Updated Transportation Impact Assessment

Proposed Daycare Center
665 & 711 Blue Hill Avenue (Route 138)
Milton, Massachusetts

Prepared for:

THE GARDNER SCHOOL

Franklin, Tennessee

November 2024

Prepared by:

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has prepared this Updated Transportation Impact Assessment (UTIA) to identify traffic impacts associated with a proposed daycare center to be located at 665 & 771 Blue Hill Avenue (Route 138) in Milton, Massachusetts (the "Project"). This assessment was prepared as an update to a TIA prepared in August 2024 and is being issued to respond to comments prepared by the Town of Milton's peer review consultant, dated October 30,2024. The original TIA was prepared in consultation with the Town of Milton and the Massachusetts Department of Transportation (MassDOT) and was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports.

PROPOSED PROJECT

The Project entails the construction of a 16,200 square foot (sf) daycare center with an anticipated enrollment of 195 students. As part of this Project, a total of 57 parking spaces will be provided on-site for employees and visitors (or a parking ratio of 0.29 parking spaces per student). The Project site encompasses approximately 6.85± acres of undeveloped land that is bounded by Route 138 to the east and residential properties and areas of open and wooded space to the west, north, and south. Access to the Project site will be provided by way of a new driveway that will intersect the west side of Route 138 approximately 0.13 miles south of Barbara Lane.

EXISTING CONDITIONS

A comprehensive field inventory of traffic conditions on the study area roadways and intersections was originally conducted in June 2024 and was updated in November 2024. In order to assess the existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts and turning movement counts (TMCs) with vehicle classification were conducted in November 2024.

The ATR machine placed on Route 138 at the proposed site driveway location, captured traffic data from November 6 to November 7, 2024 (Wednesday through Thursday, inclusive). The TMCs were collected on November 6, 2024, during the weekday morning and evening peak periods. Based on the MassDOT database, traffic volumes collected in November are 6 percent higher than the average-month conditions. As such, the traffic volumes were not adjusted downward,

maintaining a conservative (higher than average) traffic-volume condition. The TMCs were performed when weather conditions were generally clear. For comparison, the daily and weekday morning peak-hour traffic volumes from November were approximately 2 percent higher than these volumes from June, while weekday evening peak-hour volumes were comparable between both months.

Regarding safety, all study intersections were found to have a motor vehicle crash rate *below* the MassDOT average for District 6, where the Project is located. Additionally, no fatalities or accidents involving pedestrians and bicycles were reported at any of the study area intersections over the five-year period reviewed.

FUTURE CONDITIONS

Traffic volumes within the study area were projected to 2031, which reflects a seven-year planning horizon consistent with State traffic study guidelines. A 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area. Based on discussions with the Town of Milton, one proposed residential development was identified. MassDOT was contacted to identify any planned roadway improvements within the study area. One project was noted at the intersection of Route 138 and Bradlee Road (Project # 612616). However, this project is still in the planning phase, with design and programming not expected within the analysis horizon for this Project.

PROJECT-GENERATED TRAFFIC

The Project is expected to generate 137 vehicle trips (73 entering and 64 exiting) during the weekday morning peak-hour and 131 vehicle trips (62 entering and 69 exiting) during the weekday evening peak-hour. On an average weekday, approximately 399 vehicle trips are expected to enter and exit the site over a 24-hour period.

TRAFFIC OPERATIONS ANALYSIS

In order to assess the impact of the proposed Project on the roadway network, traffic operation analyses were conducted at the study intersections under 2024 Existing, 2031 No-Build, and 2031 Build conditions. Based on this assessment, we have concluded the following with respect to the Project:

- The analysis indicates that the proposed daycare center is not expected to significantly impact overall traffic operations at the study area intersections.

- Overall, Project-related impacts are defined as a predicted increase in overall average motorist delay of less than 2.0 seconds with an increase in vehicle queuing of up to 3 vehicles, compared to the future No-Build condition.

RECOMMENDATIONS

The following improvements have been recommended as a part of this evaluation:

Project Access

Access to the Project site will be provided via a full-access driveway onto the west side of Route 138. The following recommendations are offered with respect to the design and operation of this access:

- The Project site driveway is consistent with local zoning requirements[1] that indicate the site driveway should be a minimum of 24 feet in width and be designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.

- The maneuvering aisles within parking areas are consistent with local zoning requirements[2] that indicate the aisles should be a minimum width of 20 feet for two-way traffic.

- The Project site driveway should be placed under STOP-sign (*Manual on Uniform Traffic Control Devices* (MUTCD)[3] R1-1) control, with a painted STOP-bar included.

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.

- Existing trees and vegetation located within the sight triangle areas of the Project site driveway should be selectively trimmed or removed and maintained in order to provide the necessary sightlines for safe operation of the driveway.

- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sightlines.

Transportation Demand Management

Public transportation services are provided within the study area by the Massachusetts Bay Transit Authority (MBTA). The MBTA provides a fixed-route bus service with a flag stop bus stop on Route 138 between Valentine Road and Barbara Lane, which is located approximately 0.1 mile (a 4-minute walk) north of the Project site.

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following Transportation Demand Management (TDM) measures are recommended as a part of the Project:

- A transportation coordinator should be designated for the Project to coordinate the elements of the TDM Program.

- Information about public transportation services, including maps, schedules, and fare details, should be posted in a central location and/or made available to employees.

- A "welcome packet" should be provided to employees detailing available public transportation services, bicycling opportunities, and commuter options.

- The designated transportation coordinator should facilitate carpool matching for

[1]Zoning By-law of the Town of Milton § 275-11.6.E.

[2]Zoning By-law of the Town of Milton § 275-11.8.D.

[3]*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, DC; 2009.

employees.

- Access to the Bay State Commute program (formerly called NuRide) service should be made available to all employees. Bay State Commute is a free online database service to find carpool companions.

- Specific amenities should be offered to discourage off-site trips, including providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; and other such measures to reduce overall traffic volumes and travel during peak-traffic-volume periods.

With implementation of the aforementioned recommendations, including the TDM measures (which are advised but not mandatory), safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

CONCLUSIONS

As documented in this study, Project-related traffic increases will not result in significant increases in traffic volumes or traffic delays within the study area. The Project site driveway will provide safe and efficient access to and from the development. In general, Project-related traffic can be adequately accommodated within the existing and future infrastructure with minimal impact on the traffic operations within the study area.

INTRODUCTION

VAI has prepared this UTIA in order to identify the traffic impacts associated with the proposed daycare center to be located at 665 & 771 Blue Hill Avenue (Route 138) in Milton, Massachusetts. This study evaluates the following specific areas as they relate to the Project: i) site access and on-site circulation; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing and future traffic conditions, both with and without the Project.

STUDY METHODOLOGY

This study was prepared in accordance with MassDOT *Transportation Impact Assessment (TIA) Guidelines*; the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian facilities; observations of traffic flow; review of safety characteristics along area roadways; and collection of daily and peak-period traffic counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon was selected for analyses consistent with State guidelines for the preparation of TIAs. The traffic analysis conducted in stage two identifies existing or projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in June 2024. The field investigation consisted of an inventory of existing roadway geometrics, pedestrian facilities, traffic volumes, and operating characteristics, as well as posted speed limits and land use information for the roadways that provide access to the Project including Blue Hill Avenue (Route 138) as well as the intersections which are expected to accommodate the majority of Project-related traffic. The study area for the Project is listed below and graphically depicted in Figure 1 (collectively, the "*study area*").

1. Blue Hill Avenue (Route 138) at Bradlee Road and Atherton Street
2. Blue Hill Avenue (Route 138) at Robbins Street

The following describes the study area roadway and intersections:

GEOMETRY

Roadway

Blue Hill Avenue (Route 138)

Route 138 is classified as an urban principal arterial roadway under MassDOT jurisdiction. Within the study area, Route 138 runs in a general north-to-south alignment, providing one general-purpose travel lane in each direction separated by a double-yellow centerline. Within the Project site vicinity, Route 138 cross-sections range from 12 to 13 feet in width. Paved shoulders of variable width (6 to 11 feet) are present along both sides of the roadway marked with bicycle arrows. Sidewalk is not provided within the study area. The speed limit is posted at 35 miles per hour (mph). Land use along the corridor is a mix of commercial and residential uses and areas of open and wooded space.

Intersections

Figure 2 summarizes existing lane use, travel lane widths, and sidewalk and crosswalk locations at the study area intersections.

Figure 1

Site Location and Study Area Map

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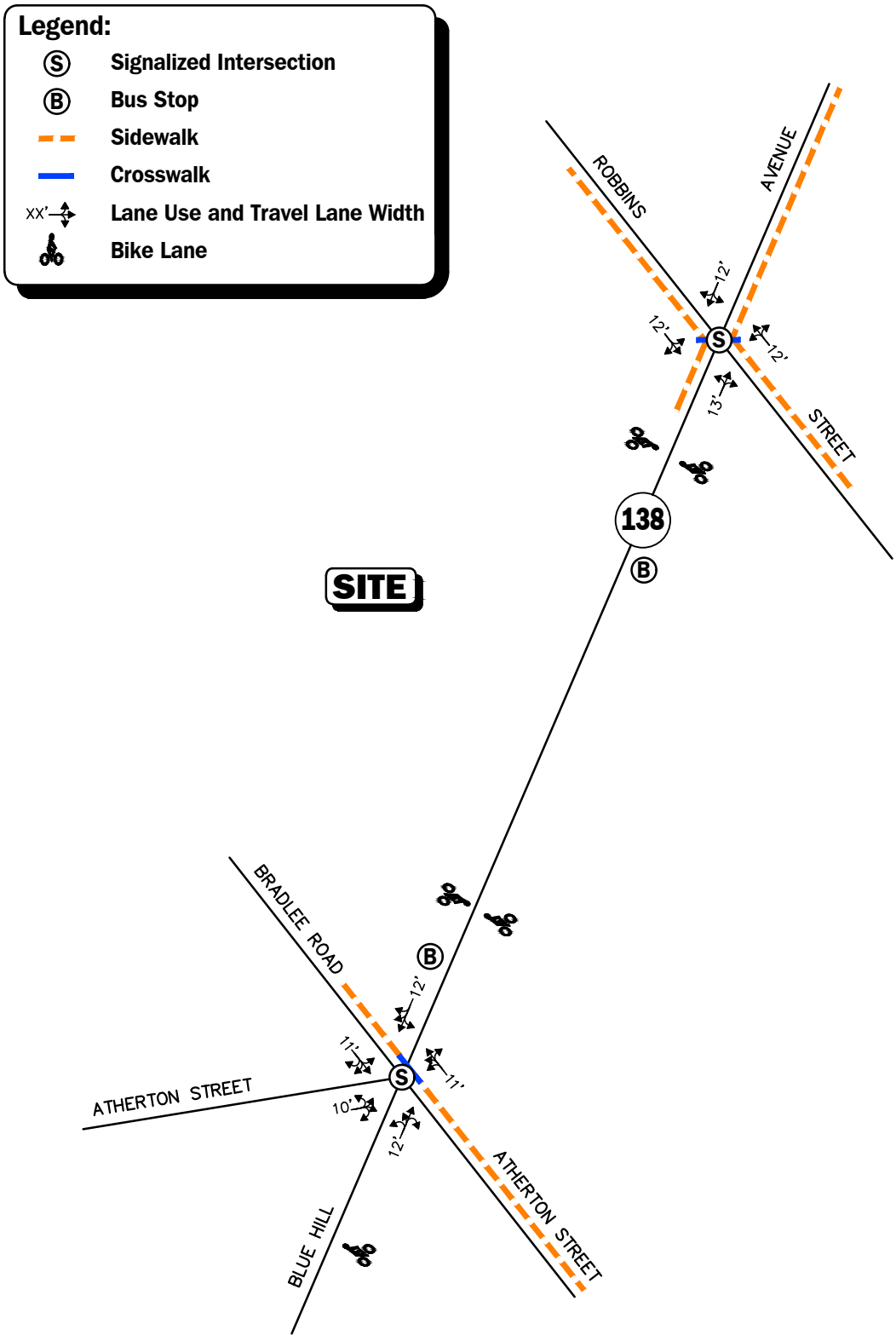

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Figure 2

Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities

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EXISTING TRAFFIC VOLUMES

In order to establish base traffic-volume demands and flow patterns within the study area, ATR counts and TMCs were completed in November 2024. The ATR counts were conducted on Route 138, at the proposed site driveway location, from November 6 through November 7, 2024 (Wednesday through Thursday, inclusive). The TMCs, including the collection of pedestrian and bicycle volumes, were conducted during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods. These times were chosen to represent the peak-traffic-volume hours for both the Project and the adjacent roadway network. The TMCs were performed when weather conditions were generally clear.

Traffic-Volume Adjustments

In order to develop 2024 Existing traffic-volume conditions, MassDOT weekday seasonal factors for Urban Groups 3 (other principal arterials) were reviewed.[4] Based on a review of this data, it was determined that traffic volumes for the month of November are 6 percent higher than the average-month conditions. This is less than the month of June, which is 11 percent higher than the average-month conditions. As such, the traffic volumes were again not adjusted downward, maintaining a conservative (higher than average) traffic-volume condition.

MassDOT no longer requires pandemic-related adjustment of traffic counts performed after March 2022 except in locations where the predominant land use consists of offices or similar uses.[5] Given that the predominant land use within the study area is residential, no further adjustment is necessary.

The 2024 Existing traffic volumes are summarized in Table 1, with the weekday morning and evening peak-hour traffic volumes graphically depicted in Figure 3 and Figure 4, respectively. It is important to note that the peak-hour traffic volumes presented in Table 1 were obtained from the TMCs and are reflected in the aforementioned figures.

Table 1
2024 EXISTING ROADWAY TRAFFIC-VOLUME SUMMARY

	Weekday	Weekday Morning Peak-Hour			Weekday Evening Peak-Hour		
Location	Daily Volume (vpd)[a]	Volume (vph)[b]	Percent of Daily Traffic[c]	Predominant Flow	Volume (vph)	Percent of Daily Traffic	Predominant Flow
Route 138, at the Proposed Site Driveway	13,872	1,041	7.5	55% NB	945	6.8	57% NB

[a]Average weekday traffic in vehicles per day, based on ATR data collected in November 2024.
[b]Two-way peak-hour volume expressed in vehicles per hour.
[c]The percent of daily traffic that occurs during the peak-hour.
NB = northbound.

As can be seen in Table 1, Route 138 was found to accommodate approximately 13,872 vehicles

[4]MassDOT statewide Traffic Data Collection; 2023 Weekday Seasonal Factors, Groups U3.
[5]*25% Design Submission Guidelines*; MassDOT Highway Division, Traffic and Safety Engineering; Revised May 31, 2022.

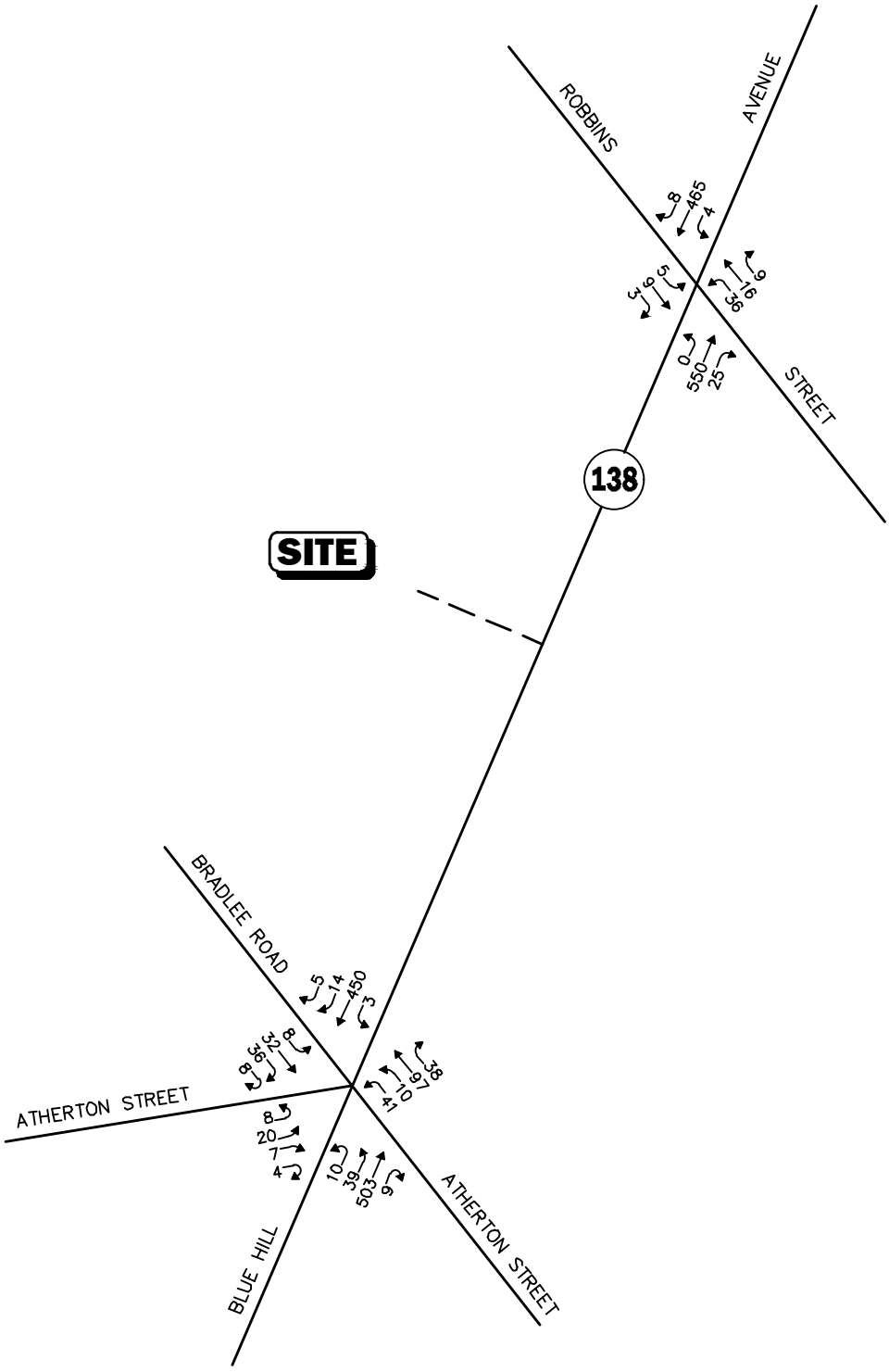

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Figure 3

2024 Existing
Weekday Morning
Peak-Hour Traffic Volumes

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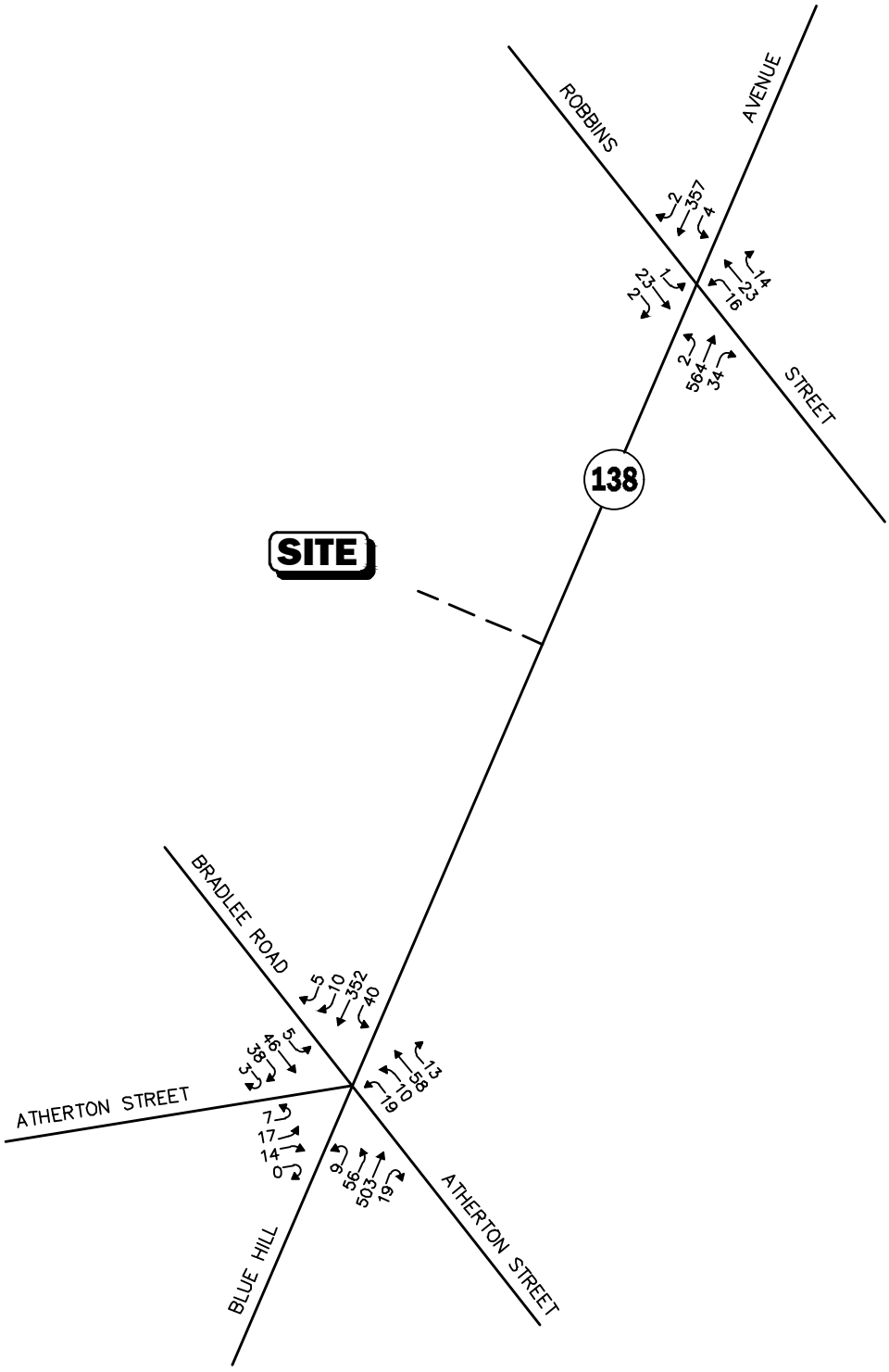

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Figure 4

2024 Existing
Weekday Evening
Peak-Hour Traffic Volumes

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per day (vpd) on an average weekday with 1,041 vehicles per hour (vph) during the weekday morning peak-hour and 945 vph during the weekday evening peak-hour. The predominant flow on Route 138 during both peak hours is in the northbound direction.

The daily volumes along Route 138 were 2 percent higher in November than they were in June (13,585 vph). The weekday morning peak hour traffic volumes were also 2 percent higher than the June peak-hour traffic volumes (1,016 vph). The traffic volumes during the weekday evening peak hour were about the same in November as they were in June (948 vph).

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in June 2024. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study area intersections. As detailed on Figure 2, sidewalks are provided along the east side of Route 138 north of Robbins Street and the west side of Route 138 for about 600 feet south of Robbins Street, with marked crosswalks provided for crossing one or more legs of the study area intersections. Sidewalks are provided along the north side of Robbins Street for about 300 feet west of Route 138 and about 750 feet east of Route 138. Sidewalks are provided along the north side of Bradlee Road for about 250 feet west of Route 138 and along the north side of Atherton Street east of Route 138. Pedestrian traffic signal equipment and phasing are provided as a part of the traffic signal systems at both signalized intersections.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the MBTA. The MBTA provides a fixed-route bus service with a flag stop bus stop on Route 138 between Valentine Road and Barbara Lane, which is located approximately 0.1 mile (a 4-minute walk) to the north of the Project site. Table 2 summarizes the characteristics of these services. Schedule and fare information for the fixed-route service are provided in the Appendix. The schedule had changed since the TIA was submitted in August 2024, so the table below was updated to reflect the changes.

Table 2
PUBLIC TRANSPORTATION SERVICES

	Weekday		Saturday	
Service	Hours of Operation	Headway (minutes)	Hours of Operation	Headway (minutes)
Route 716	5:56 AM – 7:26 PM	90 – 95	8:04 AM – 6:37 PM	65

[a]Based on latest schedule and route information available from MBTA.

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed in conjunction with the ATR counts. The speed data was collected at Route 138, along the proposed Project site frontage. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Route 138	
	Northbound	Southbound
Mean Travel Speed (mph)	42	40
85th Percentile Speed (mph)	46	46
Speed Limit (mph)	35	35

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Route 138 in the vicinity of the Project site was found to be 42 and 40 mph in the northbound and southbound directions, respectively. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be 46 mph in both directions. This was an increase from the June observed 85th percentile vehicle travel speed of 39 mph. Overall, the speed study indicates the speed of travel for vehicles traveling in each direction is above the 35 mph posted speed limit. The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances and is often used in establishing posted speed limits.

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Safety Management/Traffic Operations Unit for the most recent five-year period available (2017 through 2021) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized in Table 4 by intersection, type, weather condition, lighting condition, pavement condition, and severity.

As can be seen in Table 4, the intersection of Route 138 at Bradlee Road and Atherton Street experienced 21 accidents over the five-year review period, averaging 4.2 accidents per year. The majority of these accidents were rear-end collisions, occurred on dry pavement, during daylight, in clear weather, and resulted in property damage only. The intersection of Route 138 at Ribbons Street experienced 16 accidents over the five-year review period, averaging 3.2 accidents per year. Similarly, the majority of these accidents were rear-end collisions, occurred on dry pavement, during the night (lighted road), in clear weather, and resulted in property damage.

The calculated motor vehicle crash rate for these locations was found to be *below* both the MassDOT statewide and District averages for the MassDOT Highway Division District where these intersections are located (District 6). The intersection of Route 138 at Bradlee Road and Atherton Street is scheduled to be reconstructed in the future.

A review of the MassDOT statewide High Crash Location List indicates that there are no locations within the study area that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as a high crash cluster location. No fatalities were reported at any of the study area intersections over the five-year period reviewed. The detailed MassDOT Crash Rate Worksheets

are provided in the Appendix.

There was one fatal accident at the intersection of Route 138 at HillsView Road, an intersection located south of Route 138 at Robbins Street and not in the study area. This accident occurred on March 8, 2022, which was outside the most recent five-year period of closed crash data from MassDOT. According to the police report, this accident appeared to have been an angled collision, during the dark on a lighted roadway, and in clear weather. The crash report was heavily redacted and did not indicate a cause of the crash.

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY

Scenario	Route 138 at Bradlee Road and Atherton Street	Route 138 at Robbins Street
Year:		
2017	5	1
2018	1	6
2019	4	2
2020	2	3
2021	9	4
Total	21	16
Average[a]	4.20	3.20
Crash Rate[b]	0.64	0.58
Significant[c]	No	No
Type:		
Angle	5	1
Rear-End	9	10
Head-On	3	0
Sideswipe	2	2
Fixed Object	0	3
Pedestrian	0	0
Bicyclist	0	0
Unknown/Other	2	0
Total	21	16
Weather Conditions:		
Clear	16	11
Cloudy/Rain	5	5
Snow/Ice	0	0
Fog	0	0
Unknown/Other	0	0
Total	21	16
Lighting Conditions:		
Daylight	14	7
Dawn/Dusk	0	0
Dark (lit)	7	9
Dark (unlit)	0	0
Unknown/Other	0	0
Total	21	16
Pavement Conditions :		
Dry	17	10
Wet	2	5
Snow/Ice	0	1
Unknown/Other	2	0
Total	21	16
Severity:		
Property Damage Only	11	10
Personal Injury	8	5
Fatality	0	0
Unknown/Other	2	1
Total	21	16

Source: MassDOT Crash Data, 2017 through 2021.
[a]Average number of crashes over a five-year period.
[b]Crash rate per million entering vehicles (mev).
[c]Significant if crash rate > 0.71 for signalized intersections (MassDOT District 6 rates) or if rate >0.78 crashes per million vehicles (Statewide).

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2031, which reflects a seven-year planning horizon consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. Independent of the Project, traffic volumes on the roadway network in the year 2031 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2031 No-Build traffic volumes reflect 2031 Build traffic-volume conditions with the Project.

FUTURE TRAFFIC GROWTH

Future traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

An alternative procedure identifies the location and type of a planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic; however, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

General Background Growth

Traffic-volume data compiled by MassDOT from permanent count stations located in Milton were reviewed in order to determine general traffic growth trends in the area. This data indicates that traffic volumes have fluctuated over the past several years, with the average traffic growth rate found to be approximately 0.49 percent. In order to provide a prudent planning condition for the Project and to maintain consistency with traffic studies prepared for other developments in this area, a slightly higher 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Specific Development by Others

The Town of Milton and the City of Boston Planning Department were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on these discussions, the following project was identified for possible inclusion in this assessment:

- ***Proposed Multifamily Residential Development – 582 Blue Hill Avenue.*** This project entails construction of a 118-unit multifamily residential building to be located at 582 Blue Hill Avenue in Milton, Massachusetts. Traffic volumes from the *Traffic Impact and Access Study*[6] submitted by MDM Engineering Company Inc. dated June 2020 were added to the future condition networks. Figures A-1 and A-2 show the traffic volumes from this development.

No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate of 1.0 percent.

Planned Roadway Improvements

MassDOT was contacted in order to determine if there were any planned future roadway improvement projects expected to be completed by 2031 within the study area. Based on these discussions with MassDOT, the following roadway improvement project was identified:

- ***Intersection Improvements at Route 138 at Bradlee Road (Project # 612616).*** This project entails reconfiguration of the five-legged intersection into a roundabout. This project is planned to be funded through the 2027 Transportation Improvement Program for the Boston Metropolitan Planning Organization with construction scheduled to begin by spring 2028. According to MassDOT Project Management, the project is in the planning stage, and the 25% Design plans are not yet available. However, assumptions related to the roundabout configuration and size were made so that could be conducted under the 2031 future-year conditions.

No other roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.

No-Build Traffic Volumes

The 2031 No-Build peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2024 Existing peak-hour traffic volumes plus traffic volumes associated with the identified specific development project by others. The resulting 2031 No-Build weekday morning and evening peak-hour traffic-volume networks are shown on Figure 5 and Figure 6, respectively.

PROJECT-GENERATED TRAFFIC

As proposed, the Project will entail the construction of a 16,200± sf childcare facility with an anticipated enrollment of 195 students. In order to develop the traffic characteristics of the proposed

[6] *Traffic Impact and Access Study*, *582 Blue Hill Avenue, Milton, Massachusetts*; MDM Engineering Company Inc.; June 2020.

