Transportation Impact Assessment

Proposed Multifamily Residential Development
North Street and Blackstone Street
Bellingham, Massachusetts

Prepared for:

RAVEN HOMES INC.
Northborough, Massachusetts

October 2022

Prepared by:

Vanasse & Associates inc
Transportation Engineers & Planners

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Dear Reviewer:

This letter shall certify that this *Transportation Impact Assessment* has been prepared under my direct supervision and responsible charge. I am a Registered Professional Engineer (P.E.) in the Commonwealth of Massachusetts (Massachusetts P.E. No. 38871, Civil) and hold Certification as a Professional Traffic Operations Engineer (PTOE) from the Transportation Professional Certification Board, Inc. (TPCB), an independent affiliate of the Institute of Transportation Engineers (ITE) (PTOE Certificate No. 993). I am also a Fellow of the Institute of Transportation Engineers (FITE).

Sincerely,

VANASSE & ASSOCIATES, INC.

Jeffrey S. Dirk

Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be located off North Street and Blackstone Street in Bellingham, Massachusetts (hereafter referred to as the "Project"). This assessment was prepared in consultation with the Massachusetts Department of Transportation (MassDOT) and the Town of Bellingham, 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.

Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),[1] the Project is expected to generate approximately 224 vehicle trips on an average weekday (two-way, 24-hour volume), with 13 vehicle trips expected during the weekday morning peak-hour and 18 vehicle trips expected during the weekday evening peak-hour;

1. 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 condition), with no changes in levels of service shown to occur as a result of the Project and all of the movements at the study area intersections shown to continue to operate at level-of-service (LOS) B or better with the addition of Project-related traffic, where an LOS of "D" or better is defined as "acceptable" traffic operations;

2. All movements exiting the Project site driveways to North Street and Blackstone Street were shown to operate at LOS B or better during the peak hours with negligible vehicle queuing predicted;

3. No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study intersection; and

4. Lines of sight at the Project site driveways exceed, or could be made to exceed, the recommended minimum sight distance to function in a safe manner based on the appropriate approach speed.

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

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project site will be provided by way of two driveways that will intersect the east side of North Street approximately 450 north of Blackstone Street and the north side of Blackstone Street approximately 700 feet northeast of North Street, respectively. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

- The Project site driveway and the internal circulating drive will be 22 feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.

- All signs and pavement markings to be installed within the Project site will conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).[2]

- Driveways to the residential units should be a minimum of 21 feet long measured between the garage door and the far edge of the sidewalk (edge closest to the residence) where a sidewalk is provided, and 23 feet measured between the garage door and the edge of the traveled-way in locations without a sidewalk.

- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas of the Project site driveways should be designed and maintained so as not to restrict lines of sight.

- Snow accumulations (windrows) within the sight triangle areas of the Project site driveways will be promptly removed where such accumulations would impede sight lines.

- Existing trees and vegetation located along the east side of North Street and the north side of Blackstone Street within the intersection triangle areas of the Project site driveways should be selectively trimmed or removed and maintained to provide the required line of sight.

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

Transportation Demand Management

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles (SOVs), the follow Transportation Demand Management (TDM) measures will be implemented as part of the Project:

- A transportation coordinator will be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents;
- A "welcome packet" will be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuter options available;
- Pedestrian accommodations have been incorporated within the Project site and consist of a sidewalk that extends to both North Street and Blackstone Street;
- A central maildrop has been provided; and
- Secure bicycle parking is available to residents with the individual unit garages.

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

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be located off North Street and Blackstone Street in Bellingham, Massachusetts (hereafter referred to as the "Project"). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along North Street and Blackstone Street, and at the intersection formed by these roadways.

PROJECT DESCRIPTION

As proposed, the Project will entail the construction of a 36-unit multifamily residential development to be located off North Street and Blackstone Street in Bellingham, Massachusetts. The Project site encompasses approximately 8.17± acres of undeveloped land that is bounded by areas of open and wooded space to the north; Blackstone Street and a residential property to the south; areas of open and wooded space and low-lying wetland areas to the east; and North Street and a residential property to the west. Figure 1 depicts the Project site location in relation to the existing roadway network.

Access to the Project site will be provided by way of two driveways that will intersect the east side of North Street approximately 450 north of Blackstone Street and the north side of Blackstone Street approximately 700 feet northeast of North Street, respectively.

Off-street parking will be provided in individual garages and driveways that will accommodate a minimum of two (2) vehicles per unit, which is consistent with the requirements of §240-59, *Schedule of requirements*, of the Zoning Bylaws of the Town of Bellingham.[3] There is also an additional five (5) off-street parking spaces provided for visitors.

[3]The Zoning Bylaws require the following parking for a multifamily residential development: (a) Assisted elderly housing: one space per bedroom; (b) Studio: 1.25 spaces per dwelling unit; (c) One bedroom: 1.5 spaces per dwelling unit; (d) Two or more bedrooms: two spaces per dwelling unit.

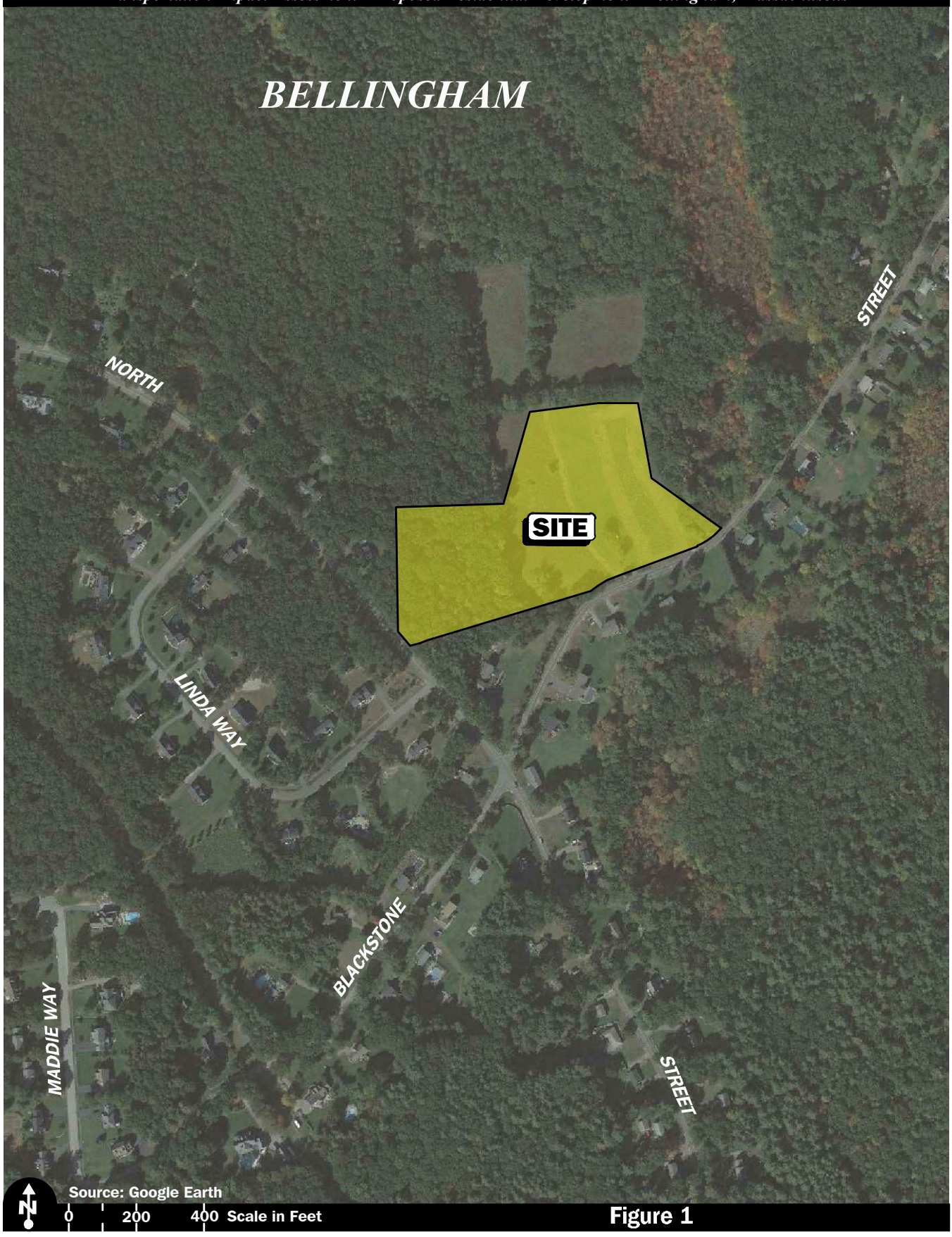

Figure 1

Site Location Map

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STUDY METHODOLOGY

This study was prepared in consultation with the Town of Bellingham and the Massachusetts Department of Transportation (MassDOT); 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; 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 and bicycle facilities; public transportation services; observations of traffic flow; 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 MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. 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 August 2022. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that was assessed for the Project consisted of North Street and Blackstone Street, and the intersection formed by these roadways.

The following describes the study area roadways and intersection.

ROADWAYS

North Street

- Two-lane urban collector roadway under Town jurisdiction;
- Transverses study area in a general north-south direction between South Main Street (Route 126) and Irene Court, where North Street becomes Bates Street;
- Provides two 10- to 11-foot wide travel lanes that are separated by a double-yellow centerline with no marked shoulders provided;
- The posted speed limit is 25 miles per hour (mph) within the study area;
- Sidewalks are provided on the west side of the roadway between Linda Way and Blackstone Street;
- Illumination is provided intermittently by way of streetlights mounted on wooden poles; and
- Land use within the study area consists of the Project site, residential properties, and areas of open and wooded space.

