancy for each building. If the Certificate of Occupancy for a building is issued between September 1 and February 29, the monitoring shall take place during the months of September or October and be reported to the Mobility Division no later than November 30. If the Certificate of Occupancy for a building is issued between March 1 and August 31, monitoring shall take place during the months of April or May and be reported to the Mobility Division no later than June 30. This will ensure that the monitoring captures a realistic assessment of the performance of the project, while giving time to compile the results and report them to the City.

It is important to note that while approved Mobility Management Plans are transferable by and among private parties, this transfer is contingent upon the new owner agreeing to continue to operate in accordance with the previously approved Mobility Management plan, as conditioned. Should the property owner elect to transfer some portion or all of the development subject to this Mobility Management Plan, commitment to the previously approved Mobility Management Plan is required by the new property owner.

I look forward to working with you in the future as you implement this plan. If you have any questions, please feel free to contact me at (617) 625-6600 or brawson@somervillema.gov.

Sincerely,

Somerville All-America City 2009

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(617) 625-6600 EXT. 2500 ● TTY: (617) 666-0001 ● FAX: (617) 625-0722
www.somervillema.gov

Brad Rawson
Director of Mobility
Mayor's Office of Strategic Planning & Community Development
City of Somerville, Massachusetts

I certify that I have read and agree to implement the Mobility Management Plan in the form approved by the Director of Mobility. I understand that failure to implement the approved plan may result in enforcement actions taken by the City of Somerville.

Agreed and accepted,

Adam Siegel
Principal
SGL Development

Somerville All-America City 2009

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www.somervillema.gov

SOMERVILLE, MASSACHUSETTS

32-44 White Street

Transportation Impact Study

Prepared for
SGL Development

Prepared by
Howard Stein Hudson

April 2023

HOWARD STEIN HUDSON

Engineers + Planners

Table of Contents

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Appendices

Introduction

Howard Stein Hudson (HSH) has prepared this Transportation Impact Study (TIS) as part of the City of Somerville development review process to evaluate the transportation impacts of the proposed 32, 40, and 44 White Street redevelopment project in Somerville, Massachusetts. The study complies with the TIS scoping letter that was submitted to the City of Somerville Mobility Division and approved on September 26, 2022. The Project site is bounded by existing roadways, residential, commercial buildings, and the nearby Porter Square Shopping Center parking lot. The Project involves the redevelopment of approximately 0.26 acres across three parcels fronting White Street and White Street Place in the Porter Square neighborhood.

The Project includes the demolition of the existing structures and construction of a four-story building with approximately 40,600 square feet (sf) of research and development/life science office use (excluding the mechanical penthouse) for approximately 80 employees. Located a few hundred feet from the Porter Square Massachusetts Bay Transportation Authority (MBTA) station, the Proponent expects most of the traffic to arrive by foot, bicycle, or transit. Vehicle parking will not be included in the Project; however, three short-term bicycle parking spaces for visitors and 12 covered, secured, long-term bicycle parking spaces for employees will be provided.

Study Area

Based on coordination with the City of Somerville, the study area (shown in **Figure 1**) consists of five intersections:

- Somerville Avenue/White Street (signalized);
- Somerville Avenue/Mossland Street (signalized);
- Elm Street/Mossland Street/Cedar Street (signalized);
- Elm Street/White Street (unsignalized); and
- Elm Street/Beech Street/Willow Street (unsignalized).

Figure 1. ***Study Area***

Methodology

The TIS contains the following components:

- The Existing (2023) Condition includes an inventory of the existing transportation conditions such as traffic characteristics, parking, curb usage, transit, pedestrian circulation, bicycle facilities, loading, and site conditions. Existing counts for vehicles, bicycles, and pedestrians were collected at the study area intersections. The traffic data collection effort and observations form the basis for the vehicle, pedestrian, and bicycle analyses, and MBTA ridership data serves as the basis for the transit analysis.
- The Future Condition evaluates potential transportation impacts associated with the Project.
  - The Build (2023) Condition section summarizes any transportation changes that occur because of the construction of the Project. Expected roadway modifications, as well as pedestrian, bicycle, parking, transit, or any other accommodations associated with the Project, are identified. This section evaluates potential impacts and includes Site circulation and project-generated trips by mode.
  - The Future (2028) Condition evaluates the long-term impacts for the year 2028, based on a five-year horizon from the year of the filing of this traffic study. The Future (2028) Condition section includes the effects of background projects and/or roadway improvements in the area.
- The final sections of the transportation study identify any transportation mitigation and Transportation Demand Management (TDM) measures that the Project plans to implement to minimize automobile usage and promote alternative modes of travel.

Existing Conditions

This section presents an overview of the existing study area network including vehicular, pedestrian, and bicycle conditions. Included are descriptions of roadway geometries; intersection traffic control; average daily traffic volumes; peak-hour vehicular, pedestrian, and bicycle volumes; traffic crashes; transit availability; parking; and curb usage.

Roadway Descriptions

Somerville Avenue is classified as an urban principal arterial under City of Somerville jurisdiction. It generally runs east-west from McGrath Highway in the east to Massachusetts Avenue in the west. It is a two-way road with one lane in each direction until the first intersection with Bow Street, where it becomes a one-way road in the eastbound direction. After the second intersection with Bow Street, it becomes a two-way road again. Within the study area, there are striped bicycle lanes on

both sides of the road. Between the intersection with Beacon Street and the intersection with Elm Street, on-street parking is provided on the south side of the street. Sidewalks are provided on both sides of the street.

White Street is classified as a local road under City of Somerville jurisdiction. It runs east-west between Elm Street to the east and Somerville Avenue to the west. It is a one-way, one-lane road in the westbound direction between the Porter Square Shopping Center driveway and the intersection with Elm Street. Between the Porter Square Shopping Center and the intersection with Somerville Avenue, it is a two-way street with one lane in each direction. There are no existing bicycle facilities. On-street parking is provided on the south side of the street. Sidewalks are provided on both sides of the street.

Mossland Street is classified as an urban collector under City of Somerville jurisdiction. It runs east-west between Elm Street to the east and Somerville Avenue to the west. It is a one-way, one-lane road in the westbound direction. There are no existing bicycle facilities. On-street parking is provided on the north side of the street. Sidewalks are provided on both sides of the street.

Elm Street is classified as an urban minor arterial under City of Somerville jurisdiction. It runs north-south between Davis Square to the north and Somerville Avenue to the south. It is a two-way road with one lane in each direction. A bicycle lane is provided in the northbound direction between the intersection with Somerville Avenue and the intersection with Mossland Street/Cedar Street. Within the study area, on-street parking is provided on both sides of the street. Sidewalks are provided on both sides of the street.

Cedar Street is classified as an urban collector under City of Somerville jurisdiction. It runs north-south from Broadway in the north to Elm Street in the south. It is a one-way, one-lane road in the southbound direction until its intersection with Highland Avenue, where it becomes a two-way, one-lane road. A buffered bicycle lane is provided on the west side of the street between the intersection with Highland Avenue and the intersection with Elm Street. On-street parking is provided on the east side of the street between the intersection with Highland Avenue and the intersection with Elm Street. Sidewalks are provided on both sides of the street.

Beech Street is classified as an urban minor arterial under City of Somerville jurisdiction. It runs east-west between Elm Street to the east and Massachusetts Avenue to the west. It is a two-way street with one lane in each direction. Bicycle facilities are not provided. On-street parking is provided on both sides of the street. Sidewalks are provided on both sides of the street.

Willow Avenue is classified as an urban collector under City of Somerville jurisdiction. It runs north-south between Broadway to the north and Elm Street to the south. Between the intersection

with Highland Avenue and the intersection with Elm Street, it is a one-way, one-lane road in the northbound direction. Between the Highland Avenue intersection and the Broadway intersection, it is a two-way road with one lane in each direction. There is a painted bicycle lane between the Elm Street intersection and the Highland Avenue intersection. Beyond this, sharrows are painted on the road. On-street parking is provided on both sides of the road. Sidewalks are also provided on both sides of the road.

Intersection Descriptions

Somerville Avenue/White Street is a three-legged signalized intersection with three approaches. The Somerville Avenue northbound approach consists of a shared through/right-turn lane and a bus/bicycle lane. This lane transitions into a full bicycle lane on the far side of intersection. The Somerville Avenue southbound approach consists of a through lane, a left-turn lane, and a buffered bicycle lane. The westbound White Street approach consists of a single right-turn lane. On-street parking is not provided at any of the approaches. Crosswalks, ADA-compliant ramps, and pedestrian signal equipment are provided across all approaches.

Somerville Avenue/Mossland Street is a three-legged signalized intersection with three approaches. The Somerville Avenue northbound approach consists of two through lanes and a four-foot bicycle lane that continues across the intersection. The Somerville Avenue southbound approach consists of two through lanes and a four-foot bicycle lane. The westbound Mossland Street approach consists of a right-turn lane and a left-turn lane. A bicycle box is provided across both lane approaches. On-street parking is not provided at any of the approaches. Crosswalks with ADA-compliant ramps and pedestrian signal equipment are provided across the southbound and westbound approaches.

Elm Street/Mossland Street/Cedar Street is a four-legged signalized intersection with three approaches. The northbound Elm Street approach consists of a shared left-turn/through lane and a six-foot bicycle lane. A bicycle box is provided. A bus stop is present at the approach. The southbound Elm Street approach consists of a shared through/right-turn lane. A bus stop is present near the southbound approach. The westbound Cedar Street approach consists of a single general-purpose lane and a five-foot buffered bicycle lane. On-street parking is provided at the westbound approach. Crosswalks, ADA-compliant ramps, and pedestrian signal equipment are provided across all approaches.

Elm Street/White Street is a three-legged unsignalized intersection with two approaches. The northbound Elm Street approach consists of a shared left-turn/through lane. The southbound Elm

Street approach consists of a shared through/right-turn lane. On-street parking is not provided at either approach. Crosswalks and ADA-compliant ramps are provided at all approaches.

Elm Street/Beech Street/Willow Avenue is a four-legged offset unsignalized intersection with three approaches. The northbound Elm Street approach consists of two parts: a shared through/right-turn at the intersection with Willow Avenue, and a left-turn lane and through lane at the intersection with Beech Street. On-street parking is provided at this approach. The southbound Elm Street approach consists of a shared through/right-turn lane. The stop controlled eastbound Beech Street approach consists of a left-turn lane and a channelized right-turn lane. Crosswalks are provided across all approaches. ADA-compliant ramps are provided across Willow Avenue and on the east side of the northbound Elm Street approach.

Existing Traffic Volumes

Traffic volumes for the existing year were developed through the collection of traffic counts and application of appropriate adjustment factors in accordance with City of Somerville TIS Guidelines.

AUTOMATIC TRAFFIC RECORDER DATA

An Automatic Traffic Recorder (ATR) is a device that continuously records the number and class of vehicles on a roadway for a given period. ATR data was collected from Thursday, October 27, through Saturday, October 28, 2022, on the following study area roadways:

- Elm Street south of White Street;
- Somerville Avenue south of White Street; and
- White Street north of White Street Place.

Volumes along Elm Street south of White Street are approximately 9,200 vehicles per day (vpd). Hourly volumes are highest, approximately 700 – 750 vehicles per hour (vph), during the weekday evening commuter peak period (4:00-7:00 p.m.), and 530 – 650 vph during the weekday morning commuter period (7:00-9:00 a.m.).

Volumes along Somerville Avenue south of White Street are approximately 8,000 vehicles per day (vpd). Hourly volumes are highest, approximately 510 – 565 vph, during the weekday morning commuter peak period (7:00-10:00 a.m.), and remain between 500 – 530 vph during the weekday afternoon through evening commuter period (1:00-7:00 p.m.).

Volumes along White Street adjacent to the site (north of White Street Place) are approximately 600 vpd. Hourly volumes are highest, approximately 60 vehicles per hour (vph), during the weekday

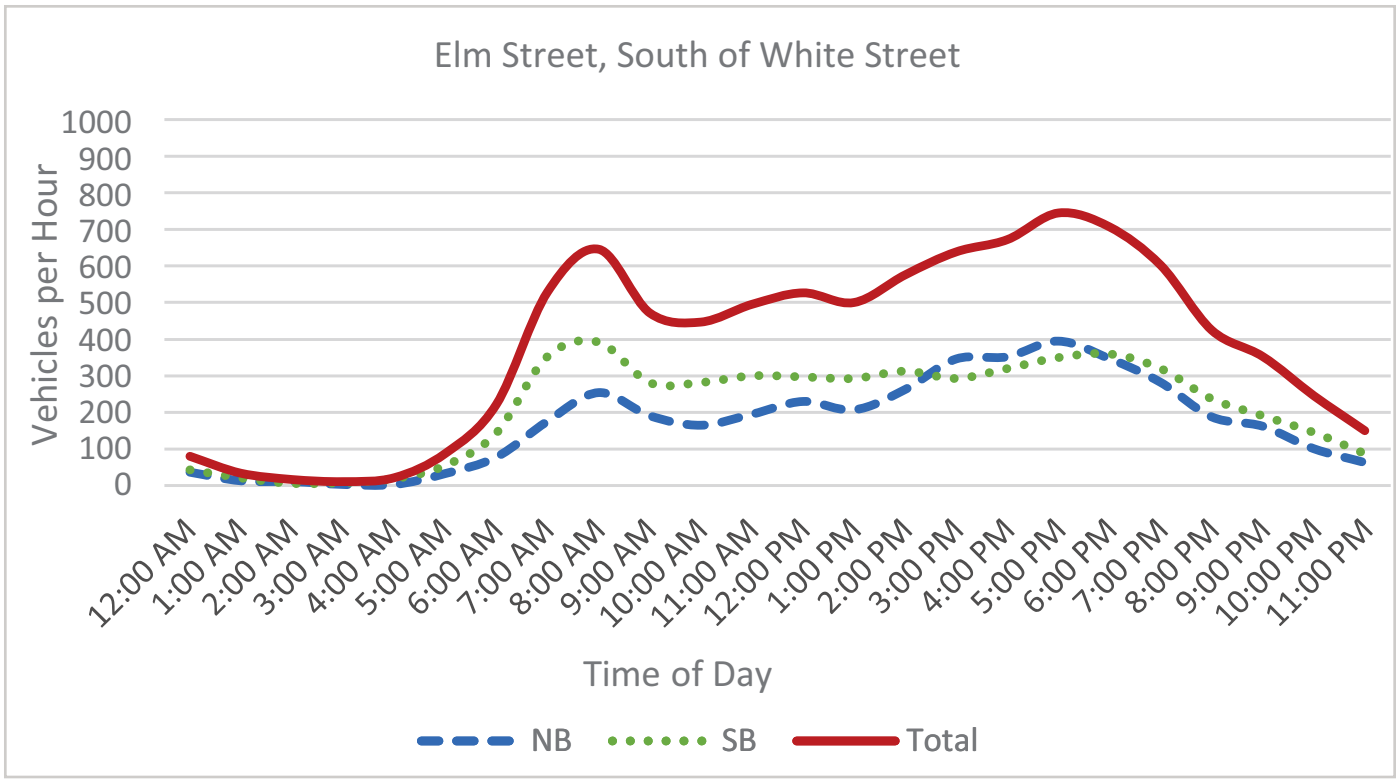
morning commuter peak period (8:00-9:00 a.m.), and are 40 – 50 vph during the weekday evening commuter period (4:00-6:00 p.m.).

Table 1 summarizes the ATR traffic data, including Average Daily Traffic (ADT), peak-hour percentage (K factor), and percent heavy vehicles (three or more axles) on study area roadways. Average daily traffic volumes for the roadways are illustrated in **Figure 2** and **Figure 3**. The count and classification data are provided in **Appendix A**.