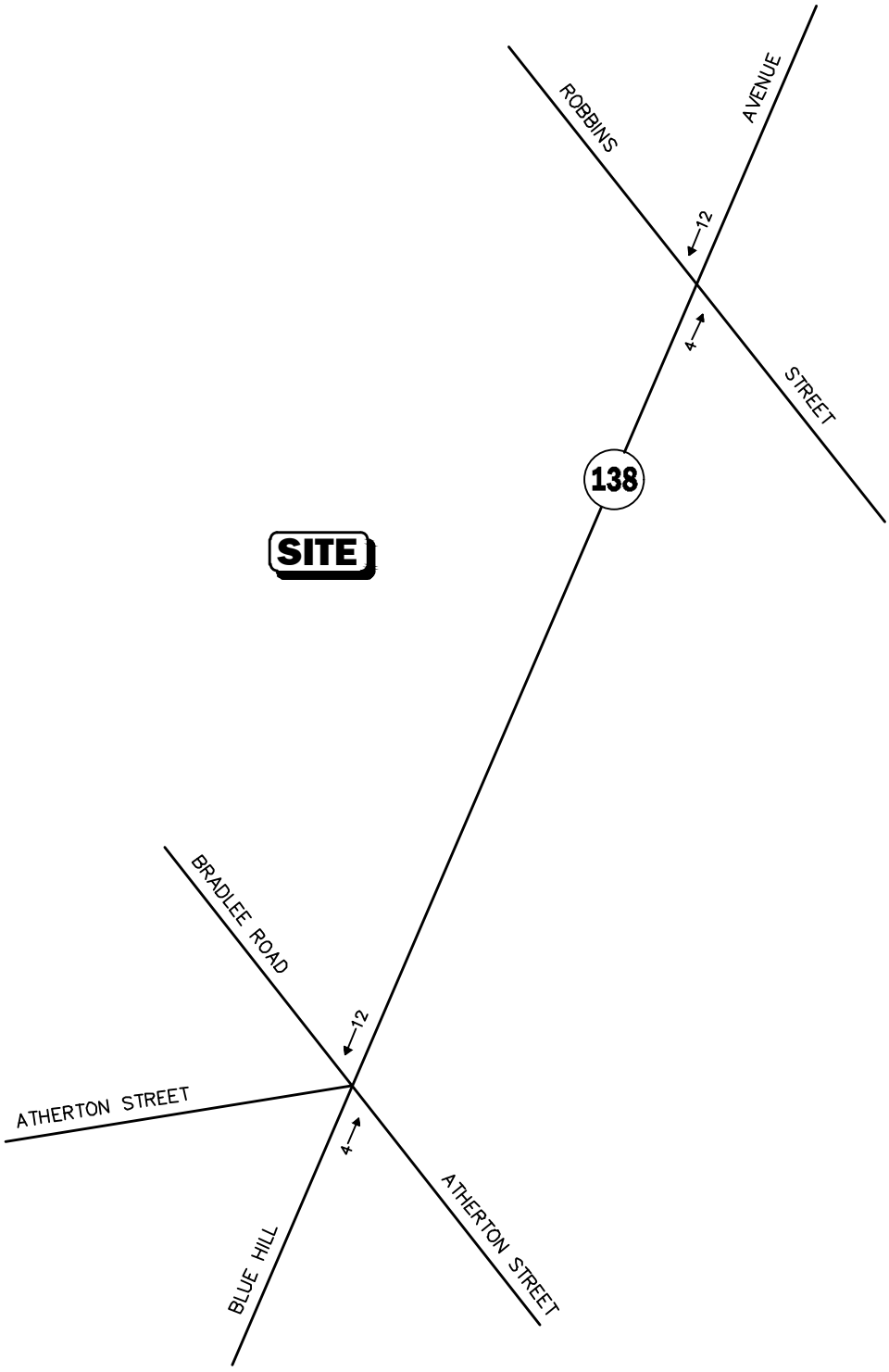

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Figure A-1

582 Blue Hill Avenue
Weekday Morning
Peak-Hour Traffic Volumes

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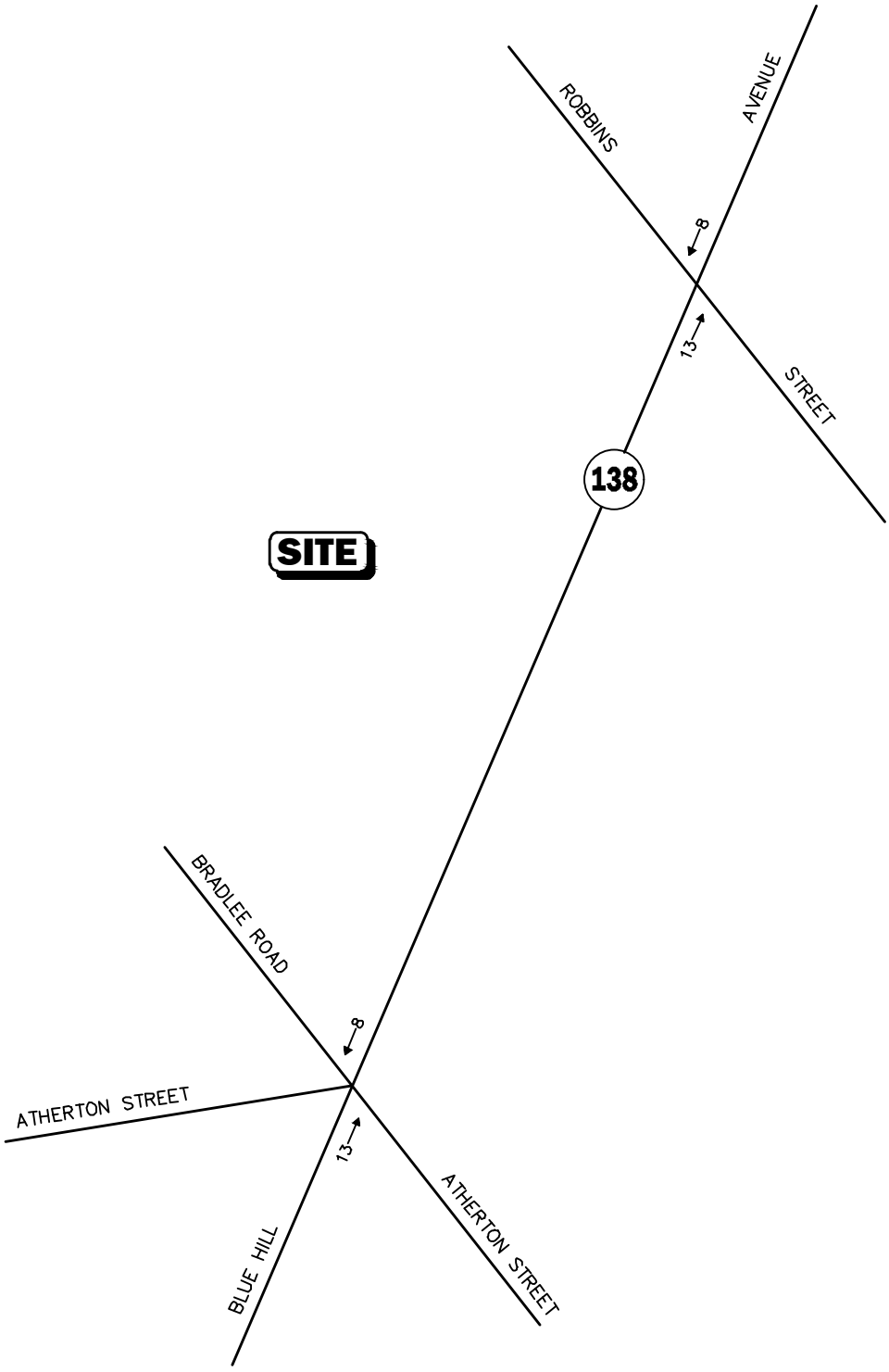

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Figure A-2

582 Blue Hill Avenue
Weekday Evening
Peak-Hour Traffic Volumes

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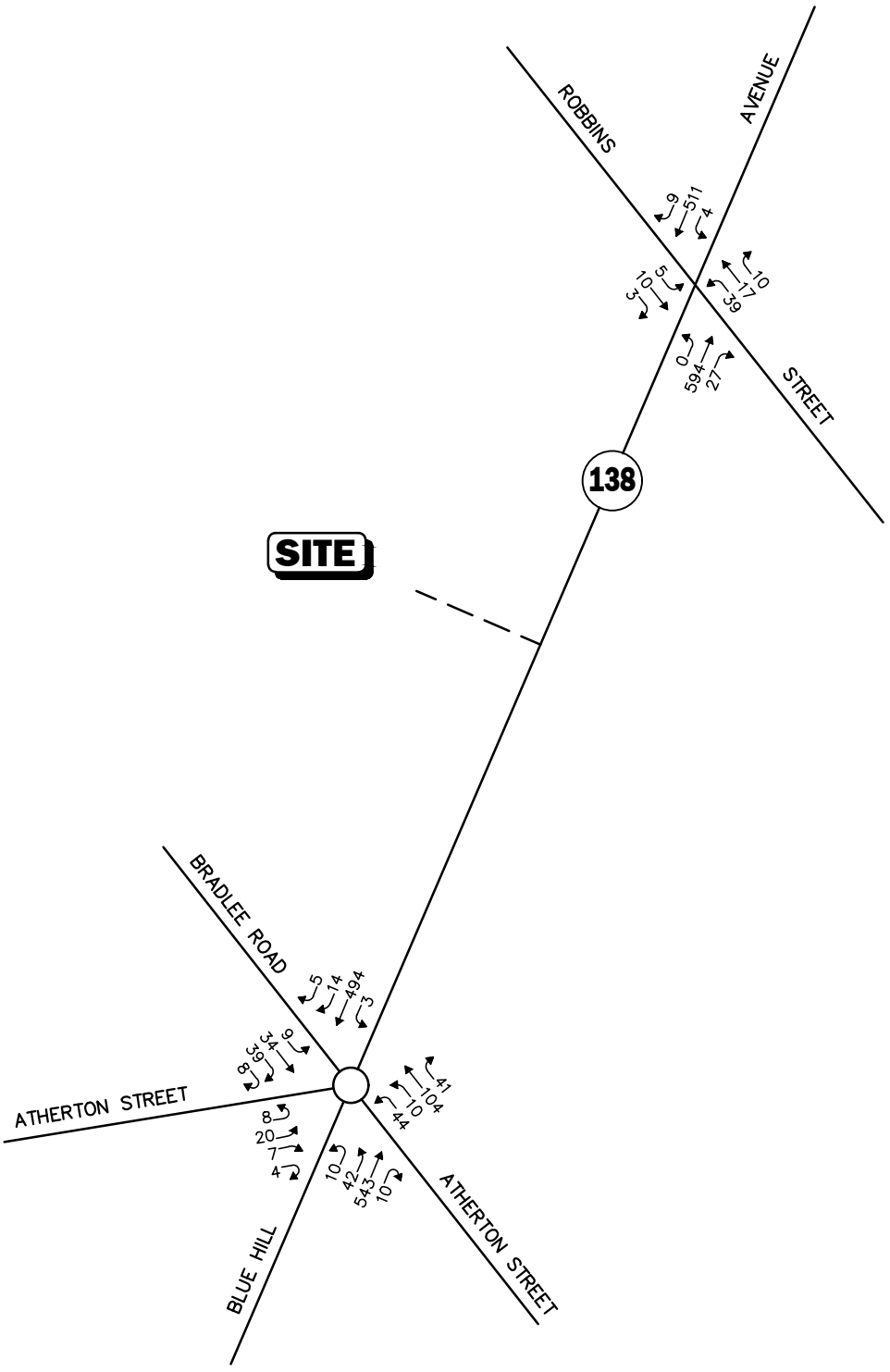

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Figure 5

2031 No-Build
Weekday Morning
Peak-Hour Traffic Volumes

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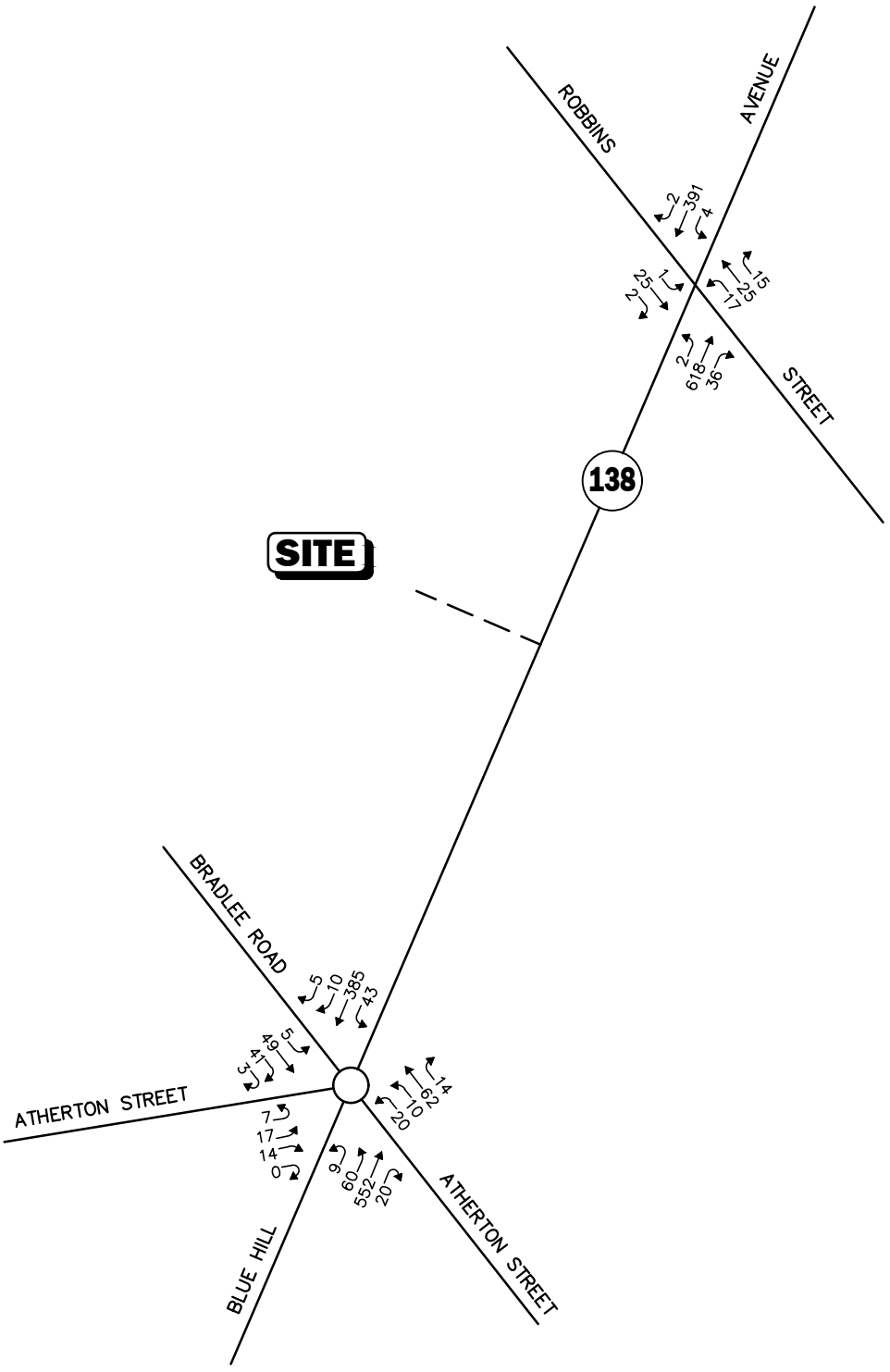

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Figure 6

2031 No-Build
Weekday Evening
Peak-Hour Traffic Volumes

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Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)[7] for similar land uses as that proposed were used. The ITE Land Use Code (LUC) 565, *Day Care Center* was used. Trip-generation calculations were performed for a typical weekday, as well as the weekday morning and weekday evening peak hours, the critical time periods for Project-related traffic activity. The vehicle trips are summarized in Table 5.

Table 5
PROPOSED SITE TRIP-GENERATION SUMMARY

Time Period/Direction	Total Vehicle Trips (195 Students)[a]
Weekday Daily:	
Entering	399
Exiting	399
Total	798
Weekday Morning Peak Hour:	
Entering	73
Exiting	64
Total	137
Weekday Evening Peak Hour:	
Entering	62
Exiting	69
Total	131

[a]Based on ITE LUC 565*, Day Care Center.*

As shown in Table 5, the Project is expected to generate approximately 137 vehicle trips (73 entering and 64 exiting) during the weekday morning peak hour and 131 vehicle trips (62 entering and 69 exiting) during the weekday evening peak hour. On an average weekday, approximately 399 vehicle trips are expected to enter and exit the site over a 24-hour period.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was developed based on a review of existing traffic patterns along the study area roadways and at the study intersections. The collection of new traffic volume in November required a revision to trip distribution from the distribution developed and previously submitted in the August 2024 TIA. The general trip distribution for the Project is summarized in Table 6 and graphically depicted in Figure 7 and Figure 8 for the weekday morning and evening peak-hours, respectively.

The additional traffic expected to be generated by the Project was assigned to the study area roadway network as shown on Figures 9 and 10.

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

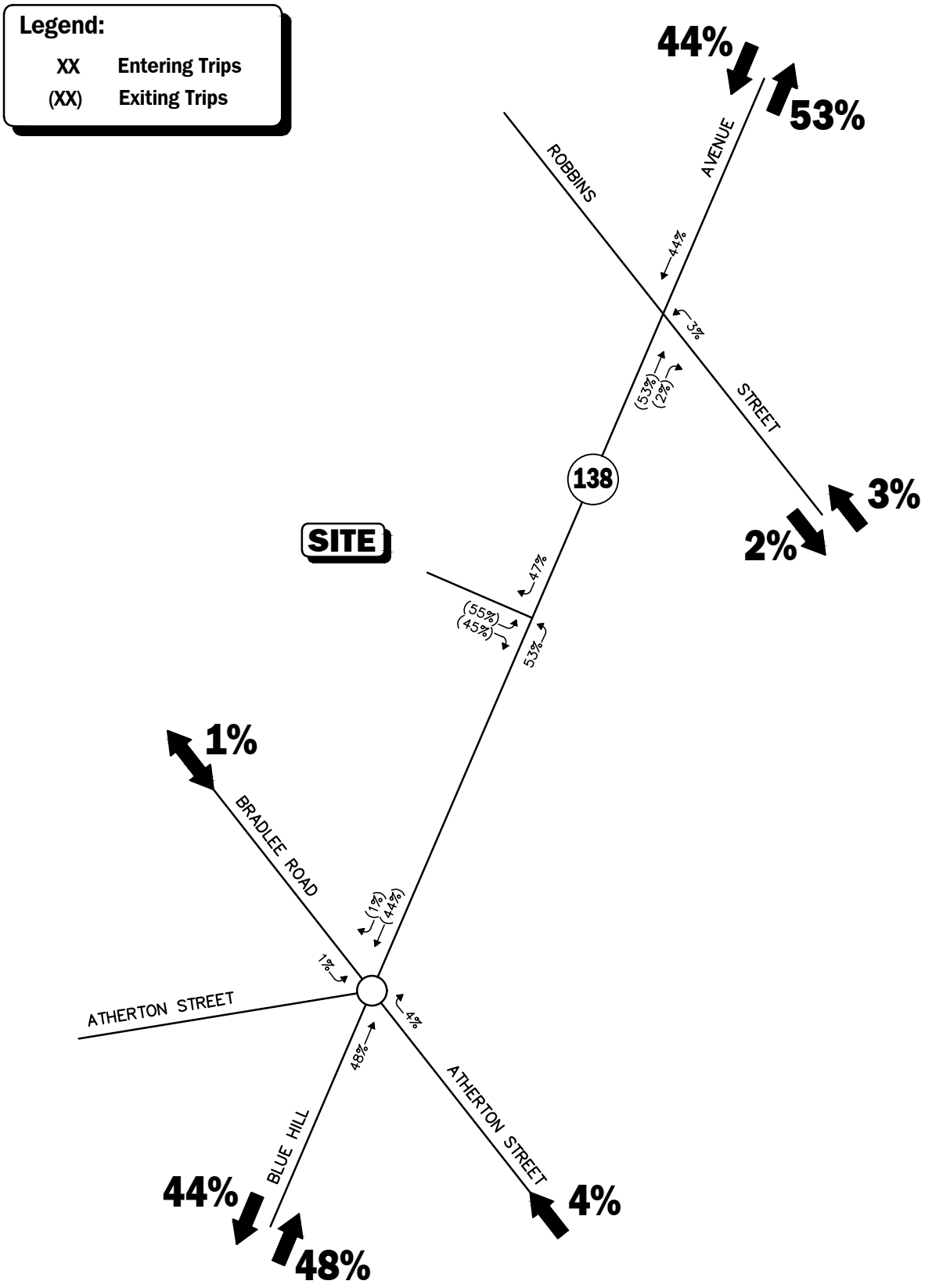

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Figure 7

Trip Distribution Map
Weekday Morning
Peak-Hour Traffic Volumes

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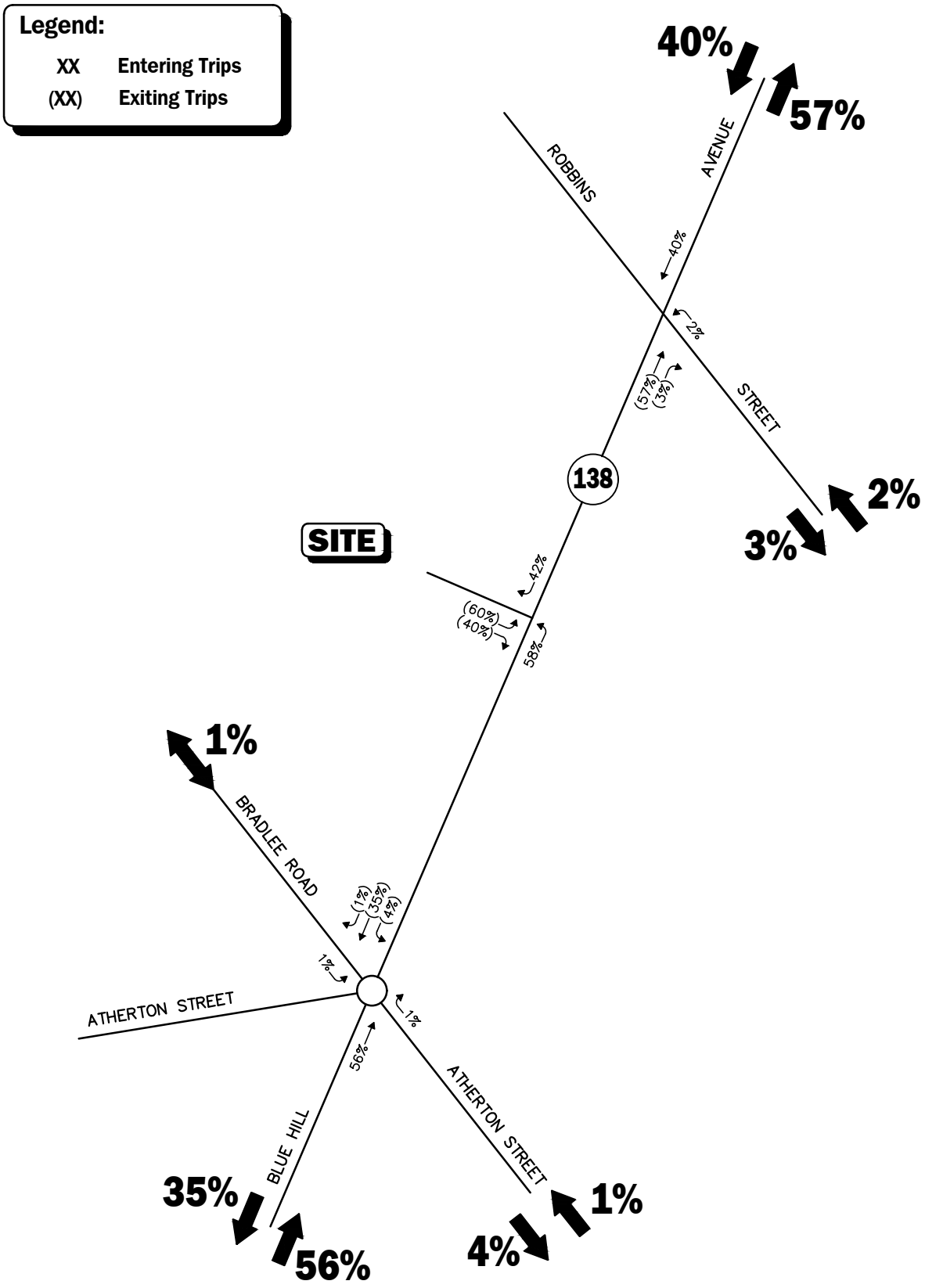
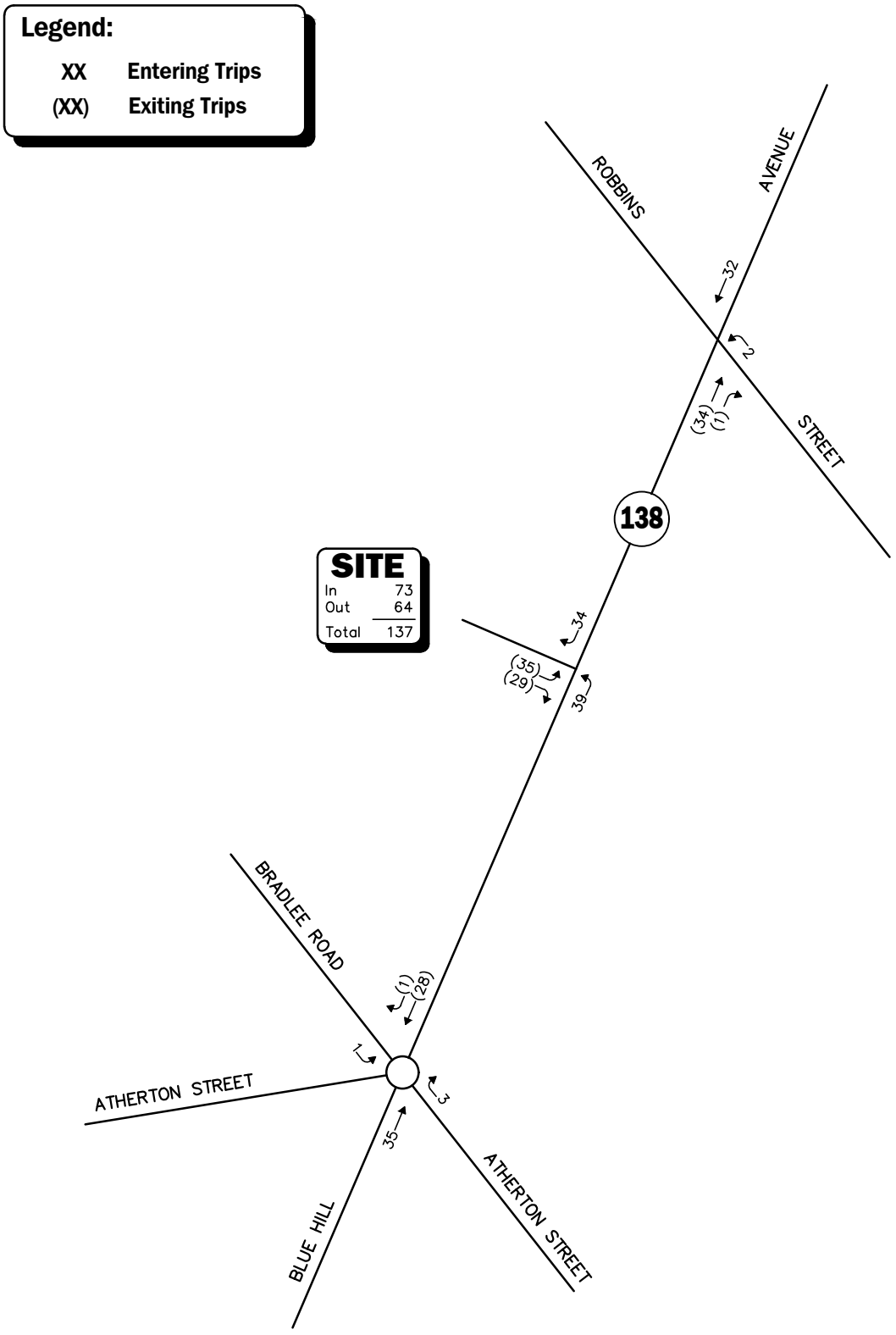


Not To Scale

Figure 8

Trip Distribution Map
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

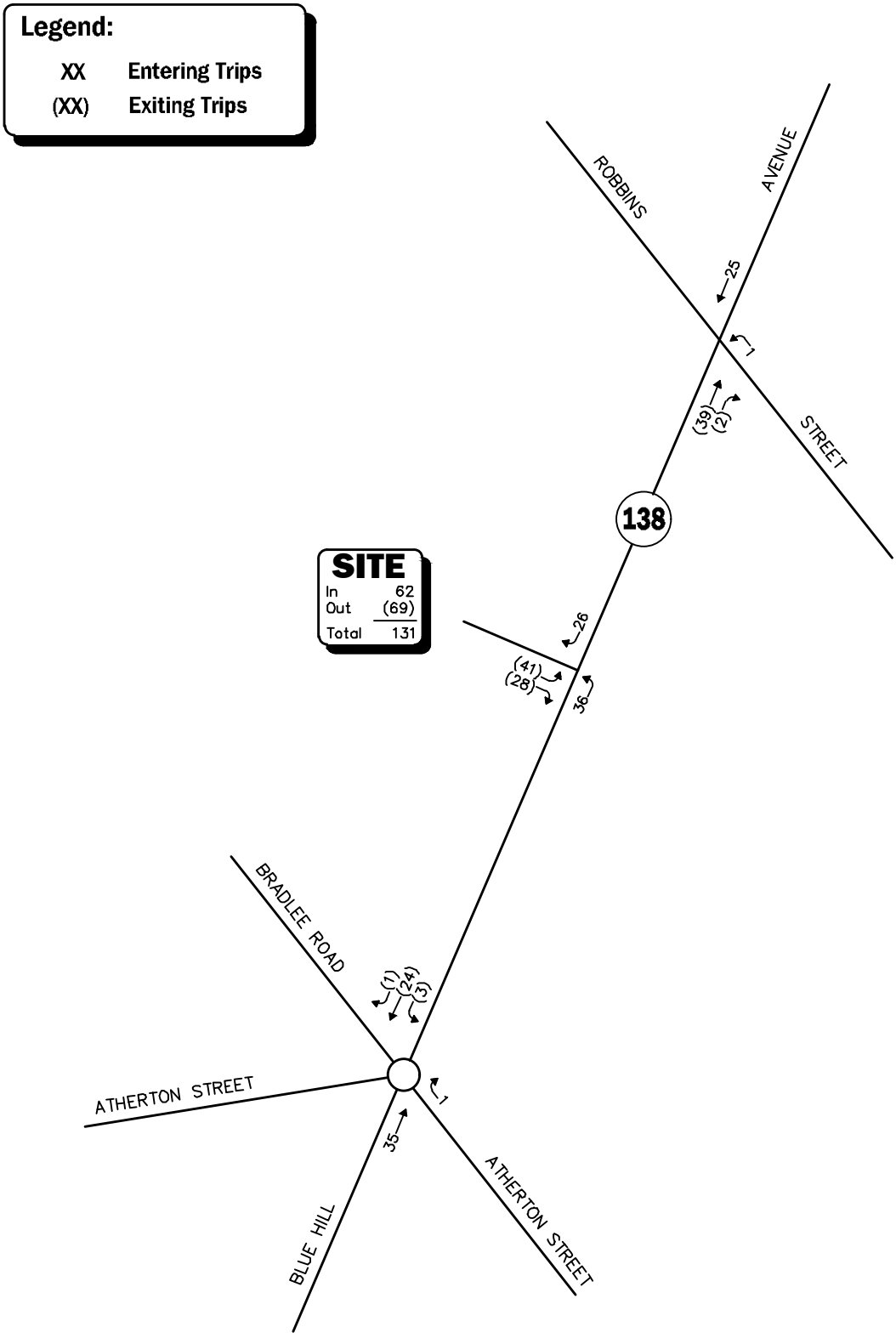


Not To Scale

Figure 9

Site-Generated Weekday Morning Peak-Hour Traffic Volumes

Vanasse & Associates inc



Not To Scale

Figure 10

Site-Generated Weekday Evening Peak-Hour Traffic Volumes

Vanasse & Associates inc

Table 6
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction (To/From)	Weekday Morning Percentage		Weekday Evening Percentage	
		To	From	To	From
Route 138	North	53	44	57	40
Route 138	South	44	48	35	56
Robbins Street	East	2	3	3	2
Atherton Street	East	0	4	4	1
Bradlee Road	West	1	1	1	1
TOTAL		**100**		**100**	

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2031 Build condition networks consist of the 2031 No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2031 Build weekday morning and evening peak-hour traffic-volume networks are graphically depicted on Figure 11 and Figure 12, respectively. A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 7. These changes are a result of the construction of the Project.

