CITY OF CAMBRIDGE
TRAFFIC, PARKING, + TRANSPORTATION

Brooke McKenna
Transportation Commissioner
344 Broadway, Suite 202
Cambridge, MA 02139

May 10, 2024

Scott Thornton
Vanasse & Associates, Inc.
35 New England Business Center, Suite 120
Andover, MA 01810

RE: 2400 Massachusetts Avenue Project

The Cambridge Traffic, Parking, and Transportation (TP&T) Department received your initial Transportation Impact Study (TIS) on March 14, 2024, for a proposed development project located at 2400 Massachusetts Avenue by North Cambridge Partners LLC. Based on staff review, some corrections and clarifications were needed for us to certify the TIS. TP+T received an updated TIS on April 29, 2024, and based on staff review we certify the TIS as accurate and complete.

Going forward, key items that we believe still need further work include the site access and loading locations, number of automobile parking spaces, short-term bicycle parking spaces and sidewalk layout designs, and transportation mitigation, including timelines for mitigation. We recommend that these items be resolved prior to you attending your first Planning Board Special Permit hearing.

Thank you for working with us on the TIS and please contact Adam Shulman of my staff at 617-349-4745 if you have any questions or to set up a meeting.

Very truly yours,

Brooke McKenna, Transportation Commissioner

cc: Jeff Parenti, Assistant Commissioner for Street Management/Director of Traffic and Parking.
Adam Shulman, Transportation Planner.

Transportation Impact Study

Proposed Mixed-Use Development
2400 Massachusetts Avenue
Cambridge, Massachusetts

Prepared for:

North Cambridge Partners LLC
Chestnut Hill, Massachusetts

April 2024

Prepared by:

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

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EXECUTIVE SUMMARY

INTRODUCTION

On behalf of North Cambridge Partners LLC (the "Applicant"), Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Study (TIS) for a proposed 56-unit multifamily residential development with approximately 6,400 square feet (sf) of ground floor commercial space to be located at 2400 Massachusetts Avenue in Cambridge, Massachusetts (hereafter referred to as the "Project"). This study reviews the potential transportation impacts, defines site access requirements, and identifies strategies to reduce traffic impacts associated with the Project. The study also reviews the Project with respect to the City of Cambridge Special Permit Criteria regarding traffic impacts, is in accordance with the City's guidelines for TIS, and follows the scoping determination dated November 9, 2023.

PROJECT DESCRIPTION

The Project involves razing the existing buildings on-site and constructing 56 dwelling units and approximately 6,400 sf of ground-floor commercial space. Long-term bicycle storage spaces will be provided on-site for 58 bicycles, or a ratio of approximately 1.04 spaces per unit. Short-term bicycle spaces will be provided on-site for 10 bicycles with an additional 12 spaces provided off-site on Massachusetts Avenue. Vehicle parking is proposed on-site via a below-grade garage containing 67 spaces (25 standard spaces, 14 tandem spaces, 24 compact spaces, and 4 accessible spaces). Access to the garage is proposed via a new curb cut onto Harvey Street. The existing curb cut onto Cedar Street will be closed. Loading operations for the building are proposed on Alberta Terrace.

CONSISTENCY WITH PLANNING STUDIES

The Project has been designed to be generally consistent with the various policy plans and development guidelines for the area. The Project has been designed to be consistent with the City's transportation planning efforts and projects to improve mobility in the surrounding area and region, including the 2015 Transit Strategic Plan, Vision Zero Plan, and Cambridge Bicycle and Pedestrian Plans. The Project also aligns with the Envision Cambridge Vision and Core Values, particularly related to Livability, as well as the Mobility Chapter.

EXISTING CONDITIONS

A field inventory of existing study area roadways was conducted to document traffic conditions in the current 2024 analysis year. Items collected regarding the study area roadways and intersections include roadway geometrics, traffic control devices, traffic signal timing plans, traffic volumes, vehicle queues, pedestrian crossing volumes, bicycle volumes, and safety data for the roadways in the vicinity of the site. Traffic volumes were measured by means of automatic traffic recorder counts (ATRs) and substantiated by manual intersection turning-movement and vehicle-classification counts (TMCs). Other transportation-related data inventoried included on-street parking regulations, transit services, and provision of bicycle and pedestrian facilities.

PROJECT-GENERATED TRAFFIC

The Project involves razing the existing structures on-site and constructing 56 multifamily residential units and approximately 6,400 sf of ground floor retail. The exiting driveway for the facility was counted to determine the number of existing trips the site generates. Trip-generation rates for the residential and retail use were derived from the Institute of Transportation Engineers (ITE)[1] trip-generation rates. The residential trip and retail trips were added together, and the existing trips subtracted to determine the net new Project trip generation by mode. The Project is expected to generate a total of 1,050 daily person trips (354 daily vehicle trips), 91 weekday morning peak-hour person trips (27 morning peak-hour vehicle trips), and 97 weekday evening peak-hour person trips (20 evening peak-hour vehicle trips).

ARTICLE 19 PROJECT REVIEW SPECIAL PERMIT CRITERIA ANALYSIS

As required by Section 19.20 of the City of Cambridge Zoning Ordinance (the "Ordinance"), the Project has been evaluated against the five Project Review Special Permit Criteria indicators as measurements of the Project's expected impact on City traffic. Of the 95 measurements analyzed in connection with the 5 indicators, only 7 were exceeded and all are exceeded under existing conditions and would be considered exceedances of the measurements with or without the Project. The Applicant is committed to the implementation of strategies described in this TIS to lessen any potential impact of the Project on City traffic. Accordingly, the Project is not expected to have a substantial adverse impact on City traffic, and issuance of a Project Review Special Permit is appropriate with respect to potential traffic impacts.

TRAFFIC OPERATIONS ANALYSIS

To assess the impact of the Project on the roadway network, traffic operations and vehicle queue analyses were performed at the study intersections under 2024 Existing, 2024 Build, and 2029 Future conditions. The analysis indicates that the Project will not have a significant effect on operating conditions at the area intersections.

[1] *Trip Generation,* 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

PARKING SUPPLY

The Project will provide 67 parking spaces, or a parking ratio of 1.2 spaces per unit in a below-grade garage that will be accessed via Harvey Street. It is noted that retail patrons of the site will be required to find public parking in the area and will not have access to the below-grade parking garage. The parking ratio was chosen to address resident concerns that this development will use some of the limited supply of resident street parking in the area and thereby impact the existing residents in the area.

Based on zoning, the residential component of the Project requires 58 regular bicycle parking spaces and 3 tandem bicycle spaces. The Project is providing 58 bicycle spaces of which 4 will have the additional 2 feet to accommodate tandem bicycles or bicycles with trailers.

TRANSPORTATION DEMAND MANAGEMENT MEASURES

Generally, the Project's location near the Linear Path which provides direct access to transit facilities such as Davis Station encourages non-auto use. Mitigation efforts are therefore geared towards efforts to encourage Project employees and residents towards alternative transportation that would result in a low single-occupancy vehicle (SOV) rate for the Project. The Project will implement the following Transportation Demand Management (TDM) measures.

- Join the Alewife Transportation Management Association (TMA). This membership will provide residents and employees with access to commuter programs such as carpool incentive, emergency ride home, and TMA rewards.

- Encourage residents and employees to obtain a CharlieCard and register it for bike parking, allowing residents and employees the ability to use the bike racks at area Massachusetts Bay Transit Authority (MBTA) stations and Pedal & Park facilities.

- Make available public transportation schedules, which will be posted in a centralized location for residents and employees to be located in the lobby of main building.

- Provide information on available pedestrian and bicycle facilities in the vicinity of the Project site in a central location for residents and employees.

- Charge for parking at market rates with parking fees unbundled from rent.

- Provide information about transportation options available to residents via a welcome packet at move-in and to employees at orientations.

- A 100 percent subsidy will be provided for the cost of a bus/subway link pass for two consecutive months to each adult member of a residential household, up to two per household, upon move-in.

CONCLUSION

As described throughout this TIS, the Project consists of the redevelopment of an existing commercial facility located at 2400 Massachusetts Avenue to provide a mix of retail and residential uses consisting of 56 multifamily residential units and 6,400 sf of ground floor retail space. Parking will be provided via a 67-space below-grade garage with access onto Harvey Street. Long-term bicycle parking will be provided on-site that can accommodate 54 regular bicycles and 4 tandem bicycles with trailers. Short-term bicycle parking will be provided on-site for 10 bicycles with an additional 12 spaces provided off-site.

The Project is located in an area close to extensive public transit networks where reliance on personal vehicles is becoming less necessary and through the provision of expanded bicycle parking and proximity to the Linear Path and bicycle lanes, the overall traffic impact of the Project will be reduced.

The proposed Project will not result in a public hazard due to substantially increased vehicular traffic or parking in this area of Cambridge. Specifically, the Project is not anticipated to have a significant adverse impact on motorist delays in the area and adequate parking supply will exist on-site to support the Project. Accordingly, this TIS finds that the Project can be accommodated within the existing area infrastructure and on the roadway network with minimal effects, resulting in the ability to implement the Project's planned residential and retail uses with the appropriate TDM measures.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Study (TIS) for the Project as described above. This study reviews the potential transportation impacts, defines site access requirements, and identifies strategies to reduce traffic impacts associated with the Project. The study also reviews the Project with respect to the City of Cambridge Special Permit Criteria regarding traffic impacts, is in accordance with the City's guidelines for TIS, and follows the scoping determination dated November 9, 2023. Table 1.a.1 outlines the existing and proposed characteristics of the Project.

Table 1.a.1
PROJECT CHARACTERISTICS

Characteristics	Existing Condition	Build Condition
Use	Retail/Office	Retail/Residential
Status	Operational	--
Leasable Space	19,472 sf	6,400 sf
Number of Residential Units	0	56
Parking Spaces	43	67
Bicycle Spaces		
Long Term	0	58
Short Term	2	10 on-site/12 off-site

At the times the counts were conducted for the Project, the site consisted of the following tenants:

- Eclipse Video Services (2,689 sf of retail and 3 employees)
- Mucky Kids Art Studio (1,350 sf of retail and 4 employees)
- Chhabra Bridal (1,706 sf retail and 3 employees)

- Thomas Gibson Esq. (715 sf office and 3 employees)
- Running with the Pack (1,872 sf dog daycare retail and 3 employees)
- David Conway (377 sf medical office and 2 employees)
- Friends of Bosnia (1,200 sf 50 percent office/50 percent educational lab subtenant and 3 employees)

Only 9,909 sf of the 19,472 sf of commercial space on-site was occupied and opened when the counts were conducted.

The Project's preliminary ground floor plan with points of vehicle, pedestrian, and bicycle access is shown on Figure 1.a.1.

A survey plan is shown on Figure 1.a.2 including property lines, abutting parcels, and property ownership with easements also depicted.

The proposed landscaping plan for the Project is shown on Figure 1.a.3 and denotes which trees shown are exiting trees. Existing trees are denoted by E1 or E2.

1.0 EXISTING CONDITIONS

1.1 EXISTING TRAFFIC CONDITIONS

A field inventory of existing study area roadways was conducted to document traffic conditions in the current 2024 analysis year. Items collected regarding the study area roadways and intersections include roadway geometrics, traffic control devices, traffic signal timing plans, traffic volumes, vehicle queues, pedestrian crossing volumes, bicycle volumes, and safety data for the roadways in the vicinity of the site. Transportation information and data used in this study were collected during December 2023 and January 2024.

1.2 DESCRIPTION OF PROJECT STUDY AREA

The Project study area was determined in consultation with City transportation officials. The study area was confirmed in the November 9, 2023 Scoping Determination from the City to VAI. The study area is listed below.

1. Massachusetts Avenue at Cedar Street
2. Massachusetts Avenue at Harvey Street/Cameron Avenue
3. Massachusetts Avenue at Alberta Terrace
4. Cedar Street at Harvey Street
5. Cedar Street at the site driveway
6. Cedar Street at Alberta Terrace

Transportation Network

Access to the area is provided via Massachusetts Avenue which abuts the site to the northeast. Massachusetts Avenue provides connections to regional roadways such as Alewife Brook Parkway and Route 2 as well as connections into downtown Cambridge and Boston. Local access to the site is provided from Alberta Terrace, Cedar Street, Harvey Street, and Cameron Avenue.

Geometric and Traffic Control

Existing intersection geometry and lane usage was obtained from field inventory and observations conducted by VAI in December 2023. A graphical depiction of intersection inventories for the study area intersections is provided on Figure 1.b.1. Sidewalks and wheelchair ramps along

Massachusetts Avenue, Cedar Street, Harvey Street, Cameron Avenue, and Alberta Terrace are in fair to good condition. The curbing on Alberta Terrace and Cameron Avenue is in fair to good condition while the curbing on Cedar Street, Harvey Street, and Massachusetts Avenue is in poor to fair condition. Massachusetts Avenue has bicycle lanes in each direction with flexible delineators between the bicycle travel lane and vehicle travel lane. Cameron Avenue has bicycle lanes in each direction between Massachusetts Avenue and Fair Oaks Street with only pavement markings delineating between the bicycle travel lane and the vehicle travel lane. East on Fair Oaks Street the westbound travel direction only provides shared use pavement markings while the eastbound direction continues to provide a bicycle lane with only pavement markings delineating between the bicycle travel lane and the vehicle travel lane. Massachusetts Avenue also has bus-only lanes northbound and southbound. The southbound bus-only lane is designated bus only from 10:00 PM to 9:00 AM and loading from 9:00 AM to 10:00 PM. It should also be noted that the Alewife Linear Path intersects Massachusetts Avenue at the Cedar Street intersection and has a dedicated phase at the traffic signal.

1.3 PARKING AND LOADING FACILITIES

Figure 1.c.1 provides a plan view of the existing parking lot on-site that can accommodate approximately 43 vehicles. There is one short-term bicycle rack on Massachusetts Avenue in front of the site that can accommodate two bicycles. No long-term bicycle racks are provided on-site.

1.4 TRANSIT SERVICES

Existing transit and bike facilities have been researched and inventoried in January 2024. Figure 1.d.1 provides a graphical depiction of the regional public and private transportation services available in the area. Figure 1.d.2 depicts all transit facilities, including bus stops, within a 0.5-mile radius of the Project site and the pedestrian access routes to the closest facilities. Figure 1.d.3 shows the bicycle parking and route access map for bicycle facilities in the area. Figure 1.d.4 provides a Carsharing and Ridesharing Services Map highlighting nearby locations of taxi stands and carsharing services such as Zipcar. It should be noted that there were no taxi stands within a 0.5-mile radius of the Project site. Figure 1.d.5 provides a Bike Sharing Station Map that identifies locations of BLUEbikes$_{SM}$ stations in the area.

1.5 LAND USE

Land uses in the vicinity of the site were researched and inventoried in December 2023 and are shown on Figure 1.e.1.

2.0 DATA COLLECTION

2.1 AUTOMATIC TRAFFIC RECORDER COUNTS

To establish existing traffic conditions within the study area, automatic traffic recorder (ATR) counts and manual turning movement and vehicle classification counts (TMCs) were conducted in January and February 2024. This allowed for public schools to be in regular session at the time the data was collected. The traffic count data sheets are provided in the Appendix. A summary of the ATR data is provided in Table 2.a.1, while the average hourly directional volumes recorded at the ATR locations are summarized in Table 2.a.2. The location of the counts and the date the counts were conducted are shown on Figure 2.a.1.

Table 2.a.1
2024 EXISTING TRAFFIC VOLUMES

Location	Weekday ADT[a]	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday ADT[a]	Saturday Midday Peak Hour		
		Vehicles per Hour	K Factor[b]	Directional Distribution	Vehicles per Hour	K Factor	Directional Distribution		Vehicles per Hour	K Factor	Directional Distribution
Cedar Street, north of Harvey Street	2,850	278	9.8	75% SB	280	9.8	64% NB	2,200	199	9.0	57% SB
Harvey Street, east of Cedar Street	3,200	255	8.0	63% WB	286	8.9	58% EB	2,750	232	8.4	51% EB
Alberta Terrace, east of Cedar Street	265	14	5.3	100% EB	18	6.8	100% EB	345	27	7.8	100% EB
Massachusetts Avenue, north of Alberta Terrace	19,500	1,348	6.9	60% SB	1,660	8.5	50% NB	17,500	1.324	7.6	51% SB

Source: ATR and TMCs conducted in January and February 2024. Volumes were seasonally adjusted to average month conditions.
[a]Two-way daily traffic expressed in vehicles per day.
[b]Two-way peak-hour volume expressed in vehicles per hour.
[c]Percent of daily volume in peak hour.
[d]Percent traveling in the peak direction.
EB = eastbound; WB = westbound; SB = southbound; NB = northbound.

Table 2.a.2
AVERAGE HOURLY TRAFFIC VOLUMES AT ATR LOCATIONS[a]

	Cedar Street, north of Harvey Street						Harvey Street, east of Cedar Street					
	Weekday			Saturday			Weekday			Saturday		
Start Time	NB	SB	Total	NB	SB	Total	EB	WB	Total	EB	WB	Total
12:00 AM	3	4	7	6	17	23	3	6	9	18	20	38
1:00	2	5	7	8	12	20	4	3	7	10	13	23
2:00	4	3	7	4	4	8	4	2	6	2	4	6
3:00	0	1	1	0	4	4	2	2	4	5	5	10
4:00	3	5	8	3	1	4	5	1	6	3	7	10
5:00	7	20	27	8	6	14	12	14	26	7	4	11
6:00	16	70	86	8	15	23	21	42	63	14	12	26
7:00	42	205	247	12	31	43	74	143	217	14	22	36
8:00	66	182	248	30	47	77	85	158	243	47	40	87
9:00	36	113	149	36	65	101	74	118	192	67	68	135
10:00	36	94	130	61	78	139	58	81	139	64	81	145
11:00	48	72	120	56	72	128	72	69	141	86	109	195
12:00 PM	57	77	134	77	100	177	78	93	171	119	113	232
1:00	61	74	135	80	116	196	76	60	136	104	92	196
2:00	85	88	173	76	87	163	101	87	188	107	74	181
3:00	151	90	241	74	75	149	175	127	302	103	107	210
4:00	161	102	263	66	95	161	148	123	271	122	95	217
5:00	162	112	274	73	105	178	153	95	248	105	98	203
6:00	121	116	237	68	89	157	179	118	297	126	119	245
7:00	65	58	123	61	56	117	124	73	197	90	90	180
8:00	36	58	94	48	49	97	53	72	125	53	65	118
9:00	34	40	74	34	34	68	48	42	90	39	68	107
10:00	15	20	35	20	28	48	27	27	54	42	33	75
11:00	13	15	28	28	33	61	14	12	26	22	32	54
Total[b]	1,224	1,624	2,848	937	1,219	2,156	1,590	1,568	3,158	1,369	1,371	2,740

See notes at end of table.

Table 2.a.2 (Continued)
AVERAGE HOURLY TRAFFIC VOLUMES AT ATR LOCATIONS[a]

	Alberta Terrace, east of Cedar Street						Massachusetts Avenue, north of Alberta Terrace					
	Weekday			Saturday			Weekday			Saturday		
Start Time	EB	WB	Total	EB	WB	Total	NB	SB	Total	NB	SB	Total
12:00 AM	1	0	1	4	0	4	82	39	121	177	82	259
1:00	1	0	1	2	0	2	41	13	54	122	66	188
2:00	0	0	0	2	0	2	23	13	36	115	42	157
3:00	2	0	2	0	0	0	14	15	29	36	20	56
4:00	0	0	0	1	0	1	23	34	57	19	13	32
5:00	2	1	3	1	1	2	65	134	199	48	39	87
6:00	1	0	1	3	0	3	208	378	586	100	88	188
7:00	5	0	5	5	0	5	478	764	1,242	185	194	379
8:00	11	0	11	4	0	4	541	858	1,399	311	296	607
9:00	11	0	11	15	0	15	460	763	1,223	416	439	855
10:00	18	0	18	15	1	16	413	581	994	507	514	1,021
11:00	21	0	21	21	0	21	454	456	910	590	609	1,199
12:00 PM	12	0	12	24	0	24	529	479	1,008	653	648	1,301
1:00	10	0	10	22	0	22	620	462	1,082	649	632	1,281
2:00	19	0	19	24	0	24	783	422	1,205	663	621	1,284
3:00	19	0	19	23	0	23	764	551	1,315	577	607	1,184
4:00	19	0	19	27	0	27	815	610	1,425	613	617	1,230
5:00	22	1	23	45	0	45	889	715	1,604	645	655	1,300
6:00	32	1	33	35	0	35	781	707	1,488	596	626	1,222
7:00	17	0	17	34	0	34	600	506	1,106	525	545	1,070
8:00	20	1	21	15	2	17	536	320	856	465	358	823
9:00	8	0	8	2	0	2	452	264	716	422	259	681
10:00	3	0	3	5	0	5	324	165	489	357	239	596
11:00	4	0	4	10	0	10	224	103	327	270	165	435
Total[b]	258	4	262	339	4	343	10,119	9,352	19,471	9,061	8,374	17.435

[a]Volumes based on ATR counts conducted by VAI in January and February 2024 and seasonally adjusted to average-month conditions; expressed in vehicles per hour.
[b]Daily volumes expressed in vehicles per day.
EB = eastbound; WB = westbound; SB = southbound; NB = northbound.

2.2 PEDESTRIANS

Pedestrian counts for the study area intersections were collected during the vehicle count periods of 2024 described above. The twelve-hour pedestrian counts were performed on the Linear Path and on Massachusetts Avenue north of Alberta Terrace. Table 2.b.1 and Table 2.b.2 summarize the hourly pedestrian volumes for the twelve-hour counts for the respective locations. All counts were conducted in cloudy weather. There was light rain at the start of the weekday morning peak count period, however it quickly tapered off. The counts indicate that the majority of the pedestrians were traveling eastbound on the Linear Path and northbound on Massachusetts Avenue. Counts on Massachusetts Avenue indicate the majority of pedestrians use the east side of the roadway.

There were also 9 pedestrians counted walking in the bicycle lanes on Massachusetts Avenue. The pedestrian observed in the west bike lane traveling southbound between the 10:30 to 11:30 AM hour was a person using rollerblades. The pedestrian observed northbound in the east bike lane between 2:30 and 3:30 PM was wearing a retroreflective construction vest and was marking things with paint. The same person was observed traveling back down the east bike lane southbound then

they crossed over to the west side of Massachusetts Avenue near Alberta Terrace. A few minutes later they crossed back over Massachusetts Avenue to the east side and continued south in the east bike lane. This person therefore accounts for the 3 trips observed in the east bike lane between 2:30 and 3:30 PM. The pedestrian observed in the west bike lane traveling southbound between 5:30 and 6:30 PM entered the bike lane and looked like they were trying to cross over to the east side of Massachusetts Avenue. They decided it was not clear and continued south in the bike lane until they reached the Alberta Terrace sign where they got back onto the sidewalk. The two pedestrians observed in the west bike lane traveling southbound between 6:30 and 7:30 PM parked on Massachusetts Avenue in from of the Project site and as they walked from their car towards their destination, they stayed in the west bike lane until they reached the Alberta Terrace sign where they got onto the sidewalk. Two pedestrians were observed traveling northbound on Massachusetts Avenue between 6:30 and 7:30 PM. They crossed Massachusetts Avenue from the west to east at Alberta Terrace. When they reached the east side of Massachusetts Avenue, they continued north for several paces in the bike lane before entering the sidewalk.

In the vicinity of the site, Massachusetts Avenue provides 8.5- to 16.5-foot-wide sidewalks, Harvey Street provides 5.5- to 7-foot-wide sidewalks, Cedar Street provides 6- to 7-foot-wide sidewalks, and Alberta Terrace provides 4- to 4.5-foot-wide sidewalks on both sides of the roadway. At intersections where crosswalks are marked, wheelchair ramps are provided at each crosswalk located across each leg of the intersection.

Table 2.b.1
AVERAGE HOURLY PEDESTRIAN VOLUMES[a]
LINEAR PATH AT MASSACHUSETTS AVENUE

Start Time	Eastbound	Westbound
7:30 AM	9	1
8:30	12	10
9:30	3	4
10:30	1	5
11:30	4	4
12:30 PM	7	4
1:30	3	5
2:30	6	8
3:30	7	13
4:30	11	10
5:30	6	1
6:30	3	2
Total	72	67

[a]Based on counts conducted by VAI in January 2024.

Table 2.b.2
AVERAGE HOURLY PEDESTRIAN VOLUMES[a]
MASSACHUSETTS AVENUE NORTH OF ALBERTA TERRACE

	On Street				On Sidewalk			
	East Bike Lane		West Bike Lane		East Side		West Side	
Start Time	NB	SB	NB	SB	NB	SB	NB	SB
7:30 AM	0	0	0	0	14	21	13	8
8:30	0	0	0	0	19	26	9	16
9:30	0	0	0	0	10	9	9	10
10:30	0	0	0	1	20	13	38	13
11:30	0	0	0	0	21	16	12	33
12:30 PM	0	0	0	0	27	28	12	23
1:30	0	0	0	0	21	27	15	19
2:30	1	2	0	0	46	26	27	24
3:30	0	0	0	0	31	13	23	25
4:30	0	0	0	0	38	30	29	38
5:30	0	0	0	1	37	24	28	32
6:30	2	0	0	2	33	29	23	27
Total	3	2	0	4	317	262	238	268

[a]Based on counts conducted by VAI in February 2024.

2.3 BICYCLES

As with the pedestrian counts, bicycle counts for the study area intersections were collected during the vehicle count periods of 2024. The twelve-hour bicycle counts were performed on the Linear Path and on Massachusetts Avenue north of Alberta Terrace. Table 2.b.3 and Table 2.b.4 summarize the hourly bicycle volumes for the twelve-hour counts for the respective locations. All counts were conducted in cloudy weather. There was light rain at the start of the weekday morning peak count period, however it quickly tapered off.

The counts of the Linear Path show that the majority of bicyclists were traveling westbound. The counts of Massachusetts Avenue indicate an even distribution of bicyclists traveling northbound and southbound. There was one bike counted traveling southbound in the northbound bike lane and one bike counted traveling northbound in the southbound bike lane. In addition, 13 bikes were counted using the sidewalks on Massachusetts Avenue.

Table 2.b.3
AVERAGE HOURLY BICYCLE VOLUMES[a]
LINEAR PATH AT MASSACHUSETTS AVENUE

Start Time	Eastbound	Westbound
7:30 AM	14	15
8:30	15	31
9:30	6	12
10:30	4	7
11:30	7	7
12:30 PM	6	7
1:30	10	14
2:30	8	19
3:30	25	19
4:30	31	15
5:30	29	26
6:30	11	14
Total	166	186

[a]Based on counts conducted by VAI in February 2024.

Table 2.b.4
AVERAGE HOURLY BICYCLE VOLUMES[a]
MASSACHUSETTS AVENUE NORTH OF ALBERTA TERRACE

	On Street				On Sidewalk			
	East Bike Lane		West Bike Lane		East Side		West Side	
Start Time	NB	SB	NB	SB	NB	SB	NB	SB
7:30 AM	21	0	0	77	1	0	0	0
8:30	24	0	0	89	2	0	0	0
9:30	15	0	0	53	1	1	0	0
10:30	10	0	0	27	0	0	0	0
11:30	8	0	0	19	1	1	0	0
12:30 PM	23	0	0	17	0	0	0	1
1:30	28	0	1	15	0	0	0	0
2:30	32	0	0	23	0	0	0	0
3:30	54	1	0	17	0	0	0	0
4:30	66	0	0	29	2	0	0	0
5:30	102	0	0	45	0	0	2	0
6:30	47	0	0	20	0	0	0	1
Total	430	1	1	431	7	2	2	2

[a]Based on counts conducted by VAI in February 2024.

2.4 INTERSECTION TURNING MOVEMENT COUNTS

Intersection turning movement counts were conducted at the study area intersections for the weekday morning (7:30 to 9:30 AM) and weekday evening (4:30 to 6:30 PM) time periods. Total cars, trucks, buses, pedestrians by movement, bicycles, and vehicle queues were recorded. The 2024 Existing weekday morning and weekday evening peak-hour traffic-volume networks are depicted on Figure 2.c.1 and Figure 2.c.2. The pedestrian volumes are depicted in Figure 2.c.3 and Figure 2.c.4 for the weekday morning and weekday evening peak-hour periods. Bicycle volumes are depicted in Figure 2.c.5 and Figure 2.c.6 for the weekday morning and weekday evening peak-hour periods.

2.5 EXISTING VEHICLE QUEUES

Vehicle queues were observed at the signalized intersections of Massachusetts Avenue at Cedar Street and Massachusetts Avenue at Harvey Street/Cameron Avenue. Table 2.c.1 summarizes the vehicle queue observations by intersection, approach, and lane.

Table 2.c.1
EXISTING QUEUE OBSERVATIONS

Intersection/Lane	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Average Queue	Maximum Queue	Average Queue	Maximum Queue
Massachusetts Avenue at Cedar Street:				
Cedar Street EB LT/RT	2	5	5	10
Massachusetts Avenue NB TH	6	11	7	11
Massachusetts Avenue NB TH	1	3	1	3
Massachusetts Avenue SB TH	21	29	18	29
Massachusetts Avenue SB RT	5	11	3	7
Massachusetts Avenue at Harvey Street/Cameron Avenue:				
Harvey Street EB LT/TH/RT	2	5	5	8
Cameron Avenue WB LT/TH/RT	12	21	4	6
Massachusetts Avenue NB LT/TH	6	14	10	22
Massachusetts Avenue NB TH/RT	2	5	3	6
Massachusetts Avenue SB TH	2	3	2	4
Massachusetts Avenue SB TH/RT	1	1	1	1

Source: Based upon observations conducted by VAI in January 2024.
EB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

2.6 MOTOR VEHICLE CRASH DATA

Motor vehicle crash data was obtained from the Massachusetts Department of Transportation (MassDOT) Safety Management/Traffic Operations Unit for the most recent three-year period available (2018-2020) in order to examine motor vehicle crash trends occurring within the study area. In addition, the Cambridge Police Department (CPD) was contacted to obtain crash records from 2018-2020 at the study area intersections. The CPD provided 14 crashes from 2018-2020 that occurred at the study area intersections, all but one of which were included in the MassDOT online database. This data is summarized in Table 2.d.1. There were no vehicle-pedestrian crashes so a separate table for that was not provided; however, Table 2.d.2 was provided that summarizes crashes between vehicles and bicyclists. Intersections where no bicyclist-vehicle crashes were recorded are not included in Table 2.d.2.

The crash summary indicates that the study area intersections all experienced 16 crashes or less over the three-year review period, or less than 5.33 crashes per year. No pedestrian crashes occurred at the intersections. There was 1 bicycle crash at the intersection of Massachusetts Avenue with Cedar Street and 5 bicycle crashes occurred at the intersection of Massachusetts Avenue with Harvey Street/Cameron Avenue. There were 5 injury crashes reported, of which 4 involved bicycles. No fatalities were reported over the three-year review period. As noted in Table 2.d.1, the intersections experienced a crash rate below the MassDOT District 6 average crash rate for intersections except for the intersection of Harvey Street with Cedar Street. This intersection experienced 4 crashes over the three-year review period. All of which were angle collisions that resulted in property-damage only. Although the crash rate for the intersection of Harvey Street at Cedar Street was above the district average, the intersection is not listed on the Highway Safety Improvement Program (HSIP) database. Designation as an HSIP location allows MassDOT to prioritize funding for safety-related improvements in a specific region of the state. However, the section of Massachusetts Avenue within the study area is listed as bicycle crash cluster 2011-2020. It should be noted that the review period does not include the recent changes to Massachusetts Avenue which installed dedicated bike lanes on the roadway and has likely improved bike safety.

Table 2.d.1
VEHICLE CRASH DATA SUMMARY[a]

	Mass Ave. at Cedar St.	Mass Ave. at Harvey St./ Cameron Ave.	Mass Ave. at Alberta Terr.	Harvey St. at Cedar St.	Cedar St. at Alberta Terr.	Cedar St. at Site Driveway
Year:						
2018	4	7	0	0	0	0
2019	2	7	0	2	1	0
2020	1	2	0	2	0	0
Total	7	16	0	4	1	0
Average[b]	2.33	5.33	0.0	1.33	0.33	0.0
Crash Rate[c]	0.32	0.65	--	0.56	0.17	--
Significant[d]	No	No	--	Yes	No	--
Type:						
Angle	0	1	0	4	0	0
Rear-End	2	3	0	0	0	0
Head-On	0	0	0	0	0	0
Sideswipe	1	6	0	0	1	0
Fixed Object	3	0	0	0	0	0
Pedestrian	0	0	0	0	0	0
Bicyclist	1	5	0	0	0	0
Unknown/Other	0	1	0	0	0	0
Total	7	16	0	4	1	0
Weather Conditions:						
Clear	4	11	0	1	1	0
Cloudy/Rain	3	4	0	3	0	0
Snow/Ice	0	0	0	0	0	0
Fog	0	0	0	0	0	0
Unknown/Other	0	1	0	0	0	0
Total	7	16	0	4	1	0
Lighting Conditions:						
Daylight	5	9	0	2	1	0
Dawn/Dusk	0	1	0	0	0	0
Dark (lit)	2	5	0	2	0	0
Dark (unlit)	0	0	0	0	0	0
Unknown/Other	0	1	0	0	0	0
Total	7	16	0	4	1	0
Pavement Conditions:						
Dry	3	12	0	1	0	0
Wet	3	2	0	3	0	0
Snow/Ice	1	1	0	0	0	0
Unknown/Other	0	1	0	0	1	0
Total	7	16	0	4	1	0
Severity:						
Property Damage Only	6	10	0	4	0	0
Personal Injury	1	4	0	0	0	0
Fatality	0	0	0	0	0	0
Unknown/Other	0	2	0	0	1	0
Total	7	16	0	4	1	0

[a]Source: MassDOT and Cambridge Police Department Crash Data.
[b]Average crashes over three-year period.
[c]Crash Rate in crashes per million entering vehicles (mev).
[d]Crash Rate noted as significant if rate exceeds MassDOT District 6 averages of 0.71 and 0.52 for signalized and unsignalized intersections, respectively.

Table 2.d.2
CRASH DATA SUMMARY: VEHICLE TO BICYCLIST[a]

	Massachusetts Avenue at Cedar Street	Massachusetts Avenue at Harvey Street/Cameron Avenue
Year:		
2018	1	3
2019	0	1
2020	0	1
Total	1	5
Average[a]	0.33	1.67
Time:		
Weekday 730 to 930 AM	0	1
Weekday 430 to 730 PM	0	2
Remainder of Day	1	2
Total	1	5
Pavement Conditions:		
Dry	0	5
Wet	1	0
Snow	0	0
Icy	0	0
Other	0	0
Unknown	0	0
Total	1	5
Day of Week:		
Monday through Friday	0	4
Saturday and Sunday	1	1
Total	1	5
Severity:		
Property Damage Only	0	2
Personal Injury	1	3
Fatal Crashes	0	0
Other/Unknown	0	0
Total	1	5

[a]Source: MassDOT and Cambridge Police Department Crash Data.
[b]Average crashes over three-year period.

2.7 EXISTING PUBLIC TRANSIT SYSTEM

The site is located near Somerville Community Path which provides access to Davis Station in Sommerville which is less than 0.5 mile from the Project site. The MBTA Red Line and six MBTA bus routes service Davis Station. In addition, MBTA Bus Route 77 and Route 83 have stops within a 0.5-mile radius of the Project site. Table 2.e.1 summarizes the headways and boarding data for the Red Line while Table 2.e.2 summarizes the same information for the eight bus routes.

Table 2.e.1
MBTA RED LINE SERVICE SUMMARY

Station	On-Time Performance Factor[b]	Rush Hour Headways (minutes)	Daily Ridership	Boarding Counts[a]			
				Weekday Morning Peak Hour		Weekday Evening Peak Hour	
				Boarding	Alighting	Boarding	Alighting
Davis Station	0.92	9.3	25,103	5,053	659	1,320	5,504

[a]Source: MBTA Open Portal Data.
[b]On-Time Performance Factor from MBTA Dashboard.

Table 2.e.2
MBTA BUS SERVICE SUMMARY

Route No.	Route	Hours of Operation	Peak-Hour Headway (minutes)	Peak-Hour Peak-Direction Planning Capacity[b]	Daily Ridership	Estimated Daily Capacity
77	Arlington Heights – Harvard Station	4:48 AM to 1:30 AM	15-19	212	6,651	10,547
83	Rindge Avenue – Central Square, Cambridge	5:10 AM to 1:26 AM	28-39	106	1,828	3.922
87	Clarendon Hill or Arlington Center – Lechmere Station	5:05 AM to 1:40 AM	16-27	212	3,685	5.088
88	Clarendon Hill – Lechmere Station	5:15 AM to 1:39 AM	16-27	212	3,815	5,141
89	Clarendon Hill or Davis Station – Sullivan Station	5:05 AM to 1:47 AM	9-28	265	3,481	6,784
90	Davis Station – Assembly Row	5:50 AM to 10:50 PM	39-46	106	1,074	2,067
94	Medford Square - Davis Station	5:25 AM to 12:54 AM	30-43	106	1,528	3,233
96	Medford Square – Harvard Station	5:10 AM to 1:39 AM	32-40	106	2,088	3,180

[a]Source: MBTA Open Portal Data, Fall 2019 for ridership data. Hours of operation and headways based on the most recent MBTA schedule.
[b]Planning capacity is 53 passengers per bus.

3.0 PROJECT TRAFFIC

3.1 TRIP GENERATION

The Project involves razing the existing buildings on-site and constructing 56 dwelling units and approximately 6,400 sf of ground floor commercial space. A review of trip-generation rates was conducted using peak hour counts of the 7 Cameron Avenue residential development and Institute of Transportation Engineers (ITE)[2] trip-generation data for Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit*. The 7 Cameron Avenue site counts were conducted on January 25, 2024 from 7:30 to 9:30 AM and from 4:30 to 7:30 PM. This methodology was developed in coordination with the Cambridge Traffic, Parking, & Transportation (TP&T) Department, due to recognition of observed driveway counts and resulting trip-generation rates that are considerably lower in Cambridge than those suggested by the Institute of Transportation Engineers (ITE) *Trip Generation* manual. More detail is provided below.

Existing Site Trip Generation

A TMC was conducted at the existing 2400 Massachusetts Avenue site driveway with Cedar Street on January 25, 2024 from 7:30 to 9:30 AM and 4:30 to 7:30 PM. This count was used to assess the level of traffic generation for the existing site. The existing site vehicle-trip generation is summarized in Table 3.a.1.

[2]Ibid 1.

Table 3.a.1
EXISTING SITE COUNT SUMMARY[a]

Time Period	Vehicle Trips
Weekday Morning Peak Hour:	
Entering	3
Exiting	0
Total	3
Weekday Evening Peak Hour:	
Entering	6
Exiting	8
Total	14

[a]Based on counts conducted January 25, 2024.

Residential Trip Generation

Counts were conducted at 7 Cameron Avenue as requested in the scoping letter of November 9, 2024. The resulting empirical rates were compared to ITE LUC 221 rates.

7 Cameron Avenue Parking Garage Counts

Peak-hour vehicle counts of the parking garage for the 37-unit residential community at 7 Cameron Avenue were conducted on January 25, 2024, from 7:30 to 9:30 AM and from 4:30 to 7:30 PM. The vehicle counts are summarized in Table 3.a.2.

Table 3.a.2
7 CAMERON AVENUE COUNT SUMMARY[a]

Time Period	Vehicle Trips
Weekday Morning Peak Hour:	
Entering	0
Exiting	3
Total	3
Weekday Evening Peak Hour:	
Entering	3
Exiting	1
Total	4

[a]Based on counts conducted January 25, 2024.

Empirical trip rates using the count data from Table 3.a.2 are summarized in Table 3.a.3 and also compared with ITE trip rates.

Table 3.a.3
7 CAMERON AVENUE VEHICLE-TRIP RATE COMPARISON

Time Period	Vehicle Trips[a]	Trip Rates[b]	ITE Trip Rates[c]	Delta
Weekday Morning Peak Hour:				
Entering	0	0.00	0.04	0.04
Exiting	3	0.08	0.24	0.16
Total	3	0.08	0.28	0.20
Weekday Evening Peak Hour:				
Entering	3	0.08	0.19	0.11
Exiting	1	0.03	0.07	0.04
Total	4	0.11	0.26	0.15

[a]From Table 3.a.2.
[b]Number of vehicle trips divided by the number of units; 37 units.
[c]Based on ITE LUC 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit.*

As shown in Table 3.a.3, the ITE trip rates for LUC 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit* are significantly higher than the empirical rates derived from the 7 Cameron Avenue resident development. However, the empirical trip rates at 7 Cameron Avenue are particularly low. As such, the ITE trip rates were used for determining the Project's residential trip generation in order to provide a conservative analysis.

Residential Mode Split

The residential mode split is based on North Cambridge (Neighborhood 11) data for five-year American Commuter Survey (ACS) 2017-2021 from the 2023 City of Cambridge Community Development Department Neighborhood Statistics. As stated in the November 9, 2023 scoping letter, this data is believed to be more representative and conservative (for SOV mode share) than using the Project's relatively small census tract 3548. The mode split data is summarized in Table 3.a.4.

Table 3.a.4
RESIDENTIAL MODE SPLITS

Characteristics/Mode Split	Residential[a]
Single Occupancy Vehicle (SOV)	32.7
High Occupancy Vehicle (HOV)	2.7
Transit	33.6
Pedestrian	4.6
Bicycle	4.9
Work at Home	20.0
Other	1.5
TOTAL	100

[a]Based on Neighborhood 11 data for five-year ACS 2017-2021 from the 2023 City of Cambridge Community Development Department Neighborhood Statistics.

Residential Person-Trip Generation

Trip rates for ITE LUC 221 were used to calculate vehicle trips for the residential land use and the mode splits from Table 3.a.4 were used to calculate a vehicle occupancy ratio (VOR) as suggested by TP&T staff, which was then used to develop person-trip generation. The person trips were then applied to the mode split data to calculate the appropriate share for each transportation mode. The trip-generation summary by mode split is shown in Table 3.a.5. Spreadsheets documenting these calculations are provided in the Appendix.

Table 3.a.5
RESIDENTIAL-TRIP GENERATION BY MODE

			MODE SPLIT PERCENTAGES								
Size	Use	VOR		Total	SOV	HOV	TRANSIT	PED	BIKE	WORK AT HOME	OTHER
56	Apartment Units	1.04		100%	32.7%	2.7%	33.6%	4.6%	4.9%	20.0%	1.5%

Daily:	Trip Rate[a]	Total Vehicle Trips	Person Vehicle Trips	Total Person Trips	SOV Person Trips	HOV Person Trips	Transit Person Trips	Ped Person Trips	Bike Person Trips	Work at Home Person Trips	Other Person Trips
Enter	1.47	82	85	240	78	6	81	11	12	48	4
Exit	1.47	82	85	240	78	6	81	11	12	48	4
Total	2.94	164	170	480	156	12	162	22	24	96	8
Weekday Morning:											
Enter	0.04	2	2	6	2	0	2	0	1	1	0
Exit	0.24	14	15	42	14	1	14	2	2	8	1
Total	0.28	16	17	48	16	1	16	2	3	9	1
Weekday Evening:											
Enter	0.19	11	11	31	10	1	10	1	2	6	1
Exit	0.07	4	4	11	4	0	4	0	1	2	0
Total	0.26	15	15	42	14	1	14	1	3	8	1

[a]Based on ITE LUC 221, *Multifamily Housing (Mid-Rise) Not Close to Rail Transit*; 56 units.

Retail Trip Generation

As requested by TP&T, the retail trips were determined using LUC 822, *Strip Retail Plaza (<40K)* and LUC 932, *High-Turnover (Sit-Down) Restaurant*. The independent variable of 3,200 sf was then applied to LUC 822 and to LUC 932 to determine the number of trips. Table 3.a.6 summarizes the base trip generation for the retail space using this approach, to which mode split adjustments were then made.

Table 3.a.6
RETAIL TRIP-GENERATION SUMMARY

Time Period	ITE LUC 822[a]	ITE LUC 932[b]	Total Retail Trips
Weekday Daily:			
Entering	87	172	259
Exiting	87	172	259
Total	174	344	518
Weekday Morning Peak Hour:			
Entering	5	17	22
Exiting	3	14	17
Total	8	31	39
Weekday Evening Peak Hour:			
Entering	11	18	29
Exiting	10	11	21
Total	21	29	50

[a]Based on ITE LUC 822, *Strip Retail Plaza (<40K)*; 3,200 sf.
[b]Based on ITE LUC 932, *High-Turnover (Sit-Down) Restaurant*; 3,200 sf.

Retail Mode Split

Parking and Transportation Demand Management (PTDM) studies from 2022 and 2023 for retail/restaurant patrons were used to develop mode split characteristics for the proposed retail use for the Project. Specifically, the PTDM studies for Twin City Plaza from 2022, 355 Fresh Pond Parkway from 2022, 110 Fawcett Street from 2023, and 88 Ames Street from 2023 were used. The mode splits data were combined utilizing a weighted average based on site patronage. The mode split data is summarized in Table 3.a.7.

Table 3.a.7
RETAIL MODE SPLITS

Characteristics/Mode Split	Residential[a]
Single Occupancy Vehicle (SOV)	30
High Occupancy Vehicle (HOV)	7
Transit	27
Pedestrian	12
Bicycle	24
Other	0
TOTAL	100

[a]Based on 2022 Twin City Plaza, 2022 355 Fresh Pond Parkway, 2023 110 Fawcett Street, and 2023 88 Ames Street PTDM reports.

Retail Person-Trip Generation

The mode splits from Table 3.a.7 were used to calculate a VOR as suggested by TP&T staff, which was then used to develop person-trip generation. The person trips were then applied to the mode split data to calculate the appropriate share for each transportation mode. The trip-generation summary by mode split is shown in Table 3.a.8. Spreadsheets documenting these calculations are provided in the Appendix.

Table 3.a.8
RETAIL TRIP GENERATION BY MODE

			MODE SPLIT PERCENTAGES						
Size	Use	VOR	SOV	HOV	TRANSIT	PED	BIKE	OTHER	Total
3,200	sf of Retail	1.10	30%	7%	27%	12%	24%	0%	100%
3,200	sf of Restaurant								
Daily:	ITE Trips[a]	Total Person Trips	SOV Person Trips	HOV Person Trips	Transit Person Trips	Ped Person Trips	Bike Person Trips	Other Person Trips	Total Vehicle Trips
Enter	259	285	86	20	77	34	68	0	96
Exit	259	285	86	20	77	34	68	0	96
Total	518	570	172	40	154	68	136	0	192
Weekday Morning:									
Enter	22	24	7	2	6	3	6	0	8
Exit	17	19	6	1	5	2	5	0	6
Total	39	43	13	3	11	5	11	0	14
Weekday Evening:									
Enter	29	32	10	2	9	3	8	0	11
Exit	21	23	7	2	6	2	6	0	8
Total	50	55	17	4	15	5	14	0	19

[a]From Table 3.a.6.

Total Project Person-Trip Generation

The residential trip and retail trips were added together to determine the total Project-trip generation by mode which is summarized in Table 3.a.9.

Table 3.a.9
TOTAL PROJECT TRIP GENERATION BY MODE

		MODE SPLIT PERCENTAGES							
Use/Size	VOR	SOV	HOV	TRANSIT	PED	BIKE	WORK AT HOME	OTHER	
56 Apartment Units	1.04	32.7%	2.7%	33.6%	4.6%	4.9%	20.0%	1.5%	
6,400 sf of Retail/Restaurant	1.10	30%	7%	27%	12%	24%	0%	0%	
Daily	Total Person Trips	SOV Person Trips	HOV Person Trips	Transit Person Trips	Ped Person Trips	Bike Person Trips	Work at Home Person Trips	Other Person Trips	Total Vehicle Trips
Residential:									
Enter	240	78	6	81	11	12	48	4	82
Exit	240	78	6	81	11	12	48	4	82
Total	480	156	12	162	22	24	96	8	164
Retail:									
Enter	285	86	20	77	34	68	0	0	96
Exit	285	86	20	77	34	68	0	0	96
Total	570	172	40	154	68	136	0	0	192
Site Totals:									
Enter	525	164	26	158	45	80	48	4	177
Exit	525	164	26	158	45	80	48	4	177
Total	1,050	328	52	316	90	160	96	8	354
Weekday Morning	Total Person Trips	SOV Person Trips	HOV Person Trips	Transit Person Trips	Ped Person Trips	Bike Person Trips	Work at Home Person Trips	Other Person Trips	Total Vehicle Trips
Residential:									
Enter	6	2	0	2	0	1	1	0	2
Exit	42	14	1	14	2	2	8	1	14
Total	48	16	1	16	2	3	9	1	16
Retail:									
Enter	24	7	2	6	3	6	0	0	8
Exit	19	6	1	5	2	5	0	0	6
Total	43	13	3	11	5	11	0	0	14
Site Totals:									
Enter	30	9	2	8	3	7	1	0	10
Exit	61	20	2	19	4	7	8	1	20
Total	91	29	4	27	7	14	9	1	30
Weekday Evening	Total Person Trips	SOV Person Trips	HOV Person Trips	Transit Person Trips	Ped Person Trips	Bike Person Trips	Work at Home Person Trips	Other Person Trips	Total Vehicle Trips
Residential:									
Enter	31	10	1	10	1	2	6	1	11
Exit	11	4	0	4	0	1	2	0	4
Total	42	14	1	14	1	3	8	1	15
Retail:									
Enter	32	10	2	9	3	8	0	0	11
Exit	23	7	2	6	2	6	0	0	8
Total	55	17	4	15	5	14	0	0	19
Site Totals:									
Enter	63	20	3	19	4	10	6	1	22
Exit	34	11	2	10	2	7	2	0	12
Total	97	31	5	29	6	17	8	1	34

Net New Project Vehicle-Trip Generation

The vehicle trips counted at the existing site which are summarized in Table 3.a.1 were then subtracted from the total Project vehicle trips shown in Table 3.a.9 to obtain the net new vehicle-trip generation for the Project. The net new vehicle trips for the Project are summarized in Table 3.a.10.

Table 3.a.10
NET NEW SITE-GENERATED TRIPS

Time Period	Proposed Site Vehicle Trips[a]	Existing Site Vehicle Trips[b]	Net New Site Vehicle Trips
Weekday Daily	354	70[c]	284
Weekday Morning Peak Hour:			
Entering	10	3	7
Exiting	20	0	20
Total	30	3	27
Weekday Evening Peak Hour:			
Entering	22	6	16
Exiting	12	8	4
Total	34	14	20

[a]From Table 3.a.9.
[b]From Table 3.a.1.
[c]Based on ratio of weekday morning peak hour trips to daily peak hour trip for LUC 822 at 9, 909 sf.

3.2 TRIP DISTRIBUTION

Residential Project trips distribution was determined based on 2021 journey to work data from the US Census Bureau for census tracts 3550, 3548, and 3549.02, the three census tracts encompassing the Project site. Retail Project trips were distributed assuming a 50 percent split on Massachusetts Avenue. The trip distribution for the Project is shown on Figure 3.b.1. Table 3.b.1 summarizes the trip distribution for the residential and retail components of the development.

Table 3.b.1
TRIP-DISTRIBUTION SUMMARY

Use	Route	Direction	Percentage To/From the Site
Residential	Massachusetts Avenue	North	35
	Massachusetts Avenue	South	35
	Cedar Street	South	15
	Cameron Avenue	East	15
	TOTAL		100
Retail	Massachusetts Avenue	North	50
	Massachusetts Avenue	South	50
	TOTAL		100

Project trips were assigned to the road network using the data from Table 3.b.1 and Figure 3.b.1 to derive the Project-generated peak-hour traffic volumes shown on Figure 3.c.1 and Figure 3.c.2 for the weekday morning and weekday evening peak hours, respectively. It should be noted that the parking garage is intended for the use of Project residents only and retail customers will utilize other sources of parking or rideshare services.

3.3 PROJECT SERVICE AND LOADING

The Project is proposing service and loading to occur from Alberta Terrace. Daily residential truck trips are typically limited to package pickup and delivery carried out using single-unit or delivery trucks. Retail truck trips are expected to be limited to SU-30 trucks or smaller. Trash is expected to be collected in totes and wheeled out to Alberta Terrace for pick-up. The expectation is that trash will be picked up once a week for both the residential and retail components of the Project and that delivery would be two to three times per week for the retail facilities.

Accordingly, the Project is proposing an on-street loading zone be created on the north side of Alberta Terrace. The Applicant understands that such a loading zone would not be for the sole use of the Project and would instead be available for use by abutters and the neighborhood as needed. The proposed loading area is depicted on Figure 3.d.1.

An AutoTurn analysis was conducted using an SU-30 truck accessing the outdoor retail space from Alberta Terrace and is shown in Figure 3.d.2. This would require losing one parking space on the north side of Alberta Terrace. More critical is the view shown in Figure 3.d.3, which indicates the loading area from Alberta Terrace. As shown, there will be horizontal structures linking the north and south segments of the multifamily building, covering portions of the outdoor retail spaces. With this design theme, it will not be possible to make an exciting outdoor space as proposed, and be able to fit a truck on site in this area. This is further demonstrated on Figure 3.d.4, which shows the outdoor retail space from the perspective of inside the site.

3.4 PROJECT ACCESS

The Project proposes site access for the parking facility onto Harvey Street. A driveway access to Harvey Street limits the exposure of project traffic to the neighborhood. The majority of project traffic is expected to use Massachusetts Avenue and the Harvey Street driveway places this traffic closer to this roadway. Other locations such as Cedar Street and Alberta Terrace have greater impact on the neighborhood which the Applicant is seeking to minimize.

The Applicant has had numerous discussions with representatives of the neighborhood and the City Council on the location for site access. Abutters have indicated they will oppose an access point on Cedar Street and also oppose primary access on Alberta Terrace.

The Cedar Street garage access is problematic for a number of reasons. While access to Cedar Street mirrors existing site access, this places driveway access with nuisance items such as exiting vehicle headlights shining on houses and entering vehicle queues directly adjacent to several houses with building faces within 10 feet of the curb. This places these abutters in the direct line of impacts for the project. In addition, a new driveway to Cedar Street would likely be limited to 24 feet in width (reduced from the existing 32-foot wide driveway) and would be compromised in maneuverability due to existing on-street parking on the west side of Cedar Street as well as the driveways to the houses that exist there. This parking limits the already narrow Cedar Street to an

effective width of approximately 19 feet for a two-way street. It should also be noted that Cedar Street at the existing driveway location carries approximately 60 percent higher peak-hour traffic volumes than Harvey Street at the proposed driveway location. A driveway on Cedar Street would therefore affect more motorists and vehicles than would a driveway on Harvey Street. The only argument in favor of a Cedar Street access is its location further away from Massachusetts Avenue than the Harvey Street access.

Similarly, garage access from Alberta Terrace would be problematic for several reasons, mostly to do with maneuvering space and parking elimination. Alberta Terrace experiences peak-hour traffic volumes of between 14 and 18 vehicles per hour (vph) during the respective weekday morning and weekday evening peak hours, which would increase to 41 and 38 vph following the Project occupancy. This is a substantial increase on a street where, due to on-street parking present on both sides of the street, maneuvering space is limited. Adding a driveway and the resultant turning maneuvers on a narrow roadway is likely to create concerns related to encroachment and adequate vehicle clearance. In addition, a driveway installation will require the elimination of on-street parking spaces for the driveway itself but also additional spaces for sight distance and maneuverability. A driveway access to Alberta Terrace would also create the same nuisance issues as would a driveway to Cedar Street: exiting vehicle headlights shining on house faces and entering vehicle queues directly adjacent to several houses with building faces within 10 feet of the curb.

By comparison, a driveway access to Harvey Street places exiting vehicle headlights shining on the back side of a commercial building without windows. A driveway to Harvey Street would be approximately 60 feet from the Massachusetts Avenue intersection which has the potential to add to traffic queues on both streets; however, this can be addressed with a “Do Not Block Driveway” cross-hatched pavement marking and signage to keep the driveway area clear. Volumes on Harvey Street are less than those on Cedar Street. The majority of Project residents are expected to travel to and from Massachusetts Avenue when they use their personal vehicles; therefore, this is a more efficient access location than the other alternative locations.

4.0 BACKGROUND TRAFFIC

Traffic volumes in the study area were projected to the year 2029, which reflects a five-year planning horizon consistent with City traffic study guidelines and the traffic study scope issued by the City TP&T Department. Traffic-volume conditions would include increases due to development projects approved or under construction and not yet occupied and increases to general background traffic levels, assumed to increase at 0.5 percent per year.

As indicated in the scoping letter, the following projects were identified for inclusion in the Future 2029 condition:

- 36-64 Whittmore Avenue
- 95 Elmwood Street

4.1 MASSACHUSETTS AVENUE PARTIAL CONSTRUCTION PROJECT

In April 2022, the Cambridge "City Council approved implementing separated bike lanes on Massachusetts Avenue north of Harvard Square to the Arlington town line". To achieve this, the city "will removed the median, install separated bike lanes, improve pedestrian crossings of Massachusetts Avenue, improve the experience for people taking the bus, and maintain 40 to 50 percent of curbside uses such as accessible parking, customer loading, and outdoor dining. Maintaining curbside uses along this critical section of Massachusetts Avenue and supporting local businesses were the key drivers behind the decision to move forward with partial construction and was strongly supported by the community." The Project covers approximately 2 miles of Massachusetts Avenue including 55 intersections, of which 16 are signalized, 42 pedestrian crosswalks across Massachusetts Avenue, and 69 pedestrian crosswalks across side streets. Specifically, the November 9, 2023 scoping letter indicates that the signal timing and phasing for intersections of Massachusetts Avenue with Cedar Street and Massachusetts Avenue with Harvey Street/Cameron Avenue are under review as part of the partial construction project for the cycle safety ordinance. No final design has been chosen at this time. As a final design has not been chosen, future condition analysis utilizes existing timing and phasing at these two locations.[3]

Separate alternative 2029 future condition analyses were run using synchro. These included three

[3] *Mass Ave Partial Construction*; City of Cambridge. Accessed February 15, 2024. https://www.cambridgema.gov/Departments/publicworks/cityprojects/2021/massave4massavepartialconstruction.

potential modifications from the Massachusetts Avenue Partial Construction Project. The first involves making Cedar Street one-way southbound between Massachusetts Avenue and Harvey Street and Harvey Street one-way eastbound between Cedar Street and Massachusetts Avenue. The second involves making Cedar Street one-way northbound between Massachusetts Avenue and Harvey Street and Harvey Street one-way westbound between Cedar Street and Massachusetts Avenue. The third involves making Cedar Street one-way southbound between Massachusetts Avenue and Harvey Street. The results of these analysis are provided in the Capacity Analysis section of the report.

5.0 TRAFFIC ANALYSIS

5.1 SITE ASSIGNMENT

The 2024 Existing condition traffic volumes were combined with the Project-generated traffic levels to derive the 2024 Build condition networks, shown on Figure 5.b.1 and Figure 5.b.2 for the weekday morning and weekday evening peak-hour time periods. Figure 5.b.3 and Figure 5.b.4 represent the projected 2024 Build weekday morning and weekday evening, peak-hour pedestrian volumes.

The Future 2029 traffic-volume condition includes the traffic volumes from the identified background developments, the increases resulting from the 0.5 percent per year annual growth rate that was applied to the 2024 Existing conditions traffic volumes, and the Project-generated traffic associated with the Project. These traffic-volume networks are shown on Figure 5.d.1 and Figure 5.d.2 for the weekday morning and weekday evening peak-hour traffic volumes. Figure 5.d.3 and Figure 5.d.4 depict the cumulative area development impact which includes the projected vehicle trips from the background developments plus the Project-generated traffic.

6.0 CAPACITY ANALYSIS

6.1 VEHICLE LEVEL-OF-SERVICE ANALYSIS

Using the 2024- and 2029-year traffic-volume networks, vehicle level-of-service analyses were conducted for the 2024 Existing, 2024 Build, and 2029 Future conditions with the results shown in Tables 6.1 and 6.2 for signalized and unsignalized intersections, respectively. As requested in the City scoping letter, these analyses were conducted using SimTraffic analysis software, calibrated to match vehicle queue observations. The analysis worksheets are contained in the Appendix.

Table 6.1
VEHICLE LEVEL-OF-SERVICE SUMMARY – SIGNALIZED INTERSECTIONS

Intersection/Peak Hour/Movement	2024 Existing Delay[a]	2024 Existing LOS[b]	2024 Build Delay	2024 Build LOS	Delay Increase	2029 Future Delay	2029 Future LOS	Delay Increase
Massachusetts Avenue at Cedar Street								
Weekday Morning Peak Hour:								
Cedar Street EB LT/RT	41.2	D	43.5	D	2.3	44.2	D	0.7
Massachusetts Avenue NB TH	8.6	A	8.4	A	-0.2	8.2	A	-0.2
Massachusetts Avenue SB TH	43.6	D	43.7	D	0.1	42.6	D	-1.1
Massachusetts Avenue SB RT	13.0	B	16.8	B	3.8	14.9	B	-1.9
Overall	**29.5**	**C**	**29.7**	**C**	**0.2**	**28.6**	**C**	**-1.1**
Weekday Evening Peak Hour:								
Cedar Street EB LT/RT	44.4	D	53.2	D	8.8	57.8	E	4.6
Massachusetts Avenue NB TH	9.2	A	9.0	A	-0.2	9.5	A	0.5
Massachusetts Avenue SB TH	33.4	C	37.6	D	4.2	41.9	D	4.3
Massachusetts Avenue SB RT	14.3	B	14.4	B	0.1	12.6	B	-1.8
Overall	**24.0**	**C**	**26.6**	**C**	**2.6**	**29.0**	**C**	**2.4**
Massachusetts Avenue at Harvey Street/Cameron Avenue								
Weekday Morning Peak Hour:								
Harvey Street EB LT/TH/RT	36.4	D	31.7	C	-4.7	30.6	C	-1.1
Cameron Avenue WB LT/TH/RT	127.6	F	167.2	F	39.6	172.1	F	4.9
Massachusetts Avenue NB LT/TH	13.5	B	11.9	B	-1.6	13.9	B	2.0
Massachusetts Avenue NB RT	4.6	A	4.4	A	-0.2	4.9	A	0.5
Massachusetts Avenue SB TH	4.0	A	3.7	A	-0.3	3.8	A	0.1
Massachusetts Avenue SB RT	0.6	A	0.6	A	0.0	0.8	A	0.2
Overall	**28.3**	**C**	**30.4**	**C**	**2.1**	**30.4**	**C**	**0.0**
Weekday Evening Peak Hour:								
Harvey Street EB LT/TH/RT	41.8	D	29.1	C	-12.7	28.8	C	-0.3
Cameron Avenue WB LT/TH/RT	63.1	E	94.6	F	31.5	149.1	F	54.5
Massachusetts Avenue NB LT/TH	16.1	B	20.3	C	4.2	24.6	C	4.3
Massachusetts Avenue NB RT	7.0	A	7.5	A	0.5	8.0	A	0.5
Massachusetts Avenue SB TH	4.3	A	4.4	A	0.1	4.5	A	0.1
Massachusetts Avenue SB RT	0.7	A	1.0	A	0.3	0.8	A	-0.2
Overall	**15.0**	**B**	**17.1**	**B**	**2.1**	**22.0**	**C**	**4.9**

[a]Average delay per vehicle (in seconds).
[b]Level of service.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turn movement; TH = through movement; RT = right-turn movement.

Table 6.2
VEHICLE LEVEL-OF-SERVICE SUMMARY - UNSIGNALIZED INTERSECTIONS

Unsignalized Intersection/ Peak Hour/Critical Movement	2024 Existing			2024 Build			Delay	2029 Future			Delay
	Demand[a]	Delay[b]	LOS[c]	Demand	Delay	LOS	Increase	Demand	Delay	LOS	Increase
Cedar Street at Harvey Street											
Weekday Morning Peak Hour:											
Harvey Street WB LT/TH/RT	161	6.8	A	164	4.3	A	-2.5	168	4.3	A	0.0
Cedar Street NB LT/TH/RT	169	4.2	A	169	15.4	C	11.2	174	24.7	C	9.3
Cedar Street SB LT/TH/RT	209	6.1	A	211	10.4	B	4.3	216	10.1	B	-0.3
Weekday Evening Peak Hour:											
Harvey Street WB LT/TH/RT	119	6.3	A	122	4.4	A	-1.9	125	4.5	A	0.1
Cedar Street NB LT/TH/RT	349	5.1	A	347	24.8	C	19.7	355	57.3	F	32.5
Cedar Street SB LT/TH/RT	102	5.5	A	105	8.2	A	2.7	110	11.7	B	3.5
Cedar Street at Existing Site Driveway											
Weekday Morning Peak Hour:											
Site Driveway WB LT/RT	0	--	--								
Cedar Street NB TH/RT	170	2.6	A								
Cedar Street SB LT/TH	252	1.6	A	Intersection is removed under 2024 Build and 2029 Future conditions.							
Weekday Evening Peak Hour:											
Site Driveway WB LT/RT	7	16.0	C								
Cedar Street NB TH/RT	348	8.2	A								
Cedar Street SB LT/TH	106	1.6	A								
Cedar Street at Alberta Terrace											
Weekday Morning Peak Hour:											
Cedar Street NB TH/RT	181	0.4	A	180	0.8	A	0.4	184	7.7	A	6.9
Cedar Street SB LT/TH	250	0.3	A	254	2.0	A	1.7	262	1.9	A	-0.1
Weekday Evening Peak Hour:											
Cedar Street NB TH/RT	366	2.8	A	365	3.9	A	1.1	374	42.5	E	38.6
Cedar Street SB LT/TH	107	0.2	A	109	1.7	A	1.5	112	1.8	A	0.1
Massachusetts Avenue at Alberta Terrace											
Weekday Morning Peak Hour:											
Alberta Terrace EB RT	14	8.7	A	17	9.4	A	0.7	17	10.0	A	0.6
Massachusetts Avenue SB TH	805	0.6	A	812	0.5	A	-0.1	839	0.5	A	0.0
Weekday Evening Peak Hour:											
Alberta Terrace EB RT	18	12.9	B	21	11.6	B	-1.3	21	13.4	B	1.8
Massachusetts Avenue SB TH	831	0.6	A	834	0.7	A	0.1	867	0.7	A	0.0

See notes at end of table.

Table 6.2 (Continued)
VEHICLE LEVEL-OF-SERVICE SUMMARY - UNSIGNALIZED INTERSECTIONS

Unsignalized Intersection/ Peak Hour/Critical Movement	2024 Existing			2024 Build			Delay Increase	2029 Future			Delay Increase
	Demand[a]	Delay[b]	LOS[c]	Demand	Delay	LOS		Demand	Delay	LOS	
Harvey Street at Proposed Site Driveway											
Weekday Morning Peak Hour:											
Harvey Street EB TH/RT	Intersection constructed under 2024 Build conditions			95	20.9	C	--	97	15.2	C	-5.7
Harvey Street WB LT/TH				161	8.1	A	--	165	8.8	A	0.7
Site Driveway NB LT/RT				14	4.3	A	--	14	4.0	A	-0.3
Weekday Evening Peak Hour:											
Harvey Street EB TH/RT				169	17.7	C	--	174	22.0	C	4.3
Harvey Street WB LT/TH				128	2.4	A	--	131	2.5	A	0.1
Site Driveway NB LT/RT				4	17.7	C	--	4	21.4	C	4.4

[a]Demand (in vehicles per hour) for the critical movements.
[b]Average delay per vehicle (in seconds) for the critical movements.
[c]Level of service.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turn movement; TH = through movement; RT = right-turn movement.

Figure 6.a.1 and Figure 6.a.2 depict the vehicle level-of-service summaries in a graphical map format for the weekday morning and weekday evening peak hours. Figure 6.a.3 and Figure 6.a.4 provide graphical maps of vehicle delay changes at the study area intersections for the weekday morning and weekday evening peak hours. These delay change maps depict the change in delay from Existing to Build and from Existing to Future conditions.

6.2 LEVEL-OF-SERVICE ANALYSIS MASSACHUSETTS AVENUE PARTIAL CONSTRUCTION PROJECT ALTERNATIVES

Separate alternative 2029 future condition analyses were run using Synchro to assess the effect of the Project traffic on three alternatives for the Massachusetts Avenue Partial Construction Project. These analyses were conducted using Synchro instead of SimTraffic because SimTraffic is variable. Each time you run a simulation the results can vary drastically. So, in order to keep as many variables the same as possible, we used Synchro. Limiting the variability provides results that more accurately show the effect of the Project traffic volumes on operations for each alternative.

The first alternative involves making Cedar Street one-way southbound between Massachusetts Avenue and Harvey Street and Harvey Street one-way eastbound between Cedar Street and Massachusetts Avenue. The second alternative involves making Cedar Street one-way northbound between Massachusetts Avenue and Harvey Street and Harvey Street one-way westbound between Cedar Street and Massachusetts Avenue. The third alternative involves making Cedar Street one-way southbound between Massachusetts Avenue and Harvey Street. The results are presented below in Table 6.3 and Table 6.4 for signalized and unsignalized intersections respectively. The analysis worksheets are contained in the Appendix.

As shown in Table 6.3, The first alternative shows that the intersection of Massachusetts Avenue at Cedar Street operates at an overall LOS D during the weekday morning and weekday evening peak hours under 2029 Future conditions without the Project. With the addition of the Project traffic, this intersection operates at an overall LOS D during the weekday morning peak hour and at an overall LOS E during the weekday evening peak hour. The intersection of Massachusetts Avenue with Harvey Street/Cameron Avenue operates at an overall LOS C or better during the weekday morning and weekday evening peak hours under 2029 Future conditions without the Project. With the addition of the Project traffic, this intersection operates at an overall LOS C during the weekday morning and the weekday evening peak hours. The critical movements at the unsignalized intersections operate at LOS C or better during the weekday morning and weekday evening peak hours both with and without the Project traffic.

The second alternative shows that the intersection of Massachusetts Avenue at Cedar Street operates at an overall LOS D during the weekday morning peak hour and at an overall LOS B during the weekday evening peak hour under 2029 Future conditions without the Project. With the addition of the Project traffic, this intersection operates at an overall LOS E during the weekday morning peak hour and at an overall LOS B during the weekday evening peak hour. The intersection of Massachusetts Avenue with Harvey Street/Cameron Avenue operates at an overall LOS D during the weekday morning peak hour and at an overall LOS F during the weekday evening peak hour under 2029 Future conditions without the Project. With the addition of the Project traffic, this intersection operates at an overall LOS D during the weekday morning and at an overall LOS F during the weekday evening peak hour. The critical movements at the unsignalized intersections operate at LOS C or better during the weekday morning and weekday evening peak hours both with and without the Project traffic.

The third alternative shows that the intersection of Massachusetts Avenue at Cedar Street operates at an overall LOS A during the weekday morning and weekday evening peak hours under 2029 Future conditions both without and with the Project. The intersection of Massachusetts Avenue with Harvey Street/Cameron Avenue operates at an overall LOS C during the weekday morning and weekday evening peak hours under 2029 Future conditions both without and with the Project. The critical movements at the unsignalized intersections operate at LOS C or better during the weekday morning and weekday evening peak hours both with and without the Project traffic.

Overall, the third alternative, Cedar Street one-way southbound between Massachusetts Avenue and Harvey Street, provided the best operations with the Cedar Street/Massachusetts Avenue/Linear Path traffic signal reduced to two-phase operation. This was noted to allow for revisions in the cycle length during both the weekday morning and weekday evening peak hours, allowing more cycles in an hour which increases the available time for crossings on the Linear Path. For each alternative assessed it was determined that the Project traffic has minimal effect on the operations.

Table 6.3
MASSACHUSETTS AVENUE PARTIAL CONSTRUCTION PROJECT ALTERNATIVES SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2029 Future without Project: Cedar Street One-Way SB Harvey Street One-Way EB				2029 Future with Project: Cedar Street One-Way SB Harvey Street One-Way EB				2029 Future without Project: Cedar Street One-Way NB Harvey Street One-Way WB				2029 Future with Project: Cedar Street One-Way NB Harvey Street One-Way WB				2029 Future without Project: Cedar Street One-Way SB				2029 Future with Project: Cedar Street One-Way SB			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Massachusetts Avenue at Cedar Street																								
Weekday Morning Peak Hour:																								
Cedar Street EB LT	--	--	--	--	--	--	--	--	0.20	27.6	C	38/67	0.21	27.8	C	41/71	--	--	--	--	--	--	--	--
Cedar Street EB RT	--	--	--	--	--	--	--	--	0.24	10.8	B	11/40	0.26	11.9	B	15/45	--	--	--	--	--	--	--	--
Massachusetts Avenue NB LT/TH	0.84	47.5	D	278/433	0.86	50.3	D	301/477	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Massachusetts Avenue NB TH	--	--	--	--	--	--	--	--	0.95	73.7	E	202/956	0.96	74.0	E	203/966	0.35	0.8	A	4/8	0.36	0.7	A	3/5
Massachusetts Avenue SB TH	0.92	44.7	D	519/790	0.93	45.5	D	520/791	0.94	41.9	D	468/944	0.94	44.5	D	472/951	0.47	1.2	A	0/0	0.47	1.2	A	0/0
Massachusetts Avenue SB RT	0.30	9.6	A	48/100	0.31	9.6	A	49/101	--	--	--	--	.--	--	--	--	0.15	0.2	A	0/0	0.16	0.2	A	0/0
Overall	--	**41.2**	**D**	--	--	**42.7**	**D**	--	--	**54.4**	**D**	--	--	**55.6**	**E**	--	--	**0.9**	**A**	--	--	**0.9**	**A**	--
Weekday Evening Peak Hour:																								
Cedar Street EB LT	--	--	--	--	--	--	--	--	0.67	51.0	D	142/190	0.67	50.8	D	141/189	--	--	--	--	--	--	--	--
Cedar Street EB RT	--	--	--	--	--	--	--	--	0.54	15.7	B	26/67	0.55	16.3	B	27/69	--	--	--	--	--	--	--	--
Massachusetts Avenue NB LT/TH	0.95	72.9	E	371/600	0.99	84.3	F	423/694	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Massachusetts Avenue NB TH	--	--	--	--	--	--	--	--	0.61	7.4	A	75/110	0.61	6.9	A	63/76	0.55	1.8	A	25/25	0.55	1.6	A	19/13
Massachusetts Avenue SB TH	0.89	38.5	D	531/809	0.90	40.1	D	533/814	0.78	17.4	B	435/653	0.79	17.8	B	--	0.50	1.3	A	0/0	0.50	1.3	A	0/0
Massachusetts Avenue SB RT	0.17	7.5	A	25/59	0.18	7.4	A	26/60	--	--	--	--	--	--	--	443/665	0.07	0.1	A	0/0	0.07	0.1	A	0/0
Overall	--	**54.0**	**D**	--	--	**60.5**	**E**	--	--	**17.2**	**B**	--	--	**17.1**	**B**	--	--	**1.5**	**A**	--	--	**1.4**	**A**	
Massachusetts Avenue at Harvey Street/Cameron Avenue																								
Weekday Morning Peak Hour:																								
Harvey Street EB LT	0.37	39.4	D	50/87	0.41	40.6	D	55/94	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Harvey Street EB LT/TH/RT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.46	21.4	C	63/103	0.49	21.9	C	68/110
Harvey Street EB TH/RT	0.25	33.9	C	68/105	0.26	33.3	C	71/109	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cameron Avenue WB LT/TH/RT	0.78	48.9	D	142/232	0.79	51.5	D	144/241	0.74	53.3	D	146/218	0.74	54.2	D	147/219	0.67	26.7	C	91/158	0.67	26.9	C	92/160
Massachusetts Avenue NB LT/TH/RT	--	--	--	--	--	--	--	--	0.51	19.0	B	120/204	0.52	19.2	B	122/207	0.48	10.6	B	71/111	0.49	10.9	B	72/113
Massachusetts Avenue NB TH/RT	0.31	8.8	A	92/123	0.32	8.9	A	93/124	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Massachusetts Avenue SB LT/TH	--	--	--	--	--	--	--	--	1.00	50.9	D	65/698	1.02	55.9	E	85/714	--	--	--	--	--	--	--	--
Massachusetts Avenue SB TH	0.89	12.3	B	22/47	0.90	12.6	B	22/47	--	--	--	--	--	--	--	--	0.86	29.4	C	250/473	0.87	30.3	C	250/474
Massachusetts Avenue SB RT	--	--	--	--	--	--	--	--	0.02	0.0	A	0/0	0.02	0.0	A	0/0	0.01	0.9	A	0/0	0.01	0.9	A	0/0
Overall	--	**19.4**	**B**	--	--	**20.1**	**C**	--	--	**39.8**	**D**	--	--	**42.4**	**D**	--	--	**21.7**	**C**	--	--	**22.2**	**C**	--
Weekday Evening Peak Hour:																								
Harvey Street EB LT	0.81	79.5	E	142/244	0.79	78.0	E	142/245	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Harvey Street EB LT/TH/RT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.98	66.3	E	158/304	0.98	67.0	E	159/305
Harvey Street EB TH/RT	0.45	41.4	D	128/191	0.44	41.0	D	129/192	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cameron Avenue WB LT/TH/RT	0.58	31.9	C	62/137	0.58	31.8	C	64/140	0.56	43.4	D	100/168	0.57	44.0	D	103/172	0.47	21.6	C	49/101	0.48	21.8	C	50/103
Massachusetts Avenue NB LT/TH/RT	--	--	--	--	--	--	--	--	0.58	16.6	B	215/280	0.62	17.5	B	226/296	0.60	10.9	B	109/162	0.64	11.6	B	114/172
Massachusetts Avenue NB TH/RT	0.39	9.1	A	141/178	0.40	9.3	A	142/178	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Massachusetts Avenue SB LT/TH	--	--	--	--	--	--	--	--	1.45	224.0	F	1012/1253	1.47	233.1	F	1023/1264	--	--	--	--	--	--	--	--
Massachusetts Avenue SB TH	0.97	23.4	C	38/815	0.99	27.7	C	41/818	--	--	--	--	--	--	--	--	0.86	24.3	C	255/496	0.87	24.5	C	255/496
Massachusetts Avenue SB RT	--	--	--	--	--	--	--	--	0.15	2.4	A	6/7	0.16	2.4	A	6/7	0.04	2.7	A	0/6	0.04	2.7	A	0/6
Overall	--	**25.0**	**C**	--	--	**26.6**	**C**	--	--	**110.5**	**F**	--	--	**114.1**	**F**	--	--	**25.6**	**C**	--	--	**26.0**	**C**	--

[a]Volume-to-capacity ratio.
[b]Control (signal) delay per vehicle in seconds.
[c]Level of service.
[d]Queue length in feet.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Table 6.4
MASSACHUSETTS AVENUE PARTIAL CONSTRUCTION PROJECT ALTERNATIVES UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2029 Future without Project: Cedar Street One-Way SB Harvey Street One-Way EB				2029 Future with Project: Cedar Street One-Way SB Harvey Street One-Way EB				2029 Future without Project: Cedar Street One-Way NB Harvey Street One-Way WB				2029 Future with Project: Cedar Street One-Way NB Harvey Street One-Way WB				2029 Future without Project: Cedar Street One-Way SB				2029 Future with Project: Cedar Street One-Way SB			
	Demand[a]	Delay[b]	LOS[c]	Queue[d]	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Cedar Street at Harvey Street																								
Weekday Morning Peak Hour:																								
Harvey Street WB LT	--	--	--	--	--	--	--	--	258	14.2	B	51	260	14.3	B	52	--	--	--	--	--	--	--	--
Harvey Street WB LT/TH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	164	15.1	C	36	165	15.1	C	36
Harvey Street WB TH/RT	--	--	--	--	--	--	--	--	107	12.2	B	17	119	12.1	B	19	--	--	--	--	--	--	--	--
Cedar Street NB LT/TH/RT	174	1.2	A	2	174	1.2	A	2	--	--	--	--	--	--	--	--	174	1.1	A	2	174	1.1	A	2
Cedar Street NB LT/TH	--	--	--	--	--	--	--	--	174	1.1	A	1	174	1.1	A	1	--	--	--	--	--	--	--	--
Cedar Street SB LT	14	7.9	A	1	16	7.9	A	1	--	--	--	--	--	--	--	--	14	7.9	A	1	14	7.9	A	1
Weekday Evening Peak Hour:																								
Harvey Street WB LT	--	--	--	--	--	--	--	--	110	13.9	B	25	113	14.0	B	26	--	--	--	--	--	--	--	--
Harvey Street WB LT/TH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	117	13.5	B	26	119	13.7	B	24
Harvey Street WB TH/RT	--	--	--	--	--	--	--	--	109	14.3	B	26	112	14.3	B	27	--	--	--	--	--	--	--	--
Cedar Street NB LT/TH/RT	357	0.5	A	1	355	0.5	A	1	--	--	--	--	--	--	--	--	357	0.5	A	1	355	0.5	A	1
Cedar Street NB LT/TH	--	--	--	--	--	--	--	--	357	0.5	A	1	355	0.5	A	1	--	--	--	--	--	--	--	--
Cedar Street SB LT	10	8.1	A	1	20	8.1	A	2	--	--	--	--	--	--	--	--	10	8.1	A	1	14	1.0	A	1
Cedar Street at Alberta Terrace																								
Weekday Morning Peak Hour:																								
Cedar Street SB LT/TH	258	0.1	A	0	263	0.2	A	0	258	0.1	A	0	262	0.2	A	0	258	0.1	A	0	261	0.2	A	0
Weekday Evening Peak Hour:																								
Cedar Street SB LT/TH	110	0.0	A	0	112	0.4	A	0	110	0.0	A	0	112	0.4	A	0	110	0.0	A	0	112	0.4	A	0
Massachusetts Avenue at Alberta Terrace																								
Weekday Morning Peak Hour:																								
Alberta Terrace EB RT	14	15.8	C	5	17	16.1	C	6	14	15.6	C	5	17	15.9	C	6	14	15.9	C	5	17	16.1	C	6
Weekday Evening Peak Hour:																								
Alberta Terrace EB RT	18	15.0	C	7	21	15.1	C	8	18	15.5	C	7	21	15.7	C	9	18	15.9	C	8	21	16.2	C	9
Harvey Street at Proposed Site Driveway																								
Weekday Morning Peak Hour:																								
Site Driveway NB LT	--	--	--	--	--	--	--	--	0	0.0	A	0	14	9.8	A	1	--	--	--	--	--	--	--	--
Site Driveway NB LT/RT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0.0	A	0	14	9.4	A	1
Site Driveway NB RT	0	0.0	A	0	14	8.8	A	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Weekday Evening Peak Hour:																								
Site Driveway NB LT	--	--	--	--	--	--	--	--	0	0.0	A	0	4	9.3	A	0	--	--	--	--	--	--	--	--
Site Driveway NB LT/RT	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0	0.0	A	0	4	10.8	B	0
Site Driveway NB RT	0	0.0	A	0	4	9.4	A	0	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[a]Demand in vehicles per hour.
[b]Delay in seconds per vehicle.
[c]Level of service.
[d]95th percentile queue length in feet.
[e]Analysis conducted using SIDRA methodology.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

7.0 QUEUE ANALYSIS

Vehicle queues were calculated for each approach of the signalized study area intersection using SimTraffic simulation software. The analyses were calibrated in an attempt to match the results of the queue observations. Table 7 summarizes the 2024 Existing observed, 2024 Existing calculated, 2024 Build calculated, and 2029 Future calculated vehicle queues.