Blackstone Street

- Two-lane local access roadway under Town jurisdiction;
- Transverses study area in a general northeast-southwest direction between Maddie Way and Mechanic Street (Route 140);

- Provides two 10- to 11-foot wide travel lanes that are separated by a double-yellow centerline with no marked shoulders provided;
- The statutory limit pursuant to M.G.L c. 90 § 17 is 30 mph;[4]
- A sidewalk is provided on the south side of the roadway west of North Street;
- Illumination is provided intermittently by way of streetlights mounted on wood poles; and
- Land use within the study area consists of the Project site, residential properties, and areas of open and wooded space;

INTERSECTION

Table 1 and Figure 2 summarize existing lane use; traffic control, and pedestrian and bicycle accommodations at the study area intersection as observed in August 2022.

Table 1
STUDY AREA INTERSECTION DESCRIPTION

Intersection	Traffic Control Type[a]	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
North St./ Blackstone St.	S	One general-purpose travel lane on all approaches	No	Yes; a sidewalk is provided along the west side of North Street between Linda Way and Blackstone Street and along the south side of Blackstone Street west of North Street	No

[a]S = STOP-sign control.

TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, turning movement counts (TMCs), and vehicle classification counts were completed in August 2022. The ATR counts were conducted on August 2nd through August 3rd, 2022 (Tuesday through Wednesday, inclusive) on North Street and Blackstone Street in the vicinity of the Project site in order to record weekday traffic conditions over an extended period, with weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak-period TMCs performed at the study intersection on August 2nd, 2022 (Tuesday). These time periods were selected for analysis purposes as they are representative of the peak-traffic-volume hours for both the Project and the adjacent roadway network.

[4]The statutory or "prima facie" speed is defined in M.G.L Chapter 90, Section 17, as the speed which would be deemed reasonable and proper to operate a motor vehicle.

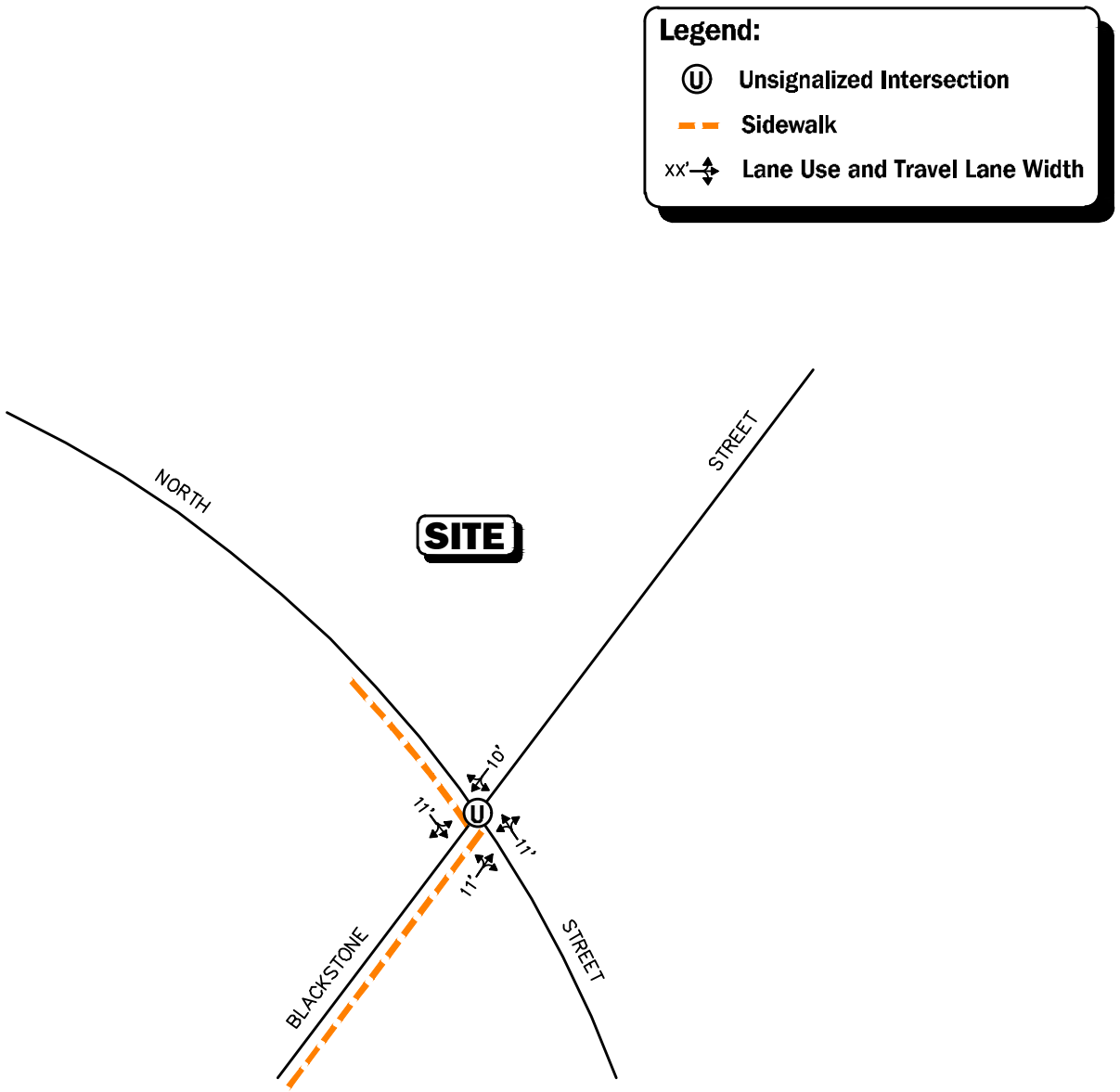

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Figure 2

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

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Traffic-Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, traffic-volume data from MassDOT Continuous Count Station No. 6125 located on I-495 in Bellingham were reviewed.[5] Based on a review of this data it was determined that traffic volumes during the month of August are approximately 4.9 percent *above* average-month conditions. As such, no adjustment was made to the August traffic volumes as they are representative of average-month conditions.

In order to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic, traffic-volume data collected at the MassDOT Continuous Count Station No. 6125 in August 2022 was compared to data collected at the same count station in August 2019. Based on this pre- and post-COVID-19 traffic-volume comparison, the traffic-volume data that was collected as part of this assessment was found to be approximately 2.9 percent *below* the conditions that existed prior to the COVID-19 pandemic. With consideration that the August traffic volumes are 4.9 percent above average-month conditions, adjustment to the raw traffic-volume data with consideration of the COVID-19 pandemic was not required

The 2022 Existing traffic volumes are summarized in Table 2, with the weekday morning and evening peak-hour traffic volumes graphically depicted on Figure 3. Note that the peak-hour traffic volumes that are presented in Table 2 were obtained from the aforementioned figure.

Table 2
2022 EXISTING TRAFFIC VOLUMES

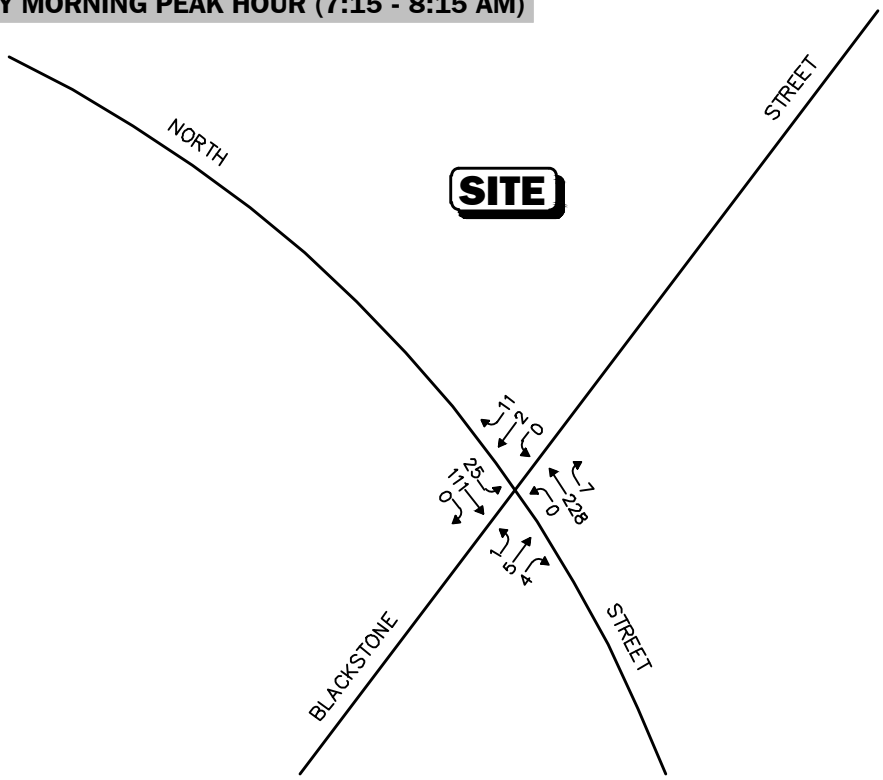
Location/Peak-Hour	AWT[a]	VPH[b]	K Factor[c]	Directional Distribution[d]
North Street, north of Blackstone Street:	4,490	--	--	--
Weekday Morning (7:15 – 8:15 AM)	--	376	8.4	63.8% NB
Weekday Evening (4:00 – 5:00 PM)	--	418	9.3	59.8% SB
Blackstone Street, east of North Street:	865	--	--	--
Weekday Morning (7:15 – 8:15 AM)	--	50	5.8	74.0% EB
Weekday Evening (4:00 – 5:00 PM)	--	84	9.7	51.2% WB

[a]Average weekday traffic in vehicles per day.
[b]Vehicles per hour.
[c]Percent of daily traffic occurring during the peak-hour.
[d]Percent traveling in peak direction.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound.

