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PRINCIPALS
Robert J. Michaud, P.E.
Daniel J. Mills, P.E., PTOE

M E M O R A N D U M

DATE: December 5, 2025

TO: Foxboro Learning, LLC
21671 Bronte Pl
Ashburn, VA 20147
Attn: Manoj Gandhi

FROM: Robert J. Michaud, P.E. – Managing Principal
Andrew J. Arseneault – Project Manager

RE: **Proposed Daycare Facility**
Cambridge Street – Burlington, Massachusetts

MDM Transportation Consultants, Inc. (MDM) has prepared a Transportation Assessment for the proposed daycare facility to be located off Cambridge Street in Burlington, Massachusetts. The location of the Site relative to the adjacent roadway network is shown in **Figure 1.** This assessment provides a summary of the baseline traffic conditions at the Site and adjacent roadways/intersections, evaluates projected trip generation, quantifies incremental traffic impacts of the Site development on area roadways, evaluates safety-related conditions at the proposed Site driveway, and provides a parking assessment for anticipated operations.

Key findings of the traffic assessment are as follows:

- *Travel Speeds – Cambridge Street.* The mean (average) travel speed on Cambridge Street was observed to be 34 mph for the northbound direction and 33 mph in the southbound direction; the 85th percentile travel speed was observed to be 38 mph in the northbound direction and 39 mph in the southbound direction. The speed data indicates that travel speeds are consistent with the regulatory speed limit of 35 mph in the immediate area.

- *Safety Review.* Based on extensive review of MassDOT crash data, the study intersection experienced a crash rate that is below the MassDOT District average, and the intersection is not listed as a high crash location (HSIP eligible) by MassDOT. Therefore, no additional safety countermeasures are warranted based on the review of the crash records and associated crash rates. Likewise, available sight lines at the site driveway intersection with Cambridge Street exceed the sight line requirements published by AASHTO.

Figure 1

Site Location

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Date: September 2025
Dwg No. 1451 MR01.dwg

- *Trip Generation Characteristics.* Based on industry standard ITE rates the daycare facility is estimated to generate 119 vehicle-trips (63 entering and 56 exiting) during the weekday morning peak hour, 119 vehicle-trips (56 entering and 63 exiting) during the weekday evening peak hours, and 570 vehicle trips on a daily basis.Empirical observations performed at a comparably sized facility indicate that the actual traffic generation may be significantly lower.

- *Adequate Roadway Capacity.* The proposed development is expected to have minimal impact on the study area intersections and will not result in any notable changes in traffic operations in the study area relative to No-Build conditions. The Rita Avenue and Site driveway approaches to Cambridge Street will operate below capacity at LOS C or better during the peak hours.

- *Adequate Parking Supply.* A review of empirical peak parking demands at a similarly-sized facility and a review of industry standards indicate that the peak parking demands under normal operating conditions will be within the proposed on-site parking supply of 33 spaces.

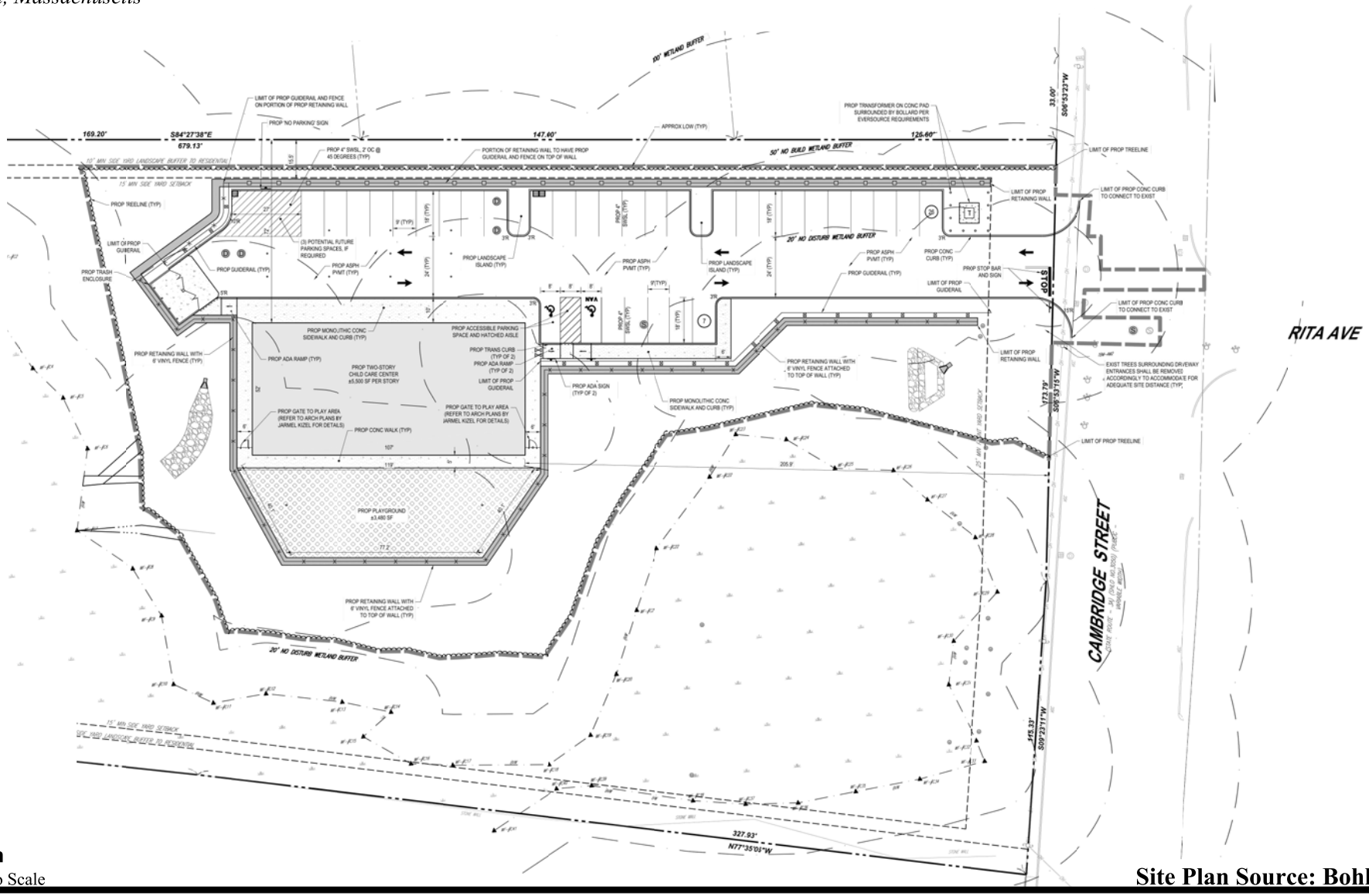
In summary, adequate capacity is available under Build Year conditions on Cambridge Street to accommodate the Site use. Implementation of access/egress improvements as outlined under the Recommendations section of this assessment will establish a framework of minimizing Site traffic impacts.

PROJECT DESCRIPTION

The Site consists of approximately 3.82± acres of unimproved land. The Site is bounded by Cambridge Street to the east, residential properties to the north, residential and commercial properties to the south and the Burlington High School to the west.

Under the proposed development plan, a 11,000± square foot (sf) daycare facility with a licensed enrollment of up to 150 students will be constructed at the Site. Access/egress to the Site will be provided by way of a full access driveway along the west side of Cambridge Street, approximately opposite Rita Avenue. The project will be supported by 33 parking spaces, consistent with the requirements as listed in the Burlington Zoning Bylaw.[1] The preliminary site layout prepared by Bohler is presented in **Figure 2.**

[1] Article VII, Section 7.2.5 of the Town of Burlington Zoning Bylaw states that a minimum and maximum of 3 spaces per 1,000 square feet (sf) are required for places of assembly.



Scale: Not to Scale

Site Plan Source: Bohler

Figure 2

Preliminary Site Plan

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Date: December 2025
Dwg No. 1451 MR01.dwg

BASELINE TRAFFIC & CHARACTERISTICS

An overview of existing roadway conditions, traffic volumes and safety characteristics is provided below.

Cambridge Street

Cambridge Street, also designated as Route 3A, is classified by the Massachusetts Department of Transportation (MassDOT) as a Principle Arterial roadway under MassDOT (State) jurisdiction. Cambridge Street connects to Interstate 95 (via Exit 51) and Route 3 to the south and to Route 62 and the Town of Billerica to the north. In the immediate project area, the roadway provides one, relatively wide, travel lane in each direction. The posted speed limit along Cambridge Street in the Site vicinity is 35 miles per hour (mph). A sidewalk is provided along the eastern side of the roadway and the MBTA provides limited bus service (Routes 350 and 354) with a stop in the immediate area at the Rita Avenue intersection. Land uses along Cambridge Street primarily include a mix of residential and commercial uses including restaurants, retail shops, and general and medical office uses.

Baseline Traffic

Turning movement counts (TMCs) were conducted in September 2025 at the intersection of Cambridge Street at Rita Avenue. A review of MassDOT permanent count station data indicates that September traffic volumes are representative of above average volume conditions, therefore, no adjustments for seasonal fluctuations were required. The weekday morning and weekday evening peak hour traffic volumes are shown in **Figure 3**. Traffic count data and MassDOT permanent count station data are provided in the **Attachments.**

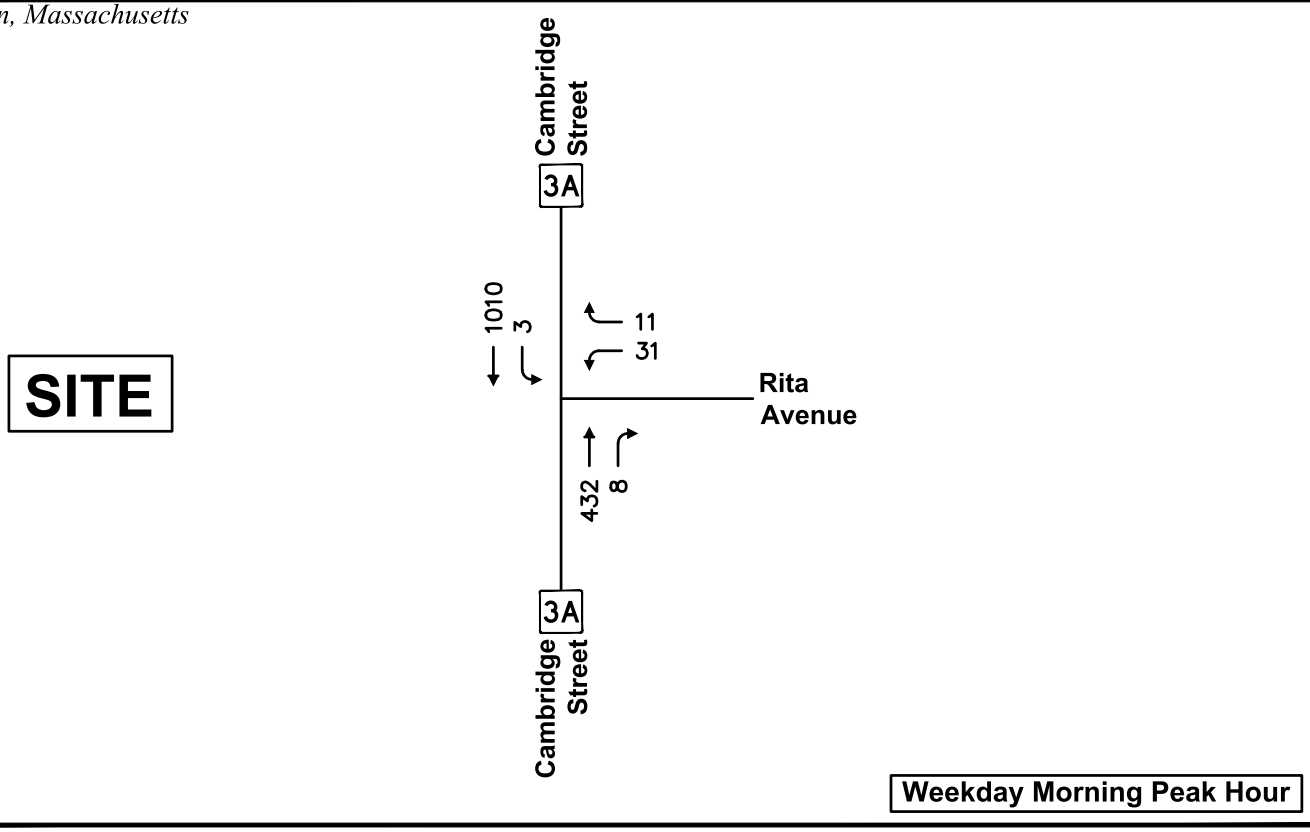
Measured Travel Speeds

Vehicle speeds were obtained for Cambridge Street northbound and southbound travel directions using a hand-held radar. **Table 1** summarizes the average and 85th percentile speeds for Cambridge Street adjacent to the Site. Field data is provided in the **Attachments**.

TABLE 1
SPEED STUDY RESULTS
CAMBRIDGE STREET ADJACENT TO SITE

Travel Direction	Travel Speeds		
	Posted[1]	Mean[2]	85th Percentile[3]
Northbound	35	34	38
Southbound	35	33	39

[1] Regulatory Speed Limit is 35 mph NB and SB.
[2] Arithmetic mean (mph).
[3] The speed at or below which 85 percent of the vehicles are traveling.