Table 1. Average Daily Traffic Summary

Location	Elm Street	Somerville Avenue	White Street
Weekday Daily Traffic Volume	9205	8055	615
a.m. Peak Hour (8 – 9 a.m.)			
Volume	645	565	60
% Heavy Vehicle	2%	5%	0%
K Factor	0.07	0.07	0.10
p.m. Peak Hour (6 – 7 p.m.)			
Volume	705	500	40
% Heavy Vehicle	1%	1%	3%
K Factor	0.08	0.06	0.06

Figure 2. ***Average Daily Traffic***



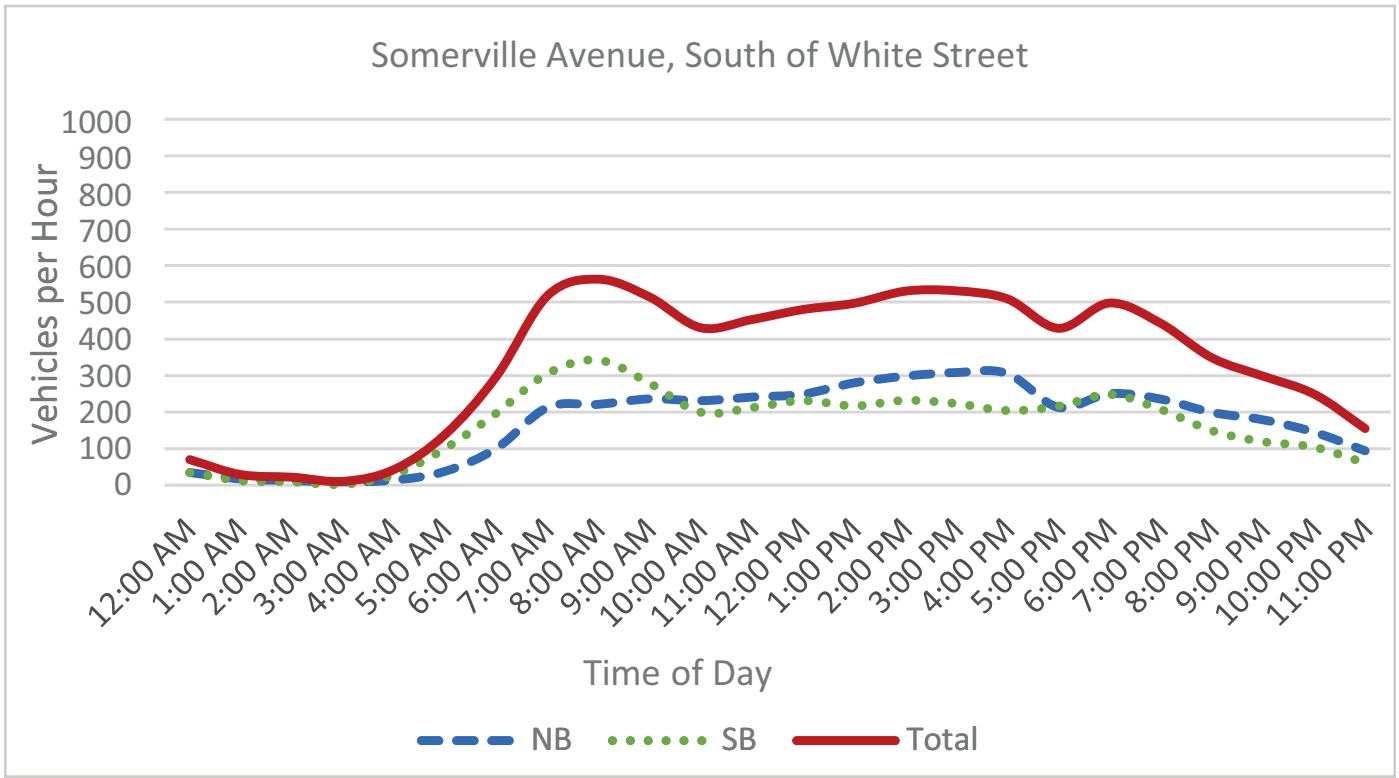
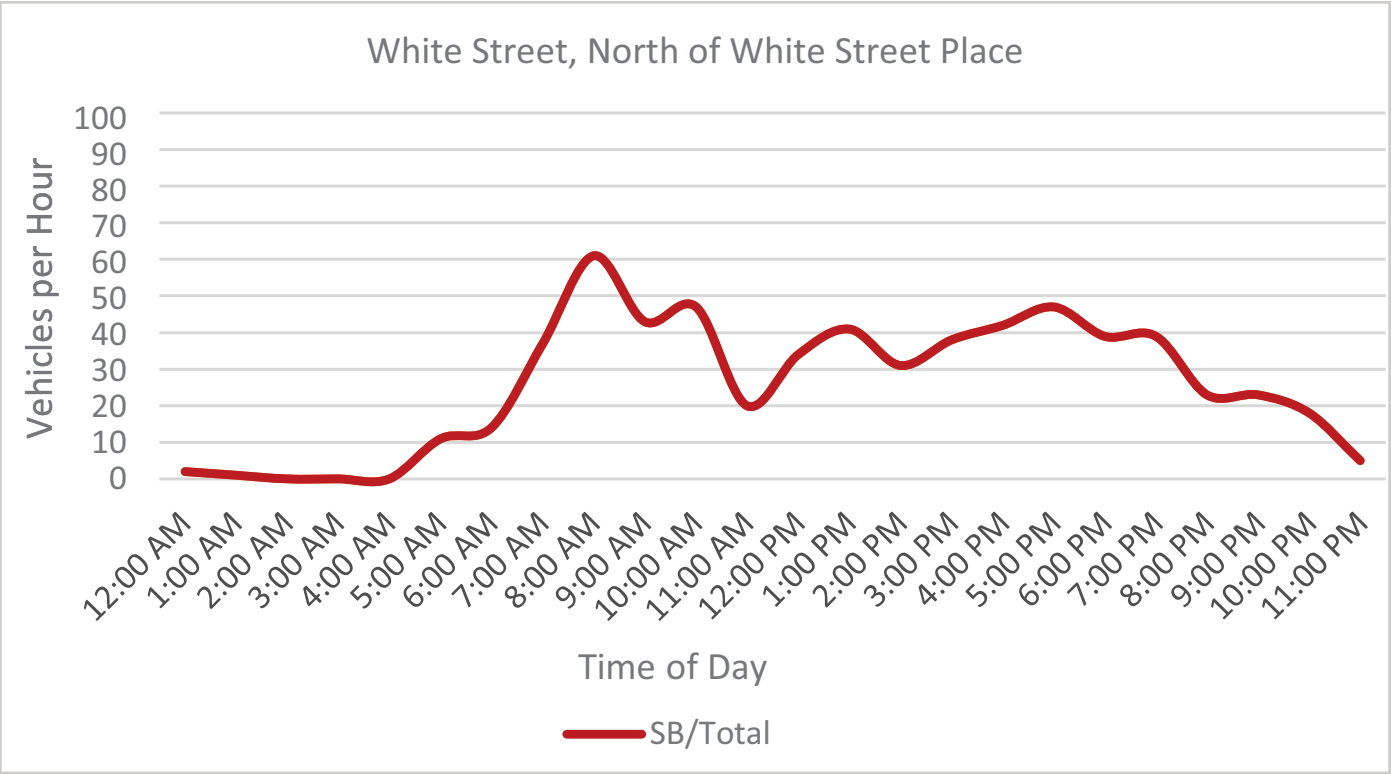


Figure 3. ***Average Daily Traffic***



TURNING MOVEMENT COUNT DATA

Traffic volume data were collected at the study area intersections on Thursday, October 27, 2022. Turning Movement Counts (TMCs) were conducted continuously from 6:00 a.m.-8:00 p.m. at the study area intersections. The TMCs collected vehicle classification including car, heavy vehicle, pedestrian, and bicycle movements. Based on the TMC data, the vehicular traffic peak hours of the study area intersections are generally 7:30-8:30 a.m. and 5:30-6:30 p.m. The detailed traffic count data are provided in **Appendix A**.

SEASONAL ADJUSTMENTS

To account for variation in traffic volumes throughout the year, the Massachusetts Department of Transportation (MassDOT) weekday seasonal correction factors were evaluated for the month of October. Facilities like those in the study area, all seasonal adjustment factors were less than one; therefore, that traffic counts during these periods are typically higher than the average for the year. For a conservative estimate, traffic counts were not seasonally adjusted. Existing (2023) Condition vehicle volumes during the a.m. and p.m. peak hours are shown in **Figure 4** and **Figure 5**, respectively.

Figure 4. ***Existing (2023) Condition Vehicle Volumes, Weekday a.m. Peak Hour***

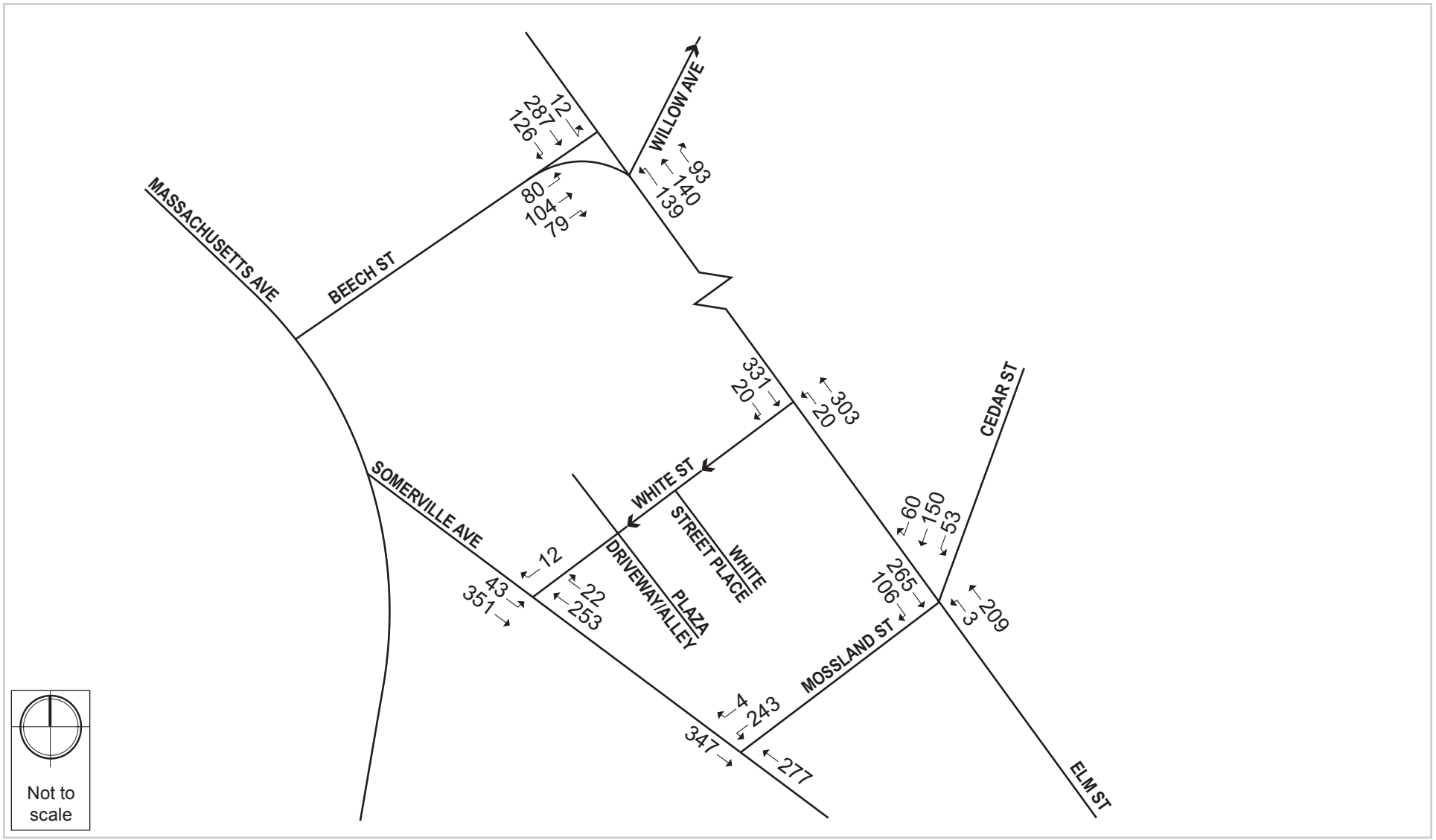
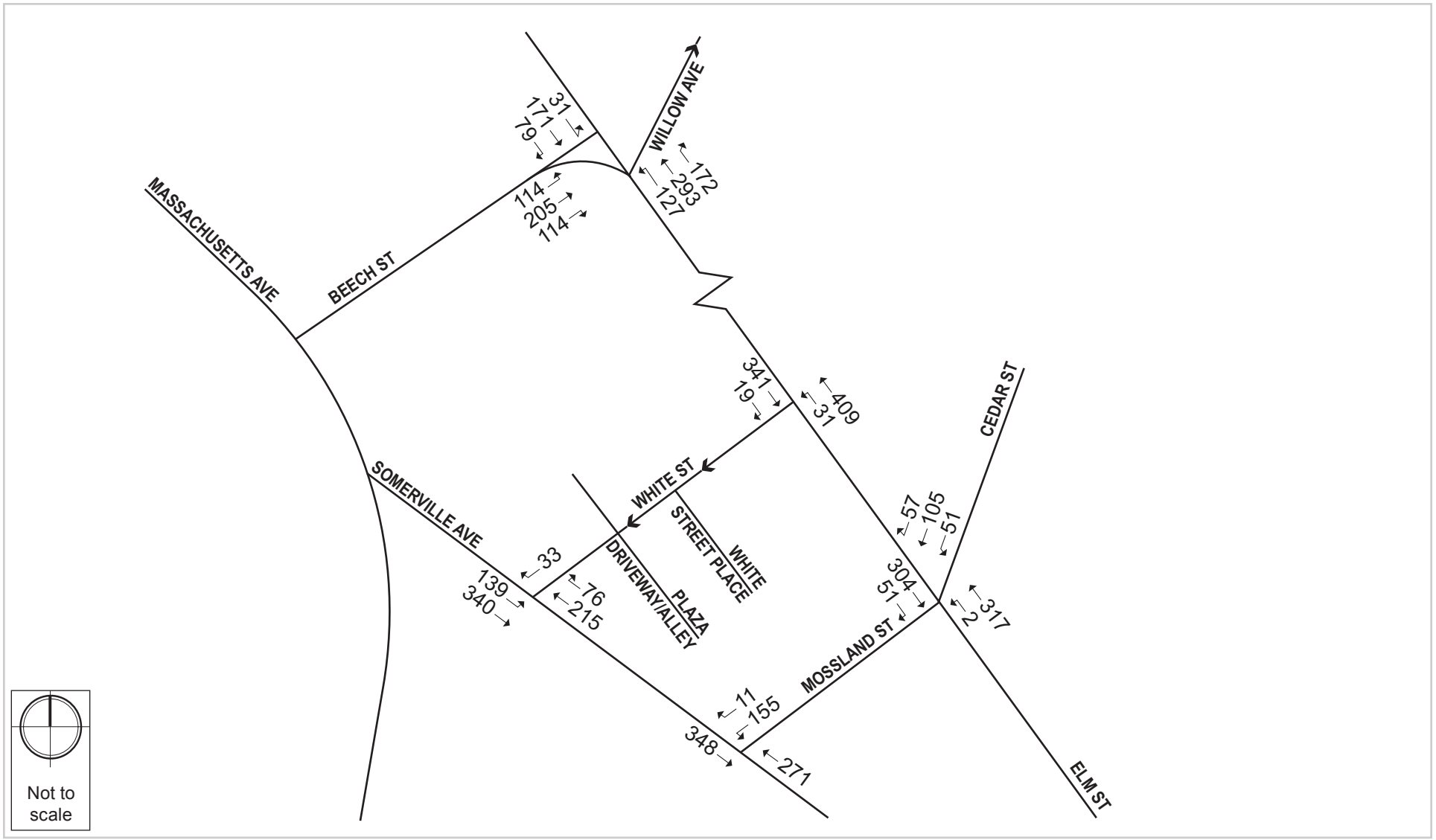


Figure 5. ***Existing (2023) Condition Vehicle Volumes, Weekday p.m. Peak Hour***



Existing Public Transportation

The Project Site is less than 500 feet from the Porter Square MBTA Station. Porter Square Station is served by the MBTA Fitchburg Commuter Rail Line, Red Line, and MBTA bus routes #77, #83, and #96. The MBTA #87 bus route provides service along Elm Street. Within a half mile, the MBTA bus routes #88 and #90 provide service along Highland Street. The existing nearby transit services within a half mile radius are shown in **Figure 6** and a summary of their service destinations, peak hour frequency, and total ridership is provided in **Table 2**.