Table 7
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak-Hour	2031 No-Build	2031 Build	Traffic-Volume Change Over No-Build	Percent Change Over No-Build
Route 138, north of Robbins Street:				
Weekday Morning	1,133	1,199	66	5.8
Weekday Evening	1,031	1,095	64	6.2
Route 138, south of Atherton Street:				
Weekday Morning	1,186	1,249	63	5.3
Weekday Evening	1,087	1,146	59	5.4
Robbins Street, east of Route 138:				
Weekday Morning	107	110	3	2.8
Weekday Evening	122	125	3	4.5
Atherton Street, east of Route 138:				
Weekday Morning	253	256	3	1.2
Weekday Evening	232	236	4	1.7
Bradlee Road, west of Route 138:				
Weekday Morning	249	251	2	0.8
Weekday Evening	232	233	1	0.4

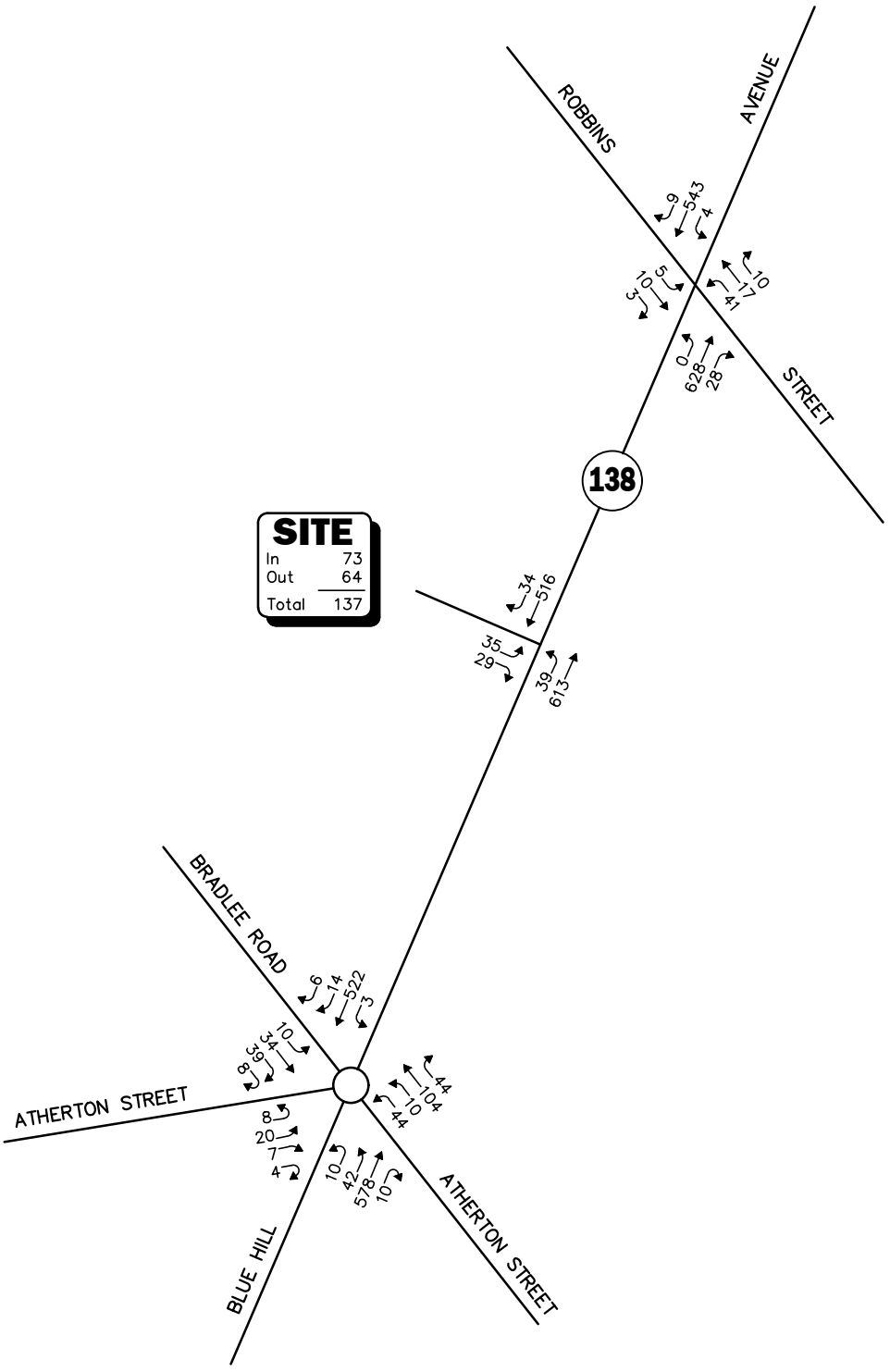


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Figure 11

2031 Build
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc

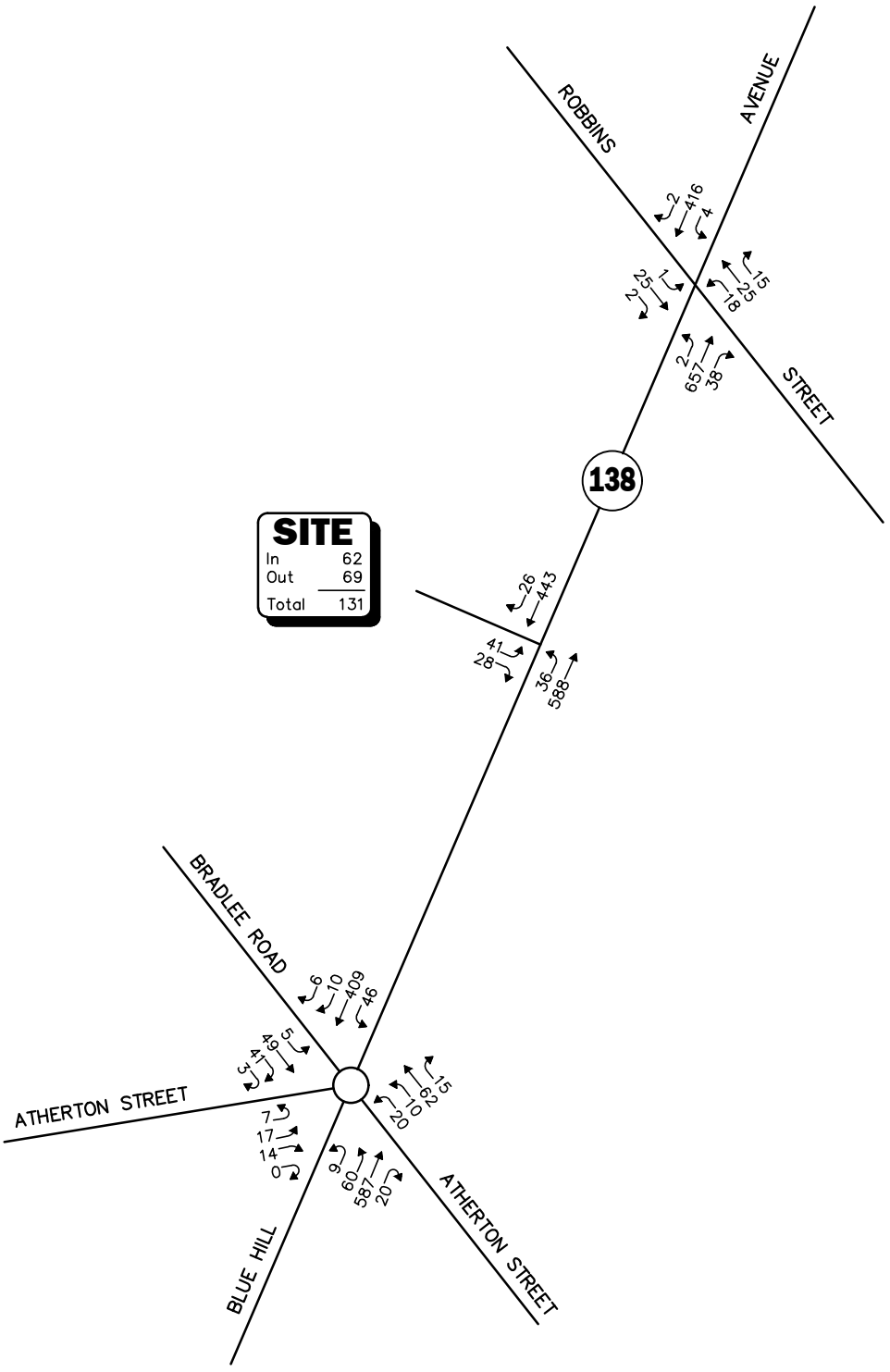

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Figure 12

2031 Build
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersection with Route 138 in accordance with MassDOT and the American Association of State Highway and Transportation Officials (AASHTO)[8] recommendations. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance recommended to be provided by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD is the sight distance recommended to be provided by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. ***In accordance with AASHTO standards, if the measured ISD is at least equal to the recommended SSD value for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions.*** Table 8 presents the measured SSD and ISD at the subject intersection.

[8] *A Policy on Geometric Design of Highway and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.

Table 8
SIGHT DISTANCE MEASUREMENTS[a]

Intersection/Sight Distance Measurement	Recommended Minimum Distances (Feet)[d] 85th Percentile Speed (46 mph)	Measured
Route 138 at the Project Site Driveway		
Stopping Sight Distance[b]:		
Route 138 approaching from the north (southbound)	414	650+
Route 138 approaching from the south (northbound)	342	550+
Intersection Sight Distance[c]:		
Looking to the north from the Project site driveway (right turn)	440	650+
Looking to the south from the Project site driveway (left turn)	510	650+

[a]Recommended values obtained from *A Policy on Geometric Design of Highways and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.
[b]The proposed site driveway will intersect Route 138 on a graded section. Vehicles traveling along site frontage will experience a downward and upward slope of approximately 6 percent. Minimum distances were adjusted to account for the existing road grading.
[c]Values shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.
[d]Based on the 85th percentile speed found for each direction.

As can be seen in Table 8, the sight distance at the intersection of the Project site driveway with Route 138 was found to exceed the minimum for both ISD and SSD in both directions, based on the 85th percentile vehicle travel speed of 46 mph. This table was revised based on the new observed vehicle speeds collected in November. The intersection sight distance is shown on a plan provided in the appendix.

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantify traffic flow within the study area. To assess quality of flow, roadway capacity, and vehicle queue analyses were conducted under Existing, No-Build, and Build traffic-volume conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.[9] The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best-operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

[9]The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition;* Transportation Research Board; Washington, DC; 2016.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than LOS A.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop, and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with oversaturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the 2000 *Highway Capacity Manual*[10] (HCM) and implemented as a part of the Synchro™ 12 software as required by MassDOT. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay, and final acceleration delay. Table 9 summarizes the relationship between level-of-service and percentile delay. The tabulated percentile delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 9
LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS[a]

Level of Service	Percentile Delay Per Vehicle (Seconds)
A	≤10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

[a]Source: *Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2000; page 16-2.

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

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 7th Edition.* Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 7th Edition*. Table 10 summarizes the relationship between level of service and average control delay.

Table 10
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Level-of-Service by Volume-to-Capacity Ratio		Average Control Delay
v/c ≤ 1.0	v/c > 1.0	(Seconds Per Vehicle)
A	F	≤10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	>50.0

[a]Source: *Highway Capacity Manual 7th Edition*; Transportation Research Board; Washington, DC; 2022; page 20-6.

SIDRA: Roundabout Analysis

The unsignalized capacity analysis for the approaches at the future Route 138 at Bradlee Road and Atherton Street roundabout is based on the procedures described in the Traffic Signalized and Unsignalized Intersection Design and Research Aid (SIDRA) Intersection.[11] The main features of the SIDRA Intersection method for unsignalized capacity estimation are the dependence of gap acceptance parameters on roadway geometry, entry lane flows, and the designation of traffic control on approach lanes.

The SIDRA analytical model calculates several components of delay. One of these, the average total delay component, produces level-of-service results based on the concepts described in the HCM. The delay ranges that define levels of service for roundabouts are shown in Table 11.

Table 11
LEVEL-OF-SERVICE CRITERIA FOR SIDRA: UNSIGNALIZED INTERSECTIONS[a]

Level-Of-Service	Control Delay Per Vehicle (Seconds)
A	≤10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 50.0
E	50.1 to 70.0
F	>70.0

[a]Source: *SIDRA Intersection 9.0 User Guide;* Akcelik & Associates Pty Ltd; Greythorn, Victoria 3104, Australia; October 2020.

[11]Traffic Signalized and Unsignalized Intersection Design and Research Aid, SIDRA Intersection 9.0 User Guide; Akcelik & Associates Pty Ltd; Greythorn, Victoria 3104, Australia; October 2020.

Vehicle Queue Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro® intersection capacity analysis software. The Synchro® vehicle queue analysis methodology is a simulation-based model that reports the number of vehicles that experience a delay of 6 seconds or more at an intersection. For signalized intersections, Synchro® reports both the average (50^{th} percentile) and the 95^{th} percentile vehicle queue. For unsignalized intersections, Synchro® reports the 95^{th} percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95^{th} percentile vehicle queue is the vehicle queue length that will be exceeded only 5 percent of the time, or approximately 3 minutes out of 60 minutes during the peak one hour of the day (during the remaining 57 minutes, the vehicle queue length will be less than the 95^{th} percentile queue length).

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2024 Existing, 2031 No-Build, and 2031 Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Tables 12, 13, and 14.

Signalized Intersection Analysis Results

Route 138 at Bradlee Road and Atherton Street

Under 2024 Existing conditions, this intersection operates at an overall LOS C during the weekday morning and evening peak hours. Under future conditions, this intersection will be reconstructed as a roundabout. These results was similar to those submitted in the August 2024 TIA.

Route 138 at Robbins Street

Under 2024 Existing and 2031 No-Build conditions, this intersection operates at an overall LOS B during the weekday morning peak hour and LOS A during the weekday evening peak hour. No changes to the overall level of service under 2031 Build conditions due to the addition of Project traffic. The vehicle queues are expected to increase by up to 2 vehicles on any of the approaches due to the addition of Project traffic. These results are better than those shown in the August 2024 TIA.

Table 12
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak-Hour/Movement	2024 Existing V/C[a]	2024 Existing Delay[b]	2024 Existing LOS[c]	2024 Existing Queue[d] Avg/95th	2031 No-Build V/C	2031 No-Build Delay	2031 No-Build LOS	2031 No-Build Queue Avg/95th	2031 Build V/C	2031 Build Delay	2031 Build LOS	2031 Build Queue Avg/95th
Route 138 at Bradlee Road and Atherton Street												
Weekday Morning:												
Bradlee Road EB LT/TH/RT/HRT	0.41	26.7	C	60/80								
Atherton Street WB HLT/LT/TH/RT	0.78	40.1	D	123/195								
Route 138 NB HLT/LT/TH/RT	0.74	19.1	B	224/379								
Route 138 SB LT/TH/RT/HRT	0.60	15.0	B	184/292								
Atherton Street NEB HLT/LT/RT/HRT	0.49	37.4	D	25/48								
Overall	--	**22.3**	**C**	--								
Weekday Afternoon:												
Bradlee Road EB LT/TH/RT/HRT	0.52	33.5	C	58/104								
Atherton Street WB HLT/LT/TH/RT	0.60	36.2	D	60/114								
Route 138 NB HLT/LT/TH/RT	0.81	21.8	C	278/600								
Route 138 SB LT/TH/RT/HRT	0.49	12.9	B	127/310								
Atherton Street NEB HLT/LT/RT/HRT	0.49	40.1	D	23/56								
Overall	--	**22.2**	**C**	--								
Route 138 at Robbins Street												
Weekday Morning:												
Robbins Street EB LT/TH/RT	0.11	17.5	B	5/23	0.12	18.6	B	5/25	0.12	19.6	B	6/27
Robbins Street WB LT/TH/RT	0.39	19.3	B	16/71	0.43	20.6	C	18/80	0.45	21.9	C	20/86
Route 138 NB LT/TH/RT	0.65	10.3	B	93/399	0.68	10.7	B	110/442	0.69	10.9	B	124/477
Route 138 SB LT/TH/RT	0.58	9.1	A	77/324	0.61	9.4	A	92/364	0.62	9.6	A	104/394
Overall	--	**10.7**	**B**	--	--	**11.1**	**B**	--	--	**11.3**	**B**	--
Weekday Afternoon:												
Robbins Street EB LT/TH/RT	0.27	19.7	B	8/36	0.30	21.4	C	10/40	0.31	22.5	C	10/41
Robbins Street WB LT/TH/RT	0.35	20.4	C	9/65	0.40	22.4	C	11/72	0.42	23.7	C	12/77
Route 138 NB LT/TH/RT	0.63	8.2	A	90/427	0.65	8.4	A	106/484	0.67	8.6	A	118/529
Route 138 SB LT/TH/RT	0.42	6.3	A	49/227	0.44	6.1	A	57/250	0.45	6.0	A	63/267
Overall	--	**8.7**	**A**	--	--	**8.8**	**A**	--	--	**9.0**	**A**	--

See Table 14 for future conditions.

[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; NEB = northeastbound; HLT = hard-left-turning movements; LT = left-turning movements; TH = through movements; RT = right-turning movements; HRT = hard-right-turning movements.

Unsignalized Intersection

Route 138 at the Project Site Driveway

Under 2031 Build conditions, the critical movements at this intersection operate at LOS D or better during the weekday morning and evening peak hours. Under 2031 Build conditions, the average vehicle queue is 1 vehicle during the weekday morning and evening peak hours. The results of this intersection in the August 2024 TIA shows a LOS C or better during the weekday morning and evening peak hours.

Table 13
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak-Hour	2024 Existing				2031 No-Build				2031 Build			
	Demand[a]	Delay[b]	LOS[c]	Queue[d]	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Route 138 at the Project Site Driveway												
Weekday Morning:												
Project site driveway EB LT/RT									64	28.0	D	33
Route 138 NB LT	Intersection only exists under Build conditions.								39	8.9	A	3
Weekday Evening:												
Project site driveway EB LT/RT									69	26.2	D	33
Route 138 NB LT									36	8.4	A	3

[a]Demand in vehicles per hour.
[b]Delay in seconds per vehicle.
[c]Level of service.
[d]95th percentile queue length (feet).
NB = northbound; EB = eastbound; LT = left-turning movements; RT = right-turning movements.

Roundabout Intersections

Route 138 at Bradlee Road and Atherton Street

Under 2031 No-Build conditions, the roundabout operates at an overall LOS B during the weekday morning and evening peak hours. There is no change in the level of service under 2031 Build conditions. The queue is expected to increase by less than 6 vehicles under 2031 Build conditions compared to 2031 No-Build conditions. These results are better than the signalized version of this intersection in the August TIA which shows an overall LOS of C during the weekday morning and evening peak hours under future conditions.

Table 14
ROUNDABOUT CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2024 Existing				2031 No-Build				2031 Build			
	Demand[a]	Delay[b]	LOS[c]	Queue[d]	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Route 138 at Bradlee Road and Atherton Street												
Weekday Morning:												
Bradlee Road EB LT/TH/RT/HRT					90	10.5	B	45	91	11.3	B	49
Atherton Street WB HLT/LT/TH/RT					199	15.1	B	105	202	17.2	B	121
Route 138 NB HLT/LT/TH/RT					605	12.7	B	174	640	13.9	B	197
Route 138 SB LT/TH/RT/HRT					516	15.3	B	250	545	16.9	B	305
Atherton Street NEB HLT/LT/RT/HRT					39	7.2	A	16	39	7.7	A	17
Overall		See in Table 12			--	**13.6**	**B**	--	--	**15.1**	**B**	--
Weekday Afternoon:												
Bradlee Road EB LT/TH/RT/HRT					98	7.4	A	31	98	7.8	A	33
Atherton Street WB HLT/LT/TH/RT					106	13.2	B	55	107	15.1	B	63
Route 138 NB HLT/LT/TH/RT					641	17.2	B	357	676	19.9	B	492
Route 138 SB LT/TH/RT/HRT					443	9.6	A	96	471	10.3	B	106
Atherton Street NEB HLT/LT/RT/HRT					38	5.6	A	11	38	5.8	A	11
Overall					--	**13.4**	**B**	--	--	**15.2**	**B**	--

[a]Demand in vehicles per hour.
[b]Delay in seconds per vehicle.
[c]Level of service.
[d]95th percentile queue length (feet).
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; NEB = northeastbound; HLT = hard-left-turning movements; LT = left-turning movements; TH = through movements; RT = right-turning movements; HRT = hard-right-turning movements.

RECOMMENDATIONS AND CONCLUSIONS

VAI has prepared this UTIA to identify traffic impacts associated with a proposed daycare center to be located at 665 & 711 Route 138 in Milton, Massachusetts. This study was prepared as an update to a TIA prepared in August 2024 and is issued to respond to comments prepared by the Town of Milton's peer review consultant, dated October 30, 2024. The original TIA was prepared in accordance with MassDOT Guidelines for TIAs and was conducted pursuant to the standards of the traffic engineering and transportation planning professions for the preparation of such reports. Based on the results of this study, the following can be concluded:

- No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study area intersections.

- Using trip-generation statistics published by the ITE, the Project is expected to generate 137 vehicle trips during the weekday morning peak-hour and 131 vehicle trips during the weekday evening peak-hour. On an average weekday, approximately 399 vehicle trips are expected to enter and exit the site over a 24-hour period..

- The sight distances at the intersection of the Project site driveway with Route 138 were found to exceed the recommended values for SSD and ISD.

- The analysis has indicated that the Project will result in minimal impact on motorist delays at the study intersections, as compared to future No-Build conditions. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with all movements at the study area intersections shown to continue to operate at LOS D or better with the addition of Project-related traffic, where an LOS of "D" or better is defined as "acceptable" traffic operations.

RECOMMENDATIONS

Access to the Project site will be provided via a driveway onto the west side of Route 138. The following recommendations are offered with respect to the design and operation of this access:

- The Project site driveway is consistent with local zoning requirements that indicate the site driveway should be a minimum of 24 feet in width and be designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency

vehicle.

- The maneuvering aisles within parking areas are consistent with local zoning requirements that indicate the aisles should be a minimum width of 20 feet for two-way traffic.

- The Project site driveway should be placed under STOP-sign (MUTCD R1-1) control, with a painted STOP-bar included.

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.

- Existing trees and vegetation located within the sight triangle areas of the Project site driveway should be selectively trimmed or removed and maintained in order to provide the necessary sight lines for safe operation of the driveway.

- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed where such accumulations would impede sightlines.

Transportation Demand Management

Public transportation services are provided within the study area by the MBTA. The MBTA provides a fixed-route bus service with a flag stop bus stop at the intersection of Route 138 at Barbara Lane, which is located approximately 0.1 mile (a 4-minute walk) to the north of the Project site.

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles, the following TDM measures are recommended as a part of the Project:

- A transportation coordinator should be designated for the Project to coordinate the elements of the TDM Program.

- Information about public transportation services, including maps, schedules, and fare details should be posted in a central location and/or made available to employees.

- A "welcome packet" should be provided to employees detailing available public transportation services, bicycling opportunities, and commuter options.

- The designated transportation coordinator should facilitate carpool matching for employees.

- Access to the Bay State Commute program (formerly called NuRide) service should be made available to all employees. Bay State Commute is a free online database service to find carpool companions.

- Specific amenities should be offered to discourage off-site trips, including providing a breakroom equipped with a microwave and refrigerator and offering direct deposit of paychecks and other such measures to reduce overall traffic volumes and travel during peak traffic-volume periods.

With implementation of the aforementioned recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing transportation system.

CONCLUSIONS

As documented in this study, Project-related traffic increases will not result in significant increases in traffic volumes or traffic delays within the study area. The Project site driveway will provide safe and efficient access to and from the development. In general, Project-related traffic can be adequately accommodated within the existing and future infrastructure with minimal impact on the traffic operations within the study area.

APPENDIX

TRAFFIC COUNT DATA
SEASONAL ADJUSTMENT DATA
PUBLIC TRANSPORTATION
VEHICLE SPEED DATA
MOTOR VEHICLE CRASH DATA
GROWTH RATE CALCULATIONS
TRIP GENERATION
INTERSECTION SIGHT DISTANCE PLAN
CAPACITY ANALYSIS

TRAFFIC COUNT DATA

Accurate Counts
978-664-2565

L B H A S C d 10000002
L S Dr
C S M , MA

11 6 202	NB,		H r T		SB,		H r T		C d T	
T	M r	A r	M r	A r	M r	A r	M r	A r	M r	A r
12 00	2	2			2					
12 1					1					
12 0	22				16					
12	10		6	2	12	0	6	60	1 6	12
1 00	12				10	6				
1 1	11				10					
1 0					11	10				
1				66		6				20
2 00	6				1					
2 1		10			6	110				
2 0		10				110				
2		10	0	1			2	12	62	2
00		10				112				
1						10				
0		6				11				
	1		0				20	22	0	0
00	11				1	11				
1	1				1	1				
0	1				2	12				
	1		6	0	20	1	0	1	1 6	2
00	2					11				
1	0	110				1 0				
0	2	102			2	1 0				
	60		166	0	11	111	12			0
6 00		6			11	11				
6 1		2			10	1				
6 0	1	2				12				
6	10	10	1	21	10		21	61		2
00	111				12					
1	11	6			10	6				
0	12				1	2				
	126	1			1		2	10	1001	6
00	112	61			1 2	6				
1	10				1 6	2				
0	106	6			10	61				
	11		1	2		62	1	2	2	1
00	10	62				62				
1	101	6			102	0				
0					10	0				
	6		6	210	10	2	16	20	0	1
10 00	6				112	1				
10 1						6				
10 0	10					2				
10		2		1 1	6	2		161	1	2
11 00		0			1	2				
11 1	1				0	2				
11 0						2				
11		26		1 0		2		11	6	2
T	26	6			1 2	106			2	
P r	2					6			2	1

Accurate Counts
978-664-2565

L B H A
L S Dr
C S M , MA

S C d 10000002

11 202	NB,		H r T		SB,		H r T		C d T	
T	M r	A r	M r	A r	M r	A r	M r	A r	M r	A r
12 00	2	1			1	61				
12 1	2	2			2	101				
12 0	1	1			1					
12	10	2		26	11	1	2	2	1	66
1 00	1	10			12	1				
1 1	10	100			11	0				
1 0	1	0				101				
1		10							6	
2 00	11	1				10				
2 1	10	12								
2 0		110				126				
2		112	6	0	6		0	1	66	
00		1			6	10				
1		1				10				
0					10	121				
	10					1 6	0	66	6	1
00	1				1	1 6				
1	16	2			1	1 0				
0	2	0			20	160				
	1				6	12	0	0	1	0
00					0	1 0				
1	1	6				1				
0		2			6	16				
	61		1	11	111	12	00			00
6 00	61	0			121	12				
6 1					11	120				
6 0	10	1			10	110				
6				21	106	11	1	6		
00	1	0			1					
1	12				10					
0	1 0	2			1 0					
	1 0				122	6	0	0		6 2
00	122	6			1 6					
1	120				12					
0	11	1			11	6				
	10		62	1	10			262	6	
00	110				10	6				
1	116	60			112					
0	6				116					
	101		1	21	102			21	2	
10 00	10				116					
10 1	6	2			102					
10 0										
10	6		6	201			01	1	6	
11 00	10	0			101	0				
11 1	6	1								
11 0	0				6	1				
11	100			1 1	0	21		12	0	10
T	2 16	1			1	0			60 0	0 1
P r		6			2				0	0
Gr d T	611	0			6 06	6			11 1	1 26
P r	2	6			2	2			0	0

ADT ADT 1 , 2 AADT 1 , 2

Accurate Counts
978-664-2565

L B H A
L S Dr
C S M , MA

S C d 10000002

11 202	M d		T d		d d		T r d		Fr d		S rd		S d		A r	
T	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,
12 00 AM					6	6		2							6	0
1 00															2	
2 00					0	2	6	0								1
00					0	20		0							2	2
00					6	0		0							0	
00					166	12	1	00							1 6	06
6 00					1	21		1							2	6
00						2		0							6	1
00					1	1	62								2	
00					6	16	1									2
10 00							6	01							60	
11 00																
12 00 PM					2	60	26	2								1
1 00					66										2	66
2 00					1	12	0	1							22	16
00						22		66								
00					0	1		0							2	2
00					0		11									62
6 00					21	61	21	6							21	6
00						10		0								0
00					2	2	1	262							2	260
00					210	20	21	21							21	210
10 00					1 1	161	201	1							1 6	16
11 00					1 0	11	1 1	12							160	122
T	0	0	0	0	6	2	666	0	0	0	0	0	0	0	6 01	0
D	0		0		1 2		1 1 1		0		0		0		1 1	
AM P					00	00	00	00							00	00
						2		0							6	1
PM P					2 00	00	2 00	00							2 00	00
					1		0								22	62
C T	0		0		1 2		1 1 1		0		0		0		1 1	
ADT	ADT 1 , 2		AADT 1 , 2													

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 1

Groups Printed- Cars - Trucks

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
07:00 AM	1	103	1	1	10	0	18	5	0	17	119	0	0	1	0	0	1	6	12	0	295
07:15 AM	0	109	4	0	8	4	16	4	5	19	104	5	0	0	0	0	0	5	5	0	288
07:30 AM	0	122	3	1	4	4	22	11	3	8	129	3	2	4	2	0	3	12	9	3	345
07:45 AM	1	128	4	1	8	1	25	8	4	13	128	3	4	4	1	4	1	1	7	1	347
Total	2	462	12	3	30	9	81	28	12	57	480	11	6	9	3	4	5	24	33	4	1275
08:00 AM	0	108	6	1	11	2	19	9	1	13	133	1	1	9	2	0	2	8	3	1	330
08:15 AM	2	92	1	2	18	3	31	10	2	5	113	2	1	3	2	0	2	11	17	3	320
08:30 AM	1	116	2	2	14	4	15	6	2	22	107	8	1	2	3	0	1	7	7	1	321
08:45 AM	1	108	0	1	13	1	13	4	2	20	86	1	0	3	2	1	2	7	5	0	270
Total	4	424	9	6	56	10	78	29	7	60	439	12	3	17	9	1	7	33	32	5	1241
Grand Total	6	886	21	9	86	19	159	57	19	117	919	23	9	26	12	5	12	57	65	9	2516
Apprch %	0.7	96.1	2.3	1	26.8	5.9	49.5	17.8	1.8	10.9	85.3	2.1	17.3	50	23.1	9.6	8.4	39.9	45.5	6.3	
Total %	0.2	35.2	0.8	0.4	3.4	0.8	6.3	2.3	0.8	4.7	36.5	0.9	0.4	1	0.5	0.2	0.5	2.3	2.6	0.4	
Cars	5	848	21	8	84	19	159	55	19	115	854	20	9	26	12	5	12	54	65	9	2399
% Cars	83.3	95.7	100	88.9	97.7	100	100	96.5	100	98.3	92.9	87	100	100	100	100	100	94.7	100	100	95.3
Trucks	1	38	0	1	2	0	0	2	0	2	65	3	0	0	0	0	0	3	0	0	117
% Trucks	16.7	4.3	0	11.1	2.3	0	0	3.5	0	1.7	7.1	13	0	0	0	0	0	5.3	0	0	4.7