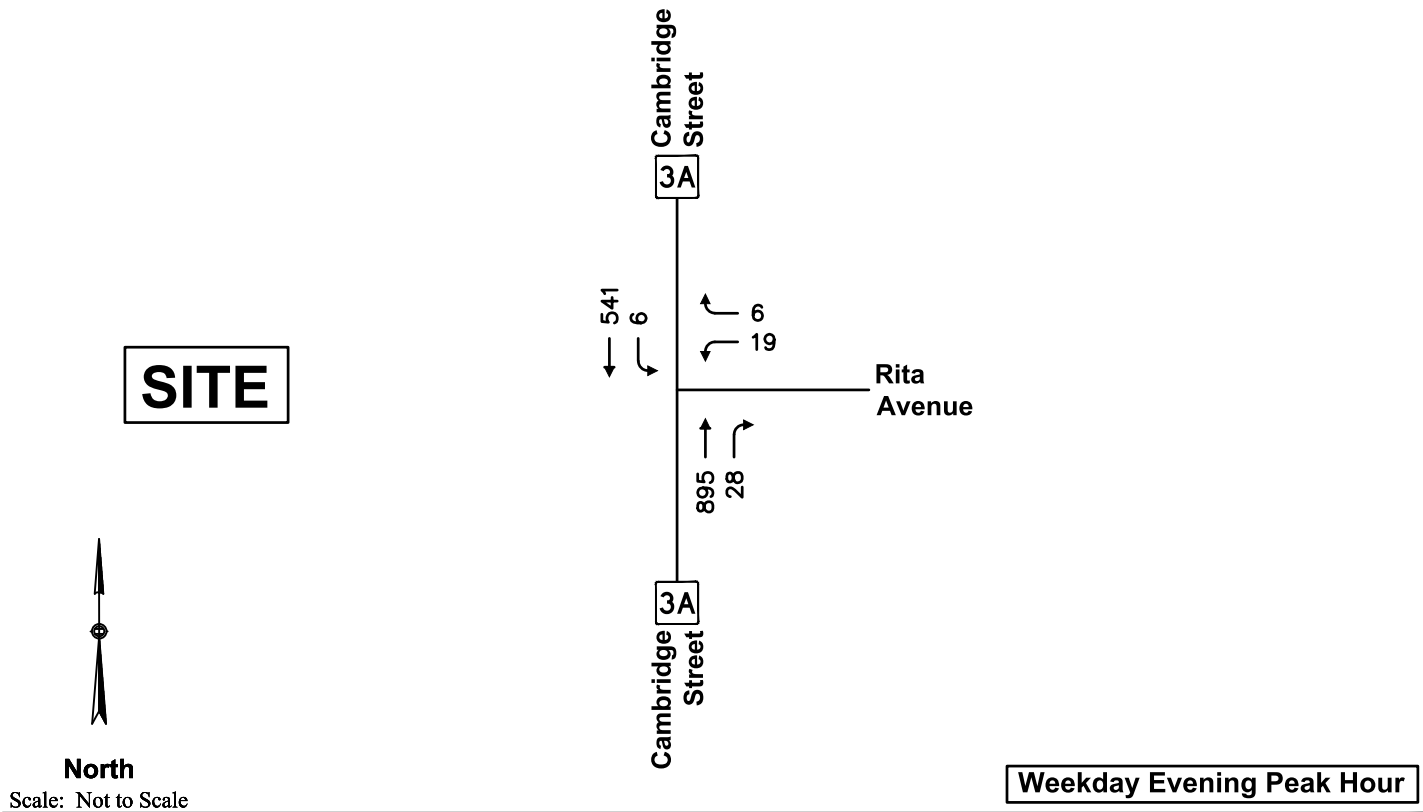


Figure 3

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2025 Baseline Condition
Weekday Peak Hour Traffic Volumes

Date: September 2025
Dwg No. 1451 MR01.dwg

As summarized in **Table 1**, the mean (average) travel speed on Cambridge Street was observed to be 34 mph for the northbound direction and 33 mph in the southbound direction; the 85th percentile travel speed was observed to be 38 mph in the northbound direction and 39 mph in the southbound direction. The speed data indicates that travel speeds are consistent with the regulatory speed limit. The observed speed data were used for the sight distance analysis.

Sight Line Evaluation

An evaluation of sight lines was conducted at the site driveway location to determine the available intersection and stopping sight distances afforded to/from the driveway.

The American Association of State Highway and Transportation Officials (AASHTO) standards[2] reference two types of sight distance that are relevant at the site driveway intersection: stopping sight distance (SSD) and intersection sight distance (ISD). Sight lines for critical vehicle movements at the proposed site driveway intersection along Cambridge Street were compared to minimum SSD and ISD recommendations for the regulatory and observed speeds in the area.

Stopping Sight Distance

Sight distance is the length of roadway visible to the motorist to a fixed object. The minimum sight distance available on a roadway should be sufficiently long enough to enable a below-average operator, traveling at or near the design speed, to stop safely before reaching a stationary object in its path. The SSD criteria are defined by AASHTO based on design and operating speeds, anticipated driver behavior and vehicle performance, as well as physical roadway conditions. SSD includes the length of roadway traveled during the perception and reaction time of a driver to an object, and the distance traveled during brake application on wet, level pavement. Adjustment factors are applied to account for roadway grades when applicable.

SSD was measured in the field using AASHTO standards for a driver eye (3.5 feet) and object height equivalent to the taillight height of a passenger car (2.0 feet) for the Cambridge Street approaches to the Site driveway. **Table 2** presents a summary of the available SSD as they relate to Cambridge Street and the AASHTO recommended SSD based on regulatory and observed speeds.

[2] *A policy on Geometric Design of Highways and Streets*, American Association of State Highway and Transportation Officials (AASHTO), 2018.

TABLE 2
STOPPING SIGHT DISTANCE SUMMARY
CAMBRIDGE STREET APPROACHES TO SITE DRIVEWAY

Approach/ Travel Direction	Available SSD	AASHTO Recommended[1]	
		Posted Speed Limit[2]	85th Percentile Travel Speed[3]
Northbound	>500 Feet	250 Feet	280 Feet
Southbound	365± Feet	250 Feet	290 Feet

[1] Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on driver height of eye of 3.5 feet to object height of 2.0 feet.
[2] Posted Speeds are 35 mph on Cambridge Street.
[3] 85th Percentile travel speed: 38 mph NB & 39 mph SB.

As summarized in **Table 2**, the analysis results indicate that the available sight lines on the Cambridge Street approaches to the site driveway exceed the AASHTO recommended SSD criteria for both travel directions along Cambridge Street based on the regulatory and observed 85th percentile travel speeds. The SSD calculations are provided in the **Attachments**.

Intersection Sight Distance

Clear sight lines provide sufficient sight distance for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. As stated under AASHTO's Intersection Sight Distance (ISD) considerations, "*…If the available sight distance for an entering …vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to avoid collisions…To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.*" AASHTO's ISD criteria are defined into several "cases". In this case, the proposed site egress driveways approaches are proposed to be under STOP sign control. The ISD in question relates to the ability to turn either right or left onto Cambridge Street.

Available ISD was measured in the field using AASHTO standards for a driver eye (3.5 feet), object height (3.5 feet), and decision point (10 feet from the edge of the effective travel way) for the northbound and southbound directions along Cambridge Street. **Table 3** presents a summary of the available ISD for the departures from the proposed Site driveway and the AASHTO required and recommended ISD.

TABLE 3
INTERSECTION SIGHT DISTANCE SUMMARY
SITE DRIVEWAY DEPARTURES TO CAMBRIDGE STREET

View Direction	Available ISD	AASHTO Minimum[1] 85th Percentile Travel Speed[2]	AASHTO Ideal[1] Posted Speed Limit[3]
Looking South	>500 Feet[4]	280 Feet	390 Feet
Looking North	350± Feet[4]	290 Feet	335 Feet

[1] Recommended sight distance based on AASHTO, A Policy on Geometric Design of Highways and Streets. Based on a driver eye height of 3.5 feet and an object height of 3.5 feet. The minimum value as noted represents SSD per AASHTO guidance.
[2] 85th Percentile travel speed: 38 mph NB & 39 mph SB.
[3] Posted Speeds are 35 mph on Cambridge Street.
[4] With removal of vegetation within the sight line triangles.

The results of the ISD analysis presented in **Table 3** indicate that with the removal of the existing vegetation located within the sight line triangles and along the Site frontage, the available sight lines looking from the site driveway onto Cambridge Street will exceed the sight line requirements for safe (SSD) operation. MDM recommends that any new plantings (shrubs, bushes) or physical landscape features to be located within the sight lines should also be maintained at a height of 2 feet or less above the adjacent roadway grade to ensure unobstructed lines of sight. A conceptual plan depicting the sight line triangles is provided in the **Attachments**.

Intersection Crash History

In order to identify crash trends and safety characteristics for the study area, crash data was obtained from MassDOT for the Town of Burlington for the five-year period covering 2020-2024 (the most recent full year of data currently available from MassDOT). A summary of the crash data with crash rates for the study intersections with reported crashes is provided in **Table 4** with detailed data provided in the **Attachments.**

Crash rates were calculated for the study intersections as reported in **Table 4**. These rates quantify the number of crashes per million entering vehicles. MassDOT has determined the official District 4 (which includes the Town of Burlington) crash rates to be 0.73 for signalized intersections and 0.57 for unsignalized intersections. These rates represents MassDOT's "average" crash experience for District 4 communities and serves as a basis for comparing reported crash rates for the study intersection. Where calculated crash rates notably exceed the district average, some form of safety countermeasures may be beneficial. A review of Highway Safety Improvement Project (HSIP) locations was also conducted.

TABLE 4
INTERSECTION CRASH SUMMARY
2020 THROUGH 2024[1]

	INTERSECTION Cambridge Street/ Rite Avenue
Traffic Control	Unsignalized
Crash Rate[2]	**0.07**
MassDOT Avg. Rate[3]	0.57
Above Avg. Rate?	**No**
Year:	
2020	0
2021	0
2022	1
2023	0
2024	1
Total	**2**
Type:	
Angle	1
Rear-End	0
Head-On	0
Sideswipe	1
Single Vehicle	0
Other/Unknown	0
Severity:	
P. Damage Only	1
Personal Injury	1
Fatality	0
Conditions:	
Dry	1
Wet	1
Snow/Ice	0
Time:	
7:00 to 9:00 AM	0
4:00 to 6:00 PM	1
Rest of Day	1

[1] Source: MassDOT Crash Database
[2] Crashes per million entering vehicles
[3] District 4 Average Crash Rate

As summarized in **Table 2**, two crashes were reported at the Cambridge Street unsignalized intersection with Rita Avenue within the study period, resulting in a crash rate of 0.07. The reported crashes included one angle type collision and one sideswipe type collision. One of the crashes resulted in personal injury, one occurred under wet roadway conditions, and one occurred during peak travel period.

In summary, based on extensive review of MassDOT crash data, the study intersection experienced crash rates that were well below the MassDOT District 4 average and was not classified as a high crash location (HSIP eligible) by MassDOT. No fatalities or pedestrian-related incidents were reported over the five-year period at the study area intersections. No immediate safety countermeasures appear necessary based on the crash history at the study area intersection.

FUTURE TRAFFIC CONDITIONS

Evaluation of the proposed development impacts requires the establishment of a future baseline analysis condition. This section estimates future roadway and traffic conditions with and without the proposed development. For planning purposes, a seven-year planning horizon (year 2032) was selected, consistent with standard industry practice.

To determine the impact of site-generated traffic volumes on the roadway network under future conditions, baseline traffic volumes in the study area were projected to a future year condition. Traffic volumes on the roadway network at that time, in the absence of the development (that is, the No-Build condition), includes existing traffic, new traffic due to general background traffic growth, and traffic related to specific developments by others that are currently under review at the local and/or state level or recently approved but not yet occupied. Consideration of these factors resulted in the development of No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop future Build conditions.

The following sections provide an overview of future No-Build traffic volumes and Build traffic volumes.

Background Traffic Growth

Background traffic includes demand generated by other planned developments in the area as well as demand increases caused by external factors. External factors are general increases in traffic not attributable to a specific development and are determined using historical data.

Historical Area Growth

Nearby permanent count station data published by MassDOT indicates a 0.77 percent per year growth rate. For purposes of this evaluation, a 1.0 percent growth rate was used (7.2 percent increase over a 7-year horizon). This growth rate is higher than historic rates and as such, is also expected to account for any small fluctuation in hourly traffic that may occur from time to time in the study area and traffic associated with other potential small developments or vacancies in the area. MassDOT permanent count station data and background growth calculations are provided in the **Attachments**.

Background Development-Related Growth

The development of future No-Build traffic volumes also considers traffic generated through the study area from other specific area developments. Based on a consultation with the Town of Burlington Planning Department and a review of Massachusetts Environmental Policy Act (MEPA) filings, there are several pending or approved projects in the immediate area that were reviewed as they may increase traffic volumes through the study. The site-specific project reviewed include the following:

- *Burlington High School Redevelopment*. This project is in the initial financing phase and involves the reconstruction or renovation of the Burlington High School, located at 123 Cambridge Avenue, the proximate location of the existing Burlington High School and west of the Site. A formal assessment of the estimated impacts associated with this development is not available; however the renovation is not expected to result in any anticipated traffic volume increases.

No other specific developments were identified that may increase traffic outside of the general background traffic growth rate The resulting 2032 No-Build traffic volumes for the weekday morning and evening peak hours are displayed in **Figure 4**.