Table 7
QUEUE ANALYSIS RESULTS[a]

Intersection/Lane	Weekday Morning Peak Hour					Weekday Evening Peak Hour				
	2024 Observed	2024 Existing Calculated	2024 Build Calculated	Increase	2029 Future Calculated	2024 Observed	2024 Existing Calculated	2024 Build Calculated	Increase	2029 Future Calculated
Massachusetts Avenue at Cedar Street:										
Cedar Street EB LT/RT	2	2	2	0	2	5	5	5	0	5
Massachusetts Avenue NB TH	6	5	6	1	6	7	6	6	0	6
Massachusetts Avenue NB TH[b]	1	--	--	--	--	1	--	--	--	--
Massachusetts Avenue SB TH	21	20	20	0	20	18	18	19	1	20
Massachusetts Avenue SB RT	5	4	5	1	5	3	3	3	0	3
Massachusetts Avenue at Harvey Street/ Cameron Avenue:										
Harvey Street EB LT/TH/RT	2	3	3	0	3	5	4	4	0	4
Cameron Avenue WB LT/TH/RT	12	12	12	0	12	4	5	6	1	8
Massachusetts Avenue NB LT/TH	6	6	6	0	8	10	10	12	2	15
Massachusetts Avenue NB TH/RT	2	3	3	0	3	3	4	4	0	4
Massachusetts Avenue SB TH	2	2	2	0	2	2	2	2	0	2
Massachusetts Avenue SB TH/RT	1	1	1	0	1	1	1	1	0	1

[a]All queues calculated using SimTraffic methodology. Queue in vehicles per lane.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turn movement; TH = through movement; RT = right-turn movement.
[b]This is a "Bus Only Lane" and it was not modeled in the analysis. Therefor no calculated queue is provided.

8.0 RESIDENTIAL STREET VOLUME ANALYSIS

The Project is located in an area of both residential and commercial/retail uses. Residential streets will be subject to some measure of traffic to and from the Project. These locations and the indicators for the increases in traffic on residential streets are summarized in Table 8.

Table 8
TRAFFIC ON RESIDENTIAL STREETS

Roadway/Peak Period	Reviewed Segment	Amount of Residential	2024 Existing Two-Way Traffic	Increase due to Project
Cedar Street:				
Morning Peak Hour	Massachusetts Avenue to Harvey Street	>1/3 but <1/2	278	5
Evening Peak Hour	Massachusetts Avenue to Harvey Street	>1/3 but <1/2	280	4
Morning Peak Hour	Harvey Street to Alberta Terrace	>1/3 but <1/2	421	3
Evening Peak Hour	Harvey Street to Alberta Terrace	>1/3 but <1/2	455	3
Alberta Terrace:				
Morning Peak Hour	Massachusetts Avenue to Cedar Street	>1/3 but <1/2	14	4
Evening Peak Hour	Massachusetts Avenue to Cedar Street	>1/3 but <1/2	18	6
Cameron Avenue:				
Morning Peak Hour	Massachusetts Avenue to Somerville City Line	More than 1/2	435	3
Evening Peak Hour	Massachusetts Avenue to Somerville City Line	More than 1/2	474	6

9.0 PARKING ANALYSIS

9.1 INTRODUCTION

The Project will provide 67 parking spaces in a below-grade garage that will be accessed via Harvey Street. The spaces will consist of 25 standard (8.5 feet by 18 feet) spaces, 14 tandem (8.5 feet by 36 feet) spaces, 24 compact (7.5 feet by 16 feet) spaces, and 4 accessible spaces. Figure 9.a.1 shows the below-grade parking garage and the stairs and elevators used to access the ground floor. The stairs and elevator on the southeast corner of the parking garage provide access to Alberta Terrace while the other set of stairs and elevator provide access to a hallway connected to the bicycle storage area, the residential trash room, the mechanical room, and the maintenance office. It is noted that retail patrons of the site will be required to find public parking in the area and will not have access to the below-grade parking garage.

9.2 RESIDENTIAL PARKING SUPPLY

The Project proposes to provide 67 parking spaces for the 56 residential units or a ratio of 1.2 spaces per unit. The parking ratio was chosen to address resident concerns that this development will use some of the limited supply of resident street parking in the area thereby impacting the existing residents in the area. To ensure that all residential parking demand is contained on-site, the parking ratio of 1.2 spaces per unit was chosen. While residents may use public transit and other alternative transportation for commuting, residents often maintain vehicle ownership for longer trips on weekends and the larger parking ratio will ensure those residents can park cars on-site without impacting the existing residents in the area.

9.3 RETAIL PARKING

There is potential for 4 spaces in the parking garage on-site to be utilized by the retail employees. If 1 space per unit was given to residents including all tandem spaces as they need to be given to the same unit, then there would be 4 additional spaces in the garage for retail employees. Figure 9.b.1 depicts the curb side regulations for Massachusetts Avenue, Cedar Street, Harvey Street, and Alberta Terrace. There are 9 residential permit parking spaces on the west side of Cedar Street, 9 residential permit parking spaces on the north side of Alberta Terrace, 8 residential permit parking spaces on the south side of Alberta Terrace, 2 two-hour parking spaces (9:00 AM to 6:00 PM) on Massachusetts Avenue in front of the Project site, 2 two-hour parking spaces (10:00 AM to 6:00

PM) on the north side of Alberta Terrace near Massachusetts Avenue, and 3 two-hour parking spaces (12:00 to 6:00 PM) on west side of Massachusetts Avenue south of Alberta Terrace.

In addition, VAI conducted a parking utilization study for the cannabis retail store at 2447-2449 Massachusetts Avenue in January 2023 which covered parts of Harvey Street, Cedar Street, Massachusetts Avenue, Cameron Avenue, Camp Street, Gold Star Road, Washburn Avenue, Tyler Court, and Edmunds Street. The parking demand survey was conducted during a typical weekday at 10:00 AM, 12:00 PM, 3:00 PM, 5:00 PM, and 7:00 PM, and a Saturday at 12:00 PM, 3:00 PM, and 7:00 PM. A total of approximately 47 on-street parking spaces that were observed non-residential permit spaces. The peak-hour demand during a typical weekday occurred at 10:00 AM when 25 spaces were occupied leaving 22 spaces vacant, and the peak-hour demand during a typical Saturday occurred at 3:00 and 7:00 PM when 25 spaces were occupied leaving 22 spaces vacant. Based on the available supply of at least 22 on-street parking spaces and the anticipated maximum project retail parking demand of 10 spaces, sufficient parking for the project will be available in the area.

9.4 BICYCLE PARKING

The bicycle parking requirements for the Project were reviewed per the City of Cambridge Zoning Ordinance 6.100. Section 6.107.2 identifies the long-term bicycle parking requirements for different land uses. Category R2 – townhouse dwellings, multifamily dwellings, trailer park, or mobile home park were used in the bicycle parking calculations. Category R2 requires 1.00 space per dwelling unit for the first 20 units in a building and then 1.05 spaces per dwelling unit for all units over 20 in that building. Therefore, the residential component of the Project requires 58 regular bicycle parking spaces.

Section 6,105.1 of the zoning ordinance states that if 20 or more bicycle spaces are required than at least 5 percent of the spaces need to provide an additional 2 feet of space to accommodate tandem bicycles or bicycles with trailers. The residential component of the Project therefore requires 3 tandem bicycle spaces.

The Project is providing 58 bicycle spaces of which 4 will have the additional 2 feet to accommodate tandem bicycles or bicycles with trailers. Figure 9.c.1 details the long-term bicycle parking for the Project. Routes identifying how these spaces are accessed are also noted on Figure 9.c.1.

The Project is also providing 10 short-term bicycle spaces on-site along Alberta Terrace with an additional 12 spaces provided off-site on Massachusetts Avenue. Figure 9.c.2 details the on-site short-term bicycle parking for the Project while Figure 9.c.3 details the off-site short-term bicycle parking.

10.0 TRANSIT ANALYSIS

10.1 PROJECT TRANSIT DISTRIBUTION

An analysis of transit usage was conducted to determine impacts that might be recognized under Build conditions. There are a total of eight bus routes and the Red Line that are with 0.5 mile of the Project site and therefore are available for residents at the site. It was determined that bus Route 94 and bus Route 96 would not be utilized by residents, employees, or patrons of the site. As such the transit trips were distributed among six bus routes and the Red Line. The distribution on the transit routes is shown in Table 10.1.

Table 10.1
TRANSIT SYSTEM TRIP DISTRIBUTION

Time Period/ Directional Distribution	Project Transit Trips[a]	Red Line 25%[b]	Bus Route 77 59%[b]	Bus Route 83 4%[b]	Bus Route 87 4%[b]	Bus Route 88 4%[b]	Bus Route 89 4%[b]	Bus Route 90 1%[b]	Bus Route 94 0%[b]	Bus Route 96 0%[b]
Weekday Daily:										
Entering	158	39	93	6	6	6	6	2	0	0
Exiting	158	39	93	6	6	6	6	2	0	0
Total	316	78	186	12	12	12	12	4	0	0
Peak-Hour Headways (Minutes)	--	6-7	15-19	28-39	16-27	16-27	9-28	39-46	30-43	32-40
Weekday Morning:										
Entering	8	2	6	0	0	0	0	0	0	0
Exiting	19	4	11	1	1	1	1	0	0	0
Total	27	6	17	1	1	1	1	0	0	0
Weekday Evening:										
Entering	19	4	11	1	1	1	1	0	0	0
Exiting	10	3	7	0	0	0	0	0	0	0
Total	29	7	18	1	1	1	1	0	0	0

[a]From Table 3.a.9.
[b]Percent splits for each route determined based on the daily ridership data presented in Table 2.e.1 and the distance of the closest stop to the site.

The peak-hour directional passenger loading from the proposed Project of 27 to 29 peak-hour person trips directed towards the area transit can be accommodated without a noticeable increase in operating characteristics. Detailed analysis of transit ridership impacts due to the Project is provided in Table 10.2 for the Red Line subway loadings, Table 10.3 for the weekday morning peak-hour bus loadings, and Table 10.4 for the weekday evening peak-hour bus loadings. Relevant capacity information was obtained from the MBTA for the Red Line and bus Routes 77, 83, 87, 88, 89, 90.

Table 10.2
MBTA RED LINE SUBWAY PEAK-HOUR RIDERSHIP IMPACTS

			Existing								Future								Proposed with Project		Ridership Increase	
Train Line	Time Period	Directional Flow	No. of Trains[a]	No. of Cars per Train	Max. Load per Car[b]	Hourly Capacity[c]	On-Time Performance[d]	Adjusted Hourly Capacity[e]	Ridership[f]	V/C[g]	No. of Trains[h]	No. of Cars per Train	Max. Load per Car	Hourly Capacity	On-Time Performance	Adjusted Hourly Capacity	Ridership[i]	V/C	Ridership	V/C	Percent	V/C
Red Line	Morning Peak Hour	Outbound	9	6	167	9,018	0.92	8,296	829	0.10	20	6	167	20,040	0.92	18,436	1,842	0.10	1,844	0.10	0.01	0.00
		Inbound	9	6	167	9,018	0.92	8,296	4,883	0.59	20	6	167	20,040	0.92	18,436	10,855	0.59	10,859	0.59	0.01	0.00
	Evening Peak Hour	Outbound	9	6	167	9,018	0.92	8,296	5,323	0.64	20	6	167	20,040	0.92	18,436	11,833	0.64	11,837	0.64	0.01	0.00
		Inbound	9	6	167	9,018	0.92	8,296	1,501	0.18	20	6	167	20,040	0.92	18,436	3,336	0.18	3,339	0.18	0.01	0.00

[a]Based on average peak hour headway of 7 minutes from MBTA schedule.
[b]Defined on the basis of MBTA design standards.
[c]Based on standard passenger load per car, number of cars per train, and number of trains per hour.
[d]From MBTA Dashboard.
[e]Hourly capacity multiplied by the On-Time Performance.
[f]From MBTA ridership count results.
[g]Volume-to-capacity ratio.
[h]Based on average headway of 3 minutes.
[i]Increased proportionally to the increase in capacity.

Table 10.3
MBTA BUS ROUTE PEAK-HOUR RIDERSHIP IMPACTS – WEEKDAY MORNING PEAK HOUR

Weekday Morning Peak Hour

Route No.	Route Headway[a]	Maximum Load[b]	Hourly Capacity	Peak On-Time Performance[c]	Adjusted Hourly Capacity[d]	Existing		Proposed with Project		Ridership Increase	
						Ridership[e]	V/C[f]	Ridership	V/C	Percent	V/C
77	9-10 minutes	53	689[h]	0.76	524	236	0.45	253	0.48	7.2	0.03
83	20 minutes	53	318[i]	0.61	194	63	0.32	64	0.33	1.6	0.01
87	20 minutes	53	159[j]	0.43	69	43	0.62	44	0.64	2.3	0.02
88	20 minutes	53	159[j]	0.75	120	54	0.45	55	0.46	1.9	0.01
89	15 minutes	53	424[k]	0.77	327	47	0.14	48	0.15	2.1	0.01
90	35 minutes	53	212[g]	0.59	125	49	0.39	49	0.39	0.0	0.00

[a]Based on MBTA Ridership Data for Fall 2022.
[b]Defined on the basis of MBTA design standards.
[c]From MBTA Performance Metrics for month of January 2024.
[d]Hourly capacity multiplied by the On-Time Performance.
[e]Based on MBTA Ridership Data for Fall 2022.
[f]Volume-to-capacity ratio.
[g]Capacity calculated based on two inbound buses and two outbound buses in the peak hour.
[h]Capacity calculated based on six inbound buses and seven outbound buses in the peak hour.
[i]Capacity calculated based on three inbound buses and three outbound buses in the peak hour.
[j]Capacity calculated based on three outbound buses in the peak hour.
[k]Capacity calculated based on four inbound buses and four outbound buses in the peak hour.

Table 10.4
MBTA BUS ROUTE PEAK-HOUR RIDERSHIP IMPACTS – WEEKDAY EVENING PEAK HOUR

Weekday Evening Peak Hour

Route No.	Route Headway[a]	Maximum Load[b]	Hourly Capacity	Peak On-Time Performance[c]	Adjusted Hourly Capacity[d]	Existing		Proposed with Project		Ridership Increase	
						Ridership[e]	V/C[f]	Ridership	V/C	Percent	V/C
77	9-10 minutes	53	689[h]	0.76	524	259	0.49	277	0.53	6.9	0.04
83	20 minutes	53	265[i]	0.61	162	38	0.23	39	0.24	2.6	0.01
87	20 minutes	53	159[j]	0.43	69	127	1.84	128	1.86	0.8	0.02
88	20 minutes	53	159[j]	0.75	120	103	0.86	104	0.87	1.0	0.01
89	18 minutes	53	371[k]	0.77	286	213	0.74	214	0.75	0.5	0.01
90	35 minutes	53	212[g]	0.59	125	49	0.39	49	0.39	0.0	0.00

[a]Based on MBTA Ridership Data for Fall 2022.
[b]Defined on the basis of MBTA design standards.
[c]From MBTA Performance Metrics for month of January 2024.
[d]Hourly capacity multiplied by the On-Time Performance.
[e]Based on MBTA Ridership Data for Fall 2022.
[f]Volume-to-capacity ratio.
[g]Capacity calculated based on two inbound buses and two outbound buses in the peak hour.
[h]Capacity calculated based on six inbound buses and seven outbound buses in the peak hour.
[i]Capacity calculated based on three inbound buses and two outbound buses in the peak hour.
[j]Capacity calculated based on three outbound buses in the peak hour.
[k]Capacity calculated based on four inbound buses and three outbound buses in the peak hour.

10.2 SUMMARY OF ANALYSIS RESULTS

Table 10.2, Table 10.3, and Table 10.4 demonstrate that generally sufficient capacity exists on the Red Line and bus routes to accommodate the expected ridership increases due to the Project. Increases in volume-to-capacity (v/c) ratios pertaining to ridership are between 0.00 and 0.04 for all affected transit options. During the weekday evening peak hour, bus Routes 87 shows existing capacity issues. This issue correlates with a poor peak hour on-time performance metric which reduced the expected capacity for the route below the demand. The unadjusted capacity for Route 87 can accommodate the demand, indicating the need to improve the on-time performance during peak hours.

Seating and lighted shelters are available at Davis Station. On Massachusetts Avenue there are benches provided at the bus stops at Cedar Street and Cameron Avenue. In addition, a bench and shelter are provided at the stop on Massachusetts Avenue at Norris Street. No bench or shelter is provided for the stops on Massachusetts Avenue at Shea Road or on Rindge Avenue at Hollis Street, Middlesex Street, or Reed Street.

10.3 FUTURE PUBLIC TRANSIT CONDITIONS

As stated earlier, In April 2022, the Cambridge City Council approved implementing separated bike lanes on Massachusetts Avenue north of Harvard Square to the Arlington town line. To achieve this, the median will be removed. In addition to installing separated bike lanes, there will be improvements to pedestrian crossings along Massachusetts Avenue and the experience for people taking the bus. The Project is still in the design stages and the final design may affect the operations of bus routes on this segment of Massachusetts Avenue. Future transit, pedestrian, and bicycle facilities are shown on Figure 10.a.1.

11.0 PEDESTRIAN ANALYSIS

A pedestrian impact analysis was conducted at the study area intersections under 2024 Existing, 2024 Build, and 2029 Future conditions, as required in the scoping letter. For signalized intersections, the pedestrian level-of-service calculations measure the adequacy of the pedestrian phases (exclusive or concurrent) for sufficient time to cross major or minor streets. The unsignalized analysis relies on a critical gap procedure. The analysis methodology was based on procedures outlined in the 2000 *Highway Capacity Manual*[4] (HCM) for signalized and unsignalized intersections and is provided in the Appendix. Table 11.1 summarizes the results of the pedestrian analysis at the signalized intersections, while Table 11.2 presents a summary of the pedestrian analysis at the unsignalized intersections. The pedestrian level-of-service for the intersections are shown graphically on Figure 11.a.1 for the weekday morning peak hour and on Figure 11.a.2 for the weekday evening peak hour.

The Project does not change the pedestrian level of service of any of the crosswalks studied as a result of the addition of the Project vehicle and pedestrian traffic under 2024 Build conditions. The increases in delays at the study area crosswalks range from 0.0 to 0.1 seconds under 2024 Build conditions.

[4] *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000.

Table 11.1
PEDESTRIAN LEVEL-OF-SERVICE SUMMARY – SIGNALIZED INTERSECTIONS

Intersection/Time Period/Crossing Path	2024 Existing			2024 Build			Delay	2029 Future		
	Demand[a]	Delay[b]	LOS[c]	Demand	Delay	LOS	Increase	Demand	Delay	LOS
Massachusetts Avenue at Cedar Street:										
Weekday Morning:										
Crossing Cedar Street (West)	73	41.7	E	81	41.7	E	0.0	81	41.7	E
Crossing Massachusetts Avenue (Diagonal)	54	41.7	E	54	41.7	E	0.0	54	41.7	E
Crossing Massachusetts Avenue (South)	61	36.8	D	67	36.8	D	0.0	67	36.8	D
Weekday Evening:										
Crossing Cedar Street (West)	112	41.7	E	121	41.7	E	0.0	121	41.7	E
Crossing Massachusetts Avenue (Diagonal)	80	41.7	E	80	41.7	E	0.0	80	41.7	E
Crossing Massachusetts Avenue (South)	89	36.8	D	96	36.8	D	0.0	96	36.8	D
Massachusetts Avenue at Harvey Street/ Cameron Avenue:										
Weekday Morning:										
Crossing Cameron Avenue (East)	38	34.5	D	38	34.5	D	0.0	38	34.5	D
Crossing Harvey Street (West)	22	34.5	D	28	34.5	D	0.0	28	34.5	D
Crossing Massachusetts Avenue (North)	33	36.8	D	48	36.8	D	0.0	48	36.8	D
Crossing Massachusetts Avenue (South)	6	36.8	D	6	36.8	D	0.0	6	36.8	D
Weekday Evening:										
Crossing Cameron Avenue (East)	43	34.5	D	43	34.5	D	0.0	43	34.5	D
Crossing Harvey Street (West)	40	34.5	D	47	34.5	D	0.0	47	34.5	D
Crossing Massachusetts Avenue (North)	36	36.8	D	51	36.8	D	0.0	51	36.8	D
Crossing Massachusetts Avenue (South)	7	36.8	D	7	36.8	D	0.0	7	36.8	D

[a]Demand in pedestrians per hour.
[b]Average delay per pedestrian (in seconds).
[c]Pedestrian level of service.

Table 11.2
PEDESTRIAN LEVEL-OF-SERVICE SUMMARY – UNSIGNALIZED INTERSECTIONS

Intersection/Time Period/Crossing Path	2024 Existing			2024 Build			Delay	2029 Future		
	Demand[b]	Delay[c]	LOS[d]	Demand	Delay	LOS	Increase	Demand	Delay	LOS
Cedar Street at Harvey Street:										
Weekday Morning:										
Crossing Harvey Street (East)	10	5.7	B	18	5.8	B	0.1	18	5.9	B
Crossing Harvey Street (West)	30	1.5	A	30	1.5	A	0.0	30	1.5	A
Crossing Cedar Street (North)	21	10.0	B	22	10.0	B	0.0	22	10.4	C
Crossing Cedar Street (South)	9	5.6	B	9	5.7	B	0.1	9	5.9	B
Weekday Evening:										
Crossing Harvey Street (East)	12	6.6	B	21	6.7	B	0.1	21	7.0	B
Crossing Harvey Street (West)	35	1.4	A	35	1.4	A	0.0	35	1.4	A
Crossing Cedar Street (North)	28	11.2	C	28	11.3	C	0.1	28	11.7	C
Crossing Cedar Street (South)	6	5.7	B	6	5.7	B	0.0	6	5.9	B
Cedar Street at Alberta Terrace:										
Weekday Morning:										
Crossing Alberta Terrace (East)	9	0.3	A	11	0.3	A	0.0	11	0.3	A
Weekday Evening:										
Crossing Alberta Terrace (East)	11	0.3	A	13	0.4	A	0.1	13	0.4	A
Massachusetts Avenue at Alberta Terrace:										
Weekday Morning:										
Crossing Alberta Terrace (West)	28	0.2	A	30	0.2	A	0.0	30	0.2	A
Weekday Evening:										
Crossing Alberta Terrace (West)	70	0.2	A	72	0.2	A	0.0	72	0.2	A

[a]Demand in pedestrians per hour.
[b]Average delay per pedestrian (in seconds).
[c]Pedestrian level of service.

12.0 BICYCLE ANALYSIS

A review of bicycle conditions was conducted at the affected intersections and street segments. Massachusetts Avenue and Cameron Avenue provide dedicated on-street lanes for bicyclists. Other city streets in the study area do not provide exclusive bicycle lanes.

12.1 VEHICLE TURNING VOLUME CONFLICTS

City guidelines require identification of conflicting vehicle-turning volumes at intersections impacted by the Project where bicycle facilities are present or where peak-hour bicycle volumes exceed 10 bicycles on any approach. The locations meeting these criteria are listed in Table 12 for 2024 Existing and 2024 Build conditions.

Table 12
BICYCLE-VEHICLE VOLUME CONFLICTS

Roadway/Intersecting Street/ Time Period	Approach Bicycle Volume	Conflicting Vehicles Turning Volume	
		2024 Existing	2024 Build
Massachusetts Avenue at Cedar Street:			
Weekday Morning	EB – <10	--	--
	NB – 14	0	0
	SB – 71	0	0
Weekday Evening	EB – <10	--	--
	NB – 91	0	0
	SB – 32	0	0
Massachusetts Avenue at Harvey Street/ Cameron Avenue:			
Weekday Morning	EB – <10	--	--
	WB – <10	--	--
	NB – 23	101	102
	SB – 84	45	47
Weekday Evening			
	EB – <10	--	--
	WB – <10	--	--
	NB – 92	157	159
	SB – 41	60	69
Massachusetts Avenue at Alberta Terrace:			
Weekday Morning			
	EB – <10	--	--
	NB – 18	0	0
	SB – 87	0	0
Weekday Evening			
	EB – 0	--	--
	NB – 71	0	0
	SB – 45	0	0
Cedar Street at Harvey Street:			
Weekday Morning	WB – <10	No bicycle facilities are present at this intersection and the bicycle approach volumes are all less than 10 bicycles therefore no analysis is required.	
	NB – <10		
	SB – <10		
Weekday Evening	WB – <10		
	NB – <10		
	SB – <10		
Cedar Street at Alberta Terrace:			
Weekday Morning	WB – 0	No bicycle facilities are present at this intersection and the bicycle approach volumes are all less than 10 bicycles therefore no analysis is required.	
	NB – <10		
	SB – <10		
Weekday Evening	WB – 0		
	NB – <10		
	SB – 0		

See notes at end of table.

Table 12 (Continued)
BICYCLE-VEHICLE VOLUME CONFLICTS

Roadway/Intersecting Street/ Time Period	Approach Bicycle Volume	Conflicting Vehicles Turning Volume	
		2024 Existing	2024 Build
Cedar Street at Existing Site Driveway:			
Weekday Morning	WB – 0 NB – <10 SB – <10	No bicycle facilities are present at this intersection and the bicycle approach volumes are all less than 10 bicycles therefore no analysis is required.	
Weekday Evening	WB – 0 NB – <10 SB – <10		
Harvey Street at Proposed Site Driveway:			
Weekday Morning	EB – <10 WB – <10 NB – 0	No bicycle facilities are present at this intersection and the bicycle approach volumes are all less than 10 bicycles therefore no analysis is required.	
Weekday Evening	EB – <10 WB – <10 NB – 0		

NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movement; TH = through movement; RT = right-turning movement.

13.0 ARTICLE 19 SPECIAL PERMIT CRITERIA ANALYSIS

Under Section 19.25.1, the Planning Board shall only grant a Section 19.20 Project Review Special Permit upon finding that the Project will have no substantial adverse impact on City traffic within the study area analyzed in the TIS. Substantial adverse impact is measured by reference to the Special Permit Criteria, which consists of five traffic impact indicators used to evaluate Project impacts. The indicators are: (1) Project vehicle-trip generation weekdays and weekends for a twenty-four-hour period and morning and evening peak-vehicle trips generated; (2) change in level of service at identified signalized intersections; (3) increased volume of trips on residential streets; (4) increase of length of vehicle queues at identified signalized intersections; and (5) lack of sufficient pedestrian and bicycle facilities. The methodology for the analysis of the traffic impact indicators is from the Cambridge "Guidelines for Presenting Information to the Planning Board," approved November 27, 2001, and revised in 2004. Referenced in the guidelines are capacity analysis procedures presented in the HCM and summarized in the Appendix. Exceedance of one or more indicators suggests a potentially substantial adverse impact on City traffic; however, the Planning Board should also consider proposed Project mitigation in making its finding. The following section summarizes the 95 measurements analyzed in applying the five indicators to the proposed Project and the proposed Project mitigation. While the Project indirectly results in exceedance of seven measurements, the methods described in the Mitigation section of this TIS outweigh any potential adverse impact of the Project.

Indicator 1: Project Vehicle – Trip Generation

The Project satisfies 3 of 3 City standards for Indicator 1 regarding vehicle-trip generation as demonstrated by the three measurements detailed in Table 13.a.

Indicator 2: Project Vehicle – Level-Of-Service

The Project satisfies 30 of 30 City standards for Indicator 2 regarding vehicle level of service as demonstrated by the measurements detailed in Table 13.b.

Indicator 3: Traffic on Residential Streets

The Project satisfies 8 of 8 City standards for Indicator 3 regarding traffic on residential streets as demonstrated by the six measurements detailed in Table 13.c.

Indicator 4: Lane Queue

The Project satisfies 20 of 20 City standards for Indicator 4 regarding lane queues as demonstrated by the measurements detailed in Table 13.d.

Indicator 5: Lack of Sufficient Pedestrian and Bicycle Facilities

A total of 27 of 34 City standards for Indicator 5A, 5B, and 5C regarding pedestrian and bicycle facilities are satisfied as demonstrated by the measurements detailed in Table 13.e.1 and Table 13.e.2. Of the 34 measurements analyzed in connection with Criteria 5, none were exceeded as a result of the Project. A total of seven measurements are exceeded under existing conditions, with or without the Project.

Table 13.a
INDICATOR 1 – PROJECT VEHICLE-TRIP GENERATION

Weekday =	284	AM Peak Hour =	27	PM Peak Hour =	20	Exceeds Criteria? [Y/N]	N/N/N

Table 13.b
INDICATOR 2 – PROJECT VEHICLE LEVEL-OF-SERVICE

Intersection/Critical Movement	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	2024 Existing	With Project	Exceeds Criteria?	2024 Existing	With Project	Exceeds Criteria?
Massachusetts Avenue at Cedar Street	C	C	N	C	C	N
Massachusetts Avenue at Harvey Street/Cameron Avenue	C	C	N	B	B	N
Cedar Street at Harvey Street						
Harvey Street WB LT/TH/RT	A	A	N	A	A	N
Cedar Street NB LT/TH/RT	A	C	N	A	C	N
Cedar Street SB LT/TH/RT	A	B	N	A	A	N
Cedar Street at Existing Site Driveway						
Site Driveway WB LT/RT	A	--	--	C	--	--
Cedar Street NB TH/RT	A	--	--	A	--	--
Cedar Street SB LT/TH	A	--	--	A	--	--
Cedar Street at Alberta Terrace						
Cedar Street NB TH/RT	A	A	N	A	A	N
Cedar Street SN LT/TH	A	A	N	A	A	N
Massachusetts Avenue at Alberta Terrace						
Alberta Terrace EB RT	A	A	N	B	B	N
Massachusetts Avenue SB TH	A	A	N	A	A	N

Table 13.b (Continued)
INDICATOR 2 – PROJECT VEHICLE LEVEL-OF-SERVICE

Intersection/Critical Movement	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	2024 Existing	With Project	Exceeds Criteria?	2024 Existing	With Project	Exceeds Criteria?
Harvey Street at Proposed Site Driveway						
Harvey Street EB TH/RT	--	C	--	--	C	N
Harvey Street WB LT/TH	--	A	--	--	A	N
Site Driveway NB LT/RT	--	A	--	--	C	N

Table 13.c
INDICATOR 3 – TRAFFIC-VOLUME INCREASE ON RESIDENTIAL STREETS

Street Segment	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	2024 Existing Volume	With Project	Exceeds Criteria?	2024 Existing Volume	With Project	Exceeds Criteria?
Cedar Street, Massachusetts Avenue to Harvey Street (Amount of residential = >1/3 but <1/2)	278	283	N	280	284	N
Cedar Street, Harvey Street to Alberta Terrace (Amount of residential = >1/3 but <1/2)	421	424	N	455	458	N
Alberta Terrace, Massachusetts Avenue to Cedar Street (Amount of residential = >1/3 but <1/2)	14	18	N	18	22	N
Cameron Avenue, Massachusetts Avenue to Somerville City Line (Amount of residential = >1/3 but <1/2)	435	438	N	474	480	N

Table 13.d
INDICATOR 4 – LANE QUEUE

Intersection	No. of Lanes Analyzed	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		2024 Existing	With Project	Exceeds Criteria?	2024 Existing	With Project	Exceeds Criteria?
Massachusetts Avenue at Cedar Street:	4						
Cedar Street EB LT/RT		2	2	N	5	5	N
Massachusetts Avenue NB TH		5	6	N	6	6	N
Massachusetts Avenue NB TH[a]		--	--	--	--	--	--
Massachusetts Avenue SB TH		20	20	N	18	19	N
Massachusetts Avenue SB RT		4	5	N	3	3	N
Massachusetts Avenue at Harvey Street/ Cameron Avenue:	6						
Harvey Street EB LT/TH/RT		3	3	N	4	4	N
Cameron Avenue WB LT/TH/RT		12	12	N	5	6	N
Massachusetts Avenue NB LT/TH		6	6	N	10	12	N
Massachusetts Avenue NB TH/RT		3	3	N	4	4	N
Massachusetts Avenue SB TH		2	2	N	2	2	N
Massachusetts Avenue SB TH/RT		1	1	N	1	1	N

[a]This is a "Bus Only Lane" and it was not modeled in the analysis. Therefor no calculated queue is provided.

Table 13.e.1
INDICATOR 5A – PEDESTRIAN LEVEL OF SERVICE

Intersection/Critical Movement	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	2024 Existing PLOS	With Project	Exceeds Criteria?	2024 Existing PLOS	With Project	Exceeds Criteria?
Massachusetts Avenue at Cedar Street:						
Crossing Cedar Street (West)	E	E	**Y**	E	E	**Y**
Crossing Massachusetts Avenue (Diagonal)	E	E	**Y**	E	E	**Y**
Crossing Massachusetts Avenue (South)	D	D	N	D	D	N
Massachusetts Avenue at Harvey Street/ Cameron Avenue:						
Crossing Cameron Avenue (East)	D	D	N	D	D	N
Crossing Harvey Street (West)	D	D	N	D	D	N
Crossing Massachusetts Avenue (North)	D	D	N	D	D	N
Crossing Massachusetts Avenue (South)	D	D	N	D	D	N
Cedar Street at Harvey Street:						
Crossing Harvey Street (East)	B	B	N	B	B	N
Crossing Harvey Street (West)	A	A	N	A	A	N
Crossing Cedar Street (North)	B	B	N	C	C	N
Crossing Cedar Street (South)	B	B	N	B	B	N
Cedar Street at Alberta Terrace:						
Crossing Alberta Terrace (East)	A	A	N	A	A	N
Massachusetts Avenue at Alberta Terrace:						
Crossing Alberta Terrace (West)	A	A	N	A	A	N

Table 13.e.2
INDICATOR 5B AND 5C – PEDESTRIAN AND BICYCLE FACILITIES

Adjacent Street or Public Right-of-Way	Sidewalks or Walkways Present?	Exceeds Criteria?	Bicycle Facilities or Right-of-Ways Present?	Exceeds Criteria?
Harvey Street	Y	N	N	**Y**
Cedar Street	Y	N	N	**Y**
Alberta Terrace	Y	N	N	**Y**
Massachusetts Avenue	Y	N	Y	N

14.0 PROJECT MITIGATION

14.1 PROJECT MITIGATION

Generally, the Project's location near the Linear Path which provides direct access to transit facilities such as Davis Station encourages non-auto use. Mitigation efforts are therefore geared towards efforts to encourage Project employees and residents towards alternative transportation that would result in a low SOV rate for the Project.

14.2 TRANSPORTATION DEMAND MANAGEMENT MEASURES

The Project will implement the following TDM measures.

- Join the Alewife TMA. This membership will provide residents and employees with access to commuter programs such as carpool incentive, emergency ride home, and TMA rewards.
- Encourage residents and employees to obtain a CharlieCard and register it for bike parking, allowing residents and employees the ability to use the bike racks at area MBTA stations and Pedal & Park facilities.
- Make available public transportation schedules, which will be posted in a centralized location for residents and employees to be located in the lobby of main building.
- Provide information on available pedestrian and bicycle facilities in the vicinity of the Project site in a central location for residents and employees.
- Charge for parking at market rates with parking fees unbundled from rent where possible.
- Provide information about transportation options available to residents via a welcome packet at move-in and to employees at orientations.
- A 100 percent subsidy will be provided for the cost of a bus/subway link pass for two consecutive months to each adult member of a residential household, up to two per household, upon move-in.

14.3 SITE ACCESS

In addition to the TDM measure identified above, the proponent is proposing to install "DO NOT BLOCK DRIVEWAY" pavement markings and signage at the proposed driveway to ensure that vehicles queued for the Massachusetts Avenue traffic signal on Harvey Street will not impede site access. Figure 14.a.1 depicts the proposed mitigation at the driveway.

15.0 CONCLUSION

As described throughout this TIS, the Project consists of the redevelopment of an existing commercial facility located at 2400 Massachusetts Avenue to a mix of retail and residential uses. Specifically, 56 multifamily residential units and 6,400 sf of ground floor retail space. Parking will be provided via a 67-space below-grade garage with access onto Harvey Street. Long-term bicycle parking will be provided on-site that can accommodate 54 regular bicycles and 4 tandem bicycles with trailers. Short-term bicycle parking will be provided on-site for 10 bicycles with an additional 12 spaces provided off-site.

The Project is located in an area close to extensive public transit networks where reliance on personal vehicles is becoming less necessary and through the provision of expanded bicycle parking and proximity to the Linear Path and bicycle lanes, the overall traffic impact of the Project will be reduced.

The proposed Project will not result in a public hazard due to substantially increased vehicular traffic or parking in this area of Cambridge. Specifically, the Project is not anticipated to have a significant adverse impact on motorist delays in the area and adequate parking supply will exist on-site to support the Project. Accordingly, this TIS finds that the Project can be accommodated within the existing area infrastructure and on the roadway network with minimal effects, resulting in the ability to implement the Project's planned residential and retail uses with the appropriate TDM measures.

Transportation Impact Study
Supporting Graphics

Proposed Mixed-Use Development
2400 Massachusetts Avenue
Cambridge, Massachusetts

Prepared for:

North Cambridge Partners LLC
Chestnut Hill, Massachusetts

April 2024

Prepared by:

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

FIGURES

FIGURES (Continued)

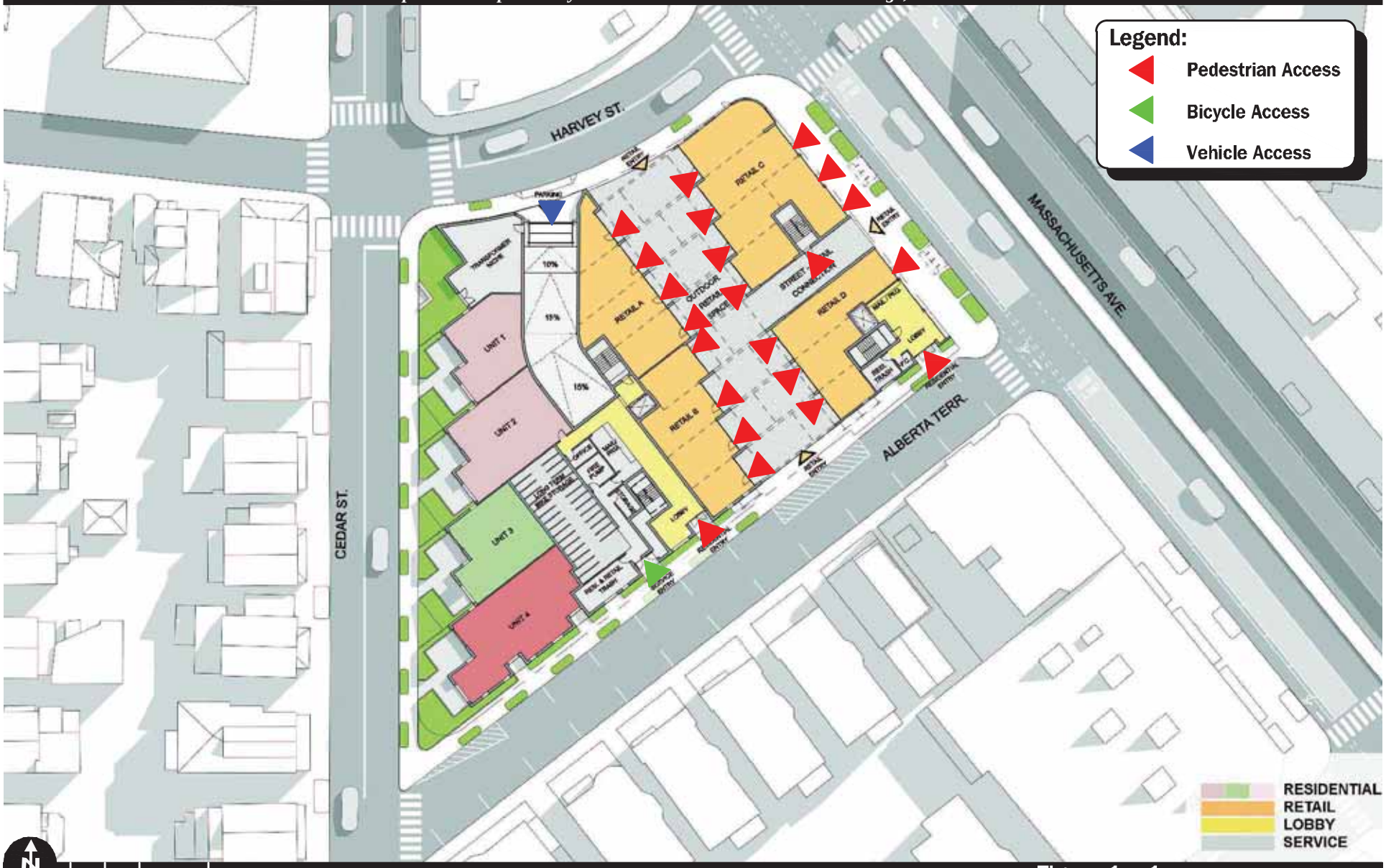

Figure 1.a.1

Ground Floor Plan

Vanasse & Associates inc

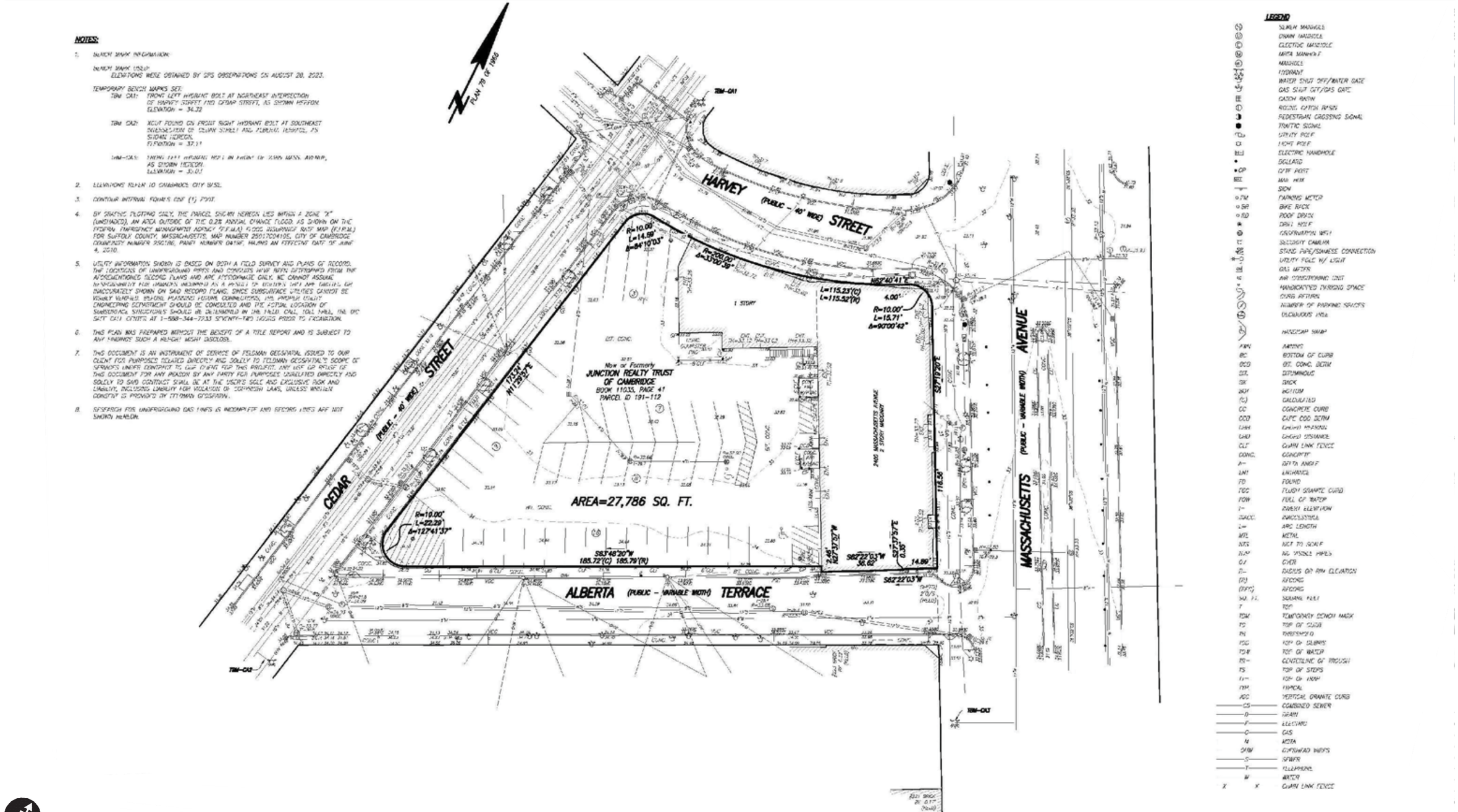

Figure 1.a.2

Existing Conditions Survey

Vanasse & Associates inc

TREES & PLANTINGS LEGEND

Type	Color	Species	Common Name	Size	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street
A7		Cercis canadensis	Eastern redbud	>15' canopy	0	10
A6		Malus sp.	Crabapple spp	10' canopy	0	4
B2.1		Amsonia hubrichtii	threadleaf bluestar	minimum 12" soil depth, anticipated plant height under 3' tall at maturity	0	1,541 sf
		Muhlenbergia capillaris	hair-awn muhly			
		Aster novae-angliae 'Grape Crush'	New England Aster			
		Solidago 'Solar Cascade'	Goldenrod			
		Zizia aurea	Golden Alexanders			
		Lonicera sempervirens	Trumpet honeysuckle			
		salvia nemorosa 'caradonna'	Woodland sage			
B2.2		Agastache foeniculum	Lavender Hyssop	minimum 9" soil depth, anticipated plant height maximum 3' tall at maturity	256 sf	730 sf
		Asclepias syriaca	Common Milkweed			
		Baptisia australis	Blue Wild Indigo			
		Echinacea purpurea	Purple Coneflower			
		Gaillardia aristata	Blanket Flower			
		Lupinus perennis	Wild Lupine			
		Rudbeckia hirta	Black Eyed Susan			
		Senna hebecarpa	American Senna			
		Solidago juncea	Early Goldenrod			
		Vernonia altissima	Ironweed			
		Festuca rubra	Red Fescue			
		Sporobolus heterolepis	Prairie Dropseed			
B2.3		Sporobolus heterolepis	Prairie Dropseed	minimum 12" soil depth, anticipated plant height under 3' tall at maturity	42 sf	0
		Schizachyrium scoparium 'Standing Ovation'	Little Bluestem			
		Asclepias incarnata	Swamp Milkweed			
		Agastache foeniculum	Anise Hyssop			
R3		Cornus Amomum	Silky Dogwood	minimum 18" soil depth, anticipated plant height over 2' tall at maturity	0	227 sf
		Kalmia Latifolia	Mountain Laurel			
		Lindera Benzoin	Spice Bush			
		Rhopes Catawbiense	Rhododendron			

GREEN ROOFS & FACADES, PAVING & STRUCTURES LEGEND

Type	Color	Description	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street	SRI
G3		Non-Intensive Green Roof	3,604 sf	2,851 sf	
D2		High SRI Paving	4,199 sf	723 sf	

STREET TREES & PLANTINGS LEGEND

Type	Color	Description / Size	Qty
E1		Preserved Existing Understory Tree (Honey Locust)	3
E2		Preserved Existing Understory Tree (Zaylova)	3
F3		New Understory Tree, >10' canopy	3
F3.1		New Understory Tree, >20' canopy	7
B2.1		Sporobolus heterolepis	647 sf
		Schizachyrium scoparium 'Standing Ovation'	
		Asclepias incarnata	
		Agastache foeniculum	

0 17.5 35 Scale in Feet

Figure 1.a.3

Proposed Landscape Plan

Vanasse & Associates inc

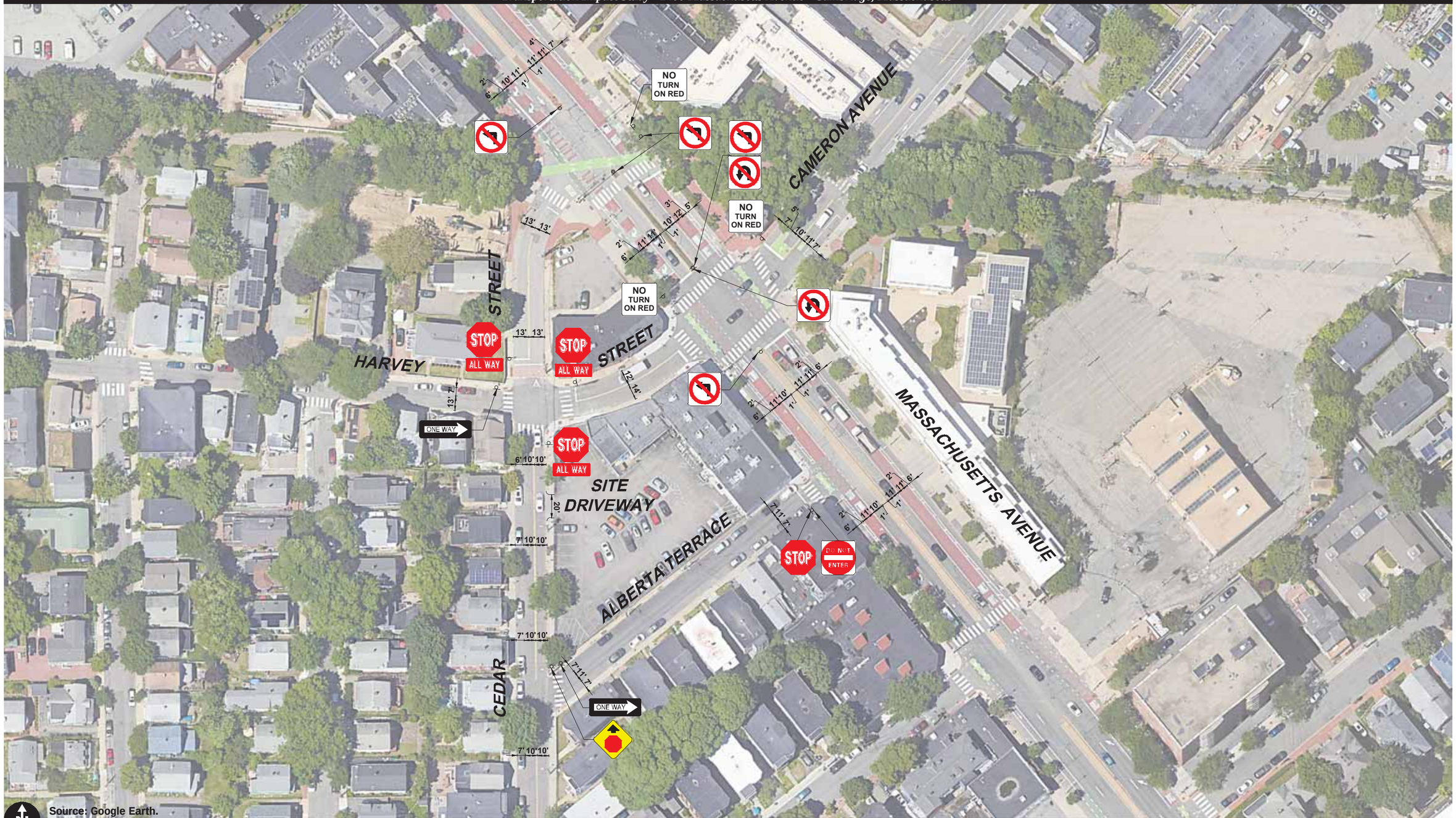

Figure 1.b.1

Study Area
Intersection Inventories

Vanasse & Associates inc

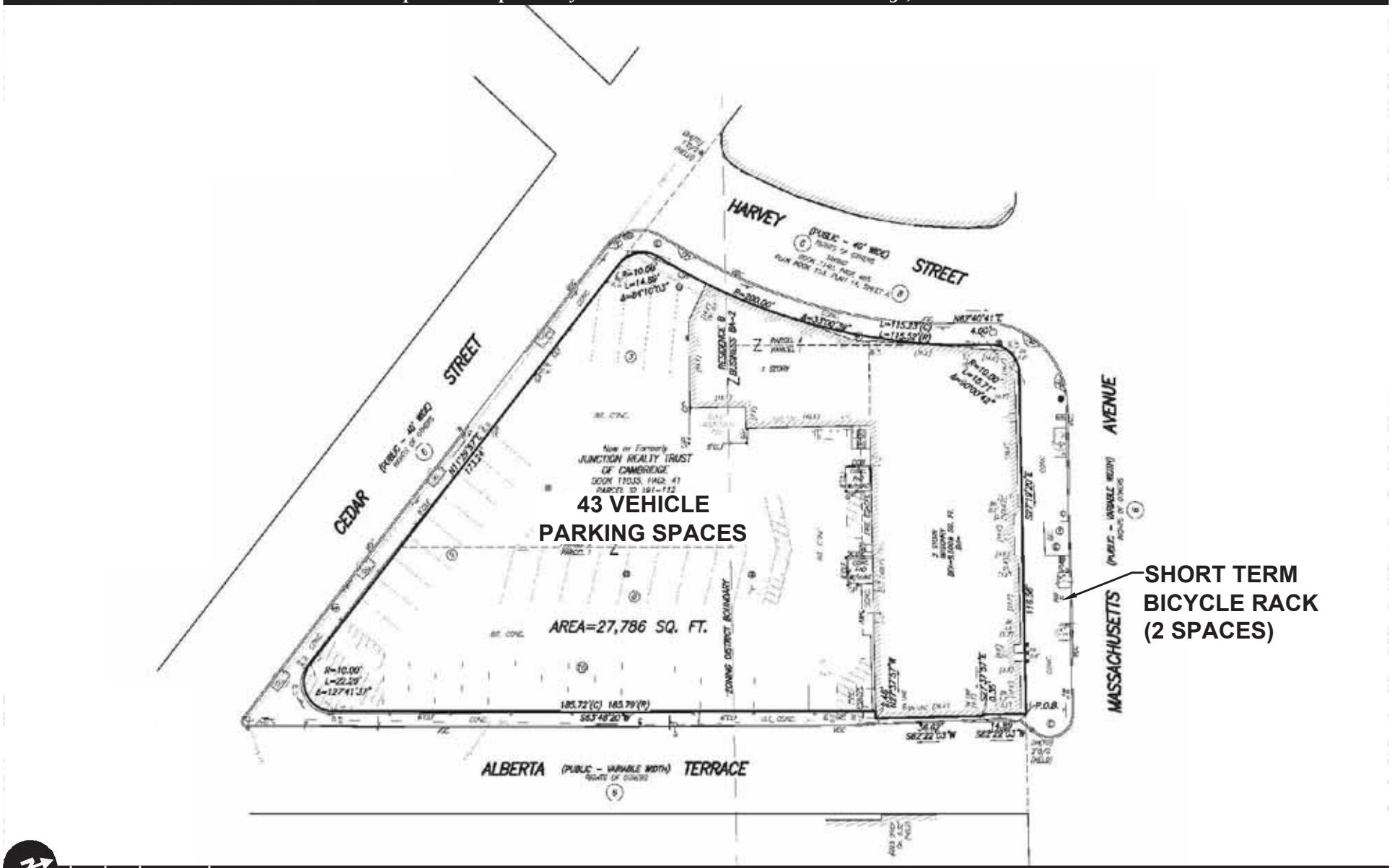

Figure 1.c.1

Existing Parking Lot and Bicycle Parking

Vanasse & Associates inc

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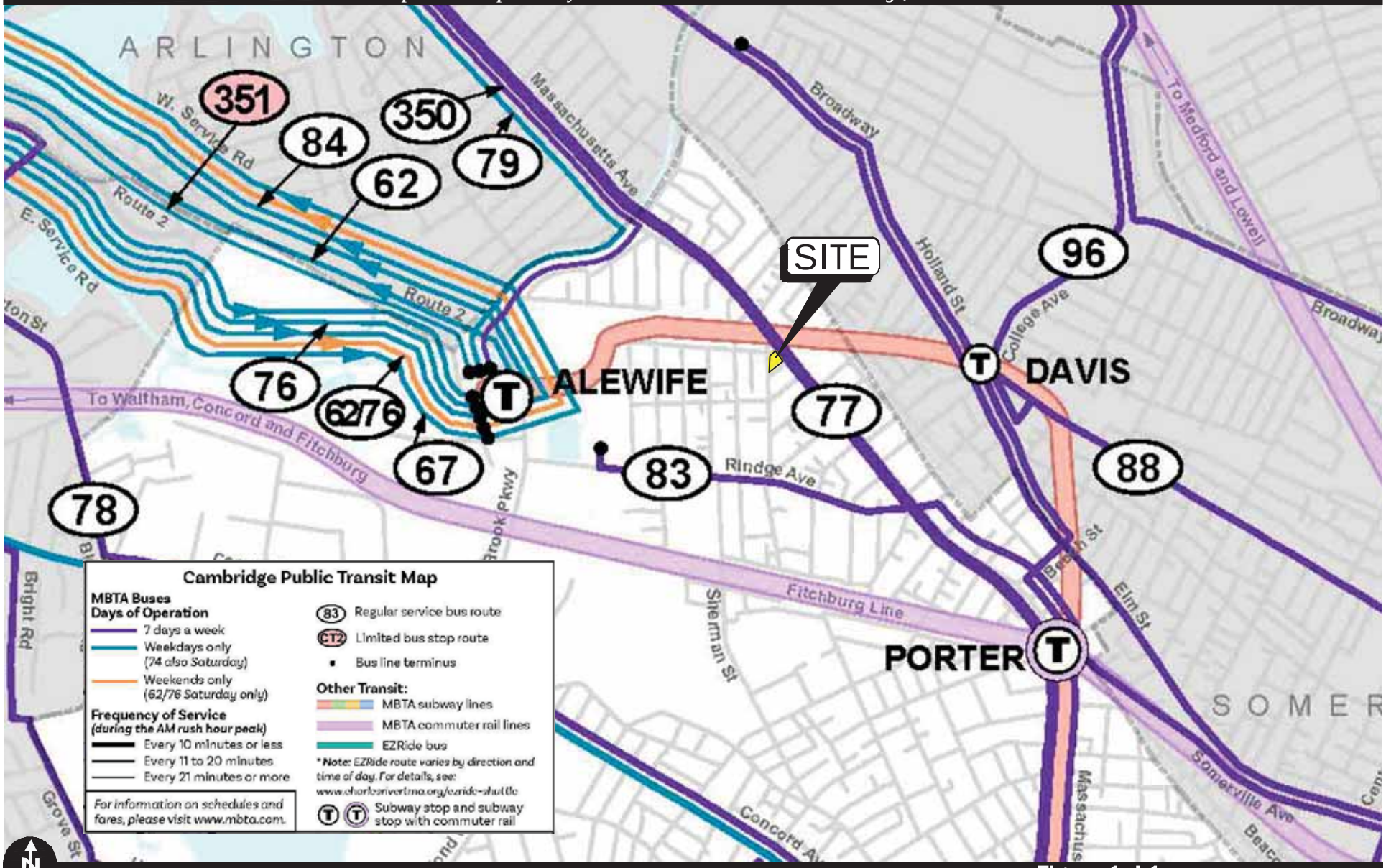

Not To Scale

Figure 1.d.1

Transit Map

Vanasse & Associates inc

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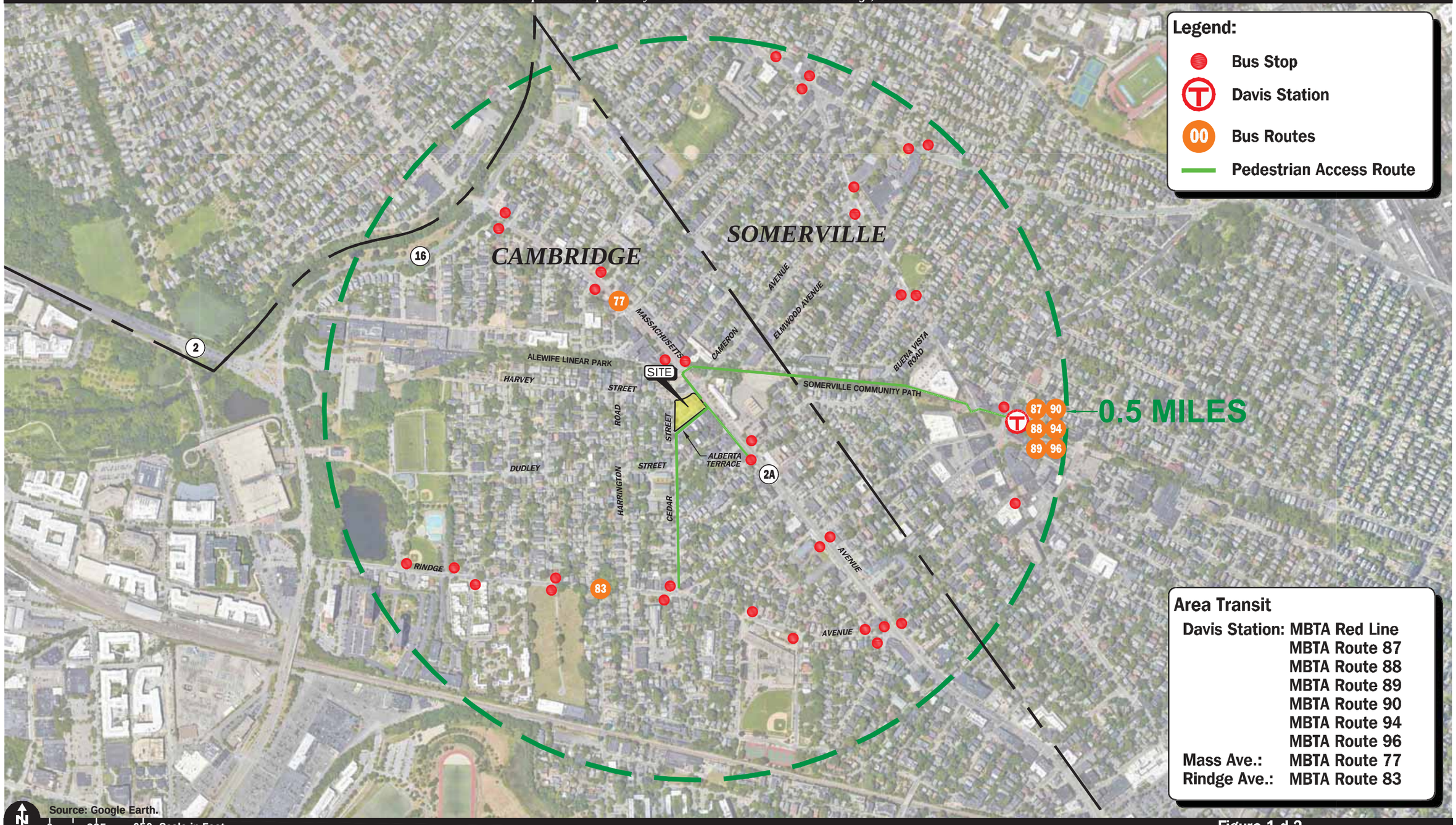


Figure 1.d.2

Transit Facilities Map

Vanasse & Associates inc

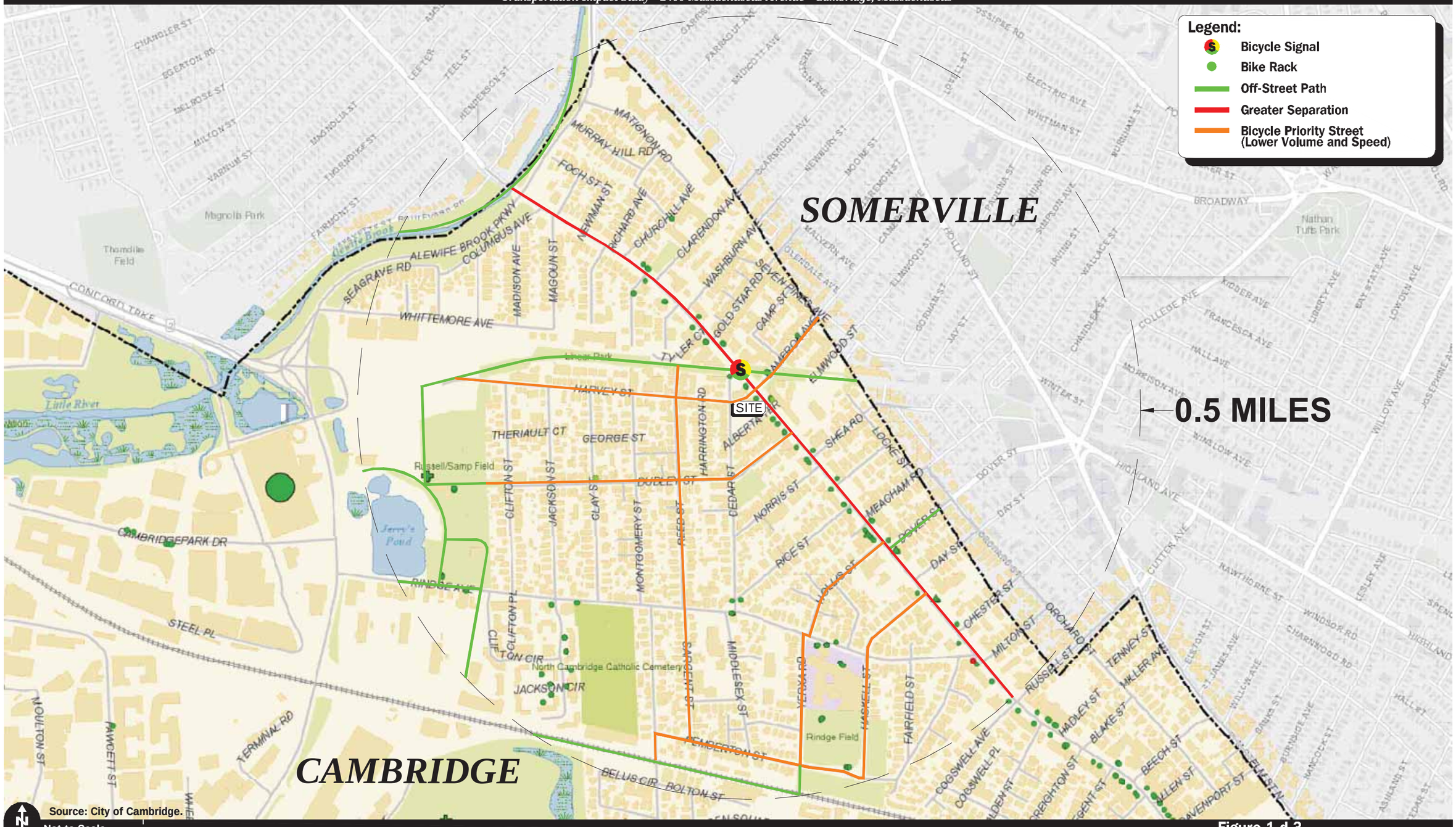


Figure 1.d.3

2020 Bicycle Network Plan

Vanasse & Associates inc

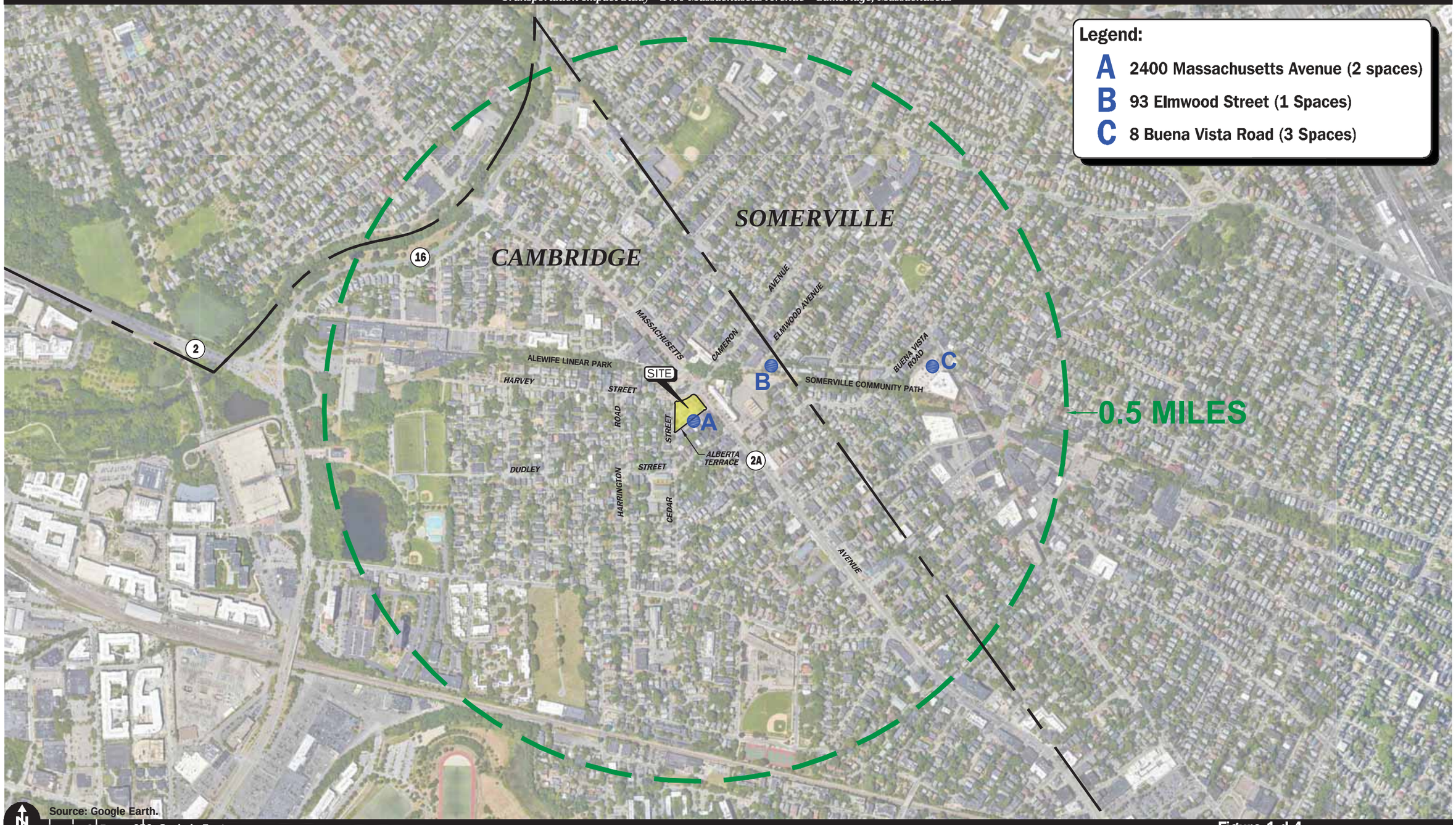


Figure 1.d.4

Car Sharing and Ride Sharing Services Map

Vanasse & Associates inc

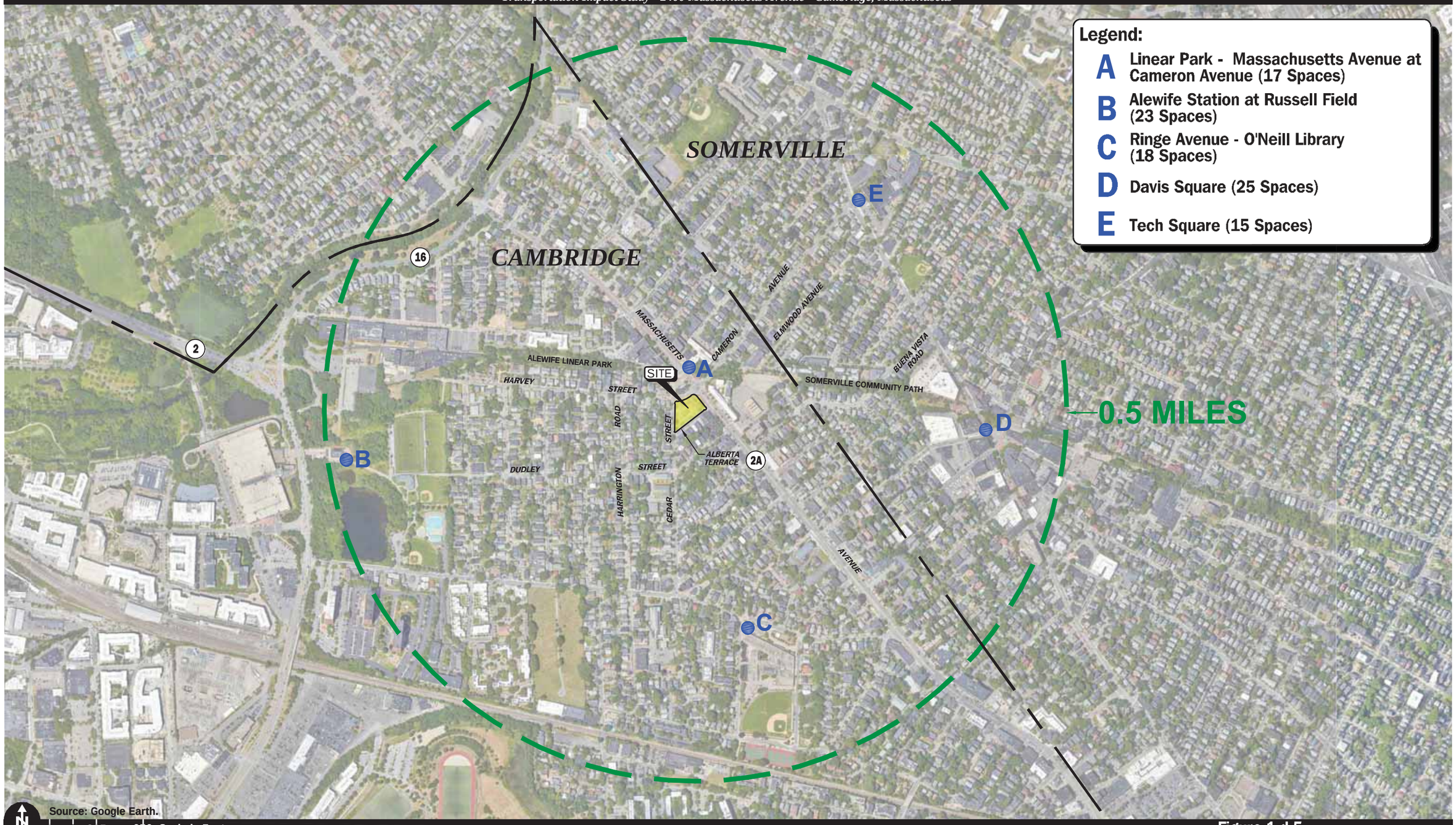


Figure 1.d.5

Bike Sharing Stations Map

Vanasse & Associates inc

Zoning Districts

- Residence A–1
- Residence A–2
- Residence B
- Residence C
- Residence C–1
- Residence C–1A
- Residence C–2
- Residence C–2A
- Residence C–2B
- Residence C–3
- Residence C–3A
- Residence C–3B
- Office–1
- Office–2
- Office–2A
- Office–3
- Office–3A
- Business A
- Business A–1
- Business A–2
- Business A–3
- Business A–4
- Business A–5
- Business B
- Business–1
- Business 2
- Business C
- Business C–1
- Industry A–1
- Industry A–2
- Industry A
- Industry B–1
- Industry B–2
- Industry B
- Industry C
- Mixed Use Development
- Ames Street District
- Alewife Overlay District
- Planned Unit Developmen
- Mixed Use Residential Ov
- North Point District
- Cambridgeport Revitalizati
- Special District–1
- Special District–2
- Special District–3
- Special District–4
- Special District–4A
- Special District–5
- Special District–6
- Special District–7
- Special District–8
- Special District–8A
- Special District–9
- Special District–10(F)
- Special District–10(H)
- Special District–11
- Special District–12
- Special District–13
- Special District–14
- Special District–15
- Open Space

City of Cambridge.

Not to Scale

Figure 1.e.1

Land Use Map

Vanasse & Associates inc

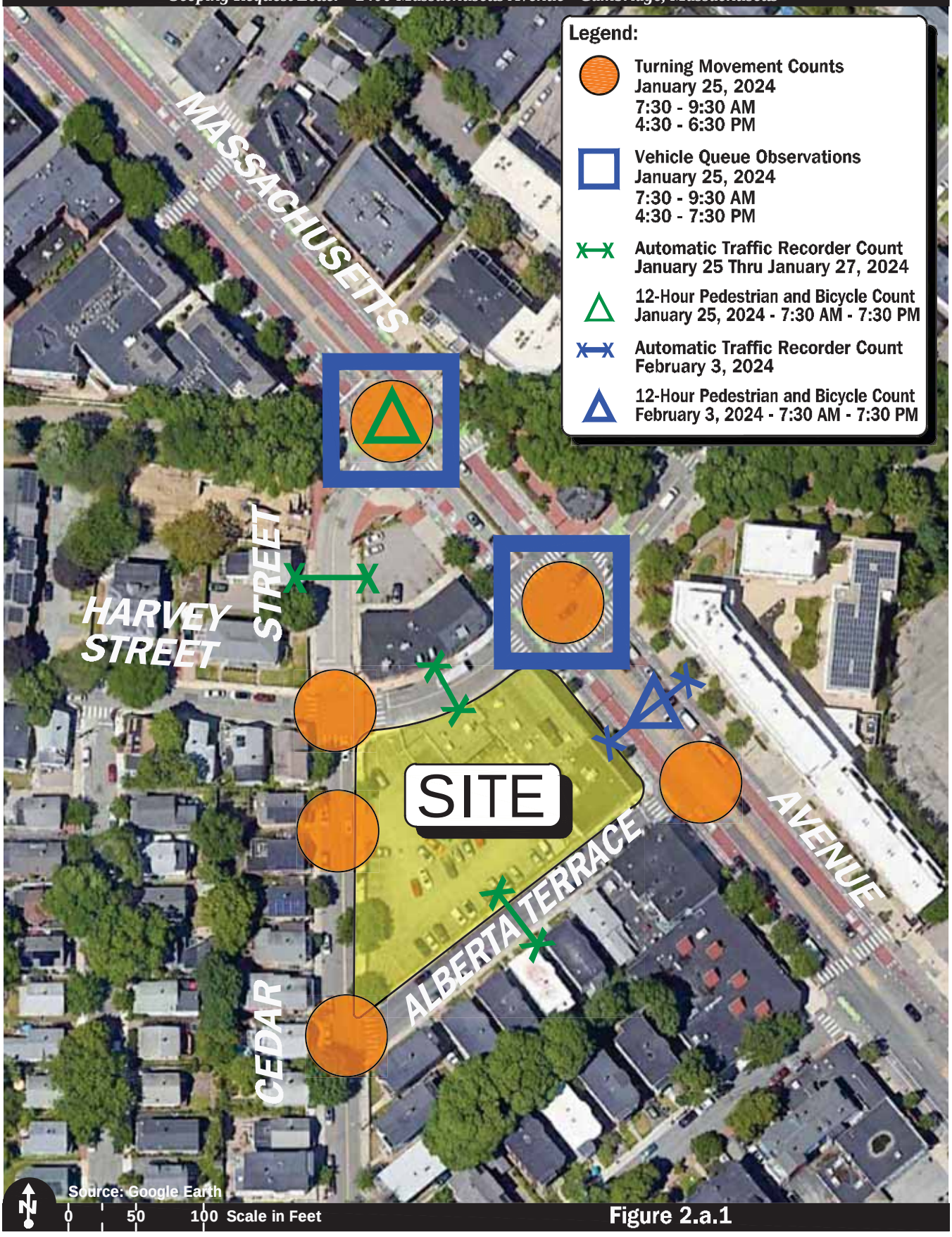
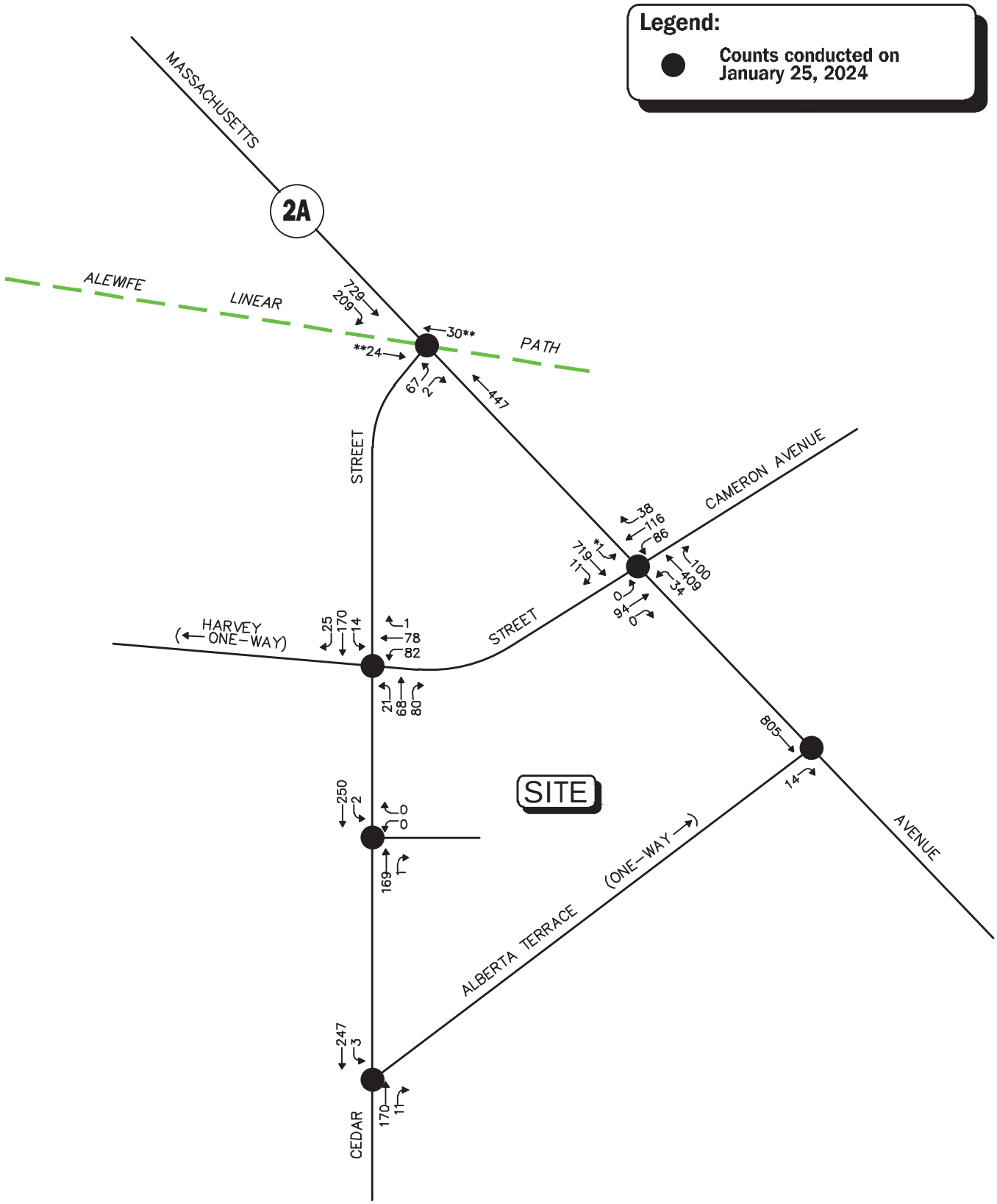


Figure 2.a.1

Count Location Map

Vanasse & Associates inc



*Illegal movement.
**Bicycle/pedestrian volumes.