As can be seen in Table 2, North Street in the vicinity of the Project site was found to accommodate approximately 4,490 vehicles on an average weekday (two-way, 24-hour volume), with approximately 376 vehicles per hour (vph) during the weekday morning peak-hour and 418 vph during the weekday evening peak-hour.

[5]MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2022.

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:00 - 5:00 PM)

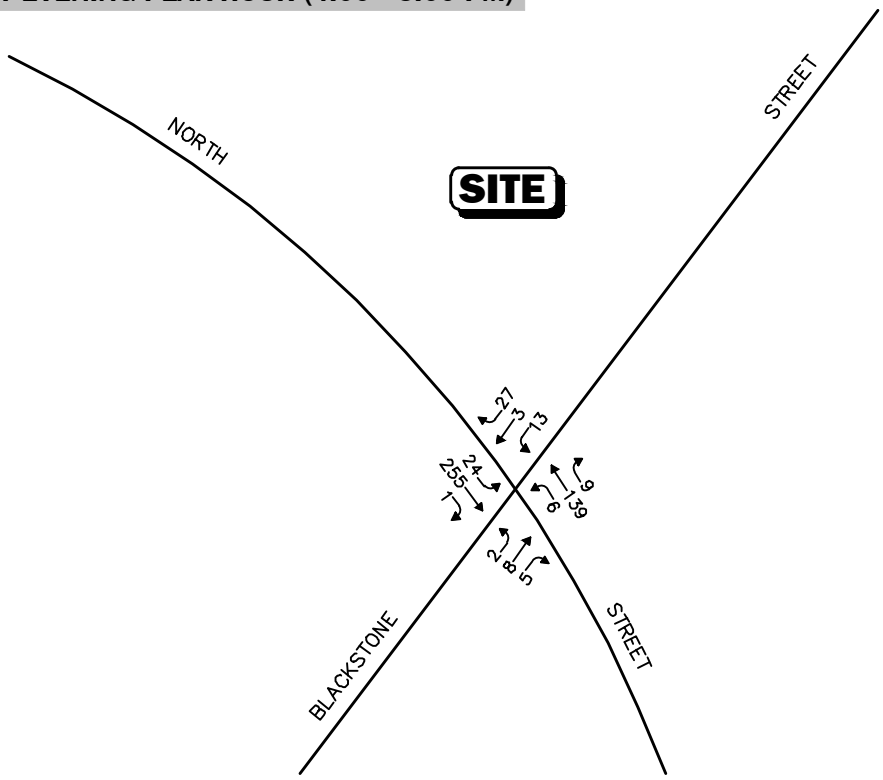


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Figure 3

2022 Existing
Peak-Hour Traffic Volumes

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Blackstone Street in the vicinity of the Project site was found to accommodate approximately 865 vehicles on an average weekday, with approximately 50 vph during the weekday morning peak-hour and 84 vph during the weekday evening peak-hour.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in August 2022. 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 intersection, as well as the location of existing and planned future bicycle facilities. As detailed on Figure 2, sidewalks are provided along the west side of North Street between Linda Way and Blackstone Street and along the south side of Blackstone Street west of North Street.

Formal bicycle facilities are not provided within the study area and the study area roadways do not provide sufficient width (combined travel lane and shoulder) to support bicycle travel in a shared traveled-way configuration.[6]

PUBLIC TRANSPORTATION

Regularly schedules public transportation services are not currently provided within the Town of Bellingham or in the immediate vicinity of the Project site. The closest regularly scheduled public transportation services to the Project site are located in Franklin (Massachusetts Bay Transportation Authority (MBTA) Commuter Rail service on the Franklin/Foxborough Line from Forge Park/I-495 Station).

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on North Street and Blackstone Street in the vicinity of the Project site in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	North Street		Blackstone Street	
	Northbound	Southbound	Eastbound	Westbound
Mean Travel Speed (mph)	30	27	29	29
85th Percentile Speed (mph)	33	30	34	35
Posted/Statutory Speed Limit (mph)	25	25	30	30

mph = miles per hour.

[6] A minimum combined travel lane and paved shoulder width of 14 feet is required to support bicycle travel in a shared traveled-way condition.

As can be seen in Table 3, the mean vehicle travel speed along North Street in the vicinity of the Project site was found to be 30 mph in the northbound direction and 27 mph southbound. 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 33 mph in the northbound direction and 30 mph southbound, which is 5 to 8 mph *above* the posted speed limit in the vicinity of the Project site (25 mph).

The mean vehicle travel speed along Blackstone Street in the vicinity of the Project site was found to be 29 mph in both the east and westbound directions, with the measured 85th percentile vehicle travel speed found to be 34 mph in the northbound direction and 35 mph southbound, which is 4 to 5 mph *above* the statutory speed limit in the vicinity of the Project site (30 mph). 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 intersection was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2015 through 2019, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and presented in Table 4.

As can be seen in Table 4, the intersection of North Street at Blackstone Street was found to have experienced a total of 10 reported motor vehicle crashes over the five-year review period, or an average of 2.0 crashes per year, the majority of which occurred on a weekday; during daylight; under clear weather conditions; and involved angle type collisions that resulted in property damage only. The North Street/Blackstone Street intersection was found to have a motor vehicle crash rate that is *below* both the MassDOT statewide and District average crash rates for a similar intersection for the MassDOT Highway Division District in which the intersection is located (District 3). No (0) motor vehicle crashes were reported to have occurred over the five-year review period along North Street or Blackstone Street in the vicinity of the proposed Project site driveways.

A review of the MassDOT statewide High Crash Location List indicated that there are no locations within the study area or along North Street or Blackstone Street that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as a high crash location. In addition, no fatal motor vehicle crashes were reported to have occurred at the study area intersection over the five-year review period.

The detailed MassDOT Crash Rate Worksheet and High Crash Location mapping are provided in the Appendix.

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY[a]

	North Street/ Blackstone Street
Traffic Control Type:[b]	U
Year:	
2015	2
2016	2
2017	3
2018	2
2019	1
Total	10
Average	2.00
Rate[c]	0.53
MassDOT Crash Rate:[d]	0.57/0.61
Significant?[e]	No
Type:	
Angle	7
Rear-End	0
Head-On	0
Sideswipe	2
Fixed Object	1
Pedestrian/Bicycle	0
Unknown/Other	0
Total	10
Conditions:	
Clear	5
Cloudy	3
Rain	1
Snow/Ice	1
Total	10
Lighting:	
Daylight	9
Dawn/Dusk	0
Dark (Road Lit)	1
Dark (Road Unlit)	0
Total	10
Day of Week:	
Monday through Friday	7
Saturday	2
Sunday	1
Total	10
Severity:	
Property Damage Only	9
Personal Injury	0
Fatality	0
Not Reported	1
Total	10

[a]Source: MassDOT Safety Management/Traffic Operations Unit records, 2015 through 2019.
[b]Traffic Control Type: S = Signalized; U = unsignalized.
[c]Crash rate per million vehicles entering the intersection.
[d]Statewide/District crash rate.
[e]The intersection crash rate is significant if it is found to exceed the MassDOT crash rate for the MassDOT Highway Division District in which the Project is located (District 3).

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2029, 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 2029 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2029 No-Build traffic volumes to reflect 2029 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 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.

Specific Development by Others

The Town of Bellingham Planning and Zoning Department was 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 intersection. Based on these consultations, the following developments were identified for review in conjunction with this assessment:

- ***Bellingham Shores, Major Residential Development Definitive Subdivision, Bellingham, Massachusetts.*** This project consists of the construction of 103 single-family residential units to be located off of Route 126 (South Main Street) to the east of the Project.

- ***Red Hill on the Charles, Definitive Subdivision, Bellingham, Massachusetts.*** This project consists of the construction of 105 single-family homes and 66 townhouse units to be located off of Route 140 (Mechanic Street) to the northeast of the Project.

- ***Bungay Brook Estate Townhomes, Special Residential Use Townhouse Dwelling, Bellingham, Massachusetts.*** This project consists of the construction of 108 townhouse units to be located off of Locust Street to the east of the Project.

- ***Proposed Warehouse, Bellingham, Massachusetts.*** This project consists of the construction of a 124,200 square foot (sf) warehouse building to be located at 206 Mechanic Street and east of the Project.

The traffic volumes associated with the aforementioned projects within the study area of this assessment are expected to be relatively minor and would be reflected in the general background traffic growth rate (discussion follows). 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.

General Background Traffic Growth

Traffic-volume data compiled by MassDOT from permanent count stations located in the region were reviewed in order to determine general traffic growth trends in the area. This data indicates that traffic volumes have fluctuated over the 10-year period between 2009 and 2019, with an average traffic growth rate of 1.21 percent. In order to provide a prudent planning condition for the Project, a slightly higher 1.5 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.