Figure 6. ***Public Transportation***

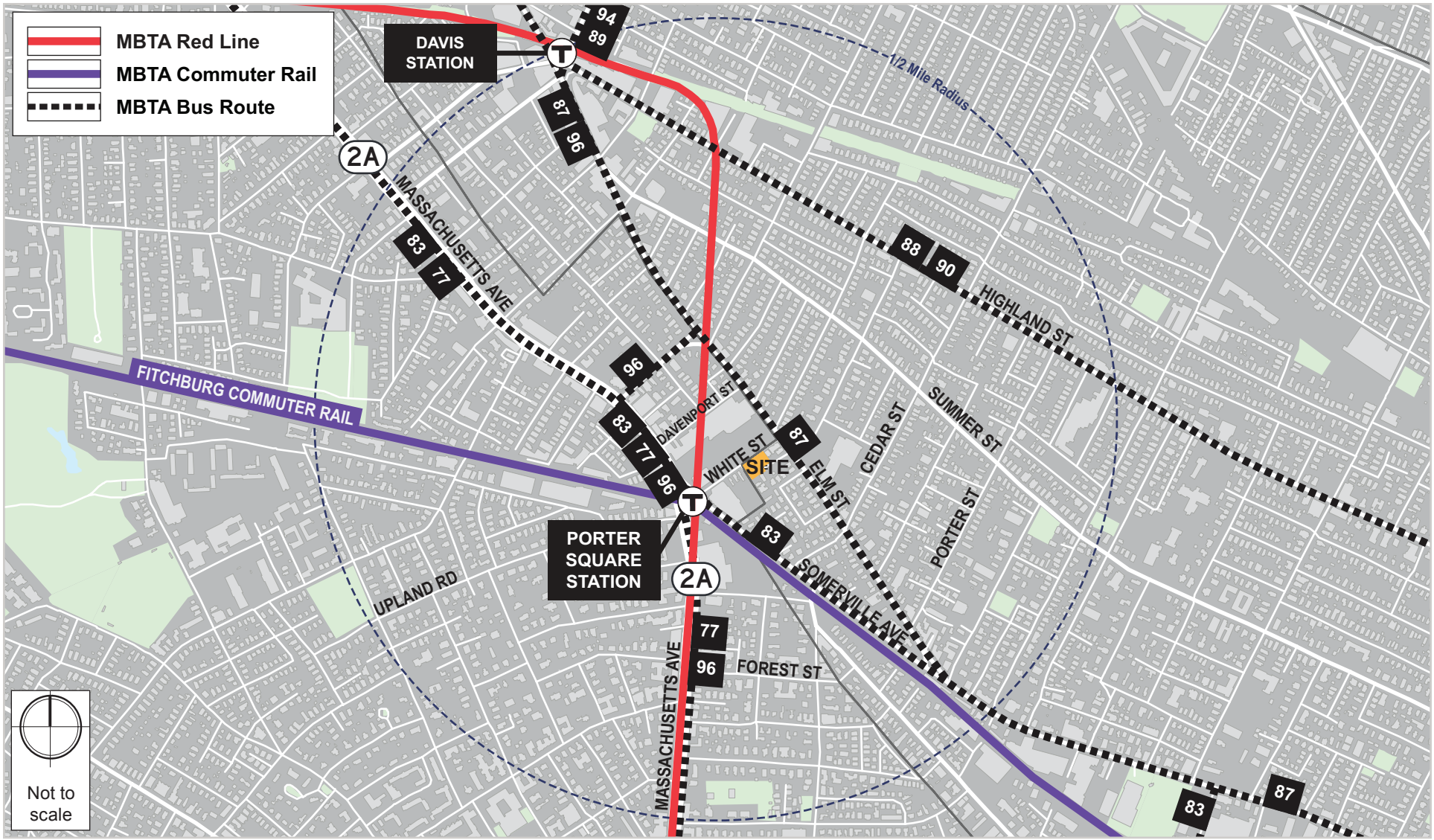


Table 2. Transit Service Summary

Route Description		Weekday Span of Service	Peak Hour Headway (min.)		Weekday Ridership*	Saturday Ridership
			a.m.	p.m.		
Heavy Rail						
Red Line	Alewife – Braintree Alewife – Ashmont	5:08 a.m.-1:12 p.m.	13 13	13 13	258,199	82,469
Fitchburg Line	Wachusett – North Station	4:50 a.m.-1:06 a.m.	60+	60+	9,302	Data Not Available
Bus						
77**	Arlington Heights – Harvard Station	4:48 a.m.-1:00 a.m.	11	10	6,652	4,590
83	Rindge Avenue – Central Square, Cambridge	5:10 a.m.-1:04 a.m.	25	25	1,828	940
87	Arlington Center or Clarendon Hill – Lechmere Station	5:10 a.m.-1:05 a.m.	16	20	3,682	2,480
88	Clarendon Hill – Lechmere Station	5:15 a.m.-1:00 a.m.	16	20	3,813	2,128
89	Clarendon Hill or David Station – Sullivan Square Station	4:30 a.m.-1:59 a.m.	10	11	3,479	1,714
90	Davis Square-Wellington Station	6:30 a.m.-10:41 p.m.	35	35	1,073	564
94	Medford Square – Davis Station	5:15 a.m.-1:12 a.m.	30	30	1,528	633
96	Medford Square – Harvard Square	5:35 a.m.-1:00 a.m.	30	30	2,088	859

** Ridership is based on 2018-2019 MBTA Open Data Portal*
*** Indicated Key Bus Route, which is one of the MBTA's fifteen most important bus routes with high ridership and higher frequency standards.*

TRANSIT STOPS

The closest bus stops for routes within one-half-mile (10-minute walk) from the Project are summarized in **Table 3**. Bus stop amenities (shelters, benches, etc.) are summarized in **Appendix B.**

Table 3. Transit Stop Summary

Stop Location/Route	Distance from Site		Routes	
	Feet	Walk-time (minutes)	ID	Direction
Heavy Rail				
Porter Station	500	2	Red Line, Fitchburg Line	NB, SB
Bus				
Elm Street @ Hancock St	330	1	87	OB
Elm Street opp Hancock St	370	2	87	IB
Somerville Ave @ White St (Porter Sq)	350	2	83	OB
Somerville Ave @ Massachusetts Ave	460	2	83	IB
Massachusetts Ave @ Porter Red Line Station	620	3	77, 83, 96	OB
Massachusetts Ave @ Upland Rd	660	3	77, 96	IB
Highland @ Cherry	1980	8	88, 90	IB
	2030	8	88, 90	OB
Elm St @ Chester St (Davis Square)	2810	11	87, 88, 89, 90, 94, 96	IB
Grove @ Highland (Davis Square)	2980	12	87, 88, 89, 90, 94, 96	OB

NB – Northbound, SB – Southbound, OB – Outbound, IB – Inbound

Existing Pedestrian Conditions

The roadways within the study area include Somerville Avenue, Elm Street, White Street, Mossland Street, Beech Street, and Willow Street. All roadways within the study area have sidewalks on both sides of the road. The sidewalks adjacent to the Project Site are generally in good condition. Existing Pedestrian Level of Traffic Stress (PLTS) is provided in the Transportation Impact Analysis section.

Somerville Avenue. Generally, seven- to twelve-foot sidewalks are provided on both sides of Somerville Avenue in the study area. The effective width (consistent usable width of the sidewalk, free of obstructions) is less in places with trees, sign poles, or hydrants. The concrete sidewalks are in fair to good condition.

Elm Street. The sidewalks on either side of the road are generally eight- to ten-feet-wide. The concrete sidewalks were recently constructed and are in good condition.

White Street. The sidewalks on either side of the road are generally four- to five-feet-wide. The concrete sidewalks are in good condition.

Mossland Street. The sidewalks are generally six-feet-wide on both sides of the street between Somerville Avenue and Elm Street. The sidewalks are concrete and are in good condition.

Beech Street. The sidewalks are generally seven- to eight-feet-wide on both sides of the street between Massachusetts Avenue and Elm Street. The existing sidewalks are a combination of brick and concrete and are in good condition.

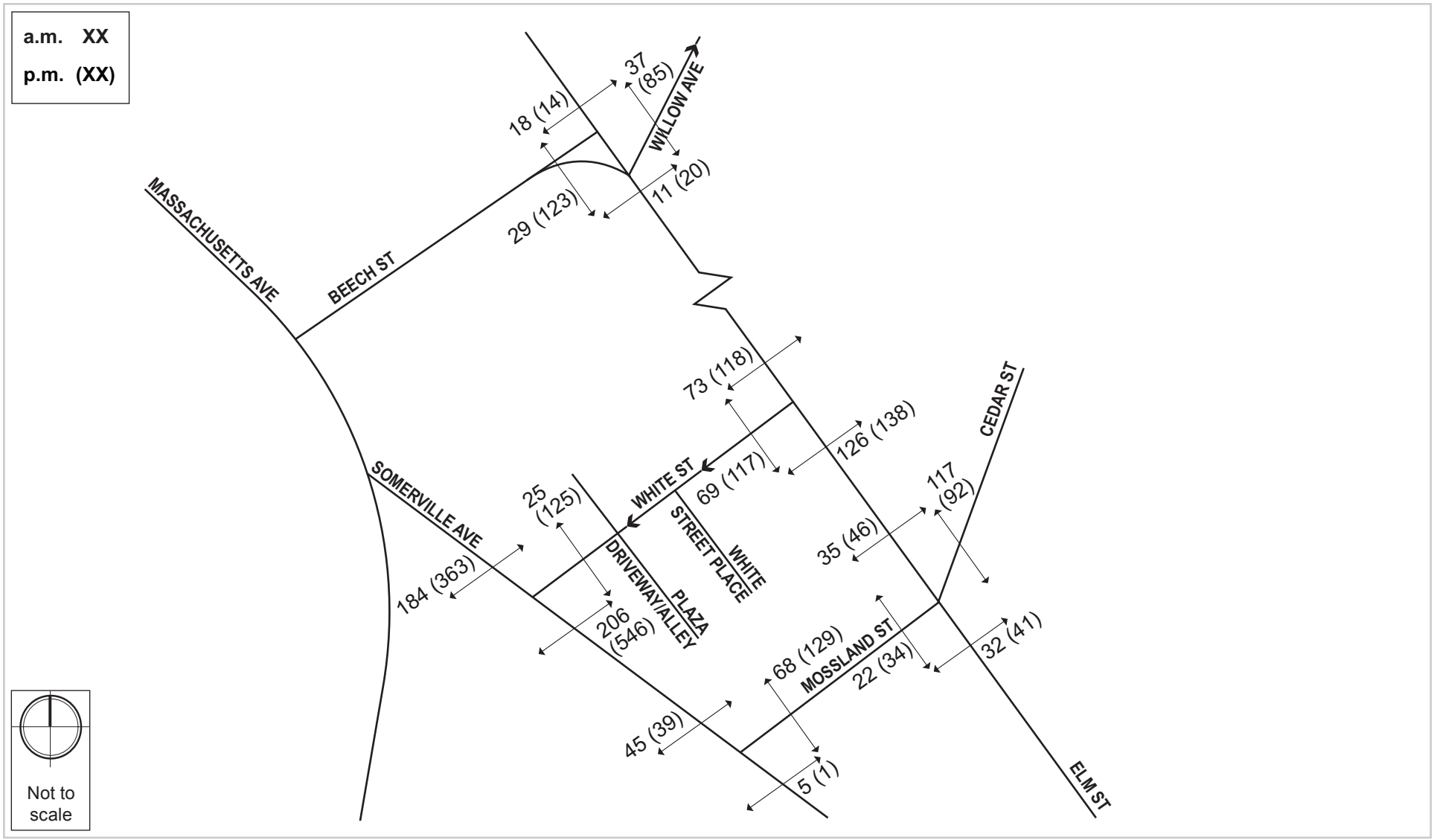
Willow Avenue. The sidewalks are generally seven- to eight-feet-wide on both sides of the street between Elm Street and Summer Street. The sidewalks are concrete and are in good condition.

Intersections. Crosswalks and ADA-compliant ramps are generally provided across all study area intersection approaches. Crosswalks range from eight- to twenty-feet-wide. Crossing distances at the crosswalks vary from 20-feet across White Street at Elm Street to 65-feet across Somerville Avenue at White Street. The pedestrian crossings at all signalized intersections in the study area are exclusive pedestrian phases.

PEDESTRIAN COUNT DATA

To determine the amount of pedestrian activity within the study area, pedestrian counts were conducted as part of the TMC data at the study area intersections. The weekday a.m. and p.m. peak hour pedestrian volumes are shown in **Figure 7**.

Figure 7. ***Existing (2023) Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hours***



Existing Bicycle Conditions

Bicycle lanes are provided on the streets surrounding the Project. Existing Bicycle Level of Traffic Stress (BLTS) is provided in the Transportation Impact Analysis section.

Somerville Avenue. Bicycle lanes are provided on both sides of the street in the study area along Somerville Avenue. Bicycle lanes are protected between Massachusetts Avenue and Acadia Park.

White Street. No bicycle facilities are provided on White Street.

Mossland Street. No bicycle facilities are provided on Mossland Street.

Elm Street. A bicycle lane is provided on the north side of the street between Somerville Avenue and Mossland Street on Elm Street; share the road (sharrows) are provided for the southbound direction. No bicycle markings are provided north of Mossland Street in the study area.

Cedar Street. A protected bicycle lane is provided southbound between Highland Street and Elm Street on Cedar Street.

Beech Street. No bicycle facilities are provided on Beech Street.

Willow Avenue. A bicycle lane is provided northbound between Elm Street and Highland Street on Willow Street.

BICYCLE COUNT DATA

To determine the amount of bicycle activity within the study area, bicycle TMCs were also conducted as part of the TMC data at the study area intersections. The weekday a.m. and p.m. peak hour bicycle volumes are shown in **Figure 8**.

BICYCLE SHARE

Bluebikes is the area's largest bicycle sharing service, operating in Somerville, and 10 other Boston-region communities. The entire system consists of more than 4,000 shared bicycles at more than 400 stations. Somerville has 32 stations as of the December 2022 Bluebikes station data inventory. Five stations are within a quarter mile (five-minute walk) of the Project within the Porter Square neighborhood (see **Figure 9**).