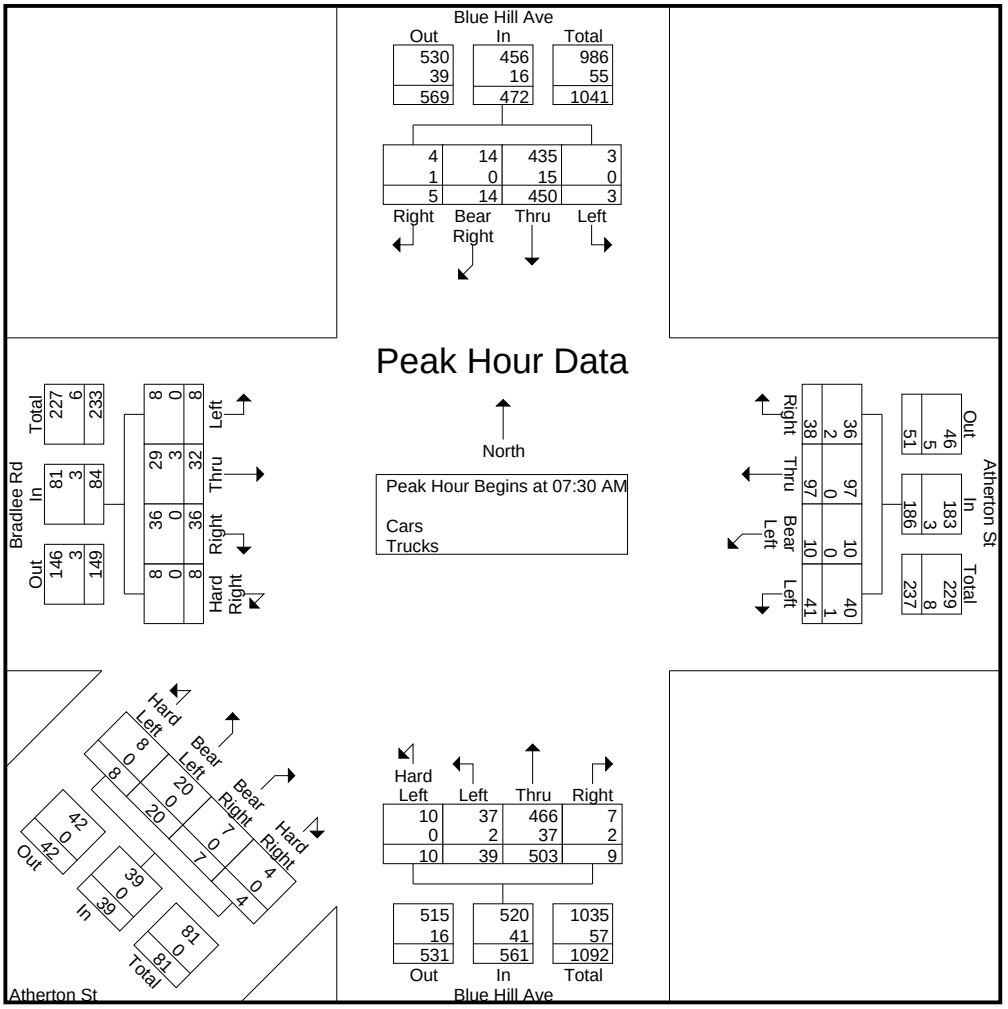
	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	0	122	3	1	126	4	**4**	22	**11**	41	3	8	129	**3**	143	2	4	**2**	0	8	**3**	**12**	9	**3**	27	345
07:45 AM	1	**128**	4	1	**134**	8	1	25	8	42	**4**	**13**	128	3	**148**	**4**	4	1	**4**	**13**	1	1	7	1	10	**347**
08:00 AM	0	108	**6**	1	115	11	2	19	9	41	1	13	**133**	1	148	1	**9**	2	0	12	2	8	3	1	14	330
08:15 AM	**2**	92	1	**2**	97	**18**	3	**31**	10	**62**	2	5	113	2	122	1	3	2	0	6	2	11	**17**	3	**33**	320
Total Volume	3	450	14	5	472	41	10	97	38	186	10	39	503	9	561	8	20	7	4	39	8	32	36	8	84	1342
% App. Total	0.6	95.3	3	1.1		22	5.4	52.2	20.4		1.8	7	89.7	1.6		20.5	51.3	17.9	10.3		9.5	38.1	42.9	9.5		
PHF	.375	.879	.583	.625	.881	.569	.625	.782	.864	.750	.625	.750	.945	.750	.948	.500	.556	.875	.250	.750	.667	.667	.529	.667	.636	.967
Cars	3	435	14	4	456	40	10	97	36	183	10	37	466	7	520	8	20	7	4	39	8	29	36	8	81	1279
% Cars	100	96.7	100	80.0	96.6	97.6	100	100	94.7	98.4	100	94.9	92.6	77.8	92.7	100	100	100	100	100	100	90.6	100	100	96.4	95.3
Trucks	0	15	0	1	16	1	0	0	2	3	0	2	37	2	41	0	0	0	0	0	0	3	0	0	3	63
% Trucks	0	3.3	0	20.0	3.4	2.4	0	0	5.3	1.6	0	5.1	7.4	22.2	7.3	0	0	0	0	0	0	9.4	0	0	3.6	4.7

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

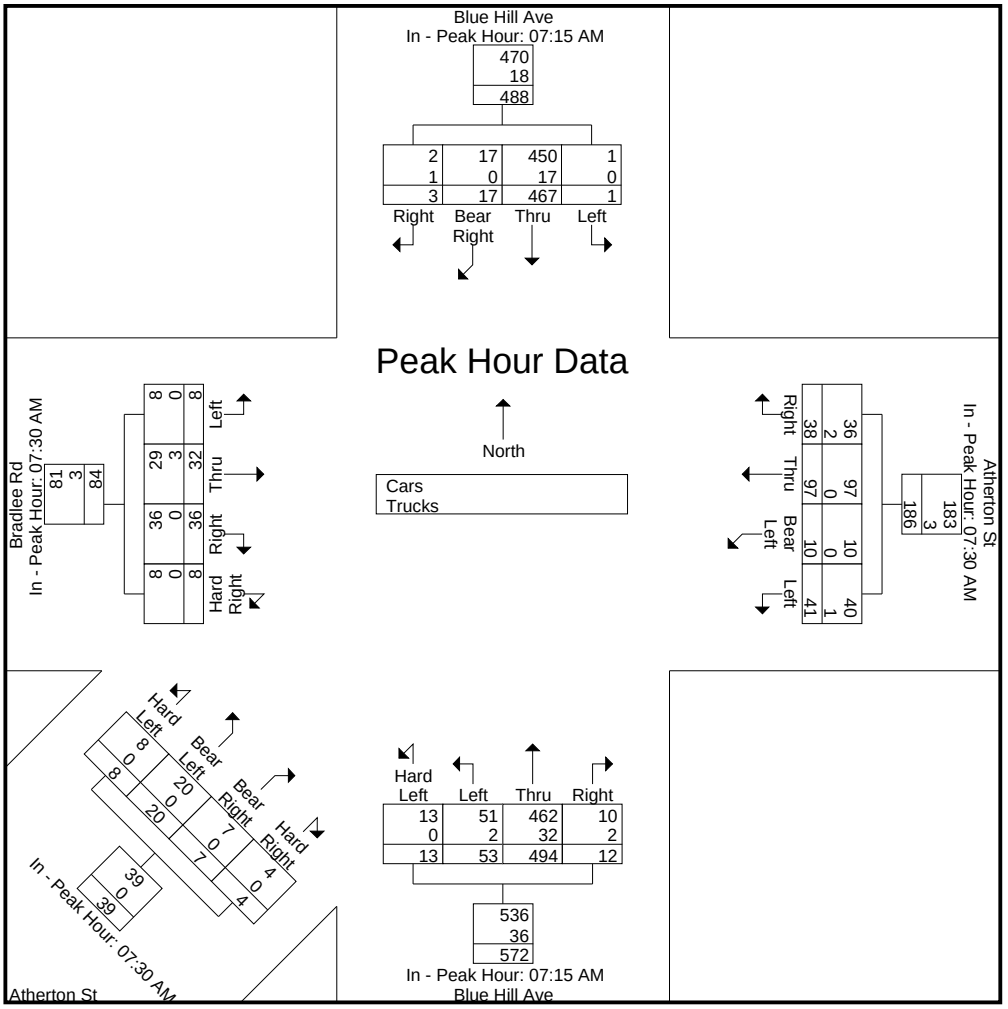
	07:15 AM					07:30 AM					07:15 AM					07:30 AM					07:30 AM				
+0 mins.	0	109	4	0	113	4	**4**	22	**11**	41	**5**	**19**	104	**5**	133	2	4	**2**	0	8	**3**	**12**	9	**3**	27
+15 mins.	0	122	3	**1**	126	8	1	25	8	42	3	8	129	3	143	**4**	4	1	**4**	**13**	1	1	7	1	10
+30 mins.	**1**	**128**	4	1	**134**	11	2	19	9	41	4	13	128	3	**148**	1	**9**	2	0	12	2	8	3	1	14
+45 mins.	0	108	**6**	1	115	**18**	3	**31**	10	**62**	1	13	**133**	1	148	1	3	2	0	6	2	11	**17**	3	**33**
Total Volume	1	467	17	3	488	41	10	97	38	186	13	53	494	12	572	8	20	7	4	39	8	32	36	8	84
% App. Total	0.2	95.7	3.5	0.6		22	5.4	52.2	20.4		2.3	9.3	86.4	2.1		20.5	51.3	17.9	10.3		9.5	38.1	42.9	9.5	
PHF	.250	.912	.708	.750	.910	.569	.625	.782	.864	.750	.650	.697	.929	.600	.966	.500	.556	.875	.250	.750	.667	.667	.529	.667	.636
Cars	1	450	17	2	470	40	10	97	36	183	13	51	462	10	536	8	20	7	4	39	8	29	36	8	81
% Cars	100	96.4	100	66.7	96.3	97.6	100	100	94.7	98.4	100	96.2	93.5	83.3	93.7	100	100	100	100	100	100	90.6	100	100	96.4
Trucks	0	17	0	1	18	1	0	0	2	3	0	2	32	2	36	0	0	0	0	0	0	3	0	0	3
% Trucks	0	3.6	0	33.3	3.7	2.4	0	0	5.3	1.6	0	3.8	6.5	16.7	6.3	0	0	0	0	0	0	9.4	0	0	3.6

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 4

Groups Printed- Cars

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
07:00 AM	0	96	1	1	9	0	18	5	0	17	111	0	0	1	0	0	1	6	12	0	278
07:15 AM	0	104	4	0	8	4	16	4	5	19	97	5	0	0	0	0	0	5	5	0	276
07:30 AM	0	120	3	1	4	4	22	11	3	7	118	3	2	4	2	0	3	12	9	3	331
07:45 AM	1	123	4	0	8	1	25	8	4	12	120	1	4	4	1	4	1	1	7	1	330
Total	1	443	12	2	29	9	81	28	12	55	446	9	6	9	3	4	5	24	33	4	1215
08:00 AM	0	103	6	1	11	2	19	8	1	13	127	1	1	9	2	0	2	7	3	1	317
08:15 AM	2	89	1	2	17	3	31	9	2	5	101	2	1	3	2	0	2	9	17	3	301
08:30 AM	1	110	2	2	14	4	15	6	2	22	98	7	1	2	3	0	1	7	7	1	305
08:45 AM	1	103	0	1	13	1	13	4	2	20	82	1	0	3	2	1	2	7	5	0	261
Total	4	405	9	6	55	10	78	27	7	60	408	11	3	17	9	1	7	30	32	5	1184
Grand Total	5	848	21	8	84	19	159	55	19	115	854	20	9	26	12	5	12	54	65	9	2399
Apprch %	0.6	96.1	2.4	0.9	26.5	6	50.2	17.4	1.9	11.4	84.7	2	17.3	50	23.1	9.6	8.6	38.6	46.4	6.4	
Total %	0.2	35.3	0.9	0.3	3.5	0.8	6.6	2.3	0.8	4.8	35.6	0.8	0.4	1.1	0.5	0.2	0.5	2.3	2.7	0.4	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:30 AM																										
07:30 AM	0	120	3	1	124	4	**4**	22	**11**	41	3	7	118	**3**	131	2	4	**2**	0	8	**3**	**12**	9	**3**	27	**331**
07:45 AM	1	**123**	4	0	**128**	8	1	25	8	42	**4**	12	120	1	137	**4**	4	1	**4**	**13**	1	1	7	1	10	330
08:00 AM	0	103	**6**	1	110	11	2	19	8	40	1	**13**	**127**	1	**142**	1	**9**	2	0	12	2	7	3	1	13	317
08:15 AM	**2**	89	1	**2**	94	**17**	3	**31**	9	**60**	2	5	101	2	110	1	3	2	0	6	2	9	**17**	3	**31**	301
Total Volume	3	435	14	4	456	40	10	97	36	183	10	37	466	7	520	8	20	7	4	39	8	29	36	8	81	1279
% App. Total	0.7	95.4	3.1	0.9		21.9	5.5	53	19.7		1.9	7.1	89.6	1.3		20.5	51.3	17.9	10.3		9.9	35.8	44.4	9.9		
PHF	.375	.884	.583	.500	.891	.588	.625	.782	.818	.763	.625	.712	.917	.583	.915	.500	.556	.875	.250	.750	.667	.604	.529	.667	.653	.966

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 7

Groups Printed- Trucks

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
07:00 AM	1	7	0	0	1	0	0	0	0	0	8	0	0	0	0	0	0	0	0	0	17
07:15 AM	0	5	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	12
07:30 AM	0	2	0	0	0	0	0	0	0	1	11	0	0	0	0	0	0	0	0	0	14
07:45 AM	0	5	0	1	0	0	0	0	0	1	8	2	0	0	0	0	0	0	0	0	17
Total	1	19	0	1	1	0	0	0	0	2	34	2	0	0	0	0	0	0	0	0	60
08:00 AM	0	5	0	0	0	0	0	1	0	0	6	0	0	0	0	0	0	1	0	0	13
08:15 AM	0	3	0	0	1	0	0	1	0	0	12	0	0	0	0	0	0	2	0	0	19
08:30 AM	0	6	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0	0	16
08:45 AM	0	5	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	9
Total	0	19	0	0	1	0	0	2	0	0	31	1	0	0	0	0	0	3	0	0	57
Grand Total	1	38	0	1	2	0	0	2	0	2	65	3	0	0	0	0	0	3	0	0	117
Apprch %	2.5	95	0	2.5	50	0	0	50	0	2.9	92.9	4.3	0	0	0	0	0	100	0	0	
Total %	0.9	32.5	0	0.9	1.7	0	0	1.7	0	1.7	55.6	2.6	0	0	0	0	0	2.6	0	0	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:45 AM																										
07:45 AM	0	5	0	**1**	**6**	0	0	0	0	0	0	**1**	8	**2**	11	0	0	0	0	0	0	0	0	0	0	17
08:00 AM	0	5	0	0	5	0	0	0	**1**	1	0	0	6	0	6	0	0	0	0	0	0	1	0	0	1	13
08:15 AM	0	3	0	0	3	**1**	0	0	1	**2**	0	0	**12**	0	**12**	0	0	0	0	0	0	**2**	0	0	**2**	**19**
08:30 AM	0	**6**	0	0	6	0	0	0	0	0	0	0	9	1	10	0	0	0	0	0	0	0	0	0	0	16
Total Volume	0	19	0	1	20	1	0	0	2	3	0	1	35	3	39	0	0	0	0	0	0	3	0	0	3	65
% App. Total	0	95	0	5		33.3	0	0	66.7		0	2.6	89.7	7.7		0	0	0	0		0	100	0	0		
PHF	.000	.792	.000	.250	.833	.250	.000	.000	.500	.375	.000	.250	.729	.375	.813	.000	.000	.000	.000	.000	.000	.375	.000	.000	.375	.855

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 10

Groups Printed- Bikes Peds

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West							
Start Time	Left	Thru	Bear Right	Right	Peds	Left	Bear Left	Thru	Right	Peds	Hard Left	Left	Thru	Right	Peds	Hard Left	Bear Left	Bear Right	Hard Right	Peds	Left	Thru	Right	Hard Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2
07:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	1	3
07:30 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
07:45 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
Total	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	4	1	5
08:00 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
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30 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
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	1	3
Total	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	2	2	4
Grand Total	0	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	2	6	3	9
Apprch %	0	0	0	100		0	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0				
Total %	0	0	0	33.3		0	0	0	0		0	0	66.7	0		0	0	0	0		0	0	0	0		66.7	33.3	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 08:00 AM																										
08:00 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
08:15 AM	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	**1**
08:30 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
08:45 AM	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	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 1

Groups Printed- Cars - Trucks

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
04:00 PM	4	68	3	2	7	0	17	4	0	10	95	7	1	2	0	0	4	11	9	2	246
04:15 PM	8	97	2	2	4	3	16	5	0	10	130	5	2	3	1	0	4	15	8	0	315
04:30 PM	5	73	3	2	1	1	17	4	5	11	117	8	0	1	0	0	4	10	11	2	275
04:45 PM	5	49	2	2	2	5	13	6	0	10	132	4	1	3	4	1	4	10	4	1	258
Total	22	287	10	8	14	9	63	19	5	41	474	24	4	9	5	1	16	46	32	5	1094
05:00 PM	7	86	6	1	4	5	16	0	3	15	105	5	2	6	3	0	1	16	14	1	296
05:15 PM	7	93	3	2	10	3	15	5	4	16	159	1	3	6	3	0	2	9	10	2	353
05:30 PM	9	86	1	1	2	2	12	7	0	14	133	3	2	5	3	0	1	11	7	0	299
05:45 PM	17	87	0	1	3	0	15	1	2	11	106	10	0	0	5	0	1	10	7	0	276
Total	40	352	10	5	19	10	58	13	9	56	503	19	7	17	14	0	5	46	38	3	1224
Grand Total	62	639	20	13	33	19	121	32	14	97	977	43	11	26	19	1	21	92	70	8	2318
Apprch %	8.4	87.1	2.7	1.8	16.1	9.3	59	15.6	1.2	8.6	86.4	3.8	19.3	45.6	33.3	1.8	11	48.2	36.6	4.2	
Total %	2.7	27.6	0.9	0.6	1.4	0.8	5.2	1.4	0.6	4.2	42.1	1.9	0.5	1.1	0.8	0	0.9	4	3	0.3	
Cars	61	619	20	13	30	19	119	31	14	97	963	43	11	26	19	1	20	91	69	8	2274
% Cars	98.4	96.9	100	100	90.9	100	98.3	96.9	100	100	98.6	100	100	100	100	100	95.2	98.9	98.6	100	98.1
Trucks	1	20	0	0	3	0	2	1	0	0	14	0	0	0	0	0	1	1	1	0	44
% Trucks	1.6	3.1	0	0	9.1	0	1.7	3.1	0	0	1.4	0	0	0	0	0	4.8	1.1	1.4	0	1.9

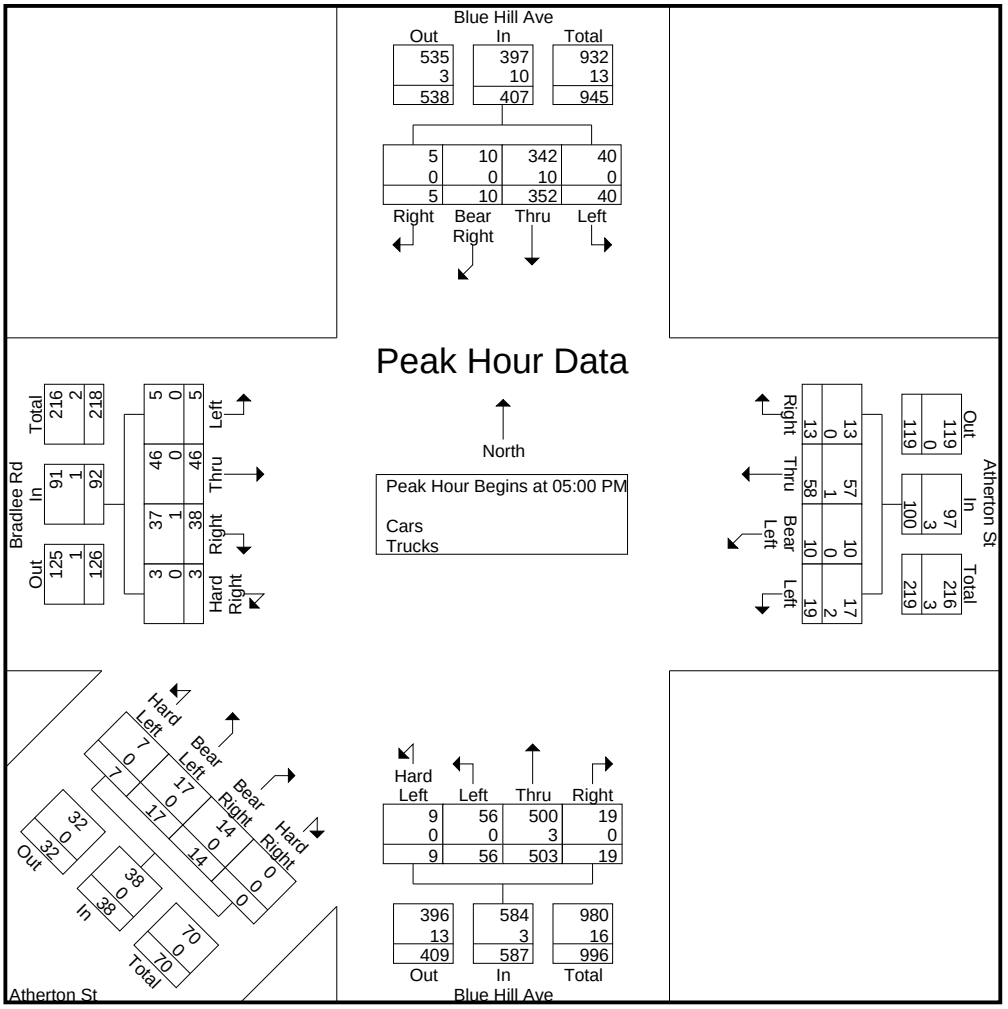
	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	7	86	**6**	1	100	4	**5**	**16**	0	25	3	15	105	5	128	2	**6**	3	0	11	1	**16**	**14**	1	**32**	296
05:15 PM	7	**93**	3	**2**	**105**	**10**	3	15	5	**33**	**4**	**16**	**159**	1	**180**	**3**	6	3	0	**12**	**2**	9	10	**2**	23	**353**
05:30 PM	9	86	1	1	97	2	2	12	**7**	23	0	14	133	3	150	2	5	3	0	10	1	11	7	0	19	299
05:45 PM	**17**	87	0	1	105	3	0	15	1	19	2	11	106	**10**	129	0	0	**5**	0	5	1	10	7	0	18	276
Total Volume	40	352	10	5	407	19	10	58	13	100	9	56	503	19	587	7	17	14	0	38	5	46	38	3	92	1224
% App. Total	9.8	86.5	2.5	1.2		19	10	58	13		1.5	9.5	85.7	3.2		18.4	44.7	36.8	0		5.4	50	41.3	3.3		
PHF	.588	.946	.417	.625	.969	.475	.500	.906	.464	.758	.563	.875	.791	.475	.815	.583	.708	.700	.000	.792	.625	.719	.679	.375	.719	.867
Cars	40	342	10	5	397	17	10	57	13	97	9	56	500	19	584	7	17	14	0	38	5	46	37	3	91	1207
% Cars	100	97.2	100	100	97.5	89.5	100	98.3	100	97.0	100	100	99.4	100	99.5	100	100	100	0	100	100	100	97.4	100	98.9	98.6
Trucks	0	10	0	0	10	2	0	1	0	3	0	0	3	0	3	0	0	0	0	0	0	0	1	0	1	17
% Trucks	0	2.8	0	0	2.5	10.5	0	1.7	0	3.0	0	0	0.6	0	0.5	0	0	0	0	0	0	0	2.6	0	1.1	1.4

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

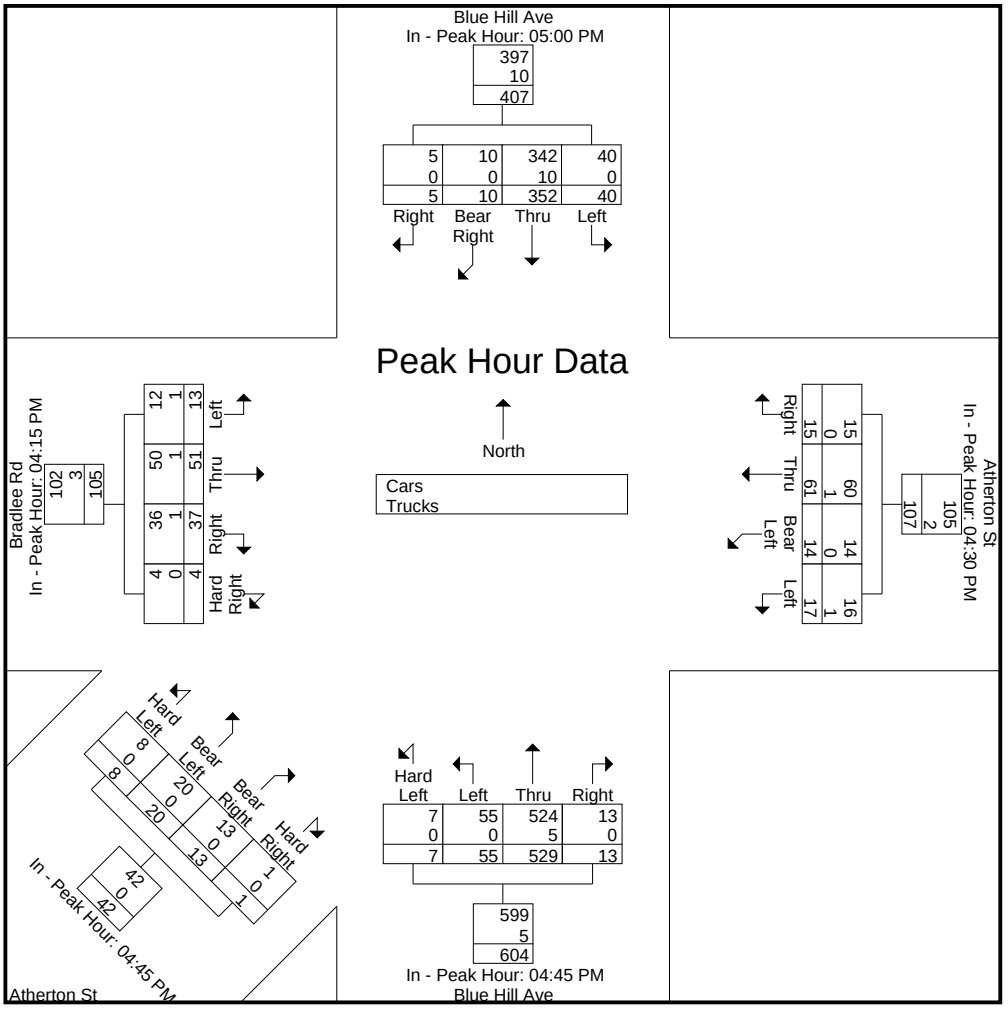
	05:00 PM					04:30 PM					04:45 PM					04:45 PM					04:15 PM				
+0 mins.	7	86	**6**	1	100	1	1	**17**	4	23	0	10	132	4	146	1	3	**4**	**1**	9	**4**	15	8	0	27
+15 mins.	7	**93**	3	**2**	**105**	2	**5**	13	**6**	26	3	15	105	**5**	128	2	**6**	3	0	11	4	10	11	**2**	27
+30 mins.	9	86	1	1	97	4	5	16	0	25	**4**	**16**	**159**	1	**180**	**3**	6	3	0	**12**	4	10	4	1	19
+45 mins.	**17**	87	0	1	105	**10**	3	15	5	**33**	0	14	133	3	150	2	5	3	0	10	1	**16**	**14**	1	**32**
Total Volume	40	352	10	5	407	17	14	61	15	107	7	55	529	13	604	8	20	13	1	42	13	51	37	4	105
% App. Total	9.8	86.5	2.5	1.2		15.9	13.1	57	14		1.2	9.1	87.6	2.2		19	47.6	31	2.4		12.4	48.6	35.2	3.8	
PHF	.588	.946	.417	.625	.969	.425	.700	.897	.625	.811	.438	.859	.832	.650	.839	.667	.833	.813	.250	.875	.813	.797	.661	.500	.820
Cars	40	342	10	5	397	16	14	60	15	105	7	55	524	13	599	8	20	13	1	42	12	50	36	4	102
% Cars	100	97.2	100	100	97.5	94.1	100	98.4	100	98.1	100	100	99.1	100	99.2	100	100	100	100	100	92.3	98	97.3	100	97.1
Trucks	0	10	0	0	10	1	0	1	0	2	0	0	5	0	5	0	0	0	0	0	1	1	1	0	3
% Trucks	0	2.8	0	0	2.5	5.9	0	1.6	0	1.9	0	0	0.9	0	0.8	0	0	0	0	0	7.7	2	2.7	0	2.9

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 4

Groups Printed- Cars

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
04:00 PM	4	66	3	2	6	0	17	3	0	10	90	7	1	2	0	0	4	11	9	2	237
04:15 PM	8	94	2	2	4	3	15	5	0	10	128	5	2	3	1	0	4	14	8	0	308
04:30 PM	5	72	3	2	1	1	17	4	5	11	116	8	0	1	0	0	3	10	11	2	272
04:45 PM	4	45	2	2	2	5	13	6	0	10	129	4	1	3	4	1	4	10	4	1	250
Total	21	277	10	8	13	9	62	18	5	41	463	24	4	9	5	1	15	45	32	5	1067
05:00 PM	7	85	6	1	4	5	15	0	3	15	104	5	2	6	3	0	1	16	13	1	292
05:15 PM	7	91	3	2	9	3	15	5	4	16	159	1	3	6	3	0	2	9	10	2	350
05:30 PM	9	82	1	1	2	2	12	7	0	14	132	3	2	5	3	0	1	11	7	0	294
05:45 PM	17	84	0	1	2	0	15	1	2	11	105	10	0	0	5	0	1	10	7	0	271
Total	40	342	10	5	17	10	57	13	9	56	500	19	7	17	14	0	5	46	37	3	1207
Grand Total	61	619	20	13	30	19	119	31	14	97	963	43	11	26	19	1	20	91	69	8	2274
Apprch %	8.6	86.8	2.8	1.8	15.1	9.5	59.8	15.6	1.3	8.7	86.2	3.8	19.3	45.6	33.3	1.8	10.6	48.4	36.7	4.3	
Total %	2.7	27.2	0.9	0.6	1.3	0.8	5.2	1.4	0.6	4.3	42.3	1.9	0.5	1.1	0.8	0	0.9	4	3	0.4	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 05:00 PM																										
05:00 PM	7	85	**6**	1	99	4	**5**	**15**	0	24	3	15	104	5	127	2	**6**	3	0	11	1	**16**	**13**	1	**31**	292
05:15 PM	7	**91**	3	**2**	**103**	**9**	3	15	5	**32**	**4**	**16**	**159**	1	**180**	**3**	6	3	0	**12**	**2**	9	10	**2**	23	**350**
05:30 PM	9	82	1	1	93	2	2	12	**7**	23	0	14	132	3	149	2	5	3	0	10	1	11	7	0	19	294
05:45 PM	**17**	84	0	1	102	2	0	15	1	18	2	11	105	**10**	128	0	0	**5**	0	5	1	10	7	0	18	271
Total Volume	40	342	10	5	397	17	10	57	13	97	9	56	500	19	584	7	17	14	0	38	5	46	37	3	91	1207
% App. Total	10.1	86.1	2.5	1.3		17.5	10.3	58.8	13.4		1.5	9.6	85.6	3.3		18.4	44.7	36.8	0		5.5	50.5	40.7	3.3		
PHF	.588	.940	.417	.625	.964	.472	.500	.950	.464	.758	.563	.875	.786	.475	.811	.583	.708	.700	.000	.792	.625	.719	.712	.375	.734	.862