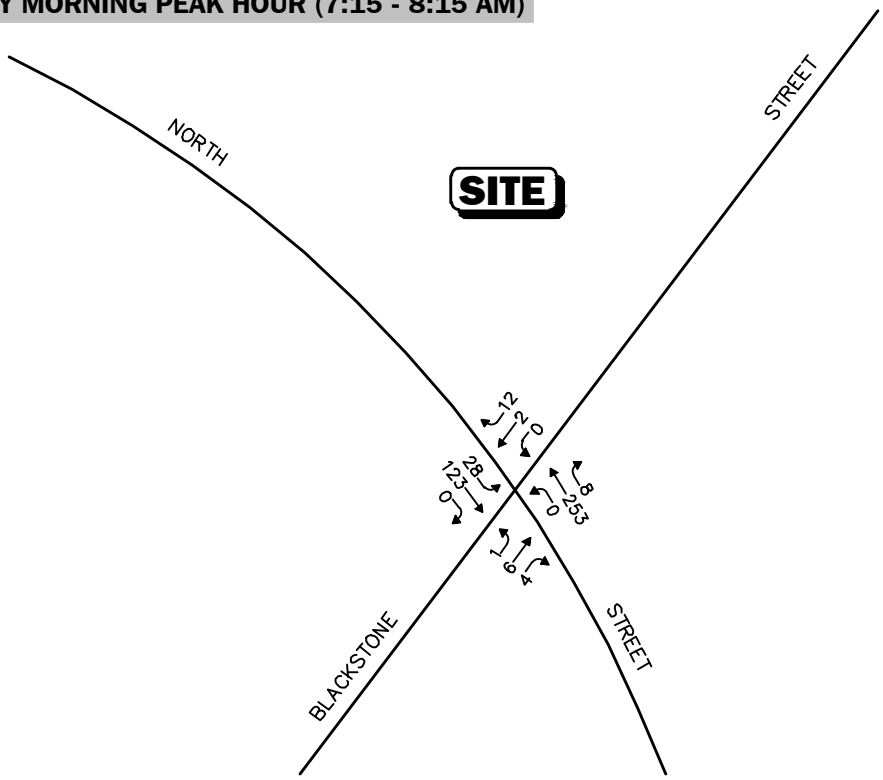
Roadway Improvement Projects

MassDOT and the Town of Bellingham were contacted in order to determine if there were any planned future roadway improvement projects expected to be completed by 2029 within the study area. Based on these discussions, no 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 2029 No-Build condition peak-hour traffic volumes were developed by applying the 1.5 percent per year compounded annual background traffic growth rate to the 2022 Existing peak-hour traffic volumes. The resulting 2029 No-Build weekday morning and evening peak-hour traffic volumes are shown on Figure 4.

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:00 - 5:00 PM)

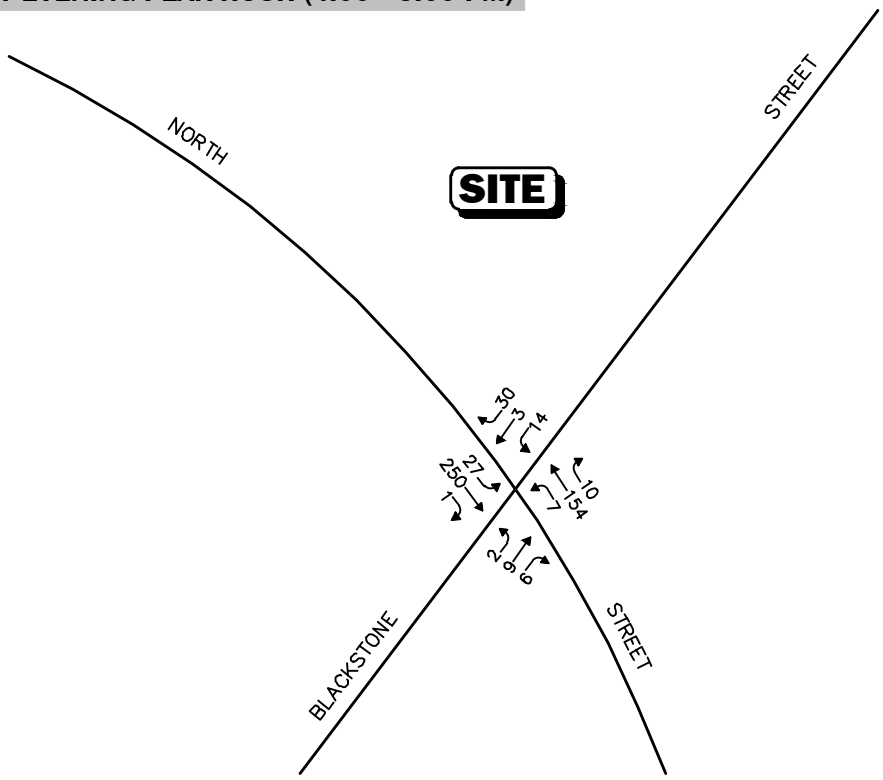


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Figure 4

2029 No-Build
Peak-Hour Traffic Volumes

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PROJECT-GENERATED TRAFFIC

Design year (2029 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the construction of a 36-unit multifamily residential development. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)[7] for a similar land use as that proposed were used. ITE Land Use Code (LUC) 215, *Single-Family Attached Housing*, was used to develop the base trip-generation characteristics for the Project, the results of which are summarized in Table 5.

Table 5
TRIP-GENERATION SUMMARY

Time Period	Vehicle Trips[a]		
	Entering	Exiting	Total
Average Weekday	112	112	224
Weekday Morning Peak-Hour	4	9	13
Weekday Evening Peak-Hour	10	8	18

[a]Based on ITE LUC 215, *Single-Family Attached Housing (36 units).*

Project-Generated Traffic-Volume Summary

As can be seen in Table 5, the Project is expected to generate approximately 224 vehicle trips on an average weekday (two-way, 24-hour volume, or 112 vehicles entering and 112 exiting), with 13 vehicle trips (4 vehicles entering and 9 exiting) expected during the weekday morning peak-hour and 18 vehicle trips (10 vehicles entering and 8 exiting) expected during the weekday evening peak-hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons residing in the Town of Bellingham and then refined based on existing traffic patterns within the study area. The general trip distribution for the Project is graphically depicted on Figure 5. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figure 6 for the weekday morning and evening peak hours.

[7]Ibid 1.

Legend:

XX Entering Trips

(XX) Exiting Trips

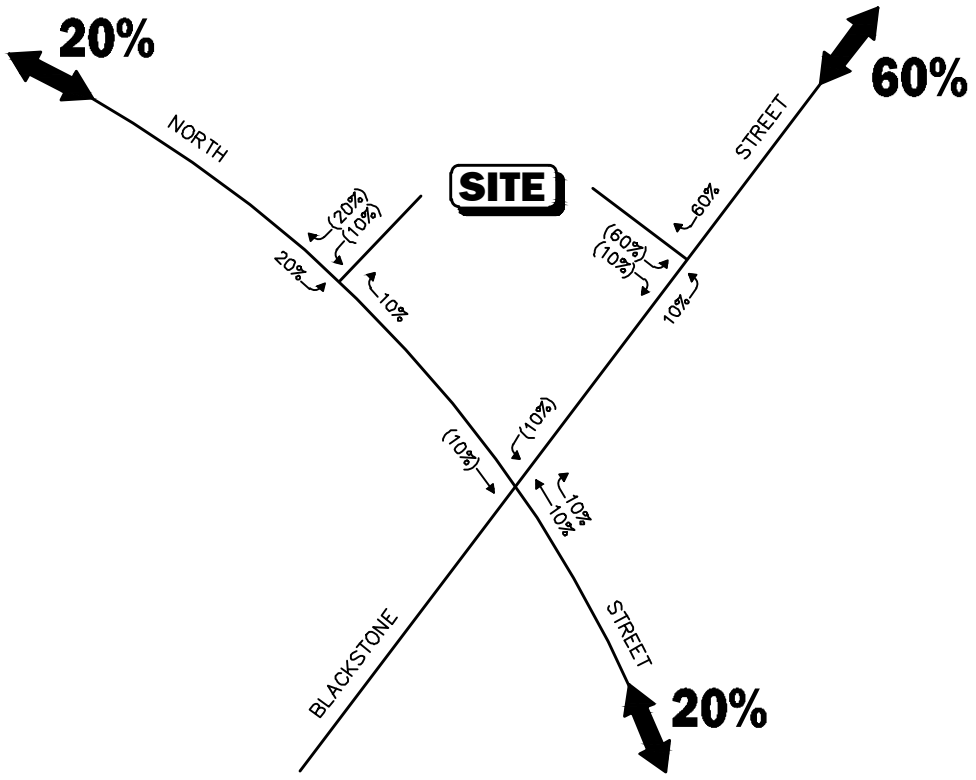

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Figure 5

Trip Distribution Map

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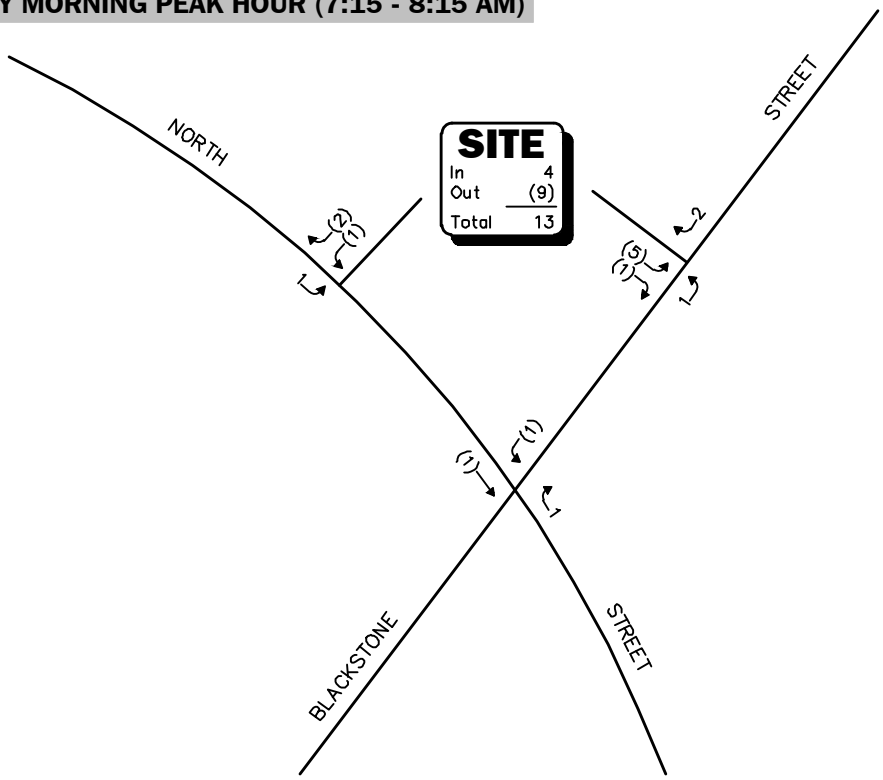
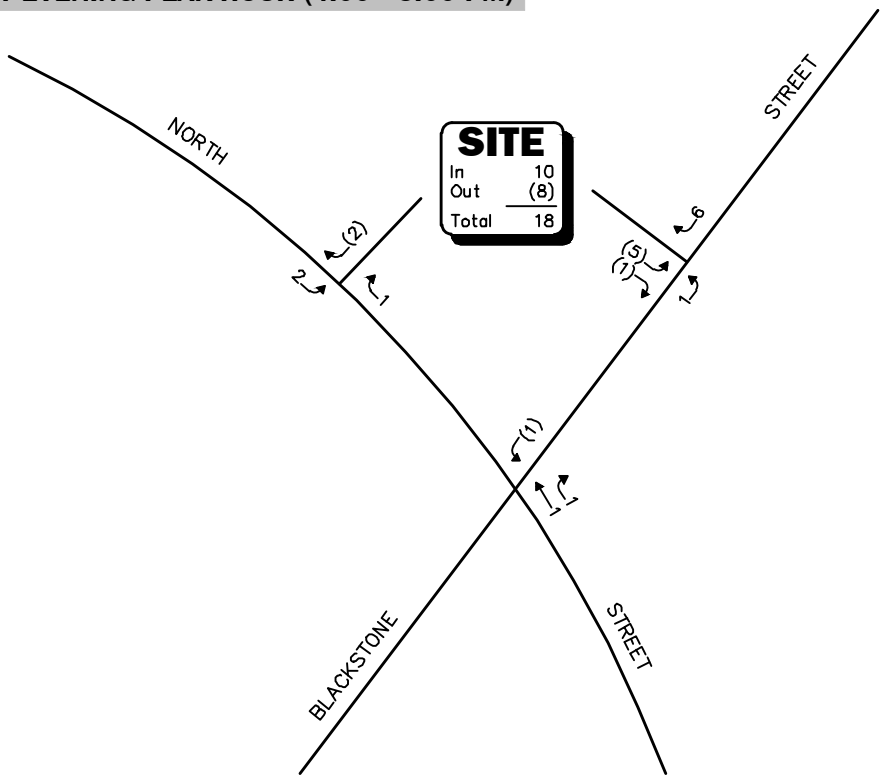
WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:00 - 5:00 PM)



Not To Scale

Figure 6

Project-Generated Peak-Hour Traffic Volumes

Vanasse & Associates inc

FUTURE TRAFFIC VOLUMES - BUILD CONDITION

The 2029 Build condition traffic volumes consist of the 2029 No-Build traffic volumes with the additional traffic expected to be generated by the Project added to them. The 2029 Build weekday morning and evening peak-hour traffic volumes are graphically depicted on Figure 7.

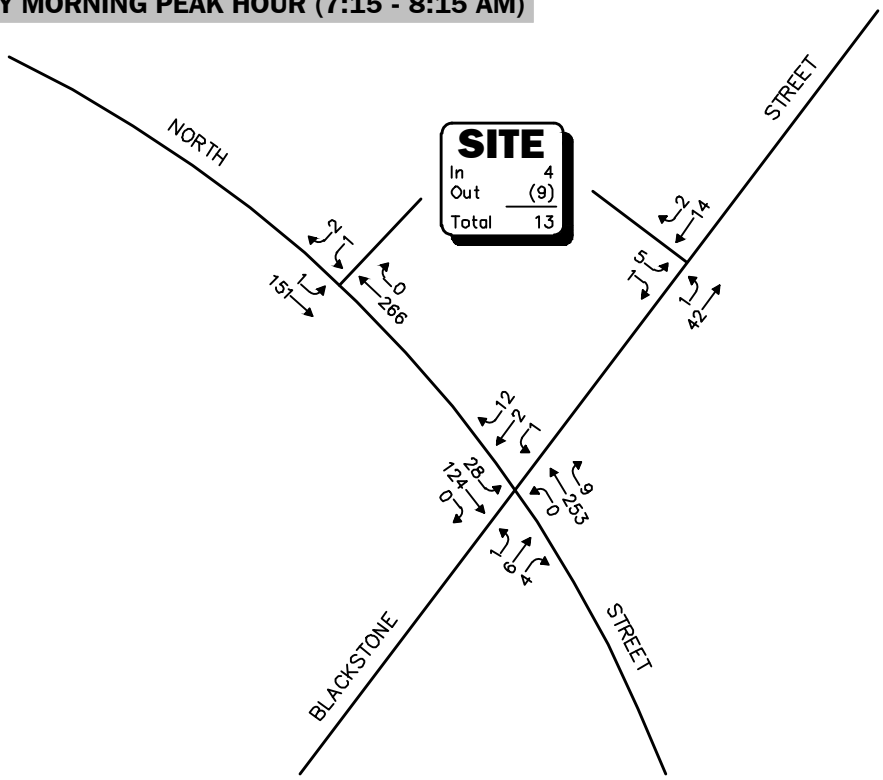
A summary of peak-hour projected traffic-volume changes outside of the study area that is the subject of this assessment is shown in Table 6. These changes are a result of the construction of the Project.

Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES

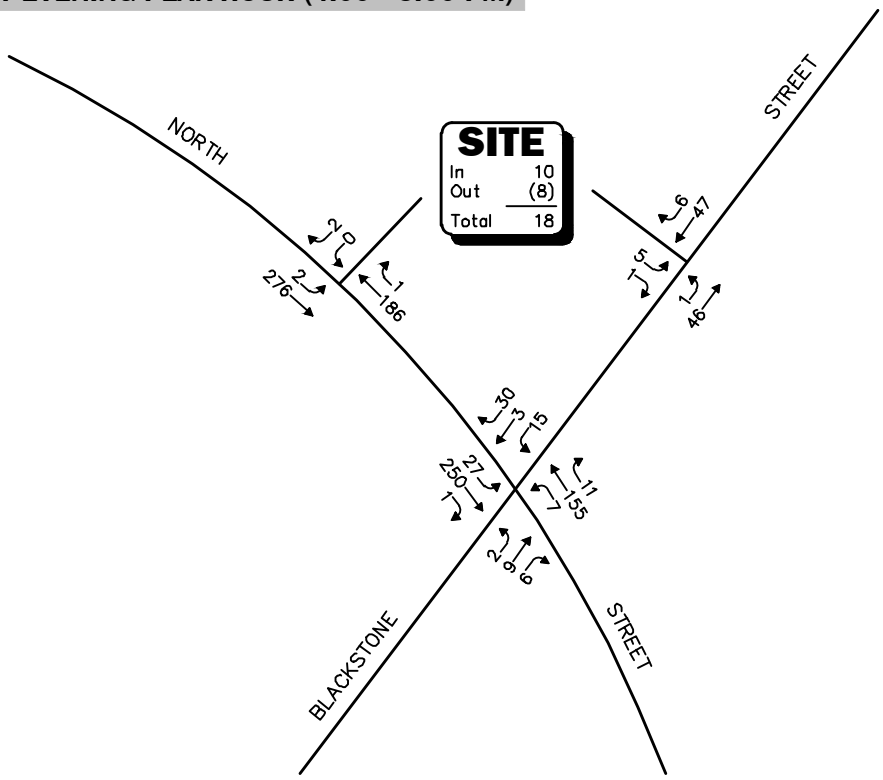
Location/Peak-Hour	2022 Existing	2029 No-Build	2029 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
North Street, north of the Project Site Driveway:					
Weekday Morning	376	417	420	3	0.7
Weekday Evening	418	464	466	2	0.4
North Street, south of Blackstone Street:					
Weekday Morning	350	388	391	3	0.8
Weekday Evening	397	441	444	3	0.7
Blackstone Street, east of the Project Site Driveway:					
Weekday Morning	50	56	63	7	12.5
Weekday Evening	84	93	104	11	11.8

As shown in Table 6, Project-related traffic-volume increases outside of the study area relative to 2029 No-Build conditions are anticipated to range from 0.4 to 12.5 percent during the peak periods, with vehicle increases shown to range from 2 to 11 vehicles. ***When distributed over the respective peak hours and to the roadway network that serves the Project site, the identified traffic-volume increases outside the immediate study area are not expected to result in a significant increase in motorist delays or vehicle queuing over anticipated future conditions without the Project (i.e., No-Build conditions).***

WEEKDAY MORNING PEAK HOUR (7:15 - 8:15 AM)



WEEKDAY EVENING PEAK HOUR (4:00 - 5:00 PM)



Not To Scale

Figure 7

2029 Build
Peak-Hour Traffic Volumes

Vanasse & Associates inc

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies 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.[8] 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.