Figure 8. ***Existing (2023) Condition Bicycle Volumes, Weekday a.m. and p.m. Peak Hours***

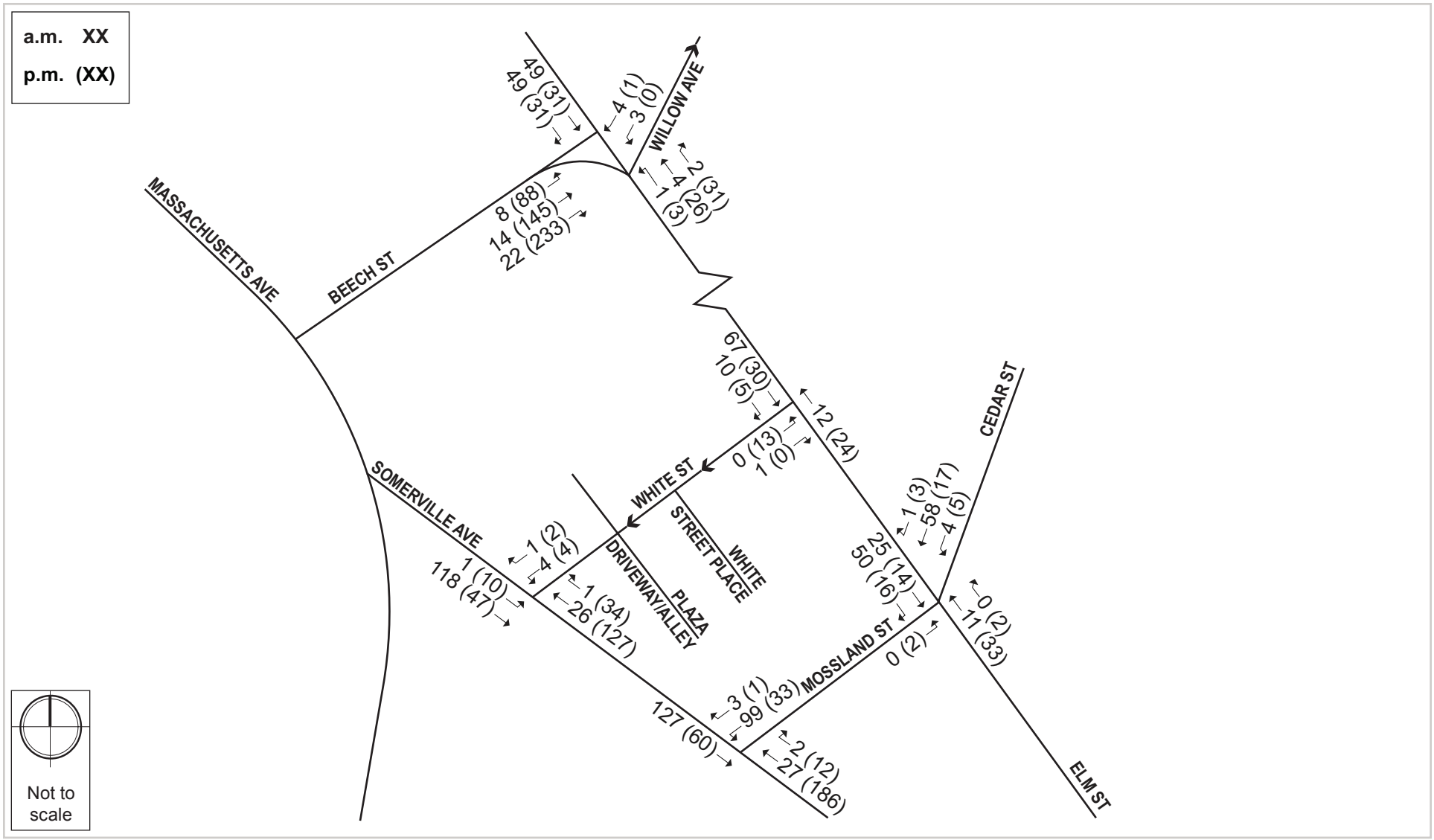
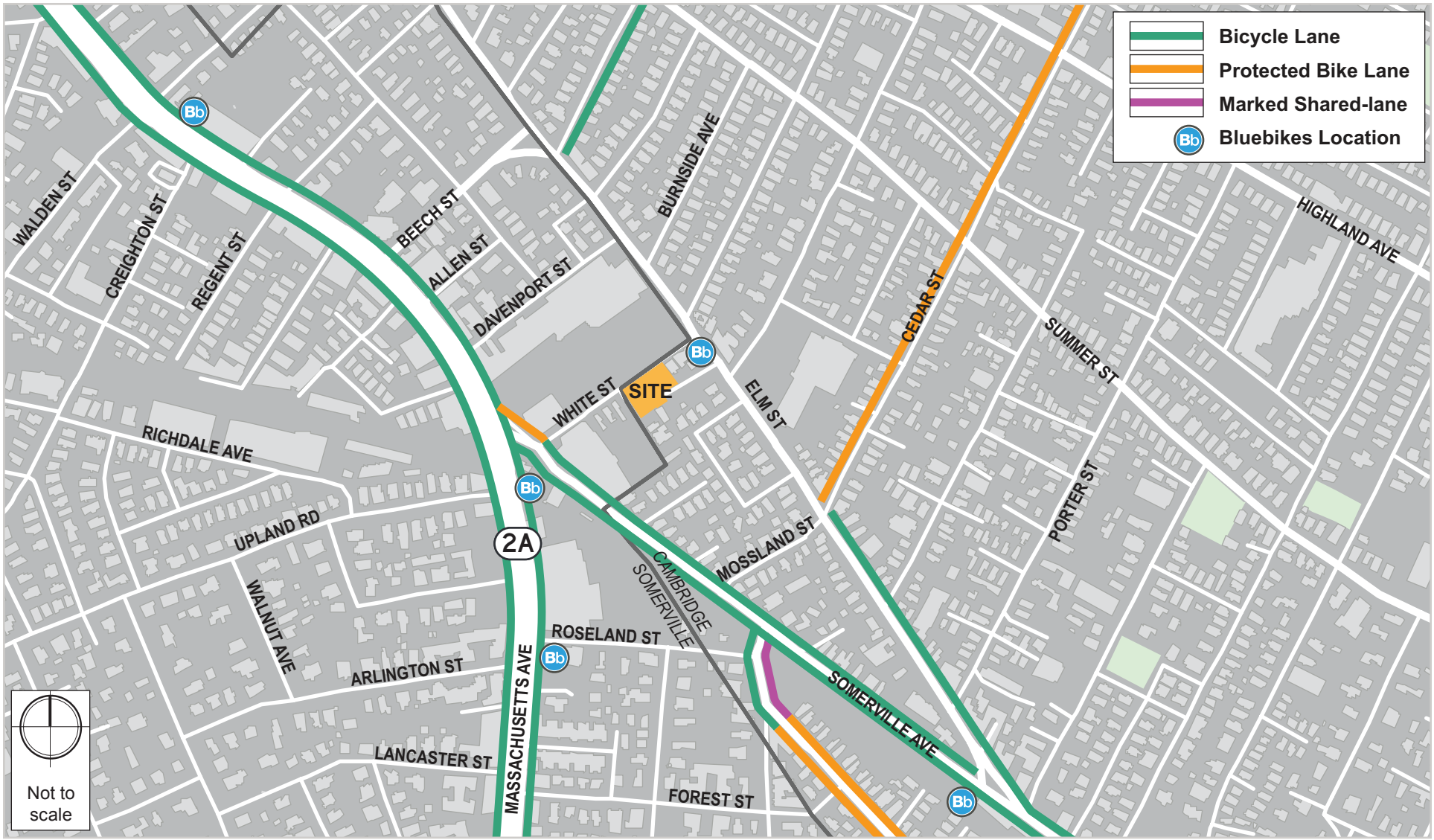


Figure 9. ***Existing Bicycle Facilities***



Vehicle Crash Analysis

HSH compiled motor vehicle crash data from the MassDOT IMPACT portal for the most recent three-year period for which complete data is available (2018-2020). Crash rates are determined based on the number of crashes per million vehicles entering an intersection. **Table 4** summarizes the crash data at the study area intersections. The detailed crash data and crash rate worksheets are provided in **Appendix C**.

Based on the most recent cluster map for the Highway Safety Improvement Program (HSIP), none of the study area intersections fall within the 2017-2019 HSIP crash clusters. Massachusetts Avenue and Somerville Avenue are 2010 – 2019 HSIP bicycle clusters. Porter Square is a 2010-2019 HSIP pedestrian cluster. The City of Somerville has made significant investments in improving bicycle and pedestrian facilities in this area. As summarized in the 2022 *Draft Bicycle Network Plan*, the City of Somerville is committed to increasing and improving the City's bicycle network. The Draft Plan proposes to expand the existing bicycle facilities to 88 miles of connected streets that are planned for future upgrades to provide protected bicycle lanes.

As shown in **Table 4**, none of the crashes in the study area were identified as fatal. Most crashes were angle (6), rear-end (2), and sideswipe in the same direction (2). Two of the angle crashes involved parked motor vehicles. Most crashes occurred on dry roadway surfaces (75%) and during daylight hours (75%).

The Somerville Avenue/White Street intersection had the highest number of crashes in the study area (7). The crash rate at this intersection during the 2018-2020 time period was 0.72 million entering vehicles (MEV), consistent with the District 4 average crash rate of 0.73, but higher than the crash rates of the other study intersections. No MassDOT crash data were reported at Elm Street/White Street or Elm Street/Beech Street/Willow Street. Somerville Avenue/Mossland Street and Elm Street/Mossland Street both had crash rates under 0.40 MEV. Combined, these intersections had five reported crashes, all of which occurred on days with clear conditions.

The City's Vision Zero Action Plan is focused on reducing and eliminating serious injuries and fatalities. Any serious injury or fatal crash involving pedestrians, bicyclists, or other vulnerable road users is considered unacceptable. One crash occurred between a vehicle and a cyclist at both Somerville Avenue/White Street and Somerville Avenue/Mossland Street.

Table 4. Motor Vehicle Crash Data Summary

Scenario		Somerville Ave/ White St	Somerville Ave/ Mossland St	Elm Street/ Mossland Street	Elm St/ White St	Elm St/Beech St/ Willow Ave
TOTAL		**7**	**1**	**4**	**0**	**0**
Year	2018	3	0	1	0	0
	2019	1	1	1	0	0
	2020	3	0	2	0	0
Severity	Property Damage Only	1	0	0	0	0
	Non-fatal Injury	0	1	2	0	0
	No injury	3	0	1	0	0
	Not Reported	3	0	1	0	0
Type	Angle	4	0	2	0	0
	Rear-End	0	0	2	0	0
	Sideswipe, same direction	1	1	0	0	0
	Sideswipe, opposite direction	1	0	0	0	0
	Head-on					
Road Surface	Dry	6	0	2	0	0
	Wet	1	1	1	0	0
Light	Daylight	6	0	2	0	0
	Dusk	0	0	1	0	0
	Dark – Lighted Roadway	1	1	1	0	0
	Dark – Roadway not lighted	0	0	0	0	0
Weather	Clear	3	0	3	0	0
	Cloudy/Rain	0	0	0	0	0
	Snow	1	0	0	0	0
Bicycle/Ped Crashes (2018-2020)		1	1	0	0	0
Crash Rate (2018 – 2020)[1,2]		**0.72**	**0.10**	**0.37**	**0.00**	**0.00**
District 4 Average Crash Rates[1]		**0.73**	**0.73**	**0.73**	**0.73**	**0.57**

Source: MassDOT, IMPACT crash data portal.
[1] Crashes per million entering vehicles (MEV) at the intersection.
[2] Crash rate for most recent, complete three-year period (2018-2020).

Build and Future Conditions

The Build (2023) and Future (2028) analysis conditions consist of the following:

- **Build (2023) Condition** represents the Existing Condition with the addition of Project-generated vehicle trips. This evaluates the effect of only the Project trips on the roadway network as it exists today.
- **Future (2028) Condition** represents the Build (2023) Condition with the addition of trips from other development projects as well as any network or design improvements proposed by other developments through the future year.

Build (2023) Condition

The Project includes the demolition of the existing structures and construction of a four-story building with approximately 40,600 square feet (sf) of research and development/life science office use (excluding the mechanical penthouse) with approximately 80 employees. Located a few hundred feet from the Porter Square MBTA station, the Proponent expects most of the traffic to arrive by foot, bicycle, or transit. Vehicle parking will not be included in the Project; however, there will be three short-term bicycle parking spaces for visitors and 12 covered, secured, long-term bicycle parking spaces for employees provided.

PARKING

VEHICLE PARKING

Somerville zoning restricts the maximum parking allowed within a transit area. No vehicle parking minimums are required for lab/office land uses in the Mid-rise 4 zone within a transit area. The Project does not propose any parking on-site and any parking demands are expected to be accommodated through parking facilities in the area.

BICYCLE PARKING

The City of Somerville Zoning Ordinance establishes the requirements for short- and long-term bicycle parking to be provided by new developments at no cost or fee to users. Consistent with the zoning for the Mid-rise 4 zone, the Project will provide bicycle parking at the rates under Research and Development (R&D) land use of the Somerville Zoning Ordinance at one per 20,000 sf short-term and one per 5,000 sf long-term.

The Project will provide three short-term bicycle parking spaces for visitors and 12 covered, secured, long-term bicycle parking spaces for employees. The City of Somerville's *Bicycle Parking Guide* and

the Association of Pedestrian and Bicycle Professionals' (APBP's) *Bicycle Parking Guidelines* will be referenced for guidance on bicycle parking design and layout. Bicycle parking will be provided at no cost or fee to employees or visitors. Short-term bicycle parking will be provided within proximity to the principal entrance. Long-term bicycle parking will be provided in the building in a covered, lit, and secure location.

SITE ACCESS AND CIRCULATION

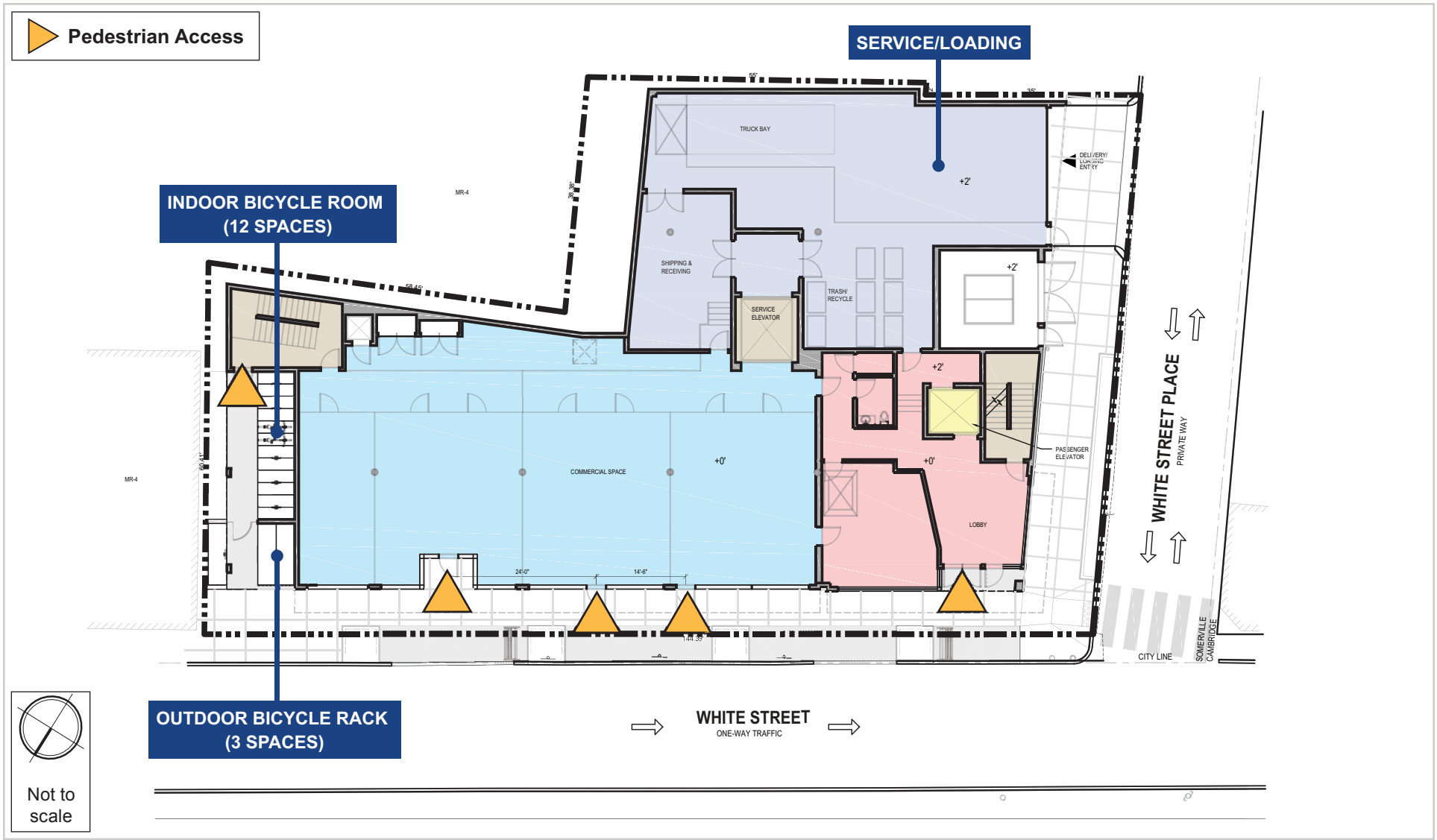
The Project will close two existing curb openings at 32 and 40 White Street and will construct a curb opening for the proposed loading dock on White Street Place. The main pedestrian entry will be located on the corner of White Street and White Street Place facing White Street, with a secondary pedestrian entry to the northeast on White Street.