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 7

Groups Printed- Trucks

	Blue Hill Ave From North				Atherton St From East				Blue Hill Ave From South				Atherton St From Southwest				Bradlee Rd From West				
Start Time	Left	Thru	Bear Right	Right	Left	Bear Left	Thru	Right	Hard Left	Left	Thru	Right	Hard Left	Bear Left	Bear Right	Hard Right	Left	Thru	Right	Hard Right	Int. Total
04:00 PM	0	2	0	0	1	0	0	1	0	0	5	0	0	0	0	0	0	0	0	0	9
04:15 PM	0	3	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	1	0	0	7
04:30 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	3
04:45 PM	1	4	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	8
Total	1	10	0	0	1	0	1	1	0	0	11	0	0	0	0	0	1	1	0	0	27
05:00 PM	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	4
05:15 PM	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:30 PM	0	4	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
05:45 PM	0	3	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	5
Total	0	10	0	0	2	0	1	0	0	0	3	0	0	0	0	0	0	0	1	0	17
Grand Total	1	20	0	0	3	0	2	1	0	0	14	0	0	0	0	0	1	1	1	0	44
Apprch %	4.8	95.2	0	0	50	0	33.3	16.7	0	0	100	0	0	0	0	0	33.3	33.3	33.3	0	
Total %	2.3	45.5	0	0	6.8	0	4.5	2.3	0	0	31.8	0	0	0	0	0	2.3	2.3	2.3	0	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:00 PM																										
04:00 PM	0	2	0	0	2	**1**	0	0	**1**	**2**	0	0	**5**	0	**5**	0	0	0	0	0	0	0	0	0	0	**9**
04:15 PM	0	3	0	0	3	0	0	**1**	0	1	0	0	2	0	2	0	0	0	0	0	0	**1**	0	0	**1**	7
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	**1**	0	0	0	1	3
04:45 PM	**1**	**4**	0	0	**5**	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	8
Total Volume	1	10	0	0	11	1	0	1	1	3	0	0	11	0	11	0	0	0	0	0	1	1	0	0	2	27
% App. Total	9.1	90.9	0	0		33.3	0	33.3	33.3		0	0	100	0		0	0	0	0		50	50	0	0		
PHF	.250	.625	.000	.000	.550	.250	.000	.250	.250	.375	.000	.000	.550	.000	.550	.000	.000	.000	.000	.000	.250	.250	.000	.000	.500	.750

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Atherton St / Bradlee Rd
City/State : Milton, MA
Weather : Clear

File Name : 10000001
Site Code : 10000001
Start Date : 11/6/2024
Page No : 10

Groups Printed- Bikes Peds

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West							
Start Time	Left	Thru	Bear Right	Right	Peds	Left	Bear Left	Thru	Right	Peds	Hard Left	Left	Thru	Right	Peds	Hard Left	Bear Left	Bear Right	Hard Right	Peds	Left	Thru	Right	Hard Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	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	1	0	1
04:15 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
04:30 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
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2
Total	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	3	0	3
05:00 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
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	0	3
05:30 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
05:45 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
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	3	0	3
Grand Total	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	6	0	6
Apprch %	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0				
Total %																										100	0	

	Blue Hill Ave From North					Atherton St From East					Blue Hill Ave From South					Atherton St From Southwest					Bradlee Rd From West					
Start Time	Left	Thru	Bear Right	Right	App. Total	Left	Bear Left	Thru	Right	App. Total	Hard Left	Left	Thru	Right	App. Total	Hard Left	Bear Left	Bear Right	Hard Right	App. Total	Left	Thru	Right	Hard Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:00 PM																										
04:00 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
04:15 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
04:30 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
04:45 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
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024
Page No : 1

Groups Printed- Cars - Trucks

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	106	0	1	3	6	2	123	1	1	1	1	245
07:15 AM	0	108	1	1	3	0	0	113	6	2	2	0	236
07:30 AM	0	121	0	8	5	2	0	146	9	3	5	0	299
07:45 AM	0	131	3	6	3	2	0	132	1	2	1	0	281
Total	0	466	4	16	14	10	2	514	17	8	9	1	1061
08:00 AM	0	116	4	6	4	2	0	141	2	0	3	3	281
08:15 AM	4	97	1	16	4	3	0	131	13	0	0	0	269
08:30 AM	0	100	1	5	3	5	1	113	13	4	4	2	251
08:45 AM	0	113	1	4	4	3	0	89	2	1	8	0	225
Total	4	426	7	31	15	13	1	474	30	5	15	5	1026
Grand Total	4	892	11	47	29	23	3	988	47	13	24	6	2087
Apprch %	0.4	98.3	1.2	47.5	29.3	23.2	0.3	95.2	4.5	30.2	55.8	14	
Total %	0.2	42.7	0.5	2.3	1.4	1.1	0.1	47.3	2.3	0.6	1.1	0.3	
Cars	4	866	11	47	29	22	3	942	47	13	24	5	2013
% Cars	100	97.1	100	100	100	95.7	100	95.3	100	100	100	83.3	96.5
Trucks	0	26	0	0	0	1	0	46	0	0	0	1	74
% Trucks	0	2.9	0	0	0	4.3	0	4.7	0	0	0	16.7	3.5

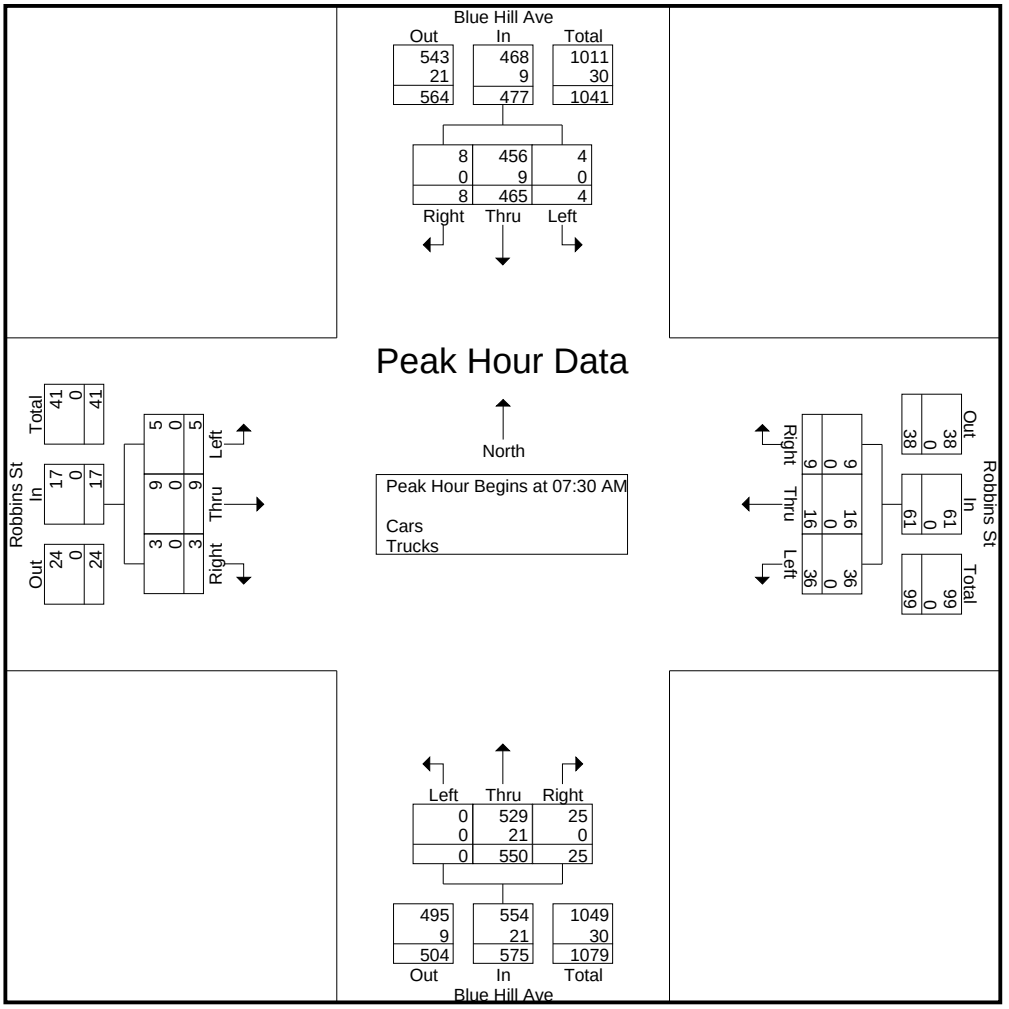
	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	121	0	121	8	**5**	2	15	0	**146**	9	**155**	**3**	**5**	0	**8**	**299**
07:45 AM	0	**131**	3	**134**	6	3	2	11	0	132	1	133	2	1	0	3	281
08:00 AM	0	116	**4**	120	6	4	2	12	0	141	2	143	0	3	**3**	6	281
08:15 AM	**4**	97	1	102	**16**	4	**3**	**23**	0	131	**13**	144	0	0	0	0	269
Total Volume	4	465	8	477	36	16	9	61	0	550	25	575	5	9	3	17	1130
% App. Total	0.8	97.5	1.7		59	26.2	14.8		0	95.7	4.3		29.4	52.9	17.6		
PHF	.250	.887	.500	.890	.563	.800	.750	.663	.000	.942	.481	.927	.417	.450	.250	.531	.945
Cars	4	456	8	468	36	16	9	61	0	529	25	554	5	9	3	17	1100
% Cars	100	98.1	100	98.1	100	100	100	100	0	96.2	100	96.3	100	100	100	100	97.3
Trucks	0	9	0	9	0	0	0	0	0	21	0	21	0	0	0	0	30
% Trucks	0	1.9	0	1.9	0	0	0	0	0	3.8	0	3.7	0	0	0	0	2.7

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

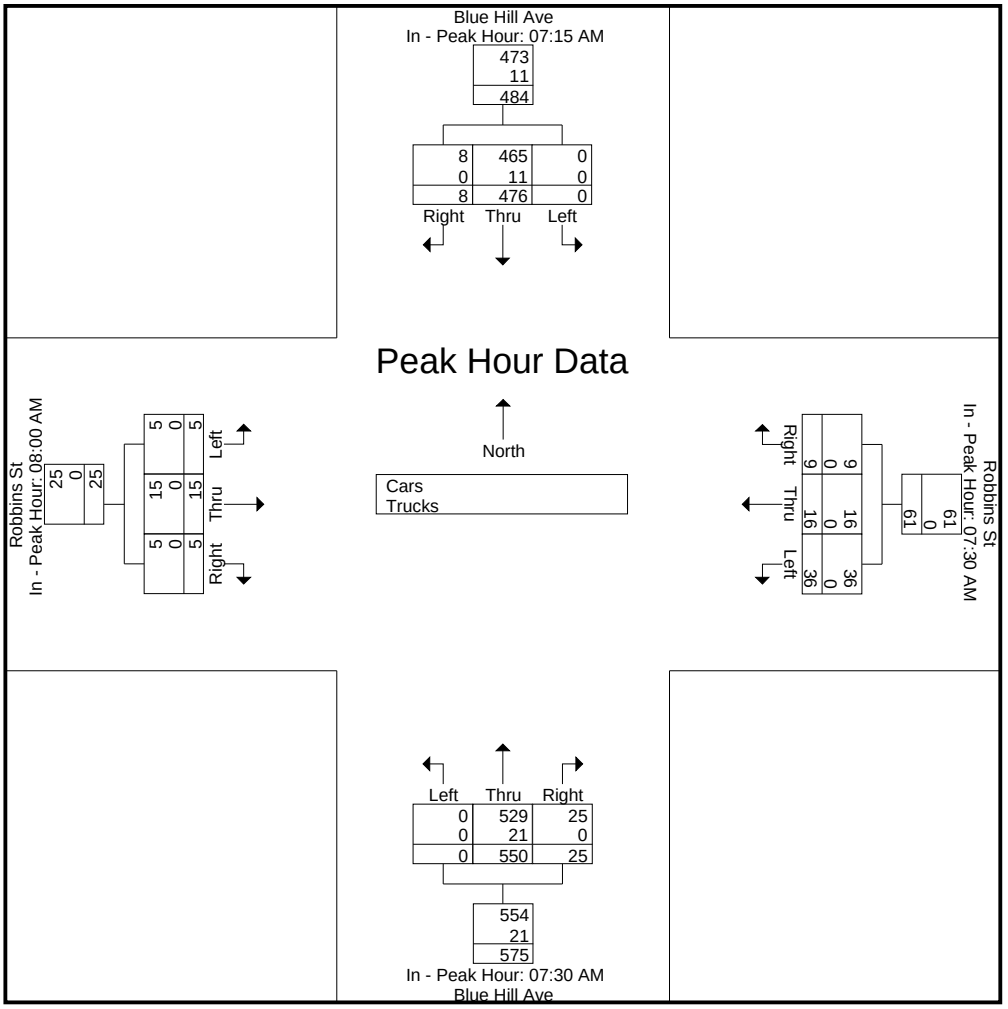
	07:15 AM				07:30 AM				07:30 AM				08:00 AM			
+0 mins.	0	108	1	109	8	**5**	2	15	0	**146**	9	**155**	0	3	**3**	6
+15 mins.	0	121	0	121	6	3	2	11	0	132	1	133	0	0	0	0
+30 mins.	0	**131**	3	**134**	6	4	2	12	0	141	2	143	**4**	4	2	**10**
+45 mins.	0	116	**4**	120	**16**	4	**3**	**23**	0	131	**13**	144	1	**8**	0	9
Total Volume	0	476	8	484	36	16	9	61	0	550	25	575	5	15	5	25
% App. Total	0	98.3	1.7		59	26.2	14.8		0	95.7	4.3		20	60	20	
PHF	.000	.908	.500	.903	.563	.800	.750	.663	.000	.942	.481	.927	.313	.469	.417	.625
Cars	0	465	8	473	36	16	9	61	0	529	25	554	5	15	5	25
% Cars	0	97.7	100	97.7	100	100	100	100	0	96.2	100	96.3	100	100	100	100
Trucks	0	11	0	11	0	0	0	0	0	21	0	21	0	0	0	0
% Trucks	0	2.3	0	2.3	0	0	0	0	0	3.8	0	3.7	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Cars

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	100	0	1	3	6	2	118	1	1	1	0	233
07:15 AM	0	104	1	1	3	0	0	108	6	2	2	0	227
07:30 AM	0	120	0	8	5	2	0	140	9	3	5	0	292
07:45 AM	0	128	3	6	3	2	0	127	1	2	1	0	273
Total	0	452	4	16	14	10	2	493	17	8	9	0	1025
08:00 AM	0	113	4	6	4	2	0	136	2	0	3	3	273
08:15 AM	4	95	1	16	4	3	0	126	13	0	0	0	262
08:30 AM	0	96	1	5	3	4	1	103	13	4	4	2	236
08:45 AM	0	110	1	4	4	3	0	84	2	1	8	0	217
Total	4	414	7	31	15	12	1	449	30	5	15	5	988
Grand Total	4	866	11	47	29	22	3	942	47	13	24	5	2013
Apprch %	0.5	98.3	1.2	48	29.6	22.4	0.3	95	4.7	31	57.1	11.9	
Total %	0.2	43	0.5	2.3	1.4	1.1	0.1	46.8	2.3	0.6	1.2	0.2	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	120	0	120	8	**5**	2	15	0	**140**	9	**149**	**3**	**5**	0	**8**	**292**
07:45 AM	0	**128**	3	**131**	6	3	2	11	0	127	1	128	2	1	0	3	273
08:00 AM	0	113	**4**	117	6	4	2	12	0	136	2	138	0	3	**3**	6	273
08:15 AM	**4**	95	1	100	**16**	4	**3**	**23**	0	126	**13**	139	0	0	0	0	262
Total Volume	4	456	8	468	36	16	9	61	0	529	25	554	5	9	3	17	1100
% App. Total	0.9	97.4	1.7		59	26.2	14.8		0	95.5	4.5		29.4	52.9	17.6		
PHF	.250	.891	.500	.893	.563	.800	.750	.663	.000	.945	.481	.930	.417	.450	.250	.531	.942

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Trucks

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	6	0	0	0	0	0	5	0	0	0	1	12
07:15 AM	0	4	0	0	0	0	0	5	0	0	0	0	9
07:30 AM	0	1	0	0	0	0	0	6	0	0	0	0	7
07:45 AM	0	3	0	0	0	0	0	5	0	0	0	0	8
Total	0	14	0	0	0	0	0	21	0	0	0	1	36
08:00 AM	0	3	0	0	0	0	0	5	0	0	0	0	8
08:15 AM	0	2	0	0	0	0	0	5	0	0	0	0	7
08:30 AM	0	4	0	0	0	1	0	10	0	0	0	0	15
08:45 AM	0	3	0	0	0	0	0	5	0	0	0	0	8
Total	0	12	0	0	0	1	0	25	0	0	0	0	38
Grand Total	0	26	0	0	0	1	0	46	0	0	0	1	74
Apprch %	0	100	0	0	0	100	0	100	0	0	0	100	
Total %	0	35.1	0	0	0	1.4	0	62.2	0	0	0	1.4	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	3	0	3	0	0	0	0	0	5	0	5	0	0	0	0	8
08:00 AM	0	3	0	3	0	0	0	0	0	5	0	5	0	0	0	0	8
08:15 AM	0	2	0	2	0	0	0	0	0	5	0	5	0	0	0	0	7
08:30 AM	0	**4**	0	**4**	0	0	**1**	**1**	0	**10**	0	**10**	0	0	0	0	**15**
Total Volume	0	12	0	12	0	0	1	1	0	25	0	25	0	0	0	0	38
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	.750	.000	.750	.000	.000	.250	.250	.000	.625	.000	.625	.000	.000	.000	.000	.633

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Bikes Peds

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	2	3
08:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
08:15 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	1	2
Total	0	0	0	1	0	0	1	0	0	1	0	1	0	1	0	0	2	3	5
Grand Total	0	1	0	1	0	0	1	0	0	1	1	2	0	1	0	0	3	5	8
Apprch %	0	100	0		0	0	100		0	50	50		0	100	0				
Total %	0	20	0		0	0	20		0	20	20		0	20	0		37.5	62.5	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	**1**	**1**	0	0	0	0	0	0	0	0	1
Total Volume	0	1	0	1	0	0	1	1	0	0	1	1	0	0	0	0	3
% App. Total	0	100	0		0	0	100		0	0	100		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.250	.250	.000	.000	.250	.250	.000	.000	.000	.000	.750

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Cars - Trucks

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	3	70	2	1	4	1	1	95	9	2	3	0	191
04:15 PM	2	99	2	3	7	0	2	127	12	1	6	0	261
04:30 PM	0	79	3	1	3	0	1	125	5	3	4	0	224
04:45 PM	0	63	1	6	5	4	0	139	18	1	4	0	241
Total	5	311	8	11	19	5	4	486	44	7	17	0	917
05:00 PM	1	92	1	4	5	7	1	113	13	0	5	1	243
05:15 PM	2	103	0	3	5	2	0	163	2	0	3	0	283
05:30 PM	1	99	0	3	8	1	1	149	1	0	11	1	275
05:45 PM	2	98	1	2	3	2	0	111	6	1	6	1	233
Total	6	392	2	12	21	12	2	536	22	1	25	3	1034
Grand Total	11	703	10	23	40	17	6	1022	66	8	42	3	1951
Apprch %	1.5	97.1	1.4	28.8	50	21.2	0.5	93.4	6	15.1	79.2	5.7	
Total %	0.6	36	0.5	1.2	2.1	0.9	0.3	52.4	3.4	0.4	2.2	0.2	
Cars	10	688	10	22	40	17	6	1014	66	8	42	3	1926
% Cars	90.9	97.9	100	95.7	100	100	100	99.2	100	100	100	100	98.7
Trucks	1	15	0	1	0	0	0	8	0	0	0	0	25
% Trucks	9.1	2.1	0	4.3	0	0	0	0.8	0	0	0	0	1.3

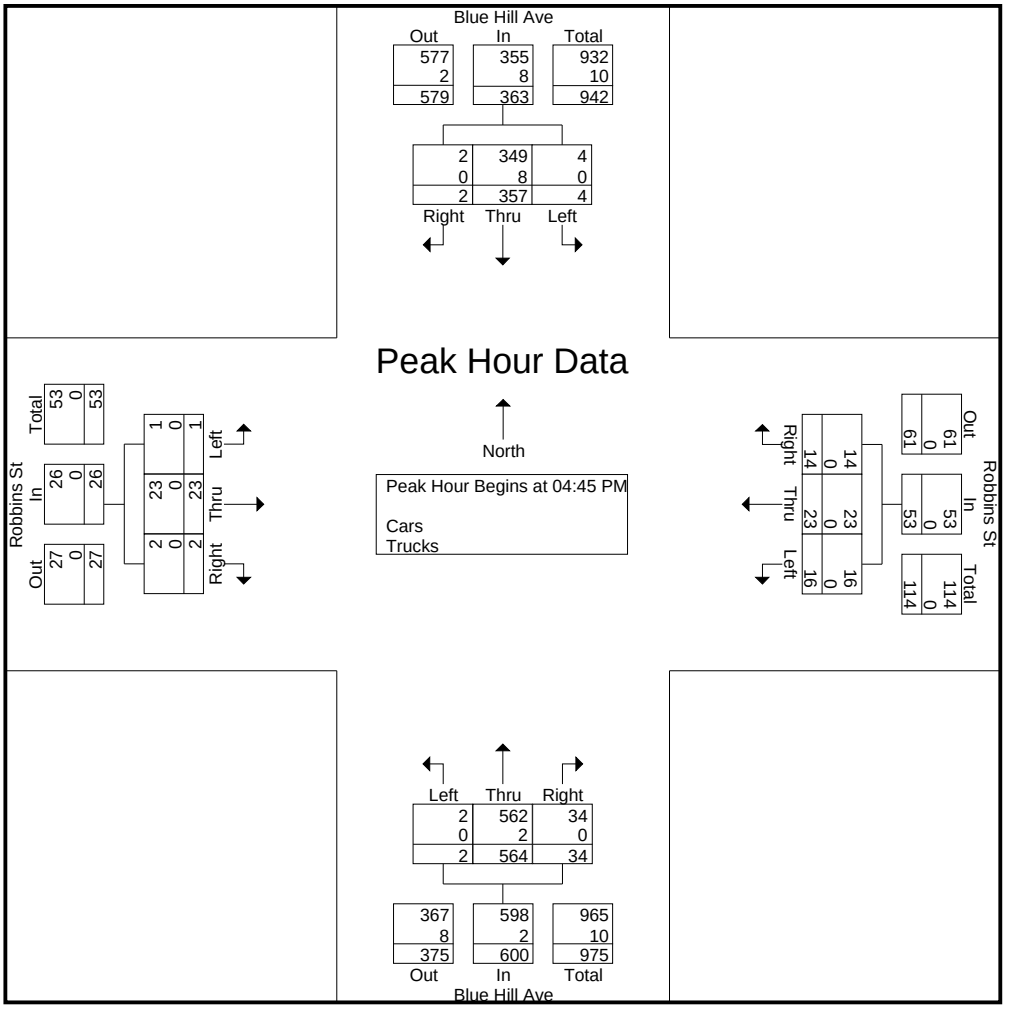
	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	63	**1**	64	**6**	5	4	15	0	139	**18**	157	**1**	4	0	5	241
05:00 PM	1	92	1	94	4	5	**7**	**16**	**1**	113	13	127	0	5	**1**	6	243
05:15 PM	**2**	**103**	0	**105**	3	5	2	10	0	**163**	2	**165**	0	3	0	3	**283**
05:30 PM	1	99	0	100	3	**8**	1	12	1	149	1	151	0	**11**	1	**12**	275
Total Volume	4	357	2	363	16	23	14	53	2	564	34	600	1	23	2	26	1042
% App. Total	1.1	98.3	0.6		30.2	43.4	26.4		0.3	94	5.7		3.8	88.5	7.7		
PHF	.500	.867	.500	.864	.667	.719	.500	.828	.500	.865	.472	.909	.250	.523	.500	.542	.920
Cars	4	349	2	355	16	23	14	53	2	562	34	598	1	23	2	26	1032
% Cars	100	97.8	100	97.8	100	100	100	100	100	99.6	100	99.7	100	100	100	100	99.0
Trucks	0	8	0	8	0	0	0	0	0	2	0	2	0	0	0	0	10
% Trucks	0	2.2	0	2.2	0	0	0	0	0	0.4	0	0.3	0	0	0	0	1.0

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

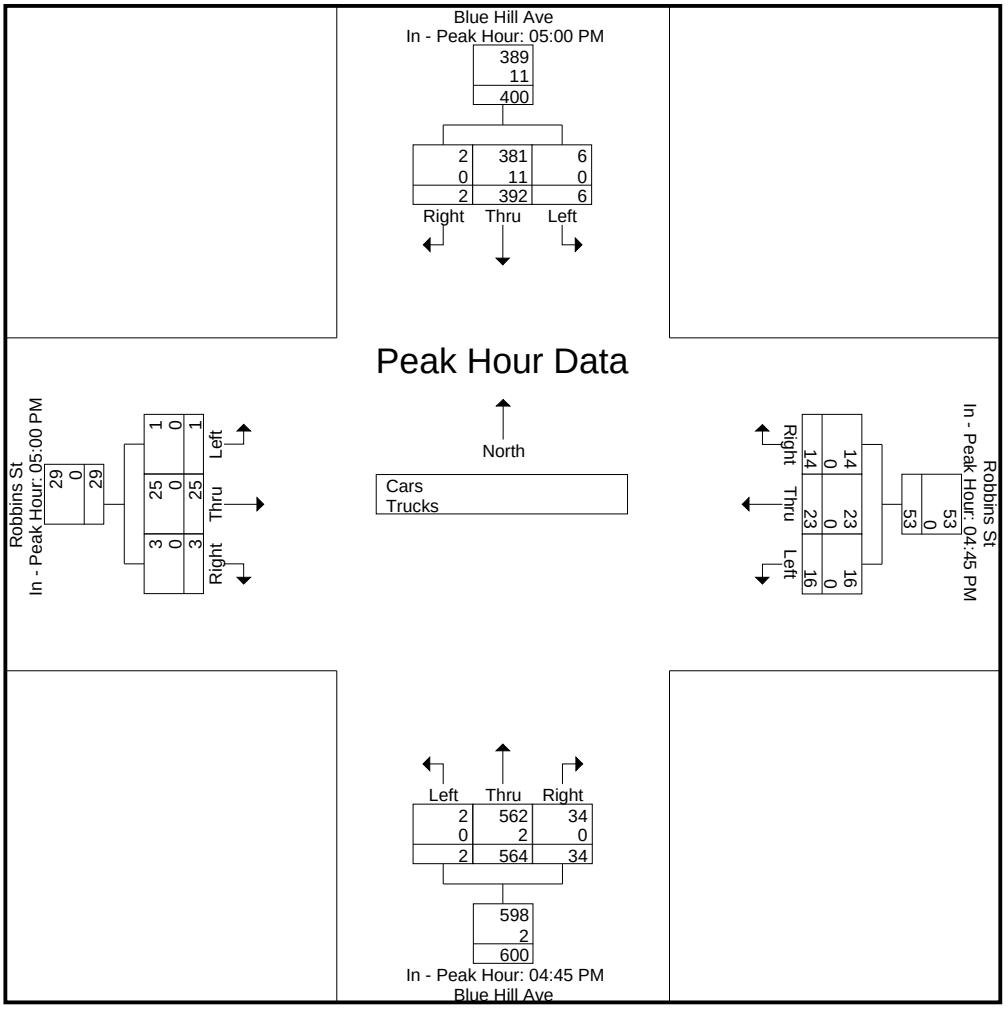
	05:00 PM				04:45 PM				04:45 PM				05:00 PM			
+0 mins.	1	92	**1**	94	**6**	5	4	15	0	139	**18**	157	0	5	**1**	6
+15 mins.	**2**	**103**	0	**105**	4	5	**7**	**16**	**1**	113	13	127	0	3	0	3
+30 mins.	1	99	0	100	3	5	2	10	0	**163**	2	**165**	0	**11**	1	**12**
+45 mins.	2	98	1	101	3	**8**	1	12	1	149	1	151	**1**	6	1	8
Total Volume	6	392	2	400	16	23	14	53	2	564	34	600	1	25	3	29
% App. Total	1.5	98	0.5		30.2	43.4	26.4		0.3	94	5.7		3.4	86.2	10.3	
PHF	.750	.951	.500	.952	.667	.719	.500	.828	.500	.865	.472	.909	.250	.568	.750	.604
Cars	6	381	2	389	16	23	14	53	2	562	34	598	1	25	3	29
% Cars	100	97.2	100	97.2	100	100	100	100	100	99.6	100	99.7	100	100	100	100
Trucks	0	11	0	11	0	0	0	0	0	2	0	2	0	0	0	0
% Trucks	0	2.8	0	2.8	0	0	0	0	0	0.4	0	0.3	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Cars

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	2	69	2	1	4	1	1	92	9	2	3	0	186
04:15 PM	2	99	2	2	7	0	2	126	12	1	6	0	259
04:30 PM	0	77	3	1	3	0	1	124	5	3	4	0	221
04:45 PM	0	62	1	6	5	4	0	138	18	1	4	0	239
Total	4	307	8	10	19	5	4	480	44	7	17	0	905
05:00 PM	1	91	1	4	5	7	1	112	13	0	5	1	241
05:15 PM	2	102	0	3	5	2	0	163	2	0	3	0	282
05:30 PM	1	94	0	3	8	1	1	149	1	0	11	1	270
05:45 PM	2	94	1	2	3	2	0	110	6	1	6	1	228
Total	6	381	2	12	21	12	2	534	22	1	25	3	1021
Grand Total	10	688	10	22	40	17	6	1014	66	8	42	3	1926
Apprch %	1.4	97.2	1.4	27.8	50.6	21.5	0.6	93.4	6.1	15.1	79.2	5.7	
Total %	0.5	35.7	0.5	1.1	2.1	0.9	0.3	52.6	3.4	0.4	2.2	0.2	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	62	**1**	63	**6**	5	4	15	0	138	**18**	156	**1**	4	0	5	239
05:00 PM	1	91	1	93	4	5	**7**	**16**	**1**	112	13	126	0	5	**1**	6	241
05:15 PM	**2**	**102**	0	**104**	3	5	2	10	0	**163**	2	**165**	0	3	0	3	**282**
05:30 PM	1	94	0	95	3	**8**	1	12	1	149	1	151	0	**11**	1	**12**	270
Total Volume	4	349	2	355	16	23	14	53	2	562	34	598	1	23	2	26	1032
% App. Total	1.1	98.3	0.6		30.2	43.4	26.4		0.3	94	5.7		3.8	88.5	7.7		
PHF	.500	.855	.500	.853	.667	.719	.500	.828	.500	.862	.472	.906	.250	.523	.500	.542	.915

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Trucks

	Blue Hill Ave From North			Robbins St From East			Blue Hill Ave From South			Robbins St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	1	1	0	0	0	0	0	3	0	0	0	0	5
04:15 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
04:30 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
04:45 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	1	4	0	1	0	0	0	6	0	0	0	0	12
05:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
05:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	5	0	0	0	0	0	0	0	0	0	0	5
05:45 PM	0	4	0	0	0	0	0	1	0	0	0	0	5
Total	0	11	0	0	0	0	0	2	0	0	0	0	13
Grand Total	1	15	0	1	0	0	0	8	0	0	0	0	25
Apprch %	6.2	93.8	0	100	0	0	0	100	0	0	0	0	
Total %	4	60	0	4	0	0	0	32	0	0	0	0	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	0	1	0	0	0	0	0	**1**	0	**1**	0	0	0	0	2
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	**5**	0	**5**	0	0	0	0	0	0	0	0	0	0	0	0	**5**
05:45 PM	0	4	0	4	0	0	0	0	0	1	0	1	0	0	0	0	5
Total Volume	0	11	0	11	0	0	0	0	0	2	0	2	0	0	0	0	13
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.550	.000	.550	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.650

Accurate Counts

978-664-2565

N/S Street : Blue Hill Avenue
E/W Street : Robbins Street
City/State : Milton, MA
Weather : Clear

File Name : 10000002
Site Code : 10000002
Start Date : 11/6/2024

Groups Printed- Bikes Peds

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	1	0	0	0	0	0	0	2	0	0	0	0	2	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	3
04:30 PM	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	3	0	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
Total	0	0	0	1	1	0	0	0	0	0	0	8	0	0	0	0	9	1	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 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	0	0	0	0	0	0
Grand Total	0	0	0	1	1	0	0	0	0	0	0	8	0	0	0	0	9	1	10
Apprch %	0	0	0		100	0	0		0	0	0		0	0	0				
Total %	0	0	0		100	0	0		0	0	0		0	0	0		90	10	

	Blue Hill Ave From North				Robbins St From East				Blue Hill Ave From South				Robbins St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% App. Total	0	0	0		100	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department
Statewide Traffic Data Collection
2023 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.23	1.14	1.11	1.06	1.01	0.96	0.93	0.91	1.00	0.97	1.04	1.08	0.77
R3	1.11	1.07	1.02	0.95	0.90	0.89	0.87	0.87	0.92	0.89	0.95	0.99	0.98
R4-R7	1.19	1.16	1.10	1.00	0.92	0.91	0.87	0.88	0.93	0.93	1.01	1.06	0.98
U1-Boston	1.07	1.05	1.00	0.95	0.93	0.92	0.92	0.92	0.94	0.93	0.96	0.99	0.94
U1-Essex	1.14	1.11	1.06	1.00	0.95	0.91	0.87	0.87	0.94	0.95	1.00	1.03	0.96
U1-Southeast	1.12	1.09	1.04	0.96	0.91	0.87	0.84	0.86	0.92	0.94	0.98	1.03	0.96
U1-West	1.05	1.02	0.98	0.96	0.94	0.93	0.94	0.94	0.95	0.92	0.96	0.98	0.81
U1-Worcester	1.06	1.04	0.97	0.93	0.92	0.90	0.92	0.92	0.93	0.92	0.94	0.97	0.88
U3	1.05	1.02	0.96	0.92	0.89	0.89	0.91	0.92	0.91	0.90	0.94	0.96	0.98
U4-U7	1.02	1.00	0.94	0.89	0.86	0.88	0.91	0.92	0.89	0.88	0.91	0.91	0.99
UR2	1.05	1.01	0.97	0.92	0.90	0.90	0.91	0.91	0.91	0.90	0.94	0.97	0.98
Rec - East	1.17	1.16	1.09	1.04	0.92	0.84	0.76	0.80	0.93	1.00	1.03	1.06	0.98
Rec - West	1.46	1.38	1.32	1.06	0.94	0.79	0.59	0.69	0.97	0.99	1.18	1.28	0.98

Round off:
0-999 = 10
>1000 = 100

U = Urban
R = Rural

1 - Interstate
2 - Freeway and Expressway
3 - Other Principal Arterial
4 - Minor Arterial
5 - Major Collector
6 - Minor Collector
7 - Local Road and Street

UR2 Group - Combination of Urban Freeways and Expressways and Rural Freeways and Expressways.