[8]The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual;* Transportation Research Board; Washington, DC; 2010.

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 extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2010 *Highway Capacity Manual.*[9] 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 2010 *Highway Capacity Manual*. Table 7 summarizes the relationship between level of service and average control delay for two-way STOP-controlled and all-way STOP-controlled intersections.

Table 7
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
v/c ≤ 1.0	v/c > 1.0	
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*; Transportation Research Board; Washington, DC; 2010; page 19-2.

[9]*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

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 which is based upon the methodology and procedures presented in the 2010 *Highway Capacity Manual*. The Synchro® vehicle queue analysis methodology is a simulation-based model which 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 (50th percentile) and the 95th percentile vehicle queue. For unsignalized intersections, Synchro® reports the 95th 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 95th 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 95th percentile queue length).

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2022 Existing, 2029 No-Build, and 2029 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Table 8, with the detailed analysis results presented in the Appendix.

The following is a summary of the level-of-service and vehicle queue analyses for the intersections within the study area. For context, we note that an LOS of "D" or better is generally defined as "acceptable" operating conditions.

Unsignalized Intersections

Project-related impacts at the unsignalized study area intersections are shown in Table 8 and are defined as follows:

North Street at Blackstone Street

No change in level-of-service or vehicle queuing is predicted to occur for any movement over No-Build conditions, with Project-related impacts generally defined as an increase in average motorist delay of less than 1.0 seconds.

North at the Project Site Driveway

All movements exiting the Project site driveway to North Street were shown to operate at LOS B during the weekday morning peak-hour and at LOS A during the weekday evening peak-hour, with negligible vehicle queuing predicted. All movements along North Street approaching the driveway were shown to operate at LOS A during both peak hours also with negligible vehicle queuing predicted.

Blackstone Street at the Project Site Driveway

All movements at the Project site driveway intersection with Blackstone Street were shown to operate at LOS A during both peak hours with negligible vehicle queuing predicted.

Table 8
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/ Peak-Hour/Movement	2022 Existing				2029 No-Build				2029 Build			
	Demand[a]	Delay[b]	LOS[c]	Queue[d] 95th	Demand	Delay	LOS	Queue 95th	Demand	Delay	LOS	Queue 95th
North Street at Blackstone Street												
Weekday Morning:												
Blackstone Street EB LT/TH/RT	136	1.4	A	0	151	1.5	A	0	152	1.5	A	0
Blackstone Street WB LT/TH/RT	235	0.0	A	0	261	0.0	A	0	262	0.0	A	0
North Street NB LT/TH/RT	10	11.1	B	0	11	11.6	B	0	11	11.6	B	0
North Street SB LT/TH/RT	13	10.1	B	0	14	10.4	B	0	15	10.6	B	0
Weekday Evening:												
Blackstone Street EB LT/TH/RT	250	0.7	A	0	278	0.7	A	0	278	0.7	A	0
Blackstone Street WB LT/TH/RT	154	0.3	A	0	171	0.3	A	0	173	0.3	A	0
North Street NB LT/TH/RT	15	12.2	B	0	17	12.7	B	0	17	12.7	B	0
North Street SB LT/TH/RT	43	11.0	B	0	47	11.5	B	0	58	12.0	B	0
North Street at the Project Site Driveway												
Weekday Morning:												
North Street EB TH/RT	--	--	--	--	--	--	--	--	152	0.1	A	0
North Street WB LT/TH	--	--	--	--	--	--	--	--	266	0.0	A	0
Project Site Driveway SB LT/RT	--	--	--	--	--	--	--	--	3	10.4	B	0
Weekday Evening:												
North Street EB TH/RT	--	--	--	--	--	--	--	--	278	0.1	A	0
North Street WB LT/TH	--	--	--	--	--	--	--	--	187	0.0	A	0
Project Site Driveway SB LT/RT	--	--	--	--	--	--	--	--	2	9.3	A	0
Blackstone Street at the Project Site Driveway												
Weekday Morning:												
Project Site Driveway EB LT/RT	--	--	--	--	--	--	--	--	6	8.8	A	0
Blackstone Street NB TH/RT	--	--	--	--	--	--	--	--	43	0.2	A	0
Blackstone Street SB LT/TH	--	--	--	--	--	--	--	--	16	0.0	A	0
Weekday Evening:												
Project Site Driveway EB LT/RT	--	--	--	--	--	--	--	--	6	9.0	A	0
Blackstone Street NB TH/RT	--	--	--	--	--	--	--	--	47	0.2	A	0
Blackstone Street SB LT/TH	--	--	--	--	--	--	--	--	53	0.0	A	0

[a]Demand in vehicles per hour.
[b]Average control delay per vehicle (in seconds).
[c]Level of service.
[d]Queue length in vehicles.
NB = northbound; SB = southbound; EB = eastbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersections with North Street and Blackstone Street in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)[10] requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required 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 or corner sight distance (CSD) is the sight distance required 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 required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 9 presents the measured SSD and ISD at the subject intersections.

[10] *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 9
SIGHT DISTANCE MEASUREMENTS[a]

Intersection/Sight Distance Measurement	Feet		
	Required Minimum (SSD)	Desirable (ISD)[b]	Measured
North Street at the Project Site Driveway			
Stopping Sight Distance:			
North Street approaching from the north	250	--	333
North Street approaching from the south	250	--	324
Intersection Sight Distance:			
Looking to the north from the Project Site Driveway	250	390	202/500+[c]
Looking to the south from the Project Site Driveway	250	335	154/500+[c]
Blackstone Street at the Project Site Driveway			
Stopping Sight Distance:			
Blackstone Street approaching from the east	250	--	309
Blackstone Street approaching from the west	250	--	500+
Intersection Sight Distance:			
Looking to the east from the Project Site Driveway	250	335	281
Looking to the west from the Project Site Driveway	250	390	63/500+[c]

[a]Recommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets,* 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on an approach speed of 35 mph along North Street and Blackstone Street.

[b]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.

[c]Available sight distance with the selective trimming/removal of trees and vegetation located within the sight triangle area of the Project site driveway.

As can be seen in Table 9, with the selective trimming/removal of trees and vegetation located within the sight triangle areas of the Project site driveways along both North Street and Blackstone Street, the available lines of sight at the Project site driveway intersections will exceed the recommended minimum sight distance to function in a safe (SSD) manner based on a 35 mph approach speed, which is consistent the 85th percentile vehicle travel speeds measured along these roadways (33/30 mph along North Street and 34/35 mph along Blackstone Street) and is 10 mph above with the posted speed limit on North Street (25 mph) and 5 mph above the statutory speed limit on Blackstone Street (30 mph).

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has conducted a TIA in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be located off North Street and Blackstone Street in Bellingham, Massachusetts The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),[11] the Project is expected to generate approximately 224 vehicle trips on an average weekday (two-way, 24-hour volume), with 13 vehicle trips expected during the weekday morning peak-hour and 18 vehicle trips expected during the weekday evening peak-hour;

2. 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 condition), with no changes in levels of service shown to occur as a result of the Project and all of the movements at the study area intersections shown to continue to operate at LOS B or better with the addition of Project-related traffic, where an LOS of "D" or better is defined as "acceptable" traffic operations;

2. All movements exiting the Project site driveways to North Street and Blackstone Street were shown to operate at LOS B or better during the peak hours with negligible vehicle queuing predicted;

3. No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study intersection; and

4. Lines of sight at the Project site driveways exceed, or could be made to exceed, the recommended minimum sight distance to function in a safe manner based on the appropriate approach speed.

[11] Ibid 1.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project site will be provided by way of two driveways that will intersect the east side of North Street approximately 450 north of Blackstone Street and the north side of Blackstone Street approximately 700 feet northeast of North Street, respectively. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

- The Project site driveway and the internal circulating drive will be 22 feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.

- All signs and pavement markings to be installed within the Project site will conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).[12]

- Driveways to the residential units should be a minimum of 21 feet long measured between the garage door and the far edge of the sidewalk (edge closest to the residence) where a sidewalk is provided, and 23 feet measured between the garage door and the edge of the traveled-way in locations without a sidewalk.

- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas of the Project site driveways should be designed and maintained so as not to restrict lines of sight.

- Snow accumulations (windrows) within the sight triangle areas of the Project site driveways will be promptly removed where such accumulations would impede sight lines.

- Existing trees and vegetation located along the east side of North Street and the north side of Blackstone Street within the intersection triangle areas of the Project site driveways should be selectively trimmed or removed and maintained to provide the required line of sight.

[12]Ibid 2.