No vehicle access to the site or parking on site is proposed. The Proponent is evaluating employee parking opportunities with operators of nearby parking facilities to share with future tenants. The proposed loading dock will be accessed off White Street Place. The loading entrance will serve as the access point for the Project's loading and service/trash operations. The conceptual Site Plan is shown in **Figure 10**.

LOADING/SERVICE

Loading and service activity will occur on-site within a designated loading dock with access to/egress from White Street Place. The loading dock is approximately 19-feet-wide and will accommodate up to a 24-foot-long box truck. The loading zone will serve trash, recycling, and delivery services. White Street in front of the Site is one-way southbound; therefore, access to the loading zone will always be entering White Street from Elm Street and exiting to White Street to Somerville Avenue.

Figure 10. ***Site Plan***



TRIP GENERATION

Determining the trip generation for the Project is a multi-step process that produces an estimate of vehicle, transit, walk, and bicycle trips associated with a proposed development and a specific land use program. To estimate the number of trips expected to be generated by the proposed Project, data published by the Institute of Transportation Engineers (ITE) in the *Trip Generation Manual* (11th Edition) [1] were used. ITE provides trip rates to estimate the total number of unadjusted vehicular trips associated with a project. In an urban setting well-served by transit, adjustments are necessary to account for other travel mode shares such as walking, bicycling, and transit.

TRIP RATES

For this Project, the following Land Use Codes (LUCs) were used for the existing uses and proposed development:

- **Land Use Code 110 – Light Industrial.** A light industrial facility is a free-standing facility devoted to a single use. The facility has an emphasis on activities other than manufacturing and typically has minimal office space. Typical light industrial activities include printing, material testing, and assembly of data processing equipment. Calculations of the number of existing vehicle trips use ITE's fitted curve equations per 1,000 sf.
- **Land Use Code 760 – Research and Development Center.** This LUC is a facility or group of facilities devoted almost exclusively to research and development activities. Research and development centers may contain offices and light fabrication areas. Calculations of the number of proposed vehicle trips use ITE's fitted curve equations per 1,000 sf.

The trip rates used for each LUC are summarized in **Table 5**.

[1] Trip Generation Manual, 11th Edition; Institute of Transportation Engineers; Washington, D.C.; 2021.

Table 5. ITE Trip Generation Rates

LUC	Time Period	ITE Average Rate*	Directional Distribution	
			Entering	Exiting
Existing				
Light Industrial (LUC 110)	Daily	4.87 per 1,000 sf	50%	50%
	Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 7-9 a.m.	0.74 per 1,000 sf	88%	12%
	Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 4-6 p.m.	0.65 per 1,000 sf	14%	86%
Proposed				
Research & Development (LUC 760)	Daily	11.08 per 1,000 sf	50%	50%
	Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 7-9 a.m.	1.03 per 1,000 sf	82%	18%
	Weekday, Peak Hour of Adjacent Street Traffic One Hour Between 4-6 p.m.	0.98 per 1,000 sf	16%	84%

** Conservatively, fitted curve equations were used.*

AVERAGE VEHICLE OCCUPANCY

The ITE rates for the different land uses were applied to the respective land use facility size to determine unadjusted vehicle trips. Those trips were then adjusted to person trips using a vehicle occupancy rate (VOR). Based on the national average vehicle occupancy rate published by the Federal Highway Administration (FHWA)[2] of 1.18 people per vehicle was used for work-based trips.

MODE SHARE

A mode share is the percentage of trips at a site using various modes of transportation such as vehicle, transit, walking, or biking. The Project mode share was determined using the 2020 American Community Survey (ACS) Means of Transportation to Work (data table B08006) for Census Tract 3510.01, published by the U.S. Census Bureau. The existing mode shares shown in **Table 6** were used to allocate the project-generated trips. The Project aims to enhance the non-car mode shares for the area through TDM elements and mobility plan improvements to help the City of Somerville achieve their 75% non-auto mode share goal by 2040.

[2] Summary of Travel Trends: 2017 National Household Travel Survey; FHWA; Washington, D.C.; July 2018.

Table 6. Existing Mode Shares

Mode Type	Mode Split[1]
Non-Vehicle Modes	
Public Transportation	50%
Walking	13%
Bicycling	5%
Vehicle Modes	
Personal Vehicle	32%
Total	**100%**

1. Based on U.S. Census 2020: ACS 5-Year Estimate for Means of Transportation to Work for Census Tract 3510.01 (Table B08006).

PROJECT-GENERATED TRIPS BY MODE

Based on current Project mode splits, the person trips were distributed by mode. Person trips for the vehicular modes were then converted back to vehicle trips using the average vehicle occupancy rate. **Table 7** summarizes the trips by transit, walk, bicycle, and automobile trips for the overall development. The vehicle person trips were then adjusted back using VOR. The full trip generation calculation sheets are included in **Appendix D**.

Table 7. Project-generated Person Trips by Mode

Time Period	Direction	Person Trips			
		Transit	Bicycle	Walk	Auto
Daily	In	189	19	49	121
	Out	189	19	49	121
	Total	**379***	**38**	**98**	**242**
a.m. Peak Hour	In	30	3	8	19
	Out	6	1	2	4
	Total	**36**	**4**	**9***	**23**
p.m. Peak Hour	In	30	1	1	3
	Out	5	3	8	19
	Total	**35**	**3***	**9**	**22**

** Differences due to rounding*

NET NEW PROJECT-GENERATED VEHICLE TRIPS

The vehicle-based trips for the existing land uses were deducted from the Project-generated vehicle trips to determine the net new vehicle trips for the Project. **Table 8** summarizes the net new vehicle trips for the Project.

Table 8. Net New Project-generated Vehicle Trips

Time Period	Direction	Existing[1]	Project	Net New
Daily	In	12	121	109
	Out	12	121	109
	Total	**25***	**242**	**218**
a.m. Peak Hour	In	2	19	17
	Out	0	4	4
	Total	**2**	**23**	**21**
p.m. Peak Hour	In	0	3	3
	Out	1	19	18
	Total	**2***	**22**	**21**

** Differences due to rounding*
1 Existing trips based on 3,776 sf using ITE LUC 110 (General Light Industrial). No trips included for two existing residential single-family houses.

PROJECT-GENERATED TRUCK TRIPS

To estimate the number of truck trips expected to be generated by the proposed Project, data published by the ITE in the *Trip Generation Manual* (11th Edition) [3] were used as well as detailed rates generated by the Central Transportation Planning Staff (CTPS) specific to land uses and the Boston area. The Project is estimated to generate two to five deliveries a day for up to 10 daily truck trips (five entering and five exiting). Most truck trips are anticipated to be light truck trips (box truck and other single unit trucks). No peak hour truck trips are estimated to occur during the a.m. or p.m. peak hours. The full truck trip generation calculation sheets are included in **Appendix D.**

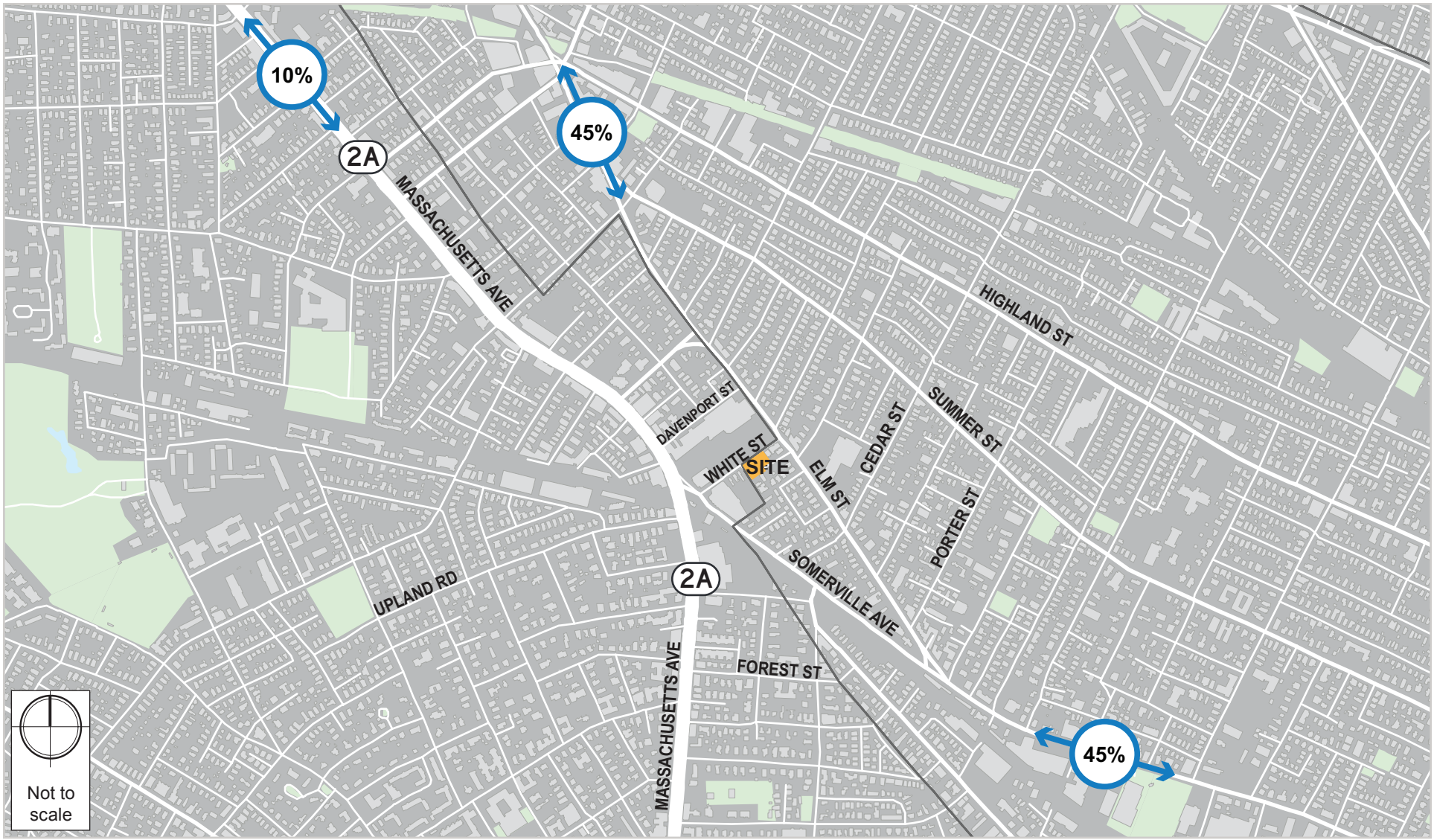
VEHICLE TRIP DISTRIBUTION

The vehicle trip distribution identifies the various travel routes for vehicles entering and exiting the Project Site. The starting or ending load point for any vehicle trips generated by the Project was assumed to be the block bounded by White Street/Elm Street/White Stret Place. No parking will be provided as part of the Project; the Proponent is evaluating parking on an as needed basis with

[3] Trip Generation Manual, 11th Edition; Institute of Transportation Engineers; Washington, D.C.; 2021.

nearby facilities. Trip distribution patterns for the Project were based on Census journey to work (JTW) zip code data. This data specifies the percentage of trips between the census tract where the Project is located and other communities within the region. The vehicle trip distribution is shown in **Figure 11**. Detailed trip distribution is included in **Appendix D.**

Figure 11. ***Vehicle Trip Distribution***



TRANSIT TRIP DISTRIBUTION

Given the small magnitude of Project trips, for a conservative estimate, the study assigned all Project-generated transit trips to bus routes despite some that may use the Red Line and Commuter Rail. The Red Line and Fitchburg Commuter Rail Line have available capacity leaving and entering the Porter Square Station during every hour of the day that exceeds the entire transit daily trip generation of the Project. Given the Red Line's and Commuter Rail Line's significantly larger capacity for additional trips than bus routes, there is not expected to be a noticeable impact on rail service from the new Project-generated transit trips. The distribution at the adjacent bus stops is shown in **Table 9**.

PROJECT-GENERATED TRANSIT TRIPS

The Project's expected daily transit trips, detailed in **Table 7**, were distributed based on the ITE Trip Generation Manual's Hourly Distribution charts based on LUC 710 (Office) hourly distribution data; no hourly distribution data is provided by ITE for LUC 760 (R&D). The transit trips were then conservatively distributed to the four MBTA bus routes adjacent to the Project using the distribution in **Table 9** based upon existing ridership at nearby stops. Project-generated transit trips are summarized in **Appendix E** with the transit capacity analysis summarized in the Transportation Impact Analysis section.

Table 9. Transit Trip Distribution

MBTA Route	MBTA Stop	Direction	Distribution	
			Boardings	Alightings
#77	Massachusetts Avenue @ Upland Road	Inbound	12%	58%
	Massachusetts Avenue @ Porter Square	Outbound	48%	7%
#83	Somerville Avenue @ Massachusetts Avenue	Inbound	14%	5%
	Somerville Avenue @ White Street	Outbound	2%	10%
#87	Elm Street opposite Hancock	Inbound	13%	4%
	Elm Street @ Hancock	Outbound	4%	11%
#96	Massachusetts Avenue @ Upland Road	Inbound	3%	3%
	Massachusetts Avenue @ Porter Square	Outbound	4%	2%

**MBTA transit data used was fall 2019.*

BUILD (2023) CONDITION VEHICLE VOLUMES

The project-generated vehicle trips were distributed throughout the study area based on the vehicle trip distribution. The project-generated trips for the weekday a.m. and p.m. peak hours are shown in **Figure 12** and **Figure 13**. The project-generated trips were added to the Existing (2023) Condition vehicular traffic volumes to develop the Build (2023) Condition vehicular traffic volumes. The Build (2023) weekday a.m. and p.m. peak hour traffic volumes are shown in **Figure 14** and **Figure 15**, respectively.