Trip Generation

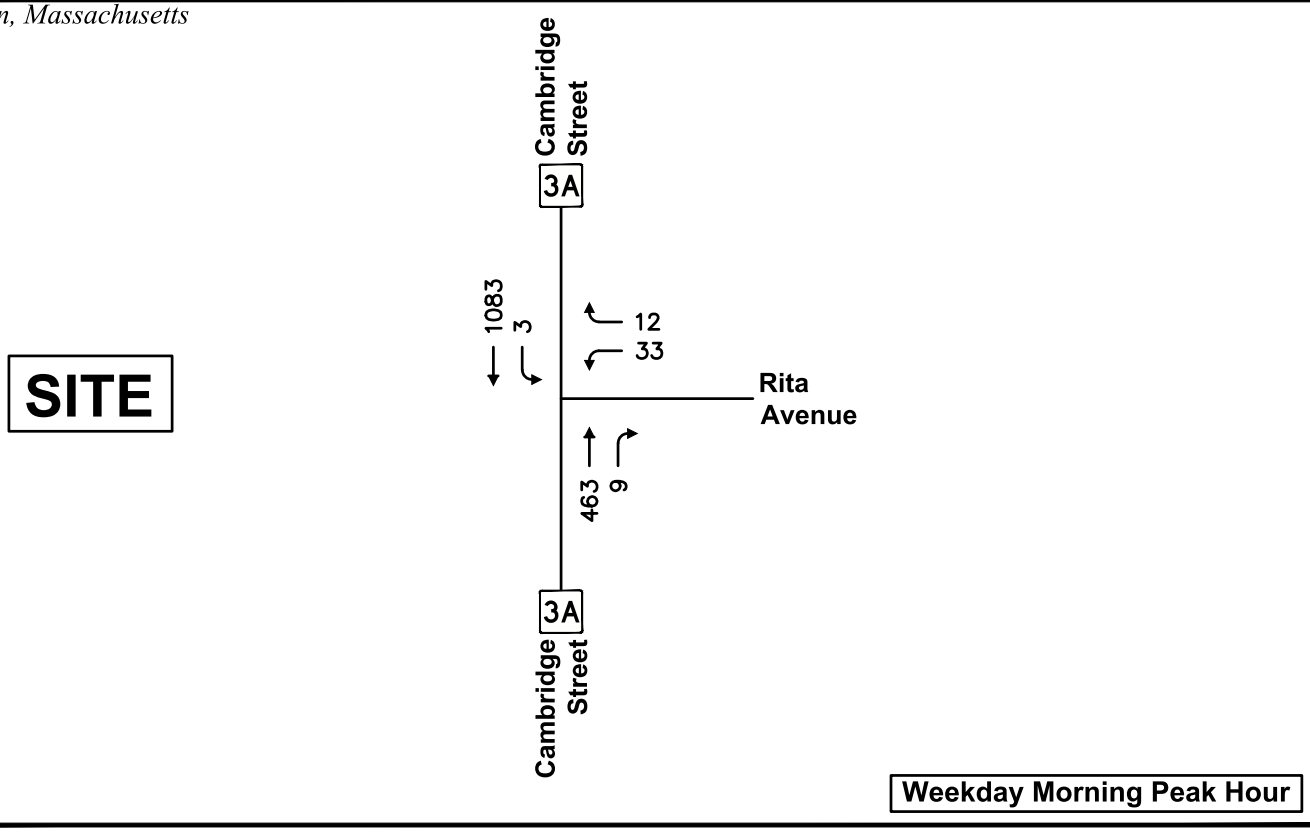
The trip generation estimates for the proposed development of the Site are provided for the weekday morning and weekday evening periods, which correspond to the critical analysis periods for the adjacent street and proposed use. New traffic generated by the project was estimated using trip rates published in ITE's *Trip Generation*[3] for the Land Use Code (LUC) 565 – Day Care Center and compared with empirical data collected at an existing daycare facility located in Natick, Massachusetts. The Natick daycare facility is similarly sized, has a licensed capacity of approximately 150 students, was under normal, typical operations at the time of the observations (124 students). A summary of trip generation estimates for the proposed Site based on ITE trip rates and the observed comparative volumes are presented in **Table 5**. Trip generation calculations are provided in the **Attachments**.

TABLE 5
TRIP-GENERATION SUMMARY

Period	ITE Basis[1]	Empirical Basis[2]
Weekday Morning Peak-Hour:		
Enter	63	64
Exit	56	54
Total	119	118
Weekday Evening Peak-Hour:		
Enter	56	54
Exit	63	62
Total	119	116
Daily	570	700

[1] Based on ITE LUC 565 – (Day Care Center) trip generation rates applied to 150 students.
[2] Calculated from empirical data for a daycare facility in Natick (Primrose with 124 students) applied to 150 students.

[3] *Trip Generation,* 12th Edition; Institute of Transportation Engineers; Washington, DC; 2025.



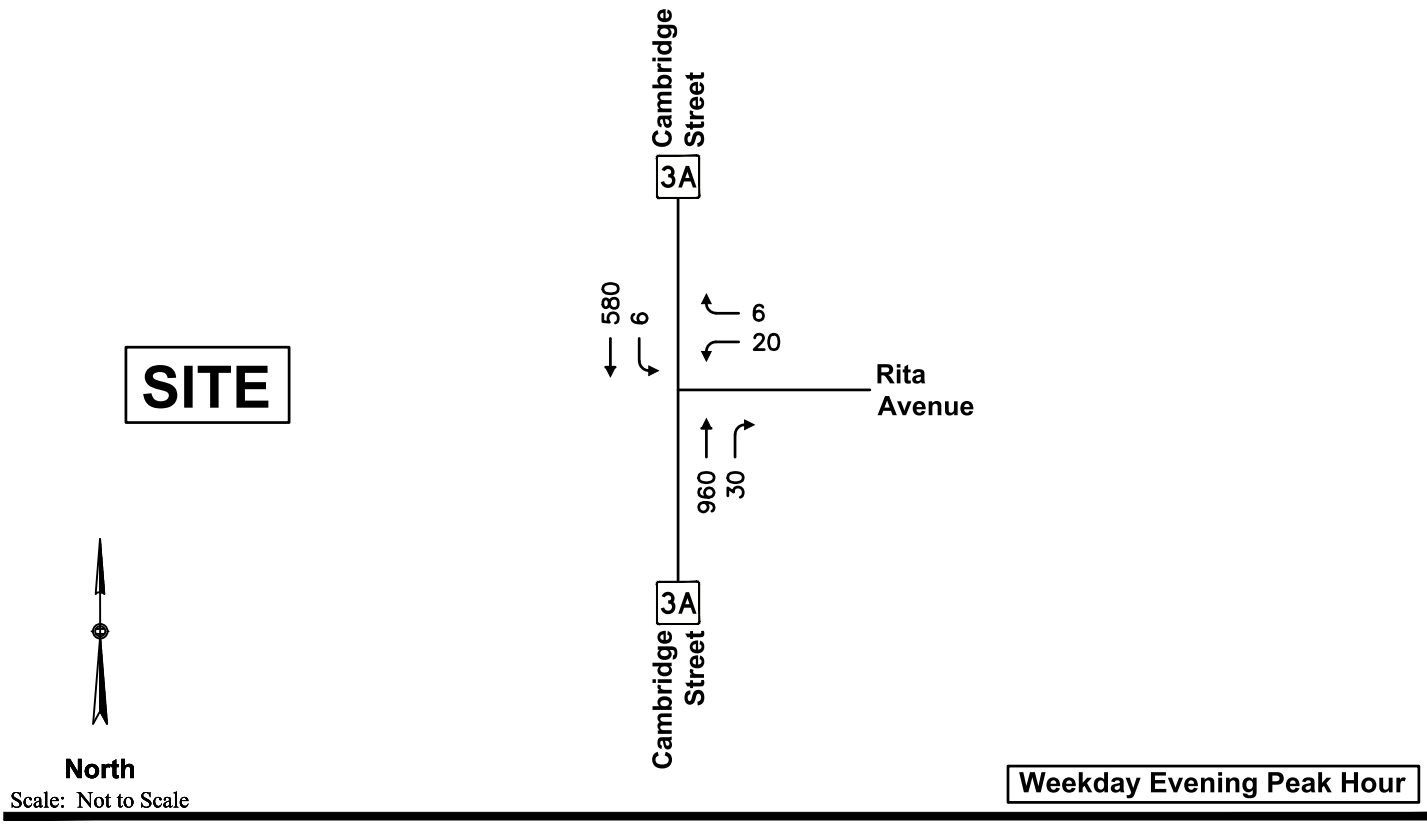


Figure 4

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2032 No-Build Condition
Weekday Peak Hour Traffic Volumes

Date: September 2025
Dwg No. 1451 MR01.dwg

As summarized in **Table 5**,

- *ITE Basis.* Based on industry standard ITE rates the proposed daycare facility is estimated to generate 119 vehicle-trips (63 entering and 56 exiting) during the weekday morning peak hour, 119 vehicle-trips (56 entering and 63 exiting) during the weekday evening peak hours, and 570 vehicle trips on a daily basis.

- *Empirical Basis.* Based on observed data at the existing daycare facility calculated projections indicate that the comparably sized and operating daycare facility generates 118 vehicle-trips (64 entering and 54 exiting) during the weekday morning peak hour, 116 vehicle-trips (54 entering and 62 exiting) during the weekday evening peak hours, and 700 vehicle trips on a daily basis.

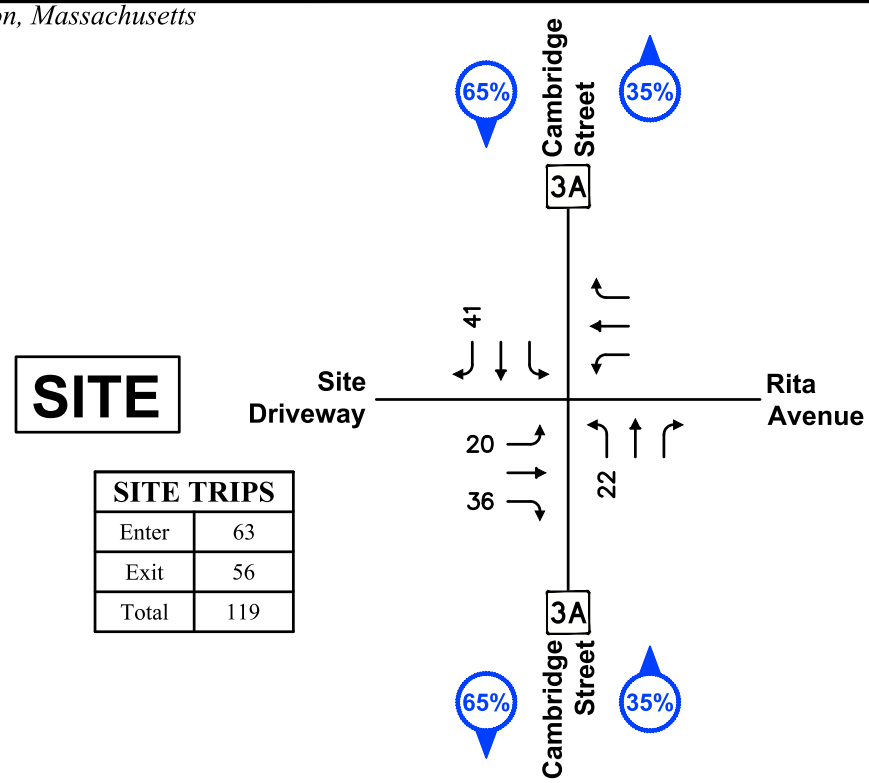
In summary, the ITE-based estimates are almost identical when compared to the empirical observations of the operating daycare facility. For analysis purposes, the ITE trip-generation estimates were used in evaluating the potential impacts of the development.

Trip Distribution

The vast majority of trips in and out of the Site during the weekday morning and weekday evening peak hours will be parent drop-off and pick-up activity. The distribution pattern is based on the general travel patterns observed along Cambridge Street. New development-related trips and the general trip distribution patterns for the weekday morning and weekday evening peak hours are depicted on **Figure 5**.

2032 Build Traffic Volumes

2032 Build traffic volume networks were derived by adding development-specific traffic volumes to the 2032 No-Build traffic volume networks. The 2032 Build traffic volume networks for the weekday morning and weekday evening peak hours are presented in **Figure 6**.