Transportation Demand Management

In an effort to encourage the use of alternative modes of transportation to single-occupant vehicles (SOVs), the follow Transportation Demand Management (TDM) measures will be implemented as part of the Project:

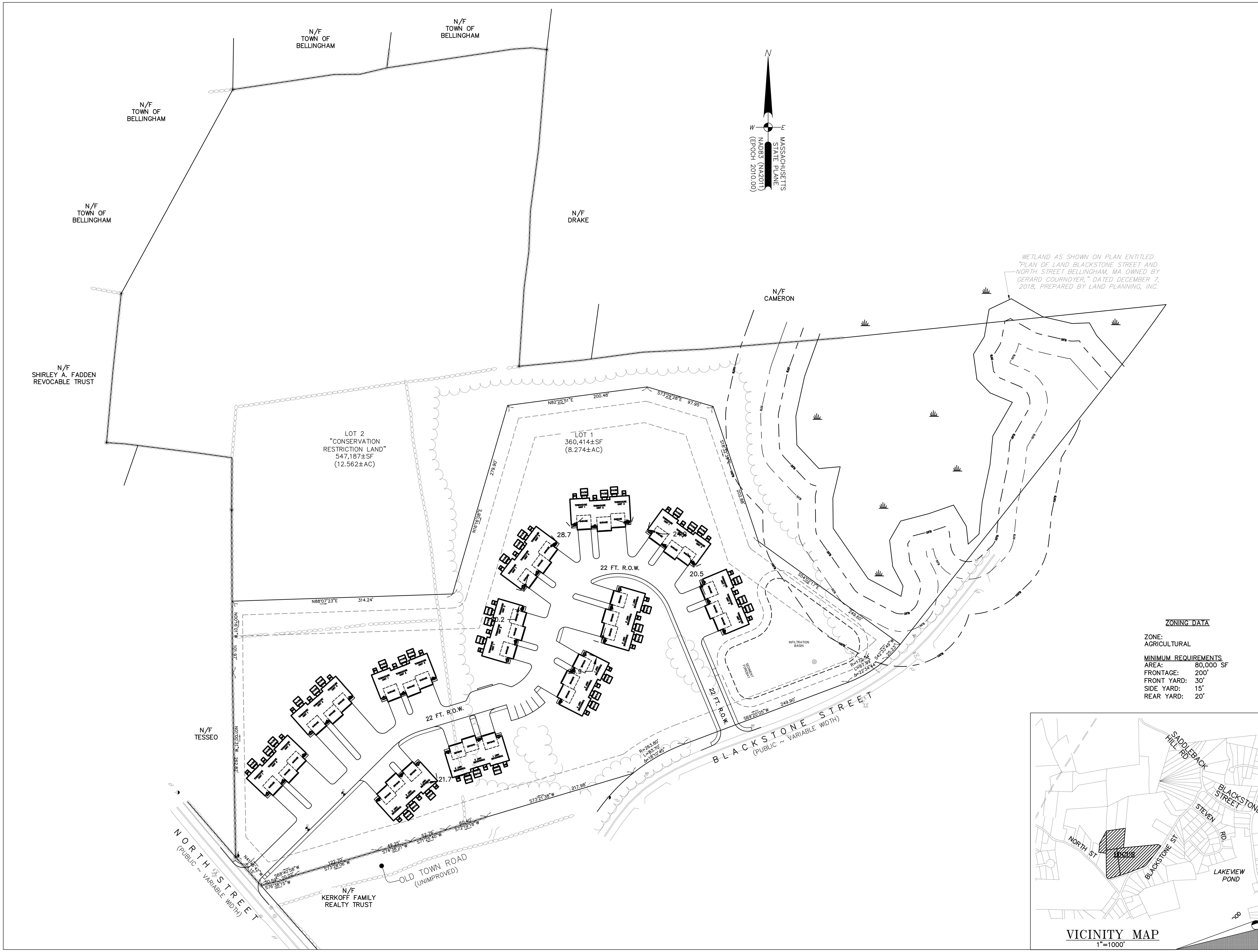
- A transportation coordinator will be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules, and fare information will be posted in a central location and/or otherwise made available to residents;
- A "welcome packet" will be provided to residents detailing available public transportation services, bicycle and walking alternatives, and commuter options available;
- Pedestrian accommodations have been incorporated within the Project site and consist of a sidewalk that extends to both North Street and Blackstone Street;
- A central maildrop has been provided; and
- Secure bicycle parking is available to residents with the individual unit garages.

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

APPENDIX

PROJECT SITE PLAN
AUTOMATIC TRAFFIC RECORDER COUNT DATA
TURNING MOVEMENT COUNT DATA
SEASONAL ADJUSTMENT DATA
COVID-19 ADJUSTMENT DATA
VEHICLE TRAVEL SPEED DATA
MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAP
GENERAL BACKGROUND TRAFFIC GROWTH
TRIP-GENERATION CALCULATIONS
TRIP DISTRIBUTION
CAPACITY ANALYSIS WORKSHEETS

PROJECT SITE PLAN



F4457

APPROVED DATE:

BELLINGHAM PLANNING BOARD

BEING A MAJORITY

LEGAL NOTES

UTILITIES ARE PLOTTED AS A COMPILATION OF RECORD DOCUMENTS, MARKINGS AND OTHER OBSERVED EVIDENCE TO DEVELOP A VIEW OF THE UNDERGROUND UTILITIES AND SHOULD BE CONSIDERED APPROXIMATE. LACKING EXCAVATION, THE EXACT LOCATION OF UNDERGROUND FEATURES CANNOT BE ACCURATELY, COMPLETELY AND RELIABLY DEPICTED. ADDITIONAL UTILITIES, NOT EVIDENCED BY RECORD DOCUMENTS OR OBSERVED PHYSICAL EVIDENCE, MAY EXIST. CONTRACTORS (IN ACCORDANCE WITH MASS.G.L. CHAPTER 82 SECTION 40 AS AMENDED) MUST CONTACT ALL UTILITY COMPANIES BEFORE EXCAVATING AND DRILLING AND CALL DIGSAFE AT 1(888)DIG-SAFE{7233}.

CONSTRUCTION ON THIS LAND IS SUBJECT TO ANY EASEMENTS, RIGHTS-OF-WAY, RESTRICTIONS, RESERVATIONS, OR OTHER LIMITATIONS WHICH MAY BE REVEALED BY AN EXAMINATION OF THE TITLE.

OWNER

RAVEN HOMES, INC.
22 BUCKHILL ROAD
NORTHBOROUGH, MA 01532

DEED BOOK 38607 PAGE 308
PLAN BOOK 697, PLAN 40

A.M. 58 LOTS 1C, 1D & 1E
A.M. 59 LOT 60A

APPLICANT

RAVEN HOMES, INC.
22 BUCKHILL ROAD
NORTHBOROUGH, MA 01532

SITE PLAN NORTH STREET & BLACKSTONE STREET BELLINGHAM MASSACHUSETTS

PROPOSED SITE

MARCH 24, 2022

DATE	REVISION DESCRIPTION

GRAPHIC SCALE: 1"=60'

Guerriere & Halnon, Inc.
ENGINEERING & LAND SURVEYING
55 WEST CENTRAL ST.
FRANKLIN, MA 02038
PH. (508) 528-3221
FX. (508) 528-7921
www.gandhengineering.com

SHEET 1 OF 1

JOB NO. F4457

AUTOMATIC TRAFFIC RECORDER COUNT DATA

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA

8/2/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	2	30			3	28				
12:15	2	30			2	32				
12:30	0	26			5	34				
12:45	1	32	5	118	11	25	21	119	26	237
1:00	1	27			2	29				
1:15	1	25			4	31				
1:30	1	26			3	28				
1:45	2	26	5	104	3	34	12	122	17	226
2:00	2	33			0	33				
2:15	1	37			0	31				
2:30	1	31			3	42				
2:45	1	26	5	127	4	40	7	146	12	273
3:00	1	34			1	37				
3:15	0	24			1	52				
3:30	4	42			5	74				
3:45	5	36	10	136	3	57	10	220	20	356
4:00	4	33			2	69				
4:15	3	40			5	72				
4:30	12	35			2	53				
4:45	9	32	28	140	0	47	9	241	37	381
5:00	9	34			4	65				
5:15	24	28			11	55				
5:30	37	34			8	55				
5:45	56	33	126	129	16	40	39	215	165	344
6:00	27	45			15	42				
6:15	49	18			33	39				
6:30	50	24			17	28				
6:45	52	32	178	119	30	30	95	139	273	258
7:00	28	35			25	39				
7:15	62	26			32	36				
7:30	50	19			38	30				
7:45	49	19	189	99	34	29	129	134	318	233
8:00	46	22			21	27				
8:15	35	38			23	17				
8:30	35	21			29	19				
8:45	33	14	149	95	26	21	99	84	248	179
9:00	32	8			17	17				
9:15	38	14			28	17				
9:30	23	2			26	16				
9:45	26	10	119	34	29	16	100	66	219	100
10:00	26	11			24	8				
10:15	27	8			26	10				
10:30	24	5			17	8				
10:45	18	12	95	36	31	5	98	31	193	67
11:00	37	1			25	9				
11:15	22	1			27	11				
11:30	22	2			24	11				
11:45	19	3	100	7	30	1	106	32	206	39
Total	1009	1144			725	1549			1734	2693
Percent	46.9%	53.1%			31.9%	68.1%			39.2%	60.8%