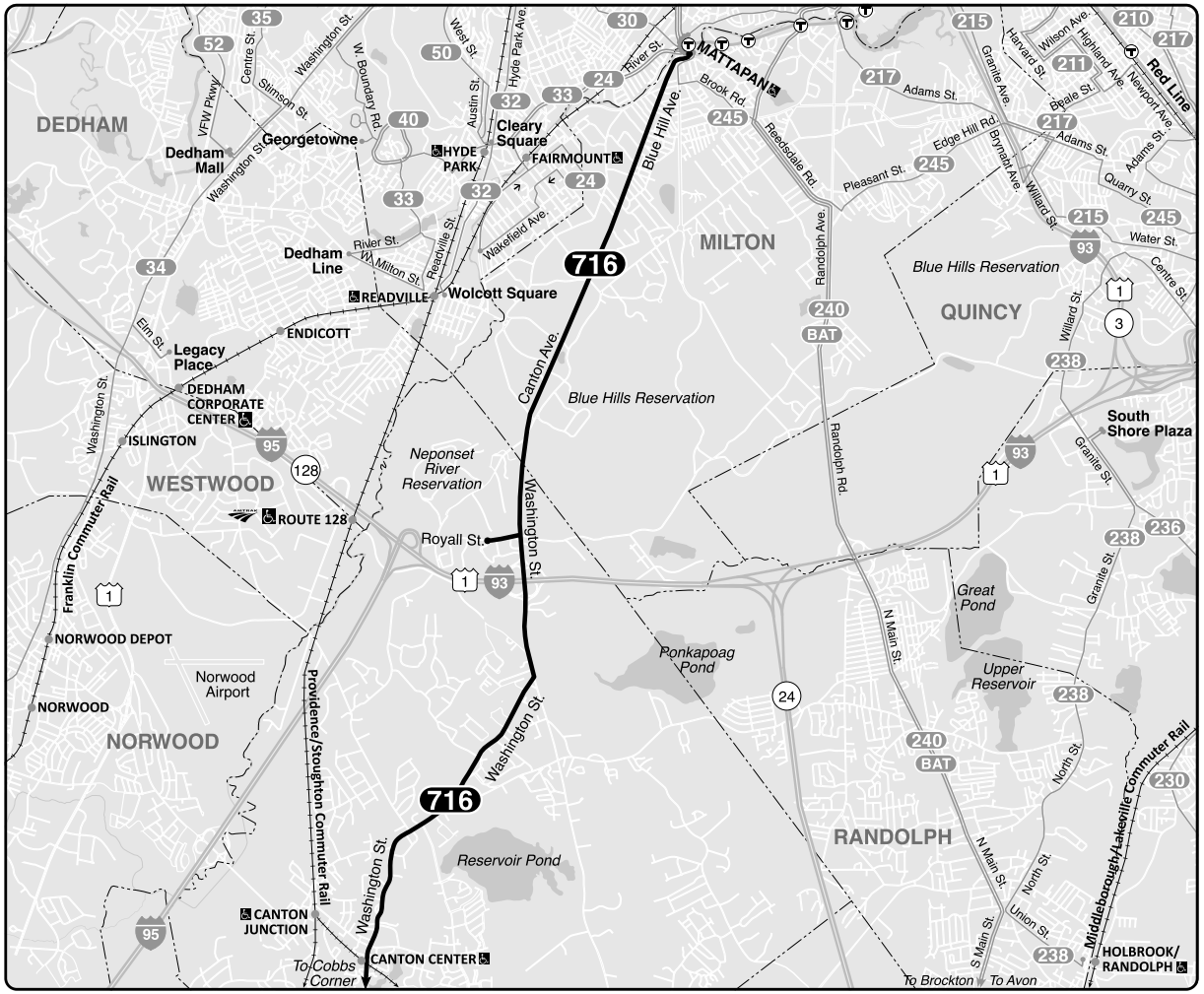
Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket.

Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113, 1114,1116,2196,2197 and 2198.

PUBLIC TRANSPORTATION

Effective **August 25, 2024** Replaces July 2024

716 Cobbs Corner – Mattapan 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

MATTAPAN LINE

PROVIDENCE/STOUGHTON LINE

Information **617-222-3200**
Lost and Found **877-378-4445**
TTY **617-222-5146**

Operated by DPV Transportation

mbta.com

PVT-3-24.3

Monday–Friday

716

Inbound
to Mattapan Station

Cobbs Corner	Canton Center Sta	Royall St, Park/Ride	Curry College	Mattapan Station
6:30	6:36	6:46	6:57	7:07
8:00	8:06	8:16	8:27	8:37
9:30	9:36	9:46	9:57	10:07
11:00	11:06	11:16	11:27	11:37
12:30	**12:36**	**12:46**	**12:57**	**1:07**
2:00	**2:06**	**2:16**	**2:27**	**2:37**
3:30	**3:36**	**3:46**	**3:57**	**4:07**
5:05	**5:11**	**5:21**	**5:32**	**5:42**
6:35	**6:41**	**6:51**	**7:02**	**7:12**

Monday–Friday

716

Outbound
to Cobbs Corner

Mattapan Station	Curry College	Royall St, Park/Ride	Canton Center Sta	Cobbs Corner
5:45	5:56	6:03	6:10	6:16
7:15	7:26	7:33	7:40	7:46
8:45	8:56	9:03	9:10	9:16
10:15	10:26	10:33	10:40	10:46
11:45	11:56	**12:03**	**12:10**	**12:16**
1:15	**1:26**	**1:33**	**1:40**	**1:46**
2:45	**2:56**	**3:03**	**3:10**	**3:16**
4:15	**4:26**	**4:33**	**4:40**	**4:46**
5:45	**5:56**	**6:03**	**6:10**	**6:16**
7:15	**7:26**	**7:33**	**7:40**	**7:46**

Saturday

716

Inbound
to Mattapan Station

Cobbs Corner	Canton Center Sta	Royall St, Park/Ride	Curry College	Mattapan Station
8:30	8:35	8:43	8:52	8:57
9:35	9:40	9:48	9:57	10:02
10:40	10:45	10:53	11:02	11:07
11:45	11:50	11:58	**12:07**	**12:12**
12:50	**12:55**	**1:03**	**1:12**	**1:17**
1:55	**2:00**	**2:08**	**2:17**	**2:22**
3:00	**3:05**	**3:13**	**3:22**	**3:27**
4:05	**4:10**	**4:18**	**4:27**	**4:32**
5:10	**5:15**	**5:23**	**5:32**	**5:37**
6:15	**6:20**	**6:28**	**6:37**	**6:42**

Saturday

716

Outbound
to Cobbs Corner

Mattapan Station	Curry College	Royall St, Park/Ride	Canton Center Sta	Cobbs Corner
8:00	8:04	8:11	8:19	8:24
9:05	9:09	9:16	9:24	9:29
10:10	10:14	10:21	10:29	10:34
11:15	11:19	11:26	11:34	11:39
12:20	**12:24**	**12:31**	**12:39**	**12:44**
1:25	**1:29**	**1:36**	**1:44**	**1:49**
2:30	**2:34**	**2:41**	**2:49**	**2:54**
3:35	**3:39**	**3:46**	**3:54**	**3:59**
4:40	**4:44**	**4:51**	**4:59**	**5:04**
5:45	**5:49**	**5:56**	**6:04**	**6:09**

Contactless payment options on this route coming soon!

This route is operated by DPV Transportation, under contract for the MBTA.

DPV Transportation
383 2nd Street
Everett, MA 02149
877-378-4445

Request service by flagging vehicle in any safe place along the route.

PM times are **bold**

Information in this timetable is subject to change without notice.

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

Holiday Service 2024

Saturday service operates on: Martin Luther King Day, Presidents Day, Patriots' Day, Columbus/ Indigenous Peoples Day.

Sunday service operates on: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving, Christmas, New Year's Eve.

VEHICLE SPEED DATA

L B H A S C d 10000002
L S Dr
C S M , MA
D r NB,

11 202 T	0 - 1 MPH	1 - 20 MPH	2	20 - 2 MPH	2 - 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 60 MPH	6	60 - MPH	6 - 0 MPH	0 MPH	T
12 00 AM	1	0		0	0	0	1	2	22	11			2	1	1	
1 00	0	0		0	1	2	10	1					0	0	0	
2 00	0	0		0	0	1		11	12	6	1		0	0	0	6
00	0	0		0	0	1	2		16				0	0	1	
00	0	0		0	0			1	22	20	1		1	0	2	
00	0	0		0	0	0	10		6		11			0	1	1
6 00	0	0		0	0		0	12	10		12		2	0	0	
00	0	0		0	0	1		2	121		2		1	0	0	
00	1	1		0			11	21	100	10			1	0	0	62
00	0	0			0	12		1 0	10	20	1		0	0	0	1
10 00	0	0		0				1		2			0	0	0	6
11 00	0	0		0	1	22	0	1 6	1	22	1		0	0	0	
12 00 PM	0	0		0	0	11	2	1		10	2		0	0	0	26
1 00	0	0		1	1	1		1	100				0	2	0	
2 00	0	0		0		12	100	20	0	1	0		1	2	0	0
00	0	1		0		1		1		10	2		0	0	0	
00	0	0		0		20		1	0	1	2		1	0	0	
00	0	0				2	10	11		2	1		0	0	0	11
6 00	0	0		0	11	2	116	112	2				0	0	0	21
00	0	0		0	11	2		1	6		0		0	0	0	
00	0	0		0	0		10	1		1			0	0	0	1
00	0	0		0	11	10	2	0		16			1	0	0	21
10 00	0	0		0	6	1		2		1	6		0	0	0	201
11 00	0	0		0	0		0			1	1		0	0	0	1 1
T	2	2				2	1 00	2	1 1				1			666

P r 1 0
S d 2 0
M S d (A r) 1
10 MPH P S d - 6
N r P 0
P r P 6 0
N r 0 MPH 2
P r 0 MPH 1

Gr d T				2	1		0 6	01	2 0		16	2	12		1 001
S			P r		1	0									
			S d		6	1	6	0							
		M S d (A r)			2										
		10 MPH P S d			6-										
		N r P			262										
		P r P			6 0										
		N r 0 MPH			60										
		P r 0 MPH			6										

Accurate Counts
978-664-2565

L B H A S C d 10000002
L S Dr
C S M , MA
D r SB,

11 202 T	0 - 1 MPH	1 - 20 MPH	2	20 - MPH	2 - 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 60 MPH	6	60 - MPH	6 - 0 MPH	0 MPH	T	
12 00 AM	0	0	0	0	0		1	26	16				0		1	2	
1 00	0	0	0	0	0	0		1	10			1	2	1	0		
2 00	0	0	0	1	0	1		11					1	0	0	0	
00	0	0	0	0	2	2							0	0	0	0	
00	0	0	0	1	0	12				1			1	2	0	0	
00	0	0	0		2	62		6	60	0			2	1	0	00	
6 00	0	0	0		1			1 6	1 6	2			1	0	0	1	
00	0	0	0			1		1 2	1	1	11		1	0	1	0	
00	1		11			1		16	1	2	2		0	0	0		
00	0	0	0	21	1	120		1		1			2	0	0		
10 00	0	0	0		2	1	0	1		1			1	0	0	01	
11 00	0	0	1			10		116			2		0	0	0		
12 00 PM	0	0	2	1	26			1 0		12	0		2	0	0	2	
1 00	2	1			2	1		1	1	20			0	0	0		
2 00	0	1	0			10		1	1	2				0	0	1	
00	2	0	0	1		101		1	116	2	10		2	0	1	66	
00	2				0	16		20	112	1	2		1	0	0	0	
00	0	0	6	20	10	22		1	60	10	2		2	0	0		
6 00	0	0		2	10	1	1	11	2				0	0	0	6	
00	2	2			6	120		6	6	1	1		1	0	0	0	
00	0	0	0		26					1	2		1	1	0	262	
00	0	0	0	1	16	6		2		10			0	1	2	21	
10 00	0	0	0		11	6		6	1	10	2			1	0	1	
11 00	0	0	0	0	10	22				12	6		1	0	1	12	
T		12		1	61	211		2	1	0	10		2	10	6	0	

P r 1 0
S d 0 6 1
M S d (A r) 1
10 MPH P S d 6-
N r P 2
P r P 62 0
N r 0 MPH
P r 0 MPH

Gr d T	2			1	1 2	1	2		1 0		22	1	1	2
S		P r	1	0										
		S d		0	6	1								
	M S d (A r) 1 6													
	10 MPH P S d 6-													
	N r P 6													
	P r P 61 0													
	N r 0 MPH 26													
	P r 0 MPH 2													

Accurate Counts
978-664-2565

L B H A
L S Dr
C S M , MA
Dr C d

S C d 10000002

11 202 T	0 - 1 MPH	1 - 20 MPH	2 MPH	20 - 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 0 MPH	0 - MPH	- 60 MPH	6 MPH	60 - 0 MPH	6 - MPH	0 T	
12 00 AM	1	0	0	0		0			16		2		2	1	
1 00	0	0	0	1	2	1	2	1	1	6	2	1	0	6	
2 00	0	0	0	1	1	6	22	20		6	1	0	0	66	
00	0	0	0	0			10	2	1		0	0	1	6	
00	0	0	0	1		1	2	6		16	2	2	2	1	
00	0	0	0		2	2	1	12		20		1	1		
6 00	0	0	0		1		2	2		21		0	0		
00	0	0	0			2 6	06	202	2	1	2	0	1		
00	2	6	11	11	6	26	2	1 1			1	0	0	6	
00	0	0		21		1		1		6	2	0	0	2	
10 00	0	0	0	1		1	0	1			1	0	0	6	
11 00	0	0	1			1	2 2	1	1		0	0	0	0	
12 00 PM	0	0	2	1		16	2	1 2	22	2	2	0	0	66	
1 00	2	1			6	1 6	11	1 1	2		0	2	0		
2 00	0	1	0	10	0	20	2	1 1	2			2	0		
00	2	1	0	20		1	11	1 1		12	2	0	1	1	
00	2			10	0	26	2	162			2	0	0	0	
00	0	0	10	2	1 0		2	10	12		2	0	0	00	
6 00	0	0			1	2	2 1	61	12		0	0	0		
00	2	2		16		21	201	111	22	1	1	0	0	6 2	
00	0	0	0			1	21	11	2		1	1	0		
00	0	0	0	12	26	11	1 2		26		1	1	2		
10 00	0	0	0	11	26	1	1 0		2			1	0		
11 00	0	0	0	0	1	2	11		26		1	0	1	10	
T	11	1		2 1	10	61	2	2 6		1 2	0	1	11	1 1 1	

P r 1 0
S d 6 1 6 1
M S d (A r) 2
10 MPH P S d 6-
N r P
P r P 6 0
N r 0 MPH 1
P r 0 MPH 6

Gr d T	2	11	0	2 1	26	101 2	2 0	1 26	22 2

S P r 1 0
S d 1 6 1
M S d (A r) 2 2
10 MPH P S d 6-
N r P 1 2 0
P r P 6 0
N r 0 MPH 1 6
P r 0 MPH 62

MOTOR VEHICLE CRASH DATA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Milton COUNT DATE : Nov-24

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED : X

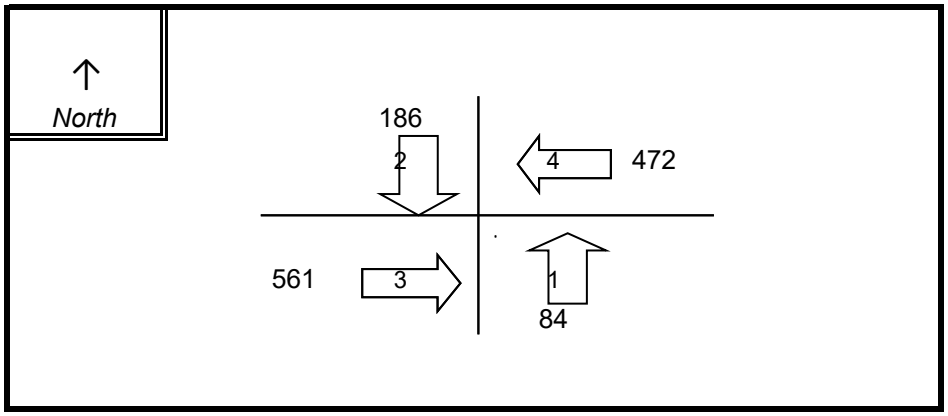
~ INTERSECTION DATA ~

MAJOR STREET : Route 138

MINOR STREET(S) : Bradlee Road

Atherton Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB	NEB	
PEAK HOURLY VOLUMES (AM) :	84	186	561	472	39	**1,342**

" K " FACTOR : **0.075** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **17,893**

TOTAL # OF CRASHES : 21 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR (**A**) : **4.20**

CRASH RATE CALCULATION : **0.64** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Accident Rate for District 6 signalized intersections = 0.71

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Milton COUNT DATE : Nov-24

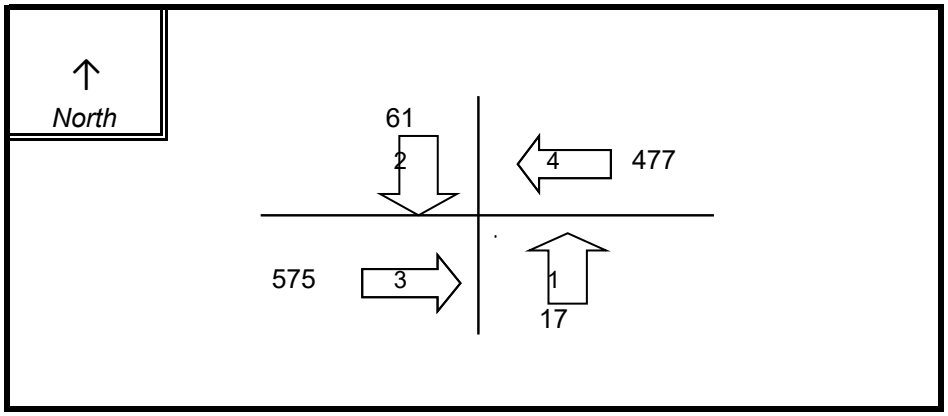
DISTRICT : 6 UNSIGNALIZED : SIGNALIZED : X

~ INTERSECTION DATA ~

MAJOR STREET : Route 138

MINOR STREET(S) : Ribbins Street

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	17	61	575	477		1,130

" K " FACTOR : **0.075** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **15,067**

TOTAL # OF CRASHES : 16 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR (**A**) : **3.20**

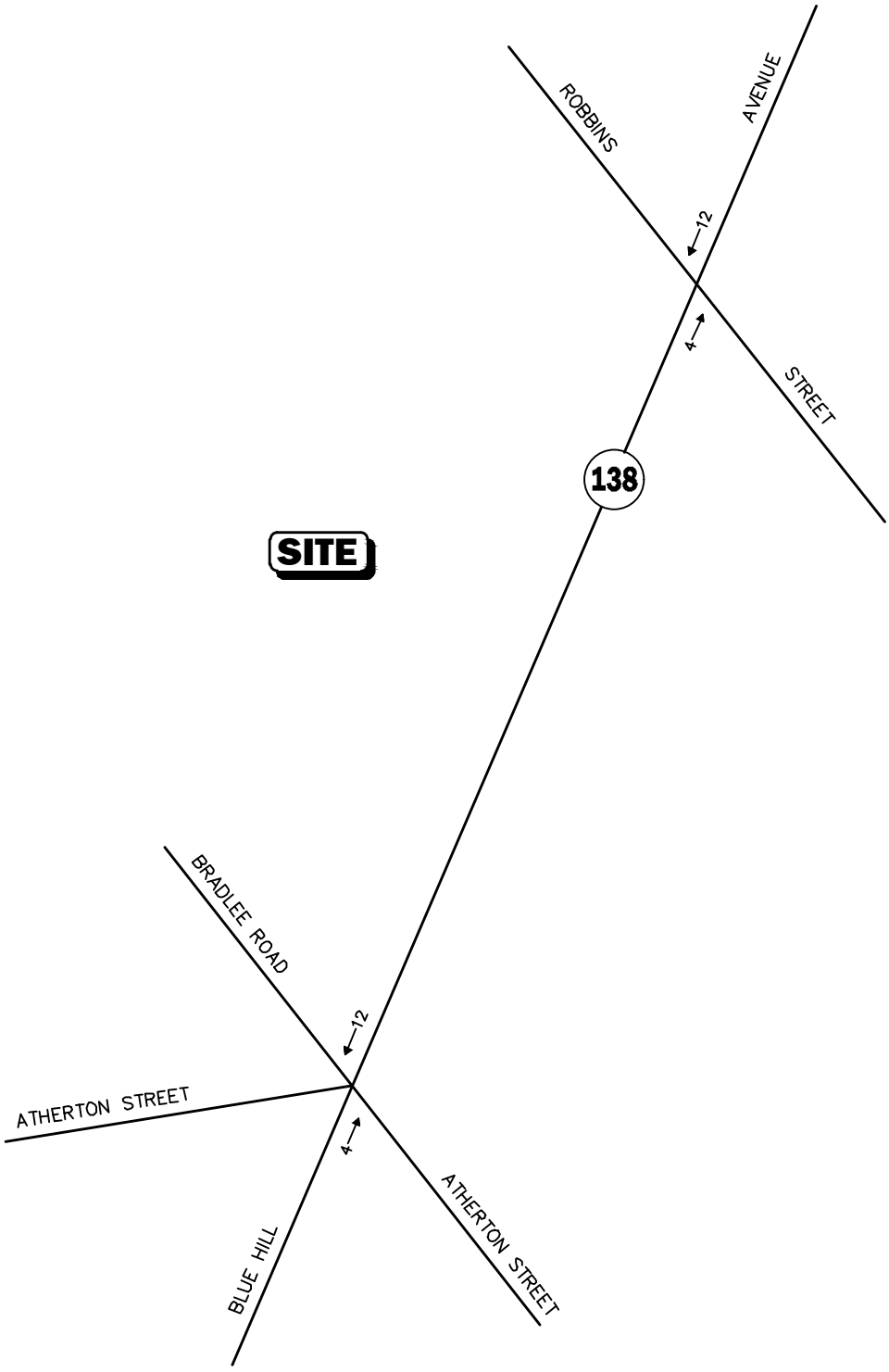
CRASH RATE CALCULATION : **0.58** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Accident Rate for District 6 signalized intersections = 0.71

GROWTH RATE CALCULATIONS

General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual
Milton	Route 138	North of Atherton Street	10,678	10,800		12,651	10,443	11,017	11,907	12,242	12,234	14,621	14,679	**3.19%**
Milton	Blue Hill Avenue	North of Neponset Valley Parkway	11,834	14,000	14,409	14,435	13,009	13,724	13,875	14,629	14,790	17,096	13,250	**1.55%**
Milton	Milton Street	West of Route 138										3,917	3,901	**-0.41%**
Milton	Blue Hill Avenue	North of Milton Street										18,582	18,656	**0.40%**
Milton	Bradlee Road	West of Route 138										2,168	2,159	**-0.42%**
Milton	Atherton Street	East of Route 138										1,825	1,818	**-0.38%**
Milton	Robbins Street	East of Route 138										1,170	1,165	**-0.43%**
Milton	Blue Hill Avenue	North of Robbins Street										12,378	12,428	**0.40%**
														0.49%

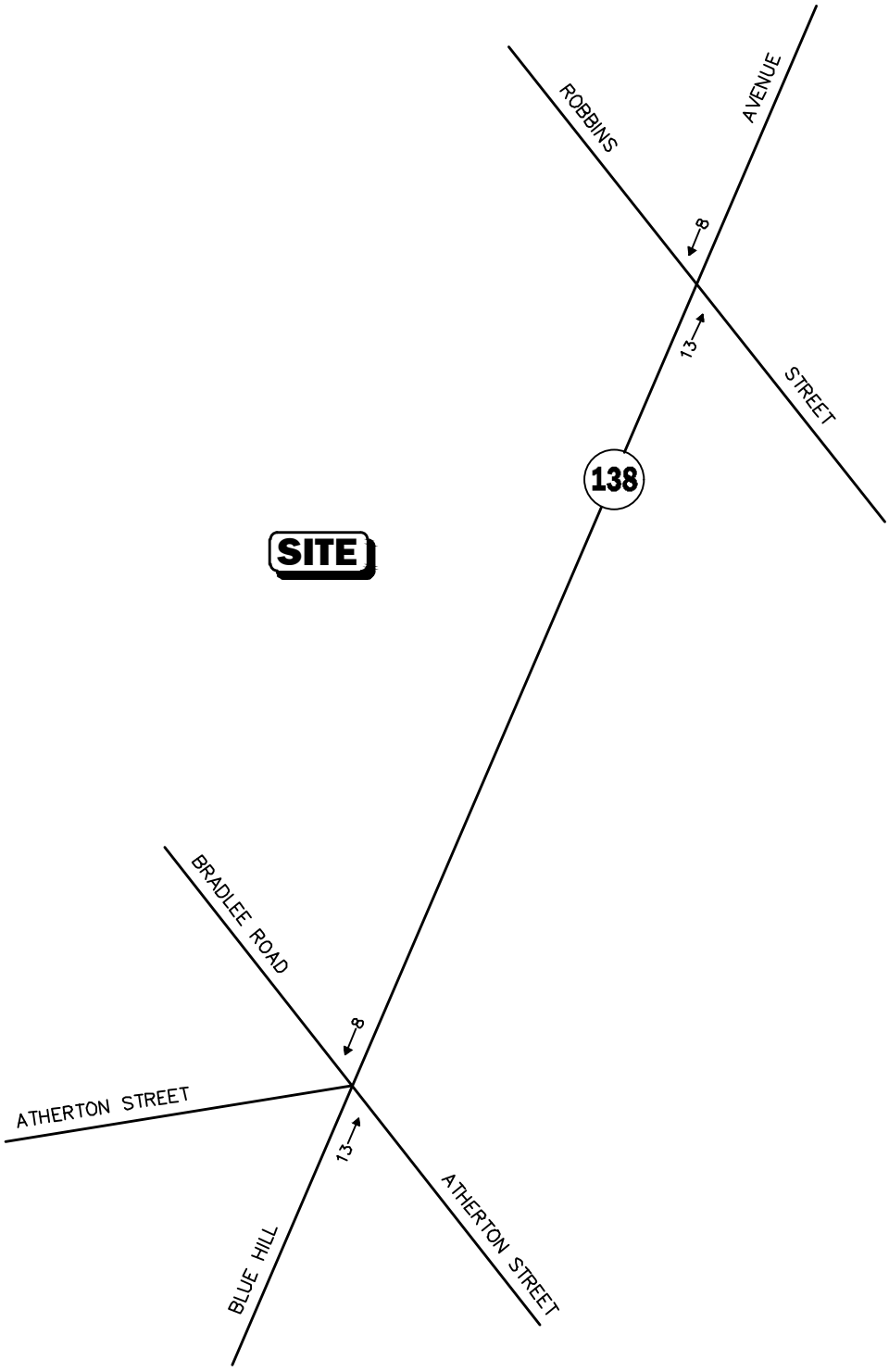


Not To Scale

Figure A-1

582 Blue Hill Avenue
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc



Not To Scale

Figure A-2

582 Blue Hill Avenue
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc

TRIP GENERATION

Day Care Center
(565)