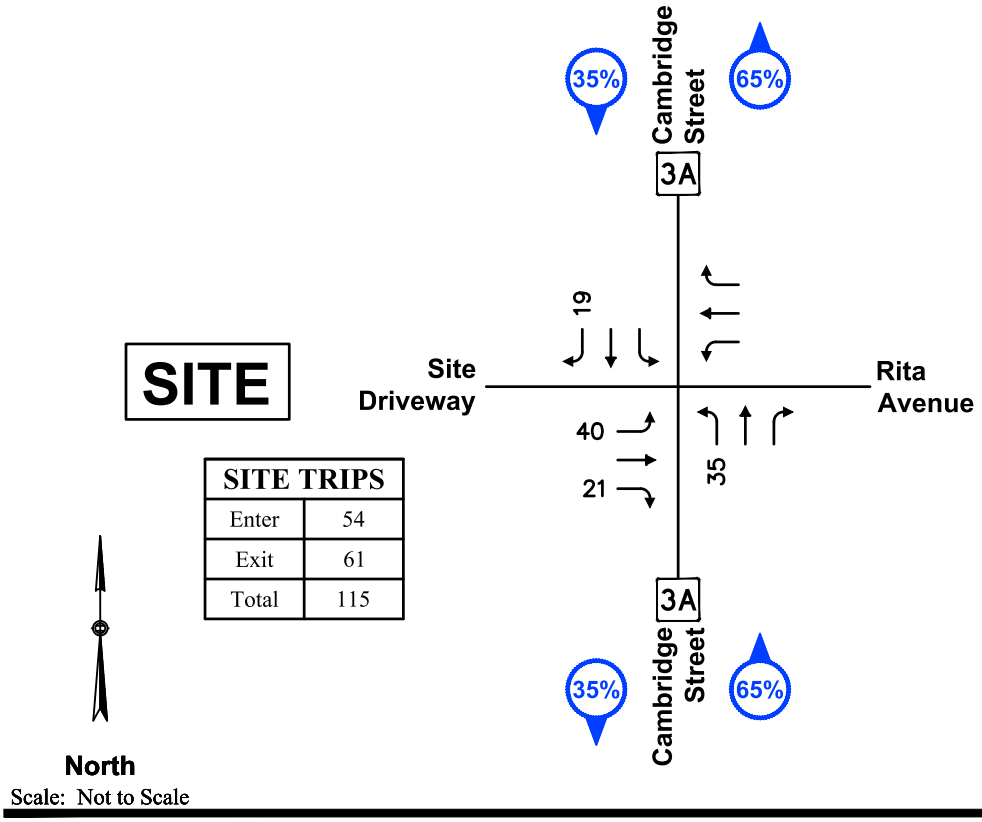


Figure 5

MDM TRANSPORTATION CONSULTANTS, INC.
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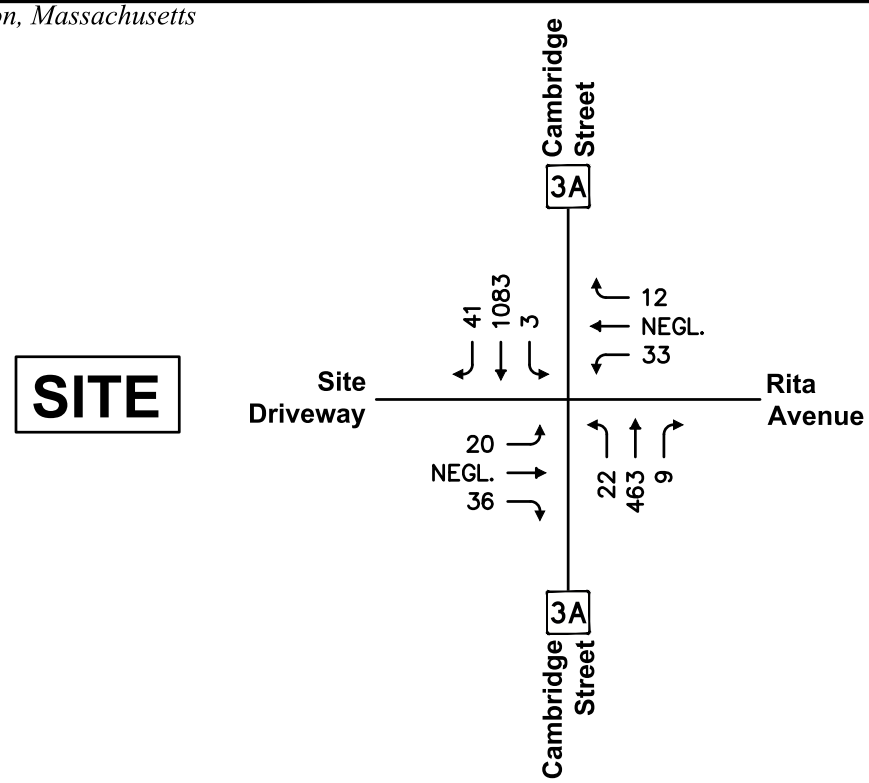
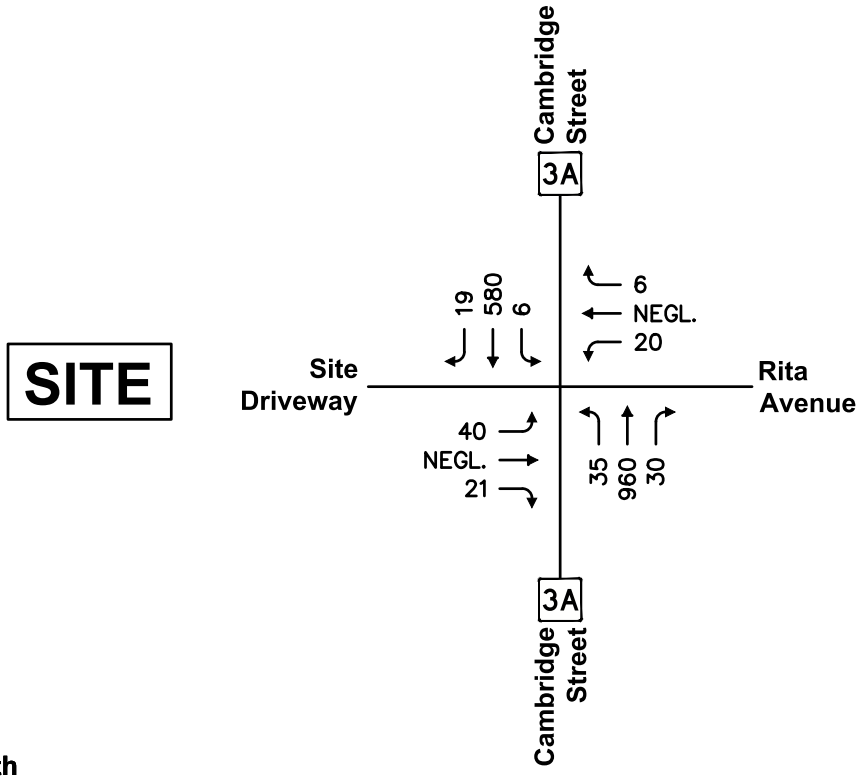
2032 Trip Distribution/Trip Generation Weekday Peak Hour Traffic Volumes

Date: September 2025
Dwg No. 1451 MR01.dwg



Weekday Morning Peak Hour



Weekday Evening Peak Hour

Figure 6

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2032 Build Conditions
Weekday Peak Hour Traffic Volumes

Date: September 2025
Dwg No. 1451 MR01.dwg

OPERATIONS ANALYSIS

This section provides an overview of operational analysis methodology and an assessment of intersection operations under 2025 Baseline, 2032 No-Build, and 2032 Build conditions.

Analysis Methodology

Capacity analyses, conducted in accordance with EEA/MassDOT guidelines, provide an index of how well the roadway facilities serve the traffic demands placed upon them. The operational results provide the basis for recommended access and any necessary roadway improvements in the following section.

Capacity analysis of intersections is developed using the Synchro® computer software, which implements the methods of the Highway Capacity Manual, 7th edition (HCM7). The resulting analysis presents a Level-of-Service (LOS) designation for individual intersection movements and/or approaches. The LOS is a letter designation that provides a qualitative measure of operating conditions based on several factors including roadway geometry, speeds, ambient traffic volumes, traffic controls, and driver characteristics. Since the LOS of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of LOS, depending on the time of day, day of week, or period of year. A range of six levels of service are defined on the basis of average delay, ranging from LOS A (the least delay) to LOS F (delays greater than 50 seconds for unsignalized movements).

Model Calibration

The Synchro® model was then calibrated based on field conditions to reflect actual observed delays on the Rita Avenue approach to Cambridge Street during the weekday morning and weekday evening peak hours. Accordingly, the modeled intersection operations described below more accurately reflect the actual field conditions for the intersection and provide a more accurate estimate of incremental delays and queuing in the area. The delay studies are included in the **Attachments**.

Analysis Results

LOS analyses were conducted for the 2025 Baseline, 2032 No-Build, and 2032 Build conditions for the Cambridge Street at Rita Avenue and the Site driveway intersection. The results of the intersection capacity analyses are summarized below in **Table 6**. Detailed analysis results are presented in the **Attachments**.

TABLE 6
INTERSECTION CAPACITY ANALYSIS RESULTS
CAMBRIDGE STREET AT RITA AVENUE AND THE SITE DRIVEWAY

		2025 Baseline			2032 No-Build			2032 Build		
Intersection	Approach	v/c[1]	Delay[2]	LOS[3]	v/c	Delay	LOS	v/c	Delay	LOS
Weekday Morning Peak Hour										
Cambridge St/	Eastbound[4]	*n/a*[5]	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	0.08	10	B
Rita Ave/	Westbound[4]	0.06	10	B	0.07	10	B	0.07	11	B
Site Driveway	Northbound	0.00	<5	A	0.00	<5	A	0.04	<5	A
	Southbound	0.00	<5	A	0.00	<5	A	0.00	<5	A
Weekday Evening Peak Hour										
Cambridge St/	Eastbound[4]	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	*n/a*	0.25	23	C
Rita Ave/	Westbound[4]	0.09	18	C	0.10	20	C	0.13	23	C
Site Driveway	Northbound	0.00	<5	A	0.00	<5	A	0.04	<5	A
	Southbound	0.01	<5	A	0.01	<5	A	0.01	<5	A

[1] Volume-to-capacity ratio
[2] Average control delay per vehicle (in seconds)
[3] Level of service
[4] Calibrated
[5] n/a = not applicable

As summarized in **Table 6**, the proposed daycare facility is expected to have minimal impact on the study area intersections and will not result in any notable changes in traffic operations in the study area relative to No-Build conditions. The proposed driveway approach to Cambridge Street will operate at LOS C or better during the peak hours.

PARKING ASSESSMENT

Local zoning sets the parking standard for daycare uses based on square footage. Peak parking generation rates for daycare uses are also published by the Institute of Transportation Engineers (ITE) in *Parking Generation*[4] and parking demands were observed at several daycare uses within the New England market. The proposed facility will include 33 marked spaces to accommodate employee parking, pick-up/drop-off activity and visitor parking.

Zoning Basis

The site has been designed to comply with local zoning which requires 33 parking spaces to support a 11,000-sf daycare facility resulting in a parking ration or 3 spaces per 1,000 sf.

ITE Basis

Applicable parking generation rates for day care center in *Parking Generation* (ITE Land Use Code 565 – Day Care Center) applied to an effective enrollment level of 150 students results in an average projected peak demand of 38 vehicles. ITE parking calculation worksheets are provided in the **Attachments**.

Empirical Basis

Empirical parking data was collected at the following daycare locations:

- *The Learning Experience in Franklin, MA*. This location was surveyed on Thursday, September 4, 2025, with an effective enrollment level of approximately 75 students and 17 staff. The facility was observed to have a peak parking demand rate of 0.24 spaces per student which is estimated to result in a peak parking demand of 36 spaces for a 150-student facility. Empirical parking data is provided in the **Attachments**.

- *Goddard School in Lexington, MA*. This location was surveyed on Thursday, May 4, 2023, between the hours of 7 AM and 6 PM with an effective enrollment level of approximately 150 students at staffing level of approximately 25 staff at the time of counts. This comparable sized facility was observed to have a peak parking demand of approximately 36 vehicles which occurred over a short period of time over a very short period of time (less than 5 minutes) during pick-up period. Empirical parking data is provided in the **Attachments**.

[4] *Parking Generation, 6th Edition*, Institute of Transportation Engineers, Washington D.C. 2023.

- *Primrose School in Natick, MA*. This location was surveyed on Wednesday, May 29, 2019, and Thursday, May 30, 2019, with an effective enrollment level of approximately 124 students. The facility was observed to have a peak parking demand rate of 0.27 spaces per student which is estimated to result in a peak parking demand of 41 spaces for a 150-student facility. Empirical parking data is provided in the **Attachments**.

- *Bright Path in Simsbury, CT.* This location has a licensed enrollment effective enrollment level of approximately 190 students. Empirical parking demand data were collected on Wednesday, September 20, 2023, from 6 AM to 9 AM to capture the morning drop off period and again from 3 PM to 6 PM for the afternoon pickup period. The facility was observed to have a peak parking demand rate of 0.24 spaces per student which is estimated to result in a peak parking demand of 36 spaces for a 150-student facility. Empirical parking data is provided in the **Attachments**.

Parking Summary

In summary, based on the results of the zoning requirement and calculated peak parking demands based on industry standards and empirical parking observations, it appears that the 33 parking spaces provided will be adequate to support the proposed daycare facility. That being said, based on the industry standard and empirical parking data, the Proponent will hold in reserve (i.e., "shadow" parking spaces) to support the potential construction of up to three additional parking spaces in order to provide a 36 vehicle demand. Alternatively, the Site operator will develop a parking management plan for employees and drop-off/pick-up activity to be implemented if such parking shortfalls are realized as the project approaches full enrollment of 150 students.

CONCLUSIONS AND RECOMENDATIONS

MDM finds that adequate capacity is available to accommodate the traffic associated with the proposed daycare facility. The proposed daycare facility is estimated to generate trip increases on the area roadways ranging from approximately 119 vehicle trips during the weekday morning peak hour to 119 vehicle trips during the weekday evening peak hour. Traffic impacts associated with the program are not expected to notably affect travel or safety conditions in the site vicinity. Safe stopping sight distance (SSD) will be available for oncoming vehicles to detect, react and stop for vehicles exiting onto Cambridge Street from the site driveway based on regulatory speed limits and observed travel speeds. Proposed parking supply of 33 spaces is expected to reasonably accommodate daycare operations at an effective enrollment level of up to 150 students and supporting staff (equivalent to the licensed enrollment capacity) based on zoning requirements, empirical data and industry standard parking demand rates. While no specific off-site mitigation elements are necessary to accommodate the proposed daycare facility, MDM recommends several improvements aimed at enhancing operations and/or safety as follows:

- *Driveway Design.* The driveway alignments, widths and curb radii have be designed to achieve (a) approximate perpendicular orientation with Cambridge Street; and (b) curb radii as required to accommodate emergency vehicles as defined by the Town of Burlington Fire Department. In all cases, the final driveway grading and orientation will meet or exceed the minimum recommended stopping sight distances.

- *Signs and Pavement Markings.* A STOP sign (R1-1) and STOP line pavement marking should be installed on the Site driveway approach to Cambridge Street. The signs and pavement markings shall be compliant with the Manual on Uniform Traffic Control Devices (MUTCD).

- *Maintain Clear Sight Lines.* The existing vegetation located within the Site and along the Site frontage will be removed in conjunction with the development of the Site. New plantings (shrubs, bushes) and structures (walls, fences, etc.) should be designed and maintained at a height of 2 feet or less above the finished driveway elevation within the sight triangle areas to provide unobstructed visibility to oncoming vehicles.

- *Parking Management Plan.* Parking management policies and practices will be implemented by the Proponent to ensure efficient operations of school pick-up/drop-off, parking activity, and student circulation. Staff should be available to direct parents internally if required so that vehicles do not queue up or spill back onto the State Highway. Special event programming including special holiday events, etc. that would require extended parent/guardian stays with parking demands in excess of on-site parking supply should be accommodated with a pre-arranged off-site parking arrangement if required.

- *Parking Monitoring Program.* The Learning Experience proposes to increase enrollment and related staffing in a gradual, phased manner in order to assure that the objectives of the Parking Management Plan can be met. TLE will monitor on-site parking utilization and the effectiveness and efficiency of the pick-up/drop off area with the goal of encouraging parents to use the pick-up /drop off function in front of the site so that the majority of the parking stalls more remote from the building's doorway will be used by staff. If required, the shadow parking spaces will be formalized to provide supplemental parking should shortfalls are realized.

Conclusions

In summary, MDM finds that the development of the Site as a daycare facility with an anticipated licensed enrollment of 150 students will be accommodated well within the capacity of the study area with no discernable impact to traffic flow compared to No-Build conditions. The study area intersection is projected to operate below capacity at an acceptable LOS C or better operation during the peak hours. Proposed access/egress along Cambridge Street will be designed to ensure adequate maneuverability for the design vehicles and that adequate sight lines are provided in accordance with AASHTO criteria based on ambient and regulatory travel speeds. The on-Site parking supply appears reasonable to support the proposed daycare facility. TLE will implement an active parking management plan and parking monitoring program. If required, the shadow parking spaces will be formalized to provide supplemental parking should shortfalls are realized.

ATTACHMENTS

- □ Traffic Volume Data
- □ Seasonal/Yearly Growth Data
- □ Speed Data
- □ Sight Distance Calculations
- □ Crash Data
- □ Trip Generation
- □ Delay Study
- □ Capacity Analysis
- □ Parking Analysis

- Traffic Volume Data

MDM Transportation Consultants, Inc.