Figure 12. ***Project-generated Vehicle Volumes, Weekday a.m. Peak Hours***

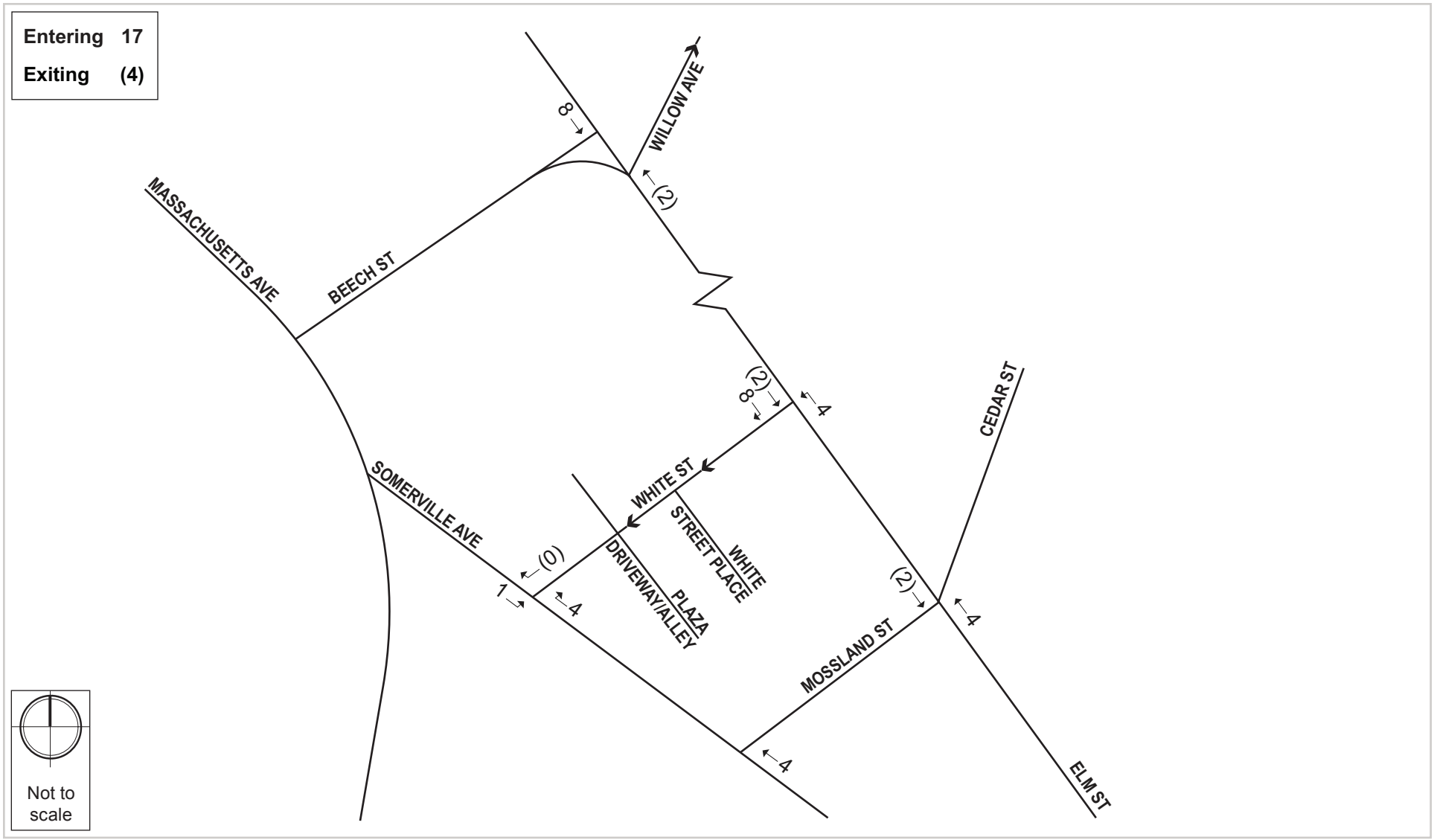


Figure 13. ***Project-generated Vehicle Volumes, Weekday p.m. Peak Hours***

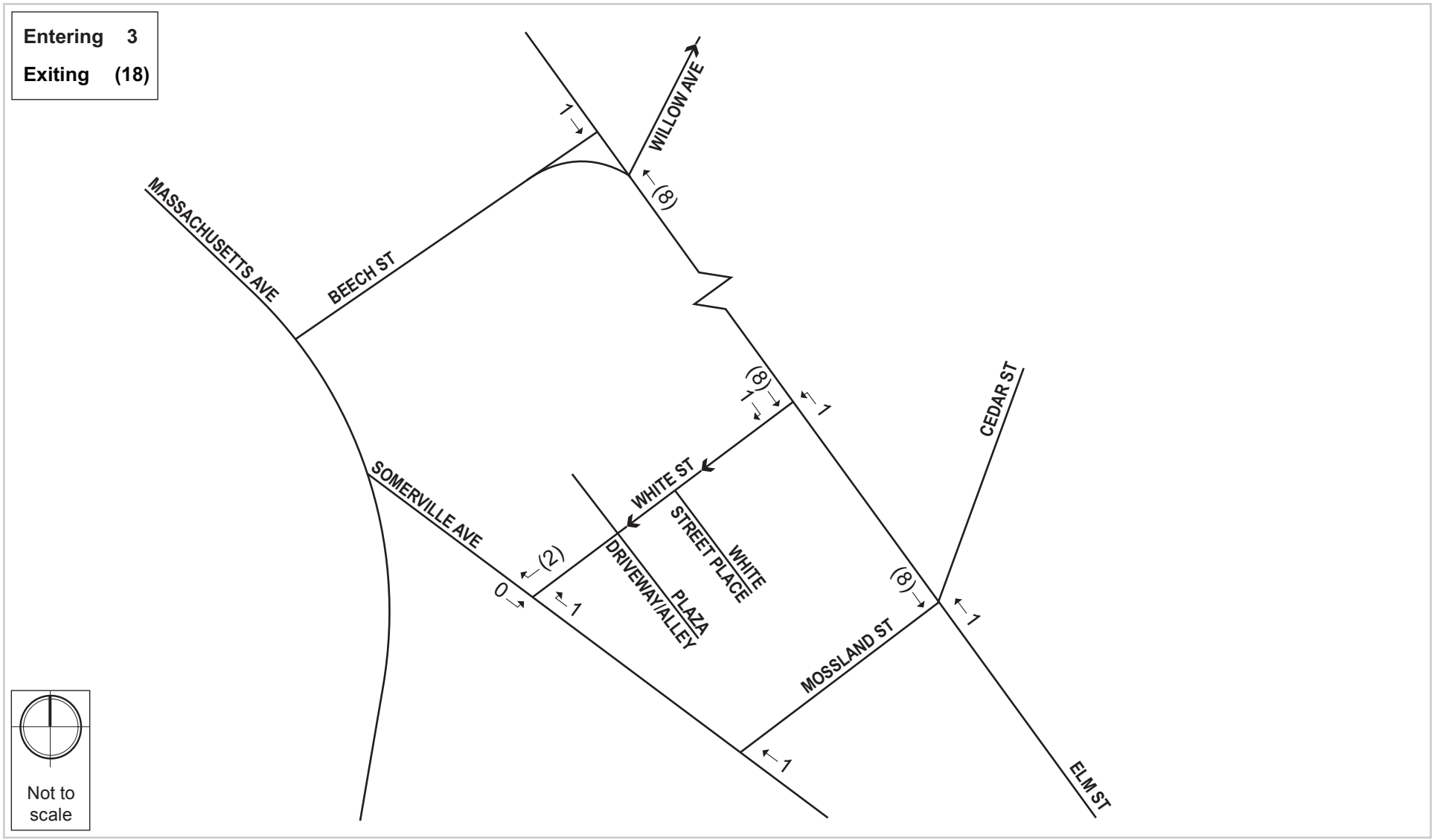


Figure 14. ***Build (2023) Condition Vehicle Volumes, Weekday a.m. Peak Hour***

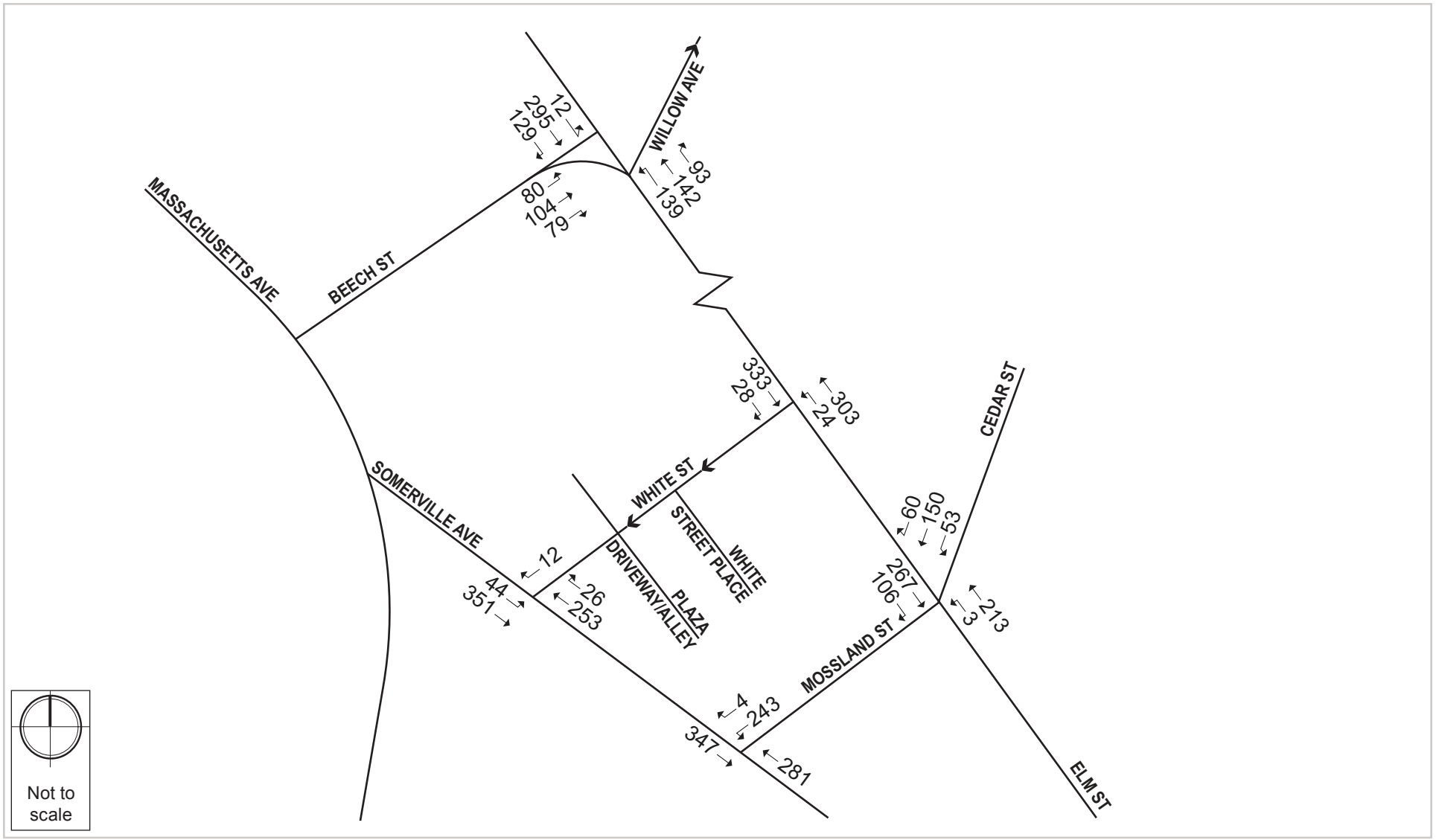
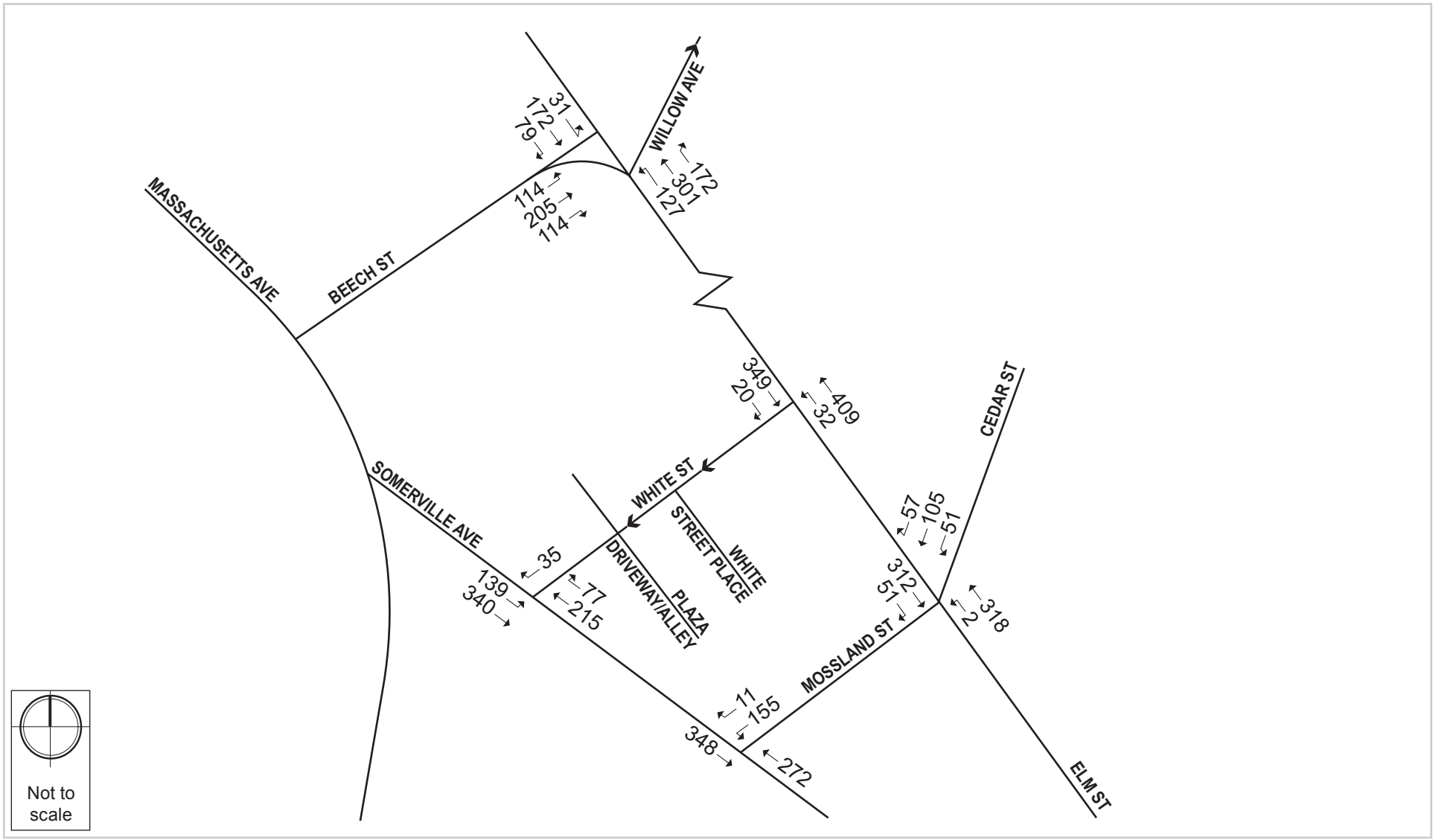


Figure 15. ***Build (2023) Condition Vehicle Volumes, Weekday p.m. Peak Hour***



Future (2028) Condition

A future analysis was completed for a build condition in the design year (2028). The Future (2028) Condition reflects a future scenario that incorporates anticipated trips associated with other planned specific developments and planned infrastructure improvements that may affect travel patterns throughout the study area. The Future (2028) Condition adds these additional trips to the Build (2023) scenario which already includes the project-generated trips. Per City of Somerville direction, no general background traffic growth rate was applied to the existing traffic volume data.

SPECIFIC DEVELOPMENT TRAFFIC GROWTH

Traffic volumes associated with larger known development projects can affect traffic patterns throughout the study area within the future analysis time horizon. A review of planned development projects was conducted to determine if there are any nearby projects in the vicinity of the study area. The following projects were identified:

- **599 Somerville Avenue**. This development will demolish the existing building and construct a laboratory/life science research building consisting of approximately 43,200 sf. The Project will provide an underground parking garage with approximately 33 parking spaces. The TIS for the project was filed in October 2021.
- **Davis Square Lab.** This development proposes approximately 102,190 sf of lab/R&D and 21,670 sf of retail/restaurant space. The ground floor portion of the Project is maintaining its retail/restaurant land use, with an approximately 6,730 sf reduction in space while maintaining the same number of establishments. The TIS for the project was filed in April 2022.