Not To Scale

Figure 2.c.1

2024 Existing Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc

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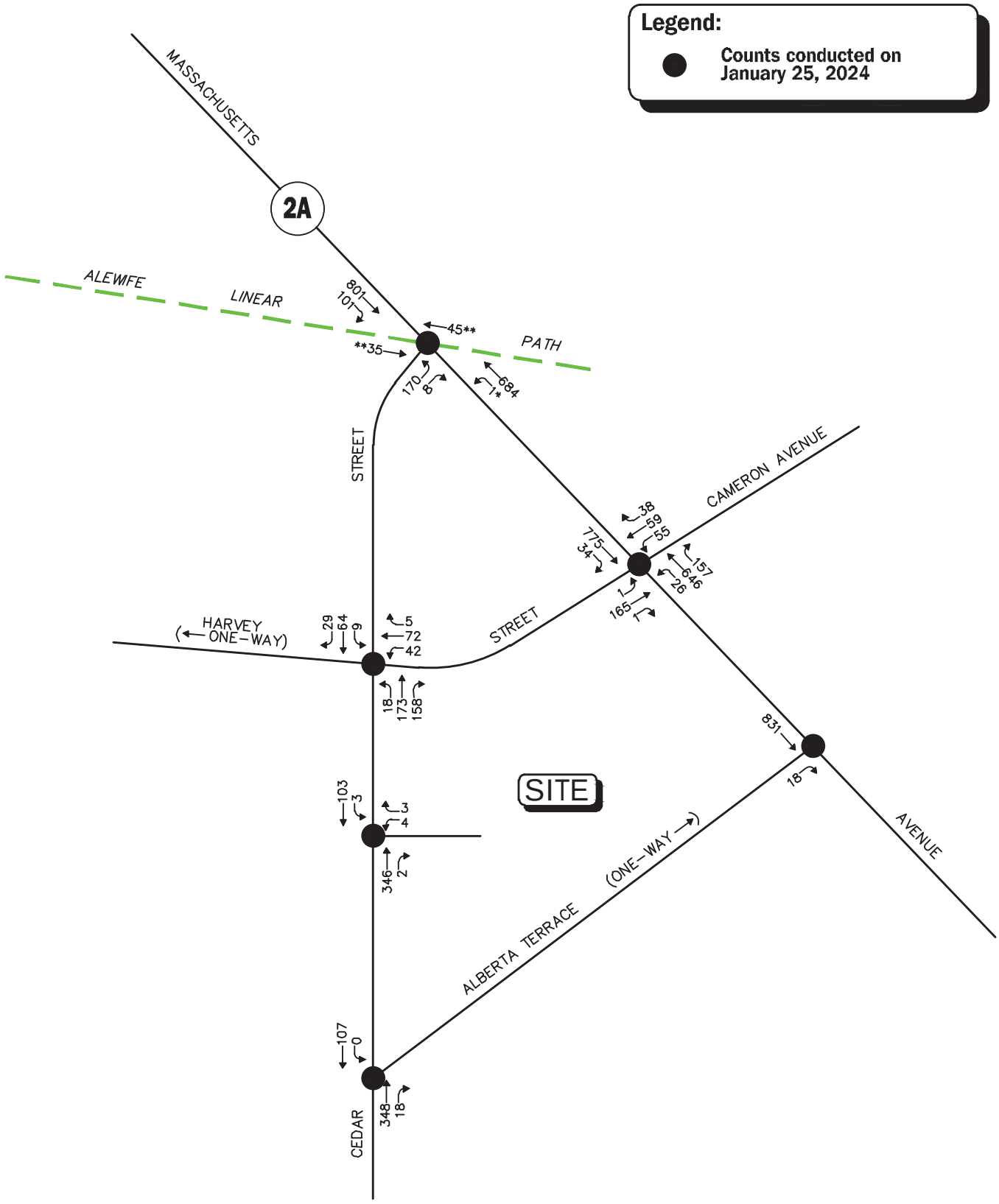


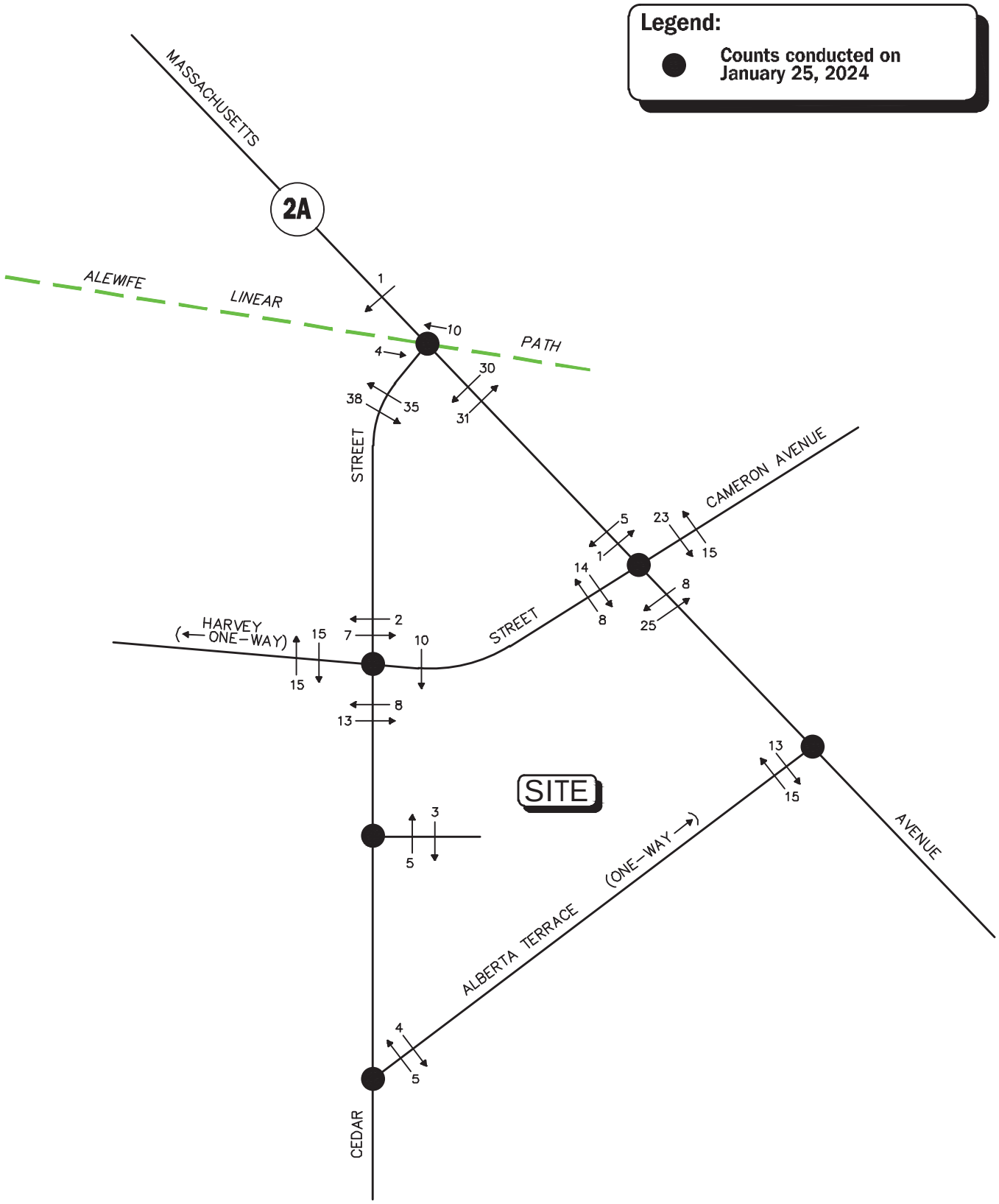
*Illegal movement.
**Bicycle/pedestrian volumes.

Not To Scale

Figure 2.c.2

2024 Existing Weekday Evening Peak-Hour Traffic Volumes

Vanasse & Associates inc

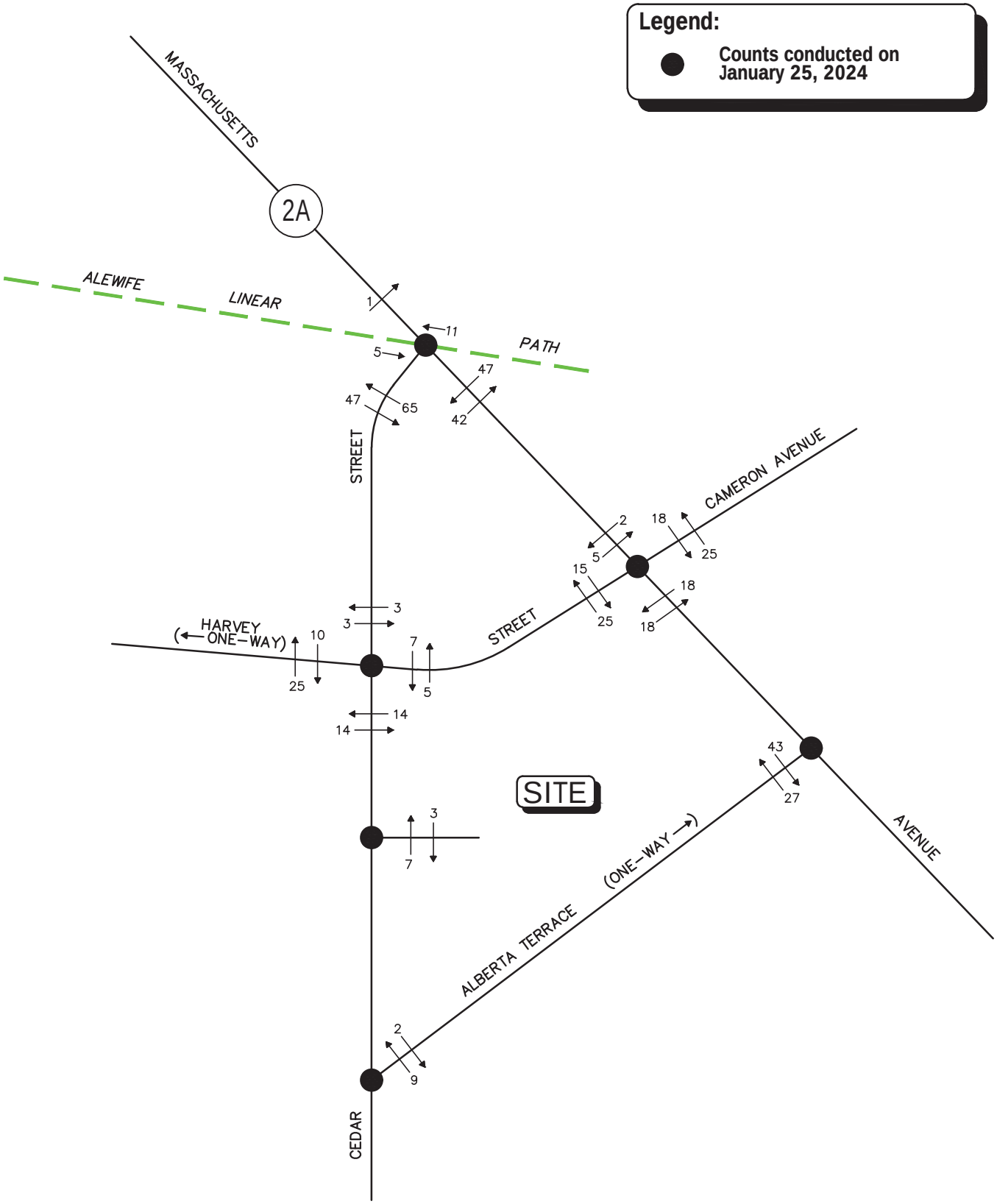


Not To Scale

Figure 2.c.3

2024 Existing
Weekday Morning
Peak-Hour Pedestrian Volumes

Vanasse & Associates inc

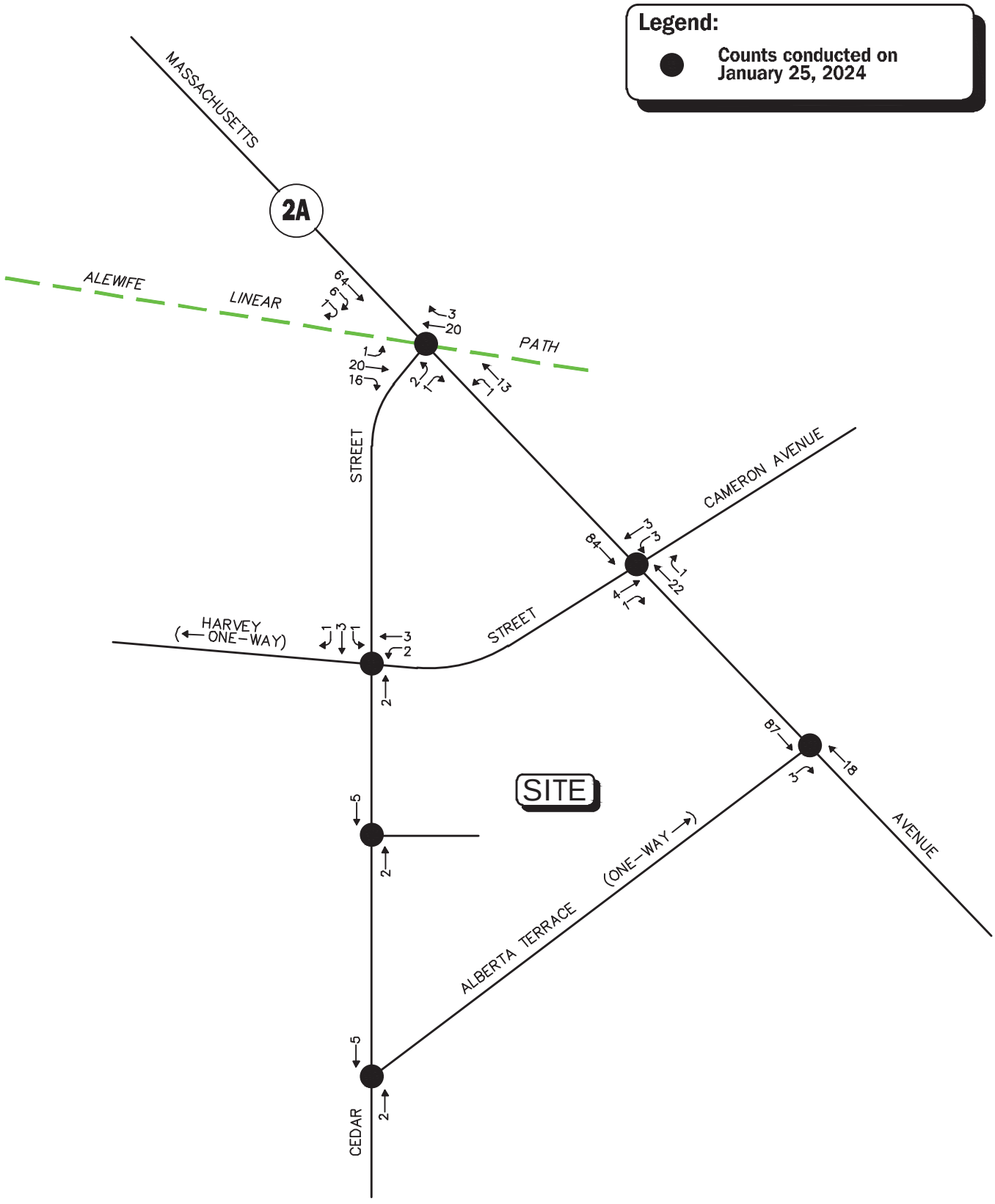


Not To Scale

Figure 2.c.4

2024 Existing
Weekday Evening
Peak-Hour Pedestrian Volumes

Vanasse & Associates inc

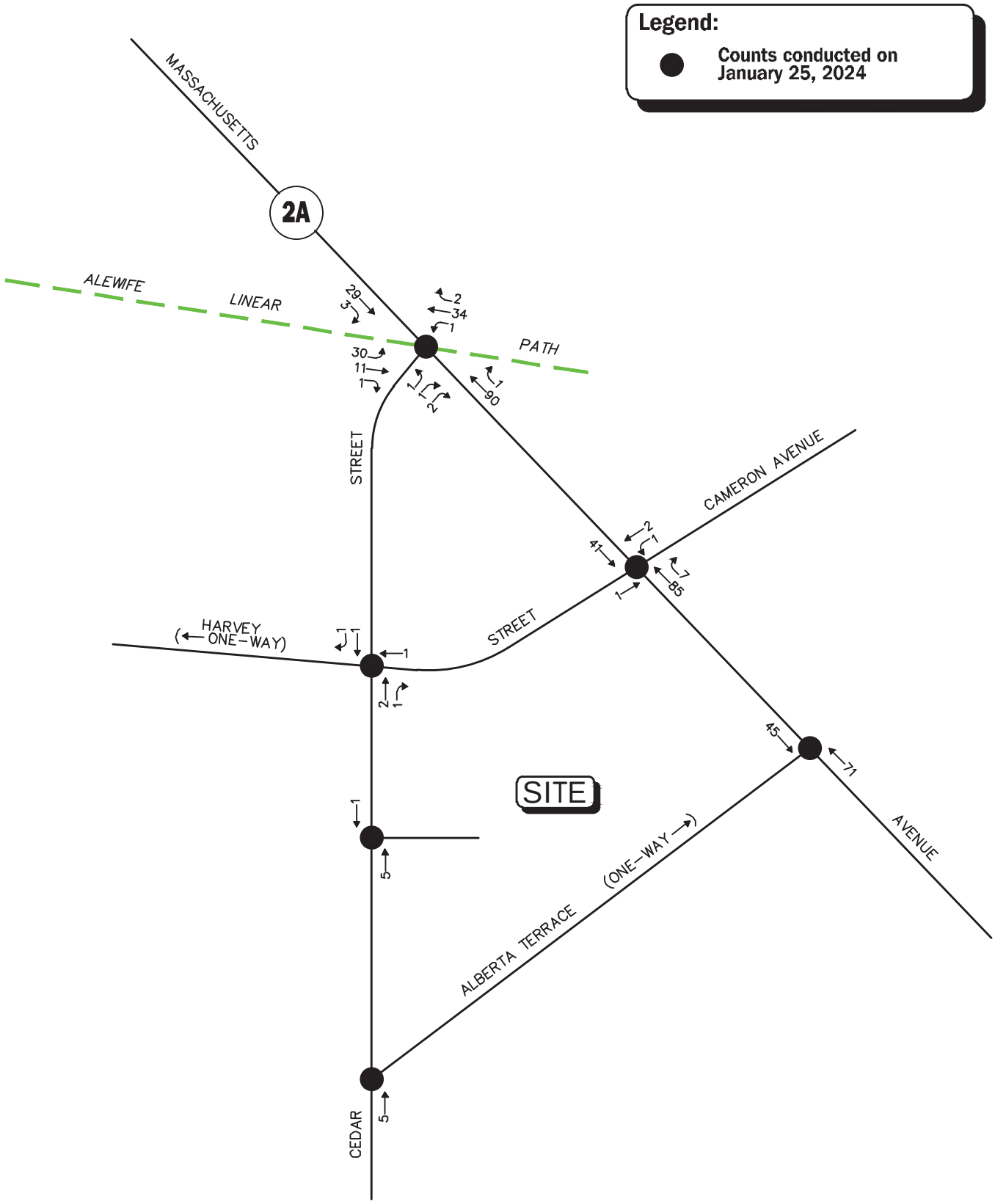


Not To Scale

Figure 2.c.5

2024 Existing Weekday Morning Peak-Hour Bicycle Volumes

Vanasse & Associates inc

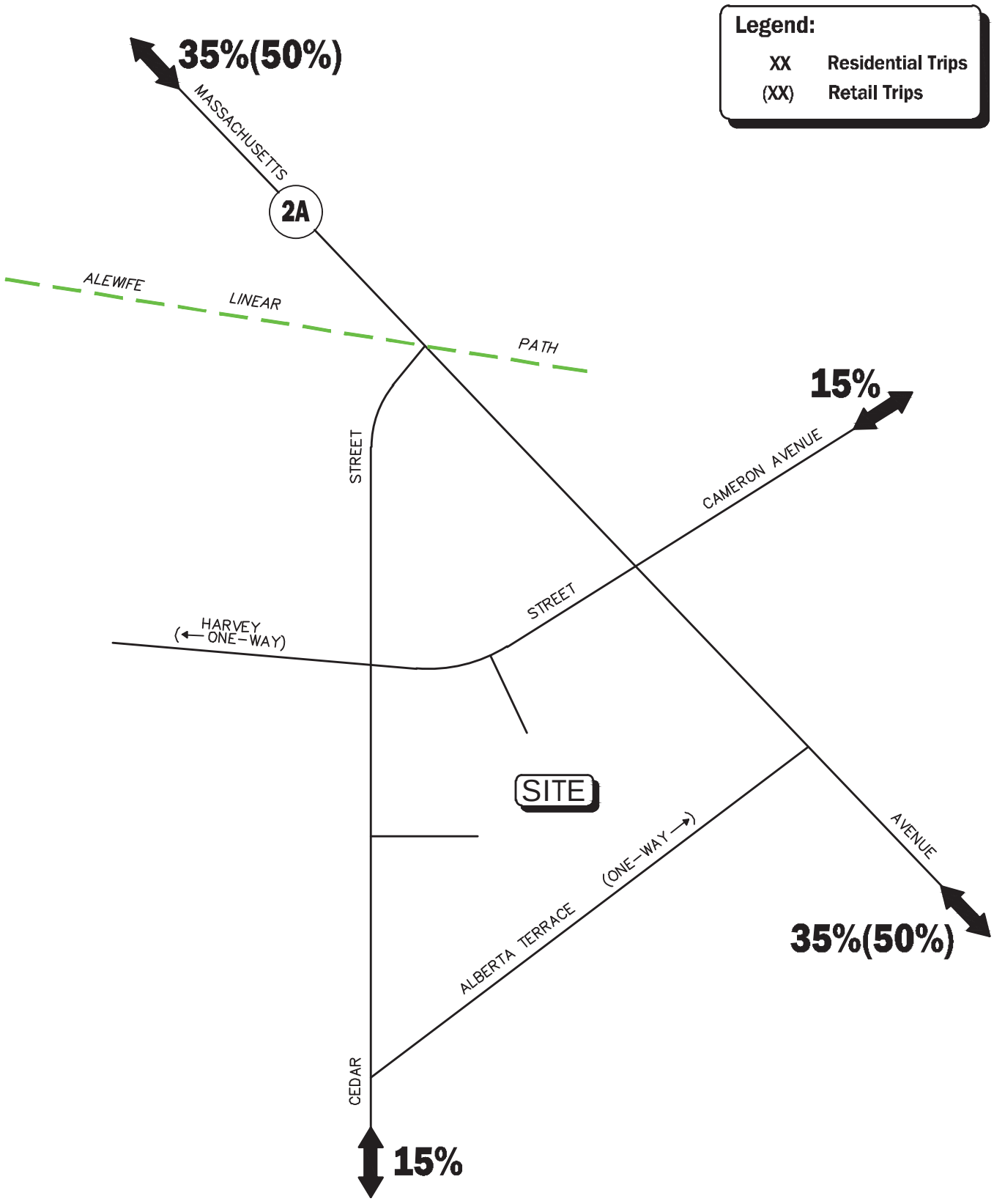


Not To Scale

Figure 2.c.6

2024 Existing
Weekday Evening
Peak-Hour Bicycle Volumes

Vanasse & Associates inc

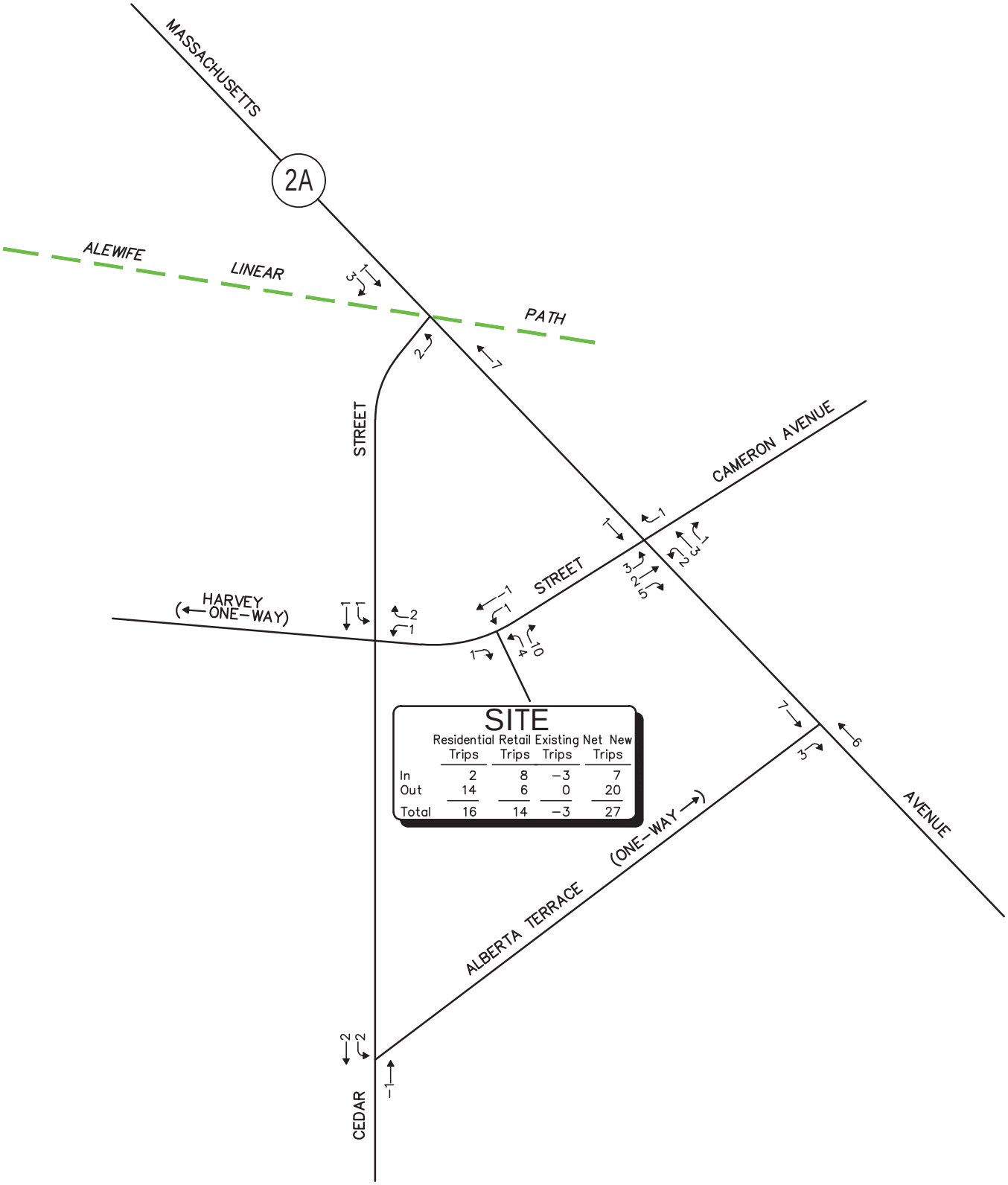


Not To Scale

Figure 3.b.1

Trip Distribution Map

Vanasse & Associates inc



Note: Retail Patrons will not park in the on-site garage

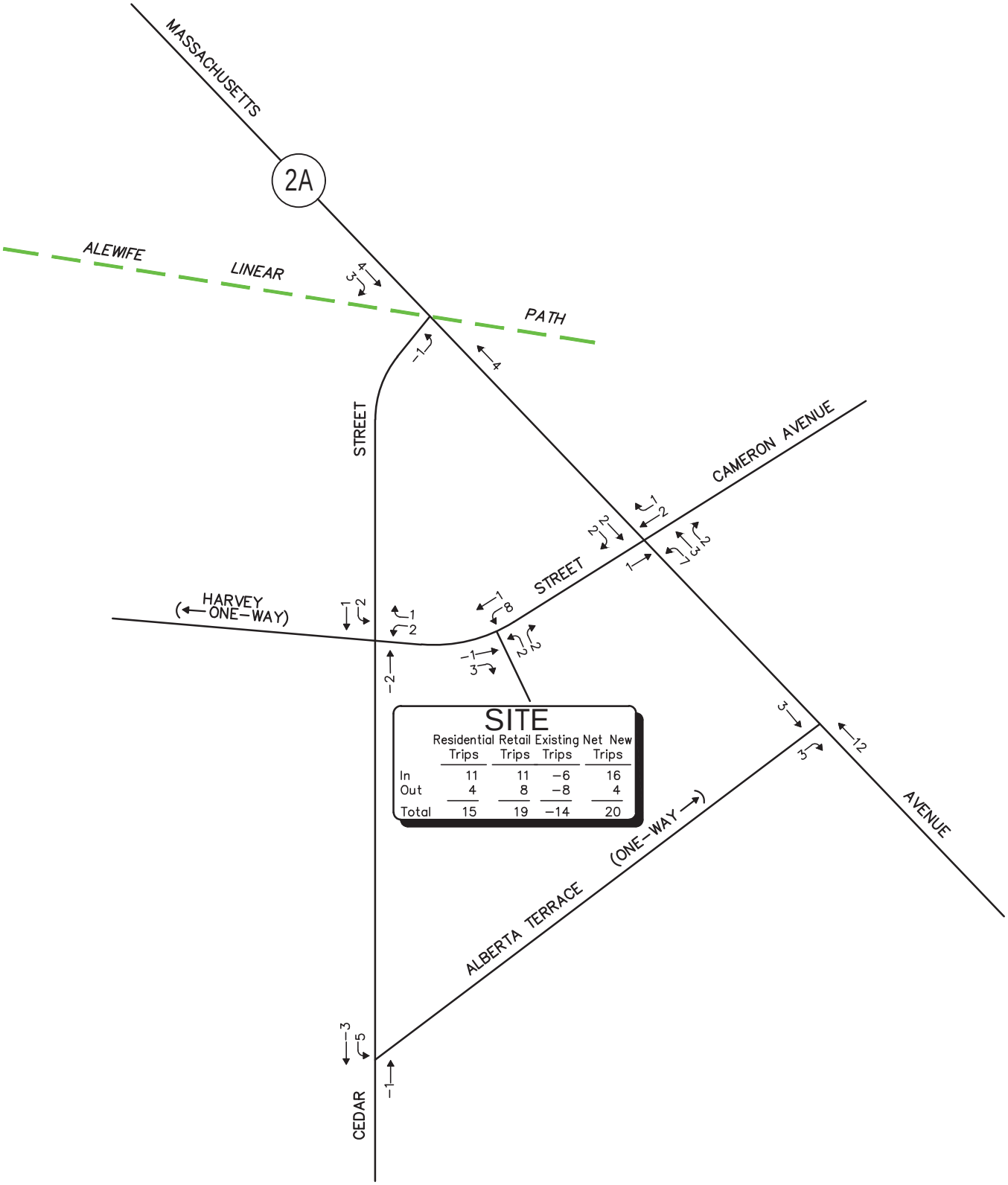
Not To Scale

Figure 3.c.1

Net New Site-Generated Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc

R:\9812\9812NT1.dwg, 3/13/2024 9:28:03 AM



Note: Retail Patrons will not park in the on-site Garage

Not To Scale

Figure 3.c.2

Net New Site-Generated Weekday Evening Peak-Hour Traffic Volumes

Vanasse & Associates inc

R:\9812\9812NT1.dwg, 3/13/2024 9:30:38 AM

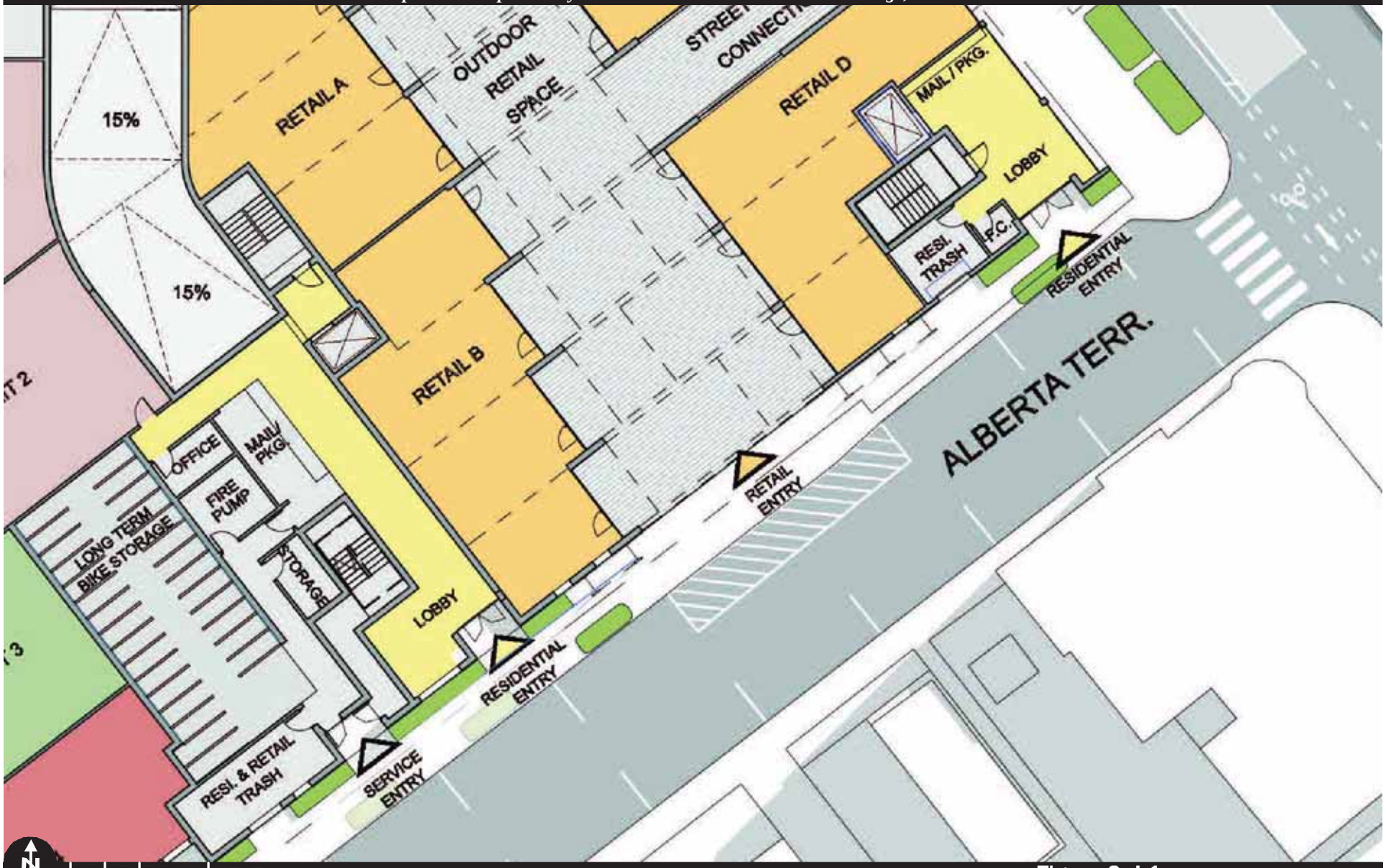


Figure 3.d.1

Proposed Loading Area

Vanasse & Associates inc

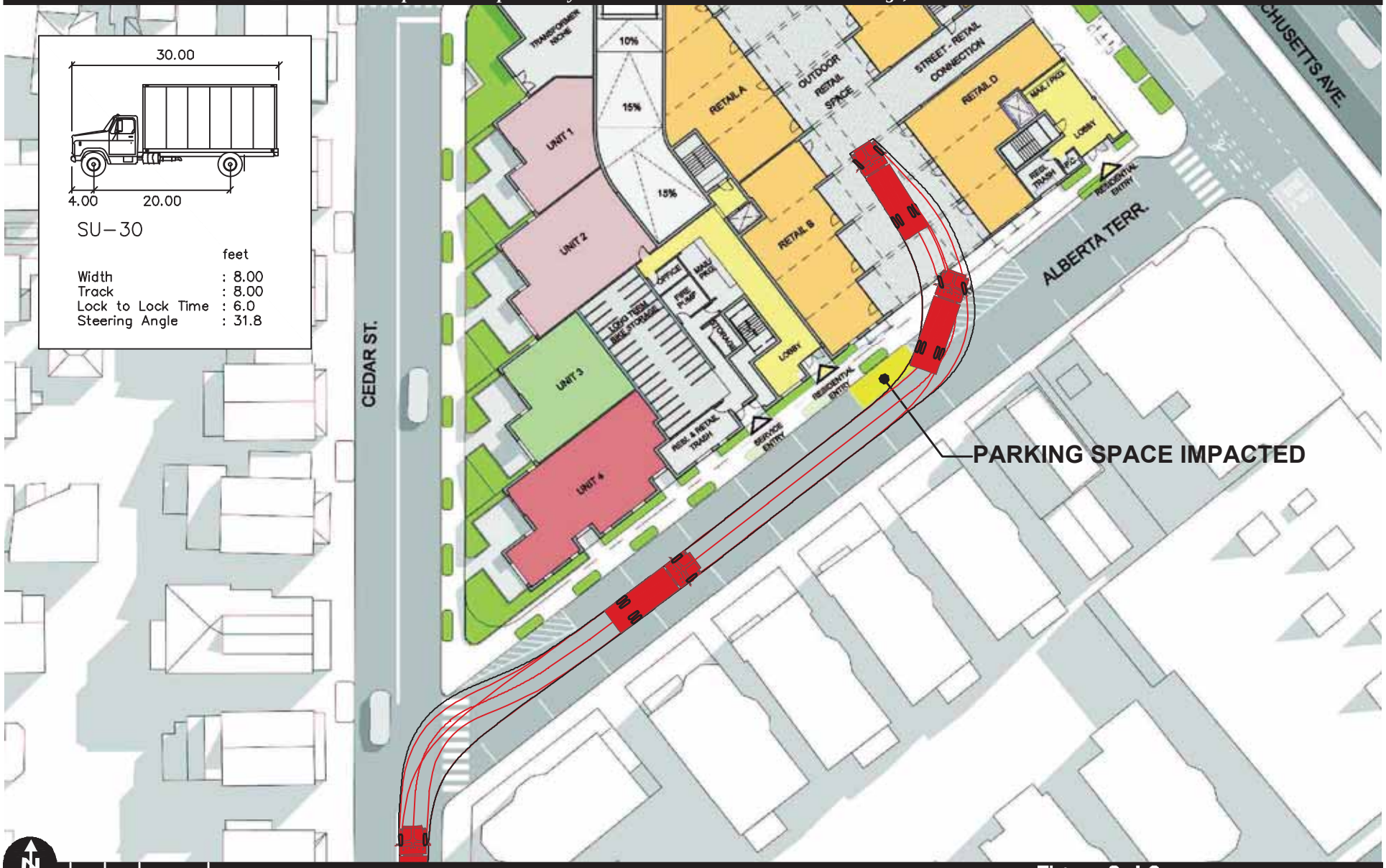


Figure 3.d.2

SU-30 Turning Analysis

Vanasse & Associates inc

R:\9812\9812SU30.dwg, Fri Apr 19 13:52:02 2024

Not to Scale

Figure 3.d.3

Loading Area View from Alberta Terrace

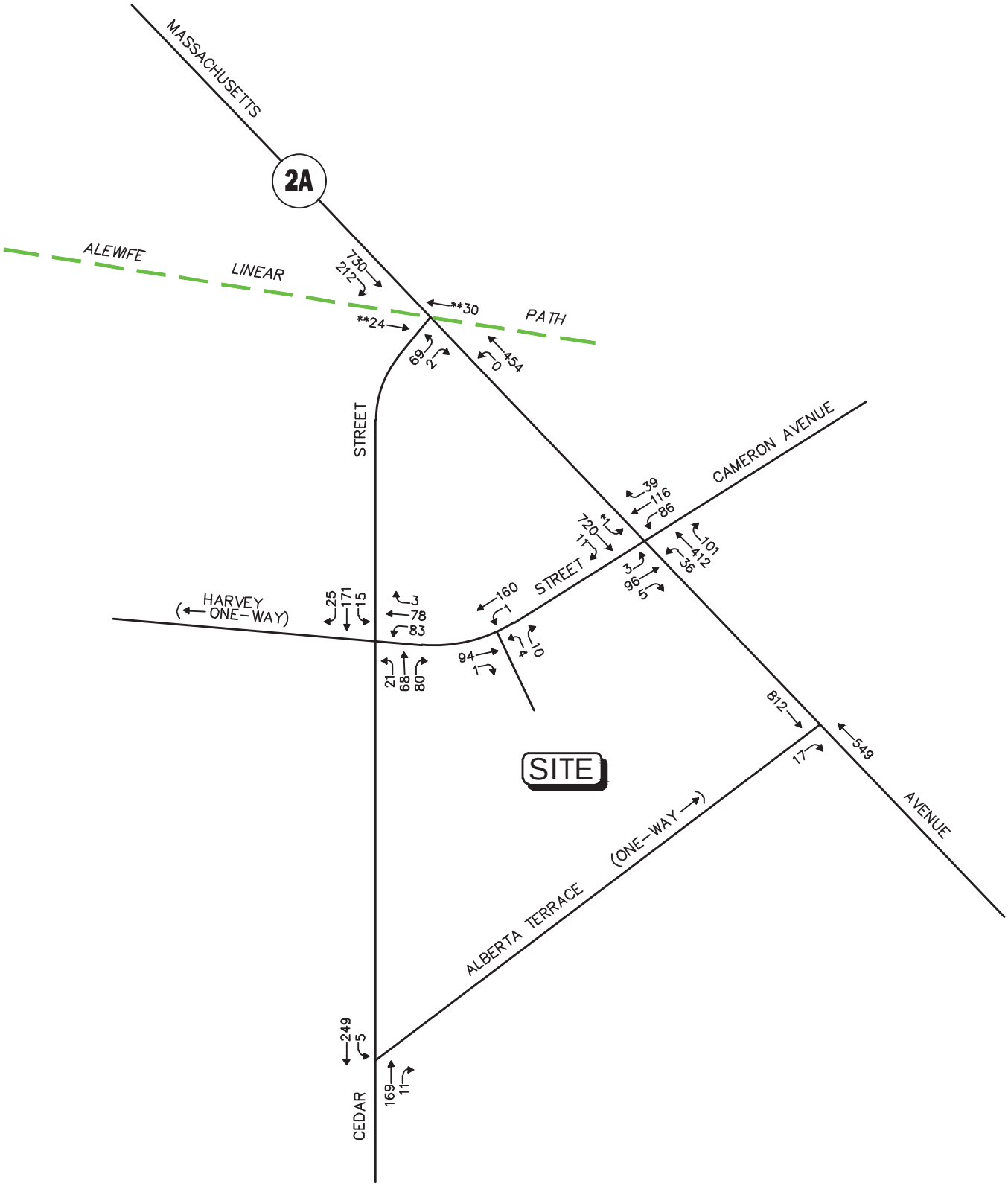
Vanasse & Associates inc

Not to Scale

Figure 3.d.4

Outdoor Retail Space

Vanasse & Associates inc



*Illegal movement.
**Bicycle / pedestrian volumes.

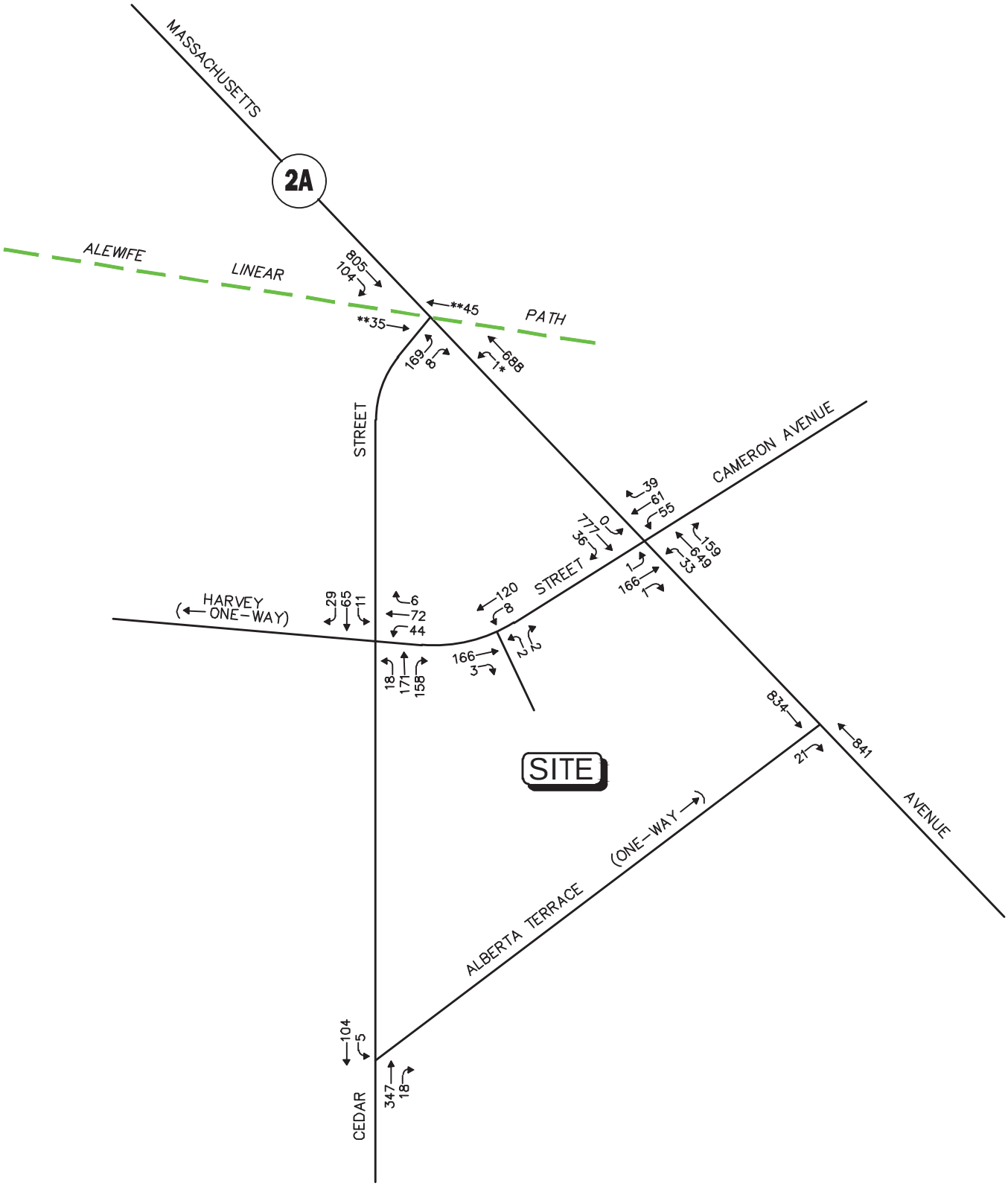
Not To Scale

Figure 5.b.1

2024 Build
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc

R:\9812\9812NT1.dwg, 2/29/2024 10:10:41 AM



*Illegal movement.
**Bicycle / pedestrian volumes.

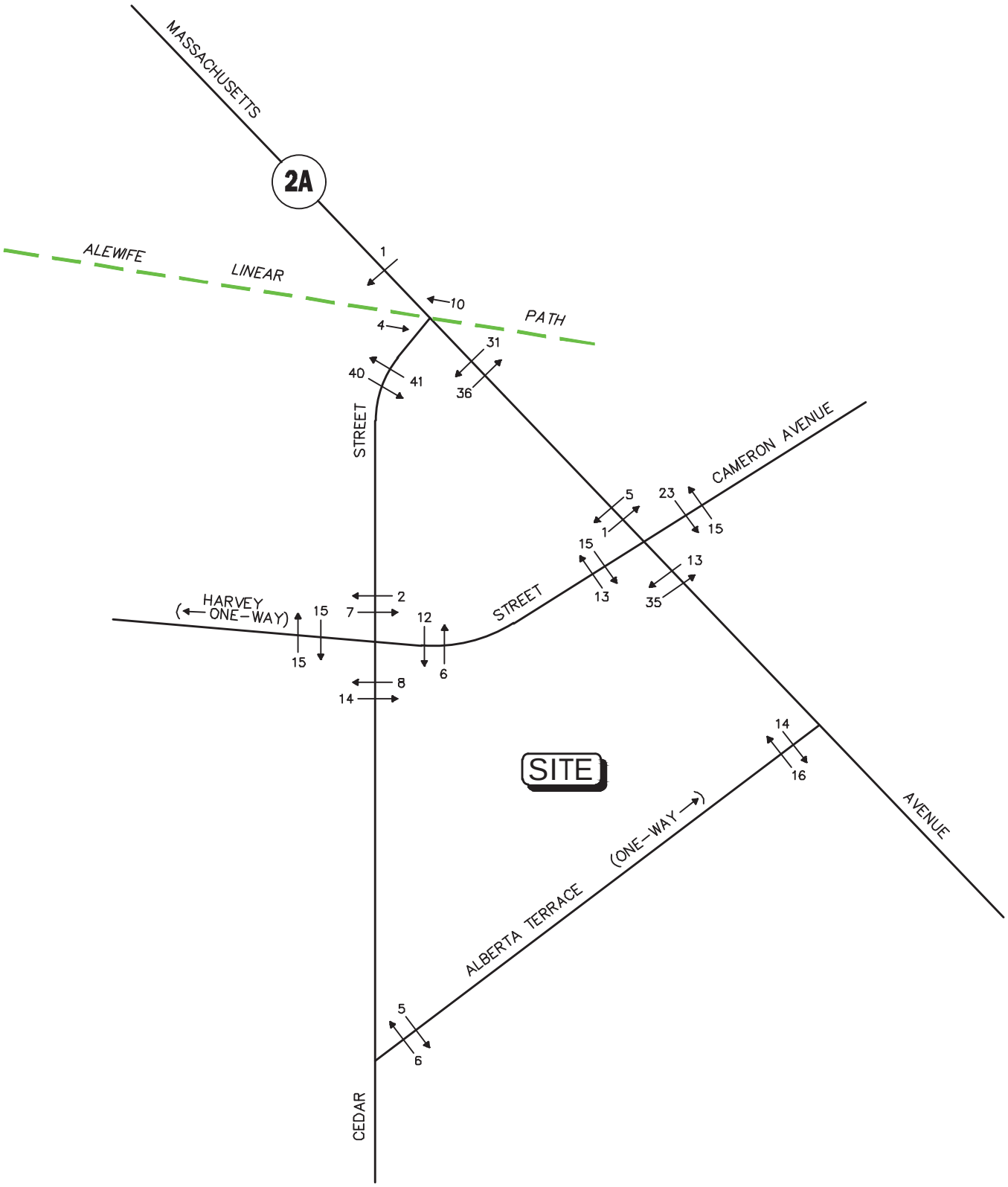
Not To Scale

Figure 5.b.2

2024 Build
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

R:\9812\9812NT1.dwg, 2/29/2024 10:18:53 AM

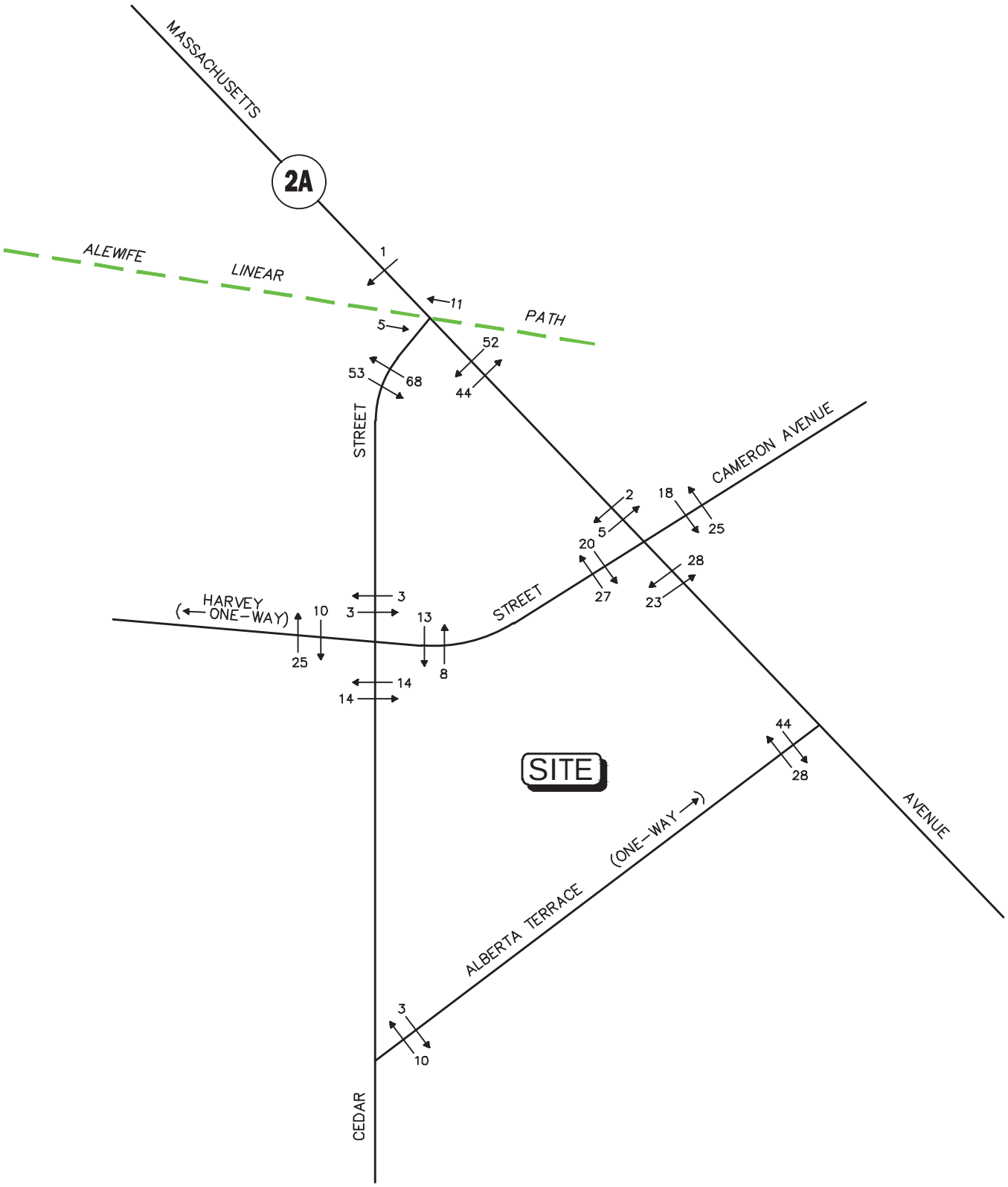


Not To Scale

Figure 5.b.3

2024 Build
Weekday Morning
Peak-Hour Pedestrian Volumes

Vanasse & Associates inc

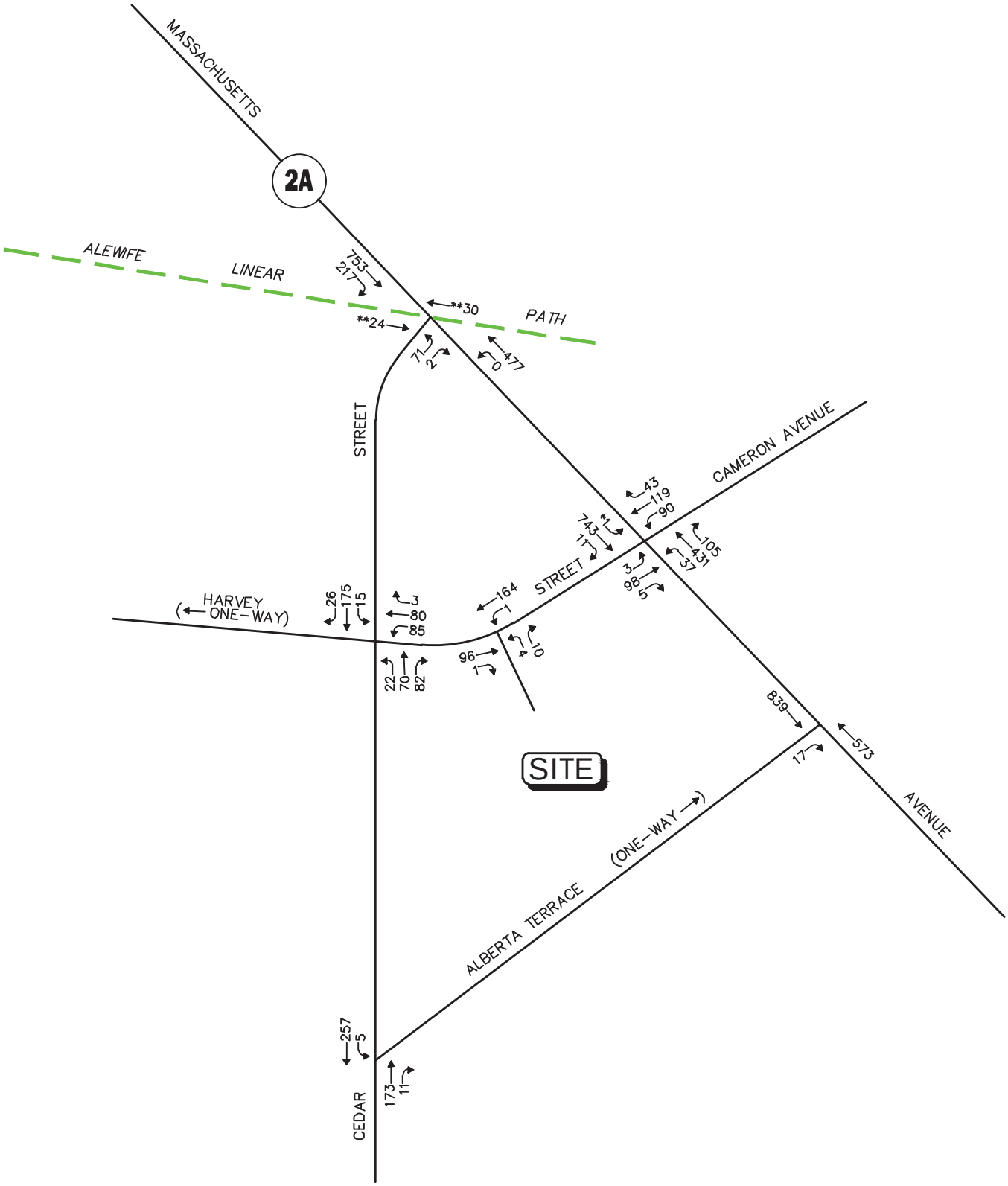


Not To Scale

Figure 5.b.4

2024 Build
Weekday Evening
Peak-Hour Pedestrian Volumes

Vanasse & Associates inc



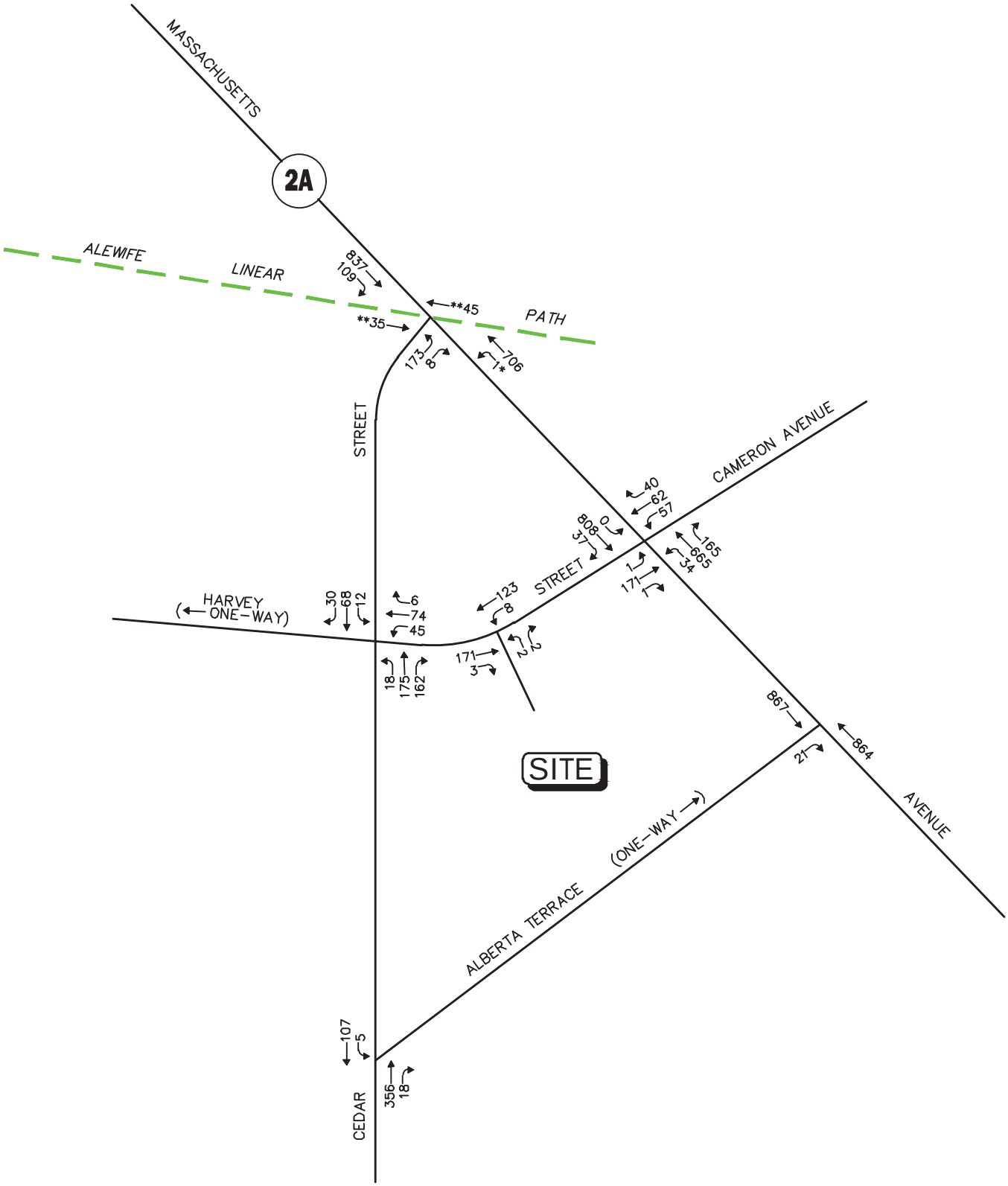
*Illegal movement.
**Bicycle / pedestrian volumes.

Not To Scale

Figure 5.d.1

2029 Future Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc



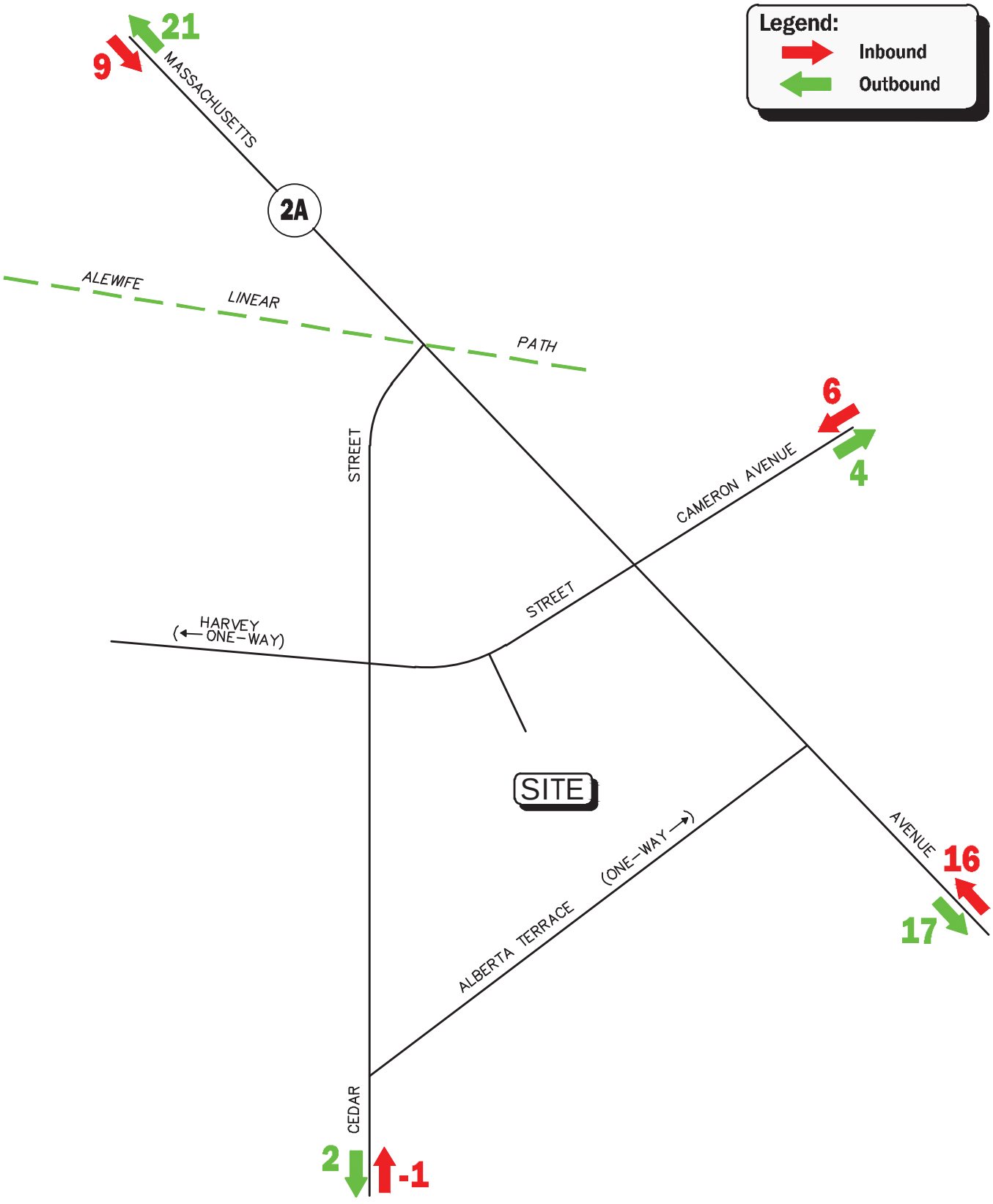
*Illegal movement.
**Bicycle / pedestrian volumes.

Not To Scale

Figure 5.d.2

**2029 Future
Weekday Evening
Peak-Hour Traffic Volumes**

Vanasse & Associates inc

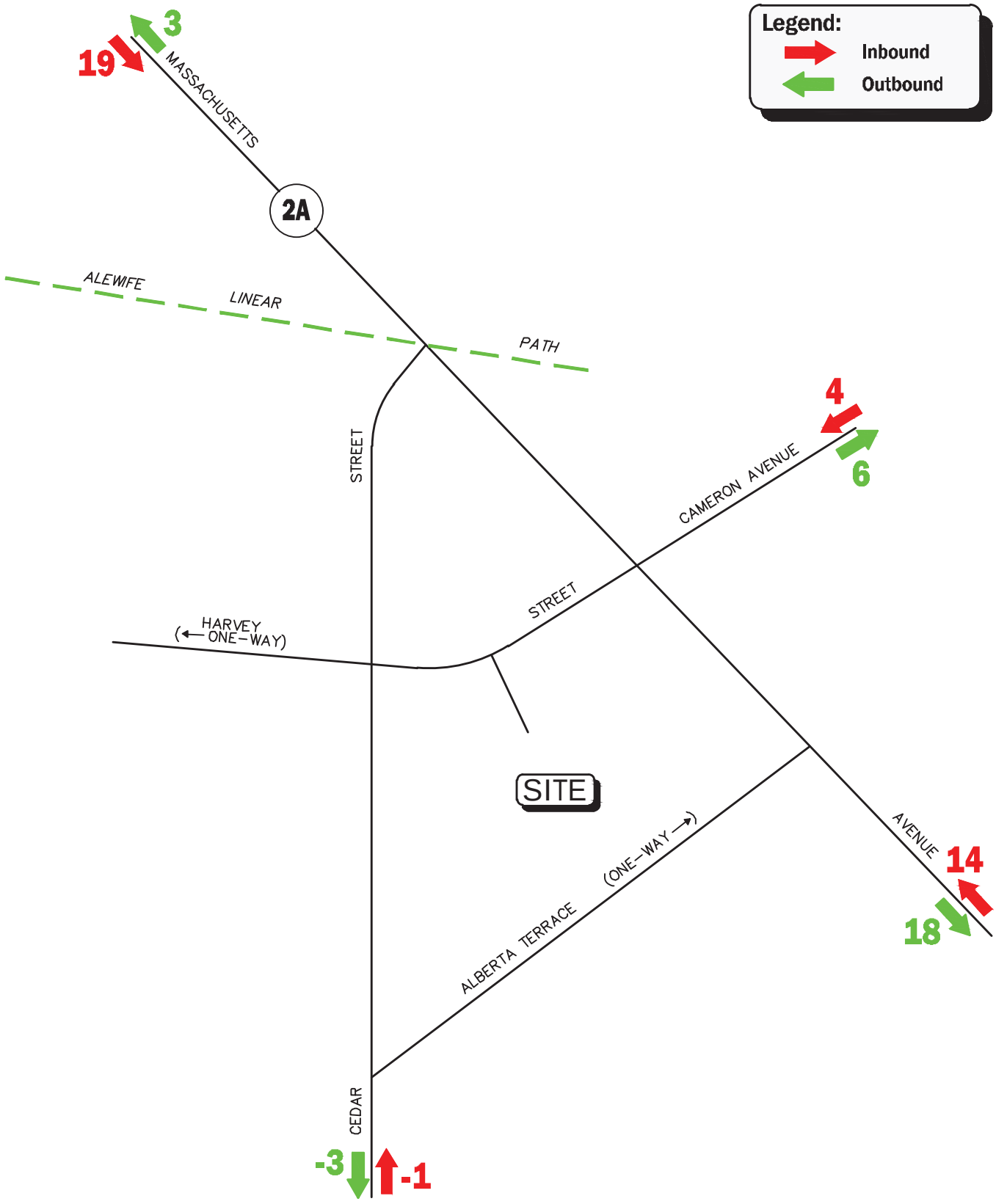


Not To Scale

Figure 5.d.3

Cumulative Area Development Impacts
Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc

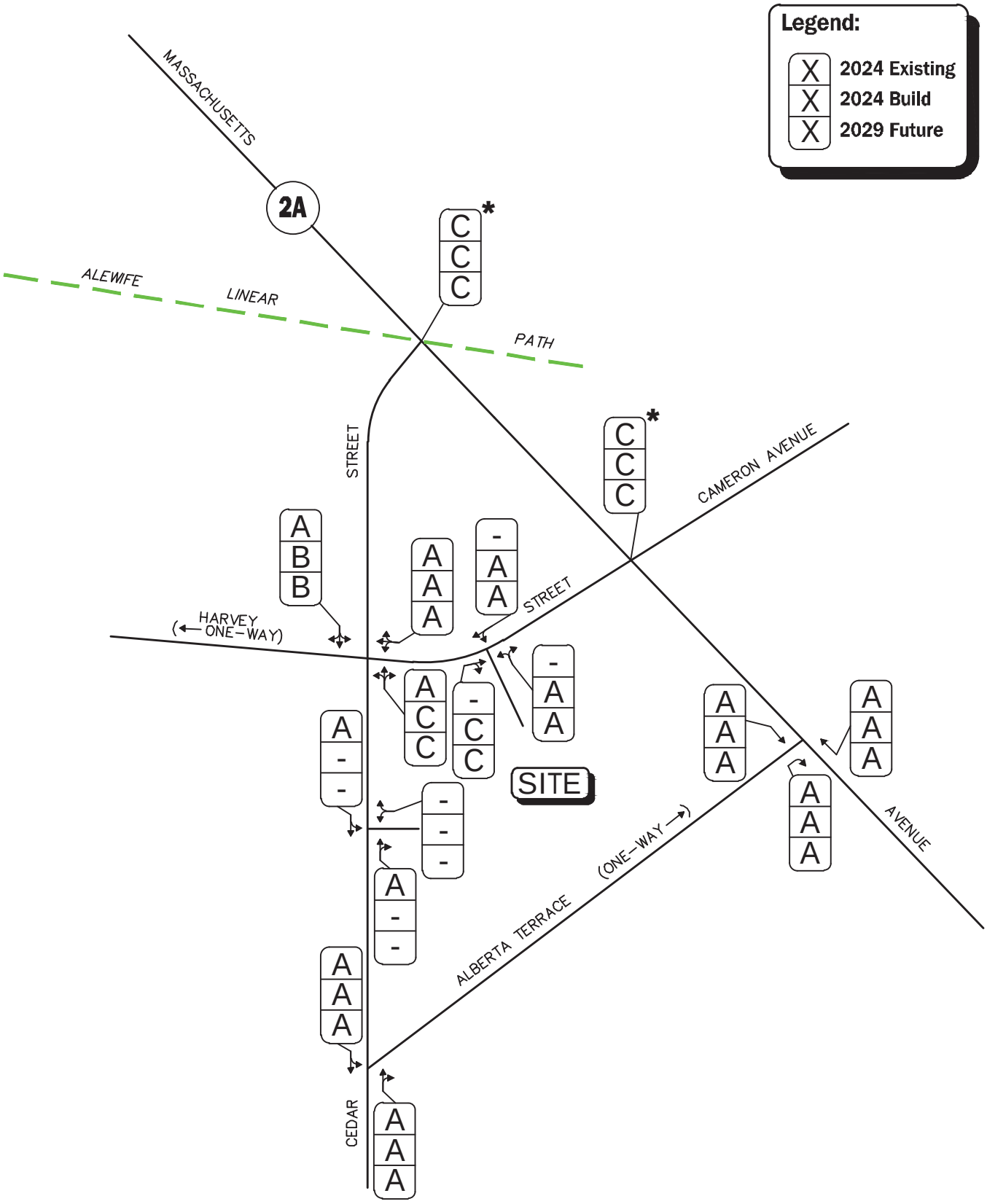


Not To Scale

Figure 5.d.4

Cumulative Area Development Impacts
Weekday Evening Peak-Hour Traffic Volumes

Vanasse & Associates inc



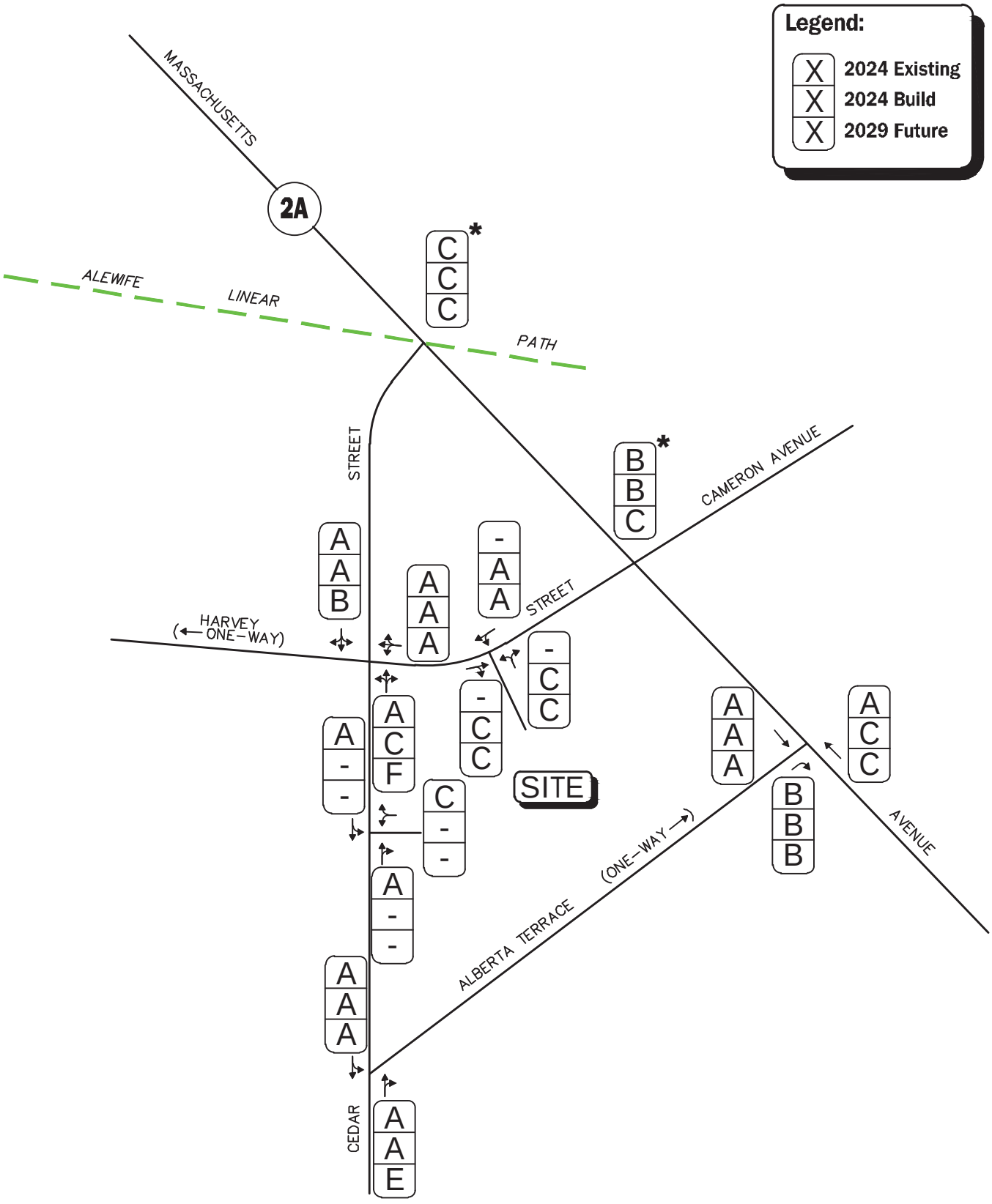
*Overall intersection level of service.

Not To Scale

Figure 6.a.1

Vehicle Level-of-Service Map
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc



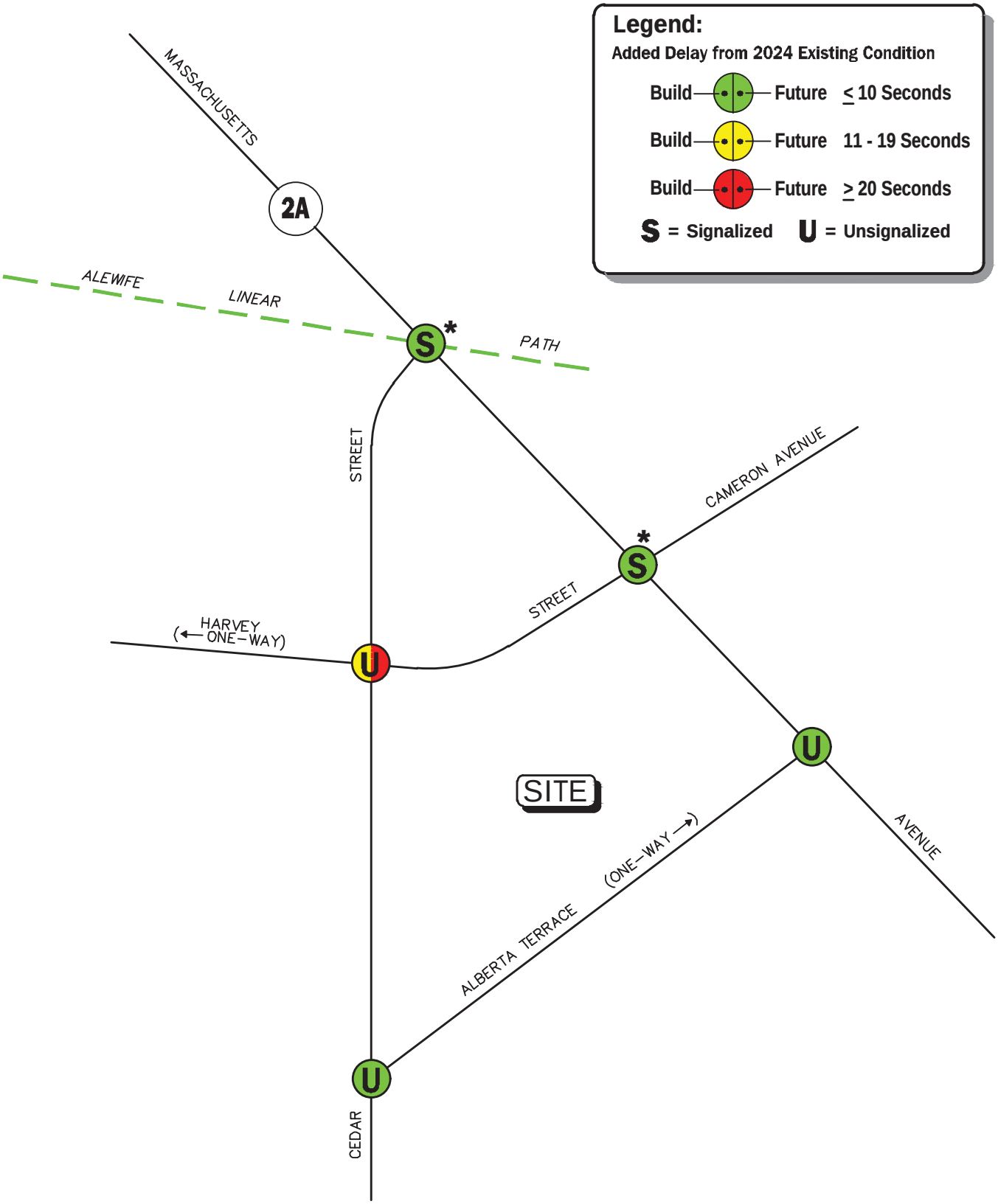
*Overall intersection level of service.

Not To Scale

Figure 6.a.2

Vehicle Level-of-Service Map
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc



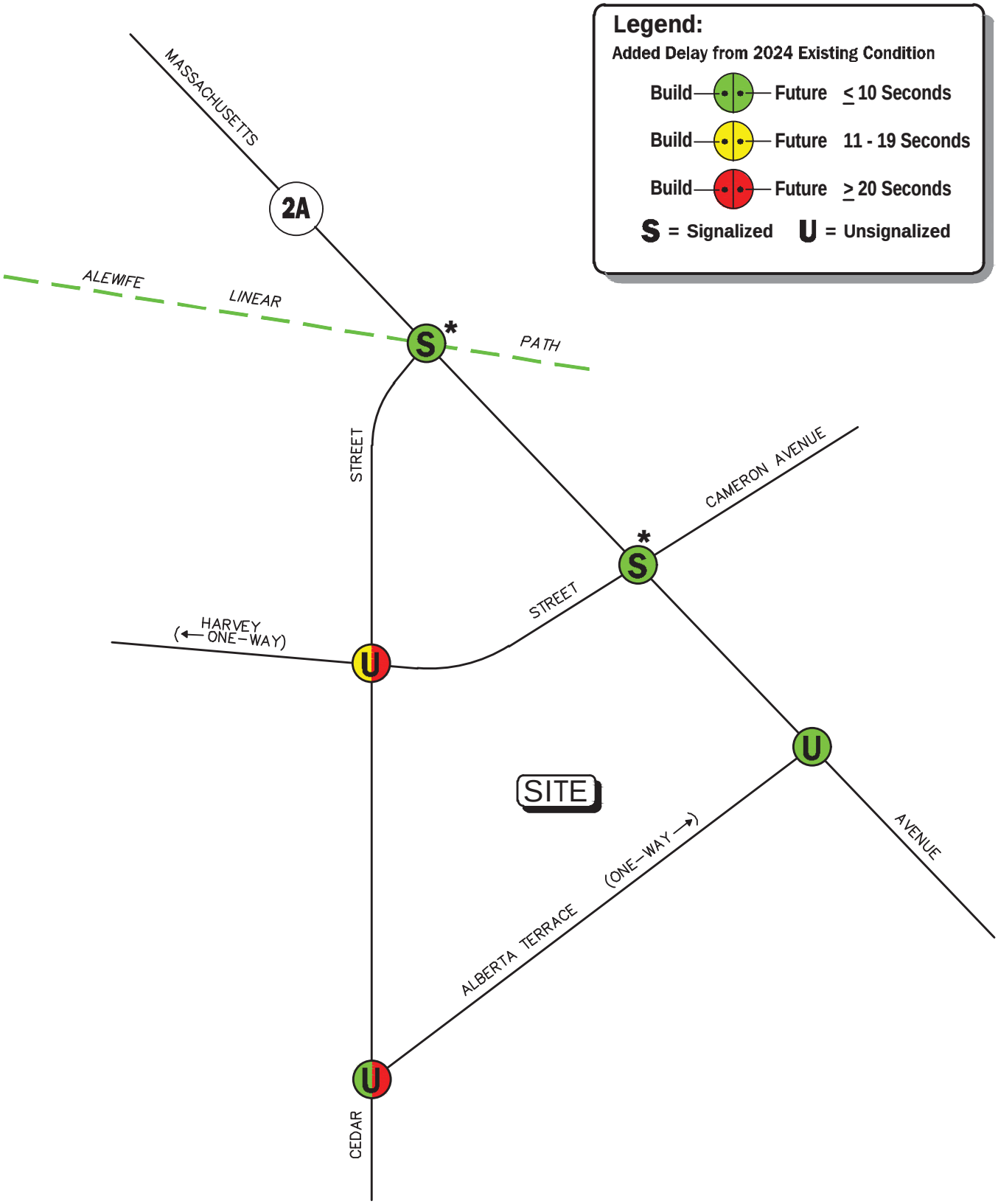
*Shows overall intersection delay increases. All other intersections show critical movement delay increases.