28 Lord Rd, Suite 280
Marlborough, MA, 01752

N/S: Cambridge Street
East: Rita Avenue
Burlington, MA

File Name : 1451 Cambridge Street at Rita Avenue
Site Code : 1451
Start Date : 9/4/2025
Page No : 1

Groups Printed- Lights - Mediums - Articulated Trucks

	Cambridge Street From North				Rita Avenue From East				Cambridge Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	218	0	0	218	2	3	0	5	3	66	0	69	292
07:15 AM	268	0	0	268	2	11	0	13	1	96	0	97	378
07:30 AM	232	0	0	232	2	7	1	10	2	91	0	93	335
07:45 AM	272	1	0	273	2	6	0	8	3	124	0	127	408
Total	990	1	0	991	8	27	1	36	9	377	0	386	1413
08:00 AM	238	2	0	240	5	7	0	12	2	121	0	123	375
08:15 AM	215	4	0	219	11	9	1	21	3	124	0	127	367
08:30 AM	186	8	0	194	7	7	0	14	2	119	0	121	329
08:45 AM	217	0	0	217	0	7	0	7	5	117	0	122	346
Total	856	14	0	870	23	30	1	54	12	481	0	493	1417
04:00 PM	105	0	0	105	1	4	4	9	8	206	0	214	328
04:15 PM	108	1	0	109	4	6	1	11	9	209	0	218	338
04:30 PM	95	2	0	97	0	4	0	4	6	231	0	237	338
04:45 PM	77	0	0	77	2	5	3	10	5	241	0	246	333
Total	385	3	0	388	7	19	8	34	28	887	0	915	1337
05:00 PM	127	0	0	127	2	8	2	12	10	253	0	263	402
05:15 PM	155	1	0	156	2	4	1	7	6	236	0	242	405
05:30 PM	116	1	0	117	0	5	2	7	7	201	0	208	332
05:45 PM	143	4	0	147	2	2	0	4	5	205	0	210	361
Total	541	6	0	547	6	19	5	30	28	895	0	923	1500
Grand Total	2772	24	0	2796	44	95	15	154	77	2640	0	2717	5667
Apprch %	99.1	0.9	0		28.6	61.7	9.7		2.8	97.2	0		
Total %	48.9	0.4	0	49.3	0.8	1.7	0.3	2.7	1.4	46.6	0	47.9	
Lights	2694	24	0	2718	44	92	15	151	77	2560	0	2637	5506
% Lights	97.2	100	0	97.2	100	96.8	100	98.1	100	97	0	97.1	97.2
Mediums	64	0	0	64	0	3	0	3	0	67	0	67	134
% Mediums	2.3	0	0	2.3	0	3.2	0	1.9	0	2.5	0	2.5	2.4
Articulated Trucks	14	0	0	14	0	0	0	0	0	13	0	13	27
% Articulated Trucks	0.5	0	0	0.5	0	0	0	0	0	0.5	0	0.5	0.5

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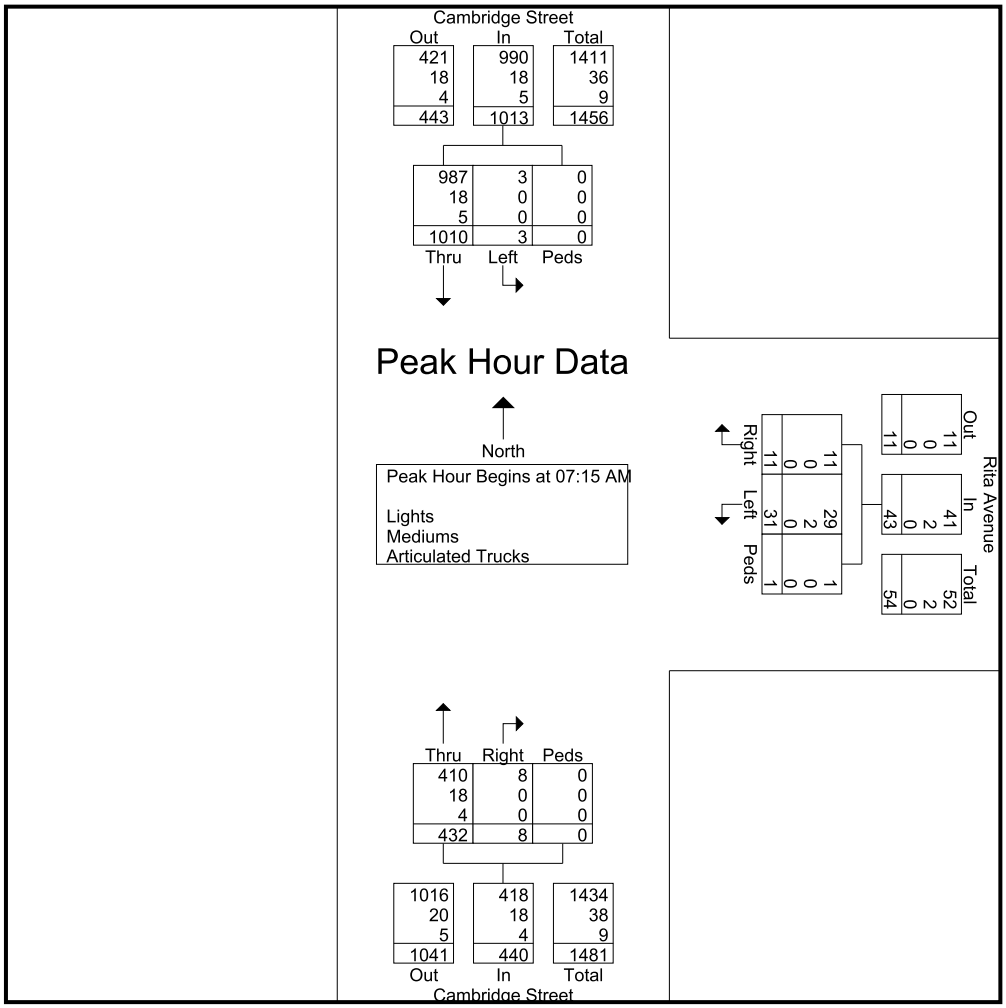
N/S: Cambridge Street
East: Rita Avenue
Burlington, MA

File Name : 1451 Cambridge Street at Rita Avenue
Site Code : 1451
Start Date : 9/4/2025

	Cambridge Street From North				Rita Avenue From East				Cambridge Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:15 AM													
07:15 AM	268	0	0	268	2	**11**	0	**13**					
07:30 AM	**232**	**0**	**0**	**232**	**2**	**7**	**1**	10	2	91	0	93	335
07:45 AM	**272**	1	0	**273**					**3**	**124**	0	**127**	**408**
08:00 AM	**238**	**2**	0	240	**5**	7	0	12	2	121	0	123	375
Total Volume	1010	3	0	1013	11	31	1	43	8	432	0	440	1496
% App. Total	99.7	0.3	0		25.6	72.1	2.3		1.8	98.2	0		
PHF	.928	.375	.000	.928	.550	.705	.250	.827	.667	.871	.000	.866	.917
Lights	987	3	0	990	11	29	1	41	8	410	0	418	1449
% Lights	97.7	100	0	97.7	100	93.5	100	95.3	100	94.9	0	95.0	96.9
Mediums	18	0	0	18	0	2	0	2	0	18	0	18	38
% Mediums	1.8	0	0	1.8	0	6.5	0	4.7	0	4.2	0	4.1	2.5
Articulated Trucks	5	0	0	5	0	0	0	0	0	4	0	4	9
% Articulated Trucks	0.5	0	0	0.5	0	0	0	0	0	0.9	0	0.9	0.6



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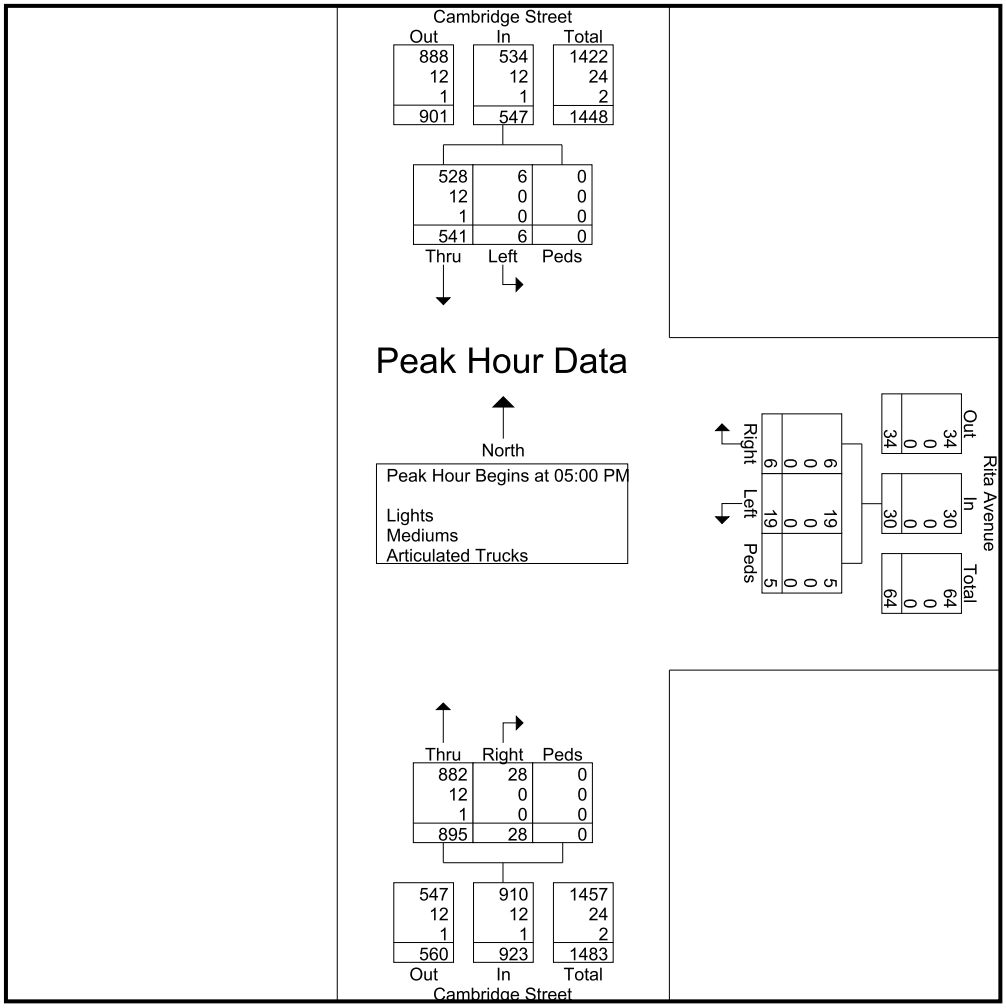
28 Lord Rd, Suite 280
Marlborough, MA, 01752

N/S: Cambridge Street
East: Rita Avenue
Burlington, MA

File Name : 1451 Cambridge Street at Rita Avenue
Site Code : 1451
Start Date : 9/4/2025
Page No : 3

	Cambridge Street From North				Rita Avenue From East				Cambridge Street From South				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 05:00 PM													
05:00 PM	127	0	0	127	**2**	**8**	**2**	**12**	**10**	**253**	0	**263**	402
05:15 PM	**155**	1	0	**156**									**405**
05:30 PM	**116**	**1**	**0**	**117**	**0**	**5**	**2**	**7**	**7**	**201**	**0**	**208**	**332**
05:45 PM	**143**	**4**	0	147	2	2	0	4	5	205	0	210	361
Total Volume	541	6	0	547	6	19	5	30	28	895	0	923	1500
% App. Total	98.9	1.1	0		20	63.3	16.7		3	97	0		
PHF	.873	.375	.000	.877	.750	.594	.625	.625	.700	.884	.000	.877	.926
Lights	528	6	0	534	6	19	5	30	28	882	0	910	1474
% Lights	97.6	100	0	97.6	100	100	100	100	100	98.5	0	98.6	98.3
Mediums	12	0	0	12	0	0	0	0	0	12	0	12	24
% Mediums	2.2	0	0	2.2	0	0	0	0	0	1.3	0	1.3	1.6
Articulated Trucks	1	0	0	1	0	0	0	0	0	1	0	1	2
% Articulated Trucks	0.2	0	0	0.2	0	0	0	0	0	0.1	0	0.1	0.1



□ Seasonal/Yearly Growth Data

STATION 403 - CONCORD - RTE. 2

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	AADT
2011	39,037	40,138	43,732	44,191	45,777	46,145	43,496	43,117	44,740	45,508	43,282	42,043	43,434
	5.8%	*4.9%*	*-1.5%*	*0.2%*	*0.0%*	*-1.1%*	*-7.1%*	*3.8%*	*0.0%*	*-1.3%*	*-0.7%*	*-0.8%*	*0.1%*
2012	41,311	42,111	43,069	44,294	45,759	45,640	40,408	44,775	44,720	44,904	42,980	41,701	43,473
	1.2%	*-7.2%*	*-2.5%*	*-2.9%*	*-3.4%*	*-1.4%*	*3.9%*	*-3.3%*	*-0.7%*	*0.4%*	*-0.7%*	*2.6%*	*-1.2%*
2013	41,792	39,095	42,007	42,993	44,222	44,984	41,995	43,310	44,422	45,062	42,684	42,773	42,945
	-2.8%	*-2.8%*	*0.8%*	*1.2%*	*1.3%*	*0.9%*	*1.9%*	*0.4%*	*-0.5%*	*1.1%*	*1.2%*	*5.7%*	*0.7%*
2015	39,457	36,908	42,703	44,051	45,401	45,790	43,572	43,700	43,992	46,043	43,701	47,747	43,589
	6.2%	*14.9%*	*4.4%*	*1.4%*	*2.9%*	*4.1%*	*3.3%*	*6.3%*	*3.4%*	*2.3%*	*3.8%*	*-9.3%*	*3.4%*
2016	41,896	42,396	44,580	44,670	46,737	47,669	45,004	46,441	45,499	47,080	45,357	43,312	45,053
	3.2%	*1.4%*	*1.4%*	*1.0%*	*1.6%*	*2.0%*	*1.7%*	*0.9%*	*3.9%*	*4.0%*	*3.0%*	*-1.1%*	*1.9%*
2017	43,250	43,008	45,196	45,139	47,491	48,619	45,789	46,860	47,255	48,955	46,715	42,828	45,925
	0.1%	*2.7%*	*0.0%*	*4.0%*	*1.4%*	*0.9%*	*-2.8%*	*-2.0%*	*-5.0%*	*-1.0%*	*-9.1%*	*5.5%*	*-0.5%*
2018	43,289	44,164	45,201	46,965	48,147	49,054	44,492	45,928	44,882	48,454	42,446	45,171	45,683
	-1.3%	*-1.8%*	*-0.9%*	*-1.7%*	*-1.4%*	*-1.3%*	*-0.1%*	*0.0%*	*0.6%*	*-0.8%*	*1.1%*	*-1.2%*	*-0.7%*
2022	41,063	41,048	43,666	43,909	45,582	46,617	44,349	45,860	45,910	46,977	44,409	42,977	44,364
	1.3%	*3.0%*	*-0.5%*	*25.9%*	*-1.8%*	*0.3%*	*-1.6%*	*-0.4%*	*-1.5%*	*0.8%*	*1.2%*	*-0.2%*	*2.2%*
2023	41,584	42,298	43,456	55,261	44,743	46,752	43,638	45,699	45,234	47,363	44,928	42,884	45,320
	0.8%	*1.3%*	*3.1%*	*-17.7%*	*5.7%*	*1.0%*	*2.3%*	*0.5%*	*4.1%*	*2.0%*	*6.6%*	*7.9%*	*1.1%*
2024	41,896	42,854	44,818	45,484	47,311	47,214	44,635	45,921	47,074	48,331	47,894	46,263	45,808
Average Volumes	41,458	41,402	43,843	45,696	46,117	46,848	43,738	45,161	45,373	46,868	44,440	43,770	*44,559*
Seasonal Adjustment Factor (to average month)	1.07	1.08	1.02	0.98	0.97	0.95	1.02	0.99	0.98	0.95	1.00	1.02	