BUS NETWORK REDESIGN[4]

One major improvement that is ongoing in the area is the MBTA bus network redesign. This work is a network-wide improvement; however, the following section summarizes some of the changes that are proposed that affect service near the Project. The overall goals of this redesign are to adapt to the changes that have occurred in the Boston metro area as places of employment, residences, and travel patterns shift. Improvements include re-routed bus lines, new lines, removed lines, and modified frequencies on select routes. Within the study area, some of the key bus improvements include the following:

[4] 231 – 249 Elm Street, 6-8 and 12 Grove Street, Somerville, MA

- **Bus Route #77/New Route T77.** New route offers service between Arlington to Porter and Harvard Squares. Route #96 between Harvard Square and Porter Square is eliminated. Service will continue to be every 15 minutes or better, 5 a.m. – 1 a.m., 7 days per week.
- **Bus Route #83.** Service between Russell Field to Porter Square to Hampshire/Prospect will remain unchanged. Service from Hampshire/Prospect will change from Kendall Square to Central Square. No new service will be provided to Central Square beyond the existing Red Line service connection. Service will remain every 30 minutes or better (current service is every 25-30 minutes).
- **Bus Route #87/ New Route T39.** Service from Clarendon Hill to Davis Square re-routed to Ball Square and Sullivan Square. Service between Porter and Davis Squares will be replaced by the T96 (Porter to Davis to Medford to Malden). Service between Porter and Lechmere replaced by T39 (Porter to Union to Central to Longwood Medical Area (LMA) to Forest Hills). Service will increase to every 15 minutes or better, 5 a.m. – 1 a.m., 7 days per week (current service is every 15- 20 minutes during peak periods and every 25-30 minutes off-peak and on Saturdays).
- **Bus Route #96/New Route T96.** Service eliminated between Porter and Harvard Squares (Route #77/T77 remains). Route T96 extended to Malden and service improves to all-day, high-frequency service. T96 replaces part of route #87, #89, #101, and #326.

While these changes were not factored into the transit analysis for this study. The MBTA Bus Network Redesign is intended to provide additional connections, more service, and more frequency for the metro-Boston area.

FUTURE (2028) CONDITION VEHICLE VOLUMES

The traffic volumes associated with the specific development projects listed previously were added to the Build (2023) Condition to develop the Future (2028) Condition vehicle volumes. The Future (2028) Condition weekday a.m. and p.m. peak hour traffic volumes are shown in **Figure 16** and **Figure 17**, respectively.

Figure 16. ***Future (2028) Condition Vehicle Volumes, Weekday a.m. Peak Hour***

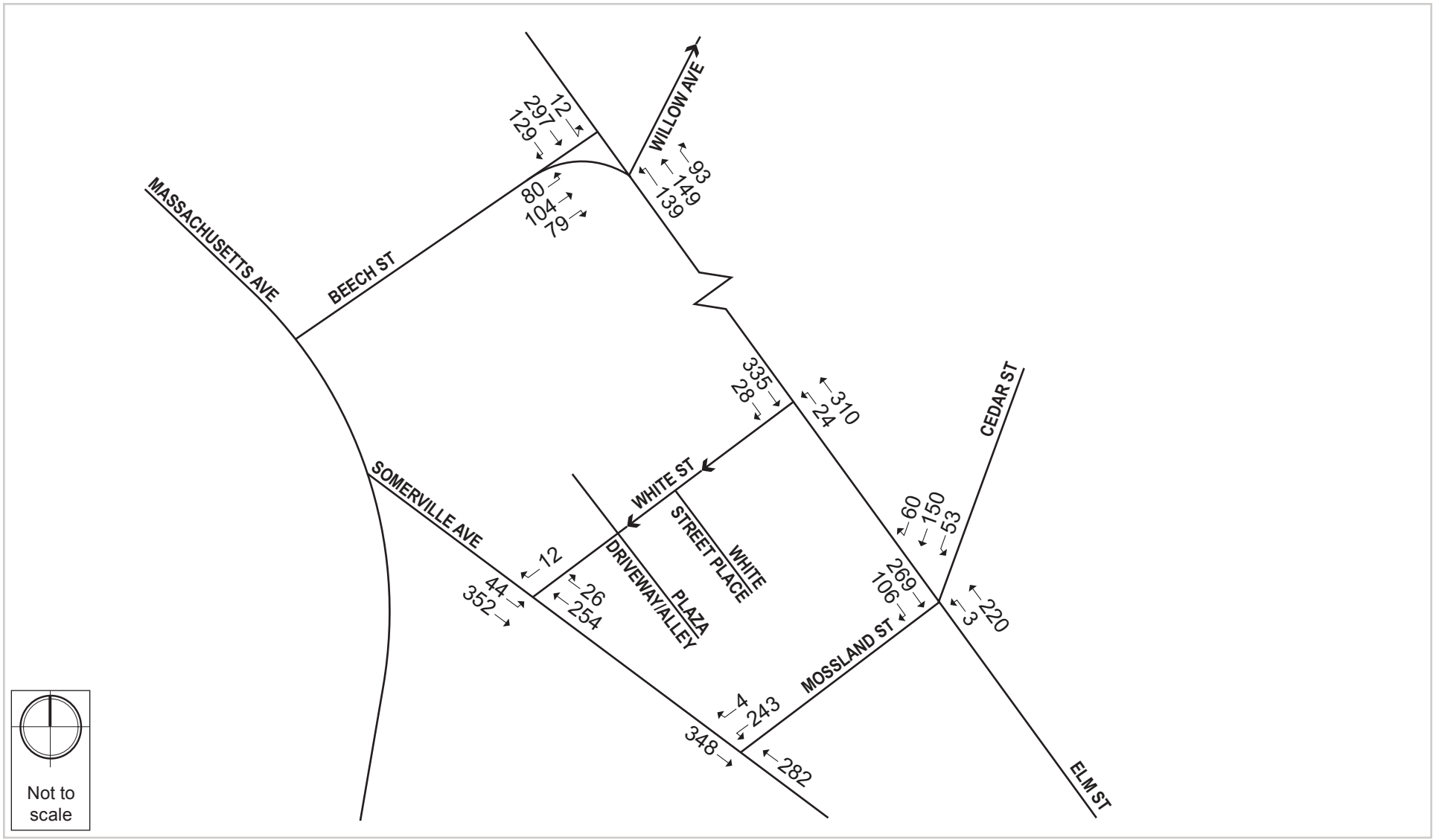
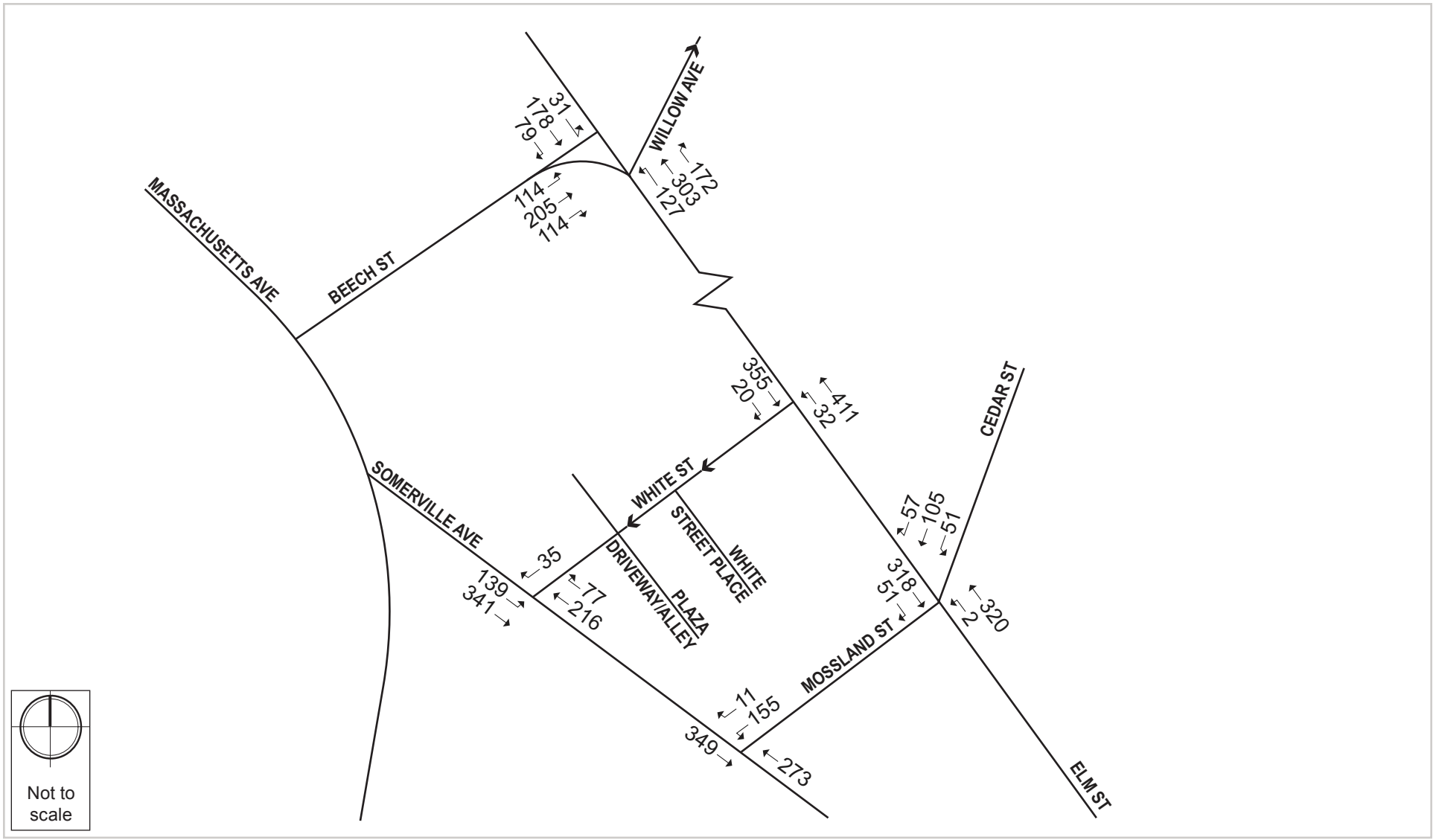


Figure 17. ***Future (2028) Condition Vehicle Volumes, Weekday p.m. Peak Hour***



Transportation Impact Analysis

This section discusses the analysis results for the transit, bicycle, pedestrian, and motor vehicle networks. Each section explains the analysis methodology used to evaluate the respective mode and then presents the results. All modes were evaluated for the Existing, Build, and Future Conditions.

Transit Analysis

The volume to capacity ratio (V/C) is the primary comfort metric to determine the existing passenger conditions and evaluate the impact the Project has on local transit services. The V/C ratio is a measurement of the number of passengers divided by the planning capacity. A V/C ratio of 1.0 or higher means the transit line is at or above capacity, and any additional passengers either cannot be accommodated and/or will cause delays to service as they try to crowd onto the train or bus. Planning capacity for bus and rail service changes between peak and off-peak hours, indicating there is a different level of comfort that passengers are willing to accept during peak hours than off-peak hours. The V/C ratio was calculated for the different analysis conditions for each transit service before and after the closest stop in both directions. For a conservative transit analysis, no transit trips were assigned to the MBTA Red Line or Commuter Rail. The transit analysis for the Project assigned all project-generated transit trips to the four bus routes with bus stops within one block of the Project: MBTA bus routes #77, #83, #87, and #96.

BUS CAPACITY ANALYSIS METHODOLOGY

Under existing conditions passenger loads approaching and leaving the bus stops closest to the Project in both the inbound and outbound directions were summarized in half-hour intervals. Bus planning capacity was determined using the MBTA's Service and Delivery Policy. The planning capacity for a bus is calculated as 125% of the seated capacity during off-peak hours and 140% during peak hours for most bus routes. For example, a standard 40-foot MBTA bus that has 39 seats would have an off-peak planning capacity of 48 passengers per bus, and a peak planning capacity of 55 passengers per bus.

- **Existing Condition.** To determine the existing ridership, rail and bus data was collected from the MBTA Open Data Portal. Automated Passenger Counter (APC) data from fall 2019 was used to serve as the baseline for the bus transit analysis providing a conservative analysis utilizing the higher pre-pandemic ridership. APC data includes average boarding, alighting, and exit loads at a stop for each bus trip.

- **Build Condition.** For the Build Condition, the project-generated transit trips were distributed according to the transit trip distribution presented earlier and added to the Existing Condition passenger loads.
- **Future Condition.** The Future (2028) Condition considers a ridership growth rate of 1% per year for a period of seven years from the Existing Condition, based on the City of Somerville TIS standards. These trips are then added to the Build Condition.

TRANSIT CAPACITY ANALYSIS SUMMARY

The bus routes in the immediate area of the Site (MBTA #77, #83, #87, and #96) all remain with a V/C ratio of less than 1.00 for every half hour increment in the Existing, Build, and Future Conditions. Select buses on Route 77 indicate exceeded capacity on a per bus bases however the half-hour V/C ratios during these times do not exceed 1.00 as additional bus capacity exists in the same period. Passenger loads for the four bus routes are provided in **Appendix E** along with half-hour passenger load comparison tables with V/C ratios for the Existing, Build, and Future Conditions.

Bicycle Analysis

Within the study area, bicycle facilities are generally five-foot-wide bicycle lanes adjacent to travel lanes. The bicycle network is analyzed using the Bicycle Level of Traffic Stress (BLTS) methodology developed by Mekuria, Furth, and Nixon in the Mineta Transportation Institute (MTI) *Report 11-19*. This methodology gives a level of stress classification for each segment and intersection based on a set of measurable characteristics or observations. The four tiers of Level of Traffic Stress (LTS) range from LTS 1, which would classify a low-stress location, to LTS 4, which is considered a high-stress environment. The four levels of stress are described in **Table 10**.

Table 10. Levels of Traffic Stress (LTS)

LTS	Description
LTS 1	Strong separation from all except low speed, low volume traffic. Simple crossings. Suitable for children.
LTS 2	Except in low speed/low volume traffic situations, cyclists have their own place to ride that keeps them from having to interact with traffic except at formal crossings. Physical separation from higher speed and multilane traffic. Crossings that are easy for an adult to negotiate. A level of traffic stress that most adults can tolerate, particularly those sometimes classified as “interested but concerned.”
LTS 3	Involves iteration with moderate speed traffic or multilane traffic, or close proximity to higher speed traffic. A level of traffic stress acceptable to those classified as “enthused and confident.”
LTS 4	Involves iteration with higher speed traffic or close proximity to high-speed traffic. A level of stress acceptable only to those classified as “strong and fearless.”

BLTS for a segment or unsignalized intersection is calculated by evaluating the characteristics in the tables found in **Appendix F** and selecting the lowest score (highest numerical value) to identify each segment or intersection with the classifications in **Table 10**.

EXISTING CONDITION

SEGMENT ANALYSIS

The study area was evaluated and is shown visually in **Figure 18**. Roadways in the immediate vicinity of the Project range from the lowest stress for bicyclists (LTS 1) on White, Davenport, and Allen Streets to higher stress for bicyclists (LTS 3) on Massachusetts Avenue and Elm Street. Somerville Avenue consists of a buffered bicycle lane which provides separation from vehicle traffic and is located on a facility with a default speed limit of 25 mph. The City statutory speed limit of 25 mph, mixed bicycle/vehicle conditions, and lower volume residential roadway conditions rank most surrounding roadways as lower stress roads with LTS 1 and LTS 2.

INTERSECTION ANALYSIS

Unsignalized Intersections

BLTS at unsignalized crossings with street speeds of 25 mph or less and crossings of two to three lanes are BLTS 1. All the unsignalized intersections in the study area meet the BLTS 1 conditions as shown visually in **Figure 18**.

Signalized Intersections

BLTS does not apply through signalized street crossings. Signalized crossings are evaluated qualitatively. Bike boxes, two-stage left-turn boxes, phase-separated right-turn lanes, and dedicated bicycle signals can all improve bicyclists' comfort at signalized intersections. The study area signalized intersections are equipped with bicycle boxes (Elm Street northbound at Mossland Street and Mossland Street westbound at Somerville Avenue). Potential conflict areas between turning vehicles and bicycle lanes are marked with dashed bicycle lane lines and contrasting green bicycle lane markings (Somerville Avenue at Mossland and White streets). Like the segment BLTS, the signalized intersection BLTS for the study area intersections are in the range of BLTS 2 to BLTS 3 as shown visually in **Figure 18**.

Figure 18. ***Bicycle Level of Traffic Stress – Existing***

BUILD (2023) CONDITION

The Build (2023) Condition includes any added bicycle trips due to the Project and on-site improvements to bicycle facilities. The Project does not propose any specific off-site bicycle lane improvements; therefore, the BLTS is forecasted to remain as in the Existing (2023) Condition.