Not To Scale

Figure 6.a.3

Vehicle Delay Change Map
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc



*Shows overall intersection delay increases. All other intersections show critical movement delay increases.

Not To Scale

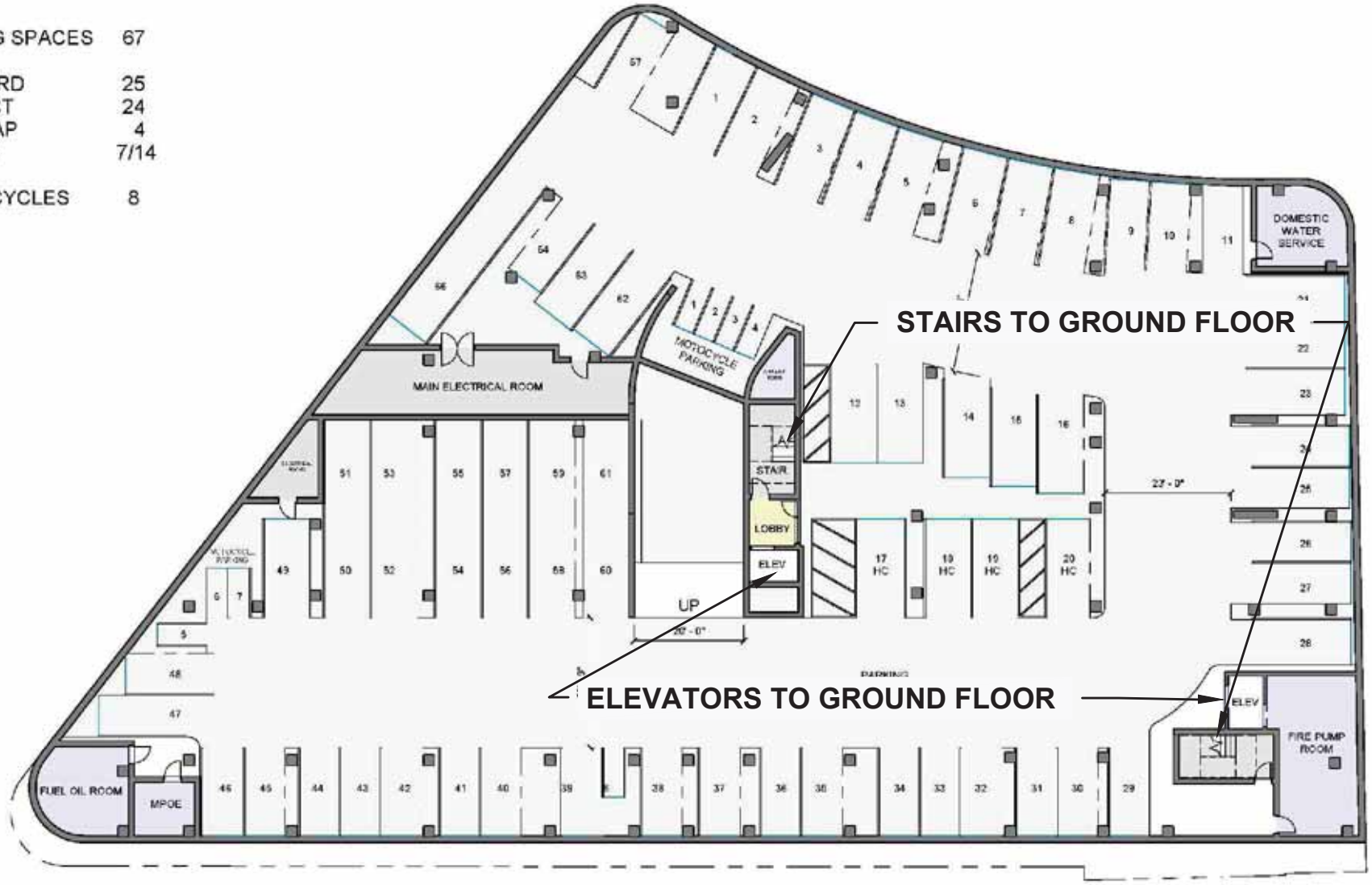
Figure 6.a.4

Vehicle Delay Change Map
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

R:\9812\9812NT1.dwg, 2/29/2024 11:20:45 AM

PARKING SPACES	67
STANDARD	25
COMPACT	24
HANDICAP	4
TANDEM	7/14
MOTORCYCLES	8



Lower Level Plan

N

0 15 30 Scale in Feet

Figure 9.a.1

Parking Garage and Pedestrian Access

Vanasse & Associates inc

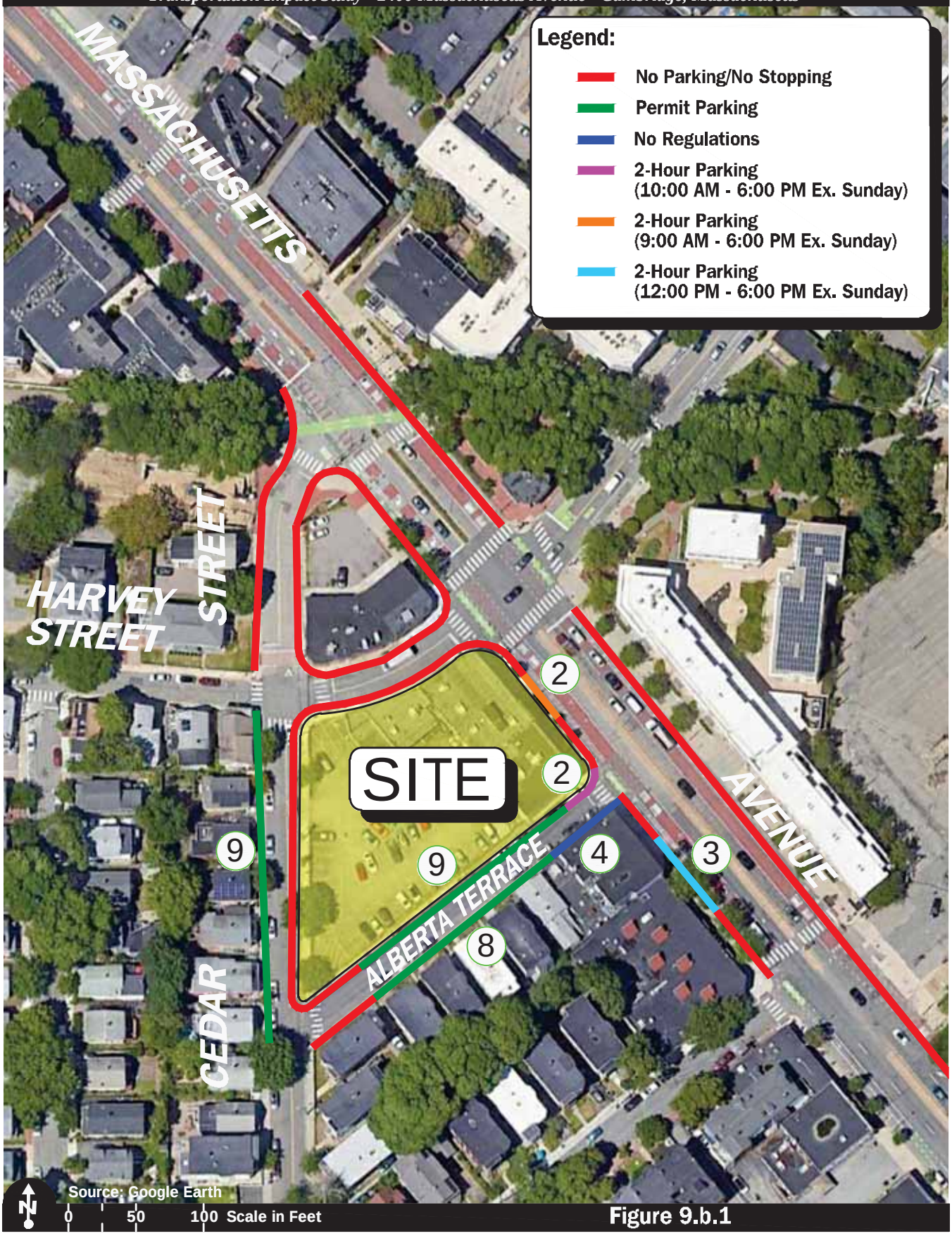
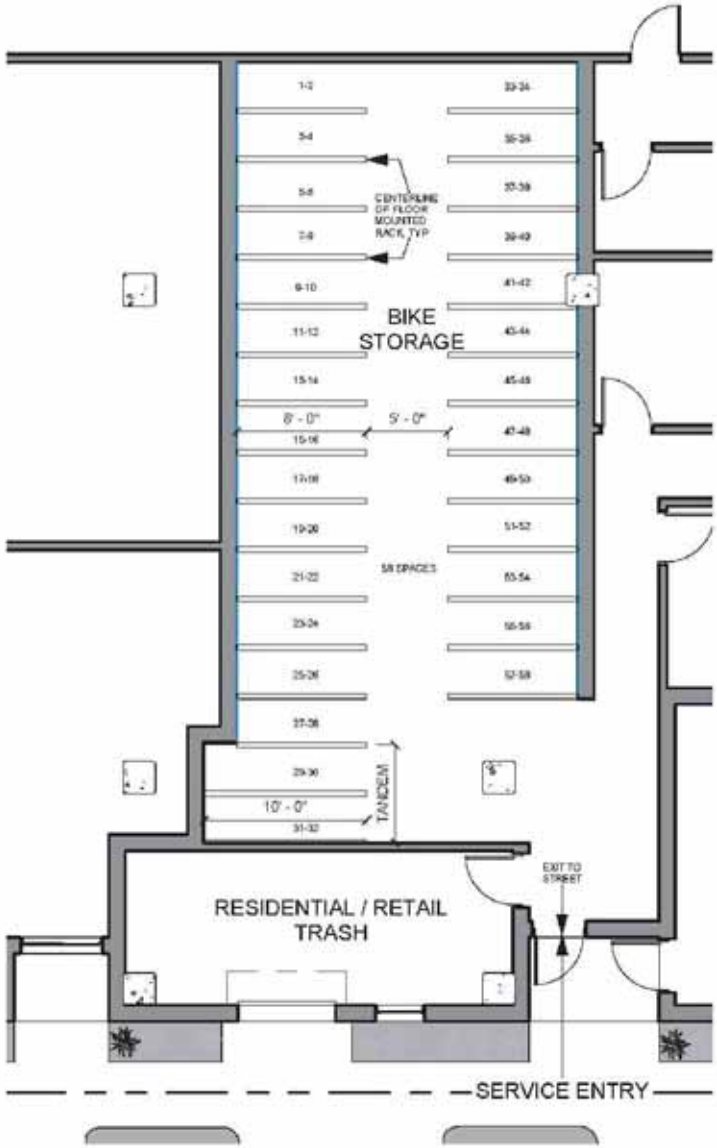


Figure 9.b.1

Parking Regulations

Vanasse & Associates inc



N

0 5 10 Scale in Feet

Figure 9.c.1

Long-Term Bicycle Storage

Vanasse & Associates inc

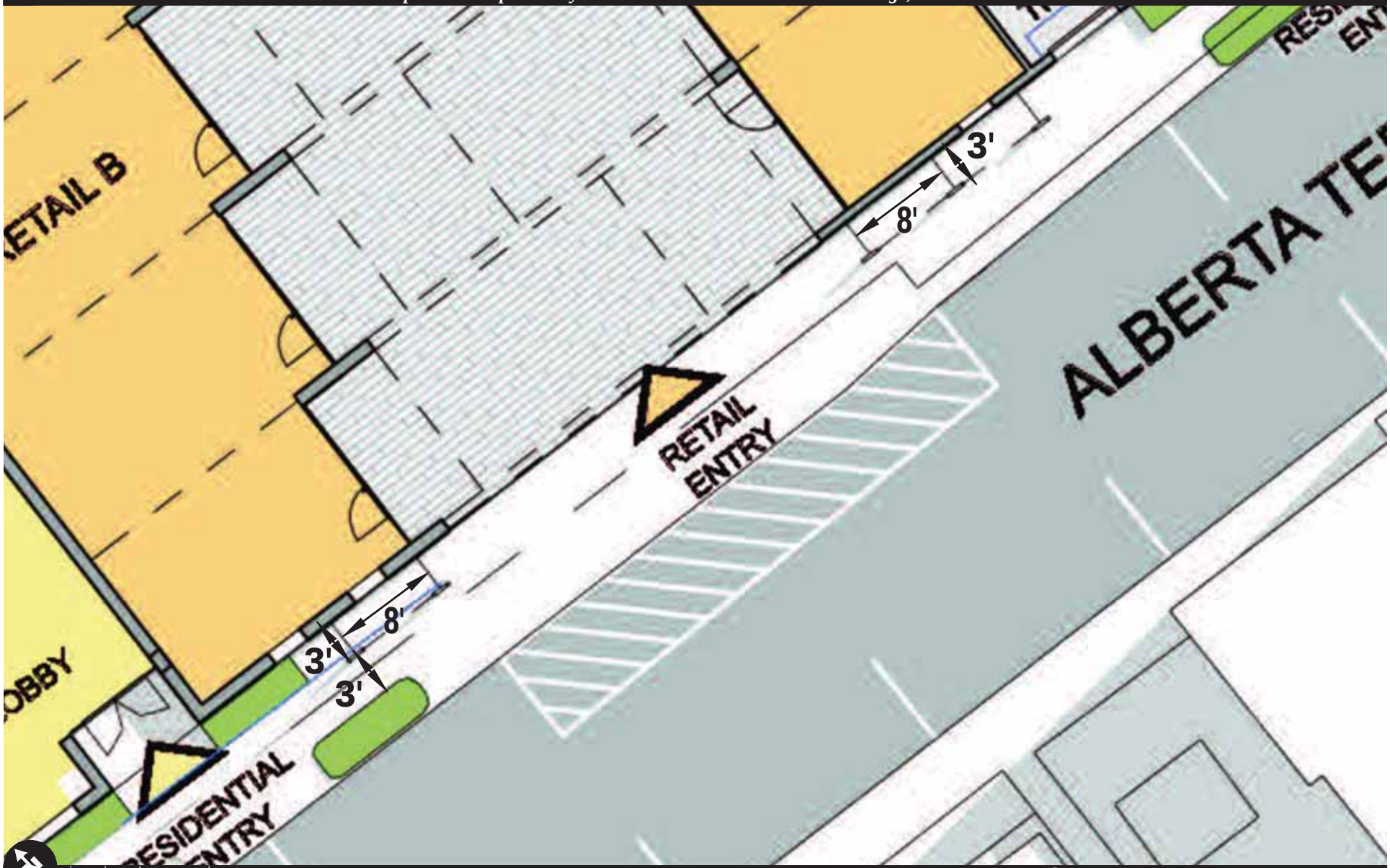


Figure 9.c.2

Short-Term Bicycle Storage On-Site on Alberta Terrace

Vanasse & Associates inc

R:\9812\9812 BICYCLE SHORT TERM.dwg, 4/19/2024 9:24:36 AM

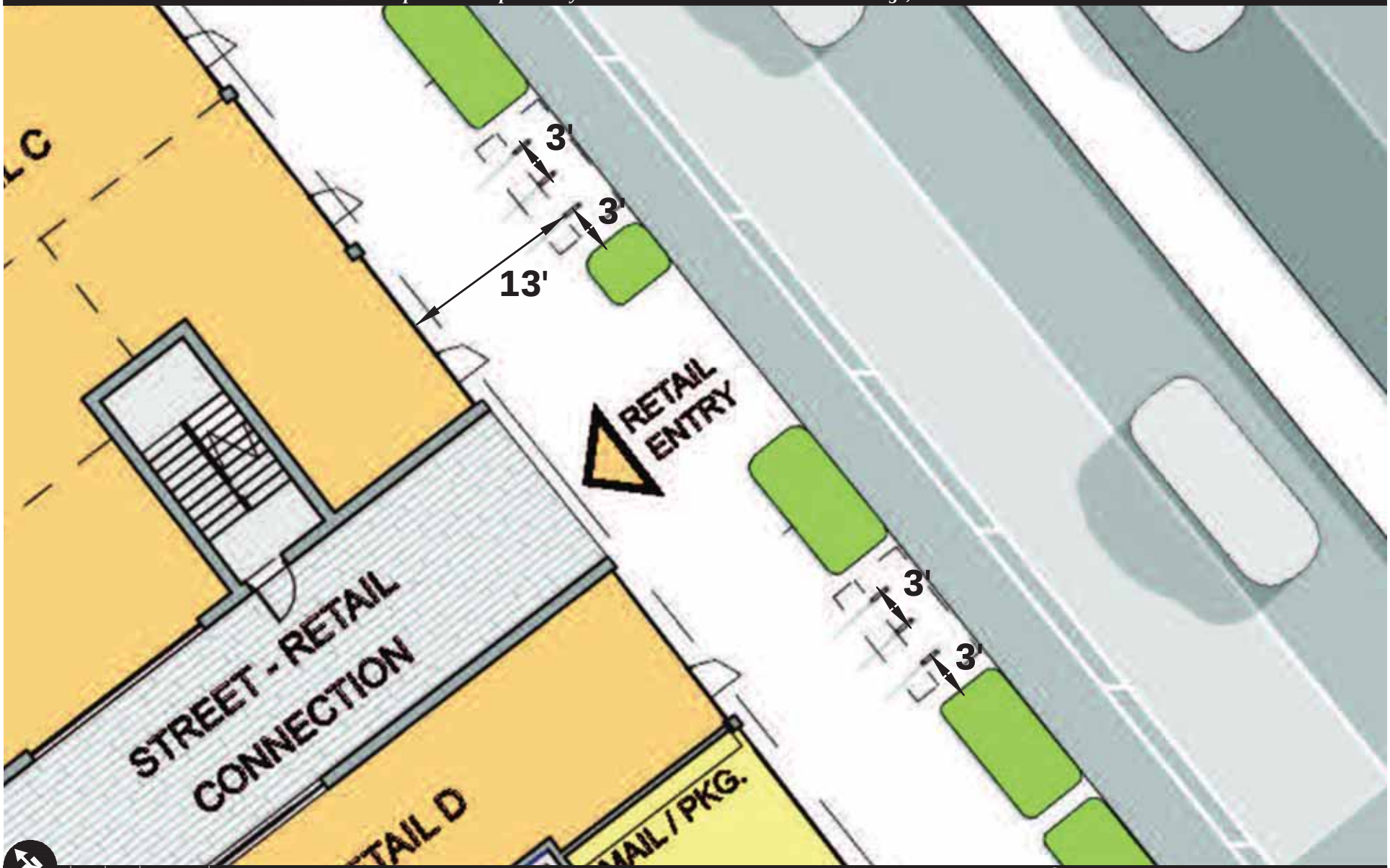


Figure 9.c.3

Short-Term Bicycle Storage Off-Site on Massachusetts Avenue

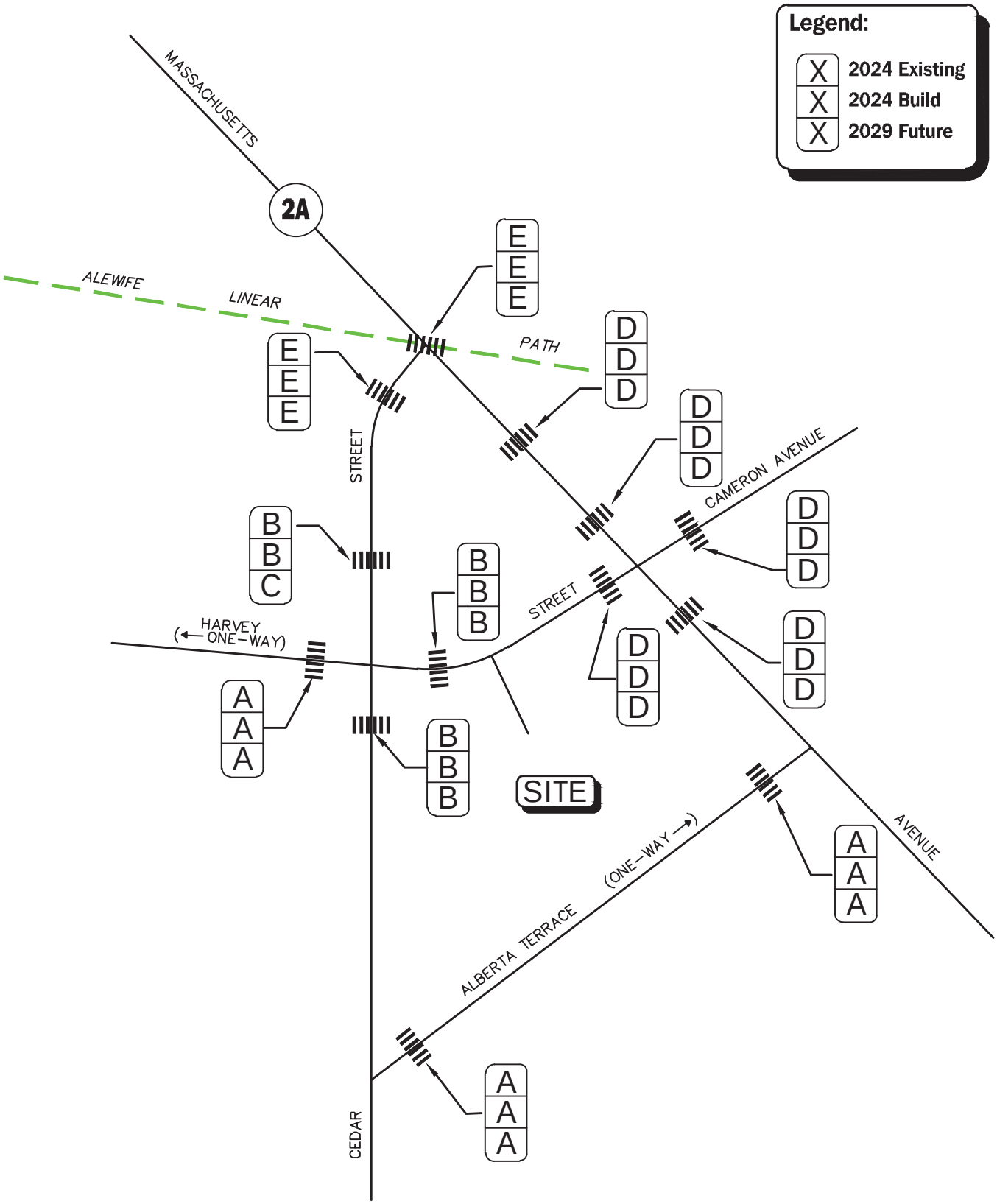
Vanasse & Associates inc

Figure 10.a.1

Future Transit, Pedestrian and Bicycle Facilities

Vanasse & Associates inc

R:\9812\9812FUTURE.dwg, 4/29/2024 11:13:56 AM



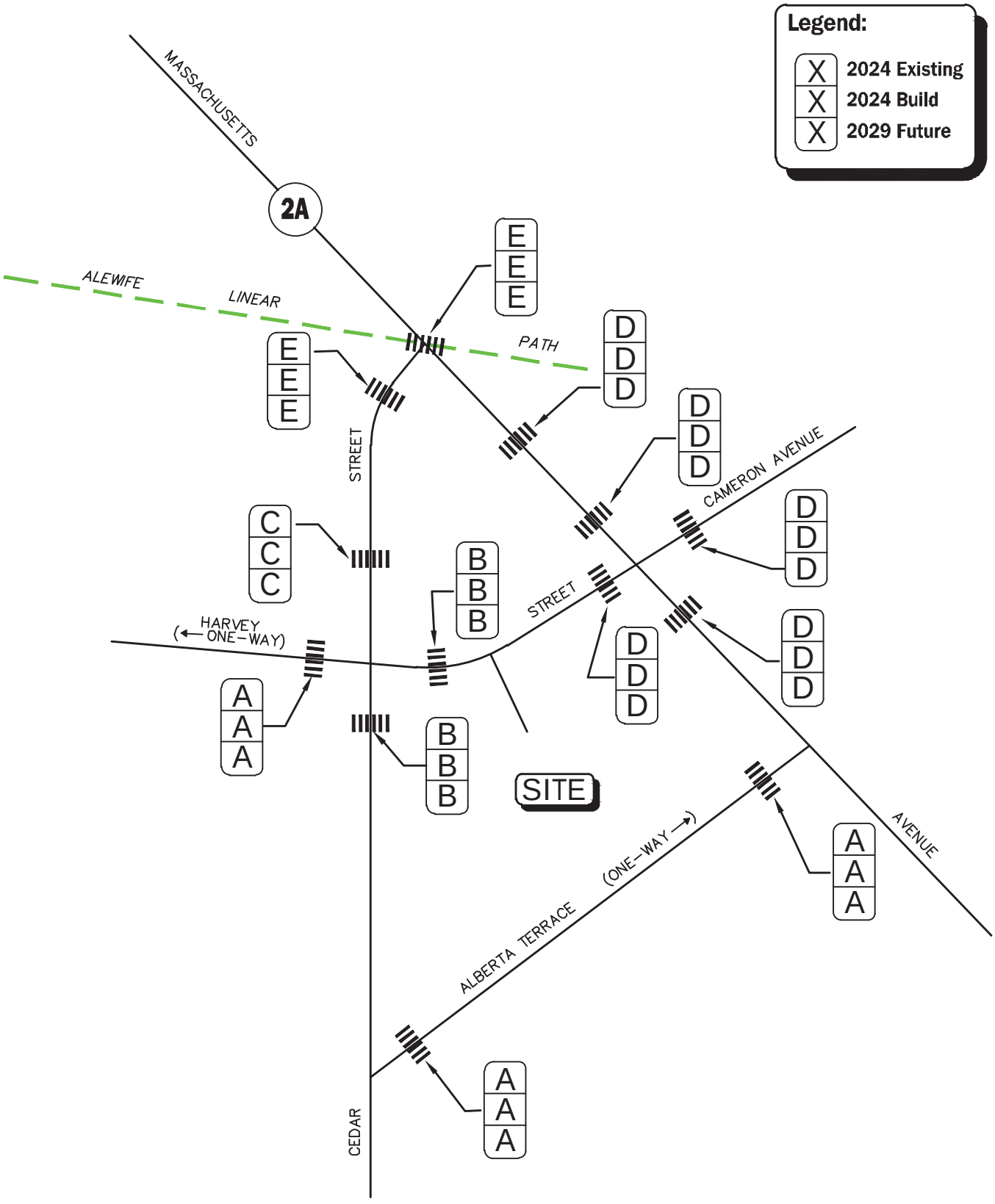
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 11.a.1

Pedestrian Level-of-Service Map
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 11.a.2

Pedestrian Level-of-Service Map
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

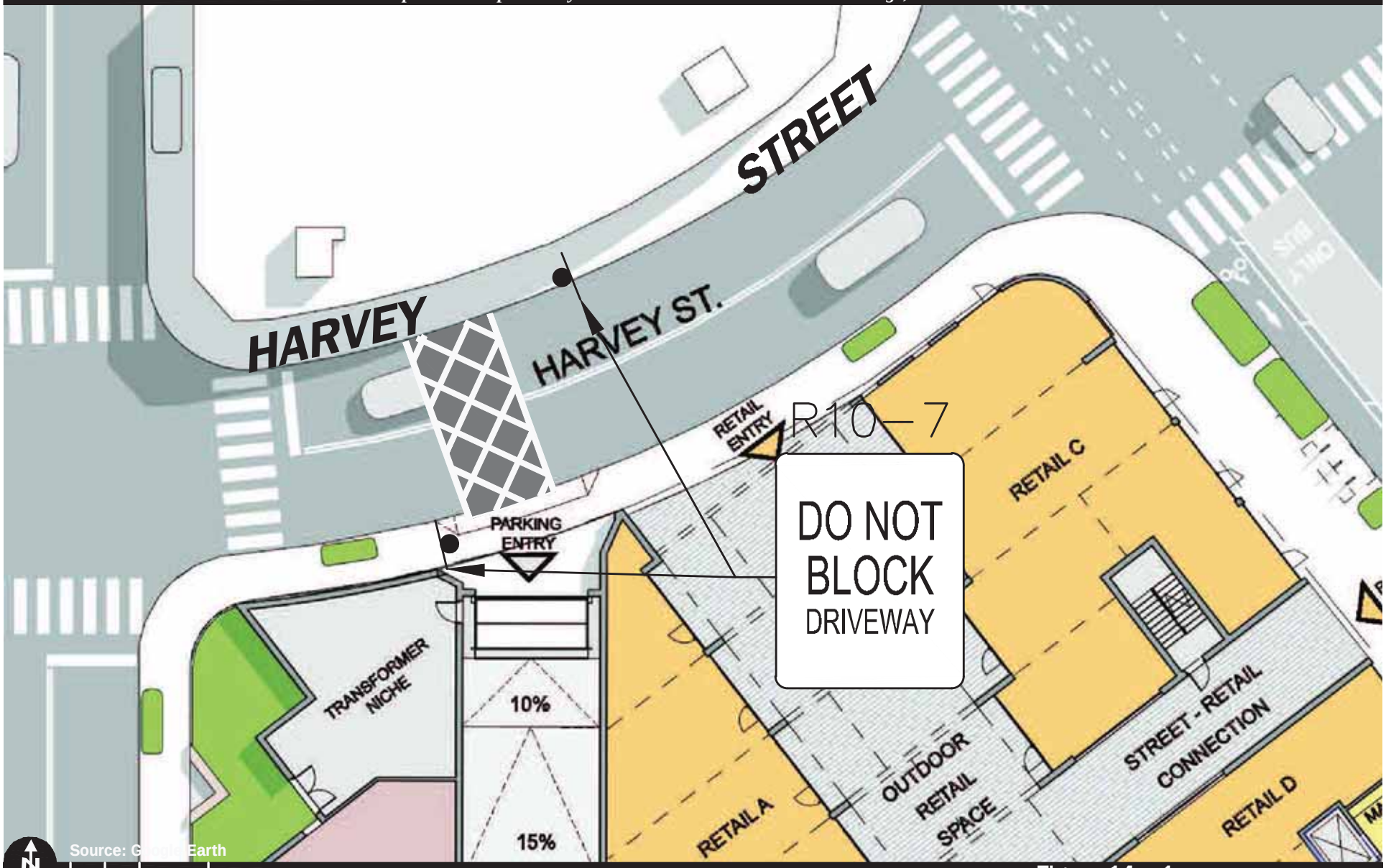


Figure 14.a.1

Proposed Harvey Street Modification

Vanasse & Associates inc

Transportation Impact Study Appendix

Proposed Mixed-Use Development
2400 Massachusetts Avenue
Cambridge, Massachusetts

Prepared for:

North Cambridge Partners LLC
Chestnut Hill, Massachusetts

April 2024

Prepared by:

Vanasse & Associates inc
Transportation Engineers & Planners

35 New England Business Center Drive
Suite 140
Andover, MA 01810

APPENDIX

CITY OF CAMBRIDGE SCOPING LETTER
TRAFFIC COUNT DATA
PUBLIC TRANSPORTATION DATA
7 CAMERON STREET COUNT DATA
TRIP GENERATION DATA
TRIP DISTRIBUTION DATA
CAPACITY ANALYSIS METHODOLOGY
CAPACITY ANALYSIS
CAPACITY ANALYSIS: MASS AVE PARTIAL CONSTRUCTION PROJECT
PEDESTRIAN ANALYSIS

CITY OF CAMBRIDGE SCOPING LETTER

CITY OF CAMBRIDGE
TRAFFIC, PARKING, + TRANSPORTATION

Brooke McKenna
Transportation Commissioner
344 Broadway, Suite 102
Cambridge, MA 02139

November 9, 2023

Scott Thornton
Vanasse & Associates, Inc.
35 New England Business Center, Suite 120
Andover, MA 01810

RE: 2400 Massachusetts Avenue Project TIS Scope

The Cambridge Traffic, Parking, and Transportation Department (TP&T) received your request for a Transportation Impact Study (TIS) scope for a proposed development project located at 2400 Massachusetts Avenue by north Point Partners LLC.

The Project proposes a residential project with approximately 56 dwelling units and 6,000 square feet of retail space. The project also proposes approximately 85 automobile parking spaces, 63 long-term bicycle spaces, and 10 short-term bicycle spaces.

The current site contains a commercial building and a surface parking lot with 50 registered parking spaces for employees.

Based on staff review, the TIS scope is approved as follows:

- The TIS should follow the most current TP+T TIS Guidelines, Supplemental and Updated TIS Guidelines dated March 30, 2020, and TIS requirements described below.

- The TIS shall document the existing site and building conditions (e.g., land use by size, tenant names, number of full and part-time employees, number of parking spaces, etc.).

- As approved by TP+T, if any existing buildings are occupied, the TIS may use driveway counts in determining the project's net new trip generation.

- Provide existing and proposed site plan(s) that include the following information:
  1. Show all property lines, abutting parcels, label property ownership and show and label any easements.
  2. Show existing and proposed buildings, including access points for pedestrians, bicyclist (i.e., doorways), automobiles, loading and service delivery (i.e., curb cuts, drop-off/pick-up locations, etc.).

3. Show existing and proposed widths for all abutting roadways, pathways, driveways, curb cuts, and sidewalks. Site plans should include curb lines and sidewalks on both sides of the streets abutting the Project site.
4. Show curb regulations for both sides of abutting streets.
5. Show all sidewalk conditions (i.e., meters, poles, signs, fire hydrants, bicycle racks, bus shelters, street trees, landscaping, streetlights, etc.).
6. Show all traffic control devices (i.e., traffic signals and cabinets, pavement markings, stop signs, etc.).
7. Clearly show and delineate between any existing and proposed street trees, landscaping, and utilities (i.e., electric utility boxes).
8. All site plans should include a scale and a north arrow.

- Collection of traffic counts shall abide by all TP+T requirements associated with compliance with the City of Cambridge's Surveillance Technology Ordinance (Chapter 2.128 of the Cambridge Municipal Code of Ordinances).

- To document the existing transportation conditions in the project's study area, the TIS should provide the following information.

  - Collect AM (7:30 – 9:30 AM) and PM (4:30 – 7:30 PM) vehicle, pedestrian, and bicycle turning movement counts (TMCs), including vehicle classification and queue observations at the following study area intersections. The exact dates of the traffic counts should be labeled on the traffic network figures.
    1. Massachusetts Avenue at Cedar Street
    2. Massachusetts Avenue at Harvey Street/Cameron Avenue
    3. Massachusetts Avenue at Alberta Terrace
    4. Cedar Street at Harvey Street
    5. Cedar Street at Alberta Terrace
    6. Existing Site driveway at Cedar Street

  - Collect minimum 3-day automatic traffic recorder (ATR) counts (Thursday, Friday, Saturday) at the following locations:
    A. Massachusetts Avenue, between Cedar Street and Alberta Terrace
    B. Cedar Street, between Massachusetts Avenue and Harvey Street
    C. Harvey Street, between Massachusetts Avenue and Cedar Street
    D. Alberta Terrace, between Massachusetts Avenue and Cedar Street

  - Collect 12-hour pedestrian and bicycle counts on Massachusetts Avenue in front of the Project site, and the Linear Park crossing at Masschusetts Avenue at Cedar Street.

  - TP+T will provide you with the most current traffic signal timing/phasing for the Masschusetts Avenue/Cedar Street and Masschusetts Avenue/Harvey Street signals. It should be noted that the signal timing for this intersection is also under review as part of the City's Massachusetts Avenue partial contrition project for the cycle safety ordinance. One possibility is to have NB Cedar turn left onto

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Mass. Ave via Harvey St, which would remove the Cedar phase at Mass/Cedar. Vanasse & Associates, Inc. and their count vendor should coordinate with TP+T to see if we can coordinate count locations with the analysis for Massachusetts Avenue.

- The TIS should include City of Cambridge Police Department crash data for the three most recent years available at all study area intersections. Bicycle and pedestrian crash rates should be listed separately. Crash rates should be compared to district and statewide averages for signalized and un-signalized intersections.

- The TIS mode split assumptions for the Project's trip generation analysis should be as shown below or as otherwise approved by TP&T.

Land Use	SOV	HOV	Transit	Bike	Walk	Work at Home	Other
Residential	32.7%	2.7%	33.6%	4.9%	4.6%	20%	1.5%
Retail	43%	11%	13%	8%	24%	0%	2%

Sources: Residential mode share based on Neighborhood 11 data for 5-year ACS 2017-2021 from the 2023 City of Cambridge Community Development Department Neighborhood Statistics. TP+T believes that Neighborhood 11 data is more representative and conservative (for SOV mode share) than using the project's relatively small census tract 3548.
Retail mode share is based on average mode shares from Retail/Restaurant patrons at the following PTDM reports. 2022 Twin City Plaza, 2022 355 Fresh Pond Parkway, 2023 110 Fawcett Street, 2023 88 Ames Street. Retail employees and patrons may use the same mode share assumption.

- TP+T believes trip rates are most accurate when determined from locally collected count data to verify or to use instead of national ITE trip rates. The TIS should determine trip generation rates from similar nearby projects. TP+T proposes collecting trip rates (i.e., AM and PM peak hour driveway counts divided by number of occupied units) at the 7 Cameron Avenue/2419 Massachusetts Avenue residential building which has 37 apartment units and 38 parking spaces. Please coordinate the counts with TP+T prior to being conducted. The TIS should compare the Project's residential trip generation using ITE trips rates and the mode shares above, with trip rates from the 7 Cameron Avenue/2419 residential building. ITE rates may be used for daily and non-automobile trip generation calculations as approved by TP+T.

- TP+T will provide information about parking demands at nearby residential projects that the TIS should use to help inform the Project's expected residential parking demand. Based on this information, the TIS should describe the rationale for the number of proposed parking spaces for the Project.

- Driveway counts at the existing site driveway may be used for vehicle trip generation credits. No additional trip credits shall be applied without explicit approval from TP+T. The TIS may collect existing doorway counts and request approval from TP+T to use that data for trip credits. TP+T does not support trip credits using ITE trip rates because the Project site is not currently fully occupied.

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- The TIS trip distribution assumptions should be based on the most recent data for the Project area, such as US Census Journey to Work data, recent City studies, intersection traffic count traffic flow data. A final trip distribution should be approved by TP&T prior to submitting the TIS.

- The TIS should include the following traffic analysis scenarios for the morning and evening peak hours:
  - 2023 Existing Condition for vehicles, pedestrian, and bicycles.
  - 2023 Build Condition. Existing Conditions plus the project generated trips at full build out.
  - 2028 Future Condition. 2023 Build Condition plus 0.5% background traffic growth rate per year for 5-years, plus any other significant development projects under construction, permitted or proposed, including the following projects:
    - 36-34 Whittmore Avenue/Alewife Park
    - 95 Elmwood Street

- Because of limitations of Synchro when two intersections are close to each other due to recognizing queue backups, you should use Sim Traffic for all intersection analysis and field verify for consistency with existing conditions. Please use best practices and calibrate Sim Traffic to match existing conditions based on observations.

- The TIS should indicate the observed vehicular queues at intersection approaches compared to computer modeled queues. If they are not consistent, the model should be re-evaluated until the model and observed queues match, otherwise the TIS must explain why they do not and cannot match.

- The TIS should address the following site plan considerations.
  - TP+T believes that the curb cut to access the Project's automobile parking would best be located on Cedar Street at the existing curb cut because a curb cut on Harvey Street would be close to the intersections of Harvey Street at Masschusetts Avenue and Harvey Street at Cedar Street. If an alternative curb cut location is proposed, the TIS should conduct an analysis of the pros/cons and explain the rationale for the alternative location.
  - The TIS should evaluate existing and proposed street and sidewalk widths for streets abutting the Project site and evaluate any opportunities, pros, and cons, for changing street and sidewalk widths.
  - The TIS should evaluate the pros/cons for locations for loading and service activities, including drop-off/pick-ups for retail uses. TP+T believes loading activities should preferably occur on-site.
  - The rationale for the proposed locations for the long-term and short-term bicycle parking spaces should be explained.

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- The TIS should document and graphically illustrate all existing public and private transit services within a half mile radius from the Project site, including bus stops, train stations, and Bluebikes bike sharing stations. Show the most logical walking and biking routes between the Project site and transit services. Indicate any access deficiencies. The TIS should document the following transit information:
    - Transit generated trips.
    - Access to transit.
    - Availability of transit services.
    - Bus crowding.
    - Project's impact on bus delay and reliability.

- In a TIS Figure, show the City's Bicycle Network Vision map for the Project study area (e.g., half mile radius from the Project site).
    - Evaluate if the Project site's abutting streets are consistent with the Bicycle Network Vision.
    - Show the most logical route for biking to/from the site using the within a half mile radius from the Project site. Indicate any barriers or deficiencies in the bicycle network.

- The pedestrian study area should be within a half mile radius (10–15-minute walk time) from the Project site. Provide special attention to the pedestrian conditions for sidewalks adjacent to the Project site, access to destinations such as shopping, parks, recreational facilities, and pedestrian access routes to transit facilities. The TIS should document the Project's pedestrian trip generation any deficiencies in the pedestrian network.

- The TIS should estimate the Project's retail parking demands and describe how the proposed retail use parking demands will be met. If the expectation is that retail parking will use on-street parking in the area, the TIS may document the area's parking availability and typical parking occupancy.

- If no retail parking will be provided on-site, the TIS should describe how the city will know if any unused residential parking spaces are used by retail employees or patrons. The TIS should also describe why providing on-site residential parking, but not on-site retail parking, is consistent with city goals and policies.

- Describe in detail and provide site plans for the Project's current and future loading and trash removal operations, including number of trips expected per day. The TIS should evaluate and describe pros and cons of loading zone locations for meeting the Project's needs while minimizing conflicts with pedestrians, bicyclists, buses, and automobiles.

- The TIS should describe in detail any proposed transportation mitigation, including Transportation Demand Management (TDM). TDM should be in line with expectations set forth in the Cambridge Envision Plan, Cambridge Transit Strategic Plan, Cambridge Bicycle and Pedestrian Plans, and other city policies and plans.

TRAFFIC, PARKING, + TRANSPORTATION | BROOKE MCKENNA, TRANSPORTATION COMMISSIONER
344 Broadway, Suite 102, Cambridge, MA 02139
617-349-4700 | cambridgema.gov/traffic

If you have any questions about this TIS Scope, feel free to contact Adam Shulman on my staff at 617-349-4745.

Very truly yours,

Brooke McKenna, Transportation Commissioner

cc: Adam Shulman, TP&T

TRAFFIC, PARKING, + TRANSPORTATION | BROOKE MCKENNA, TRANSPORTATION COMMISSIONER
344 Broadway, Suite 102, Cambridge, MA 02139
617-349-4700 | cambridgema.gov/traffic

TRAFFIC COUNT DATA

Automatic Traffic Recorder Data
Turning Movement Count Data
12-Hour Bicycle and Pedestrian Count Data
Vehicle Queue Count Data

Automatic Traffic Recorder Data

Massachusetts Avenue
just north of Alberta Terrace
City, State: Cambridge, MA
Client: VAI/ D. Roach
Site Code: 9812

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **279807 ATR-A**

Direction: **NB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		02/02/24		02/03/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	24	112	27	169	57	170	0	0	0	0	0	0	0	0	36	150
12:15	24	140	20	166	46	152	0	0	0	0	0	0	0	0	30	153
12:30	20	120	28	131	37	151	0	0	0	0	0	0	0	0	28	134
12:45	12	142	18	174	32	161	0	0	0	0	0	0	0	0	21	159
1:00	13	148	19	124	27	150	0	0	0	0	0	0	0	0	20	141
1:15	6	145	23	158	33	162	0	0	0	0	0	0	0	0	21	155
1:30	7	139	8	167	28	162	0	0	0	0	0	0	0	0	14	156
1:45	14	170	14	187	30	156	0	0	0	0	0	0	0	0	19	171
2:00	7	157	10	187	37	164	0	0	0	0	0	0	0	0	18	169
2:15	4	203	17	190	28	176	0	0	0	0	0	0	0	0	16	190
2:30	7	201	9	175	25	141	0	0	0	0	0	0	0	0	14	172
2:45	4	199	2	207	22	163	0	0	0	0	0	0	0	0	9	190
3:00	5	214	3	219	10	156	0	0	0	0	0	0	0	0	6	196
3:15	1	198	5	210	9	151	0	0	0	0	0	0	0	0	5	186
3:30	3	175	5	200	6	109	0	0	0	0	0	0	0	0	5	161
3:45	5	155	10	200	10	144	0	0	0	0	0	0	0	0	8	166
4:00	2	176	4	191	5	145	0	0	0	0	0	0	0	0	4	171
4:15	3	198	5	195	6	136	0	0	0	0	0	0	0	0	5	176
4:30	7	213	10	210	3	148	0	0	0	0	0	0	0	0	7	190
4:45	10	204	8	218	4	166	0	0	0	0	0	0	0	0	7	196
5:00	8	189	13	198	7	157	0	0	0	0	0	0	0	0	9	181
5:15	19	219	20	189	8	175	0	0	0	0	0	0	0	0	16	194
5:30	18	240	15	200	15	135	0	0	0	0	0	0	0	0	16	192
5:45	18	215	18	189	17	159	0	0	0	0	0	0	0	0	18	188
6:00	30	205	30	179	17	162	0	0	0	0	0	0	0	0	26	182
6:15	42	208	38	158	20	120	0	0	0	0	0	0	0	0	33	162
6:30	55	167	75	152	30	153	0	0	0	0	0	0	0	0	53	157
6:45	75	178	71	188	30	144	0	0	0	0	0	0	0	0	59	170
7:00	105	174	78	157	34	141	0	0	0	0	0	0	0	0	72	157
7:15	118	129	139	142	39	125	0	0	0	0	0	0	0	0	99	132
7:30	105	123	123	136	53	110	0	0	0	0	0	0	0	0	94	123
7:45	136	157	152	137	54	134	0	0	0	0	0	0	0	0	114	143
8:00	153	140	136	125	59	100	0	0	0	0	0	0	0	0	116	122
8:15	122	122	130	116	68	117	0	0	0	0	0	0	0	0	107	118
8:30	119	131	138	109	92	121	0	0	0	0	0	0	0	0	116	120
8:45	131	127	163	132	83	113	0	0	0	0	0	0	0	0	126	124
9:00	114	118	123	113	85	110	0	0	0	0	0	0	0	0	107	114
9:15	120	120	126	99	88	111	0	0	0	0	0	0	0	0	111	110
9:30	112	120	145	86	108	82	0	0	0	0	0	0	0	0	122	96
9:45	101	81	120	85	123	107	0	0	0	0	0	0	0	0	115	91
10:00	98	98	125	117	110	91	0	0	0	0	0	0	0	0	111	102
10:15	100	77	124	96	135	74	0	0	0	0	0	0	0	0	120	82
10:30	92	73	111	94	116	85	0	0	0	0	0	0	0	0	106	84
10:45	111	67	119	83	131	97	0	0	0	0	0	0	0	0	120	82
11:00	100	60	104	81	137	80	0	0	0	0	0	0	0	0	114	74
11:15	127	55	114	66	152	69	0	0	0	0	0	0	0	0	131	63
11:30	99	57	115	66	124	57	0	0	0	0	0	0	0	0	113	60
11:45	115	45	143	74	160	56	0	0	0	0	0	0	0	0	139	58
Total	**2721**	**7104**	**3053**	**7245**	**2550**	**6248**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2775**	**6866**
Day Total	**9825**		**10298**		**8798**		**0**		**0**		**0**		**0**		**9640**	
Peak HR	**7:45 AM**	**5:15 PM**	**8:00 AM**	**2:45 PM**	**11:00 AM**	**1:30 PM**									**11:00 AM**	**4:45 PM**
Volume	**530**	**879**	**567**	**836**	**573**	**658**									**497**	**763**

Massachusetts Avenue
just north of Alberta Terrace
City, State: Cambridge, MA
Client: VAI/ D. Roach
Site Code: 9812

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **279807 ATR-A**

Direction: **SB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		02/02/24		02/03/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	16	110	13	137	18	147	0	0	0	0	0	0	0	0	16	131
12:15	8	129	12	138	19	144	0	0	0	0	0	0	0	0	13	137
12:30	9	90	15	130	23	161	0	0	0	0	0	0	0	0	16	127
12:45	5	136	12	109	20	177	0	0	0	0	0	0	0	0	12	141
1:00	4	119	9	123	14	170	0	0	0	0	0	0	0	0	9	137
1:15	6	108	5	123	13	153	0	0	0	0	0	0	0	0	8	128
1:30	0	114	8	133	18	132	0	0	0	0	0	0	0	0	9	126
1:45	3	108	3	117	19	159	0	0	0	0	0	0	0	0	8	128
2:00	7	81	7	115	13	145	0	0	0	0	0	0	0	0	9	114
2:15	3	96	4	118	15	150	0	0	0	0	0	0	0	0	7	121
2:30	2	113	3	131	4	147	0	0	0	0	0	0	0	0	3	130
2:45	1	120	2	140	9	161	0	0	0	0	0	0	0	0	4	140
3:00	5	121	1	135	6	161	0	0	0	0	0	0	0	0	4	139
3:15	4	128	4	119	8	139	0	0	0	0	0	0	0	0	5	129
3:30	1	152	8	143	4	144	0	0	0	0	0	0	0	0	4	146
3:45	5	134	4	137	1	145	0	0	0	0	0	0	0	0	3	139
4:00	5	127	7	133	3	153	0	0	0	0	0	0	0	0	5	138
4:15	8	156	5	135	1	137	0	0	0	0	0	0	0	0	5	143
4:30	7	159	5	145	3	147	0	0	0	0	0	0	0	0	5	150
4:45	13	150	12	159	6	162	0	0	0	0	0	0	0	0	10	157
5:00	16	173	18	167	6	153	0	0	0	0	0	0	0	0	13	164
5:15	35	177	25	176	11	169	0	0	0	0	0	0	0	0	24	174
5:30	38	176	38	169	9	149	0	0	0	0	0	0	0	0	28	165
5:45	41	168	47	163	12	165	0	0	0	0	0	0	0	0	33	165
6:00	49	179	57	162	16	163	0	0	0	0	0	0	0	0	41	168
6:15	70	181	68	172	17	165	0	0	0	0	0	0	0	0	52	173
6:30	115	181	100	178	22	141	0	0	0	0	0	0	0	0	79	167
6:45	133	145	130	164	30	139	0	0	0	0	0	0	0	0	98	149
7:00	154	148	144	160	26	123	0	0	0	0	0	0	0	0	108	144
7:15	176	140	133	121	42	149	0	0	0	0	0	0	0	0	117	137
7:30	201	115	164	130	55	123	0	0	0	0	0	0	0	0	140	123
7:45	211	88	169	114	65	134	0	0	0	0	0	0	0	0	148	112
8:00	200	104	186	90	60	95	0	0	0	0	0	0	0	0	149	96
8:15	235	83	166	92	56	76	0	0	0	0	0	0	0	0	152	84
8:30	201	73	150	88	79	98	0	0	0	0	0	0	0	0	143	86
8:45	197	51	164	76	92	79	0	0	0	0	0	0	0	0	151	69
9:00	178	56	134	84	94	78	0	0	0	0	0	0	0	0	135	73
9:15	197	79	134	59	84	74	0	0	0	0	0	0	0	0	138	71
9:30	189	66	130	61	105	48	0	0	0	0	0	0	0	0	141	58
9:45	177	55	153	49	143	51	0	0	0	0	0	0	0	0	158	52
10:00	176	50	116	61	124	57	0	0	0	0	0	0	0	0	139	56
10:15	145	56	100	55	96	55	0	0	0	0	0	0	0	0	114	55
10:30	126	26	132	58	122	65	0	0	0	0	0	0	0	0	127	50
10:45	117	28	131	35	157	55	0	0	0	0	0	0	0	0	135	39
11:00	111	24	108	48	131	50	0	0	0	0	0	0	0	0	117	41
11:15	112	30	122	58	137	37	0	0	0	0	0	0	0	0	124	42
11:30	124	29	115	22	157	39	0	0	0	0	0	0	0	0	132	30
11:45	96	17	136	26	166	34	0	0	0	0	0	0	0	0	133	26
Total	**3932**	**5149**	**3409**	**5458**	**2331**	**5798**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3224**	**5468**
Day Total	**9081**		**8867**		**8129**		**0**		**0**		**0**		**0**		**8692**	
Peak HR	**7:30 AM**	**5:45 PM**	**7:30 AM**	**6:00 PM**	**11:00 AM**	**12:30 PM**									**8:00 AM**	**5:45 PM**
Volume	**847**	**709**	**685**	**676**	**591**	**661**									**595**	**673**

Cedar Street
north of Harvey Street
City, State: Cambridge, MA
Client: VAI/ D. Roach
Site Code: 9812

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **279807 ATR-B**

Direction: **NB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	3	10	1	8	1	17	0	0	0	0	0	0	0	0	2	12
12:15	0	17	1	24	0	19	0	0	0	0	0	0	0	0	0	20
12:30	0	15	1	13	4	19	0	0	0	0	0	0	0	0	2	16
12:45	0	12	0	10	1	18	0	0	0	0	0	0	0	0	0	13
1:00	0	14	0	9	3	25	0	0	0	0	0	0	0	0	1	16
1:15	1	13	0	17	3	16	0	0	0	0	0	0	0	0	1	15
1:30	0	21	0	22	2	17	0	0	0	0	0	0	0	0	1	20
1:45	1	10	1	14	0	17	0	0	0	0	0	0	0	0	1	14
2:00	0	13	2	22	0	15	0	0	0	0	0	0	0	0	1	17
2:15	1	18	1	26	3	26	0	0	0	0	0	0	0	0	2	23
2:30	1	12	0	23	0	15	0	0	0	0	0	0	0	0	0	17
2:45	2	37	1	27	1	16	0	0	0	0	0	0	0	0	1	27
3:00	0	32	0	24	0	14	0	0	0	0	0	0	0	0	0	23
3:15	0	37	0	40	0	18	0	0	0	0	0	0	0	0	0	32
3:30	0	34	1	30	0	16	0	0	0	0	0	0	0	0	0	27
3:45	0	39	0	32	0	22	0	0	0	0	0	0	0	0	0	31
4:00	1	38	1	38	1	22	0	0	0	0	0	0	0	0	1	33
4:15	1	40	1	31	2	12	0	0	0	0	0	0	0	0	1	28
4:30	0	37	2	32	0	15	0	0	0	0	0	0	0	0	1	28
4:45	1	37	0	40	0	13	0	0	0	0	0	0	0	0	0	30
5:00	1	28	2	45	1	19	0	0	0	0	0	0	0	0	1	31
5:15	2	50	1	30	2	20	0	0	0	0	0	0	0	0	2	33
5:30	1	39	2	35	2	16	0	0	0	0	0	0	0	0	2	30
5:45	3	36	1	36	3	14	0	0	0	0	0	0	0	0	2	29
6:00	3	45	3	34	4	16	0	0	0	0	0	0	0	0	3	32
6:15	0	21	1	23	2	18	0	0	0	0	0	0	0	0	1	21
6:30	8	28	6	19	1	17	0	0	0	0	0	0	0	0	5	21
6:45	4	20	4	18	1	13	0	0	0	0	0	0	0	0	3	17
7:00	7	18	6	19	0	16	0	0	0	0	0	0	0	0	4	18
7:15	6	16	7	16	5	11	0	0	0	0	0	0	0	0	6	14
7:30	5	13	9	19	3	18	0	0	0	0	0	0	0	0	6	17
7:45	22	14	14	15	3	13	0	0	0	0	0	0	0	0	13	14
8:00	18	7	17	15	5	11	0	0	0	0	0	0	0	0	13	11
8:15	13	10	5	17	5	11	0	0	0	0	0	0	0	0	8	13
8:30	15	5	16	12	8	16	0	0	0	0	0	0	0	0	13	11
8:45	16	12	16	2	10	7	0	0	0	0	0	0	0	0	14	7
9:00	8	11	12	6	5	7	0	0	0	0	0	0	0	0	8	8
9:15	14	10	16	7	7	7	0	0	0	0	0	0	0	0	12	8
9:30	4	7	9	5	12	13	0	0	0	0	0	0	0	0	8	8
9:45	8	4	13	5	10	5	0	0	0	0	0	0	0	0	10	5
10:00	9	5	15	10	9	6	0	0	0	0	0	0	0	0	11	7
10:15	7	4	10	5	16	6	0	0	0	0	0	0	0	0	11	5
10:30	7	3	9	8	17	5	0	0	0	0	0	0	0	0	11	5
10:45	11	2	11	4	16	2	0	0	0	0	0	0	0	0	13	3
11:00	10	3	7	3	13	11	0	0	0	0	0	0	0	0	10	6
11:15	12	3	16	2	11	10	0	0	0	0	0	0	0	0	13	5
11:30	9	4	15	3	15	3	0	0	0	0	0	0	0	0	13	3
11:45	14	2	17	2	14	2	0	0	0	0	0	0	0	0	15	2
Total	**249**	**906**	**273**	**897**	**221**	**665**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**248**	**823**
Day Total	**1155**		**1170**		**886**		**0**		**0**		**0**		**0**		**1070**	
Peak HR	**7:45 AM**	**5:15 PM**	**8:30 AM**	**4:45 PM**	**10:15 AM**	**12:15 PM**									**11:00 AM**	**4:45 PM**
Volume	**68**	**170**	**60**	**150**	**62**	**81**									**51**	**124**

Cedar Street
north of Harvey Street
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Site Code: 9812

PRECISION
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PDI File # **279807 ATR-B**

Direction: **SB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	1	10	1	19	5	23	0	0	0	0	0	0	0	0	2	17
12:15	2	22	1	17	3	24	0	0	0	0	0	0	0	0	2	21
12:30	1	21	2	27	4	23	0	0	0	0	0	0	0	0	2	24
12:45	0	20	1	16	4	24	0	0	0	0	0	0	0	0	2	20
1:00	0	18	2	17	5	36	0	0	0	0	0	0	0	0	2	24
1:15	3	22	0	20	4	23	0	0	0	0	0	0	0	0	2	22
1:30	0	13	2	20	2	29	0	0	0	0	0	0	0	0	1	21
1:45	2	17	0	22	0	21	0	0	0	0	0	0	0	0	1	20
2:00	2	20	0	19	2	21	0	0	0	0	0	0	0	0	1	20
2:15	0	13	1	14	0	21	0	0	0	0	0	0	0	0	0	16
2:30	0	24	1	30	1	17	0	0	0	0	0	0	0	0	1	24
2:45	1	26	0	20	1	23	0	0	0	0	0	0	0	0	1	23
3:00	0	25	0	20	3	19	0	0	0	0	0	0	0	0	1	21
3:15	1	27	0	22	0	17	0	0	0	0	0	0	0	0	0	22
3:30	0	14	1	24	1	18	0	0	0	0	0	0	0	0	1	19
3:45	0	19	1	27	0	17	0	0	0	0	0	0	0	0	0	21
4:00	2	20	2	22	0	31	0	0	0	0	0	0	0	0	1	24
4:15	0	26	1	15	0	21	0	0	0	0	0	0	0	0	0	21
4:30	0	24	0	27	0	12	0	0	0	0	0	0	0	0	0	21
4:45	3	26	2	21	1	26	0	0	0	0	0	0	0	0	2	24
5:00	2	29	3	34	0	25	0	0	0	0	0	0	0	0	2	29
5:15	2	25	1	30	2	25	0	0	0	0	0	0	0	0	2	27
5:30	6	28	3	17	2	20	0	0	0	0	0	0	0	0	4	22
5:45	9	24	5	26	2	29	0	0	0	0	0	0	0	0	5	26
6:00	4	21	4	35	1	25	0	0	0	0	0	0	0	0	3	27
6:15	11	32	7	31	3	24	0	0	0	0	0	0	0	0	7	29
6:30	20	31	14	21	2	17	0	0	0	0	0	0	0	0	12	23
6:45	31	25	23	32	8	18	0	0	0	0	0	0	0	0	21	25
7:00	37	17	24	23	4	9	0	0	0	0	0	0	0	0	22	16
7:15	51	16	41	19	12	25	0	0	0	0	0	0	0	0	35	20
7:30	52	11	38	13	8	7	0	0	0	0	0	0	0	0	33	10
7:45	53	11	46	18	5	12	0	0	0	0	0	0	0	0	35	14
8:00	49	19	42	11	2	6	0	0	0	0	0	0	0	0	31	12
8:15	44	15	40	17	13	16	0	0	0	0	0	0	0	0	32	16
8:30	45	9	45	12	10	9	0	0	0	0	0	0	0	0	33	10
8:45	34	12	29	11	19	15	0	0	0	0	0	0	0	0	27	13
9:00	23	10	17	7	14	10	0	0	0	0	0	0	0	0	18	9
9:15	34	13	24	4	11	8	0	0	0	0	0	0	0	0	23	8
9:30	28	7	13	7	17	6	0	0	0	0	0	0	0	0	19	7
9:45	22	8	28	10	19	8	0	0	0	0	0	0	0	0	23	9
10:00	22	7	16	3	18	8	0	0	0	0	0	0	0	0	19	6
10:15	25	3	28	9	18	8	0	0	0	0	0	0	0	0	24	7
10:30	18	4	24	8	19	1	0	0	0	0	0	0	0	0	20	4
10:45	24	5	18	8	19	9	0	0	0	0	0	0	0	0	20	7
11:00	14	5	16	3	13	7	0	0	0	0	0	0	0	0	14	5
11:15	17	3	21	5	21	9	0	0	0	0	0	0	0	0	20	6
11:30	17	2	19	4	15	9	0	0	0	0	0	0	0	0	17	5
11:45	20	4	21	3	19	6	0	0	0	0	0	0	0	0	20	4
Total	**732**	**803**	**628**	**840**	**332**	**817**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**564**	**820**
Day Total	**1535**		**1468**		**1149**		**0**		**0**		**0**		**0**		**1384**	
Peak HR	**7:15 AM**	**6:00 PM**	**7:45 AM**	**6:00 PM**	**9:45 AM**	**12:45 PM**									**7:15 AM**	**5:45 PM**
Volume	**205**	**109**	**173**	**119**	**74**	**112**									**133**	**105**

Harvey Street
east of Cedar Street
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Client: VAI/ D. Roach
Site Code: 9812

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **279807 ATR-C**

Direction: **EB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	17	1	29	6	33	0	0	0	0	0	0	0	0	2	26
12:15	1	18	3	32	7	37	0	0	0	0	0	0	0	0	4	29
12:30	1	18	2	22	2	21	0	0	0	0	0	0	0	0	2	20
12:45	1	21	0	27	2	21	0	0	0	0	0	0	0	0	1	23
1:00	1	22	2	22	3	28	0	0	0	0	0	0	0	0	2	24
1:15	2	17	1	21	4	22	0	0	0	0	0	0	0	0	2	20
1:30	0	14	0	30	0	28	0	0	0	0	0	0	0	0	0	24
1:45	1	19	0	30	2	20	0	0	0	0	0	0	0	0	1	23
2:00	1	15	0	24	0	29	0	0	0	0	0	0	0	0	0	23
2:15	2	21	0	27	1	20	0	0	0	0	0	0	0	0	1	23
2:30	1	29	0	25	0	25	0	0	0	0	0	0	0	0	0	26
2:45	0	30	1	22	1	27	0	0	0	0	0	0	0	0	1	26
3:00	1	42	1	41	3	22	0	0	0	0	0	0	0	0	2	35
3:15	0	49	1	34	0	28	0	0	0	0	0	0	0	0	0	37
3:30	0	35	3	49	1	20	0	0	0	0	0	0	0	0	1	35
3:45	1	39	0	63	1	27	0	0	0	0	0	0	0	0	1	43
4:00	0	34	1	55	0	31	0	0	0	0	0	0	0	0	0	40
4:15	1	31	0	57	2	32	0	0	0	0	0	0	0	0	1	40
4:30	1	37	3	62	1	27	0	0	0	0	0	0	0	0	2	42
4:45	3	38	0	37	0	25	0	0	0	0	0	0	0	0	1	33
5:00	3	44	0	43	3	26	0	0	0	0	0	0	0	0	2	38
5:15	2	34	2	38	1	24	0	0	0	0	0	0	0	0	2	32
5:30	4	31	2	38	1	27	0	0	0	0	0	0	0	0	2	32
5:45	2	35	2	46	2	22	0	0	0	0	0	0	0	0	2	34
6:00	1	45	1	50	4	37	0	0	0	0	0	0	0	0	2	44
6:15	2	48	4	45	3	27	0	0	0	0	0	0	0	0	3	40
6:30	10	29	5	43	3	33	0	0	0	0	0	0	0	0	6	35
6:45	7	47	7	25	3	22	0	0	0	0	0	0	0	0	6	31
7:00	14	28	12	33	3	26	0	0	0	0	0	0	0	0	10	29
7:15	12	33	14	18	4	25	0	0	0	0	0	0	0	0	10	25
7:30	22	33	15	14	3	19	0	0	0	0	0	0	0	0	13	22
7:45	22	23	32	27	3	15	0	0	0	0	0	0	0	0	19	22
8:00	27	18	14	16	4	12	0	0	0	0	0	0	0	0	15	15
8:15	17	13	20	17	9	9	0	0	0	0	0	0	0	0	15	13
8:30	17	8	17	10	14	11	0	0	0	0	0	0	0	0	16	10
8:45	19	11	18	11	17	18	0	0	0	0	0	0	0	0	18	13
9:00	19	14	19	11	8	9	0	0	0	0	0	0	0	0	15	11
9:15	17	17	28	14	17	9	0	0	0	0	0	0	0	0	21	13
9:30	20	5	17	19	20	13	0	0	0	0	0	0	0	0	19	12
9:45	14	9	14	22	18	6	0	0	0	0	0	0	0	0	15	12
10:00	15	9	14	12	15	12	0	0	0	0	0	0	0	0	15	11
10:15	15	7	11	8	19	9	0	0	0	0	0	0	0	0	15	8
10:30	16	3	13	8	8	8	0	0	0	0	0	0	0	0	12	6
10:45	9	6	18	6	18	11	0	0	0	0	0	0	0	0	15	8
11:00	18	7	10	6	23	6	0	0	0	0	0	0	0	0	17	6
11:15	15	1	16	8	27	7	0	0	0	0	0	0	0	0	19	5
11:30	15	3	24	2	14	6	0	0	0	0	0	0	0	0	18	4
11:45	20	2	28	6	17	2	0	0	0	0	0	0	0	0	22	3
Total	**392**	**1109**	**396**	**1305**	**317**	**974**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**368**	**1129**
Day Total	**1501**		**1701**		**1291**		**0**		**0**		**0**		**0**		**1498**	
Peak HR	**7:30 AM**	**6:00 PM**	**7:45 AM**	**3:45 PM**	**10:45 AM**	**5:45 PM**									**11:00 AM**	**3:45 PM**
Volume	**88**	**169**	**83**	**237**	**82**	**119**									**76**	**165**

Harvey Street
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PDI File # **279807 ATR-C**

Direction: **WB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	4	21	5	15	5	25	0	0	0	0	0	0	0	0	5	20
12:15	2	24	1	18	4	17	0	0	0	0	0	0	0	0	2	20
12:30	0	20	3	28	5	32	0	0	0	0	0	0	0	0	3	27
12:45	0	23	1	35	5	33	0	0	0	0	0	0	0	0	2	30
1:00	0	14	5	27	7	26	0	0	0	0	0	0	0	0	4	22
1:15	0	14	1	18	2	20	0	0	0	0	0	0	0	0	1	17
1:30	1	18	0	27	3	20	0	0	0	0	0	0	0	0	1	22
1:45	2	11	1	17	0	21	0	0	0	0	0	0	0	0	1	16
2:00	0	21	2	20	0	16	0	0	0	0	0	0	0	0	1	19
2:15	1	20	1	24	3	17	0	0	0	0	0	0	0	0	2	20
2:30	0	19	0	17	1	16	0	0	0	0	0	0	0	0	0	17
2:45	1	22	0	28	0	21	0	0	0	0	0	0	0	0	0	24
3:00	0	28	0	27	0	29	0	0	0	0	0	0	0	0	0	28
3:15	0	27	0	29	0	19	0	0	0	0	0	0	0	0	0	25
3:30	2	37	1	35	0	26	0	0	0	0	0	0	0	0	1	33
3:45	0	28	1	23	5	27	0	0	0	0	0	0	0	0	2	26
4:00	0	29	2	19	3	26	0	0	0	0	0	0	0	0	2	25
4:15	1	20	2	26	3	18	0	0	0	0	0	0	0	0	2	21
4:30	0	44	1	32	1	23	0	0	0	0	0	0	0	0	1	33
4:45	0	23	1	26	0	23	0	0	0	0	0	0	0	0	0	24
5:00	3	14	4	24	1	23	0	0	0	0	0	0	0	0	3	20
5:15	2	27	4	30	1	21	0	0	0	0	0	0	0	0	2	26
5:30	2	25	1	35	2	22	0	0	0	0	0	0	0	0	2	27
5:45	6	24	5	23	0	26	0	0	0	0	0	0	0	0	4	24
6:00	7	35	7	34	2	25	0	0	0	0	0	0	0	0	5	31
6:15	2	23	1	36	3	26	0	0	0	0	0	0	0	0	2	28
6:30	12	24	10	19	3	33	0	0	0	0	0	0	0	0	8	25
6:45	19	29	15	22	3	28	0	0	0	0	0	0	0	0	12	26
7:00	22	25	16	29	3	29	0	0	0	0	0	0	0	0	14	28
7:15	31	13	18	19	4	21	0	0	0	0	0	0	0	0	18	18
7:30	40	16	24	31	6	19	0	0	0	0	0	0	0	0	23	22
7:45	42	15	36	16	8	16	0	0	0	0	0	0	0	0	29	16
8:00	37	26	31	21	7	16	0	0	0	0	0	0	0	0	25	21
8:15	38	15	34	15	7	17	0	0	0	0	0	0	0	0	26	16
8:30	37	13	29	16	11	18	0	0	0	0	0	0	0	0	26	16
8:45	37	14	30	19	13	10	0	0	0	0	0	0	0	0	27	14
9:00	33	11	27	17	10	12	0	0	0	0	0	0	0	0	23	13
9:15	33	13	17	15	13	13	0	0	0	0	0	0	0	0	21	14
9:30	27	10	20	8	19	24	0	0	0	0	0	0	0	0	22	14
9:45	18	6	19	13	22	15	0	0	0	0	0	0	0	0	20	11
10:00	23	5	23	19	16	9	0	0	0	0	0	0	0	0	21	11
10:15	17	5	22	15	20	7	0	0	0	0	0	0	0	0	20	9
10:30	20	7	12	13	21	7	0	0	0	0	0	0	0	0	18	9
10:45	16	8	22	7	19	8	0	0	0	0	0	0	0	0	19	8
11:00	25	6	13	15	23	7	0	0	0	0	0	0	0	0	20	9
11:15	8	2	23	5	24	8	0	0	0	0	0	0	0	0	18	5
11:30	16	2	23	8	31	7	0	0	0	0	0	0	0	0	23	6
11:45	16	1	25	6	25	8	0	0	0	0	0	0	0	0	22	5
Total	**603**	**877**	**539**	**1021**	**364**	**930**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**502**	**943**
Day Total	**1480**		**1560**		**1294**		**0**		**0**		**0**		**0**		**1445**	
Peak HR	**7:30 AM**	**3:15 PM**	**7:45 AM**	**5:30 PM**	**11:00 AM**	**6:15 PM**									**7:45 AM**	**3:00 PM**
Volume	**157**	**121**	**130**	**128**	**103**	**116**									**106**	**112**

Alberta Terrace
east of Cedar Street
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PDI File # **279807 ATR-D**

Direction: **EB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	2	0	4	1	7	0	0	0	0	0	0	0	0	0	4
12:15	0	1	0	7	1	2	0	0	0	0	0	0	0	0	0	3
12:30	0	2	0	3	1	8	0	0	0	0	0	0	0	0	0	4
12:45	1	6	0	5	1	6	0	0	0	0	0	0	0	0	1	6
1:00	0	1	0	3	0	7	0	0	0	0	0	0	0	0	0	4
1:15	1	3	0	5	2	6	0	0	0	0	0	0	0	0	1	5
1:30	0	2	0	2	0	4	0	0	0	0	0	0	0	0	0	3
1:45	0	3	0	5	0	4	0	0	0	0	0	0	0	0	0	4
2:00	0	3	0	5	0	8	0	0	0	0	0	0	0	0	0	5
2:15	0	5	0	7	0	2	0	0	0	0	0	0	0	0	0	5
2:30	0	6	0	4	1	7	0	0	0	0	0	0	0	0	0	6
2:45	0	4	0	5	1	6	0	0	0	0	0	0	0	0	0	5
3:00	0	5	0	6	0	3	0	0	0	0	0	0	0	0	0	5
3:15	0	6	0	2	0	4	0	0	0	0	0	0	0	0	0	4
3:30	1	4	2	9	0	4	0	0	0	0	0	0	0	0	1	6
3:45	1	3	1	6	0	11	0	0	0	0	0	0	0	0	1	7
4:00	0	5	0	2	0	9	0	0	0	0	0	0	0	0	0	5
4:15	0	0	0	5	0	5	0	0	0	0	0	0	0	0	0	3
4:30	0	7	0	6	0	7	0	0	0	0	0	0	0	0	0	7
4:45	0	6	0	5	1	4	0	0	0	0	0	0	0	0	0	5
5:00	1	6	1	6	0	5	0	0	0	0	0	0	0	0	1	6
5:15	1	5	0	7	0	20	0	0	0	0	0	0	0	0	0	11
5:30	0	4	1	4	0	11	0	0	0	0	0	0	0	0	0	6
5:45	0	6	1	15	1	6	0	0	0	0	0	0	0	0	1	9
6:00	0	2	1	2	1	6	0	0	0	0	0	0	0	0	1	3
6:15	0	8	0	9	0	8	0	0	0	0	0	0	0	0	0	8
6:30	0	11	0	8	1	11	0	0	0	0	0	0	0	0	0	10
6:45	1	9	1	3	1	8	0	0	0	0	0	0	0	0	1	7
7:00	2	2	2	6	1	10	0	0	0	0	0	0	0	0	2	6
7:15	1	6	0	10	2	5	0	0	0	0	0	0	0	0	1	7
7:30	1	3	0	14	1	3	0	0	0	0	0	0	0	0	1	7
7:45	1	5	1	8	1	14	0	0	0	0	0	0	0	0	1	9
8:00	1	7	1	3	0	6	0	0	0	0	0	0	0	0	1	5
8:15	6	3	1	4	1	2	0	0	0	0	0	0	0	0	3	3
8:30	3	3	1	2	0	3	0	0	0	0	0	0	0	0	1	3
8:45	0	6	5	5	3	3	0	0	0	0	0	0	0	0	3	5
9:00	3	4	0	3	4	1	0	0	0	0	0	0	0	0	2	3
9:15	3	3	3	3	2	0	0	0	0	0	0	0	0	0	3	2
9:30	1	1	4	2	4	1	0	0	0	0	0	0	0	0	3	1
9:45	3	0	2	1	4	0	0	0	0	0	0	0	0	0	3	0
10:00	5	1	1	4	3	2	0	0	0	0	0	0	0	0	3	2
10:15	6	0	6	1	2	1	0	0	0	0	0	0	0	0	5	1
10:30	2	2	2	1	4	2	0	0	0	0	0	0	0	0	3	2
10:45	4	0	2	0	5	0	0	0	0	0	0	0	0	0	4	0
11:00	6	1	7	3	2	3	0	0	0	0	0	0	0	0	5	2
11:15	2	1	5	0	6	0	0	0	0	0	0	0	0	0	4	0
11:30	6	1	9	0	5	3	0	0	0	0	0	0	0	0	7	1
11:45	6	1	3	2	7	3	0	0	0	0	0	0	0	0	5	2
Total	**69**	**175**	**63**	**222**	**70**	**251**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**67**	**216**
Day Total	**244**		**285**		**321**		**0**		**0**		**0**		**0**		**283**	
Peak HR	**11:00 AM**	**6:00 PM**	**11:00 AM**	**7:00 PM**	**11:00 AM**	**5:15 PM**									**11:00 AM**	**5:00 PM**
Volume	**20**	**30**	**24**	**38**	**20**	**43**									**21**	**32**

Alberta Terrace
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PDI File # **279807 ATR-D**

Direction: **WB**

Weekly Report

Day	Thursday		Friday		Saturday										Week	
Date	01/25/24		01/26/24		01/27/24										Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0
6:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**3**	**1**	**1**	**2**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**
Day Total	**4**		**2**		**4**		**0**		**0**		**0**		**0**		**3**	
Peak HR	**4:15 AM**	**4:30 PM**	**5:00 AM**	**3:00 PM**	**5:00 AM**	**7:30 PM**									**5:00 AM**	**8:00 PM**
Volume	**1**	**1**	**1**	**1**	**1**	**2**									**1**	**1**

Turning Movement Count Data

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
7:30 AM	0	53	171	0	0	224	0	0	0	0	0	0	0	97	0	0	0	97	0	0	5	0	0	5	0	0	0	0	0	0	326
7:45 AM	0	52	179	0	0	231	0	0	0	0	0	0	0	112	0	0	0	112	1	0	19	0	0	20	0	0	0	0	0	0	363
Total	0	105	350	0	0	455	0	0	0	0	0	0	0	209	0	0	0	209	1	0	24	0	0	25	0	0	0	0	0	0	689
8:00 AM	0	48	161	0	0	209	0	0	0	0	0	0	0	114	0	0	0	114	0	0	16	0	0	16	0	0	0	0	0	0	339
8:15 AM	0	41	180	0	0	221	0	0	0	0	0	0	0	91	0	0	0	91	0	0	14	0	0	14	0	0	0	0	0	0	326
8:30 AM	0	43	166	0	0	209	0	0	0	0	0	0	0	104	0	0	0	104	1	0	14	0	0	15	0	0	0	0	0	0	328
8:45 AM	0	33	163	0	0	196	0	0	0	0	0	0	0	90	0	0	0	90	0	0	13	0	0	13	0	0	0	0	0	0	299
Total	0	165	670	0	0	835	0	0	0	0	0	0	0	399	0	0	0	399	1	0	57	0	0	58	0	0	0	0	0	0	1292
9:00 AM	0	24	152	0	0	176	0	0	0	0	0	0	0	87	0	0	0	87	1	0	7	0	0	8	0	0	0	0	0	0	271
9:15 AM	0	30	166	0	1	197	0	0	0	0	0	0	0	92	0	0	0	92	1	0	14	0	0	15	0	0	0	0	0	0	304
Total	0	54	318	0	1	373	0	0	0	0	0	0	0	179	0	0	0	179	2	0	21	0	0	23	0	0	0	0	0	0	575
Grand Total	0	324	1338	0	1	1663	0	0	0	0	0	0	0	787	0	0	0	787	4	0	102	0	0	106	0	0	0	0	0	0	2556
Approach %	0.0	19.5	80.5	0.0	0.1		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		3.8	0.0	96.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	12.7	52.3	0.0	0.0	65.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	30.8	0.0	0.0	0.0	30.8	0.2	0.0	4.0	0.0	0.0	4.1	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						890						0						1342						324						0	2556
Cars	0	308	1283	0	1	1592	0	0	0	0	0	0	0	725	0	0	0	725	3	0	102	0	0	105	0	0	0	0	0	0	2422
% Cars	0.0	95.1	95.9	0.0	100.0	95.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	92.1	0.0	0.0	0.0	92.1	75.0	0.0	100.0	0.0	0.0	99.1	0.0	0.0	0.0	0.0	0.0	0.0	94.8
Exiting Leg Total						828						0						1286						308						0	2422
Heavy Vehicles	0	16	55	0	0	71	0	0	0	0	0	0	0	62	0	0	0	62	1	0	0	0	0	1	0	0	0	0	0	0	134
% Heavy Vehicles	0.0	4.9	4.1	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.9	0.0	0.0	0.0	7.9	25.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	5.2
Exiting Leg Total						62						0						56						16						0	134

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
7:45 AM	0	52	179	0	0	231	0	0	0	0	0	0	0	112	0	0	0	112	1	0	19	0	0	20	0	0	0	0	0	0	363
8:00 AM	0	48	161	0	0	209	0	0	0	0	0	0	0	114	0	0	0	114	0	0	16	0	0	16	0	0	0	0	0	0	339
8:15 AM	0	41	180	0	0	221	0	0	0	0	0	0	0	91	0	0	0	91	0	0	14	0	0	14	0	0	0	0	0	0	326
8:30 AM	0	43	166	0	0	209	0	0	0	0	0	0	0	104	0	0	0	104	1	0	14	0	0	15	0	0	0	0	0	0	328
Total Volume	0	184	686	0	0	870	0	0	0	0	0	0	0	421	0	0	0	421	2	0	63	0	0	65	0	0	0	0	0	0	1356
% Approach Total	0.0	21.1	78.9	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		3.1	0.0	96.9	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.885	0.953	0.000	0.000	0.942	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.923	0.000	0.000	0.000	0.923	0.500	0.000	0.829	0.000	0.000	0.813	0.000	0.000	0.000	0.000	0.000	0.000	0.934
Cars	0	173	660	0	0	833	0	0	0	0	0	0	0	395	0	0	0	395	2	0	63	0	0	65	0	0	0	0	0	0	1293
Cars %	0.0	94.0	96.2	0.0	0.0	95.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.8	0.0	0.0	0.0	93.8	100.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	95.4
Heavy Vehicles	0	11	26	0	0	37	0	0	0	0	0	0	0	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	63
Heavy Vehicles %	0.0	6.0	3.8	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.2	0.0	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.6
Cars Enter Leg	0	173	660	0	0	833	0	0	0	0	0	0	0	395	0	0	0	395	2	0	63	0	0	65	0	0	0	0	0	0	1293
Heavy Enter Leg	0	11	26	0	0	37	0	0	0	0	0	0	0	26	0	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	63
Total Entering Leg	0	184	686	0	0	870	0	0	0	0	0	0	0	421	0	0	0	421	2	0	63	0	0	65	0	0	0	0	0	0	1356
Cars Exiting Leg						458						0						662						173						0	1293
Heavy Exiting Leg						26						0						26						11						0	63
Total Exiting Leg						484						0						688						184						0	1356