Average Yearly Growth Calculated 0.77%

Yearly Growth Factor Used **1.0%**

ITALICS = ESTIMATED DATA

MADT

- Speed Data

MDM Transportation

Cambridge Street (Route 3A)
At 120 Cambridge Street
Burlington, MA

9/3/2025
Delay Study

SUMMARY	
Average Speed (NB)	33.9
Average Speed (SB)	33.5
85th Percentile (NB)	37.7
85th Percentile (SB)	39.0

	Direction	
Vehicle #	Northbound	Southbound
1	29	40
2	38	30
3	37	32
4	33	37
5	36	36
6	52	32
7	33	31
8	32	32
9	42	33
10	35	25
11	35	28
12	36	33
13	36	35
14	35	41
15	25	35
16	23	26
17	27	31
18	28	30
19	32	32
20	35	28
21	19	34
22	33	35
23	38	21
24	33	30
25	38	41
26	44	37
27	33	37
28	32	21
29	33	31
30	30	26
31	39	55
32	37	35
33	32	34
34	35	32
35	32	28
36	27	25
37	30	34
38	36	31
39	32	33
40	36	35
41	34	26
42	34	41
43	31	40
44	37	36
45	36	41
46	32	33
47	35	34
48	34	31
49	31	53
50	42	36

□ Sight Distance Calculations

Stopping Sight Distance - Posted

Cambridge Street

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	SB	35	128.625	117.4	246.0
Direction 2	NB	35	128.625	117.4	246.0

INPUTS	Direction 1	Direction 2
Travel Direction	SB	NB
Speed	35	35
Grade	0	0
t	2.5	2.5
a	11.2	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = V^2 / (30 x ((a/32.2)+G))

Where:
t = reaction time (sec)
V = travel speed (mph)
G= roadway grade
a - deceleration rate (ft/sec^2)

Stopping Sight Distance - 85th Percentile

Cambridge Street

		SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE (FT)	CALCULATED STOPPING SIGHT DISTANCE (FT)
Direction 1	SB	39	143.325	145.8	289.1
Direction 2	NB	38	139.65	138.4	278.0

INPUTS	Direction 1	Direction 2
Travel Direction	SB	NB
Speed	39	38
Grade	0	0
t	2.5	2.5
a	11.2	11.2

Stopping Sight Distance (SSD) - Source: AASHTO

SSD = Reaction Distance + Brake Distance

Reaction Distance = 1.47 x t x V

Brake Distance = V^2 / (30 x ((a/32.2)+G))

Where:
t = reaction time (sec)
V = travel speed (mph)
G= roadway grade
a - deceleration rate (ft/sec^2)

Intersection Sight Distance Calculations

Source: *A Policy on Geometric Design of Highways and Street, 7th Edition;* AASHTO; 2018.

Passenger Car
ISD = 1.47 * V * t

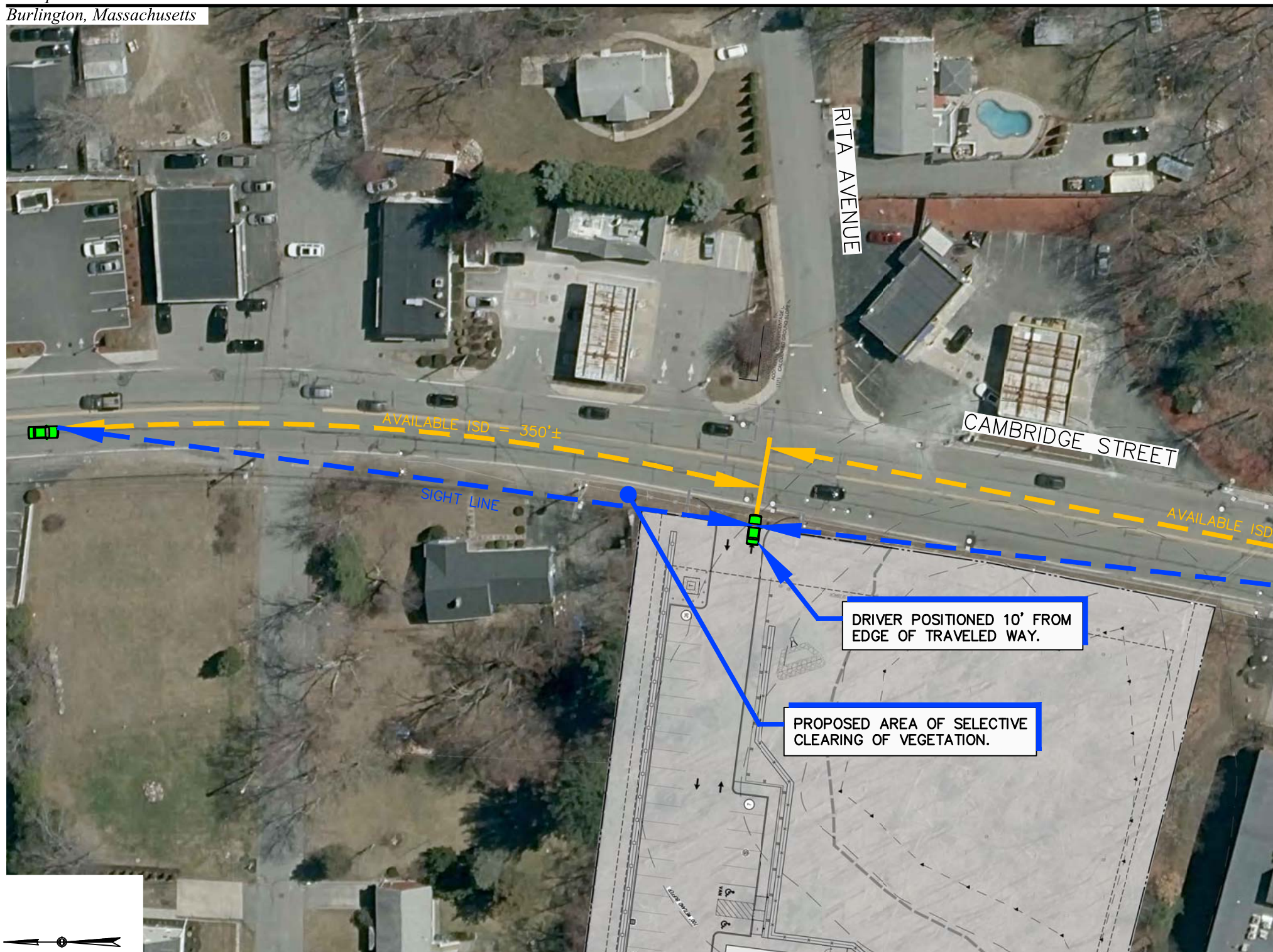
V = speed
t = time gap

t = 7.5 s for a passenger car for Left Turn from a Stop
t = 6.5 s for a passenger car for Right Turn from a Stop

Cambridge Street

		Speed Limit		Ideal ISD	SAY	
Site Driveway (left-turn from a stop)	ISD = 1.47*	35	* 7.5 =	385.875	**390 feet**	Look South
		Speed Limit		Ideal ISD	SAY	
Site Driveway (right-turn from a stop)	ISD = 1.47*	35	* 6.5 =	334.425	**335 feet**	Look North

Posted


RITA AVENUE
CAMBRIDGE STREET
AVAILABLE ISD = 350'±
SIGHT LINE
AVAILABLE ISD
DRIVER POSITIONED 10' FROM EDGE OF TRAVELED WAY.
PROPOSED AREA OF SELECTIVE CLEARING OF VEGETATION.

- Crash Data

Crash Number	City Town Name	Crash Date	Crash Severity	Crash Time	Crash Year	Max Injury Severity Reported	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	RMV Document Numbers	Road Surface Condition	Roadway Junction Type	Total Fatalities	Total Non-Fatal Injuries	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Vehicle Emergency Use (All Vehicles)	Vehicle Towed From Scene (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weat Conc
Cambridge Street at Rita Avenue																							
5187967	BURLINGTON	12/01/2022	Non-fatal injury	5:01 PM	2022	Suspected Minor Injury (B)	2	D1: (Unknown) / D2: (Unknown)		Collision with motor vehicle in traffic	Dark - lighted roadway	Angle	PW202234801534	Dry	Not at junction	0	1	V1: Turning left / V2: Travelling straight ahead	V1:(Passenger car) / V2:(Passenger car)	V1:(No) / V2:(No)	V1:(Yes, vehicle or trailer disabled) / V2:(Yes, vehicle or trailer disabled)	V1: W / V2: N	Clear
5371860	BURLINGTON	03/05/2024	Property damage only (none injured)	1:59 PM	2024	No Apparent Injury (O)	2	D1: (Unknown) / D2: (Unknown)	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction	PW20244395547	Wet	Not at junction	0	0	V1: Travelling straight ahead / V2: Turning left	V1:(Passenger car) / V2:(Passenger car)	V1:(No) / V2:(No)	V1:(No) / V2:(No)	V1: S / V2: S	Clou

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Burlington, MA COUNT DATE : Sep-25

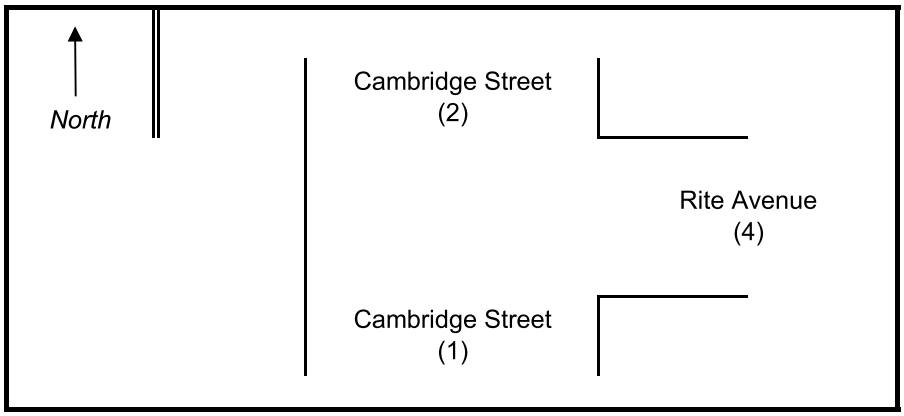
DISTRICT : 4 UNSIGNALIZED : X SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Cambridge Street

MINOR STREET(S) : Rite Avenue

INTERSECTION DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (PM) :	923	547	0	25		1,495

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **16,611**

TOTAL # OF CRASHES : 2

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.40**

CRASH RATE CALCULATION : **0.07**

RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : MassDOT District 4 Avg: Signalized = 0.73; Unsignalized = 0.57

Project Title & Date: 1451 - Burlington

- Trip Generation

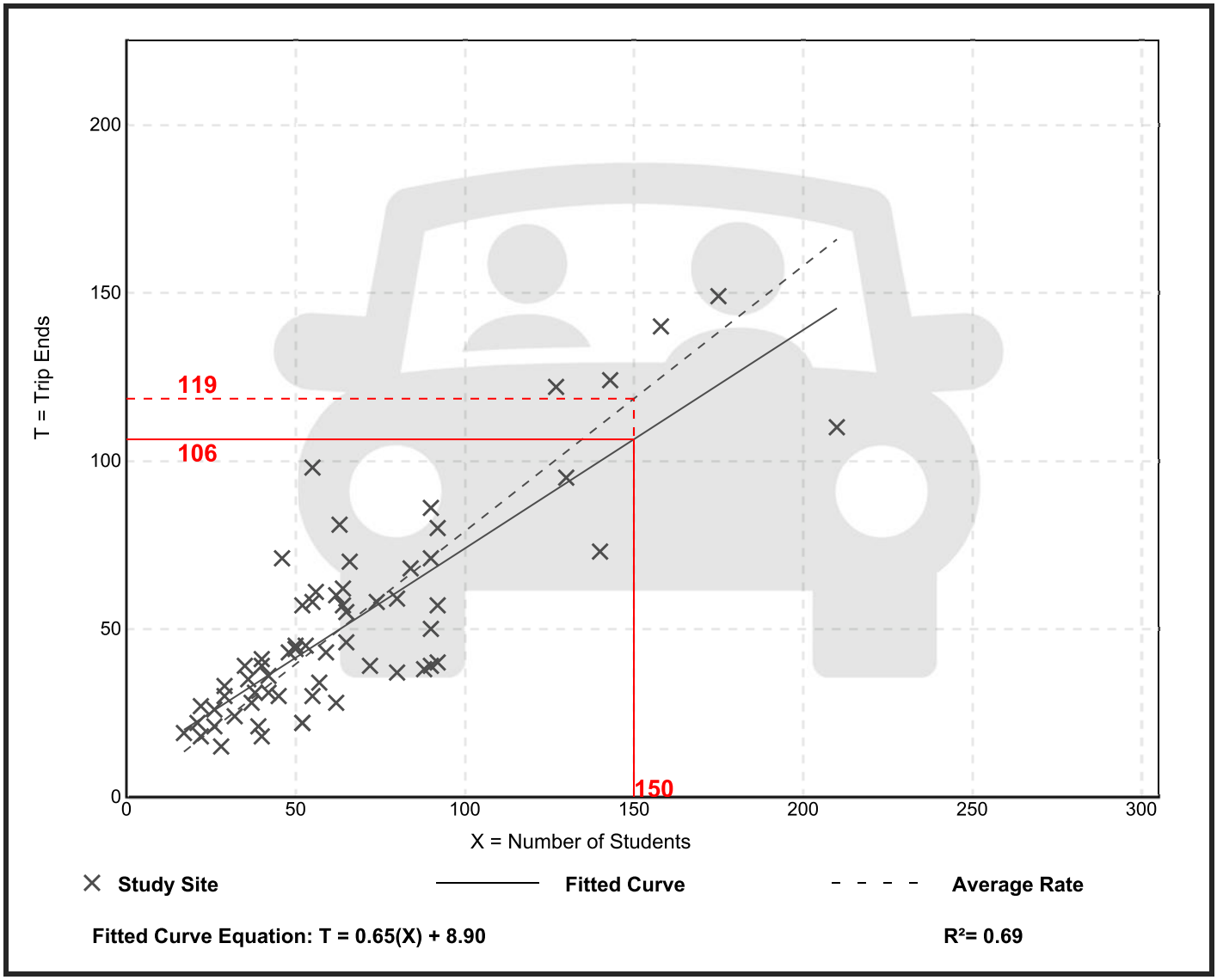
Day Care Center
(565)