FUTURE (2028) CONDITION

The Future (2028) Condition includes the improvements proposed in the Build (2023) Condition as well as changes to bicycle facilities proposed by other developments or other agencies. No additional improvements have been identified at this time by other projects.

Pedestrian Analysis

The pedestrian network is analyzed using the Pedestrian Level of Traffic Stress (PLTS) methodology developed by the Oregon Department of Transportation (DOT). This methodology gives a level of stress classification for each segment based on sidewalk width, travel lanes, physical buffers between the sidewalk and roadway, and sidewalk condition. PLTS for segments are calculated by evaluating the characteristics from the tables in **Appendix G** and selecting the lowest score (highest numerical value).

EXISTING (2023) CONDITION

SEGMENT ANALYSIS

The study area segments were evaluated using the tables in **Appendix G** and are shown visually in **Figure 19**. The sidewalks in the study area along the west side of Somerville Avenue and both sides of Massachusetts Avenue are ranked at the lower level of stress, PLTS 1, as they have the largest buffers from vehicle traffic with landscaped areas, street trees, and bicycle lanes. The wide widths combined with the separation makes these facilities comfortable to walk on. The facilities on the rest of the network are mostly at PLTS 2 and PLTS 3 as the actual widths are mostly less than six feet. These narrow sidewalks also have additional obstructions which makes the effective continuous walking widths narrower.

INTERSECTION ANALYSIS

The pedestrian delay for signalized crossings is based on the Transportation Research Board's (TRB's) 2000 *Highway Capacity Manual* (HCM) methodology and is presented in **Table 11**.

Figure 19. ***Pedestrian Level of Traffic Stress – Existing***

Table 11. Pedestrian Delay and Clearance Comparison at Signalized Intersections

Intersection and Crosswalk Location		Length (ft)	MUTCD FDW Calculation (sec)[1]	Provided FDW (sec)	Pedestrian Phasing Type	a.m. Ped. Delay (sec)	p.m. Ped. Delay (sec)	Sat Ped Delay (sec)
Somerville Ave/ White St	North	60	18	22	Exclusive	42.1	42.1	42.1
	East	28	8					
	South	65	19					
Somerville Ave/ Mossland St	North	50	14	22	Exclusive	43.1	43.1	43.1
	East	33	10					
Elm Street/ Mossland St/ Cedar St	North	50	15	17	Exclusive	34.9	34.9	34.9
	East	32	10	17				
	South	60	18	17				
	West	48	14	17				

Grey shading indicates FDW does not meet MUTCD requirement based on average walking speed of 3.5 ft/sec.

Pedestrian crossing lengths were used to compute the minimum required clearance time for each crosswalk at the signalized intersections. As shown in **Table 11**, the "flashing don't walk" (FDW) time at all of the study area signalized intersections meet the *Manual on Uniform Traffic Control Devices* (MUTCD) requirement with the exception of the south crosswalk at Elm Street/Mossland Street. By this review, the current FDW time falls below the requirement by one second. Consistent with HCM methodologies, calculations for the delay only considered an effective pedestrian green time and signal cycle length. The average delay assumes pedestrians arrive randomly within a traffic signal cycle to a crossing.

BUILD (2023) CONDITION

The Build (2023) Condition includes the added pedestrian Project trips and on-site improvements to pedestrian facilities. The pedestrian improvements include constructing a 12-foot sidewalk adjacent to the Site along White Street Place. The Project will also install crosswalk markings across White Street Place on White Street.

FUTURE (2028) CONDITION

The Future (2028) Condition includes the improvements proposed in the Build (2023) Condition as well as changes to sidewalks and crossings proposed by other developments. No additional improvements have been identified at this time by other projects.

Motor Vehicle Operations Analysis

The criterion for evaluating vehicle operations is level of service (LOS), which is determined by assessing average delay experienced by vehicles at intersections and along intersection approaches. Trafficware's Synchro (version 11) software package was used to calculate average delay and associated LOS at the study area intersections. This software is based on the traffic operational analysis methodology of the HCM. Satellite imagery as well as proposed plan sets for ongoing construction were used to collect intersection geometry such as number of turning lanes, lane length, and lane width that were incorporated into the operations analysis.

LOS designations are based on average delay per vehicle for all vehicles entering an intersection. **Table 12** displays the intersection LOS criteria. LOS A indicates the most favorable condition, with minimum traffic delay, while LOS F represents the worst condition, with significant traffic delay. However, LOS E or F is often typical for a stop-controlled minor street that intersects a major roadway and does not necessarily indicate that the operations at the intersection are poor or failing.

Table 12. Vehicle Level of Service Criteria

Level of Service	Average Stopped Delay (sec/veh)	
	Unsignalized Intersection	Signalized Intersection
A	≤10	≤10
B	>10 and ≤15	>10 and ≤20
C	>15 and ≤25	>20 and ≤35
D	>25 and ≤35	>35 and ≤55
E	>35 and ≤50	>55 and ≤80
F	>50	>80

Source: 2000 Highway Capacity Manual, Transportation Research Board.

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

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

- The 50th percentile queue length, measured in feet, represents the maximum queue length during cycle of the traffic signal with typical (or median) entering traffic volumes. 50th percentile queues are not reported for unsignalized stop locations.
- The 95th percentile queue length, measured in feet, denotes the farthest extent of the vehicle queue (to the last stopped vehicle) upstream from the stop line. This maximum queue occurs 5% or less of the time during the peak hour, and typically does not develop during off-peak hours. Since volumes fluctuate throughout the hour, the 95th percentile queue represents what can be considered a "worst case" condition. Queues at an intersection are generally below the 95th percentile length throughout most of the peak hour. It is also unlikely that 95th percentile queues for each approach to an intersection occur simultaneously.

Table 13 and **Table 14** summarize the a.m. and p.m. peak hour capacity analysis, respectively, for the study area intersections under each analysis condition: Existing (2023) Condition, Build (2023) Condition, and Future (2028) Condition. The detailed analysis reports are provided in **Appendix H**.

Table 13. Capacity Analysis Summary, Weekday a.m. Peak Hour

Intersection/ Movement	Existing (2023) Condition					Build (2023) Condition					Future (2028) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %
Signalized Intersections															
Somerville Ave/White St	**B**	**19.0**	**0.40**			**B**	**19.2**	**0.40**			**B**	**19.1**	**0.40**		
White St WB right	A	6.3	0.02	4	11	A	6.4	0.02	4	11	A	6.5	0.02	4	11
Somerville Ave NB thru/right	D	45.2	0.77	197	255	D	45.3	0.78	200	258	D	45.2	0.78	201	259
Somerville Ave SB left	A	0.6	0.04	0	0	A	0.7	0.04	0	m0	A	0.7	0.04	0	m0
Somerville Ave SB thru	A	0.0	0.22	m0	0	A	0.0	0.22	0	0	A	0.0	0.22	0	0
Somerville Ave/Mossland St	**C**	**22.2**	**0.45**			**C**	**22.1**	**0.45**			**C**	**22.1**	**0.45**		
Mossland St WB left	D	40.2	0.73	123	#225	D	40.2	0.73	123	#225	D	40.2	0.73	123	#225
Mossland St WB right	C	24.3	0.01	2	9	C	24.2	0.01	2	9	C	24.3	0.01	2	9
Somerville Ave NB thru | thru	A	5.0	0.15	26	38	A	4.9	0.15	26	38	A	5.0	0.15	26	38
Somerville Ave SB thru | thru	C	23.9	0.43	78	118	C	22.4	0.43	78	118	C	24.0	0.43	78	118
Elm St/Mossland St/Cedar St	**C**	**33.3**	**0.48**			**C**	**33.3**	**0.48**			**C**	**33.3**	**0.48**		
Cedar St WB left/thru/right	D	48.3	0.76	156	#272	D	48.3	0.76	156	#272	D	48.3	0.76	156	#272
Elm St NB left/thru	C	23.1	0.38	113	155	C	23.2	0.38	116	158	C	23.4	0.40	121	163
Elm St SB thru/right	C	30.1	0.67	214	278	C	30.3	0.68	214	280	C	30.4	0.68	217	281
Unsignalized Intersections															
Elm Street/White Street															
Elm St NB left/thru	A	0.8	0.02	-	2	A	0.9	0.03	-	2	A	0.9	0.03	-	2
Elm St SB thru/right	A	0.0	0.24	-	0	A	0.0	0.24	-	0	A	0.0	0.25	-	0
Elm Street/Beech Street															
Beech St EB left/right	C	15.4	0.48	-	65	C	15.8	0.49	-	68	C	16.1	0.50	-	70
Elm St NB left/thru	A	4.6	0.17	-	15	A	4.7	0.17	-	15	A	4.6	0.18	-	15
Elm St SB thru/right	A	0.0	0.00	-	0	A	0.0	0.00	-	0	A	0	0.00	-	0

Grey Shading indicates LOS E or F under the Existing Condition or a change from LOS D or better in a previous condition to LOS E or F.
m: Volume for 95th percentile queue is metered by upstream signal.

Table 14. Capacity Analysis Summary, Weekday p.m. Peak Hour

Intersection/Movement	Existing (2023) Condition					Build (2023) Condition					Future (2028) Condition				
	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %	LOS	Delay (s)	V/C Ratio	Queues (ft) 50th %	Queues (ft) 95th %
Signalized Intersections															
Somerville Ave/White St	**B**	**18.7**	**0.43**			**B**	**18.7**	**0.43**			**B**	**18.5**	**0.43**		
White St WB right	A	7.8	0.04	11	26	A	7.9	0.04	11	27	A	8.0	0.04	12	27
Somerville Ave NB thru/right	D	47.9	0.83	217	259	D	47.8	0.83	218	261	D	47.2	0.82	216	260
Somerville Ave SB left	A	0.8	0.13	0	m0	A	0.8	0.13	0	m0	A	0.8	0.13	0	m0
Somerville Ave SB thru	A	0.0	0.21	0	0	A	0.0	0.21	0	0	A	0.0	0.21	0	0
Somerville Ave/Mossland St	**C**	**29.2**	**0.41**			**C**	**29.2**	**0.41**			**C**	**29.2**	**0.41**		
Mossland St WB left	E	73.4	0.91	102	#160	E	73.4	0.91	102	#160	E	73.4	0.91	102	#160
Mossland St WB right	C	30.0	0.07	6	19	C	30.0	0.07	6	19	C	30.0	0.07	6	19
Somerville Ave NB thru | thru	A	3.0	0.12	17	26	A	3.0	0.13	17	26	A	3.0	0.13	17	26
Somerville Ave SB thru | thru	C	26.0	0.47	85	121	C	26.0	0.47	85	121	C	26.0	0.48	85	122
Elm St/Mossland St/Cedar St	**C**	**29.8**	**0.39**			**C**	**29.9**	**0.40**			**C**	**30.0**	**0.40**		
Cedar St WB left/thru/right	D	42.5	0.65	131	209	D	42.5	0.65	131	209	D	42.5	0.65	131	209
Elm St NB left/thru	C	25.1	0.49	157	239	C	25.1	0.49	157	240	C	25.2	0.50	158	240
Elm St SB thru/right	C	26.1	0.5	165	253	C	26.3	0.54	170	260	C	26.5	0.55	173	265
Unsignalized Intersections															
Elm Street/White Street															
Elm St NB left/thru	A	0.9	0.03	-	2	A	1.0	0.03	-	3	A	1.0	0.03	-	3
Elm St SB thru/right	A	0.0	0.22	-	0	A	0.0	0.22	-	0	A	0.0	0.23	-	0
Elm Street/Beech Street															
Beech St EB left/right	D	26.6	0.76	-	175	D	28.1	0.78	-	183	D	28.7	0.78	-	188
Elm St NB left/thru	A	2.8	0.14	-	23	A	2.8	0.14	-	13	A	2.8	0.15	-	13
Beech St SB thru/right	A	0.0	0.00	-	0	A	0.0	0.00	-	0	A	0.0	0.00	-	0

Grey Shading indicates LOS E or F under the Existing Condition or a change from LOS D or better in a previous condition to LOS E or F
m: Volume for 95th percentile queue is metered by upstream signal.

In summary, the following conditions were analyzed:

- **Existing (2023) Condition** represents the existing traffic volumes collected in October 2022, without the project.
- **Build (2023) Condition** represents the Existing Condition with the addition of project generated vehicle trips. This evaluates the effect of only the Project trips on the roadway network as it exists today.
- **Future (2028) Condition** represents the Build (2023) Condition with the addition of trips from other development projects as well as any network or design improvements proposed by other developments through the future year.

For the motor vehicle operations analysis, a Build (2023) Condition with Mitigation is not provided. The Project is not expected to cause impacts to vehicle traffic that require roadway improvements for vehicle operations.

EXISTING (2023) CONDITION CAPACITY ANALYSIS

As shown under the Existing (2023) Condition, study area intersections and approaches operate at acceptable LOS (LOS D or better) during the weekday a.m. and p.m. peak hours except the following.

SOMERVILLE AVENUE/MOSSLAND STREET

- The Mossland Street westbound left turn lane operates at LOS E during the p.m. peak hour.

Queue diagrams for the Existing (2023) Condition are provided in **Appendix I**.

BUILD (2023) CONDITION CAPACITY ANALYSIS

As shown under the Build (2023) Condition, no significant changes in LOS occur at any of the study area intersections or approaches during any of the peak hours. The Project is expected to have de minimis impact on the surrounding roadway network.

FUTURE (2028) CONDITION CAPACITY ANALYSIS

As shown under the Future (2028) Condition, all the study area intersections and approaches continue to operate at the same levels of service as in the Build (2023) Condition.

Transportation Mitigation

The Proponent will work with the City of Somerville to create a Project that improves the pedestrian environment, encourages transit and bicycle usage, and efficiently serves vehicle trips at the Project Site. The Proponent is committed to controlling the percentage of trips made to the Site by motor

vehicle at 37.5% by 2030 and will commit to best mobility practices in an attempt to influence the percentage of trips made by vehicular travel at 25% or less by 2040.

The Project will bring all abutting sidewalks and pedestrian ramps to the City of Somerville standards in accordance with the National Association of City Transportation Officials (NACTO) design guidelines. This will include the reconstruction and widening of sidewalks abutting the Project along White Street and White Street Place. Improvements will include improved street lighting where necessary, planting of street trees, and addition of street furniture such as bike racks and benches around the Site.

The Proponent is committed to implementing Mobility Management Plan (MMP) measures to minimize automobile usage and Project-related traffic impacts. The Proponent is prepared to take advantage of excellent transit access in marketing the Project to future tenants and work with them to implement the MMP measures to encourage the use of non-vehicular modes of travel. The following section identifies the TDM program to reduce the use of single occupancy vehicles. Specific mitigation contributions are:

- ***Bicycle parking.*** The Project will provide outdoor spaces for three bicycles and 12 covered, secure bicycle parking spaces in a bicycle room located within the building.
- ***White Street Place crosswalk.*** The project will construct a crosswalk across White Street Place at White Street.
- ***White Street Place sidewalk.*** The project will construct a 12-foot-wide sidewalk adjacent to the Site along White Street Place.
- ***Transit Screens.*** An on-site real time transit information display will be located within the lobby with transit schedules and arrival/departure information.

Transportation Demand Management

The Proponent will provide the following TDM program:

- Join the local Transportation Management Association or join one should one form;
- Designate an on-site transportation coordinator for the tenants;
- Host an annual mobility management education meeting for employees;
- Post mobility management information;
- Distribute mobility management information; and
- Provide a guaranteed ride home program for employees.

A MMP has been approved by the City and provides detailed TDM and mobility commitments for the Project. The Proponent continues to work with the City of Somerville to create a Project that

provides safe access for vehicle trips, improves the pedestrian environment, and encourages transit and bicycle use at the Project Site.

Conclusion

The proposed 32-44 White Street redevelopment is expected to have negligible impacts to the transportation network; the Project will rely on the vibrant transit-oriented design of the Porter Square neighborhood and will not construct any on-site parking. The Project is committed to implementing robust TDM elements to promote non-vehicular travel. The Project is committed to supporting sustainable transportation choices of transit, walking, and cycling in this vibrant neighborhood.