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
7:30 AM	0	3	6	0	0	9	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	17
7:45 AM	0	2	8	0	0	10	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	16
Total	0	5	14	0	0	19	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	33
8:00 AM	0	2	8	0	0	10	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	24
8:15 AM	0	3	6	0	0	9	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	12
8:30 AM	0	4	4	0	0	8	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	11
8:45 AM	0	0	11	0	0	11	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	21
Total	0	9	29	0	0	38	0	0	0	0	0	0	0	30	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	68
9:00 AM	0	1	9	0	0	10	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	16
9:15 AM	0	1	3	0	0	4	0	0	0	0	0	0	0	12	0	0	0	12	1	0	0	0	0	1	0	0	0	0	0	0	17
Total	0	2	12	0	0	14	0	0	0	0	0	0	0	18	0	0	0	18	1	0	0	0	0	1	0	0	0	0	0	0	33
Grand Total	0	16	55	0	0	71	0	0	0	0	0	0	0	62	0	0	0	62	1	0	0	0	0	1	0	0	0	0	0	0	134
Approach %	0.0	22.5	77.5	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	11.9	41.0	0.0	0.0	53.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.3	0.0	0.0	0.0	46.3	0.7	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						62						0						56						16						0	134
Buses	0	10	18	0	0	28	0	0	0	0	0	0	0	21	0	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	49
% Buses	0.0	62.5	32.7	0.0	0.0	39.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.9	0.0	0.0	0.0	33.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.6
Exiting Leg Total						21						0						18						10						0	49
Single-Unit Trucks	0	6	31	0	0	37	0	0	0	0	0	0	0	32	0	0	0	32	1	0	0	0	0	1	0	0	0	0	0	0	70
% Single-Unit	0.0	37.5	56.4	0.0	0.0	52.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.6	0.0	0.0	0.0	51.6	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	52.2
Exiting Leg Total						32						0						32						6						0	70
Articulated Trucks	0	0	6	0	0	6	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	15
% Articulated	0.0	0.0	10.9	0.0	0.0	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14.5	0.0	0.0	0.0	14.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.2
Exiting Leg Total						9						0						6						0						0	15

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
7:30 AM	0	3	6	0	0	9	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	17
7:45 AM	0	2	8	0	0	10	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	16
8:00 AM	0	2	8	0	0	10	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	24
8:15 AM	0	3	6	0	0	9	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	12
Total Volume	0	10	28	0	0	38	0	0	0	0	0	0	0	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	69
% Approach Total	0.0	26.3	73.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.833	0.875	0.000	0.000	0.950	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.554	0.000	0.000	0.000	0.554	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.719
Buses	0	8	9	0	0	17	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	31
Buses %	0.0	80.0	32.1	0.0	0.0	44.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.2	0.0	0.0	0.0	45.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.9
Single-Unit Trucks	0	2	15	0	0	17	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	30
Single-Unit %	0.0	20.0	53.6	0.0	0.0	44.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.9	0.0	0.0	0.0	41.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.5
Articulated Trucks	0	0	4	0	0	4	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8
Articulated %	0.0	0.0	14.3	0.0	0.0	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.9	0.0	0.0	0.0	12.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.6
Buses	0	8	9	0	0	17	0	0	0	0	0	0	0	14	0	0	0	14	0	0	0	0	0	0	0	0	0	0	0	0	31
Single-Unit Trucks	0	2	15	0	0	17	0	0	0	0	0	0	0	13	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	30
Articulated Trucks	0	0	4	0	0	4	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	8
Total Entering Leg	0	10	28	0	0	38	0	0	0	0	0	0	0	31	0	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	69
Buses						14						0						9						8						0	31
Single-Unit Trucks						13						0						15						2						0	30
Articulated Trucks						4						0						4						0						0	8

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Massachusetts Avenue						Linear Pathway						Massachusetts Avenue						Cedar Street						Linear Pathway						
	from North						from Southeast						from South						from West						from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
Total Exiting Leg						31						0						28						10						0	69

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
7:30 AM	1	1	11	0	0	0	0	13	0	3	2	5	0	0	1	0	0	0	0	1	0	2	0	0	1	1	0	2	0	4	0	0	0	0	0	1	1	2	0	1	0	0	0	0	0	1	27
7:45 AM	1	1	10	0	0	0	0	12	0	4	1	5	0	0	0	0	0	0	0	0	1	1	0	5	0	0	0	1	0	6	0	0	1	0	0	1	0	2	0	5	0	1	0	0	0	6	32
Total	2	2	21	0	0	0	0	25	0	7	3	10	0	0	1	0	0	0	0	1	1	3	0	5	1	1	0	3	0	10	0	0	1	0	0	2	1	4	0	6	0	1	0	0	0	7	59
8:00 AM	0	0	16	0	0	0	0	16	0	4	6	10	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	2	14	0	0	1	0	0	5	1	7	0	3	0	0	0	0	0	3	50
8:15 AM	0	3	19	0	0	0	0	22	0	7	7	14	0	0	3	0	0	0	0	1	0	4	0	2	0	1	0	3	1	7	0	0	0	0	0	3	2	5	0	4	0	0	0	0	0	4	56
8:30 AM	0	2	19	0	0	0	0	21	0	5	6	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5	1	0	0	0	0	2	0	3	0	4	0	0	0	0	2	6	46
8:45 AM	0	2	25	0	0	0	0	27	0	14	6	20	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	5	0	0	1	0	0	1	0	2	0	2	0	1	0	0	1	4	58
Total	0	7	79	0	0	0	0	86	0	30	25	55	0	0	3	0	0	0	0	1	0	4	0	12	0	1	0	12	6	31	1	0	2	0	0	11	3	17	0	13	0	1	0	0	3	17	210
9:00 AM	1	0	15	0	0	0	0	16	0	6	2	8	0	0	0	0	0	1	0	1	0	2	0	2	1	0	0	4	0	7	0	0	0	0	0	2	1	3	0	2	0	0	0	0	0	2	38
9:15 AM	0	2	11	0	0	0	0	13	0	9	3	12	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	4	0	0	0	0	0	0	1	1	0	3	0	0	0	0	0	3	33
Total	1	2	26	0	0	0	0	29	0	15	5	20	0	0	0	0	0	1	0	1	0	2	0	2	1	1	0	5	2	11	0	0	0	0	0	2	2	4	0	5	0	0	0	0	0	5	71
Grand Total	3	11	126	0	0	0	0	140	0	52	33	85	0	0	4	0	0	1	0	3	1	9	0	19	2	3	0	20	8	52	1	0	3	0	0	15	6	25	0	24	0	2	0	0	3	29	340
Approach %	2.1	7.9	90.0	0.0	0.0	0.0	0.0		0.0	61.2	38.8		0.0	0.0	44.4	0.0	0.0	11.1	0.0	33.3	11.1		0.0	36.5	3.8	5.8	0.0	38.5	15.4		4.0	0.0	12.0	0.0	0.0	60.0	24.0		0.0	82.8	0.0	6.9	0.0	0.0	10.3		
Total %	0.9	3.2	37.1	0.0	0.0	0.0	0.0	41.2	0.0	15.3	9.7	25.0	0.0	0.0	1.2	0.0	0.0	0.3	0.0	0.9	0.3	2.6	0.0	5.6	0.6	0.9	0.0	5.9	2.4	15.3	0.3	0.0	0.9	0.0	0.0	4.4	1.8	7.4	0.0	7.1	0.0	0.6	0.0	0.0	0.9	8.5	
Exiting Leg Total								28				85										4								180								35								8	340

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:00 AM	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
8:00 AM	0	0	16	0	0	0	0	16	0	4	6	10	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	2	14	0	0	1	0	0	5	1	7	0	3	0	0	0	0	0	3	50
8:15 AM	0	3	19	0	0	0	0	22	0	7	7	14	0	0	3	0	0	0	0	1	0	4	0	2	0	1	0	3	1	7	0	0	0	0	0	3	2	5	0	4	0	0	0	0	0	4	56
8:30 AM	0	2	19	0	0	0	0	21	0	5	6	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	5	1	0	0	0	0	2	0	3	0	4	0	0	0	0	2	6	46
8:45 AM	0	2	25	0	0	0	0	27	0	14	6	20	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	1	5	0	0	1	0	0	1	0	2	0	2	0	1	0	0	1	4	58
Total Volume	0	7	79	0	0	0	0	86	0	30	25	55	0	0	3	0	0	0	0	1	0	4	0	12	0	1	0	12	6	31	1	0	2	0	0	11	3	17	0	13	0	1	0	0	3	17	210
% Approach Total	0.0	8.1	91.9	0.0	0.0	0.0	0.0		0.0	54.5	45.5		0.0	0.0	75.0	0.0	0.0	0.0	0.0	25.0	0.0		0.0	38.7	0.0	3.2	0.0	38.7	19.4		5.9	0.0	11.8	0.0	0.0	64.7	17.6		0.0	76.5	0.0	5.9	0.0	0.0	17.6		
PHF	0.000	0.583	0.790	0.000	0.000	0.000	0.000	0.796	0.000	0.536	0.893	0.688	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.500	0.750	0.554	0.250	0.000	0.500	0.000	0.000	0.550	0.375	0.607	0.000	0.813	0.000	0.250	0.000	0.000	0.375	0.708	0.905
Entering Leg	0	7	79	0	0	0	0	86	0	30	25	55	0	0	3	0	0	0	0	1	0	4	0	12	0	1	0	12	6	31	1	0	2	0	0	11	3	17	0	13	0	1	0	0	3	17	210
Exiting Leg								18				55										1								111								22								3	210
Total								104				110										5								142								39								20	420

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
7:30 AM	0	0	0	0	0	1	1	2	0	1	3	4	0	0	0	0	0	0	0	13	9	22	0	0	0	0	0	13	9	22	0	0	0	0	0	14	12	26	0	0	0	0	0	1	2	3	79
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	19	10	29	0	0	0	0	0	8	9	17	0	0	0	0	0	9	13	22	0	0	0	0	0	1	3	4	74
Total	0	0	0	0	0	1	1	2	0	1	5	6	0	0	0	0	0	0	0	32	19	51	0	0	0	0	0	21	18	39	0	0	0	0	0	23	25	48	0	0	0	0	0	2	5	7	153
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	13	3	16	0	0	0	0	0	8	5	13	0	0	0	0	0	8	7	15	0	0	0	0	0	2	2	4	51
8:15 AM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	14	10	24	0	0	0	0	0	6	5	11	0	0	0	0	0	9	3	12	0	0	0	0	0	3	2	5	54
8:30 AM	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	19	12	31	0	0	0	0	0	8	12	20	0	0	0	0	0	9	15	24	0	0	0	0	0	5	15	20	103
8:45 AM	0	0	0	0	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	12	7	19	0	0	0	0	0	9	6	15	0	0	0	0	0	6	5	11	0	0	0	0	0	4	3	7	58
Total	0	0	0	0	0	0	1	1	0	6	12	18	0	0	0	0	0	0	0	58	32	90	0	0	0	0	0	31	28	59	0	0	0	0	0	32	30	62	0	0	0	0	0	14	22	36	266
9:00 AM	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	13	10	23	0	0	0	0	0	9	8	17	0	0	0	0	0	9	7	16	0	0	0	0	0	5	6	11	72
9:15 AM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	13	5	18	0	0	0	0	0	6	6	12	0	0	0	0	0	6	8	14	0	0	0	0	0	1	7	8	56
Total	0	0	0	0	0	0	0	0	0	4	5	9	0	0	0	0	0	0	0	26	15	41	0	0	0	0	0	15	14	29	0	0	0	0	0	15	15	30	0	0	0	0	0	6	13	19	128
Grand Total	0	0	0	0	0	1	2	3	0	11	22	33	0	0	0	0	0	0	0	116	66	182	0	0	0	0	0	67	60	127	0	0	0	0	0	70	70	140	0	0	0	0	0	22	40	62	547
Approach %	0	0	0	0	0	33.3	66.7		0	33.3	66.7		0	0	0	0	0	0	0	63.7	36.3		0	0	0	0	0	52.8	47.2		0	0	0	0	0	50	50		0	0	0	0	0	35.5	64.5		
Total %	0	0	0	0	0	0.18	0.37	0.55	0	2.01	4.02	6.03	0	0	0	0	0	0	0	21.2	12.1	33.3	0	0	0	0	0	12.2	11	23.2	0	0	0	0	0	12.8	12.8	25.6	0	0	0	0	0	4.02	7.31	11.3	
Exiting Leg Total								3				33										182								127								140								62	547

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:30 AM	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
8:30 AM	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	0	0	19	12	31	0	0	0	0	0	8	12	20	0	0	0	0	0	9	15	24	0	0	0	0	0	5	15	20	103
8:45 AM	0	0	0	0	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	12	7	19	0	0	0	0	0	9	6	15	0	0	0	0	0	6	5	11	0	0	0	0	0	4	3	7	58
9:00 AM	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	13	10	23	0	0	0	0	0	9	8	17	0	0	0	0	0	9	7	16	0	0	0	0	0	5	6	11	72
9:15 AM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	13	5	18	0	0	0	0	0	6	6	12	0	0	0	0	0	6	8	14	0	0	0	0	0	1	7	8	56
Total Volume	0	0	0	0	0	0	0	0	0	10	13	23	0	0	0	0	0	0	0	57	34	91	0	0	0	0	0	32	32	64	0	0	0	0	0	30	35	65	0	0	0	0	0	15	31	46	289
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	43.5	56.5		0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.6	37.4		0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	46.2	53.8		0.0	0.0	0.0	0.0	0.0	32.6	67.4		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.813	0.719	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.708	0.734	0.000	0.000	0.000	0.000	0.000	0.889	0.667	0.800	0.000	0.000	0.000	0.000	0.000	0.833	0.583	0.677	0.000	0.000	0.000	0.000	0.000	0.750	0.517	0.575	0.701
Entering Leg	0	0	0	0	0	0	0	0	0	10	13	23	0	0	0	0	0	0	0	57	34	91	0	0	0	0	0	32	32	64	0	0	0	0	0	30	35	65	0	0	0	0	0	15	31	46	289
Exiting Leg								0				23										91								64								65								46	289
Total								0				46										182								128								130								92	578

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
4:30 PM	0	23	145	0	0	168	0	0	0	0	0	0	0	166	0	0	0	166	2	0	33	0	0	35	0	0	0	0	0	0	369
4:45 PM	0	25	136	0	0	161	0	0	0	0	0	0	0	147	0	0	0	147	0	0	34	0	0	34	0	0	0	0	0	0	342
Total	0	48	281	0	0	329	0	0	0	0	0	0	0	313	0	0	0	313	2	0	67	0	0	69	0	0	0	0	0	0	711
5:00 PM	0	26	155	0	0	181	0	0	0	0	0	0	0	134	0	0	0	134	1	0	27	0	0	28	0	0	0	0	0	0	343
5:15 PM	0	23	156	0	0	179	0	0	0	0	0	0	0	162	1	0	0	163	1	0	52	0	0	53	0	0	0	0	0	0	395
5:30 PM	2	28	158	0	0	188	0	0	0	0	0	0	0	176	0	0	0	176	2	0	36	0	0	38	0	0	0	0	0	0	402
5:45 PM	0	21	156	0	0	177	0	0	1	0	0	1	0	157	0	0	0	157	3	0	33	0	0	36	0	0	0	0	0	0	371
Total	2	98	625	0	0	725	0	0	1	0	0	1	0	629	1	0	0	630	7	0	148	0	0	155	0	0	0	0	0	0	1511
6:00 PM	0	20	161	0	0	181	0	0	0	0	0	0	0	150	0	0	0	150	2	0	39	0	0	41	0	0	0	0	0	0	372
6:15 PM	0	32	163	0	0	195	0	0	0	0	0	0	0	155	0	0	0	155	0	0	21	0	0	21	0	0	0	0	0	0	371
6:30 PM	0	33	151	0	0	184	0	0	0	0	0	0	0	112	0	0	0	112	0	0	26	0	0	26	0	0	0	0	0	0	322
6:45 PM	0	21	143	0	0	164	0	0	0	0	0	0	0	139	0	0	0	139	1	0	21	0	0	22	0	0	0	0	0	0	325
Total	0	106	618	0	0	724	0	0	0	0	0	0	0	556	0	0	0	556	3	0	107	0	0	110	0	0	0	0	0	0	1390
7:00 PM	0	18	121	0	0	139	0	0	0	0	0	0	0	129	0	0	0	129	2	0	16	0	0	18	0	0	0	0	0	0	286
7:15 PM	0	16	125	0	0	141	0	0	0	0	0	0	0	91	0	0	0	91	3	0	14	0	0	17	0	0	0	0	0	0	249
Total	0	34	246	0	0	280	0	0	0	0	0	0	0	220	0	0	0	220	5	0	30	0	0	35	0	0	0	0	0	0	535
Grand Total	2	286	1770	0	0	2058	0	0	1	0	0	1	0	1718	1	0	0	1719	17	0	352	0	0	369	0	0	0	0	0	0	4147
Approach %	0.1	13.9	86.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	99.9	0.1	0.0	0.0		4.6	0.0	95.4	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	6.9	42.7	0.0	0.0	49.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.4	0.0	0.0	0.0	41.5	0.4	0.0	8.5	0.0	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						2070						0						1787						287						3	4147
Cars	2	282	1746	0	0	2030	0	0	1	0	0	1	0	1690	1	0	0	1691	16	0	348	0	0	364	0	0	0	0	0	0	4086
% Cars	100.0	98.6	98.6	0.0	0.0	98.6	0.0	0.0	100.0	0.0	0.0	100.0	0.0	98.4	100.0	0.0	0.0	98.4	94.1	0.0	98.9	0.0	0.0	98.6	0.0	0.0	0.0	0.0	0.0	0.0	98.5
Exiting Leg Total						2038						0						1762						283						3	4086
Heavy Vehicles	0	4	24	0	0	28	0	0	0	0	0	0	0	28	0	0	0	28	1	0	4	0	0	5	0	0	0	0	0	0	61
% Heavy Vehicles	0.0	1.4	1.4	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.6	5.9	0.0	1.1	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Exiting Leg Total						32						0						25						4						0	61

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
5:15 PM	0	23	156	0	0	179	0	0	0	0	0	0	0	162	1	0	0	163	1	0	52	0	0	53	0	0	0	0	0	0	395
5:30 PM	2	28	158	0	0	188	0	0	0	0	0	0	0	176	0	0	0	176	2	0	36	0	0	38	0	0	0	0	0	0	402
5:45 PM	0	21	156	0	0	177	0	0	1	0	0	1	0	157	0	0	0	157	3	0	33	0	0	36	0	0	0	0	0	0	371
6:00 PM	0	20	161	0	0	181	0	0	0	0	0	0	0	150	0	0	0	150	2	0	39	0	0	41	0	0	0	0	0	0	372
Total Volume	2	92	631	0	0	725	0	0	1	0	0	1	0	645	1	0	0	646	8	0	160	0	0	168	0	0	0	0	0	0	1540
% Approach Total	0.3	12.7	87.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0		0.0	99.8	0.2	0.0	0.0		4.8	0.0	95.2	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.250	0.821	0.980	0.000	0.000	0.964	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.916	0.250	0.000	0.000	0.918	0.667	0.000	0.769	0.000	0.000	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.958
Cars	2	92	620	0	0	714	0	0	1	0	0	1	0	635	1	0	0	636	7	0	159	0	0	166	0	0	0	0	0	0	1517
Cars %	100.0	100.0	98.3	0.0	0.0	98.5	0.0	0.0	100.0	0.0	0.0	100.0	0.0	98.4	100.0	0.0	0.0	98.5	87.5	0.0	99.4	0.0	0.0	98.8	0.0	0.0	0.0	0.0	0.0	0.0	98.5
Heavy Vehicles	0	0	11	0	0	11	0	0	0	0	0	0	0	10	0	0	0	10	1	0	1	0	0	2	0	0	0	0	0	0	23
Heavy Vehicles %	0.0	0.0	1.7	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	1.5	12.5	0.0	0.6	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	1.5
Cars Enter Leg	2	92	620	0	0	714	0	0	1	0	0	1	0	635	1	0	0	636	7	0	159	0	0	166	0	0	0	0	0	0	1517
Heavy Enter Leg	0	0	11	0	0	11	0	0	0	0	0	0	0	10	0	0	0	10	1	0	1	0	0	2	0	0	0	0	0	0	23
Total Entering Leg	2	92	631	0	0	725	0	0	1	0	0	1	0	645	1	0	0	646	8	0	160	0	0	168	0	0	0	0	0	0	1540
Cars Exiting Leg						794						0						627						93						3	1517
Heavy Exiting Leg						11						0						12						0						0	23
Total Exiting Leg						805						0						639						93						3	1540

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
4:30 PM	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	4
4:45 PM	0	0	3	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	8
Total	0	1	3	0	0	4	0	0	0	0	0	0	0	5	0	0	0	5	0	0	3	0	0	3	0	0	0	0	0	0	12
5:00 PM	0	2	2	0	0	4	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	6	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	10
Total	0	2	11	0	0	13	0	0	0	0	0	0	0	11	0	0	0	11	1	0	0	0	0	1	0	0	0	0	0	0	25
6:00 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	1	0	0	1	0	0	0	0	0	0	5
6:15 PM	0	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	4
6:30 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	4
6:45 PM	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	1	7	0	0	8	0	0	0	0	0	0	0	8	0	0	0	8	0	0	1	0	0	1	0	0	0	0	0	0	17
7:00 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2
7:15 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	3	0	0	3	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	7
Grand Total	0	4	24	0	0	28	0	0	0	0	0	0	0	28	0	0	0	28	1	0	4	0	0	5	0	0	0	0	0	0	61
Approach %	0.0	14.3	85.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		20.0	0.0	80.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	6.6	39.3	0.0	0.0	45.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.9	0.0	0.0	0.0	45.9	1.6	0.0	6.6	0.0	0.0	8.2	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						32						0						25						4						0	61
Buses	0	2	19	0	0	21	0	0	0	0	0	0	0	21	0	0	0	21	0	0	2	0	0	2	0	0	0	0	0	0	44
% Buses	0.0	50.0	79.2	0.0	0.0	75.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	0.0	0.0	0.0	75.0	0.0	0.0	50.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	72.1
Exiting Leg Total						23						0						19						2						0	44
Single-Unit Trucks	0	2	5	0	0	7	0	0	0	0	0	0	0	7	0	0	0	7	1	0	2	0	0	3	0	0	0	0	0	0	17
% Single-Unit	0.0	50.0	20.8	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	25.0	100.0	0.0	50.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	27.9
Exiting Leg Total						9						0						6						2						0	17
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total						0						0						0						0						0	0

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:00 PM	Massachusetts Avenue from North						Linear Pathway from Southeast						Massachusetts Avenue from South						Cedar Street from West						Linear Pathway from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
5:00 PM	0	2	2	0	0	4	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3
5:30 PM	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	5
5:45 PM	0	0	6	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	1	0	0	0	0	1	0	0	0	0	0	0	10
Total Volume	0	2	11	0	0	13	0	0	0	0	0	0	0	11	0	0	0	11	1	0	0	0	0	1	0	0	0	0	0	0	25
% Approach Total	0.0	15.4	84.6	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.250	0.458	0.000	0.000	0.542	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.917	0.000	0.000	0.000	0.917	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Buses	0	1	8	0	0	9	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	18
Buses %	0.0	50.0	72.7	0.0	0.0	69.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	81.8	0.0	0.0	0.0	81.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	72.0
Single-Unit Trucks	0	1	3	0	0	4	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	7
Single-Unit %	0.0	50.0	27.3	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0	0.0	18.2	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	28.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	1	8	0	0	9	0	0	0	0	0	0	0	9	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	18

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue						Linear Pathway						Massachusetts Avenue						Cedar Street						Linear Pathway						
	from North						from Southeast						from South						from West						from Northwest						
	Hard Righ	Right	Thru	Bear Left	U-Turn	Total	Bear Righ	Thru	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Thru	Bear Left	Left	U-Turn	Total	Right	Bear Righ	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Thru	Hard Left	U-Turn	Total	Total
Single-Unit Trucks	0	1	3	0	0	4	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	2	11	0	0	13	0	0	0	0	0	0	0	11	0	0	0	11	1	0	0	0	0	1	0	0	0	0	0	0	25
Buses						9						0						8						1						0	18
Single-Unit Trucks						2						0						4						1						0	7
Articulated Trucks						0						0						0						0						0	0
Total Exiting Leg						11						0						12						2						0	25

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
4:30 PM	0	0	5	1	0	0	0	6	0	5	9	14	0	0	1	0	0	0	0	0	0	1	0	18	0	0	0	3	2	23	0	0	0	0	0	3	2	5	0	1	0	1	0	0	0	2	51
4:45 PM	0	0	3	0	0	0	0	3	0	6	3	9	0	0	0	0	0	0	0	1	0	1	0	18	0	0	0	2	2	22	1	0	0	0	0	2	4	7	0	3	0	0	0	0	0	3	45
Total	0	0	8	1	0	0	0	9	0	11	12	23	0	0	1	0	0	0	0	1	0	2	0	36	0	0	0	5	4	45	1	0	0	0	0	5	6	12	0	4	0	1	0	0	0	5	96
5:00 PM	0	2	2	0	0	0	0	4	0	4	14	18	0	0	0	0	0	0	0	0	0	0	0	10	0	0	0	1	1	12	0	0	0	0	0	2	1	3	0	2	0	0	0	0	0	2	39
5:15 PM	0	0	6	0	0	0	0	6	0	11	7	18	0	0	0	0	0	0	0	0	1	1	0	25	0	0	0	2	1	28	0	0	1	0	0	1	2	4	0	1	0	0	0	0	0	1	58
5:30 PM	0	0	9	0	0	0	0	9	0	8	8	16	0	0	1	0	0	0	0	0	1	2	1	27	0	0	0	1	2	31	0	0	0	0	0	1	0	1	1	6	0	0	0	0	0	7	66
5:45 PM	0	2	3	0	0	0	0	5	0	7	8	15	0	0	0	0	1	0	0	0	0	1	0	17	0	0	0	1	0	18	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	41
Total	0	4	20	0	0	0	0	24	0	30	37	67	0	0	1	0	1	0	0	0	2	4	1	79	0	0	0	5	4	89	2	0	1	0	0	4	3	10	1	9	0	0	0	0	0	10	204
6:00 PM	0	1	11	0	0	0	0	12	0	4	11	15	0	0	1	0	0	0	0	0	1	2	0	21	0	0	0	1	0	22	0	1	0	0	0	0	0	1	0	4	0	0	0	0	0	4	56
6:15 PM	0	0	6	0	0	0	0	6	0	6	2	8	0	0	1	0	0	0	0	0	0	1	0	17	0	0	0	3	0	20	2	0	1	0	0	2	1	6	0	1	0	0	0	0	0	1	42
6:30 PM	0	0	4	0	0	0	0	4	0	6	3	9	0	0	1	0	0	0	0	0	0	1	0	14	0	0	0	0	2	16	1	1	0	0	0	0	4	6	0	2	0	0	0	0	2	4	40
6:45 PM	1	0	0	0	0	0	0	1	0	4	4	8	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	2	0	15	1	0	0	0	0	3	0	4	0	0	0	0	0	0	0	0	28
Total	1	1	21	0	0	0	0	23	0	20	20	40	0	0	3	0	0	0	0	0	1	4	0	65	0	0	0	6	2	73	4	2	1	0	0	5	5	17	0	7	0	0	0	0	2	9	166
7:00 PM	0	1	5	0	0	0	0	6	0	3	1	4	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	0	8	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	1	21
7:15 PM	0	1	2	0	0	0	0	3	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	8	0	0	0	0	2	10	0	0	0	0	0	0	3	3	0	1	0	0	0	0	2	3	23
Total	0	2	7	0	0	0	0	9	0	5	3	8	0	0	0	0	0	0	0	0	0	0	0	15	0	0	0	1	2	18	0	0	0	0	0	2	3	5	0	1	0	0	0	0	3	4	44
Grand Total	1	7	56	1	0	0	0	65	0	66	72	138	0	0	5	0	1	0	0	1	3	10	1	195	0	0	0	17	12	225	7	2	2	0	0	16	17	44	1	21	0	1	0	0	5	28	510
Approach %	1.5	10.8	86.2	1.5	0.0	0.0	0.0		0.0	47.8	52.2		0.0	0.0	50.0	0.0	10.0	0.0	0.0	10.0	30.0		0.4	86.7	0.0	0.0	0.0	7.6	5.3		15.9	4.5	4.5	0.0	0.0	36.4	38.6		3.6	75.0	0.0	3.6	0.0	0.0	17.9		
Total %	0.2	1.4	11.0	0.2	0.0	0.0	0.0	12.7	0.0	12.9	14.1	27.1	0.0	0.0	1.0	0.0	0.2	0.0	0.0	0.2	0.6	2.0	0.2	38.2	0.0	0.0	0.0	3.3	2.4	44.1	1.4	0.4	0.4	0.0	0.0	3.1	3.3	8.6	0.2	4.1	0.0	0.2	0.0	0.0	1.0	5.5	
Exiting Leg Total								203				138										8								113								42								6	510

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
5:15 PM	0	0	6	0	0	0	0	6	0	11	7	18	0	0	0	0	0	0	0	0	1	1	0	25	0	0	0	2	1	28	0	0	1	0	0	1	2	4	0	1	0	0	0	0	0	1	58
5:30 PM	0	0	9	0	0	0	0	9	0	8	8	16	0	0	1	0	0	0	0	0	1	2	1	27	0	0	0	1	2	31	0	0	0	0	0	1	0	1	1	6	0	0	0	0	0	7	66
5:45 PM	0	2	3	0	0	0	0	5	0	7	8	15	0	0	0	0	1	0	0	0	0	1	0	17	0	0	0	1	0	18	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	41
6:00 PM	0	1	11	0	0	0	0	12	0	4	11	15	0	0	1	0	0	0	0	0	1	2	0	21	0	0	0	1	0	22	0	1	0	0	0	0	0	1	0	4	0	0	0	0	0	4	56
Total Volume	0	3	29	0	0	0	0	32	0	30	34	64	0	0	2	0	1	0	0	0	3	6	1	90	0	0	0	5	3	99	2	1	1	0	0	2	2	8	1	11	0	0	0	0	0	12	221
% Approach Total	0.0	9.4	90.6	0.0	0.0	0.0	0.0		0.0	46.9	53.1		0.0	0.0	33.3	0.0	16.7	0.0	0.0	0.0	50.0		1.0	90.9	0.0	0.0	0.0	5.1	3.0		25.0	12.5	12.5	0.0	0.0	25.0	25.0		8.3	91.7	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.375	0.659	0.000	0.000	0.000	0.000	0.667	0.000	0.682	0.773	0.889	0.000	0.000	0.500	0.000	0.250	0.000	0.000	0.000	0.750	0.750	0.250	0.833	0.000	0.000	0.000	0.625	0.375	0.798	0.250	0.250	0.250	0.000	0.000	0.500	0.250	0.500	0.250	0.458	0.000	0.000	0.000	0.000	0.000	0.429	0.837
Entering Leg	0	3	29	0	0	0	0	32	0	30	34	64	0	0	2	0	1	0	0	0	3	6	1	90	0	0	0	5	3	99	2	1	1	0	0	2	2	8	1	11	0	0	0	0	0	12	221
Exiting Leg								93				64										5								50								9								0	221
Total								125				128										11								149								17								12	442

PDI File #: **249807 A**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue NW: Linear Pathway**
Location: **E: Linear Pathway Crosswalk W: Cedar Street SE: Linear Pathway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
4:30 PM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	5	8	13	0	0	0	0	0	21	13	34	0	0	0	0	0	20	19	39	0	0	0	0	0	3	3	6	96
4:45 PM	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	0	0	0	9	11	20	0	0	0	0	0	12	12	24	0	0	0	0	0	14	14	28	0	0	0	0	0	0	2	2	83
Total	0	0	0	0	0	0	0	0	0	4	9	13	0	0	0	0	0	0	0	14	19	33	0	0	0	0	0	33	25	58	0	0	0	0	0	34	33	67	0	0	0	0	0	3	5	8	179
5:00 PM	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	17	11	28	0	0	0	0	0	13	10	23	0	0	0	0	0	17	11	28	0	0	0	0	0	5	1	6	90
5:15 PM	0	0	0	0	0	0	0	0	0	4	2	6	0	0	0	0	0	0	0	15	5	20	0	0	0	0	0	9	15	24	0	0	0	0	0	12	22	34	0	0	0	0	0	3	7	10	94
5:30 PM	0	0	0	0	0	1	0	1	0	1	2	3	0	0	0	0	0	0	0	7	2	9	0	0	0	0	0	18	7	25	0	0	0	0	0	24	7	31	0	0	0	0	0	10	2	12	81
5:45 PM	0	0	0	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0	3	8	11	0	0	0	0	0	10	7	17	0	0	0	0	0	14	6	20	0	0	0	0	0	8	4	12	65
Total	0	0	0	0	0	1	0	1	0	9	10	19	0	0	0	0	0	0	0	42	26	68	0	0	0	0	0	50	39	89	0	0	0	0	0	67	46	113	0	0	0	0	0	26	14	40	330
6:00 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	6	8	0	0	0	0	0	10	13	23	0	0	0	0	0	15	12	27	0	0	0	0	0	4	4	8	68
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	10	17	0	0	0	0	0	7	10	17	0	0	0	0	0	9	10	19	0	0	0	0	0	4	2	6	59
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	8	6	14	0	0	0	0	0	9	12	21	0	0	0	0	0	4	8	12	50
6:45 PM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	15	3	18	0	0	0	0	0	8	10	18	0	0	0	0	0	4	8	12	56
Total	0	0	0	0	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	15	17	32	0	0	0	0	0	40	32	72	0	0	0	0	0	41	44	85	0	0	0	0	0	16	22	38	233
7:00 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	7	3	10	0	0	0	0	0	11	13	24	0	0	0	0	0	12	14	26	62
7:15 PM	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2	5	7	0	0	0	0	0	6	8	14	0	0	0	0	0	9	9	18	42
Total	0	0	0	0	0	0	1	1	0	1	1	2	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	9	8	17	0	0	0	0	0	17	21	38	0	0	0	0	0	21	23	44	104
Grand Total	0	0	0	0	0	1	1	2	0	16	24	40	0	0	0	0	0	0	0	71	64	135	0	0	0	0	0	132	104	236	0	0	0	0	0	159	144	303	0	0	0	0	0	66	64	130	846
Approach %	0	0	0	0	0	50	50		0	40	60		0	0	0	0	0	0	0	52.6	47.4		0	0	0	0	0	55.9	44.1		0	0	0	0	52.5	47.5		0	0	0	0	0	50.8	49.2		
Total %	0	0	0	0	0	0.12	0.12	0.24	0	1.89	2.84	4.73	0	0	0	0	0	0	0	8.39	7.57	16	0	0	0	0	0	15.6	12.3	27.9	0	0	0	0	0	18.8	17	35.8	0	0	0	0	0	7.8	7.57	15.4	
Exiting Leg Total								2				40										135								236								303								130	846

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:30 PM	Massachusetts Avenue from North								Linear Pathway Crosswalk from East				Linear Pathway from Southeast									Massachusetts Avenue from South								Cedar Street from West								Linear Pathway from Northwest								
	Hard Right	Right	Thru	Bear Left	U-Turn	CW-EB	CW-WB	Total	U-Turn	CW-SB	CW-NB	Total	Hard Right	Right	Bear Right	Thru	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Thru	Bear Left	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Left	Hard Left	U-Turn	CW-NB	CW-SB	Total	Hard Right	Bear Right	Thru	Hard Left	U-Turn	CW-NEB	CW-SWB	Total	Total
4:30 PM	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	0	5	8	13	0	0	0	0	0	21	13	34	0	0	0	0	0	20	19	39	0	0	0	0	0	3	3	6	96
4:45 PM	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	0	0	0	9	11	20	0	0	0	0	0	12	12	24	0	0	0	0	0	14	14	28	0	0	0	0	0	0	2	2	83
5:00 PM	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	17	11	28	0	0	0	0	0	13	10	23	0	0	0	0	0	17	11	28	0	0	0	0	0	5	1	6	90
5:15 PM	0	0	0	0	0	0	0	0	0	4	2	6	0	0	0	0	0	0	0	15	5	20	0	0	0	0	0	9	15	24	0	0	0	0	0	12	22	34	0	0	0	0	0	3	7	10	94
Total Volume	0	0	0	0	0	0	0	0	0	12	12	24	0	0	0	0	0	0	0	46	35	81	0	0	0	0	0	55	50	105	0	0	0	0	0	63	66	129	0	0	0	0	0	11	13	24	363
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.8	43.2		0.0	0.0	0.0	0.0	0.0	52.4	47.6		0.0	0.0	0.0	0.0	0.0	48.8	51.2		0.0	0.0	0.0	0.0	0.0	45.8	54.2		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.429	0.667	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.676	0.795	0.723	0.000	0.000	0.000	0.000	0.000	0.655	0.833	0.772	0.000	0.000	0.000	0.000	0.000	0.788	0.750	0.827	0.000	0.000	0.000	0.000	0.000	0.550	0.464	0.600	0.945
Entering Leg	0	0	0	0	0	0	0	0	0	12	12	24	0	0	0	0	0	0	0	46	35	81	0	0	0	0	0	55	50	105	0	0	0	0	0	63	66	129	0	0	0	0	0	11	13	24	363
Exiting Leg								0				24										81								105								129								24	363
Total								0				48										162								210								258								48	726

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	2	170	0	0	172	9	30	15	0	54	8	88	7	0	103	0	21	1	0	22	351
7:45 AM	2	173	0	0	175	6	35	25	0	66	23	102	5	0	130	0	19	0	0	19	390
Total	4	343	0	0	347	15	65	40	0	120	31	190	12	0	233	0	40	1	0	41	741
8:00 AM	1	166	0	0	167	10	26	20	0	56	25	109	8	0	142	0	24	0	0	24	389
8:15 AM	2	174	1	0	177	6	25	24	0	55	22	87	9	0	118	0	19	0	0	19	369
8:30 AM	5	165	0	0	170	14	22	14	0	50	24	88	9	0	121	0	16	0	0	16	357
8:45 AM	3	157	0	0	160	9	22	13	0	44	31	80	9	0	120	0	18	1	0	19	343
Total	11	662	1	0	674	39	95	71	0	205	102	364	35	0	501	0	77	1	0	78	1458
9:00 AM	4	146	0	0	150	7	17	11	0	35	21	78	12	0	111	0	19	0	0	19	315
9:15 AM	6	166	0	0	172	8	20	11	0	39	26	81	7	0	114	2	14	0	0	16	341
Total	10	312	0	0	322	15	37	22	0	74	47	159	19	0	225	2	33	0	0	35	656
Grand Total	25	1317	1	0	1343	69	197	133	0	399	180	713	66	0	959	2	150	2	0	154	2855
Approach %	1.9	98.1	0.1	0.0		17.3	49.4	33.3	0.0		18.8	74.3	6.9	0.0		1.3	97.4	1.3	0.0		
Total %	0.9	46.1	0.0	0.0	47.0	2.4	6.9	4.7	0.0	14.0	6.3	25.0	2.3	0.0	33.6	0.1	5.3	0.1	0.0	5.4	
Exiting Leg Total					784					331					1452					288	2855
Cars	24	1263	1	0	1288	66	193	128	0	387	175	653	61	0	889	2	146	1	0	149	2713
% Cars	96.0	95.9	100.0	0.0	95.9	95.7	98.0	96.2	0.0	97.0	97.2	91.6	92.4	0.0	92.7	100.0	97.3	50.0	0.0	96.8	95.0
Exiting Leg Total					720					322					1393					278	2713
Heavy Vehicles	1	54	0	0	55	3	4	5	0	12	5	60	5	0	70	0	4	1	0	5	142
% Heavy Vehicles	4.0	4.1	0.0	0.0	4.1	4.3	2.0	3.8	0.0	3.0	2.8	8.4	7.6	0.0	7.3	0.0	2.7	50.0	0.0	3.2	5.0
Exiting Leg Total					64					9					59					10	142

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:45 AM	2	173	0	0	175	6	35	25	0	66	23	102	5	0	130	0	19	0	0	19	390
8:00 AM	1	166	0	0	167	10	26	20	0	56	25	109	8	0	142	0	24	0	0	24	389
8:15 AM	2	174	1	0	177	6	25	24	0	55	22	87	9	0	118	0	19	0	0	19	369
8:30 AM	5	165	0	0	170	14	22	14	0	50	24	88	9	0	121	0	16	0	0	16	357
Total Volume	10	678	1	0	689	36	108	83	0	227	94	386	31	0	511	0	78	0	0	78	1505
% Approach Total	1.5	98.4	0.1	0.0		15.9	47.6	36.6	0.0		18.4	75.5	6.1	0.0		0.0	100.0	0.0	0.0		
PHF	0.500	0.974	0.250	0.000	0.973	0.643	0.771	0.830	0.000	0.860	0.940	0.885	0.861	0.000	0.900	0.000	0.813	0.000	0.000	0.813	0.965
Cars	9	653	1	0	663	34	106	81	0	221	92	361	29	0	482	0	76	0	0	76	1442
Cars %	90.0	96.3	100.0	0.0	96.2	94.4	98.1	97.6	0.0	97.4	97.9	93.5	93.5	0.0	94.3	0.0	97.4	0.0	0.0	97.4	95.8
Heavy Vehicles	1	25	0	0	26	2	2	2	0	6	2	25	2	0	29	0	2	0	0	2	63
Heavy Vehicles %	10.0	3.7	0.0	0.0	3.8	5.6	1.9	2.4	0.0	2.6	2.1	6.5	6.5	0.0	5.7	0.0	2.6	0.0	0.0	2.6	4.2
Cars Enter Leg	9	653	1	0	663	34	106	81	0	221	92	361	29	0	482	0	76	0	0	76	1442
Heavy Enter Leg	1	25	0	0	26	2	2	2	0	6	2	25	2	0	29	0	2	0	0	2	63
Total Entering Leg	10	678	1	0	689	36	108	83	0	227	94	386	31	0	511	0	78	0	0	78	1505
Cars Exiting Leg					395					169					734					144	1442
Heavy Exiting Leg					27					4					27					5	63
Total Exiting Leg					422					173					761					149	1505

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	0	6	0	0	6	0	1	2	0	3	0	7	1	0	8	0	1	1	0	2	19
7:45 AM	1	8	0	0	9	0	1	0	0	1	0	6	1	0	7	0	0	0	0	0	17
Total	1	14	0	0	15	0	2	2	0	4	0	13	2	0	15	0	1	1	0	2	36
8:00 AM	0	7	0	0	7	1	1	1	0	3	2	13	0	0	15	0	1	0	0	1	26
8:15 AM	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	10
8:30 AM	0	4	0	0	4	1	0	1	0	2	0	3	1	0	4	0	0	0	0	0	10
8:45 AM	0	9	0	0	9	0	1	1	0	2	2	9	0	0	11	0	0	0	0	0	22
Total	0	26	0	0	26	2	2	3	0	7	4	28	1	0	33	0	2	0	0	2	68
9:00 AM	0	9	0	0	9	1	0	0	0	1	1	6	2	0	9	0	0	0	0	0	19
9:15 AM	0	5	0	0	5	0	0	0	0	0	0	13	0	0	13	0	1	0	0	1	19
Total	0	14	0	0	14	1	0	0	0	1	1	19	2	0	22	0	1	0	0	1	38
Grand Total	1	54	0	0	55	3	4	5	0	12	5	60	5	0	70	0	4	1	0	5	142
Approach %	1.8	98.2	0.0	0.0		25.0	33.3	41.7	0.0		7.1	85.7	7.1	0.0		0.0	80.0	20.0	0.0		
Total %	0.7	38.0	0.0	0.0	38.7	2.1	2.8	3.5	0.0	8.5	3.5	42.3	3.5	0.0	49.3	0.0	2.8	0.7	0.0	3.5	
Exiting Leg Total					64					9					59					10	142
Buses	1	17	0	0	18	1	2	1	0	4	2	21	3	0	26	0	1	1	0	2	50
% Buses	100.0	31.5	0.0	0.0	32.7	33.3	50.0	20.0	0.0	33.3	40.0	35.0	60.0	0.0	37.1	0.0	25.0	100.0	0.0	40.0	35.2
Exiting Leg Total					23					3					18					6	50
Single-Unit Trucks	0	32	0	0	32	2	2	4	0	8	3	30	2	0	35	0	3	0	0	3	78
% Single-Unit	0.0	59.3	0.0	0.0	58.2	66.7	50.0	80.0	0.0	66.7	60.0	50.0	40.0	0.0	50.0	0.0	75.0	0.0	0.0	60.0	54.9
Exiting Leg Total					32					6					36					4	78
Articulated Trucks	0	5	0	0	5	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	14
% Articulated	0.0	9.3	0.0	0.0	9.1	0.0	0.0	0.0	0.0	0.0	0.0	15.0	0.0	0.0	12.9	0.0	0.0	0.0	0.0	0.0	9.9
Exiting Leg Total					9					0					5					0	14

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
7:30 AM	0	6	0	0	6	0	1	2	0	3	0	7	1	0	8	0	1	1	0	2	19
7:45 AM	1	8	0	0	9	0	1	0	0	1	0	6	1	0	7	0	0	0	0	0	17
8:00 AM	0	7	0	0	7	1	1	1	0	3	2	13	0	0	15	0	1	0	0	1	26
8:15 AM	0	6	0	0	6	0	0	0	0	0	0	3	0	0	3	0	1	0	0	1	10
Total Volume	1	27	0	0	28	1	3	3	0	7	2	29	2	0	33	0	3	1	0	4	72
% Approach Total	3.6	96.4	0.0	0.0		14.3	42.9	42.9	0.0		6.1	87.9	6.1	0.0		0.0	75.0	25.0	0.0		
PHF	0.250	0.844	0.000	0.000	0.778	0.250	0.750	0.375	0.000	0.583	0.250	0.558	0.500	0.000	0.550	0.000	0.750	0.250	0.000	0.500	0.692
Buses	1	8	0	0	9	0	2	1	0	3	1	13	2	0	16	0	1	1	0	2	30
Buses %	100.0	29.6	0.0	0.0	32.1	0.0	66.7	33.3	0.0	42.9	50.0	44.8	100.0	0.0	48.5	0.0	33.3	100.0	0.0	50.0	41.7
Single-Unit Trucks	0	15	0	0	15	1	1	2	0	4	1	12	0	0	13	0	2	0	0	2	34
Single-Unit %	0.0	55.6	0.0	0.0	53.6	100.0	33.3	66.7	0.0	57.1	50.0	41.4	0.0	0.0	39.4	0.0	66.7	0.0	0.0	50.0	47.2
Articulated Trucks	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Articulated %	0.0	14.8	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	13.8	0.0	0.0	12.1	0.0	0.0	0.0	0.0	0.0	11.1
Buses	1	8	0	0	9	0	2	1	0	3	1	13	2	0	16	0	1	1	0	2	30
Single-Unit Trucks	0	15	0	0	15	1	1	2	0	4	1	12	0	0	13	0	2	0	0	2	34
Articulated Trucks	0	4	0	0	4	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	8
Total Entering Leg	1	27	0	0	28	1	3	3	0	7	2	29	2	0	33	0	3	1	0	4	72
Buses					14					2					9					5	30
Single-Unit Trucks					13					3					17					1	34
Articulated Trucks					4					0					4					0	8
Total Exiting Leg					31					5					30					6	72

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	14	0	0	0	0	14	0	1	0	0	1	0	2	0	1	0	0	1	0	2	0	1	0	0	0	0	1	19
7:45 AM	0	14	0	0	0	0	14	0	1	1	0	1	0	3	0	6	0	0	0	0	6	1	1	0	0	0	1	3	26
Total	0	28	0	0	0	0	28	0	2	1	0	2	0	5	0	7	0	0	1	0	8	1	2	0	0	0	1	4	45
8:00 AM	0	20	0	0	0	0	20	0	2	0	0	1	0	3	0	10	0	0	1	0	11	0	0	0	0	0	0	0	34
8:15 AM	0	27	0	0	0	1	28	0	0	1	0	1	1	3	0	4	0	0	0	0	4	0	2	0	0	0	0	2	37
8:30 AM	0	23	0	0	0	0	23	0	0	1	0	0	0	1	1	2	0	0	0	0	3	0	1	0	0	0	0	1	28
8:45 AM	0	25	0	0	0	1	26	0	0	0	0	1	0	1	1	7	0	0	2	0	10	0	0	0	0	0	0	0	37
Total	0	95	0	0	0	2	97	0	2	2	0	3	1	8	2	23	0	0	3	0	28	0	3	0	0	0	0	3	136
9:00 AM	0	15	0	0	0	0	15	0	0	2	0	1	0	3	2	5	0	0	1	0	8	1	0	0	0	0	0	1	27
9:15 AM	0	17	0	0	0	1	18	0	0	0	0	2	0	2	1	6	0	0	0	0	7	0	0	0	0	0	0	0	27
Total	0	32	0	0	0	1	33	0	0	2	0	3	0	5	3	11	0	0	1	0	15	1	0	0	0	0	0	1	54
Grand Total	0	155	0	0	0	3	158	0	4	5	0	8	1	18	5	41	0	0	5	0	51	2	5	0	0	0	1	8	235
Approach %	0.0	98.1	0.0	0.0	0.0	1.9		0.0	22.2	27.8	0.0	44.4	5.6		9.8	80.4	0.0	0.0	9.8	0.0		25.0	62.5	0.0	0.0	0.0	12.5		
Total %	0.0	66.0	0.0	0.0	0.0	1.3	67.2	0.0	1.7	2.1	0.0	3.4	0.4	7.7	2.1	17.4	0.0	0.0	2.1	0.0	21.7	0.9	2.1	0.0	0.0	0.0	0.4	3.4	
Exiting Leg Total							44							19							167							5	235

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:00 AM	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:00 AM	0	20	0	0	0	0	20	0	2	0	0	1	0	3	0	10	0	0	1	0	11	0	0	0	0	0	0	0	34
8:15 AM	0	27	0	0	0	1	28	0	0	1	0	1	1	3	0	4	0	0	0	0	4	0	2	0	0	0	0	2	37
8:30 AM	0	23	0	0	0	0	23	0	0	1	0	0	0	1	1	2	0	0	0	0	3	0	1	0	0	0	0	1	28
8:45 AM	0	25	0	0	0	1	26	0	0	0	0	1	0	1	1	7	0	0	2	0	10	0	0	0	0	0	0	0	37
Total Volume	0	95	0	0	0	2	97	0	2	2	0	3	1	8	2	23	0	0	3	0	28	0	3	0	0	0	0	3	136
% Approach Total	0.0	97.9	0.0	0.0	0.0	2.1		0.0	25.0	25.0	0.0	37.5	12.5		7.1	82.1	0.0	0.0	10.7	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.880	0.000	0.000	0.000	0.500	0.866	0.000	0.250	0.500	0.000	0.750	0.250	0.667	0.500	0.575	0.000	0.000	0.375	0.000	0.636	0.000	0.375	0.000	0.000	0.000	0.000	0.375	0.919
Entering Leg	0	95	0	0	0	2	97	0	2	2	0	3	1	8	2	23	0	0	3	0	28	0	3	0	0	0	0	3	136
Exiting Leg							25							9							100							2	136
Total							122							17							128							5	272

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	6	9	0	0	0	0	1	4	5	0	0	0	0	2	1	3	17
7:45 AM	0	0	0	0	1	1	2	0	0	0	0	4	3	7	0	0	0	0	2	3	5	0	0	0	0	0	4	4	18
Total	0	0	0	0	1	1	2	0	0	0	0	7	9	16	0	0	0	0	3	7	10	0	0	0	0	2	5	7	35
8:00 AM	0	0	0	0	0	1	1	0	0	0	0	5	6	11	0	0	0	0	1	6	7	0	0	0	0	1	2	3	22
8:15 AM	0	0	0	0	0	2	2	0	0	0	0	7	2	9	0	0	0	0	4	10	14	0	0	0	0	5	3	8	33
8:30 AM	0	0	0	0	0	1	1	0	0	0	0	7	4	11	0	0	0	0	1	6	7	0	0	0	0	2	5	7	26
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	5	2	7	0	0	0	0	4	2	6	0	0	0	0	0	2	2	15
Total	0	0	0	0	0	4	4	0	0	0	0	24	14	38	0	0	0	0	10	24	34	0	0	0	0	8	12	20	96
9:00 AM	0	0	0	0	0	2	2	0	0	0	0	7	3	10	0	0	0	0	1	1	2	0	0	0	0	2	1	3	17
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	2	3	5	0	0	0	0	2	4	6	14
Total	0	0	0	0	0	2	2	0	0	0	0	10	3	13	0	0	0	0	3	4	7	0	0	0	0	4	5	9	31
Grand Total	0	0	0	0	1	7	8	0	0	0	0	41	26	67	0	0	0	0	16	35	51	0	0	0	0	14	22	36	162
Approach %	0	0	0	0	12.5	87.5		0	0	0	0	61.2	38.8		0	0	0	0	31.4	68.6		0	0	0	0	38.9	61.1		
Total %	0	0	0	0	0.62	4.32	4.94	0	0	0	0	25.3	16	41.4	0	0	0	0	9.88	21.6	31.5	0	0	0	0	8.64	13.6	22.2	
Exiting Leg Total							8							67							51							36	162

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:45 AM	0	0	0	0	1	1	2	0	0	0	0	4	3	7	0	0	0	0	2	3	5	0	0	0	0	0	4	4	18
8:00 AM	0	0	0	0	0	1	1	0	0	0	0	5	6	11	0	0	0	0	1	6	7	0	0	0	0	1	2	3	22
8:15 AM	0	0	0	0	0	2	2	0	0	0	0	7	2	9	0	0	0	0	4	10	14	0	0	0	0	5	3	8	33
8:30 AM	0	0	0	0	0	1	1	0	0	0	0	7	4	11	0	0	0	0	1	6	7	0	0	0	0	2	5	7	26
Total Volume	0	0	0	0	1	5	6	0	0	0	0	23	15	38	0	0	0	0	8	25	33	0	0	0	0	8	14	22	99
% Approach Total	0.0	0.0	0.0	0.0	16.7	83.3		0.0	0.0	0.0	0.0	60.5	39.5		0.0	0.0	0.0	0.0	24.2	75.8		0.0	0.0	0.0	0.0	36.4	63.6		
PHF	0.000	0.000	0.000	0.000	0.250	0.625	0.750	0.000	0.000	0.000	0.000	0.821	0.625	0.864	0.000	0.000	0.000	0.000	0.500	0.625	0.589	0.000	0.000	0.000	0.000	0.400	0.700	0.688	0.750
Entering Leg	0	0	0	0	1	5	6	0	0	0	0	23	15	38	0	0	0	0	8	25	33	0	0	0	0	8	14	22	99
Exiting Leg							6							38							33							22	99
Total							12							76							66							44	198

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:30 PM	6	140	0	0	146	14	28	8	0	50	36	150	8	0	194	0	33	0	0	33	423
4:45 PM	6	135	0	0	141	9	11	9	0	29	46	138	6	0	190	0	39	0	0	39	399
Total	12	275	0	0	287	23	39	17	0	79	82	288	14	0	384	0	72	0	0	72	822
5:00 PM	3	152	0	0	155	9	9	13	0	31	41	128	3	1	173	1	45	0	0	46	405
5:15 PM	3	156	0	0	159	11	19	10	0	40	35	152	3	0	190	1	32	0	0	33	422
5:30 PM	6	153	0	0	159	9	14	12	0	35	37	168	5	0	210	0	33	0	0	33	437
5:45 PM	8	149	0	0	157	4	10	10	0	24	38	147	4	0	189	0	33	0	0	33	403
Total	20	610	0	0	630	33	52	45	0	130	151	595	15	1	762	2	143	0	0	145	1667
6:00 PM	11	157	0	0	168	10	15	11	0	36	35	129	8	0	172	0	46	0	0	46	422
6:15 PM	4	159	0	0	163	11	12	10	0	33	38	141	6	0	185	1	44	1	0	46	427
6:30 PM	4	149	2	0	155	3	12	17	0	32	35	105	7	1	148	3	28	1	0	32	367
6:45 PM	8	132	0	0	140	12	15	12	0	39	31	129	3	0	163	2	43	0	0	45	387
Total	27	597	2	0	626	36	54	50	0	140	139	504	24	1	668	6	161	2	0	169	1603
7:00 PM	5	119	0	0	124	7	10	17	0	34	36	122	9	0	167	2	31	0	0	33	358
7:15 PM	0	124	0	0	124	10	9	6	0	25	27	86	4	0	117	2	27	0	0	29	295
Total	5	243	0	0	248	17	19	23	0	59	63	208	13	0	284	4	58	0	0	62	653
Grand Total	64	1725	2	0	1791	109	164	135	0	408	435	1595	66	2	2098	12	434	2	0	448	4745
Approach %	3.6	96.3	0.1	0.0		26.7	40.2	33.1	0.0		20.7	76.0	3.1	0.1		2.7	96.9	0.4	0.0		
Total %	1.3	36.4	0.0	0.0	37.7	2.3	3.5	2.8	0.0	8.6	9.2	33.6	1.4	0.0	44.2	0.3	9.1	0.0	0.0	9.4	
Exiting Leg Total					1706					871					1874					294	4745
Cars	63	1699	2	0	1764	109	164	134	0	407	433	1569	64	2	2068	12	431	2	0	445	4684
% Cars	98.4	98.5	100.0	0.0	98.5	100.0	100.0	99.3	0.0	99.8	99.5	98.4	97.0	100.0	98.6	100.0	99.3	100.0	0.0	99.3	98.7
Exiting Leg Total					1680					866					1847					291	4684
Heavy Vehicles	1	26	0	0	27	0	0	1	0	1	2	26	2	0	30	0	3	0	0	3	61
% Heavy Vehicles	1.6	1.5	0.0	0.0	1.5	0.0	0.0	0.7	0.0	0.2	0.5	1.6	3.0	0.0	1.4	0.0	0.7	0.0	0.0	0.7	1.3
Exiting Leg Total					26					5					27					3	61

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:30 PM	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
5:30 PM	6	153	0	0	159	9	14	12	0	35	37	168	5	0	210	0	33	0	0	33	437
5:45 PM	8	149	0	0	157	4	10	10	0	24	38	147	4	0	189	0	33	0	0	33	403
6:00 PM	11	157	0	0	168	10	15	11	0	36	35	129	8	0	172	0	46	0	0	46	422
6:15 PM	4	159	0	0	163	11	12	10	0	33	38	141	6	0	185	1	44	1	0	46	427
Total Volume	29	618	0	0	647	34	51	43	0	128	148	585	23	0	756	1	156	1	0	158	1689
% Approach Total	4.5	95.5	0.0	0.0		26.6	39.8	33.6	0.0		19.6	77.4	3.0	0.0		0.6	98.7	0.6	0.0		
PHF	0.659	0.972	0.000	0.000	0.963	0.773	0.850	0.896	0.000	0.889	0.974	0.871	0.719	0.000	0.900	0.250	0.848	0.250	0.000	0.859	0.966
Cars	28	605	0	0	633	34	51	43	0	128	147	578	23	0	748	1	156	1	0	158	1667
Cars %	96.6	97.9	0.0	0.0	97.8	100.0	100.0	100.0	0.0	100.0	99.3	98.8	100.0	0.0	98.9	100.0	100.0	100.0	0.0	100.0	98.7
Heavy Vehicles	1	13	0	0	14	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	22
Heavy Vehicles %	3.4	2.1	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.7	1.2	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.3
Cars Enter Leg	28	605	0	0	633	34	51	43	0	128	147	578	23	0	748	1	156	1	0	158	1667
Heavy Enter Leg	1	13	0	0	14	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	22
Total Entering Leg	29	618	0	0	647	34	51	43	0	128	148	585	23	0	756	1	156	1	0	158	1689
Cars Exiting Leg					613					303					649					102	1667
Heavy Exiting Leg					7					1					13					1	22
Total Exiting Leg					620					304					662					103	1689

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	4
4:45 PM	0	3	0	0	3	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	8
Total	0	4	0	0	4	0	0	0	0	0	1	5	1	0	7	0	1	0	0	1	12
5:00 PM	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	0	1	0	0	1	8
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
5:45 PM	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8
Total	0	12	0	0	12	0	0	0	0	0	0	10	1	0	11	0	1	0	0	1	24
6:00 PM	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
6:15 PM	0	3	0	0	3	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	4
6:30 PM	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	4
6:45 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
Total	1	7	0	0	8	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	16
7:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
7:15 PM	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	0	1	0	0	1	7
Total	0	3	0	0	3	0	0	1	0	1	0	4	0	0	4	0	1	0	0	1	9
Grand Total	1	26	0	0	27	0	0	1	0	1	2	26	2	0	30	0	3	0	0	3	61
Approach %	3.7	96.3	0.0	0.0		0.0	0.0	100.0	0.0		6.7	86.7	6.7	0.0		0.0	100.0	0.0	0.0		
Total %	1.6	42.6	0.0	0.0	44.3	0.0	0.0	1.6	0.0	1.6	3.3	42.6	3.3	0.0	49.2	0.0	4.9	0.0	0.0	4.9	
Exiting Leg Total					26					5					27					3	61
Buses	0	19	0	0	19	0	0	0	0	0	1	20	1	0	22	0	1	0	0	1	42
% Buses	0.0	73.1	0.0	0.0	70.4	0.0	0.0	0.0	0.0	0.0	50.0	76.9	50.0	0.0	73.3	0.0	33.3	0.0	0.0	33.3	68.9
Exiting Leg Total					20					2					19					1	42
Single-Unit Trucks	1	7	0	0	8	0	0	1	0	1	1	6	1	0	8	0	2	0	0	2	19
% Single-Unit	100.0	26.9	0.0	0.0	29.6	0.0	0.0	100.0	0.0	100.0	50.0	23.1	50.0	0.0	26.7	0.0	66.7	0.0	0.0	66.7	31.1
Exiting Leg Total					6					3					8					2	19
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total					0					0					0					0	0

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:45 PM	Massachusetts Avenue from North					Cameron Avenue from East					Massachusetts Avenue from South					Harvey Street from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
4:45 PM	0	3	0	0	3	0	0	0	0	0	1	3	0	0	4	0	1	0	0	1	8
5:00 PM	0	3	0	0	3	0	0	0	0	0	0	3	1	0	4	0	1	0	0	1	8
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
Total Volume	0	9	0	0	9	0	0	0	0	0	1	11	1	0	13	0	2	0	0	2	24
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		7.7	84.6	7.7	0.0		0.0	100.0	0.0	0.0		
PHF	0.000	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.250	0.917	0.250	0.000	0.813	0.000	0.500	0.000	0.000	0.500	0.750
Buses	0	7	0	0	7	0	0	0	0	0	1	7	0	0	8	0	1	0	0	1	16
Buses %	0.0	77.8	0.0	0.0	77.8	0.0	0.0	0.0	0.0	0.0	100.0	63.6	0.0	0.0	61.5	0.0	50.0	0.0	0.0	50.0	66.7
Single-Unit Trucks	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	0	1	0	0	1	8
Single-Unit %	0.0	22.2	0.0	0.0	22.2	0.0	0.0	0.0	0.0	0.0	0.0	36.4	100.0	0.0	38.5	0.0	50.0	0.0	0.0	50.0	33.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	7	0	0	7	0	0	0	0	0	1	7	0	0	8	0	1	0	0	1	16
Single-Unit Trucks	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	0	1	0	0	1	8
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	9	0	0	9	0	0	0	0	0	1	11	1	0	13	0	2	0	0	2	24
Buses					7					2					7					0	16
Single-Unit Trucks					4					1					2					1	8
Articulated Trucks					0					0					0					0	0
Total Exiting Leg					11					3					9					1	24

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	7	0	0	0	0	7	0	2	0	0	0	0	2	1	18	0	0	0	1	20	0	0	0	0	0	0	0	29
4:45 PM	0	8	0	0	0	0	8	0	0	0	0	0	0	0	1	18	0	0	0	0	19	0	0	0	0	0	0	0	27
Total	0	15	0	0	0	0	15	0	2	0	0	0	0	2	2	36	0	0	0	1	39	0	0	0	0	0	0	0	56
5:00 PM	0	4	1	0	0	0	5	0	1	0	0	1	1	3	2	12	0	0	0	0	14	0	1	0	0	0	0	1	23
5:15 PM	0	9	0	0	0	0	9	1	1	0	0	0	0	2	2	29	0	0	0	0	31	0	0	0	0	0	0	0	42
5:30 PM	0	11	0	0	0	0	11	0	0	0	0	0	0	0	2	27	0	0	0	0	29	0	0	0	0	0	0	0	40
5:45 PM	0	9	0	0	0	1	10	0	1	1	0	0	0	2	4	21	0	0	0	0	25	0	1	0	0	0	0	1	38
Total	0	33	1	0	0	1	35	1	3	1	0	1	1	7	10	89	0	0	0	0	99	0	2	0	0	0	0	2	143
6:00 PM	0	13	0	0	0	1	14	0	0	0	0	0	0	0	0	15	0	0	1	0	16	0	0	0	0	0	0	0	30
6:15 PM	0	8	0	0	0	0	8	0	1	0	0	0	0	1	1	22	0	0	3	0	26	0	0	0	0	0	0	0	35
6:30 PM	0	8	0	0	0	0	8	0	0	1	0	1	0	2	4	12	0	0	0	0	16	0	0	0	0	0	0	0	26
6:45 PM	0	0	0	0	1	0	1	0	2	2	0	0	1	5	1	13	0	0	0	0	14	0	1	0	0	0	0	1	21
Total	0	29	0	0	1	1	31	0	3	3	0	1	1	8	6	62	0	0	4	0	72	0	1	0	0	0	0	1	112
7:00 PM	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	10	0	0	0	0	10	0	0	0	0	0	0	0	14
7:15 PM	0	3	0	0	0	0	3	0	1	0	0	0	0	1	1	11	0	0	0	0	12	0	1	0	0	0	0	1	17
Total	0	7	0	0	0	0	7	0	1	0	0	0	0	1	1	21	0	0	0	0	22	0	1	0	0	0	0	1	31
Grand Total	0	84	1	0	1	2	88	1	9	4	0	2	2	18	19	208	0	0	4	1	232	0	4	0	0	0	0	4	342
Approach %	0.0	95.5	1.1	0.0	1.1	2.3		5.6	50.0	22.2	0.0	11.1	11.1		8.2	89.7	0.0	0.0	1.7	0.4		0.0	100.0	0.0	0.0	0.0	0.0		
Total %	0.0	24.6	0.3	0.0	0.3	0.6	25.7	0.3	2.6	1.2	0.0	0.6	0.6	5.3	5.6	60.8	0.0	0.0	1.2	0.3	67.8	0.0	1.2	0.0	0.0	0.0	0.0	1.2	
Exiting Leg Total							212							28							93							9	342

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
5:15 PM	0	9	0	0	0	0	9	1	1	0	0	0	0	2	2	29	0	0	0	0	31	0	0	0	0	0	0	0	42
5:30 PM	0	11	0	0	0	0	11	0	0	0	0	0	0	0	2	27	0	0	0	0	29	0	0	0	0	0	0	0	40
5:45 PM	0	9	0	0	0	1	10	0	1	1	0	0	0	2	4	21	0	0	0	0	25	0	1	0	0	0	0	1	38
6:00 PM	0	13	0	0	0	1	14	0	0	0	0	0	0	0	0	15	0	0	1	0	16	0	0	0	0	0	0	0	30
Total Volume	0	42	0	0	0	2	44	1	2	1	0	0	0	4	8	92	0	0	1	0	101	0	1	0	0	0	0	1	150
% Approach Total	0.0	95.5	0.0	0.0	0.0	4.5		25.0	50.0	25.0	0.0	0.0	0.0		7.9	91.1	0.0	0.0	1.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.808	0.000	0.000	0.000	0.500	0.786	0.250	0.500	0.250	0.000	0.000	0.000	0.500	0.500	0.793	0.000	0.000	0.250	0.000	0.815	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.893
Entering Leg	0	42	0	0	0	2	44	1	2	1	0	0	0	4	8	92	0	0	1	0	101	0	1	0	0	0	0	1	150
Exiting Leg							95							9							44							2	150
Total							139							13							145							3	300

PDI File #: **249807 B**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **E: Cameron Avenue W: Harvey Street**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

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Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	0	0	0	1	0	1	0	0	0	0	5	3	8	0	0	0	0	2	4	6	0	0	0	0	4	7	11	26
4:45 PM	0	0	0	0	2	2	4	0	0	0	0	4	5	9	0	0	0	0	8	1	9	0	0	0	0	7	5	12	34
Total	0	0	0	0	3	2	5	0	0	0	0	9	8	17	0	0	0	0	10	5	15	0	0	0	0	11	12	23	60
5:00 PM	0	0	0	0	2	0	2	0	0	0	0	9	2	11	0	0	0	0	11	1	12	0	0	0	0	10	4	14	39
5:15 PM	0	0	0	0	1	1	2	0	0	0	0	5	2	7	0	0	0	0	9	4	13	0	0	0	0	7	8	15	37
5:30 PM	0	0	0	0	1	0	1	0	0	0	0	12	9	21	0	0	0	0	9	3	12	0	0	0	0	6	1	7	41
5:45 PM	0	0	0	0	2	2	4	0	0	0	0	3	11	14	0	0	0	0	4	2	6	0	0	0	0	7	4	11	35
Total	0	0	0	0	6	3	9	0	0	0	0	29	24	53	0	0	0	0	33	10	43	0	0	0	0	30	17	47	152
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	4	7	11	0	0	0	0	6	6	12	25
6:15 PM	0	0	0	0	2	0	2	0	0	0	0	3	3	6	0	0	0	0	1	6	7	0	0	0	0	6	4	10	25
6:30 PM	0	0	0	0	2	1	3	0	0	0	0	17	2	19	0	0	0	0	4	6	10	0	0	0	0	4	5	9	41
6:45 PM	0	0	0	0	2	4	6	0	0	0	0	2	11	13	0	0	0	0	3	4	7	0	0	0	0	2	7	9	35
Total	0	0	0	0	6	5	11	0	0	0	0	22	18	40	0	0	0	0	12	23	35	0	0	0	0	18	22	40	126
7:00 PM	0	0	0	0	5	0	5	0	0	0	0	7	7	14	0	0	0	0	6	3	9	0	0	0	0	6	4	10	38
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	7	8	0	0	0	0	3	2	5	0	0	0	0	3	3	6	19
Total	0	0	0	0	5	0	5	0	0	0	0	8	14	22	0	0	0	0	9	5	14	0	0	0	0	9	7	16	57
Grand Total	0	0	0	0	20	10	30	0	0	0	0	68	64	132	0	0	0	0	64	43	107	0	0	0	0	68	58	126	395
Approach %	0	0	0	0	66.7	33.3		0	0	0	0	51.5	48.5		0	0	0	0	59.8	40.2		0	0	0	0	54	46		
Total %	0	0	0	0	5.06	2.53	7.59	0	0	0	0	17.2	16.2	33.4	0	0	0	0	16.2	10.9	27.1	0	0	0	0	17.2	14.7	31.9	
Exiting Leg Total							30							132							107							126	395

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:00 PM	Massachusetts Avenue from North							Cameron Avenue from East							Massachusetts Avenue from South							Harvey Street from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
5:00 PM	0	0	0	0	2	0	2	0	0	0	0	9	2	11	0	0	0	0	11	1	12	0	0	0	0	10	4	14	39
5:15 PM	0	0	0	0	1	1	2	0	0	0	0	5	2	7	0	0	0	0	9	4	13	0	0	0	0	7	8	15	37
5:30 PM	0	0	0	0	1	0	1	0	0	0	0	12	9	21	0	0	0	0	9	3	12	0	0	0	0	6	1	7	41
5:45 PM	0	0	0	0	2	2	4	0	0	0	0	3	11	14	0	0	0	0	4	2	6	0	0	0	0	7	4	11	35
Total Volume	0	0	0	0	6	3	9	0	0	0	0	29	24	53	0	0	0	0	33	10	43	0	0	0	0	30	17	47	152
% Approach Total	0.0	0.0	0.0	0.0	66.7	33.3		0.0	0.0	0.0	0.0	54.7	45.3		0.0	0.0	0.0	0.0	76.7	23.3		0.0	0.0	0.0	0.0	63.8	36.2		
PHF	0.000	0.000	0.000	0.000	0.750	0.375	0.563	0.000	0.000	0.000	0.000	0.604	0.545	0.631	0.000	0.000	0.000	0.000	0.750	0.625	0.827	0.000	0.000	0.000	0.000	0.750	0.531	0.783	0.927
Entering Leg	0	0	0	0	6	3	9	0	0	0	0	29	24	53	0	0	0	0	33	10	43	0	0	0	0	30	17	47	152
Exiting Leg							9							53							43							47	152
Total							18							106							86							94	304

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
7:30 AM	0	184	0	184	105	0	0	105	1	0	0	1	290
7:45 AM	0	203	0	203	133	0	0	133	3	0	0	3	339
Total	0	387	0	387	238	0	0	238	4	0	0	4	629
8:00 AM	0	190	0	190	143	0	0	143	2	0	0	2	335
8:15 AM	0	203	0	203	119	0	0	119	5	0	0	5	327
8:30 AM	0	178	0	178	115	0	0	115	3	0	0	3	296
8:45 AM	0	169	0	169	124	0	0	124	0	0	0	0	293
Total	0	740	0	740	501	0	0	501	10	0	0	10	1251
9:00 AM	0	156	0	156	108	0	0	108	4	0	0	4	268
9:15 AM	0	180	0	180	115	0	0	115	1	0	0	1	296
Total	0	336	0	336	223	0	0	223	5	0	0	5	564
Grand Total	0	1463	0	1463	962	0	0	962	19	0	0	19	2444
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	59.9	0.0	59.9	39.4	0.0	0.0	39.4	0.8	0.0	0.0	0.8	
Exiting Leg Total				962				1482				0	2444
Cars	0	1400	0	1400	892	0	0	892	18	0	0	18	2310
% Cars	0.0	95.7	0.0	95.7	92.7	0.0	0.0	92.7	94.7	0.0	0.0	94.7	94.5
Exiting Leg Total				892				1418				0	2310
Heavy Vehicles	0	63	0	63	70	0	0	70	1	0	0	1	134
% Heavy Vehicles	0.0	4.3	0.0	4.3	7.3	0.0	0.0	7.3	5.3	0.0	0.0	5.3	5.5
Exiting Leg Total				70				64				0	134

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
7:45 AM	0	203	0	203	133	0	0	133	3	0	0	3	339
8:00 AM	0	190	0	190	143	0	0	143	2	0	0	2	335
8:15 AM	0	203	0	203	119	0	0	119	5	0	0	5	327
8:30 AM	0	178	0	178	115	0	0	115	3	0	0	3	296
Total Volume	0	774	0	774	510	0	0	510	13	0	0	13	1297
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.953	0.000	0.953	0.892	0.000	0.000	0.892	0.650	0.000	0.000	0.650	0.956
Cars	0	744	0	744	480	0	0	480	12	0	0	12	1236
Cars %	0.0	96.1	0.0	96.1	94.1	0.0	0.0	94.1	92.3	0.0	0.0	92.3	95.3
Heavy Vehicles	0	30	0	30	30	0	0	30	1	0	0	1	61
Heavy Vehicles %	0.0	3.9	0.0	3.9	5.9	0.0	0.0	5.9	7.7	0.0	0.0	7.7	4.7
Cars Enter Leg	0	744	0	744	480	0	0	480	12	0	0	12	1236
Heavy Enter Leg	0	30	0	30	30	0	0	30	1	0	0	1	61
Total Entering Leg	0	774	0	774	510	0	0	510	13	0	0	13	1297
Cars Exiting Leg				480				756				0	1236
Heavy Exiting Leg				30				31				0	61
Total Exiting Leg				510				787				0	1297

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
7:30 AM	0	8	0	8	8	0	0	8	0	0	0	0	16
7:45 AM	0	9	0	9	9	0	0	9	0	0	0	0	18
Total	0	17	0	17	17	0	0	17	0	0	0	0	34
8:00 AM	0	9	0	9	13	0	0	13	0	0	0	0	22
8:15 AM	0	7	0	7	3	0	0	3	0	0	0	0	10
8:30 AM	0	5	0	5	5	0	0	5	1	0	0	1	11
8:45 AM	0	11	0	11	10	0	0	10	0	0	0	0	21
Total	0	32	0	32	31	0	0	31	1	0	0	1	64
9:00 AM	0	10	0	10	10	0	0	10	0	0	0	0	20
9:15 AM	0	4	0	4	12	0	0	12	0	0	0	0	16
Total	0	14	0	14	22	0	0	22	0	0	0	0	36
Grand Total	0	63	0	63	70	0	0	70	1	0	0	1	134
Approach %	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	47.0	0.0	47.0	52.2	0.0	0.0	52.2	0.7	0.0	0.0	0.7	
Exiting Leg Total				70				64				0	134
Buses	0	18	0	18	25	0	0	25	0	0	0	0	43
% Buses	0.0	28.6	0.0	28.6	35.7	0.0	0.0	35.7	0.0	0.0	0.0	0.0	32.1
Exiting Leg Total				25				18				0	43
Single-Unit Trucks	0	38	0	38	36	0	0	36	1	0	0	1	75
% Single-Unit	0.0	60.3	0.0	60.3	51.4	0.0	0.0	51.4	100.0	0.0	0.0	100.0	56.0
Exiting Leg Total				36				39				0	75
Articulated Trucks	0	7	0	7	9	0	0	9	0	0	0	0	16
% Articulated	0.0	11.1	0.0	11.1	12.9	0.0	0.0	12.9	0.0	0.0	0.0	0.0	11.9
Exiting Leg Total				9				7				0	16

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:30 AM	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
8:30 AM	0	5	0	5	5	0	0	5	1	0	0	1	11
8:45 AM	0	11	0	11	10	0	0	10	0	0	0	0	21
9:00 AM	0	10	0	10	10	0	0	10	0	0	0	0	20
9:15 AM	0	4	0	4	12	0	0	12	0	0	0	0	16
Total Volume	0	30	0	30	37	0	0	37	1	0	0	1	68
% Approach Total	0.0	100.0	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.000	0.682	0.000	0.682	0.771	0.000	0.000	0.771	0.250	0.000	0.000	0.250	0.810
Buses	0	8	0	8	9	0	0	9	0	0	0	0	17
Buses %	0.0	26.7	0.0	26.7	24.3	0.0	0.0	24.3	0.0	0.0	0.0	0.0	25.0
Single-Unit Trucks	0	19	0	19	23	0	0	23	1	0	0	1	43
Single-Unit %	0.0	63.3	0.0	63.3	62.2	0.0	0.0	62.2	100.0	0.0	0.0	100.0	63.2
Articulated Trucks	0	3	0	3	5	0	0	5	0	0	0	0	8
Articulated %	0.0	10.0	0.0	10.0	13.5	0.0	0.0	13.5	0.0	0.0	0.0	0.0	11.8
Buses	0	8	0	8	9	0	0	9	0	0	0	0	17
Single-Unit Trucks	0	19	0	19	23	0	0	23	1	0	0	1	43
Articulated Trucks	0	3	0	3	5	0	0	5	0	0	0	0	8
Total Entering Leg	0	30	0	30	37	0	0	37	1	0	0	1	68
Buses				9				8				0	17
Single-Unit Trucks				23				20				0	43
Articulated Trucks				5				3				0	8
Total Exiting Leg				37				31				0	68

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	17	0	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	17
7:45 AM	0	15	0	0	0	15	4	0	0	0	0	4	0	0	0	0	0	0	19
Total	0	32	0	0	0	32	4	0	0	0	0	4	0	0	0	0	0	0	36
8:00 AM	0	20	0	0	0	20	7	0	0	0	0	7	0	0	0	0	0	0	27
8:15 AM	0	29	0	0	0	29	4	0	0	0	0	4	3	0	0	0	0	3	36
8:30 AM	0	23	0	0	0	23	3	0	0	0	0	3	0	0	0	0	0	0	26
8:45 AM	0	30	0	0	0	30	7	0	0	0	0	7	0	0	0	0	0	0	37
Total	0	102	0	0	0	102	21	0	0	0	0	21	3	0	0	0	0	3	126
9:00 AM	0	21	0	0	0	21	7	0	0	0	0	7	0	0	0	0	0	0	28
9:15 AM	0	18	0	0	0	18	7	0	0	0	0	7	0	0	0	0	0	0	25
Total	0	39	0	0	0	39	14	0	0	0	0	14	0	0	0	0	0	0	53
Grand Total	0	173	0	0	0	173	39	0	0	0	0	39	3	0	0	0	0	3	215
Approach %	0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		
Total %	0.0	80.5	0.0	0.0	0.0	80.5	18.1	0.0	0.0	0.0	0.0	18.1	1.4	0.0	0.0	0.0	0.0	1.4	
Exiting Leg Total						39						176						0	215

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:15 AM	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
8:15 AM	0	29	0	0	0	29	4	0	0	0	0	4	3	0	0	0	0	3	36
8:30 AM	0	23	0	0	0	23	3	0	0	0	0	3	0	0	0	0	0	0	26
8:45 AM	0	30	0	0	0	30	7	0	0	0	0	7	0	0	0	0	0	0	37
9:00 AM	0	21	0	0	0	21	7	0	0	0	0	7	0	0	0	0	0	0	28
Total Volume	0	103	0	0	0	103	21	0	0	0	0	21	3	0	0	0	0	3	127
% Approach Total	0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.858	0.000	0.000	0.000	0.858	0.750	0.000	0.000	0.000	0.000	0.750	0.250	0.000	0.000	0.000	0.000	0.250	0.858
Entering Leg	0	103	0	0	0	103	21	0	0	0	0	21	3	0	0	0	0	3	127
Exiting Leg						21						106						0	127
Total						124						127						3	254

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	1	3	4
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	6	8	9
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	11	11
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	11	11
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	10	25	25
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	3
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	7	7
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	6	10	10
Grand Total	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	21	22	43	44
Approach %	0	0	0	0	0		0	0	0	0	100		0	0	0	48.837	51.163		
Total %	0	0	0	0	0	0	0	0	0	0	2.2727	2.2727	0	0	0	47.727	50	97.727	
Exiting Leg Total						0						1						43	44

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	5	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	2	11	11
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	6	11	11
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	13	28	28
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	53.6	46.4		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417	0.542	0.636	0.636
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	13	28	28
Exiting Leg						0						0						28	28
Total						0						0						56	56

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class:

Cars and Heavy Vehicles (Combined)