Vehicle Trip Ends vs:	**Students**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	63
Avg. Num. of Students:	66
Directional Distribution:	53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.42 - 1.78	0.26

Data Plot and Equation



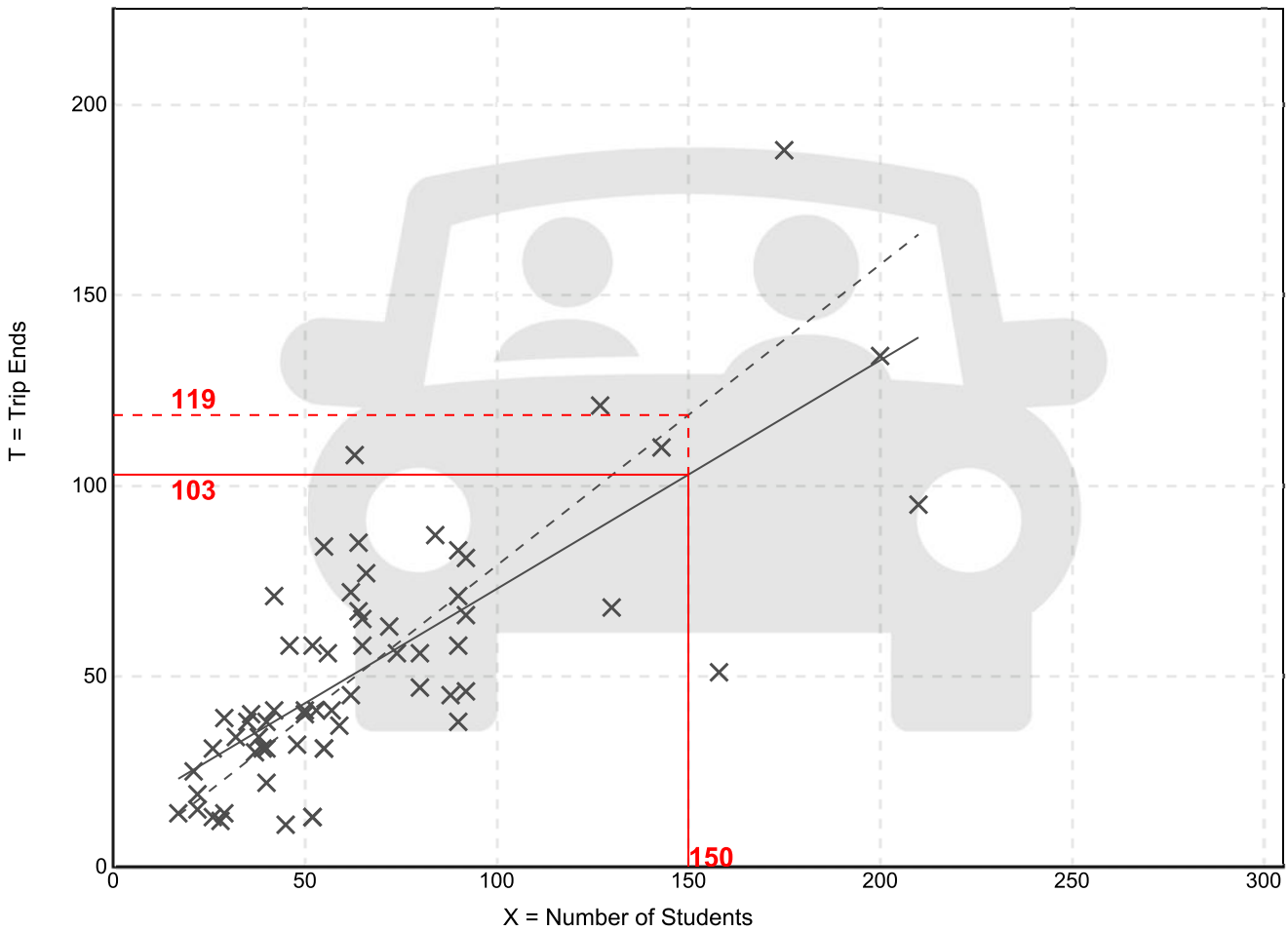
Day Care Center
(565)

Vehicle Trip Ends vs: **Students**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 63
Avg. Num. of Students: 67
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.71	0.31

Data Plot and Equation



Fitted Curve Equation: T = 0.60(X) + 12.86

R^2= 0.57

Day Care Center
(565)

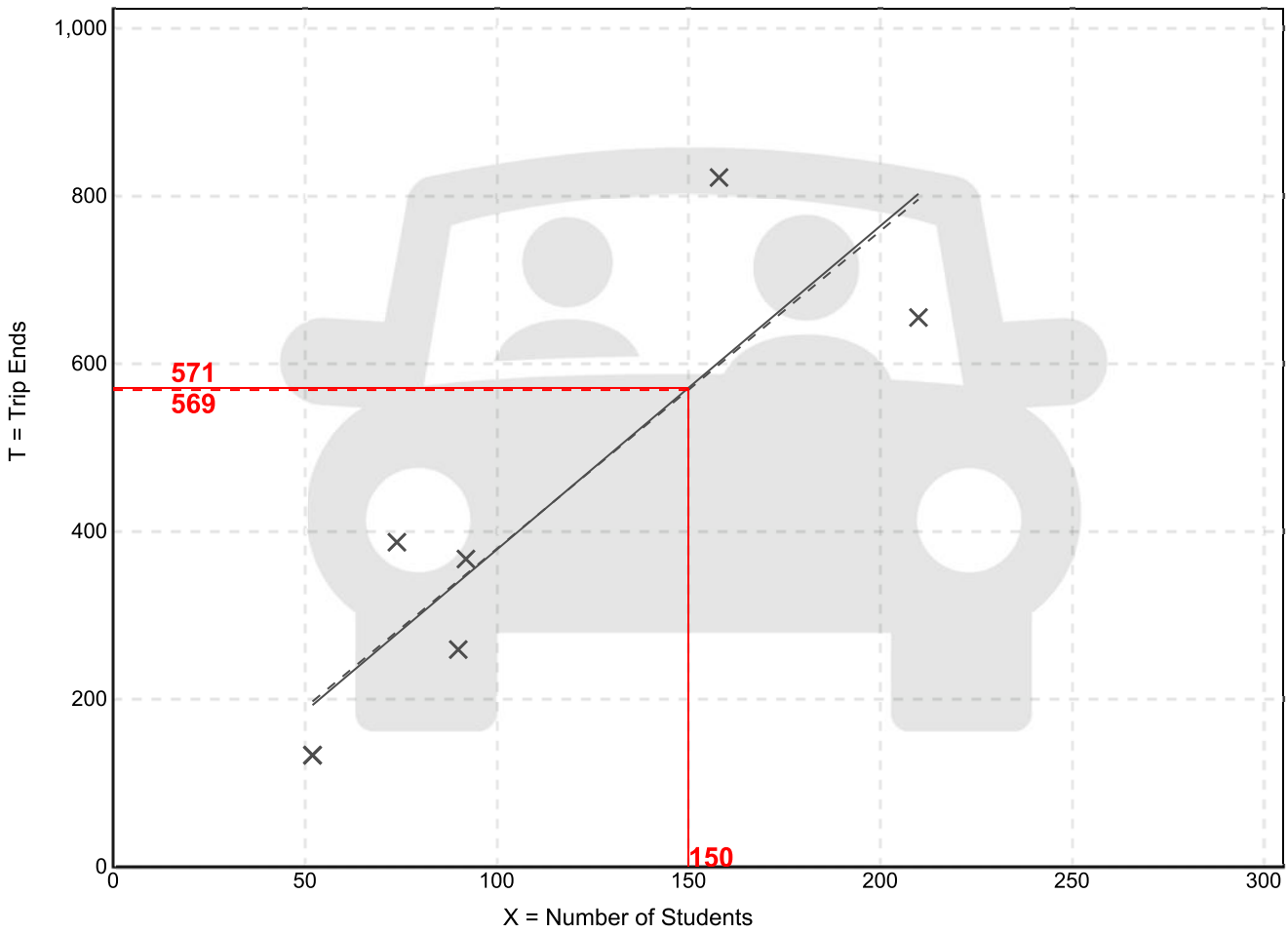
Vehicle Trip Ends vs: **Students**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 7
Avg. Num. of Students: 104
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
3.79	2.56 - 5.23	1.13

Data Plot and Equation



Fitted Curve Equation: T = 3.86(X) - 8.02

R^2= 0.76

□ Delay Study

MDM Transportation

Cambridge Street (Route 3A)
At Rita Avenue
Burlington, MA

9/4/2025
Delay Study

SUMMARY	
Total Vehicle Count	42
Average Delay	0:10
Maximum Delay	1:01
Total Delay	6:44

Vehicle #	Arrived	Departed	Delay	Movement	Note
1	7:14:27 AM	7:15:07 AM	0:40	Left	
2	7:15:03 AM	7:15:10 AM	0:07	Left	
3	7:15:27 AM	7:15:31 AM	0:04	Left	
4	7:15:47 AM	7:15:48 AM	0:01	Left	
5	7:16:48 AM	7:17:05 AM	0:17	Left	
6	7:20:07 AM	7:20:13 AM	0:06	Left	
7	7:20:41 AM	7:20:43 AM	0:02	Right	
8	7:20:48 AM	7:20:55 AM	0:07	Left	
9	7:23:05 AM	7:23:07 AM	0:02	Left	
10	7:23:23 AM	7:23:25 AM	0:02	Left	
11	7:25:23 AM	7:25:33 AM	0:10	Left	
12	7:25:27 AM	7:25:38 AM	0:11	Left	
13	7:27:42 AM	7:27:44 AM	0:02	Right	
14	7:32:37 AM	7:32:49 AM	0:12	Left	
15	7:33:09 AM	7:33:17 AM	0:08	Left	*Police Cruiser*
16	7:35:25 AM	7:35:27 AM	0:02	Right	
17	7:38:03 AM	7:38:11 AM	0:08	Left	
18	7:41:18 AM	7:41:22 AM	0:04	Left	*School Bus*
19	7:41:25 AM	7:42:01 AM	0:36	Left	
20	7:41:53 AM	7:42:06 AM	0:13	Left	
21	7:42:00 AM	7:42:14 AM	0:14	Right	
22	7:42:12 AM	7:42:18 AM	0:06	Left	
23	7:45:13 AM	7:45:30 AM	0:17	Left	
24	7:49:57 AM	7:50:01 AM	0:04	Left	*School Bus*
25	7:51:14 AM	7:51:21 AM	0:07	Left	
26	7:53:18 AM	7:53:21 AM	0:03	Right	
27	7:53:29 AM	7:53:31 AM	0:02	Right	
28	7:56:13 AM	7:56:14 AM	0:01	Left	
29	7:58:09 AM	7:58:14 AM	0:05	Left	
30	7:58:12 AM	7:58:24 AM	0:12	Left	
31	8:01:11 AM	8:02:12 AM	1:01	Left	
32	8:02:25 AM	8:02:27 AM	0:02	Left	
33	8:03:46 AM	8:03:49 AM	0:03	Left	
34	8:04:42 AM	8:04:51 AM	0:09	Left	
35	8:04:56 AM	8:05:02 AM	0:06	Left	
36	8:06:50 AM	8:07:05 AM	0:15	Left	
37	8:06:55 AM	8:07:07 AM	0:12	Right	
38	8:07:24 AM	8:07:29 AM	0:05	Left	
39	8:10:21 AM	8:10:23 AM	0:02	Right	
40	8:13:23 AM	8:13:41 AM	0:18	Right	
41	8:14:14 AM	8:14:18 AM	0:04	Right	
42	8:14:51 AM	8:14:53 AM	0:02	Right	

MDM Transportation

Cambridge Street (Route 3A)
At Rita Avenue
Burlington, MA

9/4/2025
Delay Study

SUMMARY	
Total Vehicle Count	26
Average Delay	0:18
Maximum Delay	1:02
Total Delay	7:48