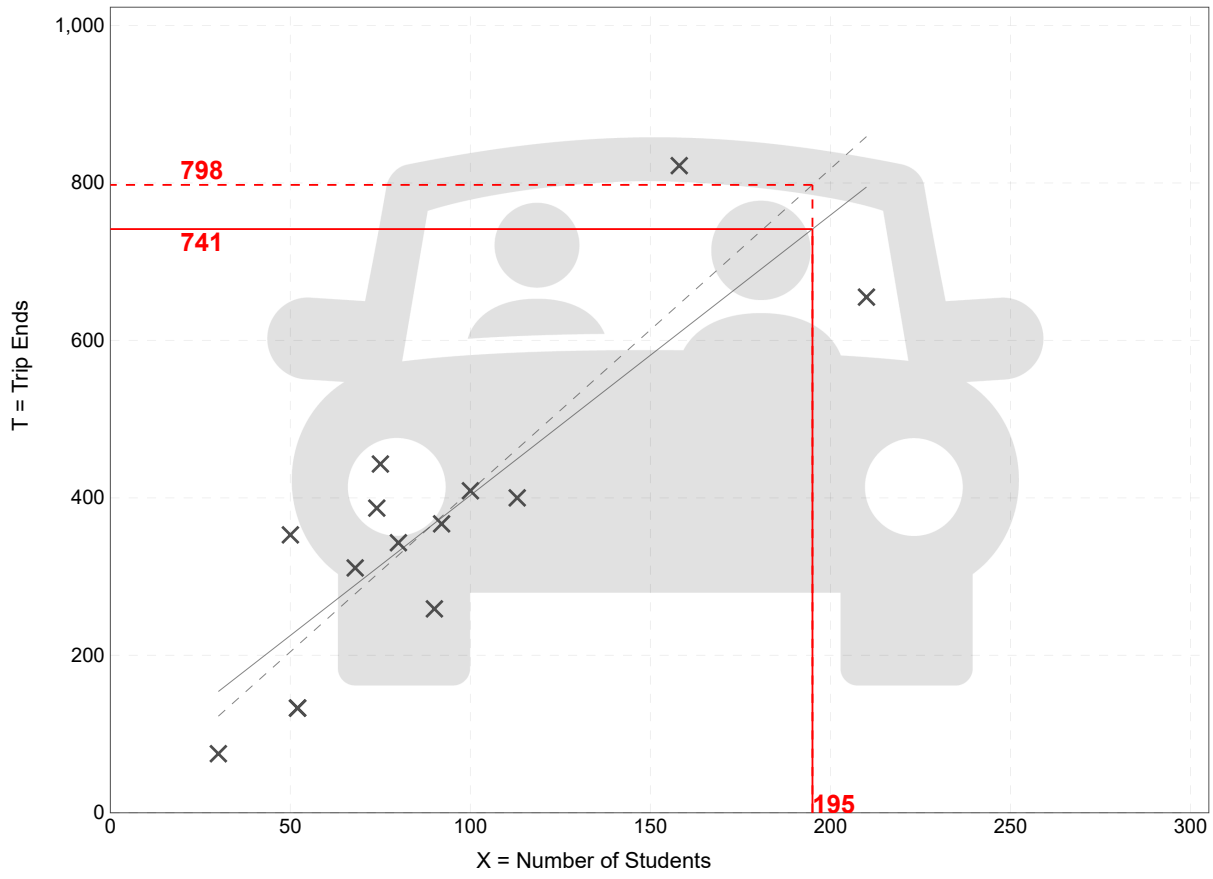
Vehicle Trip Ends vs: **Students**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 14
Avg. Num. of Students: 89
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
4.09	2.50 - 7.06	1.21

Data Plot and Equation



Fitted Curve Equation: T = 3.56(X) + 47.23

R^2= 0.72

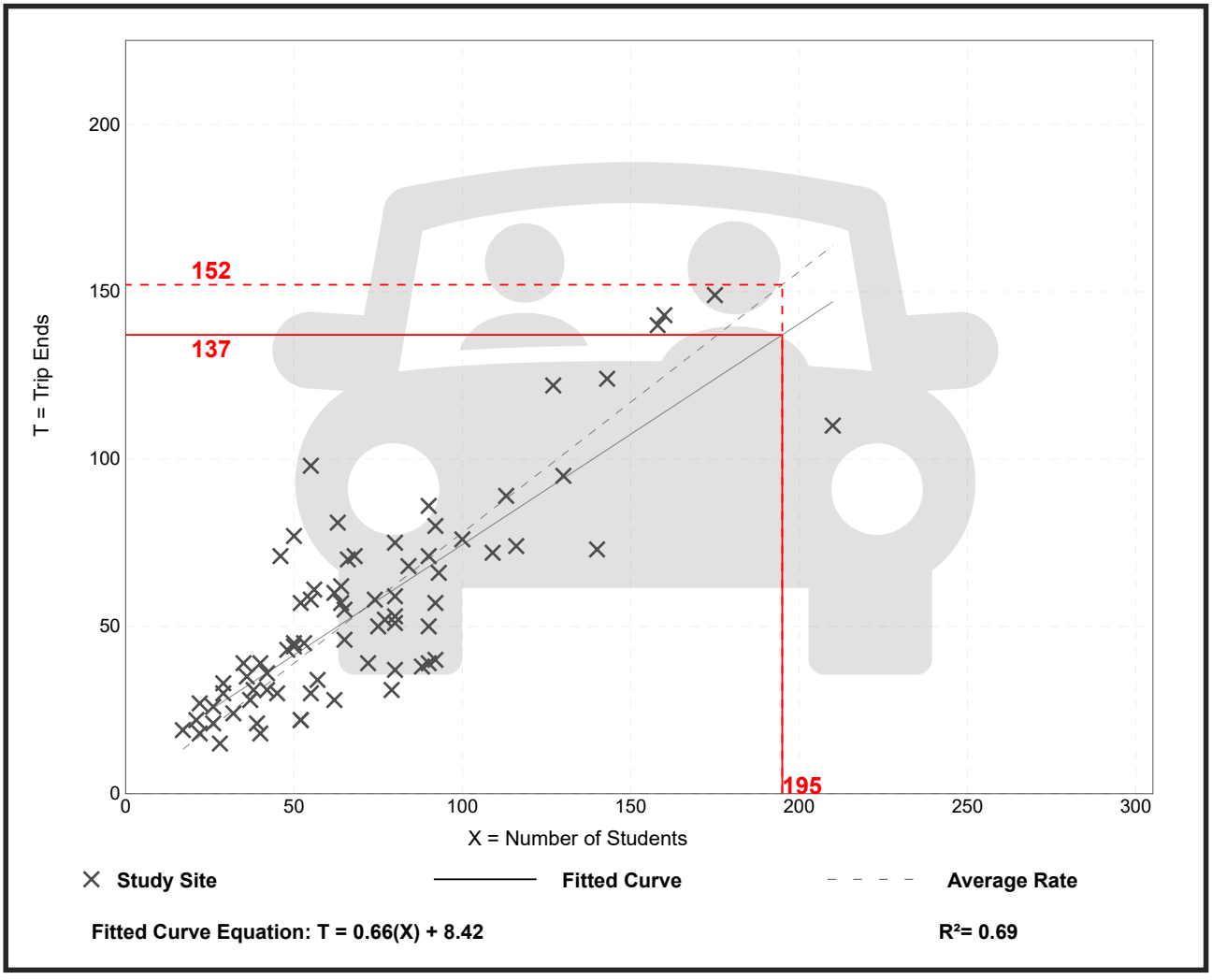
Day Care Center
(565)

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: 75
Avg. Num. of Students: 71
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.78	0.39 - 1.78	0.25

Data Plot and Equation



Fitted Curve Equation: T = 0.66(X) + 8.42

R^2= 0.69

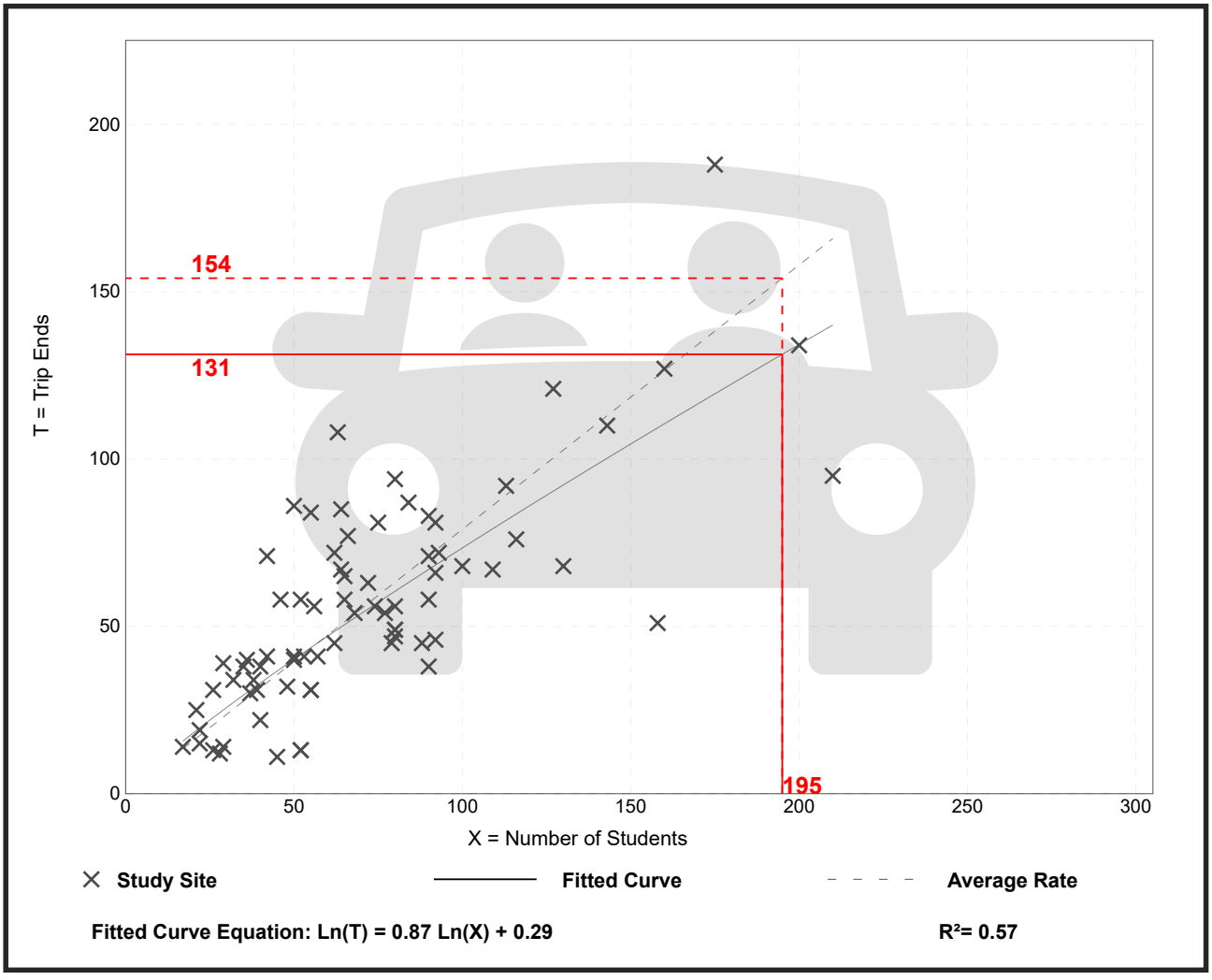
Day Care Center
(565)

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: 75
Avg. Num. of Students: 72
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Student

Average Rate	Range of Rates	Standard Deviation
0.79	0.24 - 1.72	0.30

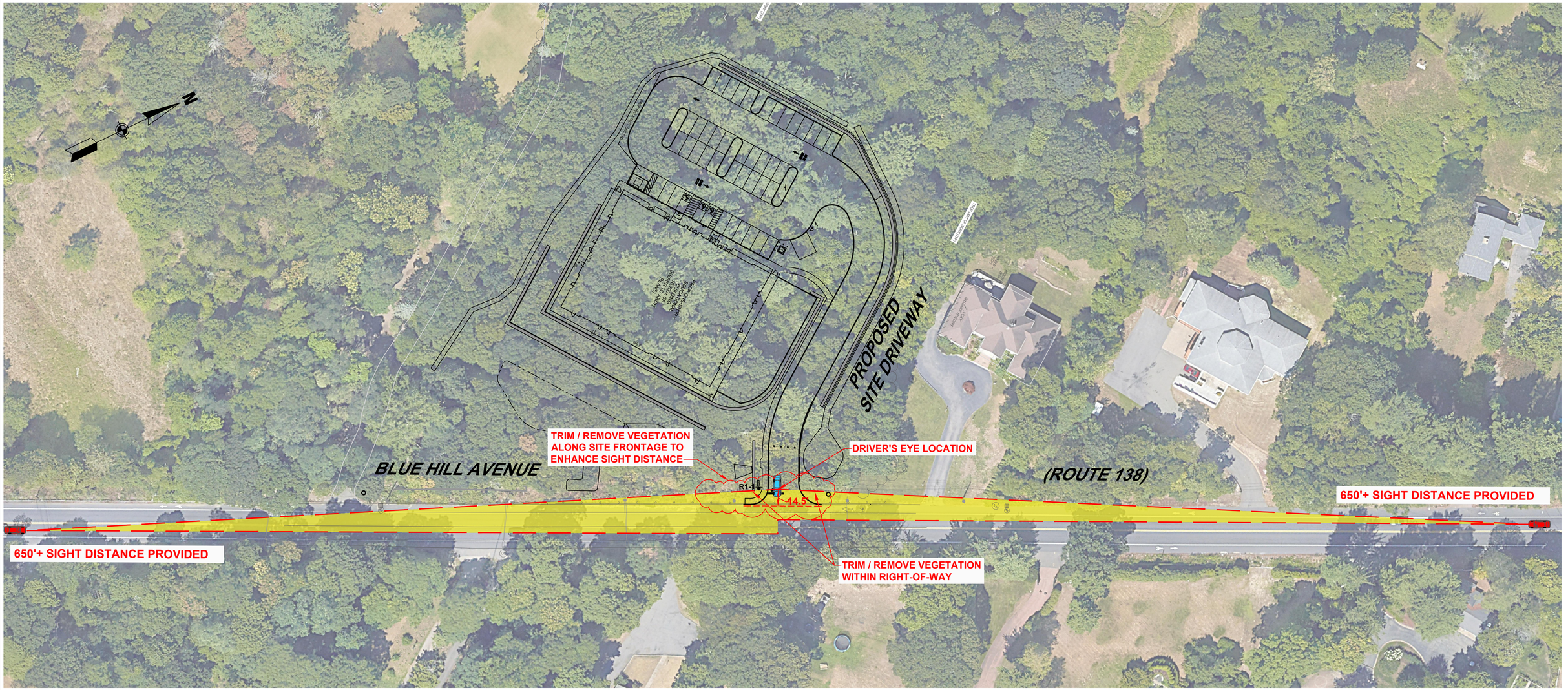
Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.87 Ln(X) + 0.29

R^2= 0.57

INTERSECTION SIGHT DISTANCE PLAN



Intersection/Sight Distance Measurement	Recommended Minimum Distances (Feet)[d] 85th Percentile Speed (46 mph)	Measured
Route 138 at the Project Site Driveway		
Stopping Sight Distance[b]:		
Route 138 approaching from the north (southbound)	414	650+
Route 138 approaching from the south (northbound)	342	550+
Intersection Sight Distance[c]:		
Looking to the north from the Project site driveway (right turn)	440	650+
Looking to the south from the Project site driveway (left turn)	510	650+

[a]Recommended values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.
[b]The proposed site driveway will intersect Route 138 on a graded section. Vehicles traveling along site frontage will experience a downward and upward slope of approximately 6 percent. Minimum distances were adjusted to account for the existing road grading.
[c]Values shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.
[d]Based on the 85th percentile speed found for each direction.

40 0 40 80
SCALE IN FEET

NOTES:
1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM BOHLER ENGINEERING AND GOOGLE EARTH.

INTERSECTION SIGHT DISTANCE

PROJECT:
PROPOSED DAYCARE CENTER
MILTON, MASSACHUSETTS

PROPONENT:
THE GARDNER SCHOOL
FRANKLIN, TENNESSEE

NO.	REVISIONS	DATE

Vanasse & Associates inc
Transportation Engineers & Planners
35 New England Business Center Drive - Suite 140 - Andover, MA 01810
www.rdva.com
978-474-8800

DESIGNED BY:	JC	DATE:	11/22/2024
DRAWN BY:	JTG	SCALE:	1" = 40'
CHECKED BY:	SWT	SHEET	1 OF 1

CAPACITY ANALYSIS

2024 Baseline Weekday Morning Peak Hour
2024 Baseline Weekday Evening Peak Hour
2031 No-Build Weekday Morning Peak Hour
2031 No-Build Weekday Evening Peak Hour
2031 Build Weekday Morning Peak Hour
2031 Build Weekday Evening Peak Hour

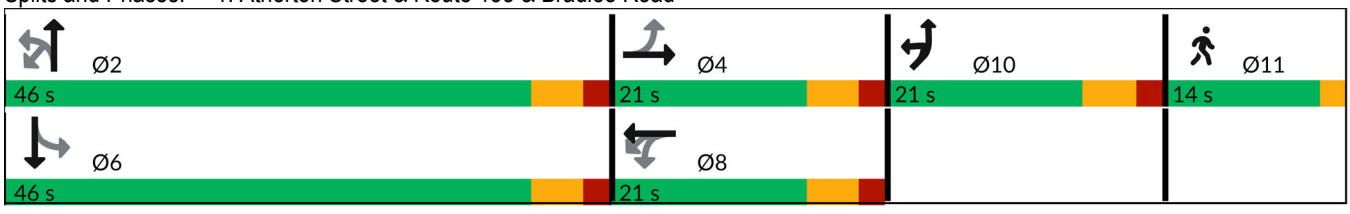
2024 Baseline Weekday Morning Peak Hour

Lane Group	EBL	EBT	WBL2	WBL	WBT	NBL2	NBL	NBT	SBL	SBT	NEL	Ø11
Lane Configurations												
Traffic Volume (vph)	8	32	41	10	97	10	39	503	3	450	20	
Future Volume (vph)	8	32	41	10	97	10	39	503	3	450	20	
Lane Group Flow (vph)	0	132	0	0	248	0	0	590	0	536	52	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Prot	
Protected Phases		4			8			2		6	10	11
Permitted Phases	4		8	8		2	2		6			
Detector Phase	4	4	8	8	8	2	2	2	6	6	10	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	14.0
Total Split (s)	21.0	21.0	21.0	21.0	21.0	46.0	46.0	46.0	46.0	46.0	21.0	14.0
Total Split (%)	20.6%	20.6%	20.6%	20.6%	20.6%	45.1%	45.1%	45.1%	45.1%	45.1%	20.6%	14%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
v/c Ratio		0.39			0.76			0.72		0.58	0.29	
Control Delay (s/veh)		32.9			48.0			21.5		17.0	37.4	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)		32.9			48.0			21.5		17.0	37.4	
Queue Length 50th (ft)		60			123			224		184	25	
Queue Length 95th (ft)		80			#195			379		292	48	
Internal Link Dist (ft)		958			955			1162		3141	1273	
Turn Bay Length (ft)												
Base Capacity (vph)		336			328			927		1038	351	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.39			0.76			0.64		0.52	0.15	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 72.7
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Atherton Street & Route 138 & Bradlee Road



Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	8	32	36	8	41	10	97	38	10	39	503	9
Future Volume (vph)	8	32	36	8	41	10	97	38	10	39	503	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	12	12	12	12
Total Lost time (s)		6.0					6.0				6.0	
Lane Util. Factor		1.00					1.00				1.00	
Frt		0.93					0.97				1.00	
Flt Protected		1.00					0.99				1.00	
Satd. Flow (prot)		1643					1736				1765	
Flt Permitted		0.96					0.88				0.92	
Satd. Flow (perm)		1579					1542				1630	
Peak-hour factor, PHF	0.64	0.64	0.64	0.64	0.75	0.75	0.75	0.75	0.95	0.95	0.95	0.95
Adj. Flow (vph)	12	50	56	12	55	13	129	51	11	41	529	9
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	132	0	0	0	0	248	0	0	0	590	0
Heavy Vehicles (%)	0%	9%	0%	0%	2%	0%	0%	5%	0%	5%	7%	22%
Turn Type	Perm	NA			Perm	Perm	NA		Perm	Perm	NA	
Protected Phases		4					8				2	
Permitted Phases	4				8	8			2	2		
Actuated Green, G (s)		15.5					15.5				36.8	
Effective Green, g (s)		15.5					15.5				36.8	
Actuated g/C Ratio		0.21					0.21				0.49	
Clearance Time (s)		6.0					6.0				6.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		325					317				797	
v/s Ratio Prot												
v/s Ratio Perm		0.08					c0.16				c0.36	
v/c Ratio		0.41					0.78				0.74	
Uniform Delay, d1		25.9					28.3				15.4	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		0.8					11.9				3.7	
Delay (s)		26.7					40.1				19.1	
Level of Service		C					D				B	
Approach Delay (s/veh)		26.7					40.1				19.1	
Approach LOS		C					D				B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	75.2	Sum of lost time (s)	20.0
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

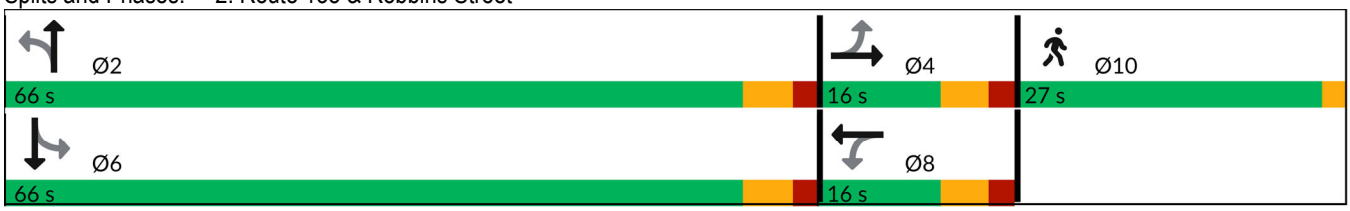
Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER	NER2
Lane Configurations								
Traffic Volume (vph)	3	450	14	5	8	20	7	4
Future Volume (vph)	3	450	14	5	8	20	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	10	10	10
Total Lost time (s)		6.0				6.0		
Lane Util. Factor		1.00				1.00		
Frt		0.99				0.96		
Flt Protected		1.00				0.96		
Satd. Flow (prot)		1832				1649		
Flt Permitted		1.00				0.96		
Satd. Flow (perm)		1828				1649		
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.75	0.75	0.75	0.75
Adj. Flow (vph)	3	511	16	6	11	27	9	5
RTOR Reduction (vph)	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	536	0	0	0	52	0	0
Heavy Vehicles (%)	0%	3%	0%	20%	0%	0%	0%	0%
Turn Type	Perm	NA			Prot	Prot		
Protected Phases		6			10	10		
Permitted Phases	6							
Actuated Green, G (s)		36.8				4.9		
Effective Green, g (s)		36.8				4.9		
Actuated g/C Ratio		0.49				0.07		
Clearance Time (s)		6.0				6.0		
Vehicle Extension (s)		3.0				3.0		
Lane Grp Cap (vph)		894				107		
v/s Ratio Prot						c0.03		
v/s Ratio Perm		0.29						
v/c Ratio		0.60				0.49		
Uniform Delay, d1		13.9				33.9		
Progression Factor		1.00				1.00		
Incremental Delay, d2		1.1				3.4		
Delay (s)		15.0				37.4		
Level of Service		B				D		
Approach Delay (s/veh)		15.0				37.4		
Approach LOS		B				D		

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	Ø10
Lane Configurations								
Traffic Volume (vph)	5	9	36	16	550	4	465	
Future Volume (vph)	5	9	36	16	550	4	465	
Lane Group Flow (vph)	0	32	0	93	618	0	535	
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA	
Protected Phases		4		8	2		6	10
Permitted Phases	4		8			6		
Detector Phase	4	4	8	8	2	6	6	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio		0.09		0.28	0.57		0.50	
Control Delay (s/veh)		22.8		25.4	13.3		12.3	
Queue Delay		0.0		0.0	0.0		0.0	
Total Delay (s/veh)		22.8		25.4	13.3		12.3	
Queue Length 50th (ft)		5		16	93		77	
Queue Length 95th (ft)		23		71	399		324	
Internal Link Dist (ft)		649		588	3141		902	
Turn Bay Length (ft)								
Base Capacity (vph)		466		429	1743		1717	
Starvation Cap Reductn		0		0	0		0	
Spillback Cap Reductn		0		0	0		0	
Storage Cap Reductn		0		0	0		0	
Reduced v/c Ratio		0.07		0.22	0.35		0.31	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 46.2
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	9	3	36	16	9	0	550	25	4	465	8
Future Volume (vph)	5	9	3	36	16	9	0	550	25	4	465	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.98			0.99			1.00	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1826			1808			1880			1859	
Flt Permitted		0.87			0.80			1.00			1.00	
Satd. Flow (perm)		1616			1489			1880			1851	
Peak-hour factor, PHF	0.53	0.53	0.53	0.66	0.66	0.66	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	9	17	6	55	24	14	0	591	27	4	522	9
RTOR Reduction (vph)	0	5	0	0	5	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	27	0	0	88	0	0	617	0	0	535	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.1			7.1			23.7			23.7	
Effective Green, g (s)		7.1			7.1			23.7			23.7	
Actuated g/C Ratio		0.15			0.15			0.50			0.50	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		243			223			943			929	
v/s Ratio Prot								c0.33				
v/s Ratio Perm		0.02			c0.06						0.29	
v/c Ratio		0.11			0.39			0.65			0.58	
Uniform Delay, d1		17.3			18.1			8.7			8.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.2			1.6			0.9	
Delay (s)		17.5			19.3			10.3			9.1	
Level of Service		B			B			B			A	
Approach Delay (s/veh)		17.5			19.3			10.3			9.1	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.2	Sum of lost time (s)	14.0
Intersection Capacity Utilization	46.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

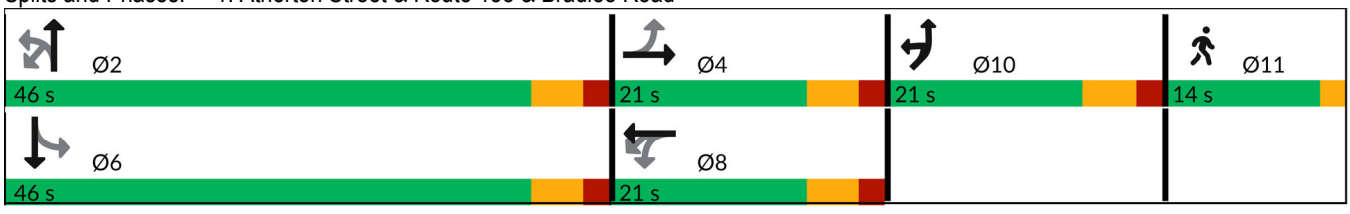
2024 Baseline Weekday Evening Peak Hour

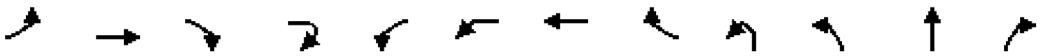
Lane Group	EBL	EBT	WBL2	WBL	WBT	NBL2	NBL	NBT	SBL	SBT	NEL	Ø11
Lane Configurations												
Traffic Volume (vph)	5	46	19	10	58	9	56	503	40	352	17	
Future Volume (vph)	5	46	19	10	58	9	56	503	40	352	17	
Lane Group Flow (vph)	0	128	0	0	131	0	0	715	0	419	49	
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Perm	NA	Perm	NA	Prot	
Protected Phases		4			8			2		6	10	11
Permitted Phases	4		8	8		2	2		6			
Detector Phase	4	4	8	8	8	2	2	2	6	6	10	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	1.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	14.0
Total Split (s)	21.0	21.0	21.0	21.0	21.0	46.0	46.0	46.0	46.0	46.0	21.0	14.0
Total Split (%)	20.6%	20.6%	20.6%	20.6%	20.6%	45.1%	45.1%	45.1%	45.1%	45.1%	20.6%	14%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0			0.0			0.0		0.0	0.0	
Total Lost Time (s)		6.0			6.0			6.0		6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None	None	None	None	None	None	None	None	None	None	None
v/c Ratio		0.49			0.56			0.77		0.47	0.29	
Control Delay (s/veh)		39.3			42.8			25.4		16.7	40.2	
Queue Delay		0.0			0.0			0.0		0.0	0.0	
Total Delay (s/veh)		39.3			42.8			25.4		16.7	40.2	
Queue Length 50th (ft)		58			60			278		127	23	
Queue Length 95th (ft)		104			114			#600		310	56	
Internal Link Dist (ft)		958			955			1162		3141	1273	
Turn Bay Length (ft)												
Base Capacity (vph)		341			305			929		899	333	
Starvation Cap Reductn		0			0			0		0	0	
Spillback Cap Reductn		0			0			0		0	0	
Storage Cap Reductn		0			0			0		0	0	
Reduced v/c Ratio		0.38			0.43			0.77		0.47	0.15	

Intersection Summary

Cycle Length: 102
Actuated Cycle Length: 76
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Atherton Street & Route 138 & Bradlee Road





Movement	EBL	EBT	EBR	EBR2	WBL2	WBL	WBT	WBR	NBL2	NBL	NBT	NBR
Lane Configurations												
Traffic Volume (vph)	5	46	38	3	19	10	58	13	9	56	503	19
Future Volume (vph)	5	46	38	3	19	10	58	13	9	56	503	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	11	11	11	11	12	12	12	12
Total Lost time (s)		6.0					6.0				6.0	
Lane Util. Factor		1.00					1.00				1.00	
Frt		0.94					0.98				1.00	
Flt Protected		1.00					0.99				0.99	
Satd. Flow (prot)		1700					1723				1865	
Flt Permitted		0.98					0.86				0.91	
Satd. Flow (perm)		1670					1495				1703	
Peak-hour factor, PHF	0.72	0.72	0.72	0.72	0.76	0.76	0.76	0.76	0.82	0.82	0.82	0.82
Adj. Flow (vph)	7	64	53	4	25	13	76	17	11	68	613	23
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	128	0	0	0	0	131	0	0	0	715	0
Heavy Vehicles (%)	0%	0%	3%	0%	11%	0%	2%	0%	0%	0%	1%	0%
Turn Type	Perm	NA			Perm	Perm	NA		Perm	Perm	NA	
Protected Phases		4					8				2	
Permitted Phases	4				8	8			2	2		
Actuated Green, G (s)		11.8					11.8				41.4	
Effective Green, g (s)		11.8					11.8				41.4	
Actuated g/C Ratio		0.15					0.15				0.52	
Clearance Time (s)		6.0					6.0				6.0	
Vehicle Extension (s)		3.0					3.0				3.0	
Lane Grp Cap (vph)		246					220				881	
v/s Ratio Prot												
v/s Ratio Perm		0.08					c0.09				c0.42	
v/c Ratio		0.52					0.60				0.81	
Uniform Delay, d1		31.5					31.9				16.1	
Progression Factor		1.00					1.00				1.00	
Incremental Delay, d2		2.0					4.3				5.7	
Delay (s)		33.5					36.2				21.8	
Level of Service		C					D				C	
Approach Delay (s/veh)		33.5					36.2				21.8	
Approach LOS		C					D				C	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	20.0
Intersection Capacity Utilization	74.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