	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
4:30 PM	0	150	0	150	194	0	0	194	6	0	0	6	350
4:45 PM	0	144	0	144	187	0	0	187	3	0	0	3	334
Total	0	294	0	294	381	0	0	381	9	0	0	9	684
5:00 PM	0	170	0	170	174	0	0	174	5	0	0	5	349
5:15 PM	1	166	0	167	193	0	0	193	4	0	0	4	364
5:30 PM	0	164	0	164	207	0	0	207	3	0	0	3	374
5:45 PM	0	159	0	159	198	0	0	198	8	0	0	8	365
Total	1	659	0	660	772	0	0	772	20	0	0	20	1452
6:00 PM	0	168	0	168	186	0	0	186	2	0	0	2	356
6:15 PM	0	169	0	169	187	0	0	187	6	0	0	6	362
6:30 PM	1	172	0	173	150	0	0	150	8	0	0	8	331
6:45 PM	0	140	0	140	163	0	0	163	7	0	0	7	310
Total	1	649	0	650	686	0	0	686	23	0	0	23	1359
7:00 PM	0	144	0	144	168	0	0	168	7	0	0	7	319
7:15 PM	0	133	0	133	117	0	0	117	4	0	0	4	254
Total	0	277	0	277	285	0	0	285	11	0	0	11	573
Grand Total	2	1879	0	1881	2124	0	0	2124	63	0	0	63	4068
Approach %	0.1	99.9	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	46.2	0.0	46.2	52.2	0.0	0.0	52.2	1.5	0.0	0.0	1.5	
Exiting Leg Total				2124				1942				2	4068
Cars	1	1853	0	1854	2093	0	0	2093	62	0	0	62	4009
% Cars	50.0	98.6	0.0	98.6	98.5	0.0	0.0	98.5	98.4	0.0	0.0	98.4	98.5
Exiting Leg Total				2093				1915				1	4009
Heavy Vehicles	1	26	0	27	31	0	0	31	1	0	0	1	59
% Heavy Vehicles	50.0	1.4	0.0	1.4	1.5	0.0	0.0	1.5	1.6	0.0	0.0	1.6	1.5
Exiting Leg Total				31				27				1	59

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
5:15 PM	1	166	0	167	193	0	0	193	4	0	0	4	364
5:30 PM	0	164	0	164	207	0	0	207	3	0	0	3	374
5:45 PM	0	159	0	159	198	0	0	198	8	0	0	8	365
6:00 PM	0	168	0	168	186	0	0	186	2	0	0	2	356
Total Volume	1	657	0	658	784	0	0	784	17	0	0	17	1459
% Approach Total	0.2	99.8	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.978	0.000	0.979	0.947	0.000	0.000	0.947	0.531	0.000	0.000	0.531	0.975
Cars	0	646	0	646	775	0	0	775	17	0	0	17	1438
Cars %	0.0	98.3	0.0	98.2	98.9	0.0	0.0	98.9	100.0	0.0	0.0	100.0	98.6
Heavy Vehicles	1	11	0	12	9	0	0	9	0	0	0	0	21
Heavy Vehicles %	100.0	1.7	0.0	1.8	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	1.4
Cars Enter Leg	0	646	0	646	775	0	0	775	17	0	0	17	1438
Heavy Enter Leg	1	11	0	12	9	0	0	9	0	0	0	0	21
Total Entering Leg	1	657	0	658	784	0	0	784	17	0	0	17	1459
Cars Exiting Leg				775				663				0	1438
Heavy Exiting Leg				9				11				1	21
Total Exiting Leg				784				674				1	1459

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
4:30 PM	0	1	0	1	4	0	0	4	0	0	0	0	5
4:45 PM	0	3	0	3	4	0	0	4	0	0	0	0	7
Total	0	4	0	4	8	0	0	8	0	0	0	0	12
5:00 PM	0	2	0	2	4	0	0	4	1	0	0	1	7
5:15 PM	1	1	0	2	2	0	0	2	0	0	0	0	4
5:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
5:45 PM	0	6	0	6	2	0	0	2	0	0	0	0	8
Total	1	11	0	12	11	0	0	11	1	0	0	1	24
6:00 PM	0	2	0	2	2	0	0	2	0	0	0	0	4
6:15 PM	0	3	0	3	1	0	0	1	0	0	0	0	4
6:30 PM	0	1	0	1	3	0	0	3	0	0	0	0	4
6:45 PM	0	1	0	1	2	0	0	2	0	0	0	0	3
Total	0	7	0	7	8	0	0	8	0	0	0	0	15
7:00 PM	0	1	0	1	1	0	0	1	0	0	0	0	2
7:15 PM	0	3	0	3	3	0	0	3	0	0	0	0	6
Total	0	4	0	4	4	0	0	4	0	0	0	0	8
Grand Total	1	26	0	27	31	0	0	31	1	0	0	1	59
Approach %	3.7	96.3	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
Total %	1.7	44.1	0.0	45.8	52.5	0.0	0.0	52.5	1.7	0.0	0.0	1.7	
Exiting Leg Total				31				27				1	59
Buses	1	19	0	20	23	0	0	23	0	0	0	0	43
% Buses	100.0	73.1	0.0	74.1	74.2	0.0	0.0	74.2	0.0	0.0	0.0	0.0	72.9
Exiting Leg Total				23				19				1	43
Single-Unit Trucks	0	7	0	7	8	0	0	8	1	0	0	1	16
% Single-Unit	0.0	26.9	0.0	25.9	25.8	0.0	0.0	25.8	100.0	0.0	0.0	100.0	27.1
Exiting Leg Total				8				8				0	16
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total				0				0				0	0

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:00 PM	Massachusetts Avenue from North				Massachusetts Avenue from South				Alberta Terrace from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Total
5:00 PM	0	2	0	2	4	0	0	4	1	0	0	1	7
5:15 PM	1	1	0	2	2	0	0	2	0	0	0	0	4
5:30 PM	0	2	0	2	3	0	0	3	0	0	0	0	5
5:45 PM	0	6	0	6	2	0	0	2	0	0	0	0	8
Total Volume	1	11	0	12	11	0	0	11	1	0	0	1	24
% Approach Total	8.3	91.7	0.0		100.0	0.0	0.0		100.0	0.0	0.0		
PHF	0.250	0.458	0.000	0.500	0.688	0.000	0.000	0.688	0.250	0.000	0.000	0.250	0.750
Buses	1	8	0	9	8	0	0	8	0	0	0	0	17
Buses %	100.0	72.7	0.0	75.0	72.7	0.0	0.0	72.7	0.0	0.0	0.0	0.0	70.8
Single-Unit Trucks	0	3	0	3	3	0	0	3	1	0	0	1	7
Single-Unit %	0.0	27.3	0.0	25.0	27.3	0.0	0.0	27.3	100.0	0.0	0.0	100.0	29.2
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	1	8	0	9	8	0	0	8	0	0	0	0	17
Single-Unit Trucks	0	3	0	3	3	0	0	3	1	0	0	1	7
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	11	0	12	11	0	0	11	1	0	0	1	24
Buses				8				8				1	17
Single-Unit Trucks				3				4				0	7
Articulated Trucks				0				0				0	0
Total Exiting Leg				11				12				1	24

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	8	0	0	0	8	18	0	0	0	0	18	0	0	0	0	0	0	26
4:45 PM	0	8	0	0	0	8	18	0	0	0	0	18	0	0	0	0	0	0	26
Total	0	16	0	0	0	16	36	0	0	0	0	36	0	0	0	0	0	0	52
5:00 PM	0	4	0	0	0	4	10	0	0	0	0	10	1	0	0	0	0	1	15
5:15 PM	0	8	0	0	0	8	17	0	0	0	0	17	0	0	0	0	1	1	26
5:30 PM	0	11	0	0	0	11	23	0	0	0	0	23	0	0	0	0	0	0	34
5:45 PM	0	10	0	0	0	10	16	0	0	0	0	16	0	0	0	0	0	0	26
Total	0	33	0	0	0	33	66	0	0	0	0	66	1	0	0	0	1	2	101
6:00 PM	0	13	0	0	0	13	15	0	0	0	0	15	0	0	0	2	0	2	30
6:15 PM	0	11	0	0	0	11	17	0	0	0	0	17	0	0	0	0	0	0	28
6:30 PM	0	9	0	0	0	9	16	0	0	0	0	16	0	0	0	0	0	0	25
6:45 PM	0	2	0	0	0	2	10	0	0	0	0	10	0	0	0	0	0	0	12
Total	0	35	0	0	0	35	58	0	0	0	0	58	0	0	0	2	0	2	95
7:00 PM	0	4	0	0	0	4	3	0	0	0	0	3	0	0	0	0	1	1	8
7:15 PM	0	4	0	0	0	4	10	0	0	0	0	10	0	0	0	0	0	0	14
Total	0	8	0	0	0	8	13	0	0	0	0	13	0	0	0	0	1	1	22
Grand Total	0	92	0	0	0	92	173	0	0	0	0	173	1	0	0	2	2	5	270
Approach %	0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		20.0	0.0	0.0	40.0	40.0		
Total %	0.0	34.1	0.0	0.0	0.0	34.1	64.1	0.0	0.0	0.0	0.0	64.1	0.4	0.0	0.0	0.7	0.7	1.9	
Exiting Leg Total						173						93						4	270

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:30 PM	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
5:30 PM	0	11	0	0	0	11	23	0	0	0	0	23	0	0	0	0	0	0	34
5:45 PM	0	10	0	0	0	10	16	0	0	0	0	16	0	0	0	0	0	0	26
6:00 PM	0	13	0	0	0	13	15	0	0	0	0	15	0	0	0	2	0	2	30
6:15 PM	0	11	0	0	0	11	17	0	0	0	0	17	0	0	0	0	0	0	28
Total Volume	0	45	0	0	0	45	71	0	0	0	0	71	0	0	0	2	0	2	118
% Approach Total	0.0	100.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.865	0.000	0.000	0.000	0.865	0.772	0.000	0.000	0.000	0.000	0.772	0.000	0.000	0.000	0.250	0.000	0.250	0.868
Entering Leg	0	45	0	0	0	45	71	0	0	0	0	71	0	0	0	2	0	2	118
Exiting Leg						71						45						2	118
Total						116						116						4	236

PDI File #: **249807 C**
Location: **N: Massachusetts Avenue S: Massachusetts Avenue**
Location: **W: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	14	14
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	5	11	16	17
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	10	20	30	31
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	8	20	20
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	16	22	22
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	9	17	17
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	7	15	15
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	34	40	74	74
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	11	16	16
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	16	16
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	10	15	15
6:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3	8	11	12
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	21	37	58	59
7:00 PM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	11	6	17	19
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	3	9	9
Total	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	17	9	26	28
Grand Total	0	0	0	2	0	2	0	0	0	2	0	2	0	0	0	82	106	188	192
Approach %	0	0	0	100	0		0	0	0	100	0		0	0	0	43.617	56.383		
Total %	0	0	0	1.0417	0	1.0417	0	0	0	1.0417	0	1.0417	0	0	0	42.708	55.208	97.917	
Exiting Leg Total						2						2						188	192

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:45 PM	Massachusetts Avenue from North						Massachusetts Avenue from South						Alberta Terrace from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	5	11	16	17
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	8	20	20
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	16	22	22
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	9	17	17
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	31	44	75	76
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	41.3	58.7		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.646	0.688	0.852	0.864
Entering Leg	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	31	44	75	76
Exiting Leg						0						1						75	76
Total						0						2						150	152

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
7:30 AM	2	46	1	3	0	52	0	16	23	0	0	39	0	0	0	0	0	0	0	18	5	2	0	25	0	0	0	0	0	0	116
7:45 AM	7	42	0	3	0	52	0	21	20	0	0	41	0	0	0	0	0	0	0	18	21	3	0	42	0	0	0	0	0	0	135
Total	9	88	1	6	0	104	0	37	43	0	0	80	0	0	0	0	0	0	0	36	26	5	0	67	0	0	0	0	0	0	251
8:00 AM	8	37	0	3	0	48	0	13	21	1	0	35	0	0	0	0	0	0	1	24	18	10	0	53	0	0	0	0	0	0	136
8:15 AM	7	34	0	3	0	44	1	24	12	0	0	37	0	0	0	0	0	0	0	14	12	5	0	31	0	0	0	0	0	0	112
8:30 AM	4	39	0	0	0	43	0	22	15	0	0	37	0	0	0	0	0	0	0	15	15	1	0	31	0	0	0	0	0	0	111
8:45 AM	4	27	0	1	0	32	1	20	14	0	0	35	0	0	0	0	0	0	1	17	15	6	0	39	0	0	0	0	0	0	106
Total	23	137	0	7	0	167	2	79	62	1	0	144	0	0	0	0	0	0	2	70	60	22	0	154	0	0	0	0	0	0	465
9:00 AM	0	22	0	1	0	23	0	17	16	0	0	33	0	0	0	0	0	0	0	17	8	2	0	27	0	0	0	0	0	0	83
9:15 AM	7	24	0	1	0	32	1	8	24	0	0	33	0	0	0	0	0	0	1	16	14	3	0	34	0	0	0	0	0	0	99
Total	7	46	0	2	0	55	1	25	40	0	0	66	0	0	0	0	0	0	1	33	22	5	0	61	0	0	0	0	0	0	182
Grand Total	39	271	1	15	0	326	3	141	145	1	0	290	0	0	0	0	0	0	3	139	108	32	0	282	0	0	0	0	0	0	898
Approach %	12.0	83.1	0.3	4.6	0.0		1.0	48.6	50.0	0.3	0.0		0.0	0.0	0.0	0.0	0.0		1.1	49.3	38.3	11.3	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	4.3	30.2	0.1	1.7	0.0	36.3	0.3	15.7	16.1	0.1	0.0	32.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	15.5	12.0	3.6	0.0	31.4	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						111						154						5						416						212	898
Cars	34	261	1	13	0	309	3	134	142	1	0	280	0	0	0	0	0	0	3	135	107	32	0	277	0	0	0	0	0	0	866
% Cars	87.2	96.3	100.0	86.7	0.0	94.8	100.0	95.0	97.9	100.0	0.0	96.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	97.1	99.1	100.0	0.0	98.2	0.0	0.0	0.0	0.0	0.0	0.0	96.4
Exiting Leg Total						110						148						5						403						200	866
Heavy Vehicles	5	10	0	2	0	17	0	7	3	0	0	10	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	0	32
% Heavy Vehicles	12.8	3.7	0.0	13.3	0.0	5.2	0.0	5.0	2.1	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.9	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0	0.0	3.6
Exiting Leg Total						1						6						0						13						12	32

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
7:30 AM	2	46	1	3	0	52	0	16	23	0	0	39	0	0	0	0	0	0	0	18	5	2	0	25	0	0	0	0	0	0	116
7:45 AM	7	42	0	3	0	52	0	21	20	0	0	41	0	0	0	0	0	0	0	18	21	3	0	42	0	0	0	0	0	0	135
8:00 AM	8	37	0	3	0	48	0	13	21	1	0	35	0	0	0	0	0	0	1	24	18	10	0	53	0	0	0	0	0	0	136
8:15 AM	7	34	0	3	0	44	1	24	12	0	0	37	0	0	0	0	0	0	0	14	12	5	0	31	0	0	0	0	0	0	112
Total Volume	24	159	1	12	0	196	1	74	76	1	0	152	0	0	0	0	0	0	1	74	56	20	0	151	0	0	0	0	0	0	499
% Approach Total	12.2	81.1	0.5	6.1	0.0		0.7	48.7	50.0	0.7	0.0		0.0	0.0	0.0	0.0	0.0		0.7	49.0	37.1	13.2	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.750	0.864	0.250	1.000	0.000	0.942	0.250	0.771	0.826	0.250	0.000	0.927	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.771	0.667	0.500	0.000	0.712	0.000	0.000	0.000	0.000	0.000	0.000	0.917
Cars	21	154	1	10	0	186	1	70	74	1	0	146	0	0	0	0	0	0	1	71	56	20	0	148	0	0	0	0	0	0	480
Cars %	87.5	96.9	100.0	83.3	0.0	94.9	100.0	94.6	97.4	100.0	0.0	96.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	95.9	100.0	100.0	0.0	98.0	0.0	0.0	0.0	0.0	0.0	0.0	96.2
Heavy Vehicles	3	5	0	2	0	10	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	19
Heavy Vehicles %	12.5	3.1	0.0	16.7	0.0	5.1	0.0	5.4	2.6	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.1	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8
Cars Enter Leg	21	154	1	10	0	186	1	70	74	1	0	146	0	0	0	0	0	0	1	71	56	20	0	148	0	0	0	0	0	0	480
Heavy Enter Leg	3	5	0	2	0	10	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	19
Total Entering Leg	24	159	1	12	0	196	1	74	76	1	0	152	0	0	0	0	0	0	1	74	56	20	0	151	0	0	0	0	0	0	499
Cars Exiting Leg						57						81						3						228						111	480
Heavy Exiting Leg						0						5						0						7						7	19
Total Exiting Leg						57						86						3						235						118	499

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
7:30 AM	1	1	0	1	0	3	0	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	6
7:45 AM	1	1	0	0	0	2	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	2	2	0	1	0	5	0	3	2	0	0	5	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	11
8:00 AM	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
8:15 AM	0	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
8:30 AM	1	3	0	0	0	4	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:45 AM	0	1	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	7	0	1	0	10	0	2	1	0	0	3	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	15
9:00 AM	0	1	0	0	0	1	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:15 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3
Total	1	1	0	0	0	2	0	2	0	0	0	2	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	6
Grand Total	5	10	0	2	0	17	0	7	3	0	0	10	0	0	0	0	0	0	0	4	1	0	0	5	0	0	0	0	0	0	32
Approach %	29.4	58.8	0.0	11.8	0.0		0.0	70.0	30.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	80.0	20.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	15.6	31.3	0.0	6.3	0.0	53.1	0.0	21.9	9.4	0.0	0.0	31.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	3.1	0.0	0.0	15.6	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						1						6						0						13						12	32
Buses	3	5	0	2	0	10	0	4	2	0	0	6	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	17
% Buses	60.0	50.0	0.0	100.0	0.0	58.8	0.0	57.1	66.7	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	53.1
Exiting Leg Total						0						3						0						7						7	17
Single-Unit Trucks	2	5	0	0	0	7	0	3	1	0	0	4	0	0	0	0	0	0	0	3	1	0	0	4	0	0	0	0	0	0	15
% Single-Unit	40.0	50.0	0.0	0.0	0.0	41.2	0.0	42.9	33.3	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	100.0	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	46.9
Exiting Leg Total						1						3						0						6						5	15
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total						0						0						0						0						0	0

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Right	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
7:30 AM	1	1	0	1	0	3	0	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	6
7:45 AM	1	1	0	0	0	2	0	2	1	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
8:00 AM	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
8:15 AM	0	2	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
Total Volume	3	5	0	2	0	10	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	19
% Approach Total	30.0	50.0	0.0	20.0	0.0		0.0	66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.750	0.625	0.000	0.500	0.000	0.833	0.000	0.500	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.792
Buses	3	3	0	2	0	8	0	3	2	0	0	5	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	14
Buses %	100.0	60.0	0.0	100.0	0.0	80.0	0.0	75.0	100.0	0.0	0.0	83.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	73.7
Single-Unit Trucks	0	2	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	5
Single-Unit %	0.0	40.0	0.0	0.0	0.0	20.0	0.0	25.0	0.0	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	26.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	3	3	0	2	0	8	0	3	2	0	0	5	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	14
Single-Unit Trucks	0	2	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	3	5	0	2	0	10	0	4	2	0	0	6	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	19
Buses						0						3						0						5						6	14
Single-Unit Trucks						0						2						0						2						1	5
Articulated Trucks						0						0						0						0						0	0

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Cedar Street						Harvey Street						Parking Lot Driveway						Cedar Street						Harvey Street						
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
Total Exiting Leg						0						5						0						7						7	19

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	2	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4
Total	0	2	0	1	0	1	0	4	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	7
8:00 AM	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4
8:15 AM	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2
8:45 AM	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0	0	0	0	0	1	0	1	5
Total	2	3	0	0	0	0	0	5	0	2	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	2	1	0	0	0	4	0	0	0	0	0	1	0	1	13
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
Total	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	3
Grand Total	2	7	0	1	0	1	0	11	0	3	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	3	2	0	0	0	6	0	0	0	0	0	1	0	1	23
Approach %	18.2	63.6	0.0	9.1	0.0	9.1	0.0		0.0	60.0	40.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	16.7	50.0	33.3	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0	0.0		
Total %	8.7	30.4	0.0	4.3	0.0	4.3	0.0	47.8	0.0	13.0	8.7	0.0	0.0	0.0	0.0	21.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.3	13.0	8.7	0.0	0.0	0.0	26.1	0.0	0.0	0.0	0.0	0.0	4.3	0.0	4.3	
Exiting Leg Total								4								2								0								9								8	23

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	1	0	1	0	2	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
7:45 AM	0	2	0	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4
8:00 AM	1	0	0	0	0	0	0	1	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	4
8:15 AM	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	1	3	0	1	0	1	0	6	0	3	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	13
% Approach Total	16.7	50.0	0.0	16.7	0.0	16.7	0.0		0.0	60.0	40.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.250	0.375	0.000	0.250	0.000	0.250	0.000	0.750	0.000	0.750	0.500	0.000	0.000	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.813
Entering Leg	1	3	0	1	0	1	0	6	0	3	2	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	13
Exiting Leg								3								1								0								5								4	13
Total								9								6								0								7								4	26

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	4	5	0	0	0	0	0	4	3	7	0	0	0	0	0	9	5	14	28
7:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	3	1	4	8
Total	0	0	0	0	0	0	1	1	0	0	0	0	0	2	0	2	0	0	0	0	0	1	4	5	0	0	0	0	0	5	5	10	0	0	0	0	0	12	6	18	36
8:00 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0	0	1	1	2	0	0	0	0	0	2	5	7	0	0	0	0	0	0	1	1	19
8:15 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3	4	0	0	0	0	0	3	8	11	23
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	0	2	11	13	21
8:45 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	2	4	6	14
Total	0	0	0	0	0	9	2	11	0	0	0	0	0	10	2	12	0	0	0	0	0	2	1	3	0	0	0	0	0	6	14	20	0	0	0	0	0	7	24	31	77
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	1	1	2	10
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	1	1	2	6
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	9	0	0	0	0	0	2	2	4	16
Grand Total	0	0	0	0	0	9	3	12	0	0	0	0	0	15	2	17	0	0	0	0	0	3	5	8	0	0	0	0	0	15	24	39	0	0	0	0	0	21	32	53	129
Approach %	0	0	0	0	0	75	25		0	0	0	0	0	88.2	11.8		0	0	0	0	0	37.5	62.5		0	0	0	0	0	38.5	61.5		0	0	0	0	0	39.6	60.4		
Total %	0	0	0	0	0	6.98	2.33	9.3	0	0	0	0	0	11.6	1.55	13.2	0	0	0	0	0	2.33	3.88	6.2	0	0	0	0	0	11.6	18.6	30.2	0	0	0	0	0	16.3	24.8	41.1	
Exiting Leg Total								12								17								8								39								53	129

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	4	5	0	0	0	0	0	4	3	7	0	0	0	0	0	9	5	14	28
7:45 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	3	1	4	8
8:00 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	4	0	4	0	0	0	0	0	1	1	2	0	0	0	0	0	2	5	7	0	0	0	0	0	0	1	1	19
8:15 AM	0	0	0	0	0	2	1	3	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3	4	0	0	0	0	0	3	8	11	23
Total Volume	0	0	0	0	0	7	2	9	0	0	0	0	0	10	0	10	0	0	0	0	0	3	5	8	0	0	0	0	0	8	13	21	0	0	0	0	0	15	15	30	78
% Approach Total	0.0	0.0	0.0	0.0	0.0	77.8	22.2		0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	37.5	62.5		0.0	0.0	0.0	0.0	0.0	38.1	61.9		0.0	0.0	0.0	0.0	0.0	50.0	50.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.350	0.500	0.450	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.750	0.313	0.400	0.000	0.000	0.000	0.000	0.000	0.500	0.650	0.750	0.000	0.000	0.000	0.000	0.000	0.417	0.469	0.536	0.696
Entering Leg	0	0	0	0	0	7	2	9	0	0	0	0	0	10	0	10	0	0	0	0	0	3	5	8	0	0	0	0	0	8	13	21	0	0	0	0	0	15	15	30	78
Exiting Leg								9								10								8								21								30	78
Total								18								20								16								42								60	156

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
4:30 PM	5	15	0	1	0	21	3	22	16	1	0	42	1	1	2	0	0	4	1	36	34	7	0	78	0	0	0	0	0	0	145
4:45 PM	7	16	0	3	0	26	1	18	4	0	0	23	0	0	0	1	0	1	0	34	36	2	0	72	0	0	0	0	0	0	122
Total	12	31	0	4	0	47	4	40	20	1	0	65	1	1	2	1	0	5	1	70	70	9	0	150	0	0	0	0	0	0	267
5:00 PM	3	23	0	2	0	28	0	11	2	0	0	13	0	0	0	0	0	0	0	42	28	4	0	74	0	0	0	0	0	0	115
5:15 PM	6	17	0	1	0	24	1	18	7	1	0	27	0	0	0	1	0	1	0	32	47	4	0	83	0	0	0	0	0	0	135
5:30 PM	4	21	0	3	0	28	1	14	10	1	0	26	1	1	0	2	0	4	1	28	38	5	0	72	0	0	0	0	0	0	130
5:45 PM	9	11	0	3	0	23	1	16	6	1	0	24	0	0	0	1	0	1	1	32	35	3	0	71	0	0	0	0	0	0	119
Total	22	72	0	9	0	103	3	59	25	3	0	90	1	1	0	4	0	6	2	134	148	16	0	300	0	0	0	0	0	0	499
6:00 PM	8	11	0	1	0	20	2	20	14	0	0	36	0	1	0	0	0	1	0	44	40	4	1	89	0	0	0	0	0	0	146
6:15 PM	10	17	0	5	0	32	0	12	10	1	0	23	1	0	0	1	0	2	1	43	22	3	0	69	0	0	0	0	0	0	126
6:30 PM	6	22	0	3	0	31	1	15	8	0	0	24	0	1	0	0	0	1	0	26	25	3	0	54	0	0	0	0	0	0	110
6:45 PM	7	12	0	2	0	21	2	12	12	1	0	27	2	0	0	0	0	2	0	44	17	3	0	64	0	0	0	0	0	0	114
Total	31	62	0	11	0	104	5	59	44	2	0	110	3	2	0	1	0	6	1	157	104	13	1	276	0	0	0	0	0	0	496
7:00 PM	5	12	0	1	0	18	1	18	5	0	0	24	1	1	0	0	0	2	0	27	17	1	0	45	0	0	0	0	0	0	89
7:15 PM	4	11	0	0	0	15	0	9	5	0	0	14	0	1	0	0	0	1	0	32	16	5	0	53	0	0	0	0	0	0	83
Total	9	23	0	1	0	33	1	27	10	0	0	38	1	2	0	0	0	3	0	59	33	6	0	98	0	0	0	0	0	0	172
Grand Total	74	188	0	25	0	287	13	185	99	6	0	303	6	6	2	6	0	20	4	420	355	44	1	824	0	0	0	0	0	0	1434
Approach %	25.8	65.5	0.0	8.7	0.0		4.3	61.1	32.7	2.0	0.0		30.0	30.0	10.0	30.0	0.0		0.5	51.0	43.1	5.3	0.1		0.0	0.0	0.0	0.0	0.0		
Total %	5.2	13.1	0.0	1.7	0.0	20.0	0.9	12.9	6.9	0.4	0.0	21.1	0.4	0.4	0.1	0.4	0.0	1.4	0.3	29.3	24.8	3.1	0.1	57.5	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						374						451						10						294						305	1434
Cars	73	187	0	25	0	285	12	184	98	6	0	300	6	6	2	6	0	20	4	418	351	44	1	818	0	0	0	0	0	0	1423
% Cars	98.6	99.5	0.0	100.0	0.0	99.3	92.3	99.5	99.0	100.0	0.0	99.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	99.5	98.9	100.0	100.0	99.3	0.0	0.0	0.0	0.0	0.0	0.0	99.2
Exiting Leg Total						369						449						10						292						303	1423
Heavy Vehicles	1	1	0	0	0	2	1	1	1	0	0	3	0	0	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	0	11
% Heavy Vehicles	1.4	0.5	0.0	0.0	0.0	0.7	7.7	0.5	1.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.1	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.8
Exiting Leg Total						5						2						0						2						2	11

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
5:15 PM	6	17	0	1	0	24	1	18	7	1	0	27	0	0	0	1	0	1	0	32	47	4	0	83	0	0	0	0	0	0	135
5:30 PM	4	21	0	3	0	28	1	14	10	1	0	26	1	1	0	2	0	4	1	28	38	5	0	72	0	0	0	0	0	0	130
5:45 PM	9	11	0	3	0	23	1	16	6	1	0	24	0	0	0	1	0	1	1	32	35	3	0	71	0	0	0	0	0	0	119
6:00 PM	8	11	0	1	0	20	2	20	14	0	0	36	0	1	0	0	0	1	0	44	40	4	1	89	0	0	0	0	0	0	146
Total Volume	27	60	0	8	0	95	5	68	37	3	0	113	1	2	0	4	0	7	2	136	160	16	1	315	0	0	0	0	0	0	530
% Approach Total	28.4	63.2	0.0	8.4	0.0		4.4	60.2	32.7	2.7	0.0		14.3	28.6	0.0	57.1	0.0		0.6	43.2	50.8	5.1	0.3		0.0	0.0	0.0	0.0	0.0		
PHF	0.750	0.714	0.000	0.667	0.000	0.848	0.625	0.850	0.661	0.750	0.000	0.785	0.250	0.500	0.000	0.500	0.000	0.438	0.500	0.773	0.851	0.800	0.250	0.885	0.000	0.000	0.000	0.000	0.000	0.000	0.908
Cars	27	60	0	8	0	95	4	68	37	3	0	112	1	2	0	4	0	7	2	136	159	16	1	314	0	0	0	0	0	0	528
Cars %	100.0	100.0	0.0	100.0	0.0	100.0	80.0	100.0	100.0	100.0	0.0	99.1	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	99.4	100.0	100.0	99.7	0.0	0.0	0.0	0.0	0.0	0.0	99.6
Heavy Vehicles	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Cars Enter Leg	27	60	0	8	0	95	4	68	37	3	0	112	1	2	0	4	0	7	2	136	159	16	1	314	0	0	0	0	0	0	528
Heavy Enter Leg	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
Total Entering Leg	27	60	0	8	0	95	5	68	37	3	0	113	1	2	0	4	0	7	2	136	160	16	1	315	0	0	0	0	0	0	530
Cars Exiting Leg						165						145						5						102						111	528
Heavy Exiting Leg						2						0						0						0						0	2
Total Exiting Leg						167						145						5						102						111	530

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
4:30 PM	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	3
Total	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	6
5:00 PM	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Total	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	4
6:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	1	0	0	0	2	1	1	1	0	0	3	0	0	0	0	0	0	0	2	4	0	0	6	0	0	0	0	0	0	11
Approach %	50.0	50.0	0.0	0.0	0.0		33.3	33.3	33.3	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	9.1	9.1	0.0	0.0	0.0	18.2	9.1	9.1	9.1	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18.2	36.4	0.0	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total						5						2						0						2						2	11
Buses	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	6
% Buses	100.0	100.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	54.5
Exiting Leg Total						2						1						0						1						2	6
Single-Unit Trucks	0	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	5
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	45.5
Exiting Leg Total						3						1						0						1						0	5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total						0						0						0						0						0	0

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:30 PM	Cedar Street from North						Harvey Street from East						Parking Lot Driveway from Southeast						Cedar Street from South						Harvey Street from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
4:30 PM	0	1	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	3
5:00 PM	1	0	0	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	1	0	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	9
% Approach Total	50.0	50.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.000	0.000	0.500	0.000	0.250	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.375	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.750
Buses	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	6
Buses %	100.0	100.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	66.7	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7
Single-Unit Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	33.3	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	1	1	0	0	0	2	0	1	0	0	0	1	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	6

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)

	Cedar Street						Harvey Street						Parking Lot Driveway						Cedar Street						Harvey Street						
	from North						from East						from Southeast						from South						from West						
	Right	Thru	Bear Left	Left	U-Turn	Total	Right	Thru	Left	Hard Left	U-Turn	Total	Hard Righ	Bear Righ	Bear Left	Hard Left	U-Turn	Total	Hard Righ	Right	Thru	Left	U-Turn	Total	Right	Bear Righ	Thru	Left	U-Turn	Total	Total
Single-Unit Trucks	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	1	0	0	0	2	0	1	1	0	0	2	0	0	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	9
Buses						2						1						0						1						2	6
Single-Unit Trucks						1						1						0						1						0	3
Articulated Trucks						0						0						0						0						0	0
Total Exiting Leg						3						2						0						2						2	9

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	1	1	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	2	0	0	0	0	0	3	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:00 PM	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
5:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	2	0	0	0	0	0	3	0	1	0	0	0	1	0	2	0	0	0	0	0	1	0	1	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	9
6:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	4
6:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	2
6:45 PM	0	1	0	0	0	0	0	1	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	2	0	0	0	0	0	2	0	4	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	4	0	0	1	0	0	0	0	1	11
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:15 PM	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
Total	0	1	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	4
Grand Total	2	7	0	0	0	0	0	9	0	7	1	0	0	1	0	9	0	0	0	0	0	1	0	1	0	3	5	0	0	0	0	8	0	0	1	0	0	1	0	2	29
Approach %	22.2	77.8	0.0	0.0	0.0	0.0	0.0		0.0	77.8	11.1	0.0	0.0	11.1	0.0		0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	37.5	62.5	0.0	0.0	0.0	0.0		0.0	0.0	50.0	0.0	0.0	50.0	0.0		
Total %	6.9	24.1	0.0	0.0	0.0	0.0	0.0	31.0	0.0	24.1	3.4	0.0	0.0	3.4	0.0	31.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	3.4	0.0	10.3	17.2	0.0	0.0	0.0	0.0	27.6	0.0	0.0	3.4	0.0	0.0	3.4	0.0	6.9	
Exiting Leg Total								5								5								1								8								10	29

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:30 PM	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	1	1	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	3
5:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	5
Total Volume	1	4	0	0	0	0	0	5	0	3	0	0	0	1	0	4	0	0	0	0	0	1	0	1	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	13
% Approach Total	20.0	80.0	0.0	0.0	0.0	0.0	0.0		0.0	75.0	0.0	0.0	0.0	25.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0	0.0		0.0	33.3	66.7	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.250	1.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.375	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.650
Entering Leg	1	4	0	0	0	0	0	5	0	3	0	0	0	1	0	4	0	0	0	0	0	1	0	1	0	1	2	0	0	0	0	3	0	0	0	0	0	0	0	0	13
Exiting Leg								2								2								1								4								4	13
Total								7								6								2								7								4	26

PDI File #: **249807 D-F**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Harvey Street W: Harvey Street SE: Parking Lot Driveway**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
4:30 PM	0	0	0	0	0	1	2	3	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	0	0	0	0	0	2	5	7	15
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	3	2	5	11
Total	0	0	0	0	0	1	2	3	0	0	0	0	0	2	1	3	0	0	0	0	0	0	1	1	0	0	0	0	0	5	2	7	0	0	0	0	0	5	7	12	26
5:00 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	0	0	0	0	0	4	0	4	13
5:15 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	4	5	0	0	0	0	0	8	4	12	21
5:30 PM	0	0	0	0	0	1	2	3	0	0	0	0	0	3	2	5	0	0	0	0	0	2	1	3	0	0	0	0	0	8	3	11	0	0	0	0	0	2	4	6	28
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3	4	0	0	0	0	0	0	3	3	0	0	0	0	0	3	2	5	0	0	0	0	0	7	0	7	20
Total	0	0	0	0	0	4	4	8	0	0	0	0	0	6	5	11	0	0	0	0	0	5	4	9	0	0	0	0	0	16	9	25	0	0	0	0	0	21	8	29	82
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	3	3	0	0	0	0	0	2	5	7	0	0	0	0	0	8	2	10	22
6:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	0	1	1	2	0	0	0	0	0	1	1	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	8	8	14
6:30 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	2	2	4	0	0	0	0	0	1	0	1	10
6:45 PM	0	0	0	0	0	1	6	7	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	4	15
Total	0	0	0	0	0	4	7	11	0	0	0	0	0	5	1	6	0	0	0	0	0	1	6	7	0	0	0	0	0	5	9	14	0	0	0	0	0	9	14	23	61
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	1	3	4	8
7:15 PM	0	0	0	0	0	1	2	3	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3	2	5	13
Total	0	0	0	0	0	1	2	3	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	4	5	9	21
Grand Total	0	0	0	0	0	10	15	25	0	0	0	0	0	13	9	22	0	0	0	0	0	6	11	17	0	0	0	0	0	33	20	53	0	0	0	0	0	39	34	73	190
Approach %	0	0	0	0	0	40	60		0	0	0	0	0	59.1	40.9		0	0	0	0	0	35.3	64.7		0	0	0	0	0	62.3	37.7		0	0	0	0	0	53.4	46.6		
Total %	0	0	0	0	0	5.26	7.89	13.2	0	0	0	0	0	6.84	4.74	11.6	0	0	0	0	0	3.16	5.79	8.95	0	0	0	0	0	17.4	10.5	27.9	0	0	0	0	0	20.5	17.9	38.4	
Exiting Leg Total								25								22								17								53								73	190

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Cedar Street from North								Harvey Street from East								Parking Lot Driveway from Southeast								Cedar Street from South								Harvey Street from West								
	Right	Thru	Bear Left	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	Hard Left	U-Turn	CW-SB	CW-NB	Total	Hard Right	Bear Right	Bear Left	Hard Left	U-Turn	CW-SWB	CW-NEB	Total	Hard Right	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Bear Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total
5:15 PM	0	0	0	0	0	1	1	2	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	1	4	5	0	0	0	0	0	8	4	12	21
5:30 PM	0	0	0	0	0	1	2	3	0	0	0	0	0	3	2	5	0	0	0	0	0	2	1	3	0	0	0	0	0	8	3	11	0	0	0	0	0	2	4	6	28
5:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	3	4	0	0	0	0	0	0	3	3	0	0	0	0	0	3	2	5	0	0	0	0	0	7	0	7	20
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	3	3	0	0	0	0	0	2	5	7	0	0	0	0	0	8	2	10	22
Total Volume	0	0	0	0	0	3	3	6	0	0	0	0	0	7	5	12	0	0	0	0	0	3	7	10	0	0	0	0	0	14	14	28	0	0	0	0	0	25	10	35	91
% Approach Total	0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	58.3	41.7		0.0	0.0	0.0	0.0	0.0	30.0	70.0		0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	71.4	28.6		
PHF	0.000	0.000	0.000	0.000	0.000	0.750	0.375	0.500	0.000	0.000	0.000	0.000	0.000	0.583	0.417	0.600	0.000	0.000	0.000	0.000	0.000	0.375	0.583	0.833	0.000	0.000	0.000	0.000	0.000	0.438	0.700	0.636	0.000	0.000	0.000	0.000	0.000	0.781	0.625	0.729	0.813
Entering Leg	0	0	0	0	0	3	3	6	0	0	0	0	0	7	5	12	0	0	0	0	0	3	7	10	0	0	0	0	0	14	14	28	0	0	0	0	0	25	10	35	91
Exiting Leg								6								12								10								28								35	91
Total								12								24								20								56								70	182

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
7:30 AM	69	0	0	69	0	0	0	0	1	25	0	26	95
7:45 AM	60	1	0	61	0	0	0	0	0	40	0	40	101
Total	129	1	0	130	0	0	0	0	1	65	0	66	196
8:00 AM	59	0	0	59	0	0	0	0	1	53	0	54	113
8:15 AM	45	1	0	46	0	0	0	0	4	33	0	37	83
8:30 AM	51	1	0	52	0	0	0	0	2	29	0	31	83
8:45 AM	44	0	0	44	0	0	0	0	0	39	0	39	83
Total	199	2	0	201	0	0	0	0	7	154	0	161	362
9:00 AM	37	1	0	38	0	0	0	0	2	28	0	30	68
9:15 AM	47	1	0	48	0	0	0	0	2	33	0	35	83
Total	84	2	0	86	0	0	0	0	4	61	0	65	151
Grand Total	412	5	0	417	0	0	0	0	12	280	0	292	709
Approach %	98.8	1.2	0.0		0.0	0.0	0.0		4.1	95.9	0.0		
Total %	58.1	0.7	0.0	58.8	0.0	0.0	0.0	0.0	1.7	39.5	0.0	41.2	
Exiting Leg Total				280				17				412	709
Cars	400	5	0	405	0	0	0	0	12	274	0	286	691
% Cars	97.1	100.0	0.0	97.1	0.0	0.0	0.0	0.0	100.0	97.9	0.0	97.9	97.5
Exiting Leg Total				274				17				400	691
Heavy Vehicles	12	0	0	12	0	0	0	0	0	6	0	6	18
% Heavy Vehicles	2.9	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	2.1	0.0	2.1	2.5
Exiting Leg Total				6				0				12	18

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
7:30 AM	69	0	0	69	0	0	0	0	1	25	0	26	95
7:45 AM	60	1	0	61	0	0	0	0	0	40	0	40	101
8:00 AM	59	0	0	59	0	0	0	0	1	53	0	54	113
8:15 AM	45	1	0	46	0	0	0	0	4	33	0	37	83
Total Volume	233	2	0	235	0	0	0	0	6	151	0	157	392
% Approach Total	99.1	0.9	0.0		0.0	0.0	0.0		3.8	96.2	0.0		
PHF	0.844	0.500	0.000	0.851	0.000	0.000	0.000	0.000	0.375	0.712	0.000	0.727	0.867
Cars	226	2	0	228	0	0	0	0	6	148	0	154	382
Cars %	97.0	100.0	0.0	97.0	0.0	0.0	0.0	0.0	100.0	98.0	0.0	98.1	97.4
Heavy Vehicles	7	0	0	7	0	0	0	0	0	3	0	3	10
Heavy Vehicles %	3.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	1.9	2.6
Cars Enter Leg	226	2	0	228	0	0	0	0	6	148	0	154	382
Heavy Enter Leg	7	0	0	7	0	0	0	0	0	3	0	3	10
Total Entering Leg	233	2	0	235	0	0	0	0	6	151	0	157	392
Cars Exiting Leg				148				8				226	382
Heavy Exiting Leg				3				0				7	10
Total Exiting Leg				151				8				233	392

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
7:30 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
Total	4	0	0	4	0	0	0	0	0	1	0	1	5
8:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
8:15 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
8:30 AM	3	0	0	3	0	0	0	0	0	0	0	0	3
8:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
Total	7	0	0	7	0	0	0	0	0	3	0	3	10
9:00 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	1	0	0	1	0	0	0	0	0	2	0	2	3
Grand Total	12	0	0	12	0	0	0	0	0	6	0	6	18
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	66.7	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	
Exiting Leg Total				6				0				12	18
Buses	7	0	0	7	0	0	0	0	0	1	0	1	8
% Buses	58.3	0.0	0.0	58.3	0.0	0.0	0.0	0.0	0.0	16.7	0.0	16.7	44.4
Exiting Leg Total				1				0				7	8
Single-Unit Trucks	5	0	0	5	0	0	0	0	0	5	0	5	10
% Single-Unit	41.7	0.0	0.0	41.7	0.0	0.0	0.0	0.0	0.0	83.3	0.0	83.3	55.6
Exiting Leg Total				5				0				5	10
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total				0				0				0	0

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:30 AM	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
7:30 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
7:45 AM	2	0	0	2	0	0	0	0	0	0	0	0	2
8:00 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
8:15 AM	2	0	0	2	0	0	0	0	0	1	0	1	3
Total Volume	7	0	0	7	0	0	0	0	0	3	0	3	10
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.875	0.000	0.000	0.875	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.750	0.833
Buses	5	0	0	5	0	0	0	0	0	1	0	1	6
Buses %	71.4	0.0	0.0	71.4	0.0	0.0	0.0	0.0	0.0	33.3	0.0	33.3	60.0
Single-Unit Trucks	2	0	0	2	0	0	0	0	0	2	0	2	4
Single-Unit %	28.6	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	66.7	0.0	66.7	40.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	5	0	0	5	0	0	0	0	0	1	0	1	6
Single-Unit Trucks	2	0	0	2	0	0	0	0	0	2	0	2	4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	7	0	0	7	0	0	0	0	0	3	0	3	10
Buses				1				0				5	6
Single-Unit Trucks				2				0				2	4
Articulated Trucks				0				0				0	0
Total Exiting Leg				3				0				7	10

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	4
Total	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	4
8:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	2
8:15 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
8:45 AM	2	0	0	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	4
Total	4	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	4	8
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3
Total	2	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3
Grand Total	9	0	0	0	0	9	0	0	0	0	0	0	0	6	0	0	0	6	15
Approach %	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		
Total %	60.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	40.0	
Exiting Leg Total						6						0						9	15

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

7:45 AM	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
7:45 AM	3	0	0	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	4
8:00 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	2
8:15 AM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total Volume	5	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	3	8
% Approach Total	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0		
PHF	0.417	0.000	0.000	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.000	0.750	0.500
Entering Leg	5	0	0	0	0	5	0	0	0	0	0	0	0	3	0	0	0	3	8
Exiting Leg						3						0						5	8
Total						8						0						8	16

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **7:30 AM**
End Time: **9:30 AM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
7:30 AM	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	6	3	9	0	0	0	0	0	0	9
9:00 AM	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	3
9:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	2	2	4	0	0	0	0	0	0	4
Grand Total	0	0	0	0	0	0	0	0	0	9	9	18	0	0	0	0	0	0	18
Approach %	0	0	0	0	0		0	0	0	50	50		0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	50	50	100	0	0	0	0	0	0	
Exiting Leg Total						0						18						0	18

Peak Hour Analysis from 07:30 AM to 09:30 AM begins at:

8:15 AM	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	0	7	3	10	0	0	0	0	0	0	10
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	70.0	30.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.375	0.833	0.000	0.000	0.000	0.000	0.000	0.000	0.833
Entering Leg	0	0	0	0	0	0	0	0	0	7	3	10	0	0	0	0	0	0	10
Exiting Leg						0						10						0	10
Total						0						20						0	20

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Cars and Heavy Vehicles (Combined)

	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
4:30 PM	29	1	1	31	0	0	0	0	6	75	0	81	112
4:45 PM	19	0	0	19	0	0	0	0	5	73	0	78	97
Total	48	1	1	50	0	0	0	0	11	148	0	159	209
5:00 PM	26	1	0	27	0	0	0	0	4	70	0	74	101
5:15 PM	22	0	0	22	0	0	0	0	5	89	0	94	116
5:30 PM	32	0	0	32	0	0	0	0	4	66	0	70	102
5:45 PM	18	0	0	18	0	0	0	0	6	71	0	77	95
Total	98	1	0	99	0	0	0	0	19	296	0	315	414
6:00 PM	26	0	0	26	0	0	0	0	2	89	0	91	117
6:15 PM	24	1	0	25	0	0	0	0	6	69	0	75	100
6:30 PM	26	2	0	28	1	0	0	1	9	51	0	60	89
6:45 PM	27	1	0	28	0	0	0	0	8	65	0	73	101
Total	103	4	0	107	1	0	0	1	25	274	0	299	407
7:00 PM	16	0	0	16	0	0	0	0	2	42	0	44	60
7:15 PM	17	0	0	17	0	0	0	0	6	53	0	59	76
Total	33	0	0	33	0	0	0	0	8	95	0	103	136
Grand Total	282	6	1	289	1	0	0	1	63	813	0	876	1166
Approach %	97.6	2.1	0.3		100.0	0.0	0.0		7.2	92.8	0.0		
Total %	24.2	0.5	0.1	24.8	0.1	0.0	0.0	0.1	5.4	69.7	0.0	75.1	
Exiting Leg Total				815				69				282	1166
Cars	280	5	1	286	1	0	0	1	63	805	0	868	1155
% Cars	99.3	83.3	100.0	99.0	100.0	0.0	0.0	100.0	100.0	99.0	0.0	99.1	99.1
Exiting Leg Total				807				68				280	1155
Heavy Vehicles	2	1	0	3	0	0	0	0	0	8	0	8	11
% Heavy Vehicles	0.7	16.7	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.9	0.9
Exiting Leg Total				8				1				2	11

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:15 PM	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
5:15 PM	22	0	0	22	0	0	0	0	5	89	0	94	116
5:30 PM	32	0	0	32	0	0	0	0	4	66	0	70	102
5:45 PM	18	0	0	18	0	0	0	0	6	71	0	77	95
6:00 PM	26	0	0	26	0	0	0	0	2	89	0	91	117
Total Volume	98	0	0	98	0	0	0	0	17	315	0	332	430
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		5.1	94.9	0.0		
PHF	0.766	0.000	0.000	0.766	0.000	0.000	0.000	0.000	0.708	0.885	0.000	0.883	0.919
Cars	98	0	0	98	0	0	0	0	17	313	0	330	428
Cars %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	99.4	0.0	99.4	99.5
Heavy Vehicles	0	0	0	0	0	0	0	0	0	2	0	2	2
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	0.5
Cars Enter Leg	98	0	0	98	0	0	0	0	17	313	0	330	428
Heavy Enter Leg	0	0	0	0	0	0	0	0	0	2	0	2	2
Total Entering Leg	98	0	0	98	0	0	0	0	17	315	0	332	430
Cars Exiting Leg				313				17				98	428
Heavy Exiting Leg				2				0				0	2
Total Exiting Leg				315				17				98	430

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
4:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	3
Total	1	0	0	1	0	0	0	0	0	4	0	4	5
5:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	1	0	1	0	0	0	0	0	3	0	3	4
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	2	1	0	3	0	0	0	0	0	8	0	8	11
Approach %	66.7	33.3	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
Total %	18.2	9.1	0.0	27.3	0.0	0.0	0.0	0.0	0.0	72.7	0.0	72.7	
Exiting Leg Total				8				1				2	11
Buses	1	0	0	1	0	0	0	0	0	3	0	3	4
% Buses	50.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	37.5	0.0	37.5	36.4
Exiting Leg Total				3				0				1	4
Single-Unit Trucks	0	1	0	1	0	0	0	0	0	5	0	5	6
% Single-Unit	0.0	100.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	62.5	0.0	62.5	54.5
Exiting Leg Total				5				1				0	6
Articulated Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
% Articulated	50.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1
Exiting Leg Total				0				0				1	1

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:30 PM	Cedar Street from North				Alberta Terrace from East				Cedar Street from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	Total
4:30 PM	1	0	0	1	0	0	0	0	0	1	0	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	3	0	3	3
5:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	1	1	0	2	0	0	0	0	0	6	0	6	8
% Approach Total	50.0	50.0	0.0		0.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.250	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.667
Buses	1	0	0	1	0	0	0	0	0	3	0	3	4
Buses %	100.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	50.0
Single-Unit Trucks	0	1	0	1	0	0	0	0	0	3	0	3	4
Single-Unit %	0.0	100.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	50.0	50.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	1	0	0	1	0	0	0	0	0	3	0	3	4
Single-Unit Trucks	0	1	0	1	0	0	0	0	0	3	0	3	4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	1	0	2	0	0	0	0	0	6	0	6	8
Buses				3				0				1	4
Single-Unit Trucks				3				1				0	4
Articulated Trucks				0				0				0	0
Total Exiting Leg				6				1				1	8

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Bicycles (on Roadway and Crosswalks)

	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
4:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	2
Total	2	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	1	3
5:00 PM	1	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	0	3	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	1	0	0	0	2	0	0	0	1	0	1	0	5	0	0	0	5	8
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
6:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	4
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 PM	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	5	1	0	0	0	6	0	0	0	1	0	1	1	9	0	0	0	10	17
Approach %	83.3	16.7	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		10.0	90.0	0.0	0.0	0.0		
Total %	29.4	5.9	0.0	0.0	0.0	35.3	0.0	0.0	0.0	5.9	0.0	5.9	5.9	52.9	0.0	0.0	0.0	58.8	
Exiting Leg Total						9						3						5	17

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

4:30 PM	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
4:30 PM	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	1	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	1	2
5:00 PM	1	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	0	3	4
Total Volume	3	1	0	0	0	4	0	0	0	1	0	1	1	4	0	0	0	5	10
% Approach Total	75.0	25.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		20.0	80.0	0.0	0.0	0.0		
PHF	0.750	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.333	0.000	0.000	0.000	0.417	0.625
Entering Leg	3	1	0	0	0	4	0	0	0	1	0	1	1	4	0	0	0	5	10
Exiting Leg						4						3						3	10
Total						8						4						8	20

PDI File #: **249807 E**
Location: **N: Cedar Street S: Cedar Street**
Location: **E: Alberta Terrace**
City, State: **Cambridge, MA**
Client: **VAI/ D. Roach**
Site Code: **9812**
Count Date: **Thursday, January 25, 2024**
Start Time: **4:30 PM**
End Time: **7:30 PM**
Class:

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Pedestrians

	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
4:30 PM	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	3
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	3
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	4	7	11	0	0	0	0	0	0	11
6:00 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
6:15 PM	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	2
6:30 PM	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2
6:45 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Total	0	0	0	1	0	1	0	0	0	3	4	7	0	0	0	0	0	0	8
7:00 PM	0	0	0	1	0	1	0	0	0	3	0	3	0	0	0	0	0	0	4
7:15 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
Total	0	0	0	1	0	1	0	0	0	4	1	5	0	0	0	0	0	0	6
Grand Total	0	0	0	2	0	2	0	0	0	12	14	26	0	0	0	0	0	0	28
Approach %	0	0	0	100	0		0	0	0	46.154	53.846		0	0	0	0	0		
Total %	0	0	0	7.1429	0	7.1429	0	0	0	42.857	50	92.857	0	0	0	0	0	0	
Exiting Leg Total						2						26						0	28

Peak Hour Analysis from 04:30 PM to 07:30 PM begins at:

5:00 PM	Cedar Street from North						Alberta Terrace from East						Cedar Street from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	1	3	4	0	0	0	0	0	0	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	0	4	7	11	0	0	0	0	0	0	11
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	36.4	63.6		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.583	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.688
Entering Leg	0	0	0	0	0	0	0	0	0	4	7	11	0	0	0	0	0	0	11
Exiting Leg						0						11						0	11
Total						0						22						0	22

12-Hour Bicycle and Pedestrian Count Data

Linear Pathway Crosswalk
north of Cedar Street
City, State: Cambridge, MA
Client: VAI/ D. Roach
Site Code: 9812

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **249807 Pathway-B**

Count Date: **Thursday, January 25, 2024**
Direction: **EB**

AM	Pedestrians	Bicycles		Total
12:00 AM				
12:15 AM				
12:30 AM				
12:45 AM				
1:00 AM				
1:15 AM				
1:30 AM				
1:45 AM				
2:00 AM				
2:15 AM				
2:30 AM				
2:45 AM				
3:00 AM				
3:15 AM				
3:30 AM				
3:45 AM				
4:00 AM				
4:15 AM				
4:30 AM				
4:45 AM				
5:00 AM				
5:15 AM				
5:30 AM				
5:45 AM				
6:00 AM				
6:15 AM				
6:30 AM				
6:45 AM				
7:00 AM				
7:15 AM				
7:30 AM	3	2		5
7:45 AM	2	1		3
8:00 AM	4	5		9
8:15 AM	0	6		6
8:30 AM	4	6		10
8:45 AM	4	5		9
9:00 AM	2	2		4
9:15 AM	2	2		4
9:30 AM	1	2		3
9:45 AM	0	3		3
10:00 AM	2	0		2
10:15 AM	0	1		1
10:30 AM	0	0		0
10:45 AM	0	3		3
11:00 AM	1	0		1
11:15 AM	0	1		1
11:30 AM	2	1		3
11:45 AM	0	0		0
AM Total	**27**	**40**		**67**
Percentage	**40.30%**	**59.70%**		
AM Peak	**8:00 AM**	**8:00 AM**		**8:00 AM**
Volume	**12**	**22**		**34**

PM	Pedestrians	Bicycles		Total
12:00 PM	2	1		3
12:15 PM	0	5		5
12:30 PM	1	0		1
12:45 PM	3	0		3
1:00 PM	1	2		3
1:15 PM	2	4		6
1:30 PM	1	1		2
1:45 PM	0	5		5
2:00 PM	2	2		4
2:15 PM	0	2		2
2:30 PM	0	0		0
2:45 PM	5	2		7
3:00 PM	0	3		3
3:15 PM	1	3		4
3:30 PM	1	4		5
3:45 PM	1	5		6
4:00 PM	2	7		9
4:15 PM	3	9		12
4:30 PM	1	9		10
4:45 PM	7	3		10
5:00 PM	1	14		15
5:15 PM	2	5		7
5:30 PM	2	7		9
5:45 PM	1	9		10
6:00 PM	2	11		13
6:15 PM	1	2		3
6:30 PM	0	4		4
6:45 PM	2	4		6
7:00 PM	0	1		1
7:15 PM	1	2		3
7:30 PM				
7:45 PM				
8:00 PM				
8:15 PM				
8:30 PM				
8:45 PM				
9:00 PM				
9:15 PM				
9:30 PM				
9:45 PM				
10:00 PM				
10:15 PM				
10:30 PM				
10:45 PM				
11:00 PM				
11:15 PM				
11:30 PM				
11:45 PM				
PM Total	**45**	**126**		**171**
Percentage	**26.32%**	**73.68%**		
PM Peak	**4:00 PM**	**4:15 PM**		**4:15 PM**
Volume	**13**	**35**		**47**
Day Total	**72**	**166**		**238**

Percentage	**30.25%**	**69.75%**

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

Linear Pathway Crosswalk
north of Cedar Street
City, State: Cambridge, MA
Client: VAI/ D. Roach
Site Code: 9812

PRECISION DATA INDUSTRIES, LLC
157 Washington Street, Suite 2
Hudson, MA 01749
Office: 508-875-0100 Fax: 508-875-0118

PDI File # **249807 Pathway-B**

Count Date: **Thursday, January 25, 2024**
Direction: **WB**

AM	Pedestrians	Bicycles		Total
12:00 AM				
12:15 AM				
12:30 AM				
12:45 AM				
1:00 AM				
1:15 AM				
1:30 AM				
1:45 AM				
2:00 AM				
2:15 AM				
2:30 AM				
2:45 AM				
3:00 AM				
3:15 AM				
3:30 AM				
3:45 AM				
4:00 AM				
4:15 AM				
4:30 AM				
4:45 AM				
5:00 AM				
5:15 AM				
5:30 AM				
5:45 AM				
6:00 AM				
6:15 AM				
6:30 AM				
6:45 AM				
7:00 AM				
7:15 AM				
7:30 AM	1	3		4
7:45 AM	0	4		4
8:00 AM	0	3		3
8:15 AM	0	5		5
8:30 AM	4	4		8
8:45 AM	2	12		14
9:00 AM	2	6		8
9:15 AM	2	9		11
9:30 AM	1	6		7
9:45 AM	0	0		0
10:00 AM	2	4		6
10:15 AM	1	2		3
10:30 AM	1	3		4
10:45 AM	0	0		0
11:00 AM	4	1		5
11:15 AM	0	3		3
11:30 AM	1	0		1
11:45 AM	2	3		5
AM Total	**23**	**68**		**91**
Percentage	**25.27%**	**74.73%**		
AM Peak	**8:30 AM**	**8:45 AM**		**8:30 AM**
Volume	**10**	**33**		**41**

PM	Pedestrians	Bicycles		Total
12:00 PM	1	3		4
12:15 PM	0	1		1
12:30 PM	0	1		1
12:45 PM	2	2		4
1:00 PM	0	2		2
1:15 PM	2	2		4
1:30 PM	1	4		5
1:45 PM	4	3		7
2:00 PM	0	2		2
2:15 PM	0	5		5
2:30 PM	0	5		5
2:45 PM	4	3		7
3:00 PM	3	6		9
3:15 PM	1	5		6
3:30 PM	7	8		15
3:45 PM	2	2		4
4:00 PM	3	5		8
4:15 PM	1	4		5
4:30 PM	1	2		3
4:45 PM	2	4		6
5:00 PM	1	3		4
5:15 PM	6	6		12
5:30 PM	1	8		9
5:45 PM	0	8		8
6:00 PM	0	4		4
6:15 PM	0	6		6
6:30 PM	0	5		5
6:45 PM	1	4		5
7:00 PM	1	3		4
7:15 PM	0	2		2
7:30 PM				
7:45 PM				
8:00 PM				
8:15 PM				
8:30 PM				
8:45 PM				
9:00 PM				
9:15 PM				
9:30 PM				
9:45 PM				
10:00 PM				
10:15 PM				
10:30 PM				
10:45 PM				
11:00 PM				
11:15 PM				
11:30 PM				
11:45 PM				
PM Total	**44**	**118**		**162**
Percentage	**27.16%**	**72.84%**		
PM Peak	**2:45 PM**	**5:15 PM**		**2:45 PM**
Volume	**15**	**26**		**37**
Day Total	**67**	**186**		**253**

Percentage	**26.48%**	**73.52%**

PRECISION
D A T A
INDUSTRIES, LLC
157 Washington Street, Suite 2
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Office: 508-875-0100 Fax: 508-875-0118

Vehicle Queue Count Data

Peak Hour Occurred: 7:45 at 8:45 AM

Massachusetts Avenue at Cedar Street Queue length (vehicles)							
	Cedar Street		Massachusetts Avenue			Massachusetts Avenue	
	Eastbound		Northbound			Southbound	
Time	LT/RT	Time	TH	TH	Time	RT	TH
7:31 AM	0	7:32 AM	4	1	7:32 AM	6	17
7:33 AM	0	7:34 AM	5	1	7:34 AM	2	23
7:35 AM	1	7:36 AM	5	1	7:36 AM	6	24
7:37 AM	2	7:38 AM	5	1	7:38 AM	0	26
7:39 AM	1	7:42 AM	5	1	7:40 AM	5	37
7:43 AM	0	7:44 AM	4	0	7:46 AM	4	22
7:45 AM	2	7:48 AM	5	1	7:49 AM	8	
7:48 AM	5	7:53 AM	6	2	7:51 AM	11	14
7:50 AM	0	7:57 AM	4	1	7:53 AM	8	
7:52 AM	2	8:01 AM	11	1	7:55 AM	5	20
7:54 AM	1	8:05 AM	6	1	7:57 AM	2	
7:56 AM	4	8:09 AM	4	0	7:59 AM	6	23
7:58 AM	1	8:14 AM	4	0	8:01 AM	3	
8:00 AM	1	8:18 AM	5	3	8:03 AM	5	24
8:02 AM	4	8:22 AM	7	1	8:05 AM	3	
8:04 AM	3	8:26 AM	5	0	8:07 AM	7	23
8:06 AM	2	8:30 AM	6	0	8:10 AM	2	
8:08 AM	3	8:35 AM	6	0	8:11 AM	3	20
8:10 AM	0	8:39 AM	4	0	8:14 AM	4	
8:13 AM	0	8:43 AM	6	1	8:16 AM	3	18
8:15 AM	2	8:47 AM	6	0	8:18 AM	1	
8:17 AM	2	8:51 AM	5	0	8:20 AM	1	28
8:19 AM	3	8:56 AM	5	0	8:22 AM	4	
8:21 AM	0	9:00 AM	10	0	8:24 AM	3	20
8:23 AM	1	9:04 AM	2	0	8:26 AM	6	
8:25 AM	1	9:08 AM	6	0	8:28 AM	3	24
8:27 AM	1	9:12 AM	5	1	8:30 AM	2	
8:29 AM	3	9:17 AM	11	0	8:32 AM	4	16
8:32 AM	2	9:21 AM	6	1	8:35 AM	7	
8:34 AM	3	9:25 AM	1	1	8:37 AM	3	17
8:36 AM	0	9:29 AM	2	0	8:39 AM	5	
8:38 AM	4				8:41 AM	7	14
8:40 AM	1				8:43 AM	0	
8:42 AM	5				8:45 AM	6	29
8:44 AM	1				8:47 AM	1	
8:46 AM	0				8:49 AM	2	25
8:48 AM	0				8:51 AM	0	
8:50 AM	3				8:54 AM	1	32
8:52 AM	2				8:58 AM	1	25
8:55 AM	2				9:00 AM	2	
8:57 AM	2				9:02 AM	2	29
8:59 AM	0				9:04 AM	1	
9:01 AM	9				9:06 AM	5	25
9:03 AM	1				9:09 AM	2	
9:05 AM	1				9:11 AM	2	23
9:07 AM	1				9:13 AM	2	
9:09 AM	0				9:15 AM	3	26
9:11 AM	0				9:17 AM	3	
9:14 AM	3				9:19 AM	2	25
9:16 AM	4				9:21 AM	3	
9:18 AM	3				9:23 AM	2	23
9:20 AM	0				9:25 AM	4	
9:22 AM	3				9:27 AM	6	24
9:24 AM	0				9:30 AM	1	
9:26 AM	2						
9:28 AM	3						
9:30 AM	1						

		Cedar Street	Massachusetts Avenue		Massachusetts Avenue	
		Eastbound	Northbound		Southbound	
		LT/RT	TH	TH	RT	TH
Peak Hour	Average	1.97	5.64	0.79	4.34	20.80
	Max	5.00	11.00	3.00	11.00	29.00
Use	**Average**	**2**	**6**	**1**	**5**	**21**
	Max	**5**	**11**	**3**	**11**	**29**

Round up if greater than 0.2

Peak Hour Occurred: 5:15 to 6:15 PM

Massachusetts Avenue at Cedar Street Queue length (vehicles)							
	Cedar Street		Massachusetts Avenue			Massachusetts Avenue	
	Eastbound		Northbound			Southbound	
Time	LT/RT	Time	TH	TH	Time	RT	TH
4:30 PM	2	4:31 PM	5	2	4:30 PM	3	
4:32 PM	5	4:36 PM	5	0	4:33 PM	4	16
4:34 PM	3	4:38 PM	8	4	4:36 PM	0	15
4:36 PM	10	4:40 PM	10	0	4:38 PM	2	15
4:39 PM	2	4:42 PM	6	2	4:40 PM	6	15
4:41 PM	4	4:44 PM	6	0	4:42 PM		11
4:43 PM	5	4:46 PM	5	0	4:44 PM	2	5
4:45 PM	3	4:48 PM	8	0	4:46 PM	3	5
4:47 PM	6	4:50 PM	5	0	4:48 PM	4	13
4:49 PM	5	4:52 PM	6	1	4:50 PM	3	11
4:51 PM	1	4:54 PM	6	0	4:52 PM	3	17
4:53 PM	2	4:56 PM	4	0	4:54 PM	1	19
4:55 PM	3	4:59 PM	10	2	4:56 PM	1	8
4:58 PM	8	5:01 PM	7	1	4:59 PM	4	8
5:00 PM	6	5:05 AM	6	0	5:01 PM	1	10
5:02 PM	2	5:07 PM	5	1	5:03 PM	3	11
5:04 PM	1	5:09 PM	5	0	5:05 PM	2	
5:06 PM	5	5:11 PM	6	0	5:07 PM	5	18
5:08 PM	4	5:13 PM	4	0	5:09 PM	3	15
5:10 PM	0	5:15 PM	6	1	5:11 PM	1	16
5:12 PM	5	5:18 PM	7	2	5:13 PM	3	21
5:14 PM	4	5:22 PM	7	3	5:15 PM	1	23
5:16 PM	0	5:26 PM	5	0	5:18 PM	2	26
5:19 PM	4	5:28 PM	8	0	5:20 PM	2	19
5:21 PM	6	5:32 PM	7	0	5:24 PM	2	20
5:23 PM	7	5:34 PM	6	0	5:26 PM	7	10
5:25 PM	3	5:39 PM	7	0	5:28 PM	1	
5:27 PM	5	5:43 PM	6	2	5:30 PM	5	29
5:29 PM	7	5:45 PM	6	0	5:32 PM	2	23
5:31 PM	4	5:47 PM	6	0	5:34 PM	7	
5:33 PM	4	5:51 PM	6	0	5:36 PM	5	20
5:35 PM	3	5:53 PM	5	0	5:41 PM	1	19
5:37 PM	5	5:55 PM	11	0	5:43 PM	2	
5:40 PM	5	5:59 PM	6	2	5:45 PM	3	4
5:42 PM	7	6:04 PM	6	2	5:47 PM	1	
5:44 PM	6	6:08 PM	6	0	5:49 PM	3	19
5:46 PM	10	6:10 PM	4	0	5:53 PM	3	3
5:48 PM	3	6:14 PM	6	0	5:56 PM	2	
5:50 PM	5	6:18 PM	8	1	5:57 PM	1	13
5:52 PM	5	6:23 PM	5	1	6:00 PM	1	
5:54 PM	1	6:27 PM	10	0	6:02 PM	3	22
5:56 PM	6	6:31 PM	5	1	6:04 PM	1	
5:58 PM	5	6:35 PM	2	1	6:06 PM	1	21
6:01 PM	2	6:39 PM	5	2	6:08 PM	0	11
6:03 PM	7	6:43 PM	5	0	6:12 PM	0	16
6:05 PM	0	6:48 PM	4	0	6:15 PM	3	
6:07 PM	7	6:50 PM	5	1	6:16 PM	2	20
6:09 PM	2	6:52 PM	7	0	6:20 PM	1	6
6:11 PM	5	6:56 PM	4	0	6:23 PM	4	
6:13 PM	6	7:00 PM	6	0	6:25 PM	7	13
6:15 PM	5	7:05 PM	6	1	6:27 PM	2	
6:17 PM	2	7:09 PM	5	0	6:33 PM	3	20
6:19 PM	6	7:13 PM	6	0	6:37 PM	2	23
6:22 PM	3	7:15 PM	7	0	6:40 PM	2	
6:24 PM	2	7:17 PM	6	1	6:42 PM	2	24
6:26 PM	2	7:19 PM	3	1	6:46 PM	4	15
6:28 PM	1	7:21 PM	5	0	6:50 PM	2	5
6:30 PM	3	7:23 PM	5	0	6:52 PM	1	
6:32 PM	3	7:26 PM	5	0	6:54 PM	0	13
6:34 PM	1	7:28 PM	3	0	6:56 PM	2	12
6:36 PM	4	7:30 PM	5	2	6:58 PM	1	4
6:38 PM	2				7:01 PM	6	
6:40 PM	4				7:02 PM	0	16
6:42 PM	2				7:05 PM	1	7
6:45 PM	2				7:07 PM	3	9
6:47 PM	2				7:09 PM	0	11
6:49 PM	3				7:11 PM	2	9
6:51 PM	2				7:13 PM	2	12
6:53 PM	1				7:15 PM		9
6:55 PM	0				7:19 PM	2	10
6:57 PM	4				7:21 PM	2	5
6:59 PM	4				7:23 PM	1	8
7:01 PM	1				7:26 PM	1	9
7:03 PM	4				7:28 PM	3	3
7:06 PM	0				7:30 PM	1	9
7:08 PM	3						
7:10 PM	4						
7:12 PM	0						
7:14 PM	2						
7:16 PM	2						
7:18 PM	0						
7:20 PM	0						
7:22 PM	3						
7:25 PM	0						
7:27 PM	4						
7:29 PM	4						

		Cedar Street	Massachusetts Avenue		Massachusetts Avenue	
		Eastbound	Northbound		Southbound	
		LT/RT	TH	TH	RT	TH
Peak Hour	Average	4.66	6.37	0.63	2.36	17.53
	Max	10.00	11.00	3.00	7.00	29.00
Use	**Average**	**5**	**7**	**1**	**3**	**18**
	Max	**10**	**11**	**3**	**7**	**29**

Round up if greater than 0.2

Peak Hour Occurred: 7:45 to 8:45 AM

Massachusetts Avenue at Harvey Street/Cameron Street Queue length (vehicles)									
	Harvey Street		Cameron Street		Massachusetts Avenue			Massachusetts Avenue	
	Eastbound		Westbound		Northbound			Southbound	
Time	LT/TH/RT	Time	LT/TH/RT	Time	LT/TH	TH/RT	Time	TH	TH/RT
7:30 AM	3		2		2	0			
7:31 AM								1	0
7:33 AM	1		6		3	0			
7:34 AM								2	0
7:35 AM	1		8		5	0			
7:36 AM								1	0
7:37 AM	2		6		3	0			
7:38 AM								1	0
7:39 AM	3		8		1	1			
7:40 AM								3	0
7:41 AM	4		9						
7:42 AM					2	1		2	0
7:43 AM	3		11						
7:44 AM					2	0		1	0
7:45 AM	0		10						
7:46 AM					3	0		1	0
7:47 AM	2		13						
7:48 AM					5	1		3	0
7:49 AM	3		13						
7:50 AM					7	1		2	0
7:52 AM	1		17		5	2		2	0
7:54 AM	3		16		2	3			
7:55 AM								3	1
7:56 AM	5		11		5	5			
7:57 AM								3	0
7:58 AM	1		17		6	1			
7:59 AM								3	0
8:00 AM	1		14		7	4			
8:01 AM								1	0
8:02 AM	3		13						
8:03 AM					1	0		2	0
8:04 AM	3		16						
8:05 AM					4	2		1	0
8:06 AM	1		12						
8:07 AM					3	0		2	0
8:08 AM	4		12						
8:09 AM					8	4		1	0
8:10 AM	1		14						
8:11 AM					4	0		1	0
8:12 AM	5		16						
8:13 AM					10	1		1	0
8:15 AM	4		21		5	0			
8:16 AM								1	0
8:17 AM	0		18		9	1			
8:18 AM								2	0
8:19 AM	2		17		14	2			
8:20 AM								1	0
8:21 AM	2		16		6	0			
8:22 AM								2	0
8:23 AM	2		15						
8:24 AM					11	1		2	0
8:25 AM	4		7						
8:26 AM					3	1		0	0
8:27 AM	1		5						
8:28 AM					4	1		2	0
8:29 AM	1		4						
8:30 AM					10	2		1	0
8:32 AM	2		5		10	1		3	0
8:34 AM	2		5		4	1		3	1
8:36 AM	0		5		3	0		2	0
8:38 AM	1		6		8	1			
8:39 AM								1	0
8:40 AM	3		4		5	3			
8:41 AM								0	0
8:42 AM	2		6		4	0			
8:43 AM								1	0
8:44 AM	2		6						
8:45 AM					0	1		1	0
8:46 AM	2		4						
8:47 AM					1	0		0	0
8:48 AM	2		4						
8:49 AM					8	2		0	0
8:50 AM	1		8						
8:51 AM					6	0		4	0
8:53 AM	3		6		3	0		0	0
8:55 AM	1		4		2	2		2	0
8:57 AM	2		8		4	0			
8:58 AM								1	0
8:59 AM	3		5		10	1			
9:00 AM								2	0
9:01 AM	1		3		10	1			
9:02 AM								1	0
9:03 AM	5		3		2	0			
9:04 AM								2	0
9:05 AM	2		6						
9:06 AM					8	2		2	0
9:07 AM	3		4						
9:08 AM					2	1		2	0
9:09 AM	2		6						
9:10 AM					5	0		2	0
9:11 AM	3		6						
9:12 AM					4	0		1	0
9:13 AM	1		2						
9:14 AM					0	0		4	0
9:16 AM	1		4		7	2		2	1
9:18 AM	1		3		1	0		3	0
9:20 AM	0		8		7	1			
9:21 AM								2	0
9:22 AM	3		3		6	2			
9:23 AM								2	0
9:24 AM	3		5		0	0			
9:25 AM								2	0
9:26 AM	3		3						
9:27 AM					4	0		2	0
9:28 AM	1		5						
9:29 AM					1	0		0	0

		Harvey Street	Cameron Street	Massachusetts Avenue		Massachusetts Avenue	
		Eastbound	Westbound	Northbound		Southbound	
		LT/TH/RT	LT/TH/RT	LT/TH	TH/RT	TH	Th/RT
Peak Hour	Average	2.10	11.52	5.72	1.34	1.66	0.07
	Max	5.00	21.00	14.00	5.00	3.00	1.00
Use	**Average**	**2**	**12**	**6**	**2**	**2**	**1**
	Max	**5**	**21**	**14**	**5**	**3**	**1**

Round up if greater than 0.2

Peak Hour Occurred: 5:30 to 6:30 PM

Massachusetts Avenue at Harvey Street/Cameron Street Queue length (vehicles)										
	Harvey Street		Cameron Street		Massachusetts Avenue			Massachusetts Avenue	
	Eastbound		Westbound		Northbound			Southbound	
Time	LT/TH/RT	Time	LT/TH/RT	Time	LT/TH	TH/RT	Time	TH	TH/RT
4:30 PM	4		2						
4:31 PM					19	3		3	0
4:32 PM	5		6						
4:33 PM					18	1		3	1
4:34 PM	4		9						
4:35 PM					14	5		3	1
4:37 PM	0		7		5	6		0	0
4:39 PM	3		8		10	4		0	0
4:41 PM	5		6		6	1			
4:42 PM								2	0
4:43 PM	2		5		11	4			
4:44 PM								3	0
4:45 PM	5		2		15	0			
4:46 PM								0	0
4:47 PM	5		4						
4:48 PM					15	4		2	0
4:49 PM	5		6						
4:50 PM					8	1		0	0
4:51 PM	5		6						
4:52 PM					5	3		0	0
4:53 PM	6		3						
4:54 PM					12	4		0	0
4:55 PM	1		4						
4:56 PM					7	6		1	0
4:57 PM	4		3						
4:58 PM					7	5		1	0
5:00 PM	3		1		4	1		0	0
5:02 PM	5		1		3	2			
5:03 PM								0	1
5:04 PM	8		4		5	3			
5:05 PM								1	0
5:06 PM	6		6		1	4			
5:07 PM								2	0
5:08 PM	5		6						
5:09 PM					6	3		4	0
5:10 PM	5		3						
5:11 PM					5	1		3	0
5:12 PM	1		4						
5:13 PM					10	0		3	0
5:14 PM	1		4						
5:15 PM					6	1		2	0
5:17 PM	0		5		13	5		1	0
5:19 PM	5		4		12	3		4	0
5:21 PM	7		4		3	1		0	0
5:25 PM	2		5		10	1			
5:26 PM								1	0
5:27 PM	6		3						
5:28 PM					14	4		1	0
5:29 PM	4		5						
5:30 PM					5	2		2	0
5:31 PM	7		3						
5:32 PM					8	2		2	0
5:33 PM	3		2						
5:34 PM					6	0		2	1
5:35 PM	3		5						
5:36 PM					7	2		0	0
5:37 PM	4		3						
5:38 PM					12	6		2	0
5:39 PM	1		3						
5:40 PM					14	1		1	0
5:42 PM	6		3		8	6		2	0
5:44 PM	3		4		6	0			
5:45 PM								3	0
5:46 PM	1		5		12	1			
5:47 PM								2	0
5:48 PM	1		3		18	5		2	0
5:50 PM	2		4						
5:51 PM					11	1		4	0
5:52 PM	5		3						
5:53 PM					22	3		3	0
5:54 PM	6		2						
5:55 PM					20	2		0	0
5:56 PM	4		3		16	3			
5:57 PM								2	0
5:58 PM	3		2						
5:59 PM					12	1		3	0
6:00 PM	6		3						
6:01 PM					21	2		0	1
6:03 PM	3		2		15	2		2	0
6:05 PM	5		6		7	2			
6:06 PM								4	0
6:07 PM	7		5		9	5			
6:08 PM								2	0
6:09 PM	6		3		0	0			
6:10 PM								1	0
6:11 PM	6		2						
6:12 PM					12	1		4	0
6:13 PM	7		4						
6:14 PM					8	2		3	0
6:15 PM	5		3						
6:16 PM					1	1		2	1
6:17 PM	8		1						
6:18 PM					14	3		2	0
6:19 PM	5		3						
6:20 PM					10	4		2	0
6:21 PM	5		5						
6:22 PM					2	3		1	0
6:24 PM	4		5		10	2		4	0
6:26 PM	8		1		4	0			
6:27 PM								3	0
6:28 PM	2		4		8	4			
6:29 PM								0	0
6:30 PM	6		4		4	2			
6:31 PM								0	1
6:32 PM	3		1						
6:33 PM					7	3		0	0
6:34 PM	4		5						
6:35 PM					0	1		2	0
6:36 PM	5		5						
6:37 PM					9	0		2	0
6:38 PM	4		3						
6:39 PM					7	4		2	0
6:40 PM	4		4						
6:41 PM					5	0		3	0
6:42 PM	4		4						
6:43 PM					1	0		0	0
6:44 PM	1		3						
6:45 PM					3	1		1	0
6:47 PM	6		5		3	2			
6:48 PM								2	0
6:49 PM	3		8		3	1			
6:50 PM								1	1
6:51 PM	7		6		2	0			
6:52 PM								0	0
6:53 PM	6		6						
6:54 PM					2	4		1	0
6:55 PM	8		3						
6:56 PM					1	0		2	0
6:57 PM	5		5						
6:58 PM					9	3		1	0
6:59 PM	6		0						
7:00 PM					10	2		2	0
7:01 PM	5		3						
7:02 PM					4	1		2	0
7:03 PM	6		2						
7:04 PM					9	2		1	1
7:06 PM	1		4		5	2		2	0
7:08 PM	2		3		10	0			
7:09 PM								1	1
7:10 PM	5		4		1	4			
7:11 PM								1	0
7:12 PM	2		3		2	0			
7:13 PM								1	0
7:14 PM	3		3						
7:15 PM					4	1		0	0
7:16 PM	1		3						
7:17 PM					7	2		1	0
7:18 PM	4		4						
7:19 PM					3	2		1	0
7:20 PM	6		1						
7:21 PM					5	0		1	0
7:22 PM	2		3						
7:23 PM					3	1		2	0
7:24 PM	2		4						
7:25 PM					2	1		0	0
7:27 PM	3		0		4	0		0	0
7:29 PM	3		4		12	1		1	0

		Harvey Street Eastbound	Cameron Street Westbound	Massachusetts Avenue Northbound		Massachusetts Avenue Southbound	
		LT/TH/RT	LT/TH/RT	LT/TH	TH/RT	TH	TH/RT
Peak Hour Average		4.55	3.31	10.07	2.27	2.07	0.10
	Max	8.00	6.00	22.00	6.00	4.00	1.00
Use	**Average**	**5**	**4**	**10**	**3**	**2**	**1**
	Max	**8**	**6**	**22**	**6**	**4**	**1**

Round up if greater than 0.2

PUBLIC TRANSPORTATION DATA

SILVER LINE

Weekday

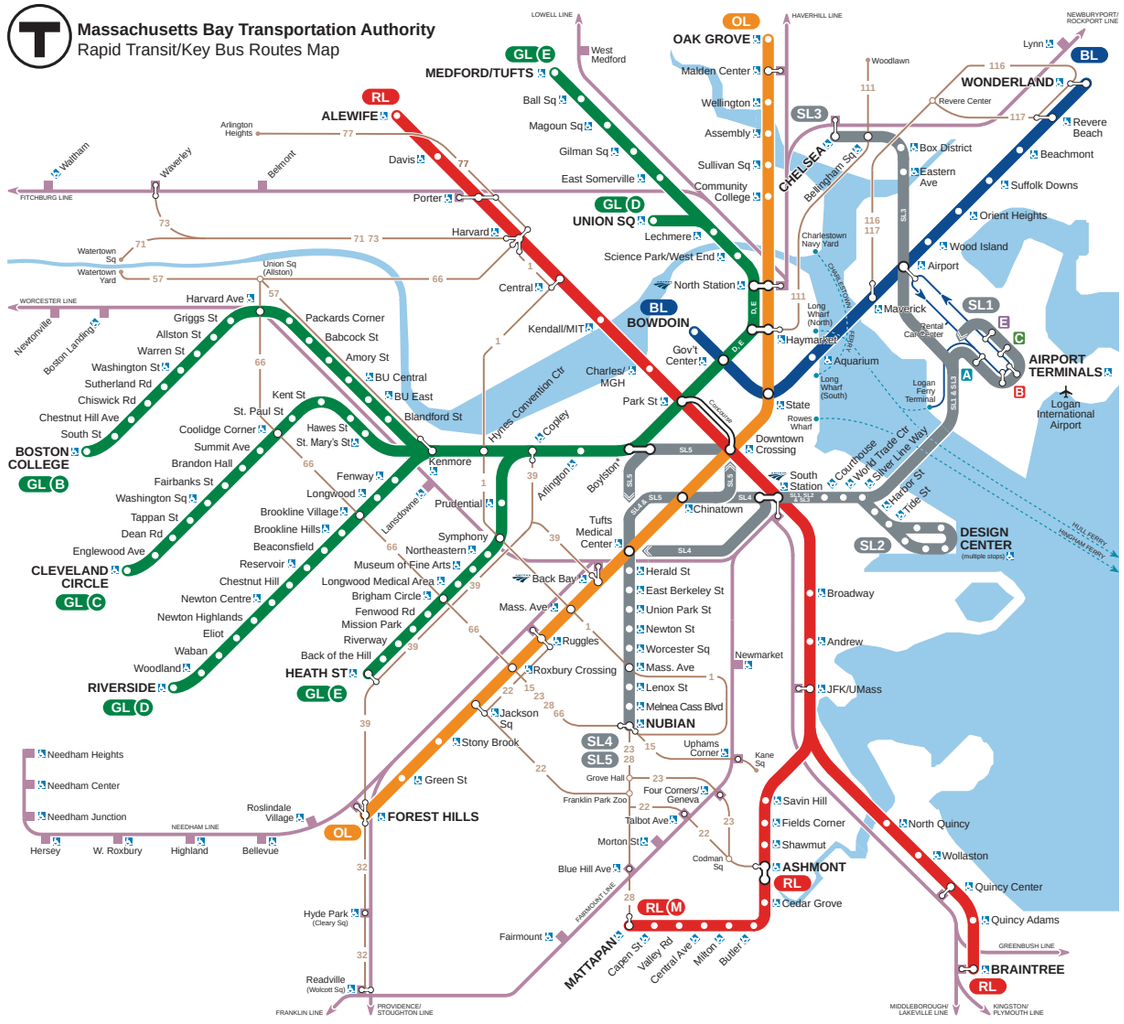
Departs		First	Last	Every...
SL1	Logan Airport	5:39 AM	1:20 AM **	10-17 min
	South Station	5:35 AM	1:02 AM *	
SL2	Drydock	5:52 AM	12:27 AM	7-16 min
	South Station	5:34 AM	12:40 AM	
SL3	Chelsea Station	4:55 AM	12:55 AM **	9-20 min
	South Station	4:20 AM	12:43 AM *	
SL4	Nubian Station	5:17 AM	12:16 AM	12-21 min
	South Station	5:40 AM	12:34 AM	
SL5	Nubian Station	5:15 AM	12:44 AM	6-20 min
	Downtown Crossing	5:32 AM	1:07 AM *	

Saturday

Departs		First	Last	Every...
SL1	Logan Airport	5:48 AM	1:12 AM **	10-14 min
	South Station	5:45 AM	12:59 AM *	
SL2	Drydock	6:06 AM	12:33 AM	14-17 min
	South Station	5:47 AM	12:45 AM	
SL3	Chelsea Station	5:27 AM	1:17 AM **	9-16 min
	South Station	4:55 AM	12:47 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

Departs		First	Last	Every...
SL1	Logan Airport	5:50 AM	1:06 AM **	10-14 min
	South Station	6:18 AM	1:00 AM *	
SL2	Drydock	6:51 AM	12:51 AM	12-18 min
	South Station	6:35 AM	12:39 AM	
SL3	Chelsea Station	6:28 AM	1:19 AM **	11-17 min
	South Station	5:52 AM	12:47 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 **April 7, 2024**

Replaces December 2023

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
trains every 7-11 min within trunk, every 15-21 min on branches.
Mattapan peak trains every 6-7 min, off-peak every 8-12 min.