Vehicle #	Arrived	Departed	Delay	Movement	Note
1	5:00:17 PM	5:00:20 PM	0:03	Right	
2	5:00:22 PM	5:00:34 PM	0:12	Left	
3	5:01:34 PM	5:01:37 PM	0:03	Left	
4	5:02:41 PM	5:03:06 PM	0:25	Left	*Waited for pedestrian*
5	5:03:33 PM	5:03:36 PM	0:03	Left	
6	5:06:48 PM	5:07:50 PM	1:02	Left	
7	5:07:28 PM	5:08:21 PM	0:53	Left	
8	5:11:30 PM	5:11:41 PM	0:11	Right	
9	5:13:09 PM	5:13:51 PM	0:42	Left	
10	5:14:04 PM	5:14:06 PM	0:02	Left	
11	5:14:32 PM	5:15:07 PM	0:35	Left	
12	5:18:24 PM	5:18:26 PM	0:02	Right	
13	5:21:47 PM	5:21:49 PM	0:02	Left	
14	5:24:11 PM	5:24:32 PM	0:21	Left	
15	5:25:00 PM	5:25:34 PM	0:34	Left	
16	5:25:21 PM	5:25:35 PM	0:14	Right	
17	5:32:12 PM	5:32:44 PM	0:32	Left	
18	5:34:31 PM	5:34:37 PM	0:06	Left	
19	5:35:53 PM	5:35:58 PM	0:05	Left	
20	5:37:21 PM	5:37:29 PM	0:08	Left	
21	5:43:57 PM	5:43:59 PM	0:02	Left	
22	5:45:18 PM	5:45:20 PM	0:02	Right	
23	5:49:44 PM	5:49:59 PM	0:15	Left	
24	5:52:07 PM	5:52:38 PM	0:31	Left	
25	5:53:29 PM	5:54:09 PM	0:40	Left	
26	5:56:29 PM	5:56:32 PM	0:03	Right	

□ Capacity Analysis

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	11	432	8	3	1010
Future Vol, veh/h	31	11	432	8	3	1010
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	0	5	0	0	2
Mvmt Flow	34	12	470	9	3	1098

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1578	474	0	0	478	0
Stage 1	474	-	-	-	-	-
Stage 2	1104	-	-	-	-	-
Critical Hdwy	2.4	2.4	-	-	4.1	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	697	981	-	-	1095	-
Stage 1	616	-	-	-	-	-
Stage 2	310	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	692	981	-	-	1095	-
Mov Cap-2 Maneuver	692	-	-	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	308	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.11	0	0.02
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	750	5	-
HCM Lane V/C Ratio	-	-	0.061	0.003	-
HCM Ctrl Dly (s/v)	-	-	10.1	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	6	895	28	6	541
Future Vol, veh/h	19	6	895	28	6	541
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	20	6	962	30	6	582

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1572	977	0	0	992	0
Stage 1	977	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Critical Hdwy	4.6	4.6	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	269	474	-	-	705	-
Stage 1	368	-	-	-	-	-
Stage 2	555	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	266	474	-	-	705	-
Mov Cap-2 Maneuver	266	-	-	-	-	-
Stage 1	368	-	-	-	-	-
Stage 2	548	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	18.33	0	0.11
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	297	20	-
HCM Lane V/C Ratio	-	-	0.091	0.009	-
HCM Ctrl Dly (s/v)	-	-	18.3	10.2	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	12	463	9	3	1083
Future Vol, veh/h	33	12	463	9	3	1083
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	7	0	5	0	0	2
Mvmt Flow	36	13	503	10	3	1177

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1692	508	0	0	513	0
Stage 1	508	-	-	-	-	-
Stage 2	1184	-	-	-	-	-
Critical Hdwy	2.4	2.4	-	-	4.1	-
Critical Hdwy Stg 1	5.47	-	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-	-
Follow-up Hdwy	3.563	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	674	973	-	-	1063	-
Stage 1	594	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	668	973	-	-	1063	-
Mov Cap-2 Maneuver	668	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	281	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	10.29	0	0.02
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	729	5	-
HCM Lane V/C Ratio	-	-	0.067	0.003	-
HCM Ctrl Dly (s/v)	-	-	10.3	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	6	960	30	6	580
Future Vol, veh/h	20	6	960	30	6	580
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	0	1	0	0	2
Mvmt Flow	22	6	1032	32	6	624

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1685	1048	0	0	1065	0
Stage 1	1048	-	-	-	-	-
Stage 2	637	-	-	-	-	-
Critical Hdwy	4.6	4.6	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	243	445	-	-	662	-
Stage 1	340	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	239	445	-	-	662	-
Mov Cap-2 Maneuver	239	-	-	-	-	-
Stage 1	340	-	-	-	-	-
Stage 2	523	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	20	0	0.11
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	268	18	-
HCM Lane V/C Ratio	-	-	0.104	0.01	-
HCM Ctrl Dly (s/v)	-	-	20	10.5	0
HCM Lane LOS	-	-	C	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	0	36	33	0	12	22	463	9	3	1083	41
Future Vol, veh/h	20	0	36	33	0	12	22	463	9	3	1083	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	7	2	0	2	5	0	0	2	2
Mvmt Flow	22	0	39	36	0	13	24	503	10	3	1177	45

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1757	1767	1199	1740	1784	508	1222	0	0	513	0	0
Stage 1	1206	1206	-	556	556	-	-	-	-	-	-	-
Stage 2	551	561	-	1184	1228	-	-	-	-	-	-	-
Critical Hdwy	2.4	2.4	2.4	2.4	2.4	2.4	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.17	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.17	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.563	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	664	632	806	664	629	973	571	-	-	1063	-	-
Stage 1	224	257	-	507	513	-	-	-	-	-	-	-
Stage 2	519	510	-	226	250	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	610	589	806	589	586	973	571	-	-	1063	-	-
Mov Cap-2 Maneuver	610	589	-	589	586	-	-	-	-	-	-	-
Stage 1	222	254	-	477	483	-	-	-	-	-	-	-
Stage 2	482	480	-	213	248	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	10.43	10.91	0.52	0.02
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	80	-	-	723	658	5	-	-
HCM Lane V/C Ratio	0.042	-	-	0.084	0.074	0.003	-	-
HCM Ctrl Dly (s/v)	11.6	0	-	10.4	10.9	8.4	0	-
HCM Lane LOS	B	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	40	0	21	20	0	6	35	960	30	6	580	19
Future Vol, veh/h	40	0	21	20	0	6	35	960	30	6	580	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	0	2	0	2	1	0	0	2	2
Mvmt Flow	43	0	23	22	0	6	38	1032	32	6	624	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1754	1787	634	1760	1781	1048	644	0	0	1065	0	0
Stage 1	647	647	-	1124	1124	-	-	-	-	-	-	-
Stage 2	1108	1140	-	637	657	-	-	-	-	-	-	-
Critical Hdwy	4.6	4.6	4.6	4.6	4.6	4.6	4.12	-	-	4.1	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.1	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.5	4.018	3.3	2.218	-	-	2.2	-	-
Pot Cap-1 Maneuver	227	211	637	227	212	445	941	-	-	662	-	-
Stage 1	460	467	-	252	281	-	-	-	-	-	-	-
Stage 2	255	276	-	469	462	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	199	187	637	194	188	445	941	-	-	662	-	-
Mov Cap-2 Maneuver	199	187	-	194	188	-	-	-	-	-	-	-
Stage 1	453	460	-	227	253	-	-	-	-	-	-	-
Stage 2	226	249	-	446	455	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	23.4	23.44	0.31	0.1
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	61	-	-	261	223	18	-	-
HCM Lane V/C Ratio	0.04	-	-	0.252	0.125	0.01	-	-
HCM Ctrl Dly (s/v)	9	0	-	23.4	23.4	10.5	0	-
HCM Lane LOS	A	A	-	C	C	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1	0.4	0	-	-

- [ ] Parking Analysis

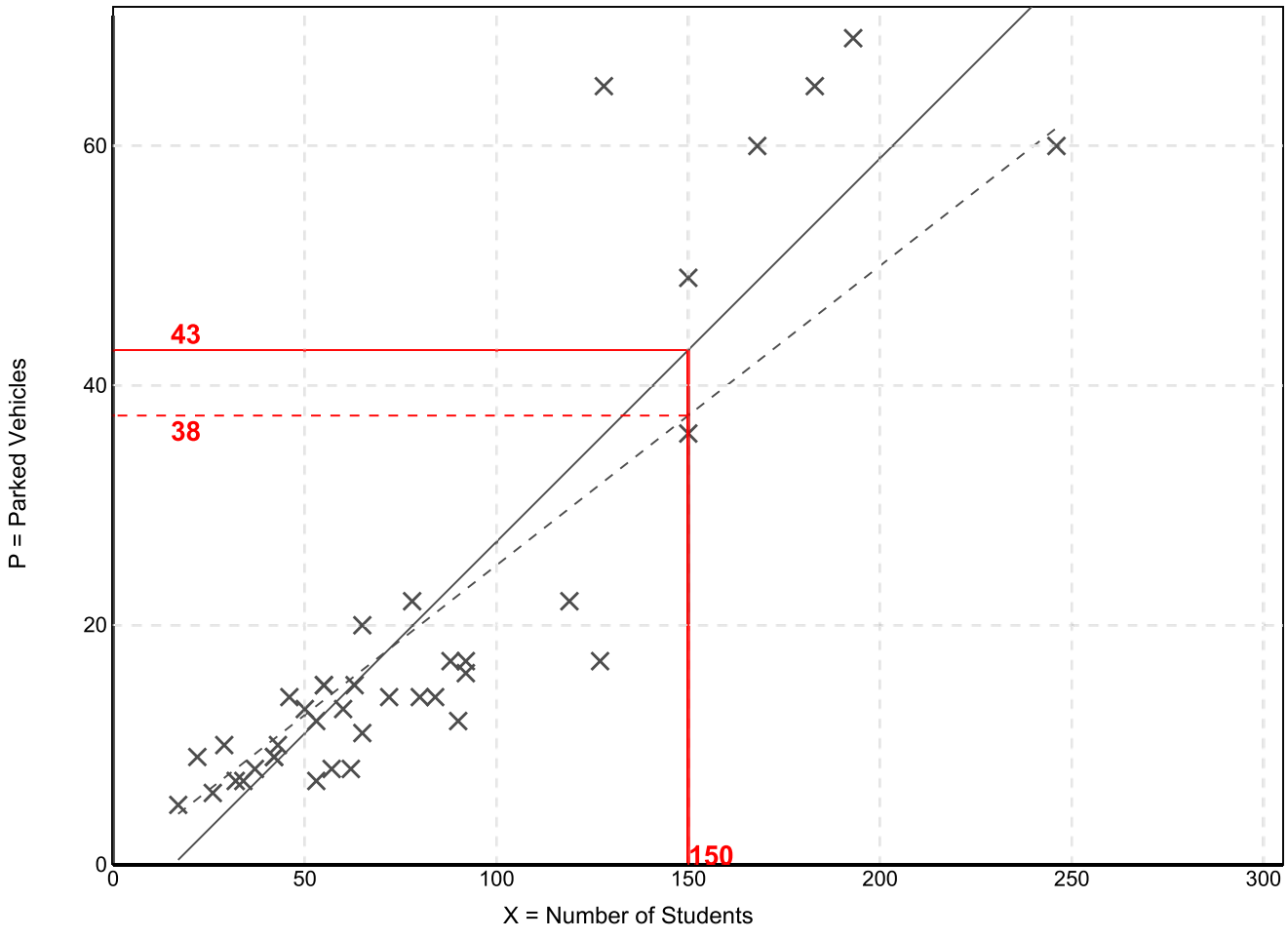
Day Care Center
(565)

Peak Period Parking Demand vs: **Students**
On a: **Weekday (Monday - Friday)**
Setting/Location: **General Urban/Suburban**
Number of Studies: 39
Avg. Num. of Students: 81

Peak Period Parking Demand per Student

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.25	0.13 - 0.51	0.20 / 0.34	0.22 - 0.28	0.09 (36%)

Data Plot and Equation



Fitted Curve Equation: P = 0.32(X) - 5.03

R^2= 0.80

MDM Transportation

9/4/2025

The Learning Experience
515 West Central Street
Franklin, MA

Parking Occupancy

Effective Enrollment: 75 Students
Staffing: 17 Staff

Peak Observed: 18 Spaces
Peak Rate (Per Student): 0.240

	Hourly Peak Parking
12:00	1
1:00	0
2:00	0
3:00	0
4:00	0
5:00	1
6:00	3
7:00	7
8:00	17
9:00	18
10:00	16
11:00	16
12:00	16
1:00	17
2:00	15
3:00	17
4:00	15
5:00	13
6:00	5
7:00	2
8:00	2
9:00	2
10:00	2
11:00	1

MDM Transportation

5/4/2023

The Goddard School
332 Concord Avenue
Lexington, MA

Parking Occupancy

Effective Enrollment: 150 Students
Staffing: 25 Staff

Peak Observed: 36 Spaces
Peak Rate (Per Student): 0.240

	Hourly Peak Parking
12:00	0
1:00	0
2:00	0
3:00	0
4:00	0
5:00	0
6:00	0
7:00	22
8:00	35
9:00	36
10:00	30
11:00	30
12:00	27
1:00	22
2:00	20
3:00	13
4:00	24
5:00	36
6:00	3
7:00	0
8:00	0
9:00	0
10:00	0
11:00	0

MDM Transportation

5/29/2019

Primrose School
296 N Main Street
Natick, MA

Parking Occupancy

Effective Enrollment: 124 Students

Peak Observed: 18 Spaces
Peak Rate (Per Student): 0.274

	Hourly Peak Parking
12:00	0
1:00	0
2:00	0
3:00	0
4:00	0
5:00	0
6:00	6
7:00	15
8:00	26
9:00	34
10:00	34
11:00	34
12:00	31
1:00	29
2:00	28
3:00	29
4:00	29
5:00	31
6:00	8
7:00	0
8:00	0
9:00	0
10:00	0
11:00	0

BrightPath- 1 St. John's Place, Simsbury, CT

AM OBSERVATIONS	
TIME	**Occupied Spaces**
6:00 AM	0
6:10 AM	1
6:20 AM	3
6:30 AM	5
6:40 AM	7
6:50 AM	9
7:00 AM	12
7:10 AM	14
7:20 AM	19
7:30 AM	18
7:40 AM	24
7:50 AM	31
8:00 AM	28
8:10 AM	31
8:20 AM	26
8:30 AM	29
8:40 AM	31
8:50 AM	30
9:00 AM	32
Maximum Occupied Spaces	**32**
Average Occupied Spaces	**18**

PM OBSERVATIONS	
TIME	**Occupied Spaces**
3:00 PM	34
3:10 PM	35
3:20 PM	35
3:30 PM	32
3:40 PM	37
3:50 PM	34
4:00 PM	35
4:10 PM	36
4:20 PM	34
4:30 PM	34
4:40 PM	39
4:50 PM	41
5:00 PM	41
5:10 PM	29
5:20 PM	36
5:30 PM	30
5:40 PM	22
5:50 PM	18
6:00 PM	12
Maximum Occupied Spaces	**41**
Average Occupied Spaces	**32**

Data collected Wednesday 9/20/23