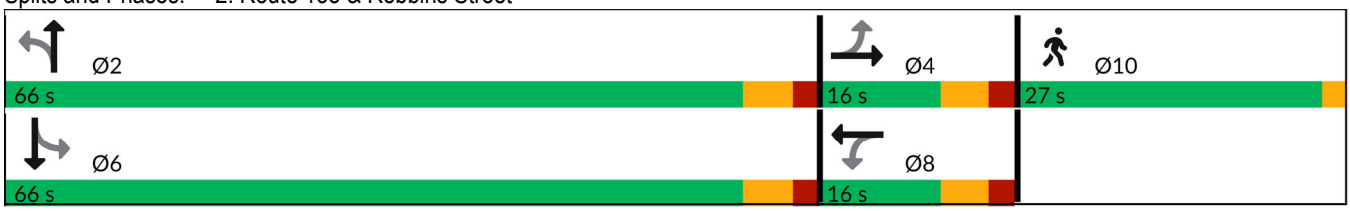
Movement	SBL	SBT	SBR	SBR2	NEL2	NEL	NER
Lane Configurations							
Traffic Volume (vph)	40	352	10	5	7	17	14
Future Volume (vph)	40	352	10	5	7	17	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	10	10	10
Total Lost time (s)		6.0				6.0	
Lane Util. Factor		1.00				1.00	
Frt		1.00				0.95	
Flt Protected		1.00				0.97	
Satd. Flow (prot)		1834				1634	
Flt Permitted		0.90				0.97	
Satd. Flow (perm)		1650				1634	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.79	0.79	0.79
Adj. Flow (vph)	41	363	10	5	9	22	18
RTOR Reduction (vph)	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	419	0	0	0	49	0
Heavy Vehicles (%)	0%	3%	0%	0%	0%	0%	0%
Turn Type	Perm	NA			Prot	Prot	
Protected Phases		6			10	10	
Permitted Phases	6						
Actuated Green, G (s)		41.4				4.9	
Effective Green, g (s)		41.4				4.9	
Actuated g/C Ratio		0.52				0.06	
Clearance Time (s)		6.0				6.0	
Vehicle Extension (s)		3.0				3.0	
Lane Grp Cap (vph)		853				100	
v/s Ratio Prot						c0.03	
v/s Ratio Perm		0.25					
v/c Ratio		0.49				0.49	
Uniform Delay, d1		12.5				36.3	
Progression Factor		1.00				1.00	
Incremental Delay, d2		0.4				3.7	
Delay (s)		12.9				40.1	
Level of Service		B				D	
Approach Delay (s/veh)		12.9				40.1	
Approach LOS		B				D	

Intersection Summary

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø10
Lane Configurations									
Traffic Volume (vph)	1	23	16	23	2	564	4	357	
Future Volume (vph)	1	23	16	23	2	564	4	357	
Lane Group Flow (vph)	0	49	0	64	0	659	0	422	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases		4		8		2		6	10
Permitted Phases	4		8		2		6		
Detector Phase	4	4	8	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		6.0		6.0		6.0		6.0	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
v/c Ratio		0.12		0.17		0.49		0.32	
Control Delay (s/veh)		24.6		22.5		10.6		8.8	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay (s/veh)		24.6		22.5		10.6		8.8	
Queue Length 50th (ft)		8		9		90		49	
Queue Length 95th (ft)		36		65		427		227	
Internal Link Dist (ft)		649		588		3141		902	
Turn Bay Length (ft)									
Base Capacity (vph)		647		574		1779		1704	
Starvation Cap Reductn		0		0		0		0	
Spillback Cap Reductn		0		0		0		0	
Storage Cap Reductn		0		0		0		0	
Reduced v/c Ratio		0.08		0.11		0.37		0.25	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 42.8
Natural Cycle: 70
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	23	2	16	23	14	2	564	34	4	357	2
Future Volume (vph)	1	23	2	16	23	14	2	564	34	4	357	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.96			0.99			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1875			1805			1930			1861	
Flt Permitted		0.98			0.88			1.00			0.99	
Satd. Flow (perm)		1844			1616			1928			1848	
Peak-hour factor, PHF	0.54	0.54	0.54	0.83	0.83	0.83	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	2	43	4	19	28	17	2	620	37	5	415	2
RTOR Reduction (vph)	0	3	0	0	12	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	46	0	0	52	0	0	657	0	0	422	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.1			4.1			24.2			24.2	
Effective Green, g (s)		4.1			4.1			24.2			24.2	
Actuated g/C Ratio		0.09			0.09			0.54			0.54	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		169			148			1048			1004	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.03			c0.34			0.23	
v/c Ratio		0.27			0.35			0.63			0.42	
Uniform Delay, d1		18.8			19.0			7.0			6.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			1.5			1.2			0.3	
Delay (s)		19.7			20.4			8.2			6.3	
Level of Service		B			C			A			A	
Approach Delay (s/veh)		19.7			20.4			8.2			6.3	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	44.5	Sum of lost time (s)	14.0
Intersection Capacity Utilization	52.6%	ICU Level of Service	A
Analysis Period (min)	15		

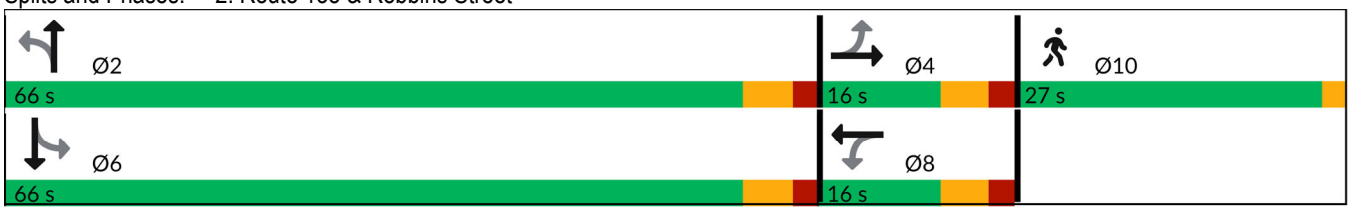
c Critical Lane Group

2031 No-Build Weekday Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	Ø10
Lane Configurations								
Traffic Volume (vph)	5	10	39	17	594	4	511	
Future Volume (vph)	5	10	39	17	594	4	511	
Lane Group Flow (vph)	0	34	0	100	668	0	588	
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA	
Protected Phases		4		8	2		6	10
Permitted Phases	4		8			6		
Detector Phase	4	4	8	8	2	6	6	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio		0.10		0.30	0.60		0.53	
Control Delay (s/veh)		24.3		27.6	13.5		12.4	
Queue Delay		0.0		0.0	0.0		0.0	
Total Delay (s/veh)		24.3		27.6	13.5		12.4	
Queue Length 50th (ft)		5		18	110		92	
Queue Length 95th (ft)		25		80	442		364	
Internal Link Dist (ft)		649		588	3141		902	
Turn Bay Length (ft)								
Base Capacity (vph)		445		407	1729		1703	
Starvation Cap Reductn		0		0	0		0	
Spillback Cap Reductn		0		0	0		0	
Storage Cap Reductn		0		0	0		0	
Reduced v/c Ratio		0.08		0.25	0.39		0.35	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 48.8
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	5	10	3	39	17	10	0	594	27	4	511	9
Future Volume (vph)	5	10	3	39	17	10	0	594	27	4	511	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			0.99			1.00	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1831			1808			1880			1859	
Flt Permitted		0.88			0.80			1.00			1.00	
Satd. Flow (perm)		1627			1487			1880			1852	
Peak-hour factor, PHF	0.53	0.53	0.53	0.66	0.66	0.66	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	9	19	6	59	26	15	0	639	29	4	574	10
RTOR Reduction (vph)	0	5	0	0	5	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	95	0	0	667	0	0	588	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.4			7.4			26.0			26.0	
Effective Green, g (s)		7.4			7.4			26.0			26.0	
Actuated g/C Ratio		0.15			0.15			0.52			0.52	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		241			220			981			966	
v/s Ratio Prot								c0.35				
v/s Ratio Perm		0.02			c0.06						0.32	
v/c Ratio		0.12			0.43			0.68			0.61	
Uniform Delay, d1		18.4			19.3			8.8			8.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.4			1.9			1.1	
Delay (s)		18.6			20.6			10.7			9.4	
Level of Service		B			C			B			A	
Approach Delay (s/veh)		18.6			20.6			10.7			9.4	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	14.0
Intersection Capacity Utilization	50.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

LANE SUMMARY

Site: 101 [Route 138 at Atherton Street and Bradlee Road (Site Folder: General)]

2031 No-Build Weekday Morning Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Route 138													
Lane 1[d]	637	7.0	1006	0.633	100	12.7	LOS B	6.6	173.2	Full	1600	0.0	0.0
Approach	637	7.0		0.633		12.7	LOS B	6.6	173.2				
East: Atherton Street													
Lane 1[d]	265	1.5	546	0.486	100	15.1	LOS B	4.1	104.3	Full	1600	0.0	0.0
Approach	265	1.5		0.486		15.1	LOS B	4.1	104.3				
North: Route 138													
Lane 1[d]	586	3.1	878	0.668	100	15.3	LOS B	9.7	249.4	Full	1600	0.0	0.0
Approach	586	3.1		0.668		15.3	LOS B	9.7	249.4				
West: Bradlee Road													
Lane 1[d]	141	3.4	536	0.263	100	10.5	LOS B	1.7	44.9	Full	1600	0.0	0.0
Approach	141	3.4		0.263		10.5	LOS B	1.7	44.9				
SouthWest: Atherton Street													
Lane 1[d]	52	0.0	587	0.089	100	7.2	LOS A	0.6	15.2	Full	1600	0.0	0.0
Approach	52	0.0		0.089		7.2	LOS A	0.6	15.2				
Intersection	1681	4.2		0.668		13.6	LOS B	9.7	249.4				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Route 138

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	44	572	11	637	7.0	1006	0.633	100	NA	NA
Approach	11	44	572	11	637	7.0		0.633			

East: Atherton Street

Mov. From E	L2	L1	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	SW	W	N			veh/h	v/c	%	%	No.
Lane 1	59	13	139	55	265	1.5	546	0.486	100	NA	NA
Approach	59	13	139	55	265	1.5		0.486			

North: Route 138											
Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	3	561	16	6	586	3.1	878	0.668	100	NA	NA
Approach	3	561	16	6	586	3.1		0.668			

West: Bradlee Road											
Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	14	53	61	13	141	3.4	536	0.263	100	NA	NA
Approach	14	53	61	13	141	3.4		0.263			

SouthWest: Atherton Street											
Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	27	9	5	52	0.0	587	0.089	100	NA	NA
Approach	11	27	9	5	52	0.0		0.089			

	Total	%HV	Deg.Satn (v/c)
Intersection	1681	4.2	0.668

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

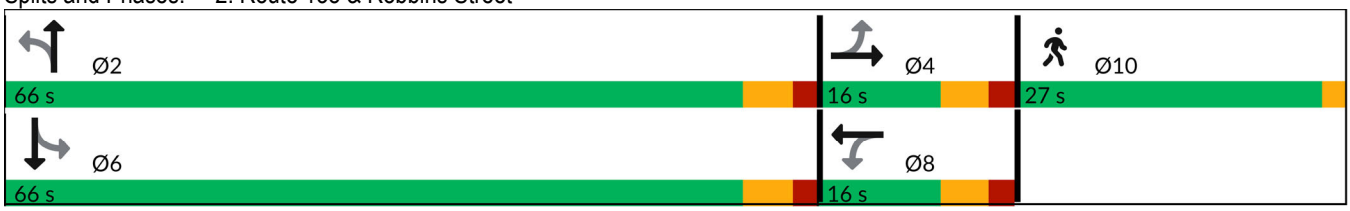
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Bradlee Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

2031 No-Build Weekday Evening Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø10
Lane Configurations									
Traffic Volume (vph)	1	25	17	25	2	618	4	391	
Future Volume (vph)	1	25	17	25	2	618	4	391	
Lane Group Flow (vph)	0	52	0	68	0	721	0	462	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases		4		8		2		6	10
Permitted Phases	4		8		2		6		
Detector Phase	4	4	8	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		6.0		6.0		6.0		6.0	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
v/c Ratio		0.13		0.19		0.52		0.35	
Control Delay (s/veh)		26.5		24.4		10.7		8.6	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay (s/veh)		26.5		24.4		10.7		8.6	
Queue Length 50th (ft)		10		11		106		57	
Queue Length 95th (ft)		40		72		484		250	
Internal Link Dist (ft)		649		588		3141		902	
Turn Bay Length (ft)									
Base Capacity (vph)		737		651		1766		1691	
Starvation Cap Reductn		0		0		0		0	
Spillback Cap Reductn		0		0		0		0	
Storage Cap Reductn		0		0		0		0	
Reduced v/c Ratio		0.07		0.10		0.41		0.27	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 45.9
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	25	2	17	25	15	2	618	36	4	391	2
Future Volume (vph)	1	25	2	17	25	15	2	618	36	4	391	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.96			0.99			1.00	
Flt Protected		1.00			0.99			1.00			1.00	
Satd. Flow (prot)		1877			1806			1930			1861	
Flt Permitted		0.98			0.88			1.00			0.99	
Satd. Flow (perm)		1846			1616			1928			1849	
Peak-hour factor, PHF	0.54	0.54	0.54	0.83	0.83	0.83	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	2	46	4	20	30	18	2	679	40	5	455	2
RTOR Reduction (vph)	0	3	0	0	12	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	49	0	0	56	0	0	719	0	0	462	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.2			4.2			27.3			27.3	
Effective Green, g (s)		4.2			4.2			27.3			27.3	
Actuated g/C Ratio		0.09			0.09			0.57			0.57	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		162			142			1103			1058	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.03			c0.37			0.25	
v/c Ratio		0.30			0.40			0.65			0.44	
Uniform Delay, d1		20.4			20.6			7.0			5.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			1.8			1.4			0.3	
Delay (s)		21.4			22.4			8.4			6.1	
Level of Service		C			C			A			A	
Approach Delay (s/veh)		21.4			22.4			8.4			6.1	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	14.0
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

LANE SUMMARY

Site: 101 [Route 138 at Atherton Street and Bradlee Road (Site Folder: General)]

2031 No-Build Weekday Evening Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Route 138													
Lane 1[d]	782	0.9	1033	0.757	100	17.2	LOS B	14.2	356.2	Full	1600	0.0	0.0
Approach	782	0.9		0.757		17.2	LOS B	14.2	356.2				
East: Atherton Street													
Lane 1[d]	139	3.2	450	0.310	100	13.2	LOS B	2.1	54.8	Full	1600	0.0	0.0
Approach	139	3.2		0.310		13.2	LOS B	2.1	54.8				
North: Route 138													
Lane 1[d]	457	2.6	951	0.480	100	9.6	LOS A	3.8	95.9	Full	1600	0.0	0.0
Approach	457	2.6		0.480		9.6	LOS A	3.8	95.9				
West: Bradlee Road													
Lane 1[d]	136	1.3	694	0.196	100	7.4	LOS A	1.2	31.0	Full	1600	0.0	0.0
Approach	136	1.3		0.196		7.4	LOS A	1.2	31.0				
SouthWest: Atherton Street													
Lane 1[d]	48	0.0	732	0.066	100	5.6	LOS A	0.4	10.4	Full	1600	0.0	0.0
Approach	48	0.0		0.066		5.6	LOS A	0.4	10.4				
Intersection	1562	1.6		0.757		13.4	LOS B	14.2	356.2				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Route 138

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	73	673	24	782	0.9	1033	0.757	100	NA	NA
Approach	11	73	673	24	782	0.9		0.757			

East: Atherton Street

Mov. From E	L2	L1	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	SW	W	N			veh/h	v/c	%	%	No.
Lane 1	26	13	82	18	139	3.2	450	0.310	100	NA	NA
Approach	26	13	82	18	139	3.2		0.310			

North: Route 138											
Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	44	397	10	5	457	2.6	951	0.480	100	NA	NA
Approach	44	397	10	5	457	2.6		0.480			

West: Bradlee Road											
Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	7	68	57	4	136	1.3	694	0.196	100	NA	NA
Approach	7	68	57	4	136	1.3		0.196			

SouthWest: Atherton Street										
Mov. From SW To Exit:	L3 W	L1 N	R1 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	9	22	18	48	0.0	732	0.066	100	NA	NA
Approach	9	22	18	48	0.0		0.066			

	Total	%HV	Deg.Satn (v/c)
Intersection	1562	1.6	0.757

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

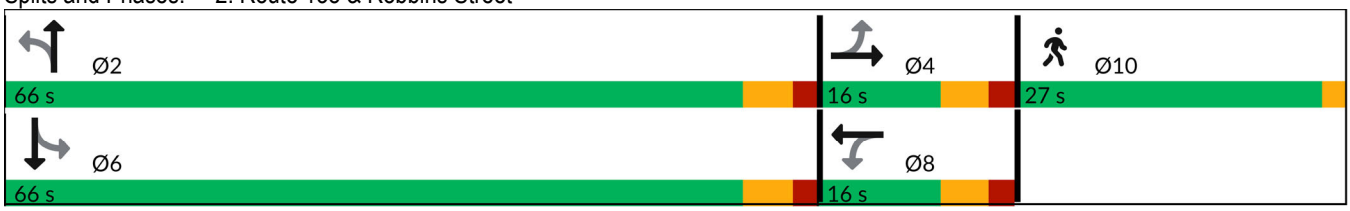
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Bradlee Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

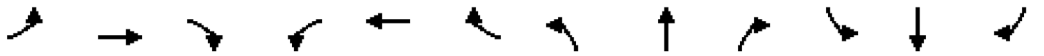
2031 Build Weekday Morning Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT	Ø10
Lane Configurations								
Traffic Volume (vph)	5	10	41	17	628	4	543	
Future Volume (vph)	5	10	41	17	628	4	543	
Lane Group Flow (vph)	0	34	0	103	705	0	624	
Turn Type	Perm	NA	Perm	NA	NA	Perm	NA	
Protected Phases		4		8	2		6	10
Permitted Phases	4		8			6		
Detector Phase	4	4	8	8	2	6	6	
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0	
Total Lost Time (s)		6.0		6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	None	None	None	None
v/c Ratio		0.10		0.32	0.62		0.55	
Control Delay (s/veh)		25.5		29.1	13.7		12.5	
Queue Delay		0.0		0.0	0.0		0.0	
Total Delay (s/veh)		25.5		29.1	13.7		12.5	
Queue Length 50th (ft)		6		20	124		104	
Queue Length 95th (ft)		27		86	477		394	
Internal Link Dist (ft)		649		588	1773		902	
Turn Bay Length (ft)								
Base Capacity (vph)		419		383	1720		1694	
Starvation Cap Reductn		0		0	0		0	
Spillback Cap Reductn		0		0	0		0	
Storage Cap Reductn		0		0	0		0	
Reduced v/c Ratio		0.08		0.27	0.41		0.37	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 51
Natural Cycle: 80
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	10	3	41	17	10	0	628	28	4	543	9
Future Volume (vph)	5	10	3	41	17	10	0	628	28	4	543	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.98			0.99			1.00	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1831			1808			1880			1859	
Flt Permitted		0.88			0.80			1.00			1.00	
Satd. Flow (perm)		1625			1482			1880			1852	
Peak-hour factor, PHF	0.53	0.53	0.53	0.66	0.66	0.66	0.93	0.93	0.93	0.89	0.89	0.89
Adj. Flow (vph)	9	19	6	62	26	15	0	675	30	4	610	10
RTOR Reduction (vph)	0	5	0	0	5	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	29	0	0	98	0	0	704	0	0	624	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA			NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.6			7.6			28.1			28.1	
Effective Green, g (s)		7.6			7.6			28.1			28.1	
Actuated g/C Ratio		0.15			0.15			0.54			0.54	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		237			216			1013			998	
v/s Ratio Prot								c0.37				
v/s Ratio Perm		0.02			c0.07						0.34	
v/c Ratio		0.12			0.45			0.69			0.62	
Uniform Delay, d1		19.3			20.3			8.8			8.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			1.5			2.1			1.2	
Delay (s)		19.6			21.9			10.9			9.6	
Level of Service		B			C			B			A	
Approach Delay (s/veh)		19.6			21.9			10.9			9.6	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	11.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.1	Sum of lost time (s)	14.0
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	29	39	613	516	34
Future Vol, veh/h	35	29	39	613	516	34
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	88	92
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	38	32	42	666	586	37

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1356	605	623	0	-	0
Stage 1	605	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Critical Hdwy	6.4	6.2	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	166	501	968	-	-	-
Stage 1	549	-	-	-	-	-
Stage 2	470	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	155	501	968	-	-	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	511	-	-	-	-	-
Stage 2	470	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	27.97	0.53	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	108	-	225	-	-
HCM Lane V/C Ratio	0.044	-	0.309	-	-
HCM Control Delay (s/veh)	8.9	0	28	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

LANE SUMMARY

Site: 101 [Route 138 at Atherton Street and Bradlee Road (Site Folder: General)]

2031 Build Weekday Morning Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Route 138													
Lane 1[d]	674	7.0	1004	0.671	100	13.9	LOS B	7.4	196.2	Full	1600	0.0	0.0
Approach	674	7.0		0.671		13.9	LOS B	7.4	196.2				
East: Atherton Street													
Lane 1[d]	269	1.5	512	0.526	100	17.2	LOS B	4.8	120.6	Full	1600	0.0	0.0
Approach	269	1.5		0.526		17.2	LOS B	4.8	120.6				
North: Route 138													
Lane 1[d]	619	3.1	876	0.707	100	16.9	LOS B	11.9	304.9	Full	1600	0.0	0.0
Approach	619	3.1		0.707		16.9	LOS B	11.9	304.9				
West: Bradlee Road													
Lane 1[d]	142	3.4	508	0.280	100	11.3	LOS B	1.9	48.7	Full	1600	0.0	0.0
Approach	142	3.4		0.280		11.3	LOS B	1.9	48.7				
SouthWest: Atherton Street													
Lane 1[d]	52	0.0	555	0.094	100	7.7	LOS A	0.7	16.4	Full	1600	0.0	0.0
Approach	52	0.0		0.094		7.7	LOS A	0.7	16.4				
Intersection	1757	4.3		0.707		15.1	LOS B	11.9	304.9				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Route 138

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	44	608	11	674	7.0	1004	0.671	100	NA	NA
Approach	11	44	608	11	674	7.0		0.671			

East: Atherton Street

Mov. From E	L2	L1	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	SW	W	N			veh/h	v/c	%	%	No.
Lane 1	59	13	139	59	269	1.5	512	0.526	100	NA	NA
Approach	59	13	139	59	269	1.5		0.526			

North: Route 138

Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	3	593	16	7	619	3.1	876	0.707	100	NA	NA
Approach	3	593	16	7	619	3.1		0.707			

West: Bradlee Road

Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	16	53	61	13	142	3.4	508	0.280	100	NA	NA
Approach	16	53	61	13	142	3.4		0.280			

SouthWest: Atherton Street

Mov. From SW To Exit:	L3 W	L1 N	R1 E	R3 S	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	27	9	5	52	0.0	555	0.094	100	NA	NA
Approach	11	27	9	5	52	0.0		0.094			

	Total	%HV	Deg.Satn (v/c)
Intersection	1757	4.3	0.707

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

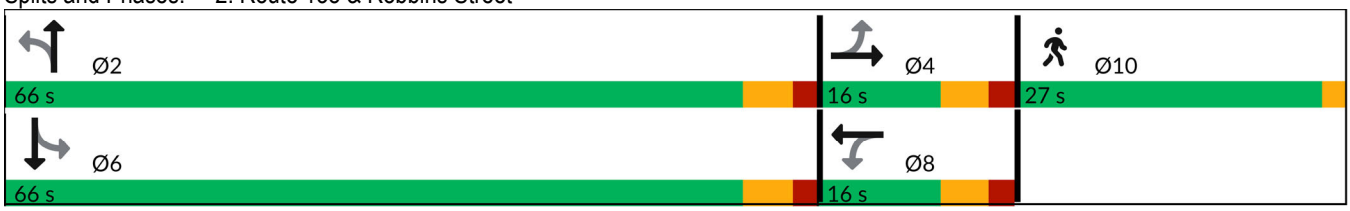
	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Bradlee Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										

2031 Build Weekday Evening Peak Hour

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø10
Lane Configurations									
Traffic Volume (vph)	1	25	18	25	2	657	4	416	
Future Volume (vph)	1	25	18	25	2	657	4	416	
Lane Group Flow (vph)	0	52	0	70	0	766	0	491	
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases		4		8		2		6	10
Permitted Phases	4		8		2		6		
Detector Phase	4	4	8	8	2	2	6	6	
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	27.0
Total Split (s)	16.0	16.0	16.0	16.0	66.0	66.0	66.0	66.0	27.0
Total Split (%)	14.7%	14.7%	14.7%	14.7%	60.6%	60.6%	60.6%	60.6%	25%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0	
Total Lost Time (s)		6.0		6.0		6.0		6.0	
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	None	None	None
v/c Ratio		0.13		0.20		0.54		0.36	
Control Delay (s/veh)		28.1		26.1		10.8		8.4	
Queue Delay		0.0		0.0		0.0		0.0	
Total Delay (s/veh)		28.1		26.1		10.8		8.4	
Queue Length 50th (ft)		10		12		118		63	
Queue Length 95th (ft)		41		77		529		267	
Internal Link Dist (ft)		649		588		1743		902	
Turn Bay Length (ft)									
Base Capacity (vph)		577		508		1756		1682	
Starvation Cap Reductn		0		0		0		0	
Spillback Cap Reductn		0		0		0		0	
Storage Cap Reductn		0		0		0		0	
Reduced v/c Ratio		0.09		0.14		0.44		0.29	

Intersection Summary
Cycle Length: 109
Actuated Cycle Length: 48.1
Natural Cycle: 75
Control Type: Semi Act-Uncoord

Splits and Phases: 2: Route 138 & Robbins Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Volume (vph)	1	25	2	18	25	15	2	657	38	4	416	2
Future Volume (vph)	1	25	2	18	25	15	2	657	38	4	416	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	13	13	13	12	12	12
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.97			0.99			1.00	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1877			1806			1930			1861	
Flt Permitted		0.98			0.88			1.00			0.99	
Satd. Flow (perm)		1846			1605			1929			1849	
Peak-hour factor, PHF	0.54	0.54	0.54	0.83	0.83	0.83	0.91	0.91	0.91	0.86	0.86	0.86
Adj. Flow (vph)	2	46	4	22	30	18	2	722	42	5	484	2
RTOR Reduction (vph)	0	3	0	0	12	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	49	0	0	58	0	0	764	0	0	491	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		4.3			4.3			29.4			29.4	
Effective Green, g (s)		4.3			4.3			29.4			29.4	
Actuated g/C Ratio		0.09			0.09			0.59			0.59	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		159			138			1136			1089	
v/s Ratio Prot												
v/s Ratio Perm		0.03			c0.04			c0.40			0.27	
v/c Ratio		0.31			0.42			0.67			0.45	
Uniform Delay, d1		21.4			21.6			7.0			5.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			2.1			1.6			0.3	
Delay (s)		22.5			23.7			8.6			6.0	
Level of Service		C			C			A			A	
Approach Delay (s/veh)		22.5			23.7			8.6			6.0	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	9.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	49.9	Sum of lost time (s)	14.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	41	28	36	588	443	26
Future Vol, veh/h	41	28	36	588	443	26
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	82	82	97	92
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	45	30	44	717	457	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1276	471	485	0	-	0
Stage 1	471	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Critical Hdwy	6.4	6.2	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	186	597	1088	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	443	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	173	597	1088	-	-	-
Mov Cap-2 Maneuver	173	-	-	-	-	-
Stage 1	590	-	-	-	-	-
Stage 2	443	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	26.23	0.49	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	104	-	243	-	-
HCM Lane V/C Ratio	0.04	-	0.308	-	-
HCM Control Delay (s/veh)	8.4	0	26.2	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.3	-	-

LANE SUMMARY

Site: 101 [Route 138 at Atherton Street and Bradlee Road (Site Folder: General)]

2031 Build Weekday Evening Peak Hour
Site Category: (None)
Roundabout

Lane Use and Performance

	DEMAND FLOWS [Total veh/h	HV] %	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh	Dist] ft	Lane Config	Lane Length ft	Cap. Adj. %	Prob. Block. %
South: Route 138													
Lane 1[d]	824	0.9	1030	0.801	100	19.9	LOS B	19.5	492.0	Full	1600	0.0	0.0
Approach	824	0.9		0.801		19.9	LOS B	19.5	492.0				
East: Atherton Street													
Lane 1[d]	141	3.2	409	0.344	100	15.1	LOS B	2.4	62.1	Full	1600	0.0	0.0
Approach	141	3.2		0.344		15.1	LOS B	2.4	62.1				
North: Route 138													
Lane 1[d]	486	2.6	949	0.511	100	10.3	LOS B	4.1	105.9	Full	1600	0.0	0.0
Approach	486	2.6		0.511		10.3	LOS B	4.1	105.9				
West: Bradlee Road													
Lane 1[d]	136	1.3	669	0.203	100	7.8	LOS A	1.3	32.4	Full	1600	0.0	0.0
Approach	136	1.3		0.203		7.8	LOS A	1.3	32.4				
SouthWest: Atherton Street													
Lane 1[d]	48	0.0	706	0.068	100	5.8	LOS A	0.4	10.9	Full	1600	0.0	0.0
Approach	48	0.0		0.068		5.8	LOS A	0.4	10.9				
Intersection	1635	1.6		0.801		15.2	LOS B	19.5	492.0				

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: HCM Delay Formula (Geometric Delay is not included).
Queue Model: HCM Queue Formula.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

d Dominant lane on roundabout approach

Approach Lane Flows (veh/h)

South: Route 138

Mov. From S To Exit:	L3 SW	L2 W	T1 N	R2 E	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	11	73	716	24	824	0.9	1030	0.801	100	NA	NA
Approach	11	73	716	24	824	0.9		0.801			

East: Atherton Street

Mov. From E	L2	L1	T1	R2	Total	%HV	Cap.	Deg. Satn	Lane Util.	Prob. SL Ov.	Ov. Lane

To Exit:	S	SW	W	N			veh/h	v/c	%	%	No.
Lane 1	26	13	82	20	141	3.2	409	0.344	100	NA	NA
Approach	26	13	82	20	141	3.2		0.344			

North: Route 138											
Mov. From N To Exit:	L2 E	T1 S	R1 SW	R2 W	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	47	422	10	6	486	2.6	949	0.511	100	NA	NA
Approach	47	422	10	6	486	2.6		0.511			

West: Bradlee Road											
Mov. From W To Exit:	L2 N	T1 E	R2 S	R3 SW	Total	%HV	Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	7	68	57	4	136	1.3	669	0.203	100	NA	NA
Approach	7	68	57	4	136	1.3		0.203			

SouthWest: Atherton Street											
Mov. From SW To Exit:	L3 W	L1 N	R1 E	Total	%HV		Cap. veh/h	Deg. Satn v/c	Lane Util. %	Prob. SL Ov. %	Ov. Lane No.
Lane 1	9	22	18	48	0.0		706	0.068	100	NA	NA
Approach	9	22	18	48	0.0			0.068			

	Total	%HV	Deg.Satn (v/c)
Intersection	1635	1.6	0.801

Lane flow rates given in this report are based on the arrival flow rates subject to upstream capacity constraint where applicable.

Merge Analysis

	Exit Lane Number	Short Lane Length ft	Percent Opng in Lane %	Opposing Flow Rate veh/h	Opposing Flow Rate pcu/h	Critical Gap sec	Follow-up Headway sec	Lane Flow Rate veh/h	Capacity veh/h	Deg. Satn v/c	Min. Delay sec	Merge Delay sec
South Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
East Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
North Exit: Route 138 Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
West Exit: Bradlee Road Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										
SouthWest Exit: Atherton Street Merge Type: **Not Applied**												
Full Length Lane	1	Merge Analysis not applied.										