Departs	First	Last
Alewife	5:15 AM	12:30 AM *
Ashmont	5:15 AM	12:30 AM *
Alewife	5:25 AM	12:20 AM
Braintree	5:06 AM	12:02 AM
M Ashmont	5:14 AM	1:35 AM *
Mattapan	5:02 AM	1:18 AM

Trips with (*) wait at transfer stations for subway connections.

Saturday
trains every 9-10 min within trunk, every 19-20 min on branches.
Mattapan trains every 12-13 min

Departs	First	Last
Alewife	5:15 AM	12:30 AM *
Ashmont	5:15 AM	12:30 AM *
Alewife	5:24 AM	12:20 AM
Braintree	5:07 AM	12:02 AM
M Ashmont	5:12 AM	1:35 AM *
Mattapan	5:02 AM	1:18 AM

Trips with (*) wait at transfer stations for subway connections.

Sunday
trains every 9-10 min within trunk, every 19-20 min on branches.
Mattapan trains every 12-13 min

Departs	First	Last
Alewife	6:00 AM	12:30 AM *
Ashmont	6:00 AM	12:30 AM *
Alewife	6:09 AM	12:20 AM
Braintree	5:50 AM	12:02 AM
M Ashmont	6:00 AM	1:35 AM *
Mattapan	5:48 AM	1:18 AM

Trips with (*) wait at transfer stations for subway connections.

ORANGE LINE

Weekday
trains every7-10 min

Departs	First	Last
Oak Grove	5:15 AM	12:30 AM *
Forest Hills	5:15 AM	12:30 AM *

Trips with (*) wait at transfer stations for subway connections.

Saturday
trains every 10-11 min

Departs	First	Last
Oak Grove	5:15 AM	12:30 AM *
Forest Hills	5:15 AM	12:30 AM *

Trips with (*) wait at transfer stations for subway connections.

Sunday
trains every 13-15 min

Departs	First	Last
Oak Grove	6:00 AM	12:30 AM *
Forest Hills	6:00 AM	12:30 AM *

Trips with (*) wait at transfer stations for subway connections.

	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.

All MBTA buses are accessible to people with disabilities.

GREEN LINE B C D E

Weekday
peak trains every 6-8 min, off peak trains every 7-12 min

Departs	First	Last
B Boston College	5:01 AM	12:16 AM
Government Center	5:45 AM	12:58 AM *
C Cleveland Circle	5:00 AM	12:19 AM
Government Center	5:37 AM	12:52 AM *
D Riverside	4:45 AM	12:16 AM *
Union Square	4:50 AM	12:50 AM ^
E Heath Street	5:42 AM	12:55 AM ^
Medford/Tufts	5:01 AM	12:19 AM *

Trips with (*) wait at transfer stations for subway connections.
Trips with (^) don't provide guaranteed connections.

Saturday
trains every 8-12 min

Departs	First	Last
B Boston College	4:45 AM	12:09 AM
Government Center	5:29 AM	12:53 AM *
C Cleveland Circle	4:50 AM	12:19 AM
Government Center	5:26 AM	12:54 AM *
D Riverside	5:00 AM	12:15 AM *
Union Square	4:55 AM	12:38 AM *
E Heath Street	5:41 AM	12:55 AM ^
Medford/Tufts	5:02 AM	12:25 AM *

Trips with (*) wait at transfer stations for subway connections.
Trips with (^) don't provide guaranteed connections.

Sunday
trains every 9-13 min

Departs	First	Last
B Boston College	5:20 AM	12:14 AM
Government Center	6:04 AM	12:57 AM *
C Cleveland Circle	5:30 AM	12:17 AM
Government Center	6:06 AM	12:52 AM *
D Riverside	5:25 AM	12:15 AM *
Union Square	5:34 AM	12:39 AM *
E Heath Street	6:08 AM	12:50 AM ^
Medford/Tufts	5:15 AM	12:28 AM *

Trips with (*) wait at transfer stations for subway connections.
Trips with (^) don't provide guaranteed connections.

BLUE LINE

Weekday
peak trains every 5-6 min, off peak trains every 7-13 min

Departs	First	Last
Wonderland	5:12 AM	12:28 AM *
Bowdoin	5:33 AM	12:54 AM *

Trips with (*) wait at transfer stations for subway connections.

Saturday
trains every 10-11 min

Departs	First	Last
Wonderland	5:24 AM	12:24 AM *
Bowdoin	5:37 AM	12:52 AM *

Trips with (*) wait at transfer stations for subway connections.

Sunday
trains every 10-11 min

Departs	First	Last
Wonderland	6:00 AM	12:24 AM *
Bowdoin	6:27 AM	12:52 AM *

Trips with (*) wait at transfer stations for subway connections.

Service Notes

Third D leaves Riverside to Medford/Tufts on weekdays.

First D leaves North Station at 5:00 AM on weekdays.

First eastbound E serves East Somerville at 4:49 AM.

Some early morning westbound E operate Union Square–Heath Street

SL1 & SL3 trips with ** stop only at Silver Line Way, World Trade Center and South Station via Summer Street.

Holidays

- SUN New Year's Day
- SAT MLK Jr. Day
- SAT Presidents Day
- SAT Patriots' Day
- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SAT Columbus/Indigenous Peoples Day
- SUN Thanksgiving
- SUN Christmas Day
- SUN New Year's Eve

gtfs_route_id	gtfs_route_short_name	gtfs_route_long_name	gtfs_route_desc	route_category	mode_type	peak_offpeak_ind	metric_type	otp_numerator	otp_denominator	cancelled_	ObjectId		On Time Pe
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	110864.0472	117227.5102			15186	0.945717
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	118609.3849	125706.2261			15189	0.943544
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	123503.4811	130554.2063			14468	0.945994
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	109766.0152	116861.6119			14740	0.939282
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	112229.1934	117257.9275			14257	0.957114
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	123935.8284	131905.9426			14274	0.939577
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	109642.0063	116822.3659			13960	0.938536
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	120656.7479	130144.5302			13970	0.927098
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	112675.7012	117779.4459			13610	0.956667
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	124501.8607	131167.1429			13621	0.949185
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	91863.24701	95535.54707			13403	0.961561
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	64896.53873	68577.77166			13201	0.94632
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	108219.2243	115004.3154			12952	0.941001
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	125326.6586	131003.5614			13075	0.956666
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	89014.82564	112790.5125			12775	0.789205
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	116775.7075	127523.9312			12786	0.915716
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	80781.69173	87789.80035			12236	0.920172
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	46342.2706	54289.42967			12258	0.853615
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	54454.37713	61801.25491			12282	0.881121
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	48754.25139	54722.27325			12314	0.89094
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	120617.0318	130412.3659			11606	0.92489
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	108650.2448	115020.9463			11882	0.944613
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	91643.73707	95725.61026			11504	0.957359
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	65019.60475	68203.09087			11569	0.953323
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	109491.7603	118646.3533			11238	0.922841
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	121971.7154	129699.2243			11242	0.94042
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	72989.37548	85501.01258			11151	0.853667
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	89625.25306	102580.5409			11157	0.873706
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	109696.8697	117899.4124			11193	0.930428
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	120362.7573	130924.1587			11196	0.919332
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	108433.8082	116935.7077			10868	0.927294
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	119393.8865	131426.403			10874	0.908447
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	95721.73785	100274.6565			10824	0.954596
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	96694.91238	102603.551			10827	0.942413
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	85429.46626	92152.13024			11026	0.927048
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	58713.23514	65496.74366			10700	0.89643
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	106351.6837	116670.011			10692	0.91156
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	115465.2657	127396.7278			10725	0.906344
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	106994.0347	116475.9891			10012	0.918593
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	122036.1319	131750.669			10033	0.926266
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	108536.022	117592.1353			9757	0.922987
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	123781.4451	131051.8411			9768	0.944523
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	122413.474	131123.6677			9209	0.933573
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	109446.0597	118761.8044			9426	0.921559
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	101632.0421	113481.7376			9026	0.895581
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	117341.5258	131693.5975			9049	0.891019
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	88831.55218	94711.02154			8875	0.937922
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	64006.17396	67392.48319			8900	0.949752
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	101493.2356	111272.9754			8485	0.91211
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	116546.4356	125534.9537			8587	0.928398
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	75761.74267	98007.85138			8313	0.773017
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	93873.57486	103164.4184			8373	0.909941
Red		Red Line	Rapid Transit	Red Line	Rail	PEAK	Passenger Wait Time	104669.1687	116475.1385			7653	0.89864
Red		Red Line	Rapid Transit	Red Line	Rail	OFF_PEAK	Passenger Wait Time	117248.1392	127926.1986			7664	0.91653
											On Time Performance		**0.919892**

mode	season	route_id	route_name	direction_id	day_type_id	day_type_name	time_period_id	time_period_name	stop_name	stop_id	total_ons	total_offs	number_service_days	average_ons	average_offs	average_flow	ObjectId
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_05	MIDDAY_SCHOOL	Davis	place-davis	62838	4611	77	816	60	1535	4806
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_06	PM_PEAK	Davis	place-davis	95174	20443	77	1236	265	2949	4903
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_07	EVENING	Davis	place-davis	65174	8302	77	846	108	1494	4947
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_03	AM_PEAK	Davis	place-davis	372722	3231	77	4841	42	9636	4969
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_04	MIDDAY_BASE	Davis	place-davis	231035	6548	77	3000	85	5471	4991
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_01	VERY_EARLY_MORNING	Davis	place-davis	8833	77	77	115	1	216	5118
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_02	EARLY_AM	Davis	place-davis	43926	550	77	570	7	1500	5168
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_08	LATE_EVENING	Davis	place-davis	16661	1226	77	216	16	320	5480
1	Fall 2019	Red	Red Line	0	day_type_01	weekday	time_period_09	NIGHT	Davis	place-davis	1729	39	77	22	1	30	5571
														11662	585		
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_03	AM_PEAK	Davis	place-davis	16320	47496	77	212	617	1255	5284
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_04	MIDDAY_BASE	Davis	place-davis	8917	88989	77	116	1156	1093	5318
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_05	MIDDAY_SCHOOL	Davis	place-davis	3597	110015	77	47	1429	1720	5340
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_08	LATE_EVENING	Davis	place-davis	1246	44182	77	16	574	420	5371
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_09	NIGHT	Davis	place-davis	101	7021	77	1	91	23	5393
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_01	VERY_EARLY_MORNING	Davis	place-davis	668	2871	77	9	37	101	5418
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_06	PM_PEAK	Davis	place-davis	6465	403390	77	84	5239	5312	5517
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_07	EVENING	Davis	place-davis	6037	229692	77	78	2983	2144	5558
1	Fall 2019	Red	Red Line	1	day_type_01	weekday	time_period_02	EARLY_AM	Davis	place-davis	3082	9795	77	40	127	327	5580
														603	12253		
														23927	13423		

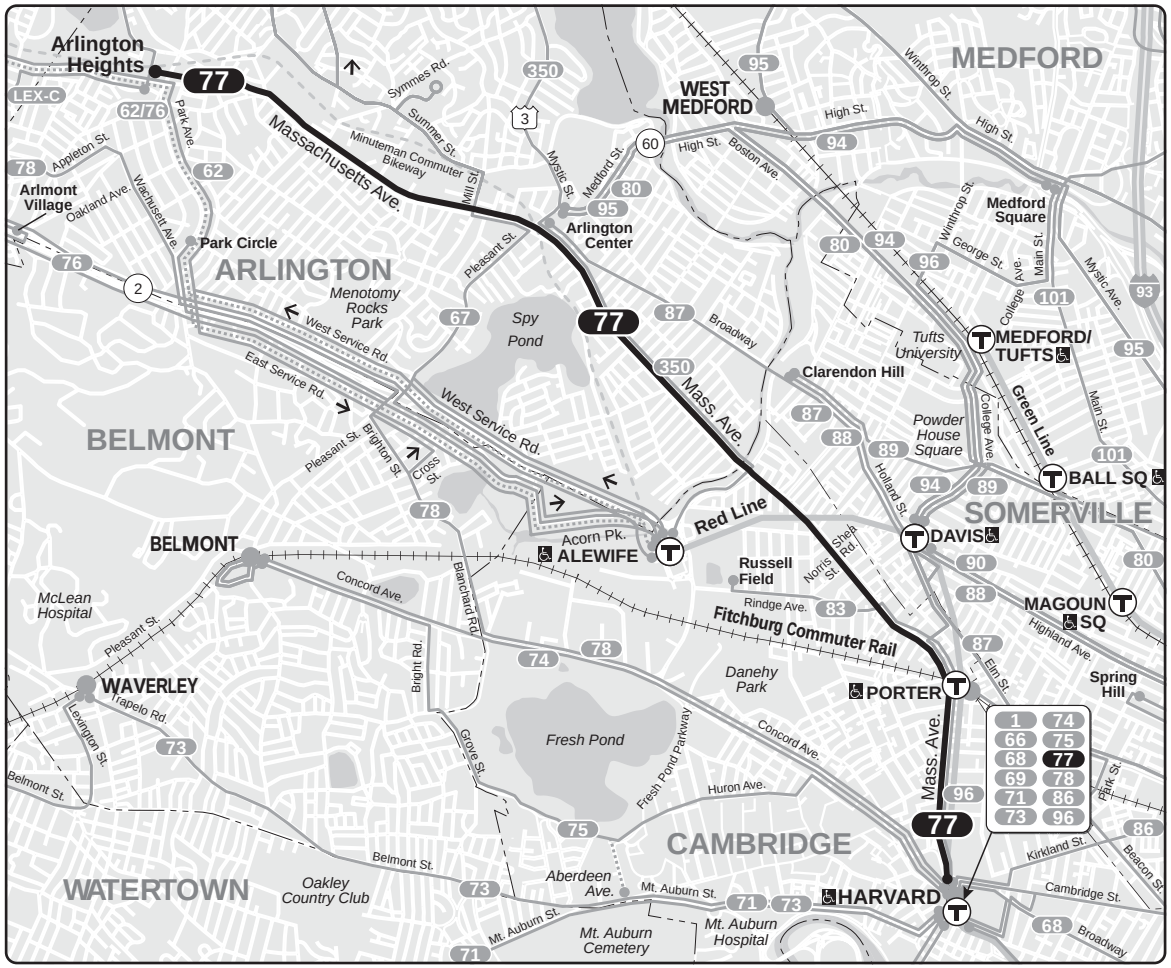
	On	Off
AM Peak	5057	58
PM Peak	1245	302

	Inbound	Outbound
AM Peak	4883	829
PM Peak	1501	5323

Effective **December 17, 2023** Replaces August 2023

77 Arlington Heights – Harvard Sta

Schedule Change
Weekday



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

♿ All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Local 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

Frequency

20

Most buses every **20 minutes** or less

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	4:52	4:59	5:10
5:00	5:04	5:11	5:22
5:12	5:16	5:23	5:34
5:23	5:27	5:34	5:45
5:34	5:38	5:45	5:56
5:45	5:49	5:56	6:07
5:56	6:00	6:08	6:20
6:06	6:11	6:19	6:31
6:16	6:21	6:29	6:41
6:26	6:31	6:39	6:51
6:36	6:41	6:49	7:02
6:46	6:51	6:59	7:15
every **15** min or less			
1:22	**1:29**	**1:40**	**1:55**
1:35	**1:42**	**1:53**	**2:08**
1:48	**1:55**	**2:06**	**2:21**
2:01	**2:08**	**2:19**	**2:34**
2:14	**2:21**	**2:32**	**2:47**
2:27	**2:34**	**2:45**	**3:00**
2:40	**2:47**	**2:58**	**3:14**
2:54	**3:01**	**3:13**	**3:29**
S **-**	**3:10**	**3:22**	**3:38**
3:09	**3:16**	**3:28**	**3:44**
S **-**	**3:20**	**3:32**	**3:48**
3:24	**3:31**	**3:43**	**3:59**
every **16** min or less			
9:53	**9:57**	**10:06**	**10:18**
10:09	**10:13**	**10:22**	**10:34**
10:25	**10:29**	**10:37**	**10:47**
10:40	**10:44**	**10:52**	**11:02**
10:55	**10:59**	**11:07**	**11:17**
11:10	**11:14**	**11:22**	**11:31**
11:25	**11:29**	**11:35**	**11:44**
11:40	**11:44**	**11:50**	**11:59**
11:55	**11:59**	12:05	12:14
12:10	12:14	12:20	12:29
12:25	12:29	12:35	12:44
12:40	12:44	12:50	12:59

Outbound

Harvard Station	Mass Ave & Shea St	Arlington Center	Arlington Heights
5:10	5:16	5:23	5:31
5:20	5:26	5:33	5:41
5:30	5:36	5:43	5:51
5:40	5:46	5:53	6:01
5:51	5:57	6:04	6:12
6:02	6:08	6:15	6:23
6:14	6:20	6:27	6:35
6:26	6:32	6:39	6:47
6:38	6:44	6:51	6:59
6:50	6:56	7:04	7:15
7:02	7:11	7:20	7:31
7:14	7:23	7:34	7:48
every **19** min or less			
10:40	10:49	10:58	11:10
10:55	11:04	11:13	11:25
11:10	11:19	11:28	11:40
11:24	11:33	11:42	11:54
11:39	11:48	11:57	**12:10**
11:54	**12:05**	**12:15**	**12:28**
12:09	**12:20**	**12:30**	**12:43**
12:24	**12:35**	**12:45**	**12:58**
12:39	**12:50**	**1:00**	**1:13**
12:54	**1:05**	**1:15**	**1:28**
1:08	**1:19**	**1:29**	**1:42**
1:21	**1:32**	**1:42**	**1:55**
every **16** min or less			
10:25	**10:33**	**10:40**	**10:50**
10:40	**10:48**	**10:55**	**11:05**
10:55	**11:03**	**11:10**	**11:20**
11:10	**11:18**	**11:25**	**11:35**
11:25	**11:33**	**11:40**	**11:50**
11:40	**11:48**	**11:55**	**12:05**
11:55	12:03	12:10	12:20
12:10	12:18	12:25	12:34
12:25	12:32	12:37	12:45
12:40	12:47	12:52	1:00
12:55	1:02	1:07	1:15
W 1:10	1:17	1:22	1:30

Saturday 77

Inbound

Arlington Heights	Arlington Center	Mass Ave & Norris St	Harvard Station
4:48	4:52	4:57	5:06
5:06	5:10	5:15	5:24
5:24	5:28	5:34	5:45
5:42	5:46	5:52	6:03
6:00	6:04	6:11	6:22
6:18	6:22	6:29	6:40
6:36	6:40	6:47	6:58
6:54	6:58	7:05	7:16
7:12	7:16	7:23	7:34
7:30	7:34	7:41	7:52
7:48	7:52	7:59	8:10
8:05	8:09	8:16	8:27
every **15** min or less			
10:35	10:42	10:52	11:09
10:51	10:58	11:08	11:25
11:07	11:14	11:24	11:41
11:23	11:30	11:40	11:57
11:39	11:46	11:56	**12:13**
11:55	**12:02**	**12:12**	**12:29**
12:11	**12:18**	**12:28**	**12:45**
12:27	**12:34**	**12:44**	**1:01**
12:43	**12:50**	**1:00**	**1:17**
12:59	**1:06**	**1:16**	**1:33**
1:15	**1:22**	**1:32**	**1:49**
1:31	**1:38**	**1:48**	**2:05**
every **18** min or less			
9:09	**9:14**	**9:22**	**9:36**
9:26	**9:31**	**9:39**	**9:53**
9:43	**9:48**	**9:56**	**10:10**
10:00	**10:05**	**10:13**	**10:27**
10:20	**10:25**	**10:32**	**10:44**
10:40	**10:44**	**10:50**	**11:02**
11:00	**11:04**	**11:10**	**11:22**
11:20	**11:24**	**11:30**	**11:42**
11:40	**11:44**	**11:50**	12:02
12:00	12:04	12:10	12:19
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
5:11	5:19	5:23	5:31
5:30	5:38	5:42	5:50
5:49	5:57	6:01	6:09
6:07	6:15	6:19	6:27
6:25	6:33	6:39	6:48
6:43	6:51	6:57	7:06
7:01	7:09	7:15	7:24
7:19	7:27	7:33	7:42
7:37	7:45	7:51	8:00
7:55	8:03	8:10	8:19
8:13	8:21	8:28	8:37
8:31	8:39	8:46	8:55
every **18** min or less			
10:58	11:08	11:17	11:30
11:14	11:24	11:33	11:46
11:30	11:40	11:49	**12:02**
11:46	11:56	**12:05**	**12:18**
12:02	**12:12**	**12:21**	**12:34**
12:18	**12:28**	**12:37**	**12:50**
12:34	**12:44**	**12:53**	**1:06**
12:50	**1:00**	**1:09**	**1:22**
1:06	**1:16**	**1:25**	**1:38**
1:22	**1:32**	**1:41**	**1:54**
1:38	**1:48**	**1:57**	**2:10**
1:54	**2:04**	**2:13**	**2:26**
every **16** min or less			
9:40	**9:50**	**9:56**	**10:06**
9:57	**10:07**	**10:13**	**10:23**
10:14	**10:24**	**10:30**	**10:40**
10:31	**10:41**	**10:47**	**10:57**
10:50	**11:00**	**11:06**	**11:16**
11:10	**11:20**	**11:26**	**11:36**
11:30	**11:40**	**11:46**	11:56
11:50	12:00	12:06	12:14
12:10	12:18	12:24	12:32
12:30	12:38	12:44	12:52
12:50	12:58	1:04	1:12
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.

Holidays

- SUN New Year's Day
- SAT MLK Jr. Day
- SAT Presidents Day
- SAT Patriots' Day
- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SAT Columbus/Indigenous Peoples Day
- SUN Thanksgiving
- SUN Christmas Day
- SUN New Year's Eve

Explore the Reliability Dashboard

Interact with the dashboard below to see how reliable our service is on average.

Note: The reliability target is a goal we want to meet to ensure reliable service for our riders. We measure our current service against the reliability target as one way to find out what we need to do to improve service.

Select Display: Table

Select Date: 1/31/2024

Select a date between 1/1/2015 and 2/18/2024

Bus route reliability

Select Route

- 75
- 76
- 77
- 78
- 79
- 80
- 83
- 84

Select Mode: Bus

By route for Key Bus Route: 77

	Reliability
Peak	76%
Off Peak	80%
Overall	79%

ObjectId	season	route_id	route_variant	direction_id	trip_start_time	boardings	alightings	load_	sample_size
5853082	Fall 2022	77	77-_-0	0	0:05:00	0	0.1	6.9	68
5861461	Fall 2022	77	77-_-1	1	0:05:00	0	0	2	65
5853020	Fall 2022	77	77-_-0	0	0:20:00	0	0.1	5.8	60
5861587	Fall 2022	77	77-_-1	1	0:20:00	0	0	1.4	63
5853237	Fall 2022	77	77-_-0	0	0:35:00	0	0.1	4	61
5861539	Fall 2022	77	77-_-1	1	0:40:00	0.1	0	2.4	66
5853550	Fall 2022	77	77-_-0	0	0:50:00	0	0.1	3	61
5853284	Fall 2022	77	77-_-0	0	1:05:00	0	0.1	3.7	29
5861308	Fall 2022	77	77-_-1	1	4:48:00	0.1	0	14.5	56
5861617	Fall 2022	77	77-_-1	1	5:00:00	0.1	0	8.2	56
5853438	Fall 2022	77	77-_-0	0	5:10:00	0.4	0	2.6	68
5861699	Fall 2022	77	77-_-1	1	5:12:00	0.4	0	5.6	65
5853391	Fall 2022	77	77-_-0	0	5:20:00	0	0	4.1	52
5861656	Fall 2022	77	77-_-1	1	5:23:00	0.5	0	9.4	60
5853844	Fall 2022	77	77-_-0	0	5:30:00	0	0	4.1	53
5861883	Fall 2022	77	77-_-1	1	5:34:00	0.3	0	9.5	64
5853982	Fall 2022	77	77-_-0	0	5:41:00	0.2	0	3.2	64
5861796	Fall 2022	77	77-_-1	1	5:45:00	0.4	0.1	12.7	52
5853650	Fall 2022	77	77-_-0	0	5:52:00	0	0.1	3.1	57
5861915	Fall 2022	77	77-_-1	1	5:56:00	0.2	0	10	53
5853728	Fall 2022	77	77-_-0	0	6:04:00	0	0.9	8.7	63
5861991	Fall 2022	77	77-_-1	1	6:07:00	0.3	0	14.7	65
5853956	Fall 2022	77	77-_-0	0	6:15:00	0.3	0.3	8.1	54
5862201	Fall 2022	77	77-_-1	1	6:18:00	0.3	0	11.8	57
5853702	Fall 2022	77	77-_-0	0	6:26:00	0.2	0	9.6	50
5862110	Fall 2022	77	77-_-1	1	6:28:00	0.3	0.2	13.9	63
5853874	Fall 2022	77	77-_-0	0	6:37:00	0.1	0.1	8.4	61
5862368	Fall 2022	77	77-_-1	1	6:38:00	0.4	0.1	14.1	37
5854378	Fall 2022	77	77-_-0	0	6:48:00	0.1	0	7.4	57
5862346	Fall 2022	77	77-_-1	1	6:48:00	0.3	0.1	15.9	56
5862267	Fall 2022	77	77-_-1	1	6:58:00	0.3	0.1	20.4	49
5854046	Fall 2022	77	77-_-0	0	7:00:00	0.5	0.1	12.6	59
5862711	Fall 2022	77	77-_-1	1	7:08:00	0.3	0.3	20.2	60
5854365	Fall 2022	77	77-_-0	0	7:12:00	0.3	0.1	10.8	35
5862463	Fall 2022	77	77-_-1	1	7:17:00	0.4	0.1	17.4	54
5854181	Fall 2022	77	77-_-0	0	7:23:00	0.1	0.1	11.5	56
5862617	Fall 2022	77	77-_-1	1	7:27:00	1.2	0.2	21.6	24
5854243	Fall 2022	77	77-_-0	0	7:33:00	0.1	0	10.9	9
5862749	Fall 2022	77	77-_-1	1	7:36:00	1.2	0.2	25.2	60
5854526	Fall 2022	77	77-_-0	0	7:43:00	0.1	0.2	12.1	48
5862409	Fall 2022	77	77-_-1	1	7:46:00	1	0.3	23.2	48
5854537	Fall 2022	77	77-_-0	0	7:53:00	0.2	0.3	13.5	60
5863049	Fall 2022	77	77-_-1	1	7:55:00	1	0.5	25.1	35
5854602	Fall 2022	77	77-_-0	0	8:03:00	0.1	0.3	10.2	55
5863086	Fall 2022	77	77-_-1	1	8:04:00	0.8	0.3	26	56
5854682	Fall 2022	77	77-_-0	0	8:13:00	0.2	0.4	9.1	26
5862991	Fall 2022	77	77-_-1	1	8:13:00	0.6	0.2	16.7	10
5862883	Fall 2022	77	77-_-1	1	8:22:00	0.8	0.4	24.7	49
5854405	Fall 2022	77	77-_-0	0	8:23:00	0.3	0.2	10.7	59
5862846	Fall 2022	77	77-_-1	1	8:31:00	0.8	0.2	17.9	57
5854986	Fall 2022	77	77-_-0	0	8:33:00	0.3	0.3	6.9	50
5862974	Fall 2022	77	77-_-1	1	8:40:00	0.7	0.1	12.7	58
5855184	Fall 2022	77	77-_-0	0	8:43:00	0.2	0.3	6.3	36
5863024	Fall 2022	77	77-_-1	1	8:50:00	0.5	0.1	13.9	28
5854966	Fall 2022	77	77-_-0	0	8:55:00	0.2	0.3	6.9	56
5863496	Fall 2022	77	77-_-1	1	9:00:00	1.2	0.1	21.1	60
5855075	Fall 2022	77	77-_-0	0	9:10:00	0.6	0.8	11.6	50
5863229	Fall 2022	77	77-_-1	1	9:10:00	0.8	0.2	18.9	52
5863324	Fall 2022	77	77-_-1	1	9:20:00	0.6	0.2	15.6	39
5854801	Fall 2022	77	77-_-0	0	9:25:00	0.3	0.4	11.7	60
5863205	Fall 2022	77	77-_-1	1	9:30:00	1	0.2	17	55
5855545	Fall 2022	77	77-_-0	0	9:40:00	0.3	0.4	12.3	62
5863914	Fall 2022	77	77-_-1	1	9:45:00	0.6	0.1	20.8	51
5855232	Fall 2022	77	77-_-0	0	9:55:00	0.2	0.2	10.4	63
5863634	Fall 2022	77	77-_-1	1	10:00:00	0.7	0.2	20.8	61
5855467	Fall 2022	77	77-_-0	0	10:10:00	0.2	0.3	10.4	52
5863810	Fall 2022	77	77-_-1	1	10:15:00	0.6	0.2	17.2	68
5855373	Fall 2022	77	77-_-0	0	10:25:00	0.2	0.2	12.9	51
5863905	Fall 2022	77	77-_-1	1	10:30:00	0.7	0.2	16.4	64
5855922	Fall 2022	77	77-_-0	0	10:40:00	0.1	0.3	11.9	49
5864032	Fall 2022	77	77-_-1	1	10:45:00	0.6	0.2	15.6	55
5855628	Fall 2022	77	77-_-0	0	10:55:00	0.2	0.2	9.7	70
5864212	Fall 2022	77	77-_-1	1	11:00:00	0.5	0.3	17.1	59
5855683	Fall 2022	77	77-_-0	0	11:10:00	0.2	0.2	12.2	60
5864085	Fall 2022	77	77-_-1	1	11:15:00	0.6	0.1	14.5	57
5855860	Fall 2022	77	77-_-0	0	11:24:00	0.1	0.3	7.3	55
5864121	Fall 2022	77	77-_-1	1	11:30:00	0.4	0.1	15.7	70
5856026	Fall 2022	77	77-_-0	0	11:39:00	0.3	0.6	11.1	61
5864722	Fall 2022	77	77-_-1	1	11:45:00	0.6	0.5	14.2	63
5856194	Fall 2022	77	77-_-0	0	11:54:00	0.2	0.4	9.5	57
5864492	Fall 2022	77	77-_-1	1	12:00:00	0.5	0.3	15.9	55
5856319	Fall 2022	77	77-_-0	0	12:09:00	0.3	0.6	11.8	65
5864645	Fall 2022	77	77-_-1	1	12:15:00	0.6	0.2	16.6	63
5856238	Fall 2022	77	77-_-0	0	12:24:00	0.2	0.2	13.7	62
5864779	Fall 2022	77	77-_-1	1	12:30:00	0.7	0.4	13.5	60
5856484	Fall 2022	77	77-_-0	0	12:39:00	0.1	0.3	13.5	58
5865031	Fall 2022	77	77-_-1	1	12:43:00	0.6	0.3	15.1	62
5856429	Fall 2022	77	77-_-0	0	12:54:00	0.1	0.6	11.4	60
5864982	Fall 2022	77	77-_-1	1	12:56:00	0.7	0.2	14.9	51
5856503	Fall 2022	77	77-_-0	0	13:08:00	0.2	0.5	11.9	58
5864926	Fall 2022	77	77-_-1	1	13:09:00	0.4	0.2	11	62
5856613	Fall 2022	77	77-_-0	0	13:21:00	0.2	0.5	14.1	61
5864864	Fall 2022	77	77-_-1	1	13:22:00	0.6	0.7	18.3	63
5856851	Fall 2022	77	77-_-0	0	13:34:00	0.3	0.5	14.8	57
5865327	Fall 2022	77	77-_-1	1	13:35:00	0.5	0.2	11.7	60
5857081	Fall 2022	77	77-_-0	0	13:47:00	0.3	0.5	12.8	48
5865318	Fall 2022	77	77-_-1	1	13:47:00	0.5	0.1	12.4	57
5865281	Fall 2022	77	77-_-1	1	13:59:00	0.5	0.1	14.9	62
5857130	Fall 2022	77	77-_-0	0	14:00:00	0.3	0.5	15.2	62
5865357	Fall 2022	77	77-_-1	1	14:11:00	0.7	0.3	16.2	58
5857009	Fall 2022	77	77-_-0	0	14:13:00	0.2	0.2	15.1	57
5865560	Fall 2022	77	77-_-1	1	14:23:00	1	0.3	15.4	63
5856929	Fall 2022	77	77-_-0	0	14:26:00	0.4	0.4	15.4	53
5865956	Fall 2022	77	77-_-1	1	14:35:00	0.8	0.3	11.8	58
5857521	Fall 2022	77	77-_-0	0	14:38:00	0.4	0.3	13.6	60
5865999	Fall 2022	77	77-_-1	1	14:47:00	0.7	0.4	17	61
5857411	Fall 2022	77	77-_-0	0	14:50:00	0.7	0.5	18.5	52
5858802	Fall 2022	77	77-_-1	1	14:59:00	0.7	0.4	18.3	63
5857371	Fall 2022	77	77-_-0	0	15:02:00	0.5	0.6	20.1	63
5869641	Fall 2022	77	77-1-1	1	15:05:00	0.4	0.2	11.1	65
5865751	Fall 2022	77	77-_-1	1	15:11:00	0.2	0.2	11.7	65
5857211	Fall 2022	77	77-_-0	0	15:14:00	0.3	0.6	20	55
5869691	Fall 2022	77	77-1-1	1	15:15:00	0.3	0.2	8.3	68
5866194	Fall 2022	77	77-_-1	1	15:23:00	0.3	0.2	13.7	60
5857689	Fall 2022	77	77-_-0	0	15:26:00	0.5	1.6	26.4	58
5866092	Fall 2022	77	77-_-1	1	15:35:00	0.2	0.1	13.7	52
5857903	Fall 2022	77	77-_-0	0	15:38:00	0.3	0.8	21.6	61
5866041	Fall 2022	77	77-_-1	1	15:47:00	0.4	0.3	14.3	64
5857960	Fall 2022	77	77-_-0	0	15:48:00	0.2	0.5	16.1	61
5866272	Fall 2022	77	77-_-1	1	15:57:00	0.2	0.3	13.2	55
5857774	Fall 2022	77	77-_-0	0	15:58:00	0.2	0.6	17	50
5866488	Fall 2022	77	77-_-1	1	16:06:00	0.2	0.4	15.3	70
5857989	Fall 2022	77	77-_-0	0	16:08:00	0.2	0.7	20.1	59
5866421	Fall 2022	77	77-_-1	1	16:16:00	0.4	0.4	14.5	59
5858299	Fall 2022	77	77-_-0	0	16:18:00	0.3	0.7	23.4	50
5866457	Fall 2022	77	77-_-1	1	16:25:00	0.3	0.3	14	61
5858070	Fall 2022	77	77-_-0	0	16:28:00	0.4	1	20	50
5866622	Fall 2022	77	77-_-1	1	16:34:00	0.4	0.3	11.7	61
5858156	Fall 2022	77	77-_-0	0	16:38:00	0.5	0.8	23.5	45
5866681	Fall 2022	77	77-_-1	1	16:44:00	0.6	0.3	11.8	55
5858037	Fall 2022	77	77-_-0	0	16:48:00	0.3	0.7	24.4	56
5866998	Fall 2022	77	77-_-1	1	16:53:00	0.5	0.2	11.7	59
5858358	Fall 2022	77	77-_-0	0	16:58:00	0.4	0.7	24.9	58
5866988	Fall 2022	77	77-_-1	1	17:03:00	0.6	0.2	14.9	51
5858423	Fall 2022	77	77-_-0	0	17:08:00	0.4	0.6	32.4	51
5867037	Fall 2022	77	77-_-1	1	17:12:00	0.5	0.3	12.5	54
5858693	Fall 2022	77	77-_-0	0	17:17:00	0.2	0.4	19.4	60
5866824	Fall 2022	77	77-_-1	1	17:22:00	0.5	0.4	13	45
5858416	Fall 2022	77	77-_-0	0	17:27:00	0.3	0.4	20.8	55
5866887	Fall 2022	77	77-_-1	1	17:31:00	0.6	0.6	13.4	58
5858488	Fall 2022	77	77-_-0	0	17:36:00	0.4	0.7	23.4	58
5867079	Fall 2022	77	77-_-1	1	17:41:00	0.3	0.5	12.7	57
5858552	Fall 2022	77	77-_-0	0	17:46:00	0.2	0.5	23.4	46
5867269	Fall 2022	77	77-_-1	1	17:51:00	0.4	0.2	11.9	62
5858769	Fall 2022	77	77-_-0	0	17:55:00	0.3	0.6	20	55
5867579	Fall 2022	77	77-_-1	1	18:00:00	0.2	0.1	7.8	60
5859181	Fall 2022	77	77-_-0	0	18:05:00	0.3	0.6	22.5	42
5867421	Fall 2022	77	77-_-1	1	18:10:00	0.2	0.1	7.1	56
5859094	Fall 2022	77	77-_-0	0	18:14:00	0.6	0.7	22.9	59
5867556	Fall 2022	77	77-_-1	1	18:20:00	0.4	0.2	7.4	59
5858884	Fall 2022	77	77-_-0	0	18:23:00	0.3	0.6	19.6	48
5867287	Fall 2022	77	77-_-1	1	18:30:00	0.4	0.2	6.5	57
5859143	Fall 2022	77	77-_-0	0	18:32:00	0.4	0.9	18.7	58
5859159	Fall 2022	77	77-_-0	0	18:42:00	0.3	0.6	14.9	39
5867793	Fall 2022	77	77-_-1	1	18:42:00	0.4	0.1	6.4	57
5859517	Fall 2022	77	77-_-0	0	18:51:00	0.2	0.8	14.7	21
5867643	Fall 2022	77	77-_-1	1	18:55:00	0.4	0.2	7.2	61
5859281	Fall 2022	77	77-_-0	0	19:01:00	0.2	0.8	19.3	54
5867868	Fall 2022	77	77-_-1	1	19:09:00	0.3	0.2	7.6	53
5859591	Fall 2022	77	77-_-0	0	19:11:00	0.2	0.7	14.3	55
5859558	Fall 2022	77	77-_-0	0	19:21:00	0.1	0.7	12.7	54
5867704	Fall 2022	77	77-_-1	1	19:23:00	0.4	0.2	5.9	43
5859316	Fall 2022	77	77-_-0	0	19:32:00	0.2	0.7	13.6	59
5868249	Fall 2022	77	77-_-1	1	19:37:00	0.2	0.2	6.5	56
5859622	Fall 2022	77	77-_-0	0	19:44:00	0.2	1	15.1	52
5868087	Fall 2022	77	77-_-1	1	19:51:00	0.2	0.2	5.8	54
5859887	Fall 2022	77	77-_-0	0	19:56:00	0.2	0.8	14	43
5868159	Fall 2022	77	77-_-1	1	20:05:00	0.1	0.2	8.2	62
5859689	Fall 2022	77	77-_-0	0	20:09:00	0.1	0.6	20.7	56
5868045	Fall 2022	77	77-_-1	1	20:20:00	0.1	0.2	7.7	56
5859941	Fall 2022	77	77-_-0	0	20:22:00	0.2	0.6	14.2	53
5859853	Fall 2022	77	77-_-0	0	20:35:00	0.1	0.7	12.3	59
5868383	Fall 2022	77	77-_-1	1	20:35:00	0.1	0.2	6.2	56
5860322	Fall 2022	77	77-_-0	0	20:50:00	0.2	0.9	17.3	59
5868785	Fall 2022	77	77-_-1	1	20:50:00	0.2	0.3	9.1	61
5860114	Fall 2022	77	77-_-0	0	21:05:00	0.1	0.5	13.6	57
5868615	Fall 2022	77	77-_-1	1	21:05:00	0.1	0.9	7.7	59
5860238	Fall 2022	77	77-_-0	0	21:20:00	0.3	0.7	15.2	60
5868750	Fall 2022	77	77-_-1	1	21:20:00	0.3	0.7	9.4	61
5860382	Fall 2022	77	77-_-0	0	21:35:00	0.2	0.4	11.8	59
5868545	Fall 2022	77	77-_-1	1	21:35:00	0.2	0.3	6.8	58
5860778	Fall 2022	77	77-_-0	0	21:50:00	0.4	0.6	13	60
5869116	Fall 2022	77	77-_-1	1	21:50:00	0.3	0.3	10.4	60
5860413	Fall 2022	77	77-_-0	0	22:05:00	0.2	0.5	11.6	57
5868941	Fall 2022	77	77-_-1	1	22:05:00	0.1	0.5	11.5	58
5860468	Fall 2022	77	77-_-0	0	22:20:00	0.3	0.5	12.5	62
5869023	Fall 2022	77	77-_-1	1	22:20:00	0.1	0.2	4.6	58
5860482	Fall 2022	77	77-_-0	0	22:35:00	0.3	0.7	10.6	62
5869160	Fall 2022	77	77-_-1	1	22:35:00	0.1	0.1	4.5	62
5860810	Fall 2022	77	77-_-0	0	22:50:00	0.2	0.4	9.4	59
5868927	Fall 2022	77	77-_-1	1	22:50:00	0.1	0	2.7	58
5861011	Fall 2022	77	77-_-0	0	23:05:00	0.1	0.4	11.8	68
5869252	Fall 2022	77	77-_-1	1	23:05:00	0.1	0	2.9	65
5861151	Fall 2022	77	77-_-0	0	23:20:00	0.2	0.3	11.3	60
5869203	Fall 2022	77	77-_-1	1	23:20:00	0	0	2	61
5860930	Fall 2022	77	77-_-0	0	23:35:00	0	0.1	9.1	66
5869258	Fall 2022	77	77-_-1	1	23:35:00	0	0	2.2	70
5861132	Fall 2022	77	77-_-0	0	23:50:00	0.1	0.1	8	65
5869607	Fall 2022	77	77-_-1	1	23:50:00	0	0	1.6	62

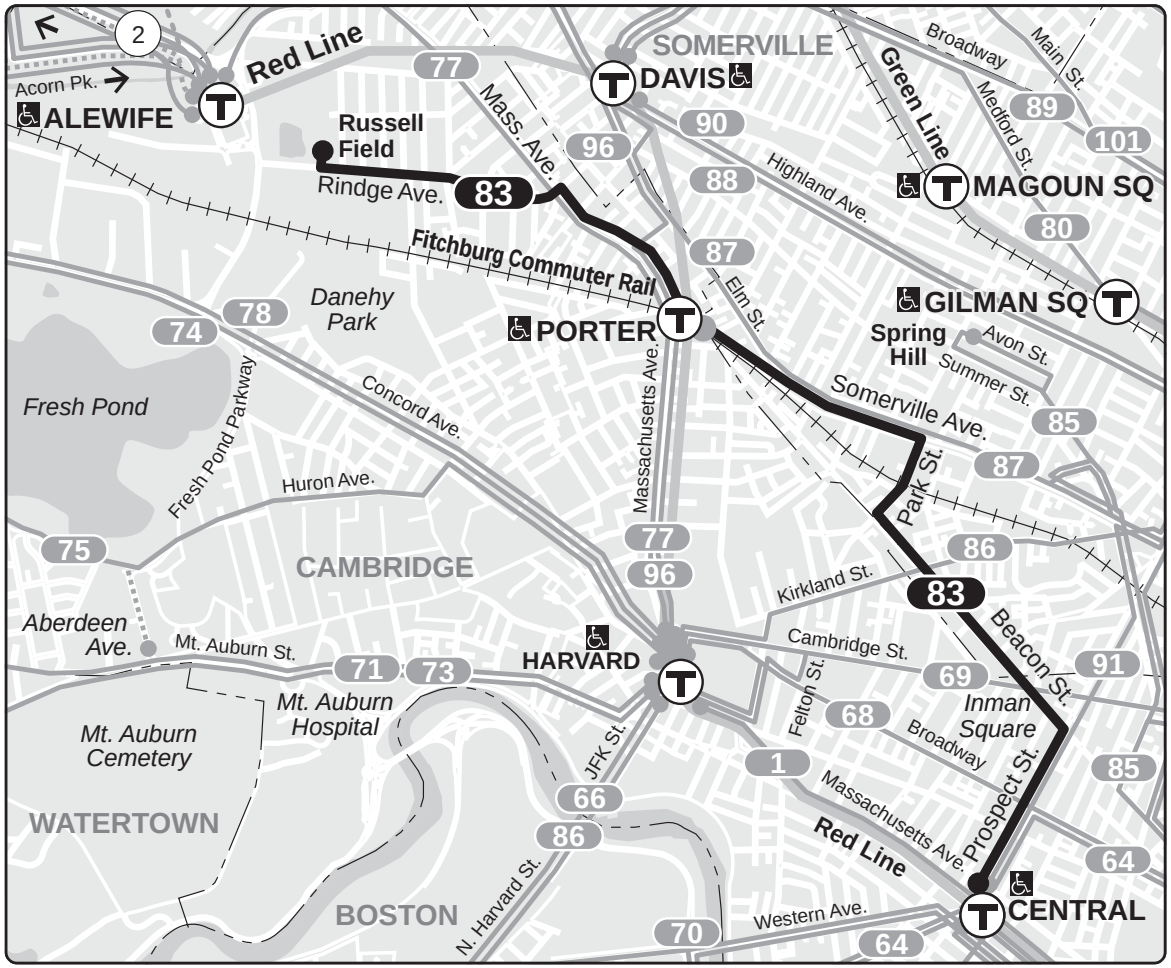
Start Time	Hourly Ridership
7:33	236
7:36	232.5
7:43	219.4
7:46	213.8
7:53	203.8
7:55	189.8
8:03	170.6
8:04	182.4
8:13	188.2
8:22	177.4
8:23	151.5
8:31	170.9

Start Time	Hourly Ridership
16:34	246.1
16:38	258.2
16:44	246.9
16:48	258.3
16:53	245.4
16:58	253.9
17:03	236
17:08	243.7
17:12	217.7
17:17	228.6
17:22	216.6
17:27	223.2
17:31	208.8
17:36	214.2
17:41	189.7
17:46	198.9
17:51	174.8
17:55	178
18:00	164.9
18:05	177.1
18:10	161.8
18:14	169.6
18:20	145.4
18:23	150.9
18:30	136.9

Effective **December 17, 2023** Replaces August 2023

83 Rindge Ave – Central Sq, Cambridge

Schedule Change
Weekday



Connections

RED LINE

FITCHBURG LINE

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

All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Local 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

Rindge Avenue	Porter Station	Central Sq, Cambridge
5:10	5:15	5:28
5:30	5:35	5:48
5:50	5:55	6:09
6:10	6:15	6:29
6:35	6:40	6:54
7:00	7:05	7:23
7:25	7:30	7:48
7:55	8:00	8:23
8:25	8:31	8:54
8:55	9:01	9:21
9:30	9:35	9:55
10:00	10:05	10:25
10:30	10:35	10:55
11:00	11:05	11:25
11:30	11:35	11:55
12:00	**12:05**	**12:25**
12:30	**12:35**	**12:55**
1:00	**1:05**	**1:25**
1:30	**1:35**	**1:55**
2:00	**2:05**	**2:25**
2:35	**2:40**	**3:00**
3:05	**3:10**	**3:30**
3:40	**3:45**	**4:05**
4:14	**4:19**	**4:41**
4:49	**4:54**	**5:17**
5:25	**5:30**	**5:53**
6:02	**6:07**	**6:30**
6:35	**6:40**	**6:57**
7:10	**7:15**	**7:32**
7:43	**7:48**	**8:05**
8:35	**8:40**	**8:57**
9:30	**9:35**	**9:48**
10:20	**10:25**	**10:38**
11:10	**11:15**	**11:28**
12:00	12:05	12:18
12:45	12:50	1:03

Outbound

Central Sq, Cambridge	Porter Station	Rindge Avenue
5:30	5:39	5:47
5:50	5:59	6:07
6:15	6:24	6:32
6:35	6:44	6:52
7:00	7:12	7:21
7:28	7:40	7:49
7:58	8:11	8:21
8:28	8:41	8:51
8:58	9:11	9:21
9:30	9:43	9:53
10:00	10:13	10:23
10:30	10:43	10:53
11:00	11:13	11:23
11:30	11:43	11:53
12:00	**12:13**	**12:23**
12:30	**12:43**	**12:53**
1:00	**1:13**	**1:23**
1:30	**1:43**	**1:53**
2:00	**2:15**	**2:27**
2:30	**2:45**	**2:57**
3:05	**3:20**	**3:32**
S **-**	**3:31**	**3:45**
S **-**	**3:36**	**3:50**
3:35	**3:50**	**4:02**
4:10	**4:25**	**4:38**
4:46	**5:04**	**5:17**
5:22	**5:42**	**5:55**
5:58	**6:14**	**6:25**
6:35	**6:51**	**7:02**
7:05	**7:21**	**7:31**
7:37	**7:51**	**8:00**
8:10	**8:21**	**8:30**
9:05	**9:16**	**9:25**
9:55	**10:06**	**10:15**
10:45	**10:56**	**11:04**
11:35	**11:45**	**11:53**
12:25	12:35	12:43
W 1:10	1:18	1:26

Saturday 83

Inbound

Rindge Avenue	Porter Station	Central Sq, Cambridge
5:10	5:15	5:29
5:55	6:00	6:14
6:40	6:45	6:59
7:25	7:30	7:44
8:15	8:20	8:36
9:05	9:10	9:28
9:36	9:42	10:03
10:09	10:15	10:36
10:42	10:48	11:09
11:15	11:21	11:42
11:48	11:54	**12:15**
12:21	**12:27**	**12:48**
12:54	**1:00**	**1:21**
1:27	**1:33**	**1:54**
2:00	**2:06**	**2:27**
2:33	**2:39**	**3:00**
3:06	**3:12**	**3:33**
3:39	**3:45**	**4:06**
4:12	**4:18**	**4:39**
4:45	**4:51**	**5:12**
5:18	**5:24**	**5:45**
5:51	**5:57**	**6:18**
6:24	**6:30**	**6:51**
6:57	**7:03**	**7:21**
7:30	**7:36**	**7:54**
8:30	**8:36**	**8:54**
9:30	**9:35**	**9:52**
10:25	**10:30**	**10:47**
11:15	**11:20**	**11:37**
12:05	12:10	12:22
12:55	1:00	1:12

Outbound

Central Sq, Cambridge	Porter Station	Rindge Avenue
5:34	5:45	5:52
6:19	6:30	6:37
7:04	7:15	7:22
7:49	8:00	8:10
8:39	8:52	9:02
9:09	9:22	9:32
9:39	9:52	10:02
10:12	10:25	10:36
10:45	11:00	11:11
11:18	11:33	11:44
11:51	**12:06**	**12:17**
12:24	**12:39**	**12:50**
12:57	**1:12**	**1:23**
1:30	**1:45**	**1:56**
2:03	**2:18**	**2:29**
2:36	**2:51**	**3:02**
3:09	**3:24**	**3:35**
3:42	**3:57**	**4:08**
4:15	**4:30**	**4:41**
4:48	**5:03**	**5:14**
5:21	**5:36**	**5:47**
5:54	**6:09**	**6:20**
6:27	**6:42**	**6:53**
7:00	**7:15**	**7:26**
8:00	**8:15**	**8:26**
9:00	**9:14**	**9:23**
9:55	**10:09**	**10:18**
10:50	**11:03**	**11:11**
11:40	**11:51**	**11:59**
12:30	12:41	12:49
W 1:15	1:25	1:32

Sunday 83

Inbound

Rindge Avenue	Porter Station	Central Sq, Cambridge
7:45	7:50	8:05
8:35	8:40	8:55
9:30	9:35	9:52
10:27	10:32	10:49
11:27	11:32	11:49
12:27	**12:33**	**12:54**
1:27	**1:33**	**1:54**
2:27	**2:33**	**2:54**
3:27	**3:33**	**3:51**
4:27	**4:33**	**4:51**
5:27	**5:33**	**5:51**
6:27	**6:33**	**6:51**
7:27	**7:33**	**7:51**
8:27	**8:33**	**8:48**
9:22	**9:27**	**9:41**
10:17	**10:22**	**10:36**
11:07	**11:12**	**11:26**
11:57	12:02	12:13
12:47	12:52	1:03

Outbound

Central Sq, Cambridge	Porter Station	Rindge Avenue
7:25	7:35	7:42
8:15	8:25	8:33
9:05	9:17	9:26
10:00	10:12	10:21
11:00	11:14	11:24
12:00	**12:14**	**12:24**
1:00	**1:14**	**1:24**
2:00	**2:14**	**2:24**
3:00	**3:14**	**3:24**
4:00	**4:14**	**4:24**
5:00	**5:14**	**5:24**
6:00	**6:14**	**6:23**
7:00	**7:14**	**7:23**
8:00	**8:13**	**8:22**
9:00	**9:12**	**9:20**
9:50	**10:02**	**10:10**
10:40	**10:52**	**11:00**
11:30	**11:42**	**11:50**
12:20	12:29	12:34
W 1:10	1:19	1:24

S from Broadway & Fayette 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.

Holidays

- SUN New Year's Day
- SAT MLK Jr. Day
- SAT Presidents Day
- SAT Patriots' Day
- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SAT Columbus/Indigenous Peoples Day
- SUN Thanksgiving
- SUN Christmas Day
- SUN New Year's Eve

Explore the Reliability Dashboard

Interact with the dashboard below to see how reliable our service is on average.

Note: The reliability target is a goal we want to meet to ensure reliable service for our riders. We measure our current service against the reliability target as one way to find out what we need to do to improve service.

Select Display: Table

Select Date: 1/31/2024

Select a date between 1/1/2015 and 2/19/2024

Bus route reliability

Select Route

- 75
- 76
- 77
- 78
- 79
- 80
- 83
- 84

Select Mode: Bus

By route for Bus Route 83

	Reliability
Peak	61%
Off Peak	80%
Overall	75%

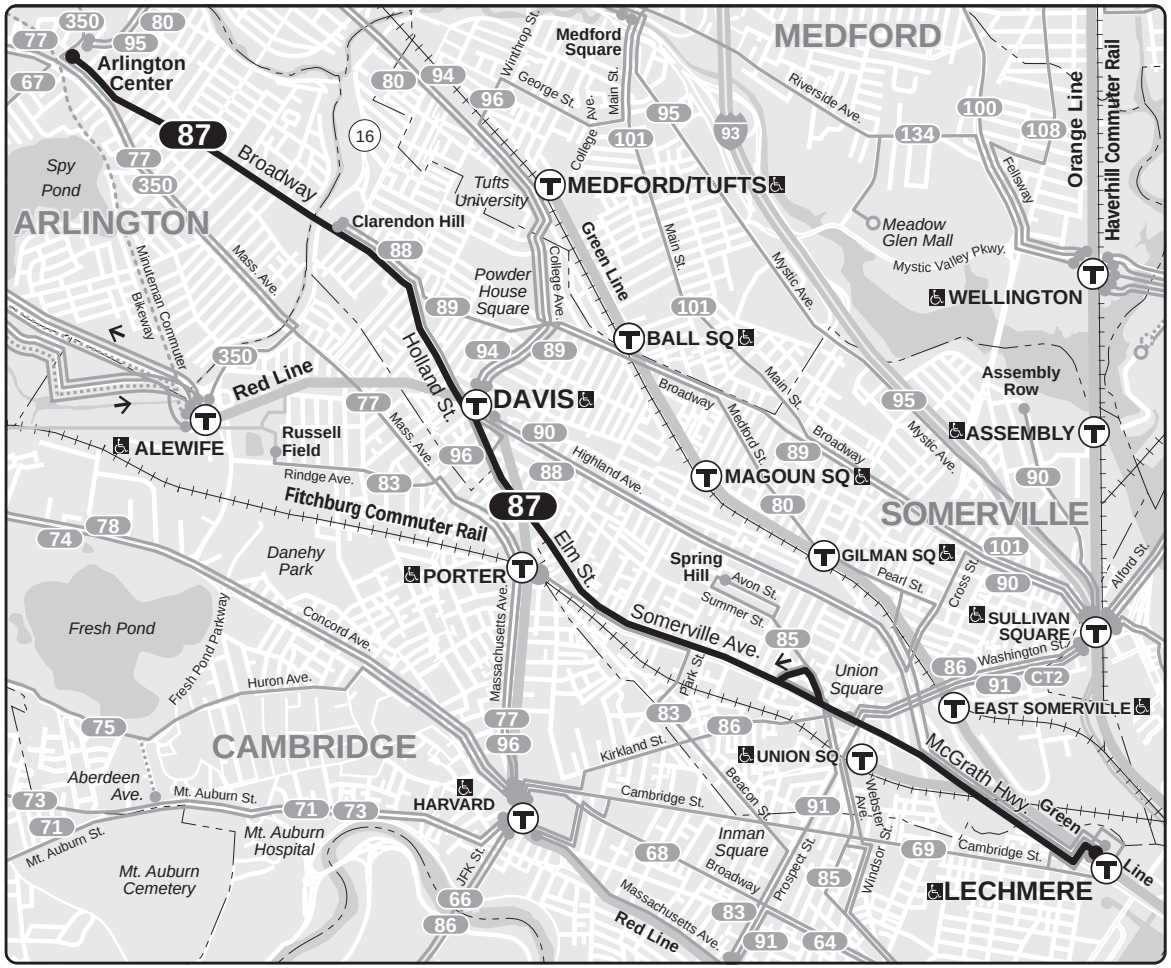
ObjectId	season	route_id	route_variant	direction_id	trip_start_time	boardings	alightings	load_	sample_size
5892792	Fall 2022	83	83-1-1	1	0:00:00	0	0	1	68
5890413	Fall 2022	83	83-1-0	0	0:20:00	0	0.2	1.6	65
5892621	Fall 2022	83	83-1-1	1	0:45:00	0.1	0	1.4	65
5890494	Fall 2022	83	83-1-0	0	1:05:00	0	0.1	2	60
5892575	Fall 2022	83	83-1-1	1	5:10:00	0	0	4.8	66
5890522	Fall 2022	83	83-1-0	0	5:30:00	0	0	5.2	66
5893044	Fall 2022	83	83-1-1	1	5:30:00	0	0	1.1	70
5890519	Fall 2022	83	83-1-0	0	5:50:00	0	0	1	72
5892955	Fall 2022	83	83-1-1	1	5:50:00	0.4	0	2.3	66
5892818	Fall 2022	83	83-1-1	1	6:10:00	1.5	0	3.3	71
5890647	Fall 2022	83	83-1-0	0	6:15:00	0	0.1	1.4	67
5890585	Fall 2022	83	83-1-0	0	6:35:00	0	0.7	1.4	69
5892845	Fall 2022	83	83-1-1	1	6:35:00	1.1	0	5.2	67
5893192	Fall 2022	83	83-1-1	1	6:55:00	1.2	0	3.2	69
5890453	Fall 2022	83	83-1-0	0	7:00:00	0	0.9	1.8	67
5893136	Fall 2022	83	83-1-1	1	7:15:00	0.9	0.4	3.6	67
5890745	Fall 2022	83	83-1-0	0	7:25:00	0	2	2.2	72
5893064	Fall 2022	83	83-1-1	1	7:35:00	3	0.1	11.7	67
5890730	Fall 2022	83	83-1-0	0	7:45:00	0.1	0.5	3	66
5892903	Fall 2022	83	83-1-1	1	7:55:00	8.1	0.2	19	72
5891185	Fall 2022	83	83-1-0	0	8:05:00	0	0.5	3.5	65
5893059	Fall 2022	83	83-1-1	1	8:15:00	1.7	0.2	7.3	68
5890940	Fall 2022	83	83-1-0	0	8:28:00	0.1	0.5	3.4	69
5893091	Fall 2022	83	83-1-1	1	8:35:00	1.1	0.1	10.5	65
5891142	Fall 2022	83	83-1-0	0	8:50:00	0	0.2	2	70
5893518	Fall 2022	83	83-1-1	1	8:55:00	0.5	0.1	4.9	68
5890813	Fall 2022	83	83-1-0	0	9:10:00	0	0.1	2.5	66
5893301	Fall 2022	83	83-1-1	1	9:20:00	1.7	0	7.5	69
5890837	Fall 2022	83	83-1-0	0	9:30:00	0	0.1	2	69
5893451	Fall 2022	83	83-1-1	1	9:40:00	0.7	0	5.4	66
5891080	Fall 2022	83	83-1-0	0	10:00:00	0	0.3	3.1	71
5893476	Fall 2022	83	83-1-1	1	10:00:00	0.6	0	5.5	69
5891016	Fall 2022	83	83-1-0	0	10:30:00	0	0.2	4.6	66
5893531	Fall 2022	83	83-1-1	1	10:30:00	0.6	0	5.9	70
5891299	Fall 2022	83	83-1-0	0	11:00:00	0	0.4	4.2	70
5893335	Fall 2022	83	83-1-1	1	11:00:00	0.7	0.1	5.1	70
5891488	Fall 2022	83	83-1-0	0	11:30:00	0	0.4	5.2	71
5893368	Fall 2022	83	83-1-1	1	11:30:00	0.9	0	6	70
5891557	Fall 2022	83	83-1-0	0	12:00:00	0	0.7	7	68
5893664	Fall 2022	83	83-1-1	1	12:00:00	0.7	0.1	5.8	70
5891255	Fall 2022	83	83-1-0	0	12:30:00	0	0.5	5.1	71
5893628	Fall 2022	83	83-1-1	1	12:30:00	0.4	0	5.1	70
5891342	Fall 2022	83	83-1-0	0	13:00:00	0	0.5	6.1	69
5893874	Fall 2022	83	83-1-1	1	13:00:00	0.7	0	6	71
5891403	Fall 2022	83	83-1-0	0	13:30:00	0	0.9	5.3	68
5893862	Fall 2022	83	83-1-1	1	13:30:00	1.2	0	6.4	69
5891436	Fall 2022	83	83-1-0	0	14:00:00	0	1.1	5.7	68
5893959	Fall 2022	83	83-1-1	1	14:00:00	0.6	0	4.2	69
5891779	Fall 2022	83	83-1-0	0	14:30:00	0.6	1.3	7.1	69
5893992	Fall 2022	83	83-1-1	1	14:35:00	0.9	0.3	7.6	69
5891634	Fall 2022	83	83-1-0	0	15:05:00	0	1.1	7.6	68
5894227	Fall 2022	83	83-1-1	1	15:05:00	1.4	0	6.9	69
5895105	Fall 2022	83	83-2-0	0	15:10:00	0.1	2.4	16.2	71
5894857	Fall 2022	83	83-2-0	0	15:15:00	0	1.2	8.3	67
5891733	Fall 2022	83	83-1-0	0	15:35:00	0	1	7	66
5894018	Fall 2022	83	83-1-1	1	15:40:00	1.5	0	7.4	70
5891870	Fall 2022	83	83-1-0	0	16:00:00	0	1.5	5.1	63
5894392	Fall 2022	83	83-1-1	1	16:10:00	1.7	0.1	7.3	66
5891925	Fall 2022	83	83-1-0	0	16:25:00	0.1	1.1	6.1	69
5894284	Fall 2022	83	83-1-1	1	16:40:00	1.7	0	6.4	66
5891719	Fall 2022	83	83-1-0	0	16:50:00	0.1	1.4	5.5	63
5894103	Fall 2022	83	83-1-1	1	17:05:00	2	0	6.4	70
5891966	Fall 2022	83	83-1-0	0	17:15:00	0.1	1.2	6.1	65
5894128	Fall 2022	83	83-1-1	1	17:30:00	1.2	0	5.8	64
5892227	Fall 2022	83	83-1-0	0	17:40:00	0	0.8	5.2	70
5894419	Fall 2022	83	83-1-1	1	17:55:00	0.7	0	4.8	65
5892269	Fall 2022	83	83-1-0	0	18:05:00	0	1.7	5.1	59
5894561	Fall 2022	83	83-1-1	1	18:20:00	0.6	0.1	3.7	70
5892071	Fall 2022	83	83-1-0	0	18:30:00	0	0.9	4.1	63
5894657	Fall 2022	83	83-1-1	1	18:40:00	0.7	0	3.2	62
5892013	Fall 2022	83	83-1-0	0	18:50:00	0	0.8	2.2	69
5892218	Fall 2022	83	83-1-0	0	19:10:00	0.1	0.7	2.8	65
5894525	Fall 2022	83	83-1-1	1	19:10:00	0.4	0	3.6	64
5892201	Fall 2022	83	83-1-0	0	19:40:00	0	0.9	3.1	62
5894611	Fall 2022	83	83-1-1	1	19:40:00	0.4	0	2.6	59
5892325	Fall 2022	83	83-1-0	0	20:10:00	0	0.8	2.9	57
5894739	Fall 2022	83	83-1-1	1	20:35:00	0.3	0	2.2	58
5892464	Fall 2022	83	83-1-0	0	21:05:00	0	1.1	3	62
5894818	Fall 2022	83	83-1-1	1	21:30:00	0.1	0	3.5	62
5892492	Fall 2022	83	83-1-0	0	21:55:00	0	1	2.5	63
5894991	Fall 2022	83	83-1-1	1	22:20:00	0.2	0	2	61
5892745	Fall 2022	83	83-1-0	0	22:45:00	0	0.3	3	66
5895062	Fall 2022	83	83-1-1	1	23:10:00	0.1	0	1.1	61
5892693	Fall 2022	83	83-1-0	0	23:35:00	0	0	3.6	72

Start Time	Hourly Ridership
7:35	62.9
7:45	59.8
7:55	58.4
8:05	36.6
8:15	35.2
8:28	35.2
8:35	33.3

Start Time	Hourly Ridership
16:40	37.9
16:50	35.8
17:05	34.3
17:15	32.7
17:30	29.7
17:40	27.7
17:55	25.6
18:05	23.1
18:20	23.9

Effective **December 17, 2023** Replaces August 2023

87 Clarendon Hill or Arlington Ctr – Lechmere Sta



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

♿ All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Local 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

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
-	5:28	5:31	5:49
-	5:53	5:56	6:17
6:12	6:17	6:20	6:42
6:32	6:37	6:40	7:02
6:50	6:55	6:58	7:20
7:07	7:12	7:15	7:38
7:23	7:28	7:33	8:02
7:39	7:44	7:49	8:19
7:55	8:00	8:05	8:38
8:12	8:18	8:23	8:56
8:30	8:36	8:41	9:09
8:49	8:55	9:00	9:24
9:09	9:14	9:17	9:41
9:28	9:33	9:36	10:00
9:46	9:51	9:54	10:18
10:04	10:09	10:12	10:36
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**
1:59	**2:04**	**2:07**	**2:34**
2:17	**2:22**	**2:25**	**2:54**
2:36	**2:41**	**2:44**	**3:13**
3:01	**3:06**	**3:09**	**3:38**
3:26	**3:31**	**3:34**	**4:03**
3:47	**3:52**	**3:55**	**4:24**
4:10	**4:15**	**4:18**	**4:47**
4:34	**4:39**	**4:42**	**5:12**
5:01	**5:06**	**5:09**	**5:39**
5:24	**5:29**	**5:32**	**6:02**
5:49	**5:54**	**5:57**	**6:27**
6:14	**6:19**	**6:22**	**6:48**
6:39	**6:44**	**6:47**	**7:11**
7:05	**7:09**	**7:12**	**7:32**
7:25	**7:29**	**7:32**	**7:52**
7:55	**7:59**	**8:02**	**8:20**
-	**8:35**	**8:38**	**8:56**
-	**9:15**	**9:18**	**9:36**
-	**9:55**	**9:58**	**10:14**
-	**10:26**	**10:29**	**10:45**
-	**10:58**	**11:01**	**11:16**
-	**11:29**	**11:32**	**11:47**
-	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
5:30	5:43	5:49	-
5:54	6:07	6:13	6:17
6:21	6:34	6:40	6:44
6:48	7:01	7:07	7:13
7:11	7:27	7:33	7:39
7:29	7:45	7:51	7:57
7:47	8:04	8:13	8:19
8:08	8:25	8:34	8:40
8:25	8:42	8:51	8:57
8:45	9:02	9:11	9:17
9:02	9:19	9:28	9:34
9:20	9:37	9:46	9:52
9:37	9:54	10:03	10:09
9:53	10:10	10:19	10:25
10:20	10:37	10:46	10:52
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**
1:21	**1:39**	**1:49**	**1:54**
1:54	**2:12**	**2:22**	**2:27**
2:23	**2:41**	**2:51**	**2:56**
2:48	**3:06**	**3:16**	**3:21**
3:08	**3:26**	**3:36**	**3:41**
3:32	**3:50**	**4:00**	**4:05**
3:55	**4:13**	**4:23**	**4:28**
4:19	**4:37**	**4:49**	**4:56**
4:41	**5:00**	**5:12**	**5:19**
5:06	**5:25**	**5:37**	**5:44**
5:31	**5:50**	**6:02**	**6:06**
5:55	**6:14**	**6:26**	**6:30**
6:19	**6:37**	**6:45**	**6:49**
6:43	**6:59**	**7:07**	**7:11**
7:06	**7:22**	**7:30**	**7:34**
7:30	**7:46**	**7:54**	**7:58**
7:55	**8:11**	**8:19**	**-**
8:25	**8:38**	**8:44**	**-**
9:05	**9:18**	**9:24**	**-**
9:45	**9:58**	**10:04**	**-**
10:20	**10:33**	**10:39**	**-**
10:50	**11:03**	**11:09**	**-**
11:22	**11:35**	**11:41**	**-**
11:54	12:06	12:12	-
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.

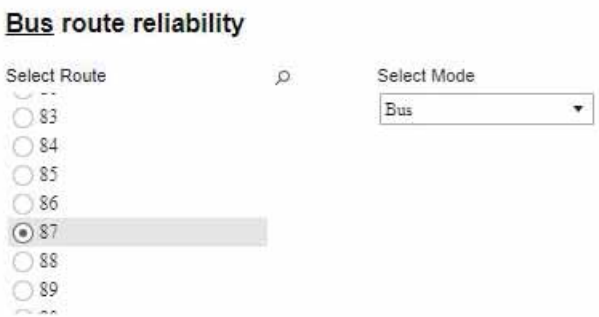
Holidays

- SUN New Year's Day
- SAT MLK Jr. Day
- SAT Presidents Day
- SAT Patriots' Day
- SUN Memorial Day
- SUN Independence Day
- SUN Labor Day
- SAT Columbus/Indigenous Peoples Day
- SUN Thanksgiving
- SUN Christmas Day
- SUN New Year's Eve

Explore the Reliability Dashboard

Interact with the dashboard below to see how reliable our service is on average.

Note: The reliability target is a goal we want to meet to ensure reliable service for our riders. We measure our current service against the reliability target as one way to find out what we need to do to improve service.



By route for Bus Route 87

	Reliability
Peak	43%
Off Peak	69%
Overall	62%

ObjectId	season	route_id	route_variant	direction_id	trip_start_time	boardings	alightings	load_	sample_size
5904797	Fall 2022	87	87-_-0	0	0:25:00	1.4	0.3	3	63
5904453	Fall 2022	87	87-_-0	0	0:55:00	0.6	0.1	1.6	64
5904563	Fall 2022	87	87-_-0	0	1:22:00	0.1	0.1	1.3	44
5905067	Fall 2022	87	87-_-0	0	5:29:00	0.1	1.1	2.2	69
5907404	Fall 2022	87	87-2-0	0	5:50:00	1	0.7	2.8	72
5907206	Fall 2022	87	87-2-0	0	6:14:00	2	1.8	4.4	73
5907243	Fall 2022	87	87-2-0	0	6:34:00	3.7	1	6.6	69
5907431	Fall 2022	87	87-2-0	0	6:54:00	3.2	3	6.8	70
5907342	Fall 2022	87	87-2-0	0	7:14:00	4.2	1.8	10.6	67
5907390	Fall 2022	87	87-2-0	0	7:29:00	1.8	1.5	8	70
5907564	Fall 2022	87	87-2-0	0	7:47:00	1.6	2	5.9	70
5907631	Fall 2022	87	87-2-0	0	8:06:00	3.8	3.6	8.8	71
5907668	Fall 2022	87	87-2-0	0	8:27:00	2.8	2.4	9.1	70
5907937	Fall 2022	87	87-2-0	0	8:49:00	2.9	1.8	7.7	64
5907995	Fall 2022	87	87-2-0	0	9:11:00	2.1	2.3	6.7	70
5907786	Fall 2022	87	87-2-0	0	9:33:00	2.4	2.3	6.1	68
5907721	Fall 2022	87	87-2-0	0	9:53:00	2.6	2.2	7.3	71
5908154	Fall 2022	87	87-2-0	0	10:22:00	3.8	3.3	8.1	37
5908035	Fall 2022	87	87-2-0	0	10:52:00	4.4	2.6	9.4	65
5908136	Fall 2022	87	87-2-0	0	11:22:00	4.5	2.9	8.4	71
5908370	Fall 2022	87	87-2-0	0	11:52:00	5.1	2.3	10.4	63
5908307	Fall 2022	87	87-2-0	0	12:22:00	6.4	3.2	13	72
5908425	Fall 2022	87	87-2-0	0	12:52:00	6.9	3	13.7	50
5908751	Fall 2022	87	87-2-0	0	13:22:00	7.7	2.6	14.5	66
5908499	Fall 2022	87	87-2-0	0	13:52:00	7.1	4.2	15.9	72
5908614	Fall 2022	87	87-2-0	0	14:22:00	6.2	4.2	17.1	65
5908698	Fall 2022	87	87-2-0	0	14:48:00	9	4.5	19.8	65
5908892	Fall 2022	87	87-2-0	0	15:08:00	8.3	2.8	20	71
5909079	Fall 2022	87	87-2-0	0	15:28:00	8.3	2.9	15.5	65
5908975	Fall 2022	87	87-2-0	0	15:48:00	10.3	4.2	18.4	61
5909175	Fall 2022	87	87-2-0	0	16:09:00	12.1	3.4	21.4	66
5908820	Fall 2022	87	87-2-0	0	16:30:00	11	3.2	19.1	53
5909192	Fall 2022	87	87-2-0	0	16:50:00	12	3.6	21	67
5909511	Fall 2022	87	87-2-0	0	17:10:00	13.9	3.9	25.1	41
5909553	Fall 2022	87	87-2-0	0	17:30:00	15.1	3.1	24.8	66
5909414	Fall 2022	87	87-2-0	0	17:50:00	14	3.6	23.1	70
5909365	Fall 2022	87	87-2-0	0	18:10:00	11.3	3.2	20.6	68
5909392	Fall 2022	87	87-2-0	0	18:30:00	10.6	2.9	19.3	63
5909321	Fall 2022	87	87-2-0	0	18:50:00	6.2	2.6	13.7	66
5909574	Fall 2022	87	87-2-0	0	19:10:00	7.4	2	13.2	62
5909647	Fall 2022	87	87-2-0	0	19:30:00	7	2.5	12.6	68
5905272	Fall 2022	87	87-_-0	0	19:55:00	5.1	2.2	9.6	66
5905364	Fall 2022	87	87-_-0	0	20:25:00	7.2	2.3	12.6	63
5905540	Fall 2022	87	87-_-0	0	20:55:00	5.2	1.5	9.9	59
5905388	Fall 2022	87	87-_-0	0	21:25:00	5.8	1.8	11.6	62
5905448	Fall 2022	87	87-_-0	0	21:50:00	2.4	1.1	6.2	64
5905872	Fall 2022	87	87-_-0	0	22:20:00	3.9	0.9	6.5	63
5905643	Fall 2022	87	87-_-0	0	22:50:00	3.3	0.6	6.2	65
5905775	Fall 2022	87	87-_-0	0	23:20:00	4.9	0.5	7.6	65
5905917	Fall 2022	87	87-_-0	0	23:55:00	2.9	0.3	5.7	66

Start Time	Hourly Ridership
7:47	40
8:06	42.9
8:27	37.8

Start Time	Hourly Ridership
16:30	112.8
16:50	122.5
17:10	126.6
17:30	118.8
17:50	108.6
18:10	90.4
18:30	77.9
18:50	67.2

Subject: RE: 2400_Mass Ave Project

Lefcourt, David <dlefcourt@cambridgema.gov> Wed, Apr 24, 3:46 PM (5 days ago)
to Diana Gallo, Andrea Varutti, Steve Watt, Putnam, Andrew, Bentley, Abigail

Hi Diana,

I do confirm that there are currently no existing trees on the property.

Thanks,

David Lefcourt
City Arborist/Tree Warden
MCA I BCMA I ISA Municipal Specialist I TRAQ I MQTW
City of Cambridge
147 Hampshire Street
Cambridge, MA 02139
617-349-6433
www.cambridgema.gov/tree

From: Diana Gallo <dgallo@landworks-studio.com>
Sent: Wednesday, April 24, 2024 10:13 AM
To: Lefcourt, David <dlefcourt@cambridgema.gov>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>; Putnam, Andrew <aputnam@cambridgema.gov>; Bentley, Abigail <abentley@cambridgema.gov>
Subject: RE: 2400_Mass Ave Project

Happy morning David,

I would like to check in with you about our site visit. Since we should submit info for Article 19, We would like to ask for your help to confirm that there are no trees inside the property.

Please, let me know if you need anything from our side. Looking forward to hearing from you,

Diana Gallo

From: Diana Gallo
Sent: Wednesday, April 10, 2024 9:42 AM
To: 'Lefcourt, David' <dlefcourt@cambridgema.gov>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>; Putnam, Andrew <aputnam@cambridgema.gov>; Bentley, Abigail <abentley@cambridgema.gov>
Subject: RE: 2400_Mass Ave Project

Thanks again David,

2pm work for us.

Diana Gallo

From: Lefcourt, David <dlefcourt@cambridgema.gov>
Sent: Wednesday, April 10, 2024 9:07 AM
To: Diana Gallo <dgallo@landworks-studio.com>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>; Putnam, Andrew <aputnam@cambridgema.gov>; Bentley, Abigail <abentley@cambridgema.gov>
Subject: Re: 2400_Mass Ave Project

Anytime between 12-3pm will work for me on 4/19.

Thanks,

David Lefcourt
City Arborist/Tree Warden
MCA I BCMA I Municipal Specialist I TRAQ I MQTW
City of Cambridge
147 Hampshire Street
Cambridge, MA 02139
617-349-6433
www.cambridgema.gov/tree

From: Diana Gallo <dgallo@landworks-studio.com>
Sent: Tuesday, April 9, 2024 4:57:37 PM
To: Lefcourt, David <dlefcourt@cambridgema.gov>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>; Putnam, Andrew <aputnam@cambridgema.gov>; Bentley, Abigail <abentley@cambridgema.gov>
Subject: RE: 2400_Mass Ave Project

Hi David,

Thank you so much for your early response. Sure, following your suggestion Friday the 19th works for us. Do you have any time preference?

Best,

Diana Gallo

From: Lefcourt, David <dlefcourt@cambridgema.gov>
Sent: Tuesday, April 9, 2024 10:48 AM
To: Diana Gallo <dgallo@landworks-studio.com>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>; Putnam, Andrew <aputnam@cambridgema.gov>; Bentley, Abigail <abentley@cambridgema.gov>
Subject: RE: 2400_Mass Ave Project

Hi Diana,

Thank you for the email. We should meet onsite to discuss your proposed streetscape improvements in regard to street trees. Please let me know your availability for next Wednesday through Friday.

Thanks,

David Lefcourt

City Arborist/Tree Warden

MCA I BCMA I ISA Municipal Specialist I TRAQ I MQTW

City of Cambridge

147 Hampshire Street

Cambridge, MA 02139

617-349-6433

www.cambridgema.gov/tree

From: Diana Gallo <dgallo@landworks-studio.com>
Sent: Monday, April 8, 2024 5:50 PM
To: Cambridge Trees <cambridgetrees@cambridgema.gov>
Cc: Andrea Varutti <avarutti@landworks-studio.com>; Steve Watt <swatt@landworks-studio.com>
Subject: 2400_Mass Ave Project

Hi David,

My name is Diana Gallo, I am a landscape Designer from Landworks Studio Inc. Our firm is working with the firm Merge Architecture on a project located on 2400 Mass Ave in Cambridge/Boston area. We are reaching out to share what we are doing in terms of tree proposal to get the certification for the project.

We don’t have any existing trees inside the property line. However, we are planning to improve the ecology of the streetscape by adding new tree species along Cedar St. (4): Harvey St. (2); and Mass Ave. (2), in addition to preserving the existing ones and re locating one. We are also proposing new species inside the property: (14) along Cedar St. as described in the attached file. We would like you to look at our proposal and please, let us know if you have any questions or comments. We are happy to jump in a call if you wish,

Please, let me know if you need any other information in addition to this that needs to be provided.

Regards,

Diana Gallo

1.0 Introduction

This section describes the existing infrastructure systems surrounding the Project Site and discusses utility requirements of the Project and potential utility impacts.

The Project is expected to connect to existing utility systems available in Harvey Street and Cedar Street. These utility systems include those owned or managed by City of Cambridge Department of Public Works (DPW), City of Cambridge Water Department (CWD) and private utility providers.

The Proponent will coordinate the design of the proposed utility connections with Cambridge DPW, CWD, and private utility providers. All utility connections will be designed to minimize adverse effects to the existing systems and surrounding areas. Figures 1 and 2 depict the existing infrastructure surrounding the Project Site and proposed utilities, respectively.

2.0 Sanitary Sewer Infrastructure

2.1 Existing Sewer Service and Infrastructure

Cambridge DPW owns and maintains 10-inch sanitary sewers in Massachusetts Avenue and Harvey Street and 8-inch sanitary sewers in Cedar Street and Alberta Terrace. Sanitary flow from the area is conveyed through the City's system, and ultimately to the Massachusetts Water Resources Authority (MWRA) collection system for processing at the wastewater treatment facility at Deer Island.

The existing sewer service to the building is from a sewer manhole situated at the intersection of Massachusetts Avenue and Harvey Street (northeast corner of the site). Table 1 summarizes the existing estimated sewage generation based on the Massachusetts State Environmental Code (Title 5) design flow rates. Under existing conditions, the site generates approximately 1,500 gallons per day (gdp) of sanitary sewage.

Table 1: Existing Sewage Generation

Use	Sewage Flow Design Rate	Unit	# of Units	Estimated Sewage Generation
Retail	50 GPD	Per 1,000 SF	7,617 SF	381 GPD
Office	75 GPD	Per 1,000 SF	5,363 SF	403 GPD
Doctor Office	250 GPD	Per Doctor	2 Doctors	500 GPD
Dentist Office	200 GPD	Per Dentist	1 Dentist	200 GPD
			Total Existing:	**1,500 GPD**

2.2 Proposed Sewer Service and Infrastructure

The proposed sanitary sewer is anticipated to be connected in the same 10-inch sewer main within Harvey Street. An oil/water separator will be utilized to treat drippings collected in parking garage floor drains before being discharged to sanitary sewer. Based on the development program, the Project will generate approximately 13,000 gpd sanitary sewage, resulting in an increase of approximately 11,500 gpd.

Table 2: Proposed Sewage Generation

Use	Sewage Flow Design Rate	Unit	# of Units	Estimated Sewage Generation
Residential	110 GPD	Per Bedroom	115 Bedrooms	12,650 GPD
Retail	50 GPD	Per 1,000 SF	6,400 SF	320 GPD
			Total Proposed:	**13,000 GPD**
			Net Increase:	**11,500 GPD**

Note: Sewage Flow Design Rate based on Title 5, 310 CMR 15.203

2.3 Inflow and Infiltration (I/I)

Cambridge DPW requires that new developments generating greater than 15,000 gpd of net new sanitary flows mitigate the impacts of the development by removing inflow and infiltration (I/I) present in the existing sanitary sewer system. I/I includes groundwater infiltration from leaking/ broken sewer infrastructure as well as illicit stormwater connections from roof leaders and drainage infrastructure. Projects that generate flows greater than the 15,000-gallon threshold are responsible for mitigating I/I at a ration of 4:1 relative to the net new wastewater generated.

Because the Project is only expected to generate a net increase in sanitary flow of approximately 11,500 gpd, this regulatory threshold for I/I mitigation is not triggered.

3.0 Water Infrastructure

3.1 Existing Water Service and Infrastructure

Cambridge Water Department (CWD) owns and maintains a 10” domestic supply water main in Cedar Street, 6” water supply in Alberta Terrace, and three high pressure mains for fire protection service surrounding the Site, separate from the domestic supply. Refer to Figure 1. There are existing supply lines to the building and three existing hydrants within 300 feet of the existing building.

3.2 Proposed Water Service and Infrastructure

Domestic water demand is based on estimated sewage generation with an added factor of 10 percent for consumption, system losses, and other use. Based upon estimated sewage flows outlined in Table 1 and Table 2, the existing water usage is approximately 1,650 gpd and the proposed domestic water demand is approximately 14,300 gpd. Therefore, the proposed development results in a net increase of 12,650 gpd of water demand. The Proponent will continue to consider and evaluate methods, including water reuse for irrigation of green spaces, to conserve water as building design evolves.

New water connections to municipal infrastructure will be designed in accordance with CWD design standards and Cambridge Fire Department requirements. Water services to the new building will be metered, designed with backflow prevention, and adequate fire department connection(s) (FDC) to ensure conformity with CWD and Cambridge Fire Department requirements.

4.0 Stormwater Infrastructure

4.1 Existing Stormwater Infrastructure

Under existing conditions, the Project Site is fully occupied by impervious surfaces including the existing building and paved parking areas. The Project Site is bordered by public concrete sidewalks and paved streets. Currently, runoff from the existing building roof is collected with roof drains and discharged onto the paved parking lot via several downspouts along the southern face of the building. A portion of the stormwater runoff from the roof and southern portion of the parking lot are collected by three catch basins central to the Site and connect to Cambridge DPW's 24" combined sewer main in Cedar Street. The remaining portions of the roof and paved parking areas sheet flow onto the surrounding public concrete sidewalks and paved streets and are collected by the drainage infrastructure owned and maintained by Cambridge DPW. Based on the existing conditions survey and available record information, there is no evidence of stormwater quality treatment best management practices (BMPs) or infiltration/ detention BMPs on the Project Site.

Cambridge DPW owns and maintains a storm drainage system consisting of a 12" trunk line within Alberta Terrace (to the south of the Project Site) and a 12" trunk line within Harvey Street (to the north of the Project Site) which connect to the 24" combined sewer main in Cedar Street.

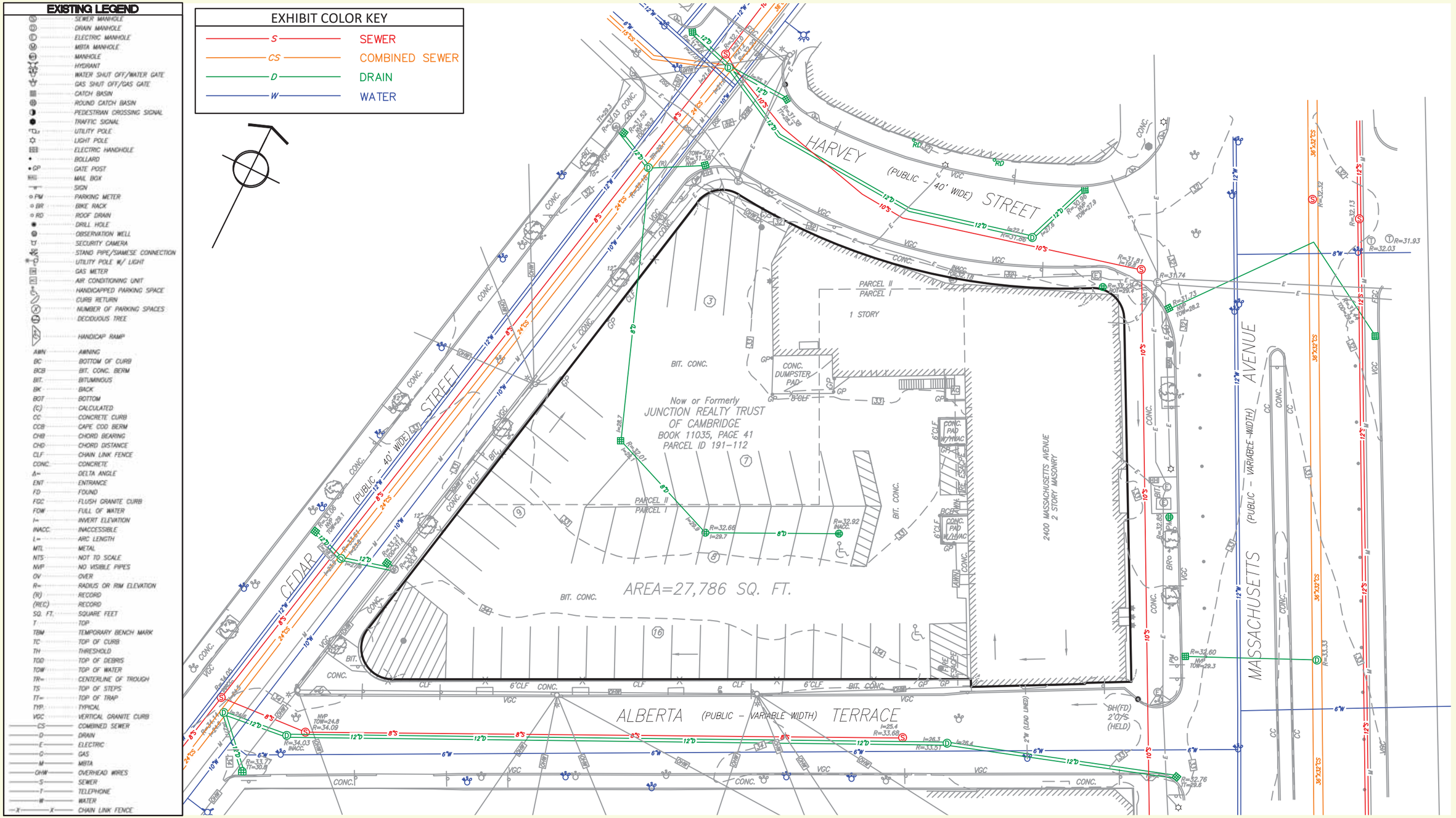
4.2 Proposed Stormwater Infrastructure

To address the City's stormwater management requirements and Cambridge DPW guidelines, the Project will comply with the City of Cambridge Wastewater and Stormwater Drainage Use Regulations (pursuant to Cambridge Municipal Code Chapter 13.16 Wastewater and Stormwater Drainage Systems) to the maximum extent practicable and incorporate on-site stormwater management and will not discharge untreated stormwater into the drainage system. The proposed on-site stormwater management system is expected to improve water quality, reduce runoff volume, and control peak rates of runoff compared to existing conditions.

As the design progresses, a stormwater infiltration system and/or stormwater reuse system will be designed to provide groundwater recharge, reduce peak flow, and provide phosphorus removal to the maximum extent practicable. The Proponent will evaluate the potential for integrating green infrastructure elements including ground-level green space, planters, and green roofs with the goal of retaining a greater volume of stormwater runoff and increasing infiltration capacity for the Project.

2400 Massachusetts Avenue

Cambridge, Massachusetts



BEALS AND THOMAS

B+T Drawing No. 348500P001B-001 Date: 04/04/2024 Scale: 1" = 30'

Existing Conditions

Article 19.000 Project Review

Figure 1

2400 Massachusetts Avenue

Cambridge, Massachusetts

EXHIBIT COLOR KEY

- PROPOSED SEWER
- PROPOSED DRAINAGE
- PROPOSED WATER
- PROPOSED BUILDING AT GROUND LEVEL
- PROPOSED BUILDING OVERHANG
- GROUND LEVEL GREEN SPACE
- ROOF AREA GREEN SPACE

LIMIT OF PARKING GARAGE

GREEN SPACE (TYP.)

GREEN ROOF AREAS

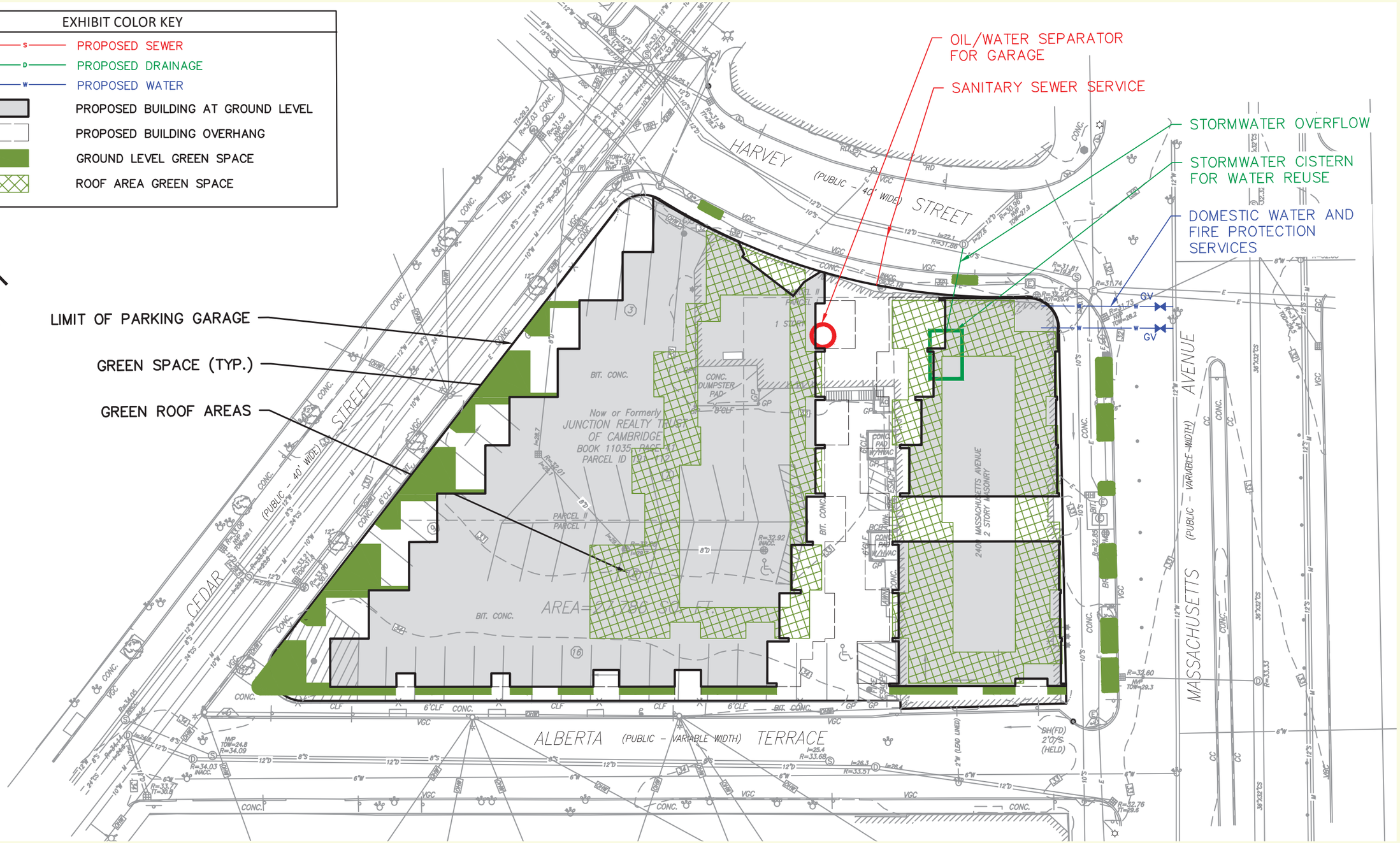
OIL/WATER SEPARATOR FOR GARAGE

SANITARY SEWER SERVICE

STORMWATER OVERFLOW

STORMWATER CISTERN FOR WATER REUSE

DOMESTIC WATER AND FIRE PROTECTION SERVICES



METERS 0 5 10 25

FEET 0 15 30 60 90

BEALS AND THOMAS

B+T Drawing No. 348500P001B-002 Date: 04/04/2024 Scale: 1" = 30'

Proposed Infrastructure

Article 19.000 Project Review

Figure 2

ACENTECH
ACOUSTICS TECHNOLOGY VIBRATION

April 4, 2024

Jamie Pelletier
Senior Associate
Merge Architects
332 Congress Street
Boston, MA 02210

Via Email: jamie@mergearchitects.com

Subject: Statement of Compliance: Environmental Noise Regulations
2400 Mass Ave. Mixed Use Project
Cambridge, MA
Project Number 637361

Dear Jamie:

We understand that the 2400 Mass Avenue site in Cambridge, MA will be redeveloped by North Cambridge Partners LLC to include a mixed-use development (retail and housing) consisting of 10 – 15 micro retail spaces and 55 – 65 dwelling units for sale. This letter is to affirm that the 2400 Mass Avenue Mixed-Use Project in Cambridge, MA (the project) will abide by the applicable state and local noise regulations, protecting residences and other abutters from excess noise.

APPLICABLE NOISE REGULATIONS AND PROJECT DESIGN CRITERIA

The following are the noise regulations applicable to this project site. The project will be designed to the more stringent sound level limits described below in order to meet both noise regulations.

MassDEP Policy

The MassDEP policy[1] defines how the Department enforces its noise regulation (310 CMR 7.10). The policy establishes the project noise limits on the basis of existing background sound levels, which are defined in terms of the 90th percentile A-weighted sound level (L_{A90}). A sound source or facility which causes the background sound level to increase by 10 dBA or more is in violation of the MassDEP noise policy. In addition, the MassDEP policy prohibits the creation of a "pure-tone condition", wherein the sound pressure level in an octave band exceeds the sound pressure level in both adjacent bands by 3 dB or more.

The MassDEP policy states that the criteria are measured both at the property line and at the nearest inhabited residence. MassDEP had, in the past, publicly-clarified that the agency primarily considers the effect of noise on the nearest occupied residence and/or building housing sensitive receptors.

We assume the ambient noise levels at the project site may sometimes be as low as 35 dBA $L_{A90\text{-}1hr}$ in this neighborhood. From that perspective, project imissions should not exceed about 45 dBA during the quietest parts of the day.

[1] https://www.mass.gov/doc/massdep-noise-policy/download

City of Cambridge

The City of Cambridge Noise Control Ordinance (Chapter 8.16 of the Cambridge, Massachusetts Municipal Code[2]) limits noise to abutting properties to certain specific sound pressure levels, as specified in the following table:

TABLE 1. Maximum Allowable Sound Pressure Levels, per Table 8.16.060E of the Cambridge Noise Control Ordinance.

Octave Band Center Frequency Measurement (Hz)	Residential Area		Residential in Industrial		Commercial Area	Industry Area
	Daytime	Other Times	Daytime	Other Times	Anytime	Anytime
31.5	76	68	79	72	79	83
63	75	67	78	71	78	82
125	69	61	73	65	73	77
250	62	52	68	57	68	73
500	56	46	62	51	62	67
1,000	50	40	56	45	56	61
2,000	45	33	51	39	51	57
4,000	40	28	47	34	47	53
8,000	38	26	44	32	44	50
Single Number Equivalent (dB(A))	60	50	65	55	65	70

The “residential area” limits apply to residential zones and to residential uses in other non-industrial zones. Construction noise is exempted from the limits in TABLE 1; the ordinance separately limits noise from construction activity.

FIGURE 1 below shows current zoning in the vicinity of the project site – a mix of residential, business, and special district. We specifically identify the locations of the residential abutters nearest to the redevelopment project site. Noise level limits at these residential abutters must be limited to the levels outlined in TABLE 1.

[2] https://library.municode.com/ma/cambridge/codes/code_of_ordinances?nodeId=TIT8HESA_CH8.16NOCO

FIGURE 1. Approximate Zoning and residential abutters in the vicinity of the project site.

COMPLIANCE WITH NOISE REGULATIONS

If necessary to confirm compliance with the MassDEP noise policy, the project will undertake during the Article 19 process a survey of existing ambient noise levels that establish prevailing background sound levels. This survey will thereby define site-specific limits that, together with the fixed limits in the Cambridge Noise Control Ordinance, will apply to the project.

During design, the design team will continue to engage qualified acoustics and noise control consultants to advise the design team on the noise mitigation measures necessary to comply with MassDEP's noise limits as well the limits prescribed in the Cambridge Noise Control Ordinance. These measures may include strategic equipment selection and location, equipment noise barriers or screens, sound attenuation devices, or other measures necessary to confirm compliance. We understand that it is ownership's intent and commitment to implement these measures as necessary to abide by the noise regulations applicable to this site.

BUILDING SERVICES EQUIPMENT NOISE MODELING

Overview

We have completed computer modeling of facility imissions using the current version of CadnaA, based on drawings and sound power level data supplied by Merge Architects. The CadnaA model implemented the equations of ISO 9613.

HVAC Equipment

The CadnaA model considers the following rooftop HVAC equipment:

- (59) 2-ton condensers serving residences
- (7) 12-ton condensers serving retail or paired to ERUs
- (2) ERUs

Anticipated HVAC Noise Levels

Sound levels produced by the HVAC equipment listed above are at most 40 dBA in the community. We expect this equipment will comply with the noise ordinance as designed. Please advise if we should consider further equipment not listed above.

FIGURE 2 presents estimated HVAC equipment sound levels at nearby structures and the street level.

Generator

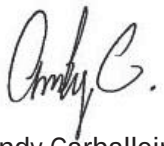
To comply with the ordinance during daytime maintenance testing, the project will provide an F202 sound-attenuating enclosure and critical grade muffler for the emergency backup generator. In this case, the expected community sound level is at most 55 dBA during maintenance testing.

FIGURE 3 presents estimated HVAC equipment sound levels at nearby structures and the street level.

* * * * *

We look forward to continuing to support the project, to advise you on noise control and other aspects of acoustical design as may be necessary and appropriate for this exciting new development in our City.

Sincerely,



Andy Carballeira, INCE Bd Cert
Principal | Acoustics

CC: Jack Taylor (Acentech)

FIGURE 2. Estimated A-weighted HVAC equipment noise levels (dB re: 20 µPa)

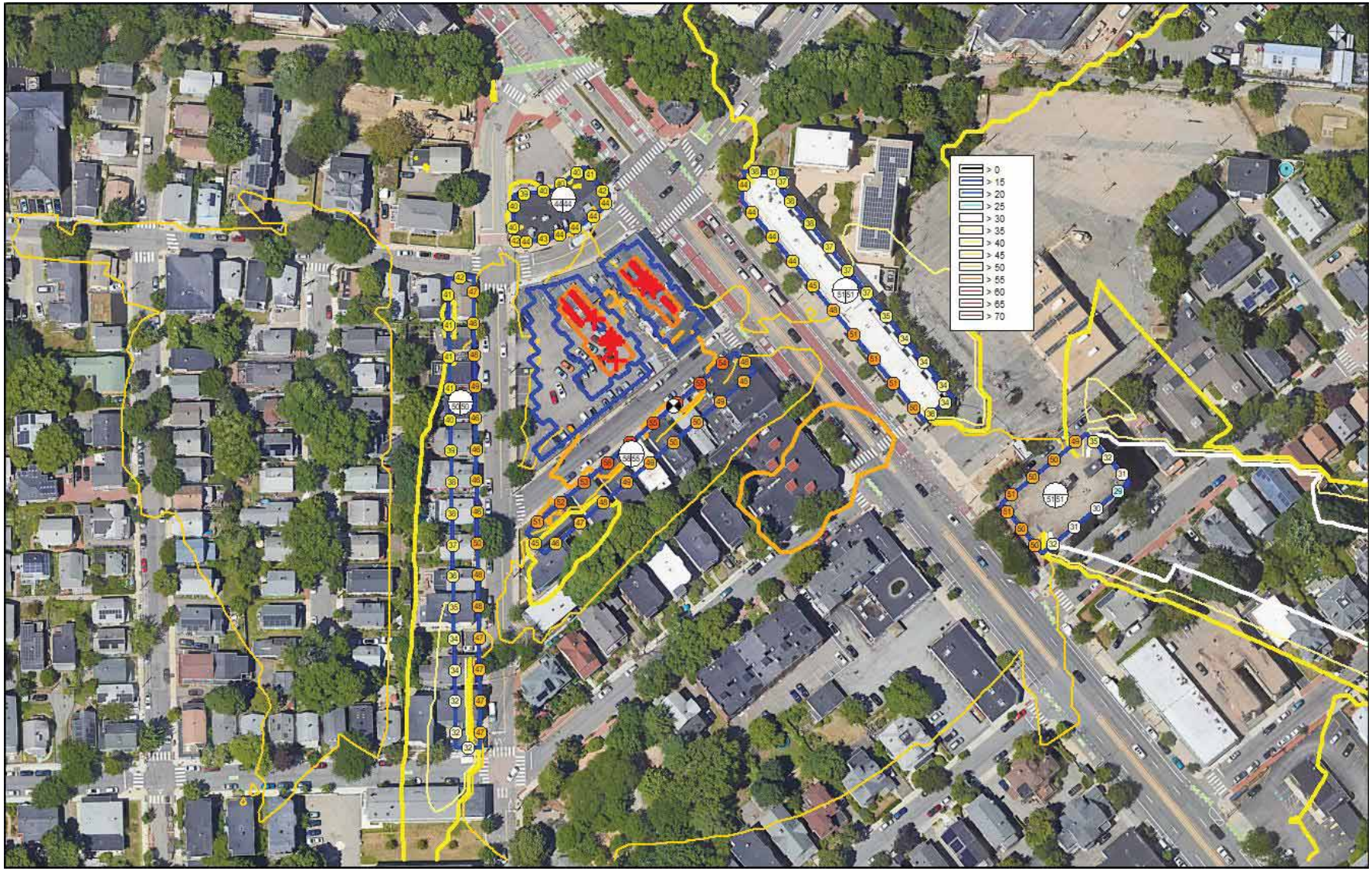


FIGURE 3. Estimated A-weighted HVAC equipment and generator noise levels (dB re: 20 µPa)

Summer Solstice 9-00 AM

Summer Solstice 12-00 PM

Summer Solstice 4-00 PM

Note: Unit counts and configurations, and interior programming, are not final and are subject to ongoing review with the City of Cambridge

Spring-Fall Equinox 9-00 AM

Spring-Fall Equinox 12-00 PM

Spring-Fall Equinox 4-00 PM

Note: Unit counts and configurations, and interior programming, are not final and are subject to ongoing review with the City of Cambridge

merge

2.24 Shadow Studies

2400 Massachusetts Ave | North Cambridge Partners LLC | Article 19 Graphic Volume

Merge Architects
1/64” = 1’-0”
5/31/2024

Winter Solstice 9-00 AM

Winter Solstice 12-00 PM

Winter Solstice 4-00 PM

Note: Unit counts and configurations, and interior programming, are not final and are subject to ongoing review with the City of Cambridge

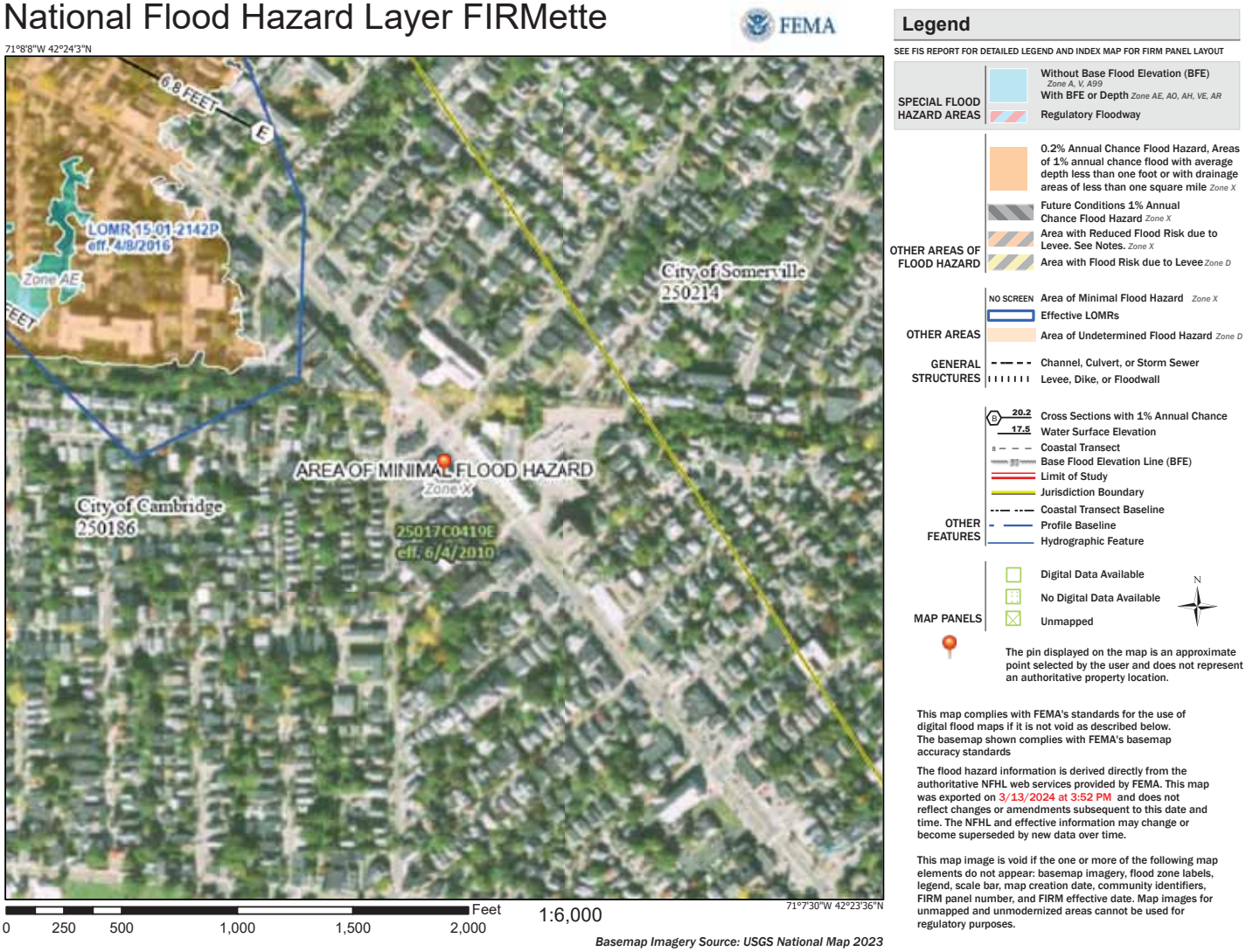
Flood Plain Documentation

Sea Level Rise and Extreme Storms/Flooding

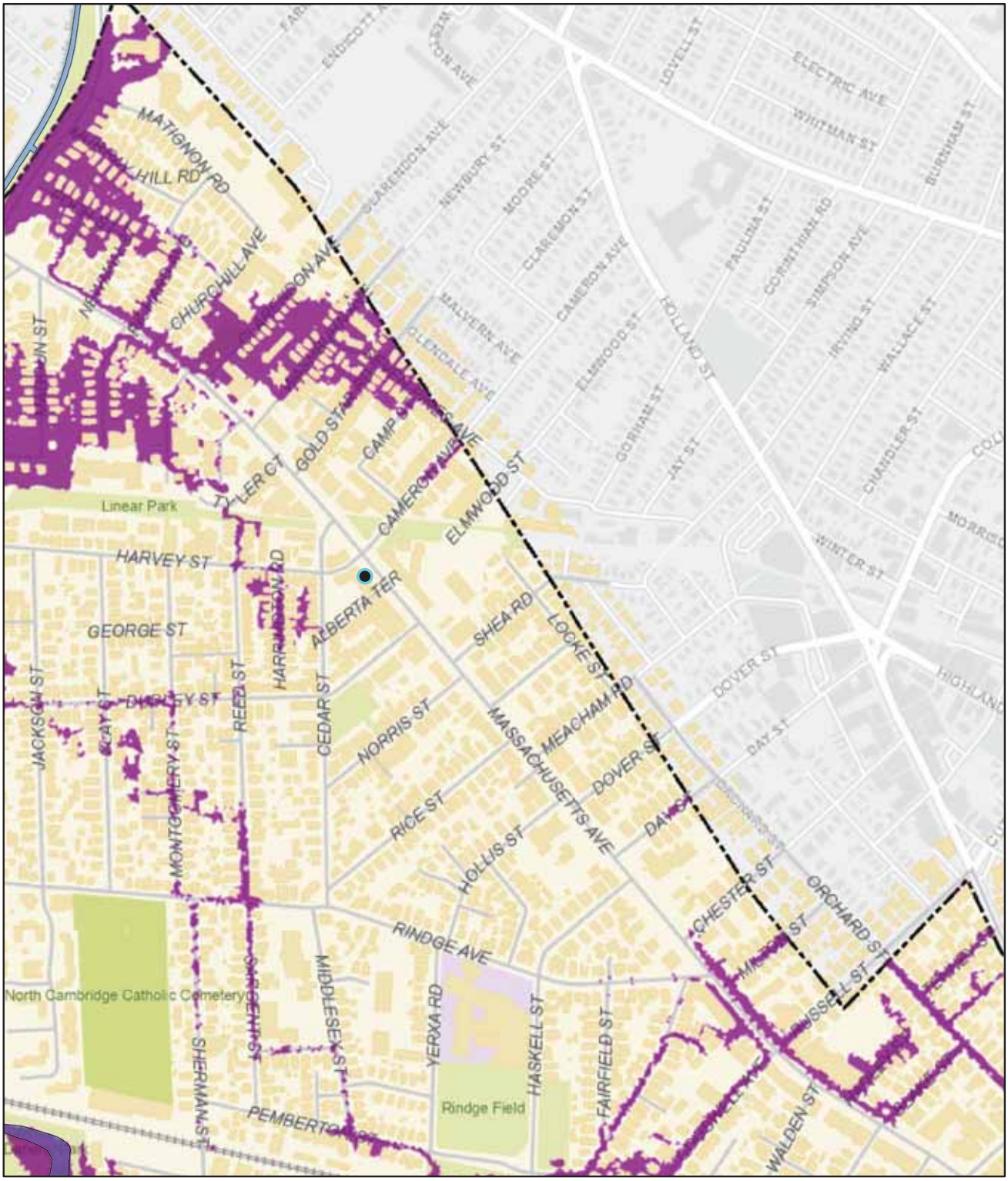
Existing Conditions:
As shown on the Flood Insurance Rate Map (FIRM) Map for Middlesex County, Effective 2010, the Project Site is located within a Zone X (areas determined to be outside the 0.2% annual chance flood).

Future Conditions:
The City of Cambridge FloodViewer 2022 indicates that the Project Site is not located within an area subject to 2070 1% Precipitation Flooding or within an area subject to 2070 1% Seal Level Rise / Storm Surge Flooding. The FloodViewer 2022 uses *"the latest simulation results from the City's hydraulic/hydrologic flood model, and the latest sea level rise/storm surge statewide flood model results from the Massachusetts Coast Flood Risk Model (MC-FRM)."*

National Flood Hazard Layer FIRMette



Cambridge FloodViewer Pilot



11/29/2023, 1:41:19 PM

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

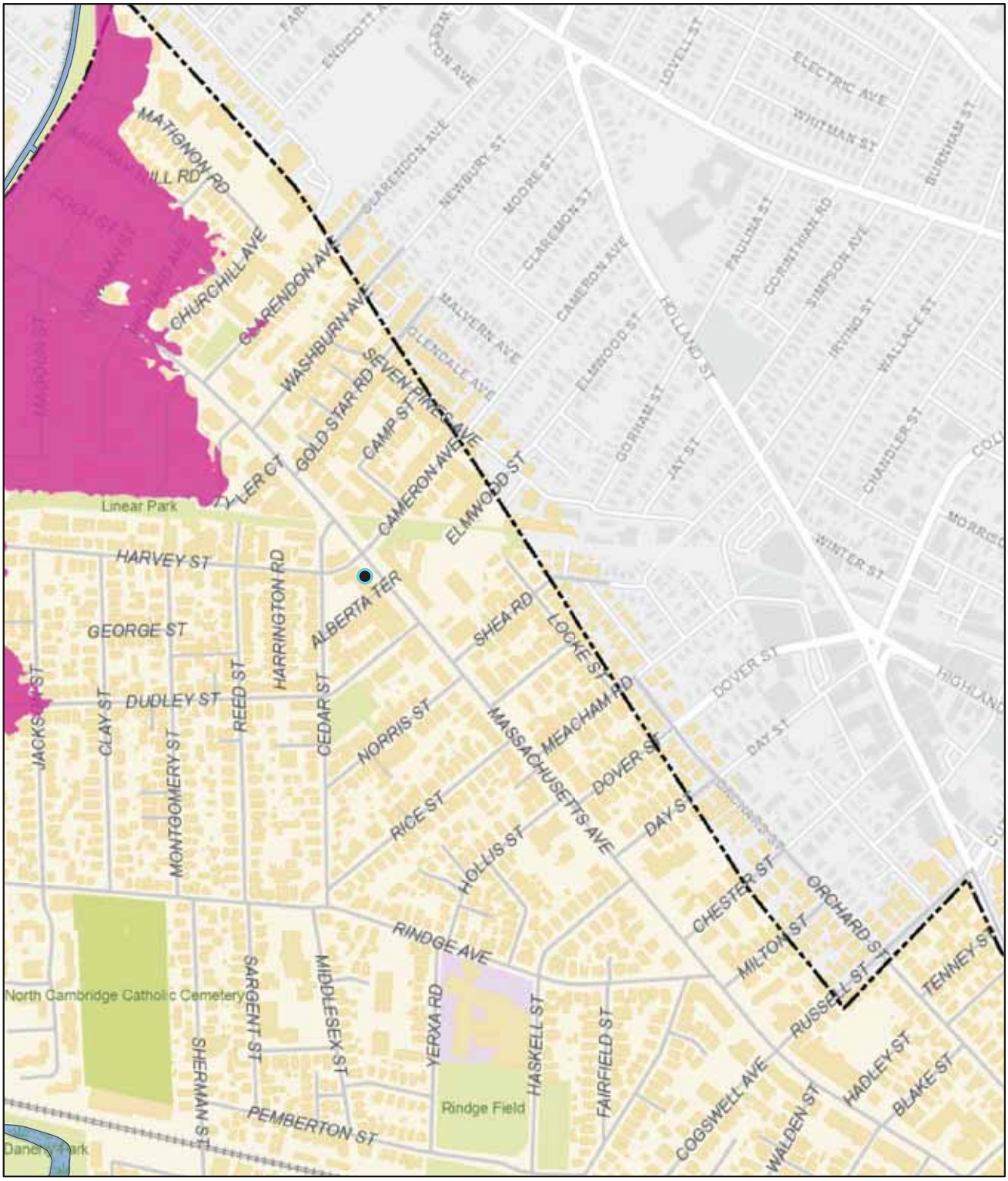
2070 - 1% - Extent of Flooding

Water Bodies

City of Boston, City of Cambridge, MassGIS, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, EPA, City of Cambridge GIS

City of Cambridge, MA
Visit CambridgeMA.gov/FloodViewer for additional information.

Cambridge FloodViewer Pilot



11/29/2023, 1:40:46 PM

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

2070 - 1% - SLR/SS Flooding Extent

Water Bodies

City of Boston, City of Cambridge, MassGIS, Esri, HERE, Garmin, GeoTechnologies, Inc., Intermap, USGS, EPA, City of Cambridge GIS

City of Cambridge, MA
Visit CambridgeMA.gov/FloodViewer for additional information.

Green Building Project Checklist

Green Building Project Location: Building A, 2400 Massachusetts Avenue, Cambridge, MA 02140

Applicant

Name: North Cambridge Partners LLC

Address: 2400 Massachusetts Ave. Cambridge, MA 02140

Contact Information

Email Address: _____

Telephone #: _____

Project Information (select all that apply):

- ☒ New Construction – GFA: 61,570.6 sf
- ☐ Addition – GFA of Addition: _____
- ☐ Rehabilitation of Existing Building – GFA of Rehabilitated Area: _____
  - ☐ Existing Use(s) of Rehabilitated Area: _____
  - ☐ Proposed Use(s) of Rehabilitated Area: _____
- ☒ Requires Planning Board Special Permit approval
- ☐ Subject to Section 19.50 Building and Site Plan Requirements
- ☐ Site was previously subject to Green Building Requirements

Green Building Rating Program/System:

- ☐ Leadership in Energy and Environmental Design (LEED) – Version: _____
  - ☐ Building Design + Construction (BD+C) – Subcategory: _____
  - ☐ Residential BD+C – Subcategory: _____
  - ☐ Interior Design + Construction (ID+C) – Subcategory: _____
  - ☐ Other: _____
- ☒ Passive House – Version: PHIUS CORE 2021
  - ☒ PHIUS+
  - ☐ Passivhaus Institut (PHI)
  - ☐ Other: _____
- ☐ Enterprise Green Communities – Version: _____

Project Phase

☒ **SPECIAL PERMIT**

Before applying for a building permit, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☐ Rating system checklist
- ☒ Rating system narrative
- ☒ Net zero narrative (see example template for guidance)
- ☒ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Special Permit)

Project Phase

☐ **BUILDING PERMIT**

Before applying for a building permit, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☐ Rating system checklist – updated from any prior version
- ☐ Rating system narrative – updated from any prior version with additional supporting information from construction documents
- ☐ Net zero narrative – updated from any prior version (see example template for guidance)
- ☐ Energy Simulation Tool results demonstrating compliance with selected rating system. *[Note: For Passive House rating program, must use WUFI Passive, Passive House Planning Package (PHPP), or comparable software tool authorized by Passive House.]*
- ☐ Credentials of Green Commissioning Authority (or copy of contract between developer and Commissioning Authority if an independent consultant or subcontractor), including documentation of Green Commissioning process experience on at least two building projects with a scope of work similar to the proposed project extending from early design phase through at least ten (10) months of occupancy
- ☐ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Building Permit)

Passive House rating program only:

- ☐ Letter of intent from Passive House rater/verifier hired for on-site verification, with credentials of rater/verifier
- ☐ Credentials of Certified Passive House Consultant who has provided design, planning, or consulting services (if different from the Green Building Professional for the project)
- ☐ Construction drawings and specifications

Project Phase

☐ **CERTIFICATE OF OCCUPANCY**

Before applying for a certificate of occupancy, submit this documentation to CDD for review and approval.

Required Submissions

All rating programs:

- ☐ Rating system checklist – updated from any prior version
- ☐ Rating system narrative – updated from any prior version with additional supporting information from as-built conditions
- ☐ Net zero narrative – updated from any prior version (see example template for guidance)
- ☐ Energy Simulation Tool results demonstrating compliance with selected rating system, updated to as-built conditions. *[Note: For Passive House rating program, must use WUFI Passive, Passive House Planning Package (PHPP), or comparable software tool authorized by Passive House.]*
- ☐ Affidavit with schedule of commissioning requirements signed by Green Commissioning Authority, with attached credentials – use City form provided (Certificate of Occupancy)
- ☐ Affidavit signed by Green Building Professional with attached credentials – use City form provided (Certificate of Occupancy)

Passive House rating program only:

- ☐ Pressure Test Verification
- ☐ Ventilation Commissioning
- ☐ Quality Assurance Workbook
- ☐ Final testing and verification report from rater/verifier

Affidavit Form for Green Building Professional
Building Permit

Green Building
Project Location: 2400 Massachusetts Ave, Cambridge, MA 02140

Green Building Professional

Name: 2400 Massachusetts Ave, Cambridge, MA 02140

☐ Architect

☒ Engineer

License Number: MA - 48087

Company: WSP

Address: 100 Summer St, Boston, MA 02110

Contact Information

Email Address: Adam.Jennings@wsp.com

Telephone Number: 617-426-7330

I, Adam Jennings , as the Green Building Professional for this Green Building Project, have reviewed all relevant documents for this project and confirm to the best of my knowledge that those documents indicate that the project is being designed to achieve the requirements of Section 22.24 under Article 22.20 of the Cambridge Zoning Ordinance.

(Signature) 5/28/2024 *(Date)*

Attach either:

☒ Credential from the applicable Green Building Rating Program indicating advanced knowledge and experience in environmentally sustainable development in general as well as the applicable Green Building Rating System for this Green Building Project.

☐ If the Green Building Rating Program does not offer such a credential, evidence of experience as a project architect or engineer, or as a consultant providing third-party review, on at least three (3) projects that have been certified using the applicable Green Building Rating Program.

Certificate

Passive House Designer

Passive House Institute

Dr. Wolfgang Feist
64283 Darmstadt
Germany
www.passivehouse.com

Valid until 11th January 2029

Adam Jennings

Date of birth: 15th September 1980

is entitled to use the seal below during the five year validity of the certificate and is listed during this period in the list of Certified Passive House Designers/Consultants at www.passivehouse-designer.org

The qualification was obtained according to the valid examination regulations

at: **Passive House Network/PHA**

in: **Online exam**

PHI DESIGNER
CERTIFIED PASSIVE HOUSE DESIGNER

Darmstadt, 11th January 2024

Wolfgang Feist

Prof. Dr. Wolfgang Feist

LINNEAN SOLUTIONS

PASSIVE HOUSE NARRATIVE

2400 Massachusetts Ave, Cambridge

LINNEAN SOLUTIONS

PHIUS CORE 2021 Passive House Narrative

February 12, 2024

Project: 2400 Massachusetts Ave, Cambridge, MA

Project Description:
2400 Massachusetts Avenue, in Cambridge, Massachusetts consists of two mixed use buildings containing 56 dwelling units. The project is designed to meet the standards of the PHIUS CORE 2021 Certification program for Passive House design and construction and is pursuing certification. Both buildings are currently passing energy model thresholds for Passive House certification. Building B will incorporate solar PV if the design changes in any way that causes it to be required to continue meeting passive house thresholds.

Sincerely,
Jim Newman
LEED AP O+M, LFA, Eco District AP, LENSES Faculty Member
Principal
Linnean Solutions

LINNEAN SOLUTIONS

Passive House Narrative

2400 Massachusetts Ave, Cambridge

2400 Massachusetts Ave is beginning the design process in which the project team is thoroughly incorporating sustainable design elements in order to achieve Passive House Certification using the PHIUS CORE 2021 program. The project will reduce overall energy demand through the use of high performance building strategies.

PHIUS CORE 2021is a rigorous standard that includes a "thorough passive house design verification protocol with a stringent Quality Assurance/Quality Control (QA/QC) program performed onsite by highly skilled and specialized PHIUS+ Raters and Verifiers." Through this program the project will also meet U.S. DOE Zero Energy Ready Home status, Energy Star for Homes, U.S. EPA Indoor Air Plus program for indoor air quality, and EPA Watersense Homes for whole building efficient water use.

The building will meet PHIUS CORE 2021 certification using the following strategies:

1. Improved Airtightness – PHIUS requires 0.06 cfm/sf of building envelope area. A continuous airtight layer will wrap the building ensuring improved airtightness.
2. Continuous and robust thermally insulated building envelope.
3. High performance windows and doors
4. Fully electric high efficiency heating and cooling systems (heat pumps or VRF)
5. Fully electric residential cooking systems
6. Energy Recovery Ventilation (ERV) – to capture waste energy to help pre-condition incoming ventilation air.
7. Balanced Ventilation systems
8. High efficiency hot water heating systems and insulated water pipes.
9. Heat pump or condensing clothes dryers.
10. Recirculation kitchen hoods. (Kitchen exhaust handled by ERV).
11. No or very limited thermal bridging. The building will eliminate or greatly reduce any potential thermal bridges in structural elements or attachments.

Net Zero Narrative

Introduction

The "Net Zero Narrative" is required for projects subject to Green Building Requirements, Section 22.20 of the Cambridge Zoning Ordinance. The requirement is based on the recommendations of the City's Net Zero Action Plan (adopted in 2015), which seeks to neutralize greenhouse gas emissions in Cambridge by 2050. This plan sets a timeframe of 2025 for most new construction to be designed to a "net zero" standard, meaning that on an annual basis, all greenhouse gas emissions resulting from building operations are offset by carbon-free energy production. In the meantime, the goal is to reduce greenhouse gas emissions to the maximum extent possible, and to design and develop buildings to adapt to net zero emissions in the future.

This Net Zero Narrative is provided for advisory review only. It is intended to inform City staff and officials on how the Net Zero Action Plan has influenced the design of the project, and to begin a dialogue so that all parties can better understand what building improvements are possible and what the major barriers are to achieving net zero emissions. As research, design, and development of the project continues to unfold, this narrative must be updated and included in the submission for the Building Permit and Certificate of Occupancy.

Example Narrative Template

This document provides an example format for the Net Zero Narrative as a guide for developers and designers. Variations are appropriate to account for the unique conditions of a case. However, any Net Zero Narrative must include the components set forth in Paragraph (c), Section 22.25.1 of the Zoning Ordinance:

(1) *anticipated building envelope performance, including roof, foundation, walls and window assemblies, and window-to-wall ratio;*
(2) *anticipated energy loads, baseline energy simulation tool assumptions, and proposed energy targets, expressed in terms of site energy use intensity ("EUI"), source EUI, and total greenhouse gas emissions;*
(3) *description of ways in which building energy performance has been integrated into aspects of the Green Building Project 's planning, design, and engineering, including building use(s), orientation, massing, envelope systems, building mechanical systems, on-site and off-site renewable energy systems, and district- wide energy systems;*
(4) *description of the technical framework by which the Green Building Project can be transitioned to net zero emissions in the future (acknowledging that such a transition might not be economically feasible at first), including future net zero emissions options for building envelope, HVAC systems, domestic hot water, interior lighting, and on- and off-site renewable energy sources;*
(5) *description of programs provided by local utility companies, government agencies, and other organizations that provide technical assistance, rebates, grants, and incentives that can assist in achieving higher levels of building performance, summarizing which entities have been contacted and which programs could be utilized in the Green Building Project;*
(6) *assessment of the technical and financial feasibility to meet the projected HVAC and domestic hot water demands of the building as noted above in (2) using energy systems that do not consume carbon-based fuels on-site compared to code-compliant energy systems that consume carbon-based fuels on-site, which shall include the cost of installation, maintenance and upkeep of the energy system and its components (incorporating programs and incentives as noted above in (5); and*
(7) *embodied carbon w*hole building lifecycle analysis of the estimated emissions generated by the construction of the Green Building Project. As further detailed in the below template, such reporting

shall include at minimum the estimated lifecycle emissions generated by the use of major building materials, including but not limited to wood, concrete, steel, aluminum and glass, using embodied emissions modeling software and industry standards acceptable to CDD staff. This section shall not impose a requirement on any building project that does not meet the standard threshold for project review special permit of 50,000 square feet or includes housing units.

Net Zero Narrative

Project Name/Address: 2400 Massachusetts Avenue, Cambridge, MA 02140

Submitted By:

Date of Submission:

Project Profile

Development Characteristics

Lot Area (sq.ft.):	27,786 sf
Existing Land Use(s) and Gross Floor Area (sq.ft.), by Use:	Paved parking and commercial.
Proposed Land Use(s) and Gross Floor Area (sq.ft.), by Use:	Mixed Use Residential: 88,282 sf Retail: 6,400 sf
Proposed Building Height(s) (ft. and stories):	69 ft, 6 stories
Proposed Dwelling Units:	56
Proposed Open Space (sq.ft.):	Include at grade
Proposed Parking Spaces:	85
Proposed Bicycle Parking Spaces (Long-Term and Short-Term):	Long term: 63 Short term: 10

Green Building Rating System

Choose the Rating System selected for this project:

LEED-Leadership in Energy & Environmental Design (U.S. Green Building Council)					
Rating System & Version:		***Seeking Certification?****	Yes	[No]	TBD
Rating Level:		***# of Points:***			

Enterprise Green Communities					
Rating System & Version:		***Seeking Certification?****	Yes	[No]	TBD
Rating Level:		***# of Points:***			

Passive House Institute US (PHIUS) or Passivhaus Institut (PHI)					
Rating System & Version:	PHIUS CORE 2021	***Seeking Certification?****	[Yes]	No	TBD

**NOTE: Certification is not required through the Green Building Requirements. However, you may choose to indicate if the Project Team intends to pursue formal certification through these Green Building Rating Programs (or their affiliates).*

Net Zero Narrative

Project Name/Address: 2400 Massachusetts Avenue, Cambridge, MA, 02140

Submitted By:

Date of Submission:

Proposed Project Design Characteristics

Building Envelope

Assembly Descriptions:

Roof:	Flat roof with a minimum of 5 inches Polyisocyanurate Board insulation with a minimum R-value of 30.
Foundation:	6 inch concrete slab on grade with 2 inches Expanded Polystyrene Insulation with an R-value of 8. TBD. It is expected at this time that the continuous insulation will wrap the conditioned area at the ground floor and garage level circulation and therefore exclude the main unconditioned parking garage. Elevator pit foundation is 12 inches of concrete with 2 inches of Expanded Polystyrene Insulation with an R-value of 8.
Exterior Walls:	TBD. Assumed to be wood framed construction above podium with 6" of exterior continuous Polyisocyanurate Board insulation yielding an R-value of 36.
Windows:	PH window with a Uw-mounted of 0.15, and SHGC of 0.25
Window-to-Wall Ratio:	Bldg B: 4088/18958.93= 21.5% glazing >>rounded up to 22% Bldg A: 8875.82/33793= 26%
Other Components:	There is an overhang with 6 inches of continuous exterior Polyisocyanurate Board with an R-value of 36. Additionally, the floor above the commercial space has 1 inch of Polyisocyanurate Board with an R-value of 6.

Envelope Performance:

Provide estimates of the thermal transmittance (U-value) for the building envelope compared to "Baseline" standards required by the Massachusetts Stretch Energy Code, latest adopted edition.

	Proposed		***Baseline***	
	Area (sf)	*U-value*	*Area (sf)*	*U-Value*
Window	Building A: 8875.8 Building B: 4097.1 Total: 12972.9	Building A:.144 Building B:.156	17261	.30
Wall	Building A: 45450.1 Building B: 21572.2 Total: 67022.3	Building A: .027 Building B: .027	61369.9	.033
Roof	Building A: 15602.1 Building B: 7243 Total: 22845.1	Building A: .032 Building B: .032	228845.1	.033

Net Zero Narrative

Envelope Commissioning Process:

PHIUS Certification requires that commissioning be performed by a Functional Testing Agent who is engaged in the project and present on-site to perform said testing. The building envelope and all systems are tested and documented as part of this process.

Building Mechanical Systems

Systems Descriptions:

Space Heating:	*All electric –air source heat pumps with a COP of 1.9*
Space Cooling:	*Electric air source heat pumps*
Heat Rejection:	*Electric air source heat pump system with heat rejection to atmosphere*
Pumps & Auxiliary:	*no pumps or aux heating systems are associated with the system*
Ventilation:	*Central, balanced ventilation*
Domestic Hot Water:	*Electric point of use air source heat pump hot water with a performance ratio of 1.22*
Interior Lighting:	*LED lighting meeting Energy Star requirements*
Exterior Lighting:	*LED lighting meeting Energy Star requirements*
Other Equipment:	*electric-powered appliances with an energy star rating where applicable*

Systems Commissioning Process:

TBD- will meet minimum commissioning requirements.

Building Energy Performance Measures

Overview

Broadly describe the ways in which building energy performance has been integrated into the following aspects of the project's planning, design, engineering, and commissioning. More detail on specific measures can be provided in appendices.

Land Uses:	*[Ex: efficient arrangement of uses within a site…] The project is mixed use development that promotes walking and biking and local commerce. The building also uses intensive vegetation at grade and on roofs, which provides cooling benefits while improving stormwater management.*
Building Orientation and Massing:	*The proposed Project carefully considers the existing established streetscape, and takes a variety of approaches to address each of the abutting streets: Massachusetts Avenue to the east, Alberta Terrace to the south, Cedar Street to the west, and Harvey Street to the north. The massing is highest along Massachusetts Avenue in order to maintain the existing streetwall that lines the majority of the corridor. This frontage/massing is broken up by a series of multi-story, vertical recesses that provide balconies to the residents, and read as an inverted interpretation of a series of bays, a prevalent architectural element along this stretch of the Avenue. Along Alberta Terrace, the portions of the massing that abut the adjacent residential district are carefully and sequentially set back from the street edge to react to the scale of the triple deckers across the street. A 35 ft height datum is established along this frontage, with the lower massing providing a series of vertical recesses that mimic the rhythm of the adjacent side yards. As the building gets closer to fronting Cedar Street, the massing terraces down to 1 and 2 stories to better match the scale of the single family homes across the street. A series of sawtooth shaped setbacks along Cedar Street create walk out patios and yards for the 4 ground floor units. The cedar street facade will create shading from the southern geometric projections which can reduce solar gain but still invite large amounts of daylight into the units. The Harvey Street frontage abuts a commercial lot that is similarly zoned as BA-5. The buildings hug the curved property.* *The massing of the Project is uniquely configured to minimize shadow impacts on neighboring lots. With a maximum height of 69 ft, the bulk of the taller massing is consolidated along Massachusetts Avenue. As the building extends towards the neighboring residential zoning districts along Alberta Terrace and Cedar Street, the massing terraces down from 6 stories above grade to 1 and 2 stories along the Cedar Street edge. As a result, morning shadows primarily cast onto these terraces, rather than the neighboring lots. Afternoon shadows primarily cast onto Harvey Street and evening shadows primarily cast onto Massachusetts Avenue.*

Envelope Systems:	*high performance glazing, Assumption at this point is wood frame construction with exterior continuous insulation to prevent thermal bridging. The rest is TBD*
Mechanical Systems:	*Heating and Cooling needs will be met with Individual electric air source heat pumps located in unit with condensers on the roof. The project has yet to determine if the system will be ducted or ductless. Electric Centralized ventilation provided via energy recovery unit located on each rooftop. The garage is electrically ventilated but not heated. Assumption at this point is POU hp water heater, ducted ventilation with SRE of at least 70% at building A and 84% at building B, mini splits with COP of ~ 1.9 or better. The rest of the details will be determined as design progresses.*
Renewable Energy Systems:	*Solar is TBD.*
District-Wide Energy Systems:	*TBD*
Other Systems:	*Electric vehicle charging and in-unit point of use heat pump water heaters will be incorporated.*

Net Zero Narrative

Project Name/Address: 2400 Massachusetts Avenue, Cambridge, MA 02140

Submitted By:

Date of Submission:

Integrative Design Process

Describe how different parties in the development process (owners, developers, architects, engineers, contractors, commissioning agents) have collaborated in the design. Include the Basis of Design and Owner's Project Requirements and describe how they have been informed by planning activities such as meetings or design charettes. Describe how continuing collaborative processes will inform Schematic/Design and Construction Documents.

All parties in the development process were engaged early during conceptual and schematic design stages to provide input and help make decisions. The design team has been involved in several coordination meetings and working sessions that involve key stakeholders and consultants, including the Owner, Architect, Sustainability Consultant, MEP Engineers, and Structural Engineers. The design team will also complete a Passive House Design Charette with all parties.

Green Building Incentive Program Assistance

Describe any programs applicable to this project that would support improved energy performance or reduced greenhouse gas emissions, and which of those programs have been contacted and may be pursued. Programs may be offered by utility companies, government agencies, and other organizations, and might include rebates, grants, financing, technical assistance, and other incentives.

Mass Save and other available incentives if applicable.

Net Zero Scenario Transition

Describe the technical framework by which the project can be transitioned to net zero greenhouse gas emissions in the future, acknowledging that such a transition might not be economically feasible at first. This description should explain the future condition and the process of transitioning from the proposed design to the future condition.

	Net Zero Condition:	***Transition Process:***
Building Envelope:	*Exterior only insulation*	*Easy swap to zero GHG cladding*
HVAC Systems:	*All electric systems*	*No immediate action required for net zero, but when systems are replaced in the future it is anticipated there will be more efficient systems available as tech is improved.*
Domestic Hot Water:	*All electric systems*	*Future equipment is anticipated to be more energy efficient*
Lighting:	*High efficiency LED lighting*	*Light fixtures could be replaced with more efficient light fixtures in the future.*
Renewable Energy Systems:	*TBD*	*[Describe process for adapting from the current proposal to a future "Net Zero Condition."]*
Other Strategies:	*TBD*	*[Describe process for adapting from the current proposal to a future "Net Zero Condition."]*

Energy Systems Comparison

Overview

This section should describe the results of an analysis comparing the technical and financial feasibility to meet the projected HVAC and domestic hot water demands of the building using energy systems that do not consume carbon-based fuels on-site compared to code-compliant energy systems that consume carbon-based fuels on-site.

All electric building, no carbon-based fuels onsite for normally operating equipment, no analysis performed.

Assumptions

Describe what building energy systems were included and excluded in your analysis and why.

	Included in analysis?		***Describe the systems for which this was analyzed or explain why it was not included in the analysis:***
	Yes	***No***	
Solar Photovoltaics:		X	This will continue to be considered as project design progresses
Solar Hot Water:		X	This was not considered because of financial feasibility
Ground-Source Heat Pumps (Geothermal):		X	This was not considered because of financial feasibility

Water-Source Heat Pumps:		X	This was not considered because of financial feasibility
Air-Source Heat Pumps:	X		This project will use air source heat pumps for availability, efficiency, and financial purposes
Non-Carbon-Fuel District Energy:		X	This is an all electric building
Other Non-Carbon-Fuel Systems:		X	All electric building

Non-Carbon-Fuel Scenario

All electric building, no carbon-based fuels onsite for normally operating equipment, no analysis performed.

Solar-Ready Roof Assessment

The purpose of this assessment is to determine the technical feasibility of solar energy system installation, either as part of the proposed project or in the future. It is helpful to supplement this narrative with a plan depicting the information provided.

Total Roof Area (sq. ft.):	*There is 22845 sf of roof between buildings A and B. There is mechanical equipment on the roof so not all of this area will be available for solar consideration*
Unshaded Roof Area (sq. ft.):	*TBD*
Structural Support:	*Will meet minimum code requirements to support future installation of on-site solar PV.*
Electrical Infrastructure:	*A pathway between the roof area and the main electric room in the garage will be provided for future PV systems, and the switchboard will include a breaker based on the future PV array size.*
Other Roof Appurtenances:	*Mechanical equipment includes Energy Recovery Units and condensers, and emergency electric room.*
Solar-Ready Roof Area (sq. ft.):	*[Based on information above, estimate the total roof area on which the installation of solar PV or hot water panels would be technically feasible either immediately or in the future.]*
Capacity of Solar Array:	*[Based on the solar-ready area, estimate the total energy capacity of a solar PV or hot water system, if installed.]*
Financial Incentives:	*[Describe programs that are available to mitigate the up-front costs of solar PV or hot water system installation, including the potential for third-party ownership.]*
Cost Feasibility:	*[Determine whether it is cost-feasible to install a solar PV or hot water system as a component of the project. This may be supplemented with a detailed third-party analysis.]*

Net Zero Narrative

Project Name/Address: 2400 Massachusetts Avenue, Cambridge, MA 02140

Submitted By:

Date of Submission:

Results

Briefly summarize the results of the analysis and how it has informed the design of the project. Also include figures for the "Non-Carbon-Fuel Scenario" in the concluding Summary Table at the end of the Net Zero Narrative. Attachments can be provided with more specific figures and metrics regarding installation, maintenance, and upkeep costs (exclusive *of operating fuel expenses), but a full report is not necessary.*

	Proposed Design		***Non-Carbon-Fuel Scenario***	
	Installation Cost	*Maintenance Cost*	*Installation Cost*	*Maintenance Cost*
Space Heating	TBD	As design progresses		
Space Cooling	TBD	As design progresses		
Heat Rejection	TBD	As design progresses		
Pumps & Aux.	TBD	As design progresses		
Ventilation	TBD	As design progresses		
Domestic Hot Water	TBD	As design progresses		
(Financial Incentives)				
Total Building Energy System Cost				

Describe results and conclusions from the analysis. Analysis TBD

Net Zero Narrative

Project Name/Address: 2400 Massachusetts Avenue, Cambridge, MA 02140

Submitted By:

Date of Submission:

Anticipated Energy Loads and Greenhouse Gas Emissions

Assumptions

Describe the assumptions and methodology used to conduct preliminary energy modeling and set energy targets for the project. Specifically describe what components of the building were included and excluded.

The energy load and greenhouse gas emissions analysis was done using WUFI software. The number of units, number of occupants, floor area, volume, and climate location were all factors that informed the energy model and project targets. Roof, Exterior walls, foundation, windows, heating and cooling systems, ventilation, DHW, auxiliary electricity use, appliance electricity use, shading, site elevation and orientation, and internal heat gains were all components included in the analysis.

Annual Projected Energy Consumption and Greenhouse Gas (GHG) Emissions

The preliminary energy modeling results should be shown in a concluding table format similar to what is shown on the next page. It should compare the "baseline building" (Massachusetts Stretch Energy Code) to the proposed design, as well as the future "net zero" scenario described later in this narrative.

	Baseline Building		Proposed Design		Future Net Zero Scenario		Non-Carbon-Fuel Scenario	
	kWh or Therms	% of Total	kWh or Therms	% of Total	kWh or Therms	% of Total	kWh or Therms	% of Total
Space Heating	This will be		131728.80 kWh	9.3%				
Space Cooling	Available for		77813.36 kWh	5.5%				
Heat Rejection	The next round		34061.31 kWh	2.4%				
Pumps & Aux.	Of submission		34065 kWh	2.4%				
Ventilation	-modeling in progress		61310.44 kWh	4.3%				
Domestic Hot Water			85263.75 kWh	6%				
Interior Lighting			102951.62 kWh	7.2%				
Exterior Lighting			0	0%				
Misc. Equipment			201784 kWh	14.2%				
	$US, kBTU, kBTU/SF		$US, kBTU, kBTU/SF	% Reduction from Baseline	$US, kBTU, kBTU/SF	% Reduction from Baseline	$US, kBTU, kBTU/SF	% Reduction from Baseline
Site EUI			17.59					
Source EUI			31.66					
Total Energy Use			2554346.37 kbtu					
Total Energy Cost			$112,235.54					
	kWh or Therms	% Total Energy	kWh or Therms	% Total Energy	kWh or Therms	% Total Energy	kWh or Therms	% Total Energy
On-Site Renewable Energy Generation								
Off-Site Renewable Energy Generation								
	Tons CO_2 [/SF]		Tons CO_2 [/SF]	% Reduction from Baseline				
GHG Emissions			203.64 tons					
GHG Emissions per SF			.0025 tons/sf					

It may be helpful to present this information in a chart or graph. The following page provides examples.

Project Name/Address:

Submitted By:

Date of Submission:

CITY OF CAMBRIDGE EMBODIED CARBON REPORTING TEMPLATE

City of Cambridge Zoning Ordinance Amendment to Section 22.25.1(c) of Article 22, entitled Sustainable Design and Development (Ordinance No. 2022-20), Section 7. Embodied Emissions:

"A whole building lifecycle analysis of the estimated emissions generated by the construction of the Green Building Project. The Assistant City Manager for Community Development shall promulgate regulations for how these estimated emissions are to be reported.

Such regulations shall include at minimum the required reporting of estimated lifecycle emissions generated by the use of major building materials, including but not limited to wood, concrete, steel, aluminum and glass, using embodied emissions modeling software and industry standards acceptable to CDD staff. This paragraph will become effective on the date of final promulgation of the regulations for Green Building Projects that have not yet completed the initial stage of administrative review by such date, and shall not impose a requirement on any building project that does not meet the standard threshold for project review special permit of 50,000 square feet or includes housing units."

Applicability: For Projects after date of final promulgation of regulations (01/01/2024)

Is this project subject to Green Building Requirements (Section 22.20)?	□X Yes □ No
Does this project meet the threshold for Project Review special permit (Section 19.23)?	□X Yes □ No
Is the gross floor area of this project 50,000 square feet or more?	□X Yes □ No
Does this project exclude dwelling units?	□ Yes □X No

Complete this reporting template if the answer is "Yes" to ALL of the above.

Green Building Report Project Information Matrix

Please fill out Green Building Report (GBR) Project Information Matrix items below:

GBR Project Information	Metrics/Units/Data	
Date	5/24/2024	
Project name:	2400 Massachusetts Avenue	
Building Gross Floor Area	Building A: 57909 sf, Building B: 22780 sf	
Project Design Phase (% Complete SC/DD/CD)	SD	
Project Stage at CDD (SP/Des Rev/BP or Cert of Occ)	Building Permit	
Energy Code Compliace Pathway used for the building per Massachusetts Energy Code (Indicate PATHWAY)	Passive House	
Fossil Fuel use (Yes/No-all electric). If Yes, what extent?	no- all electric	
District energy - (Yes/No)	no	
ASHRAE Version (Standard-Year)	NA	
Improved energy performance compared to Stretch Code/ASHRAE standard 90.1. (%)	TBD modeling in progress	
LEED Alternative Compliance Path (ACP) V4 EApc 95 (Yes/No)	no	
Energy Cost Savings - LEED project - compared to baseline reported in LEED EA (%)	NA	
Energy Use Savings - LEED project - reduction compared to baseline reported in LEED EA (%)	NA	
Total energy cost/year ($)	Building A: $144,530.66, Building B: $72,586.22	assuming Cambridge average of $0.29/kWh
Site EUI - Stretch Code standards. (kBTU/SF-yr)	Site EUI: Building A: 16.31, Building B: 20.83	
Source EUI - Stretch Code standards. (kBTU/SF-yr)	Source EUI: Building A: 29.37, Building B: 37.49	
GHG intensity (kg CO2/sf)	Building A: 3.41, Building B: 4.35	assuming NEWE intensity of 872.52 lbs / mwh
GHG emissions reduction proposed (%)	TBD modeling in progress	
Annual GHG emissions (mtCO2e)	Building A: 197.24, Building B: 99.06	
Solar Ready (Yes / No)	yes, pv under consideration	
Solar Capacity (kW)	currently 0kw, in consideration	
Solar (renewable energy cost) contribution (%)	currently 0 %, in consideration	
Solar Ready - Roof area (SF)	TBD	
Green Roof (extensive or intensive) (Yes/No - SF)	yes, sf TBD based on mech. Equipment	
Bio-Solar Roof (using green roof and solar) (Yes/No-SF)	TBD	
Building Envelope commissioing (Yes/No)	Yes	
Window-to-wall (%)	Building A: 26% , Building B: 22%	
Triple-glazing used (Yes/No)	yes	
U value of glazing used (value)	0.15	
VLT for vertical glazing at ground level uses (%)	TBD	
Indoor water use reduction below LEED baseline (%)	NA	
Outdoor water use reduction below LEED baseline (%)	NA	
Lighting design/plug load reduction (%)	TBD	
Number of EV ready spaces (% of total parking)	2 EV ready spaces and 20% EV capable spaces	
C & D waste diverted from landfill (%)	TBD	
Building Certification Rating Used (Rating System-v.)	PHIUS Core 2021 v3.2	
LEED Certification Level (Platinum,Gold, Silver)	NA	
LEED Credit points (points pursued or verified)	NA	
Whole building Life-cycle assessement tool - (Athena, Tally, EC3, OneClickLCA, TRACI, others)	TBD	
Expected Life time GHG emissions - CO2/CO2e *	Building A: 4931 mt, Building B: 2476.5 mt	2025 until 2050 as indicated in *notes below

Residential units	56
Home Energy Rating System (HERS scores)	TBD

* Estimate of total GHG emissions in MTCO2e. GHG emissions is for both building operation and embodied carbon.

- The total GHG emissions should account for the reductions in operational carbon anticipated in the annual projected energy consumption and GHG emissions from the Project's net zero narrative and account the reductions in embodied carbon anticipated in the design and construction process.
- Embodied carbon should be based on a whole building life cycle assessment using LCA tool per LEED v4 framework and informed by third-party verified EPDs.
- LCA stages (i.e., building/product life cycle stages A1-A5, B2-B5, and C1-C4) from cradle to grave. Building service life should be least 60 years.
- At minimum, embodied carbon calculations should be performed for building structure (concrete and steel framing) and building envelope.
- Envelope components should include glass, metal panels, aluminum framing and insulation to the interior finish.
- Total GHG emissions estimate should also show total GHG emissions projected from building occupancy to year 2050.

Green Factor Certification Form

This is for projects that are subject to the Green Factor Standard in Section 22.90 of the Cambridge Zoning Ordinance, which requires site and landscape design features that reduce urban heat.

Review Section 22.90 of the Cambridge Zoning Ordinance and the Cambridge Cool Score Information and Guidelines before completing this form. When submitting a completed form, attach the supporting materials listed in the Green Factor Checklist.

Project Address/Location: 2400 Massachusetts Avenue

Planning Board (PB) and/or Board of Zoning Appeal (BZA) case number (if applicable): N/A

Developer Name and Contact Information

Name: 2400 Mass Ave LLC

Mailing Address: 9 South Street, Chestnut Hill, MA 02467

Email Address: dws@northcambridgepartners.com

Telephone #: 617-297-8849

Applicability: Section 22.92 & Section 5.22.5

Is this project subject to Green Building Requirements (Section 22.20)?	■ Yes □ No
Does this project involve the construction of a new building?	■ Yes □ No
Does this project enlarge an existing building's footprint by at least 50%?	■ Yes □ No
Does this project involve the creation of new surface parking area?	□ Yes ■ No

Answer the questions below if the answer is "Yes" to any of the above

Requirements

Cool Roof Requirement

Does this project involve the construction of a new building roof or replacement of more than 50% of an existing roof?	■ Yes □ No
Has this project received a Certificate of Appropriateness from the Cambridge Historical Commission or a Neighborhood Conservation District Commission, or a determination of adverse effect by the Executive Director of the Cambridge Historical Commission? [if "Yes," attach the document to your submission]	□ Yes □ No ■ N/A

Last Updated: March 2024

How much of the new or replaced roof area (in sq. ft.) has a slope (rise:run) of less than 2:12? [Cool Roof Requirement is not applicable to roof area with a 2:12 or steeper slope]	21,008 sf
What is the initial Solar Reflectance Index (SRI) of the proposed roof surface material for the area described above, excluding any solar energy systems or green roof area? [Minimum is 82]	TBD >82

Cool Score – Base information on the attached Cool Score Sheet and Site/Roof Plan

What is the Cool Score of the proposed site design? [Minimum is 1.0 except per below]	1.47
What is the Cool Score of the existing site? [Only answer if the project does not involve a new building or enlargement of a building footprint. The proposed Cool Score must not be less than the Cool Score of the existing site]	N/A

Modifications to Requirements

Has the project received, or will the project seek, a special permit from the Planning Board to modify the Green Factor Standard for this proposal?	□ Received SP (date: _____) □ Seeking SP ■ No modification

5/31/24

Signature of Applicant Date

Last Updated: March 2024

Green Factor Checklist

Project Phase	Required Submissions
■ **Special Permit/Design Review (if applicable)**	■ Green Factor Certification Form ■ Cool Score Sheet ■ Site and Roof Plans
☐ **Building Permit**	☐ Green Factor Certification Form (updated from prior version) ☐ Cool Score Sheet (updated from prior version) ☐ Site and Roof Plans (updated from prior version) ☐ Catalog of plant species including height and canopy spread of trees and height and soil depth of high and low planting areas ☐ Specifications of roof surface material including initial Solar Reflectivity Index (SRI) ☐ Specifications of paving material including SRI (if applicable) ☐ Specifications of green roof installation with operations and maintenance plan (if applicable)
☐ **Certificate of Occupancy**	***All materials updated based on as-built conditions:*** ☐ Green Factor Certification Form (updated from prior version) ☐ Cool Score Sheet (based on as-built conditions) ☐ Site and Roof Plans (based on as-built conditions) ☐ Catalog of plant species including height and canopy spread of trees and height and soil depth of high and low planting areas ☐ Specifications of roof surface material including initial Solar Reflectivity Index (SRI) ☐ Specifications of paving material including SRI (if applicable) ☐ Specifications of green roof installation with operations and maintenance plan (if applicable)

Last Updated: March 2024

TREES & PLANTINGS LEGEND

Type	Color	Species	Common Name	Size	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street
A6		Cercis canadensis	New Understory Tree （Eastern redbud)	>15' canopy	0	10
		Malus sp.	Crabapple spp	10' canopy	0	4
B2.1		Amsonia hubrichtii	threadleaf bluestar	minimum 12" soil depth, anticipated plant height under 3' tall at maturity	0	1,377 sf
		Muhlenbergia capillaris	hair-awn muhly			
		Eurybia x Herveyi 'Aster Twilight'	Hervey's Aster			
		Solidago 'Solar Cascade'	Goldenrod			
		Zizia aurea	Golden Alexanders			
		Parthenocissus Quinquefolia	Virginia Creeper			
		Rhus aromatica'Gro-low'	Fragrant Sumac			
B2.2		Sporobolus heterolepis	Prairie Dropseed	minimum 12" soil depth, anticipated plant height under 3' tall at maturity	0	33 sf
		Schizashyrium scoparium 'Standing Ovation'	Little Bluestem			
		Asclepias incarnata	Swamp Milkweed			
		Agastache foeniculum	Anise Hyssop			
B3		Thalictrum Rochebruneanum	Meadow Rue	minimum 18" soil depth, anticipated plant height over 2' tall at maturity	0	218 sf
		Fothergilla Gardenii	Dwarf Fothergilla			
		Pennisetum Alopecuroides "Hameln"	Fountain Grass			
		Rhus aromatica'Gro-low'	Fragrant Sumac			
		Nepeta Racemosa "Walker's Low"	Catmint			

GREEN ROOFS & FACADES, PAVING & STRUCTURES LEGEND

Type	Color	Description	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street	SRI
C3.1		Non-intensive Green Roof	3,804 sf	2,867 sf	

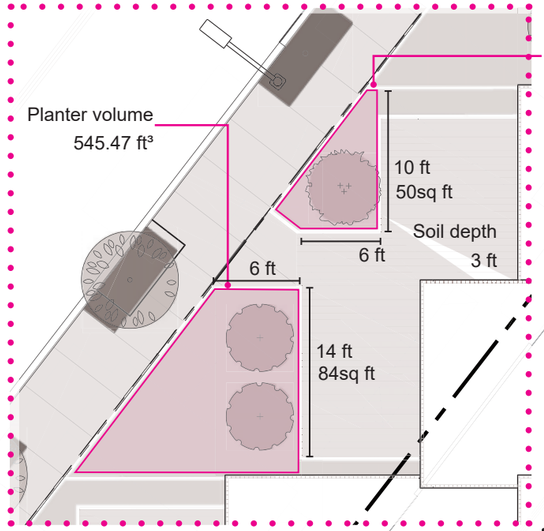
Type	Color	Species	Common Name	Size	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street	
C3.2		Agastache foeniculum	Lavender Hyssop	minimum 12" soil depth, anticipated plant height maximum 3' tall at maturity	743 sf	255 sf	
		Brunnera Macrophylla	Siberian Bugloss				
		Campanula Glomerata "Caroline"	Clustered Bellflower				
		Carex Morrowii	Sedge				
		Polystichum Setiferum	Soft Shield Fern				
		Packera aurea	Golden Ragwort				
		Festuca rubra	Red Fescue				

Type	Color	Description	Qty / Area outside 20' of Street	Qty. / Area within 20' of Street	SRI
D2		High SRI Paving	2,895 sf		

STREET TREES & PLANTINGS LEGEND

Type	Color	Description / Size	Qty
E1		Preserved Existing Understory Tree （Honey Locust)	3
E2		Preserved Existing Understory Tree （Zeylkova)	3
F3		New Street Tree, >60' canopy	2
F3.1		New Street Tree, >20' canopy	12
B2.3		Sporobolus heterolepis	721 sf
		Schizashyrium scoparium 'Standing Ovation'	
		Asclepias incarnata	
		Agastache foeniculum	

Note: Unit counts and configurations, and interior programming, are not final and are subject to ongoing review with the City of Cambridge



Tree Pit, Typical Cedar Patios

Dashed line corresponds to first floor
Total area first floor: 4,403 sf
High-SRI Paving Outside 20' of street: 2,895 sf
Shaded Area Outside 20' of street: 1,738 sf
Shaded Area within 20' of street: 1,002 sf

Harvey St.

Cedar St.

Mass Ave.

Alberta Terrace

235 sf
102 sf
186 sf
70 sf
186 sf
70 sf
186 sf
75 sf
24 sf ea.
267 sf
148 sf
27 sf
43 sf
3,074 sf
142 sf
154 sf
104 sf
126 sf
90 sf
105 sf
147 sf
130 sf
3,596 sf
Mechanical Area
Rooftop
Mechanical Area
Rooftop
21 sf
12 sf
18 sf
120 sf
103 sf
96 sf

Note: Unit counts and configurations, and interior programming, are not final and are subject to ongoing review with the City of Cambridge

0 6 12 18 24 30FT

merge

2.9 Green Factor Plan Detail

2400 Massachusetts Ave | North Cambridge Partners LLC | Article 19 Graphic Volume

Landworks

-

5/31/2024

City of Cambridge **Cool Score Sheet** **4/19/2024**

Project Address	Special Permit Number	Total Lot Area (SF)
2400 Mass Ave		27,785
Applicant Name	**Phone Number**	**Open Space Requirement (%)**
		20%
Applicant Contact / Address	**Email Address**	**Zoning District**
Project Description		**Result**
		Pass

Enter minimum required open space ratio. If the ratio is less than 20%, enter 20 here.

When entering strategies that are within 20' of the street (including sidewalks), do not also enter them in column H.

		Outside 20' of Street	Value Factor		Within 20' of Street	Value Factor	Contributing Area
Trees	**Preserved Existing Trees**						
Enter the number of trees in each category. Count each tree only once on this form.	**A1** Understory tree currently <10' canopy spread	0	0.80	+	0	1.60	-
	A2 Understory tree currently >10' canopy spread	0	1.00	+	0	2.00	-
	A3 Canopy tree currently <15' canopy spread	0	0.80	+	0	1.60	-
	A4 Canopy tree currently between 15' and 25' canopy spread	0	1.00	+	0	2.00	-
	A5 Canopy tree currently >25' canopy spread	0	1.20	+	0	2.40	-
	New or Transplanted Trees						
	A6 Understory tree	0	0.60	+	14	1.20	2,520
	A7 Canopy tree	0	0.70	+	0	1.40	-
Planting Areas							
Enter area in square feet of each component in the box provided	**B1** Lawn Area	0	0.30	+	0	0.60	-
	B2 Low Planting Area	0	0.40	+	1,410	0.80	1,128
	B3 High Planting Area	0	0.50	+	218	1.00	218
Green Roofs & Facades							
For definitions, see reference document.	**C1** Green Façade	0	0.10	+	0	0.20	-
	C2 Living Wall	0	0.30	+	0	0.60	-
	C3 Green Roof Area	4,547	0.30	+	3,122	0.60	3,237
	C4 Short Intensive Green Roof Area	0	0.50	+	0	1.00	-
	C5 Intensive Green Roof Area	0	0.60	+	0	1.20	-
Paving & Structures							
	D1 Low Slope Roof	0	N/A				
	D2 High-SRI Paving	2,895	0.1				290
	D3 Shaded Area	1,738	0.2	+	1,002	0.40	748

High-SRI Paving areas within 20' of a Street do not count towards the Cool Score

Project Summary

Portion of lot area utilizing green strategies	*26%*
Portion of score from green strategies	*87%*
Portion of score from trees	*31%*
Portion of score contributing to public realm cooling	*75%*

Total Contributing Area	**8,141**
Total Area Goal	**5,557**
COOL FACTOR SCORE	**1.47**

If your project scores 1 or above, you have successfully met the requirements of the Cool Factor