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA

8/3/2022	WB,		Hour Totals		EB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	18			6	38				
12:15	3	30			1	39				
12:30	2	24			3	22				
12:45	2	31	8	103	10	19	20	118	28	221
1:00	4	27			12	19				
1:15	1	25			4	32				
1:30	0	29			1	30				
1:45	2	29	7	110	3	32	20	113	27	223
2:00	1	30			1	30				
2:15	1	31			1	37				
2:30	2	28			0	43				
2:45	2	29	6	118	1	33	3	143	9	261
3:00	0	21			1	44				
3:15	2	35			1	52				
3:30	2	31			1	56				
3:45	2	28	6	115	3	77	6	229	12	344
4:00	2	44			4	54				
4:15	4	44			2	69				
4:30	8	33			5	58				
4:45	11	34	25	155	2	62	13	243	38	398
5:00	14	34			4	68				
5:15	11	40			11	73				
5:30	37	32			11	52				
5:45	47	32	109	138	16	44	42	237	151	375
6:00	37	28			12	38				
6:15	56	28			34	40				
6:30	49	31			32	37				
6:45	51	42	193	129	23	35	101	150	294	279
7:00	44	24			26	34				
7:15	54	19			34	33				
7:30	65	23			27	28				
7:45	65	19	228	85	37	29	124	124	352	209
8:00	50	32			25	35				
8:15	52	28			24	21				
8:30	40	18			25	18				
8:45	35	18	177	96	24	22	98	96	275	192
9:00	40	18			21	23				
9:15	17	14			17	20				
9:30	30	16			17	21				
9:45	29	7	116	55	34	12	89	76	205	131
10:00	20	3			23	8				
10:15	26	11			25	18				
10:30	29	9			16	13				
10:45	20	8	95	31	31	7	95	46	190	77
11:00	20	5			25	13				
11:15	35	6			25	9				
11:30	17	1			26	7				
11:45	27	2	99	14	28	9	104	38	203	52
Total	1069	1149			715	1613			1784	2762
Percent	48.2%	51.8%			30.7%	69.3%			39.2%	60.8%
Grand Total	2078	2293			1440	3162			3518	5455
Percent	47.5%	52.5%			31.3%	68.7%			39.2%	60.8%
ADT		ADT: 4,486		AADT: 4,486						

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA

8/1/2022	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,	WB,	EB,
12:00 AM	*	*	5	21	8	20	*	*	*	*	*	*	*	*	6	20
1:00	*	*	5	12	7	20	*	*	*	*	*	*	*	*	6	16
2:00	*	*	5	7	6	3	*	*	*	*	*	*	*	*	6	5
3:00	*	*	10	10	6	6	*	*	*	*	*	*	*	*	8	8
4:00	*	*	28	9	25	13	*	*	*	*	*	*	*	*	26	11
5:00	*	*	126	39	109	42	*	*	*	*	*	*	*	*	118	40
6:00	*	*	178	95	193	101	*	*	*	*	*	*	*	*	186	98
7:00	*	*	189	129	228	124	*	*	*	*	*	*	*	*	208	126
8:00	*	*	149	99	177	98	*	*	*	*	*	*	*	*	163	98
9:00	*	*	119	100	116	89	*	*	*	*	*	*	*	*	118	94
10:00	*	*	95	98	95	95	*	*	*	*	*	*	*	*	95	96
11:00	*	*	100	106	99	104	*	*	*	*	*	*	*	*	100	105
12:00 PM	*	*	118	119	103	118	*	*	*	*	*	*	*	*	110	118
1:00	*	*	104	122	110	113	*	*	*	*	*	*	*	*	107	118
2:00	*	*	127	146	118	143	*	*	*	*	*	*	*	*	122	144
3:00	*	*	136	220	115	229	*	*	*	*	*	*	*	*	126	224
4:00	*	*	140	241	155	243	*	*	*	*	*	*	*	*	148	242
5:00	*	*	129	215	138	237	*	*	*	*	*	*	*	*	134	226
6:00	*	*	119	139	129	150	*	*	*	*	*	*	*	*	124	144
7:00	*	*	99	134	85	124	*	*	*	*	*	*	*	*	92	129
8:00	*	*	95	84	96	96	*	*	*	*	*	*	*	*	96	90
9:00	*	*	34	66	55	76	*	*	*	*	*	*	*	*	44	71
10:00	*	*	36	31	31	46	*	*	*	*	*	*	*	*	34	38
11:00	*	*	7	32	5	13	*	*	*	*	*	*	*	*	6	22
Total	0	0	2153	2274	2209	2303	0	0	0	0	0	0	0	0	2183	2283
Day	0		4427		4512		0		0		0		0		4466	
AM Peak			7:00	7:00	7:00	7:00									7:00	7:00
Volume			189	129	228	124									208	126
PM Peak			4:00	4:00	4:00	4:00									4:00	4:00
Volume			140	241	155	243									148	242
Comb Total	0		4427		4512		0		0		0		0		4466	
ADT	ADT: 4,486		AADT: 4,486													

Accurate Counts

978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA

8/2/2022	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	12			0	6				
12:15	0	8			0	7				
12:30	0	6			1	2				
12:45	0	7	0	33	0	10	1	25	1	58
1:00	0	2			0	12				
1:15	1	7			0	9				
1:30	0	2			0	6				
1:45	0	5	1	16	0	5	0	32	1	48
2:00	0	4			0	6				
2:15	0	2			0	6				
2:30	1	4			0	7				
2:45	0	5	1	15	0	6	0	25	1	40
3:00	0	6			0	5				
3:15	0	10			0	9				
3:30	0	12			0	8				
3:45	0	14	0	42	0	16	0	38	0	80
4:00	0	11			0	14				
4:15	2	12			1	15				
4:30	0	11			0	8				
4:45	1	7	3	41	0	9	1	46	4	87
5:00	0	5			0	8				
5:15	3	8			2	10				
5:30	4	5			0	12				
5:45	4	7	11	25	3	9	5	39	16	64
6:00	7	6			3	19				
6:15	3	4			1	7				
6:30	3	5			1	6				
6:45	4	3	17	18	2	4	7	36	24	54
7:00	12	2			1	10				
7:15	13	2			2	9				
7:30	9	4			4	5				
7:45	9	6	43	14	7	5	14	29	57	43
8:00	8	2			3	7				
8:15	6	1			2	8				
8:30	6	1			2	2				
8:45	12	4	32	8	5	5	12	22	44	30
9:00	4	4			5	4				
9:15	4	1			9	2				
9:30	7	1			4	8				
9:45	7	1	22	7	4	5	22	19	44	26
10:00	6	2			3	5				
10:15	5	1			3	3				
10:30	7	2			3	0				
10:45	5	1	23	6	4	2	13	10	36	16
11:00	6	1			6	1				
11:15	3	0			5	2				
11:30	6	1			4	1				
11:45	8	0	23	2	8	0	23	4	46	6
Total	176	227			98	325			274	552
Percent	43.7%	56.3%			23.2%	76.8%			33.2%	66.8%

Accurate Counts
978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA

8/3/2022	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	5			1	12				
12:15	0	2			0	11				
12:30	0	6			0	8				
12:45	0	5	1	18	0	2	1	33	2	51
1:00	0	8			0	9				
1:15	0	9			0	3				
1:30	0	4			1	2				
1:45	0	2	0	23	0	6	1	20	1	43
2:00	0	4			0	5				
2:15	0	5			1	6				
2:30	0	8			0	8				
2:45	1	4	1	21	0	3	1	22	2	43
3:00	0	6			0	6				
3:15	0	13			0	9				
3:30	0	4			0	13				
3:45	0	8	0	31	0	8	0	36	0	67
4:00	1	7			0	13				
4:15	0	13			0	9				
4:30	1	9			1	13				
4:45	0	10	2	39	0	15	1	50	3	89
5:00	0	7			1	7				
5:15	4	10			2	11				
5:30	1	6			0	12				
5:45	1	8	6	31	3	7	6	37	12	68
6:00	4	6			1	12				
6:15	7	3			2	9				
6:30	7	7			2	5				
6:45	10	5	28	21	4	8	9	34	37	55
7:00	14	3			5	12				
7:15	10	8			4	4				
7:30	12	7			4	4				
7:45	13	5	49	23	6	8	19	28	68	51
8:00	10	7			7	10				
8:15	13	6			6	6				
8:30	7	2			6	2				
8:45	12	3	42	18	5	2	24	20	66	38
9:00	6	2			7	6				
9:15	5	2			5	3				
9:30	4	4			9	5				
9:45	4	2	19	10	6	3	27	17	46	27
10:00	6	1			3	1				
10:15	7	1			10	2				
10:30	6	3			7	0				
10:45	10	1	29	6	9	4	29	7	58	13
11:00	5	0			4	1				
11:15	8	*			6	*				
11:30	6	*			9	*				
11:45	7	*	26	0	8	*	27	1	53	1
Total	203	241			145	305			348	546
Percent	45.7%	54.3%			32.2%	67.8%			38.9%	61.1%
Grand Total	379	468			243	630			622	1098
Percent	44.7%	55.3%			27.8%	72.2%			36.2%	63.8%
ADT		ADT: 863		AADT: 863						

Accurate Counts
978-664-2565

Location : Blackstone Street
Location : North of North Street
City/State: Bellingham, MA

93450002

8/1/2022	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,
12:00 AM	*	*	0	1	1	1	*	*	*	*	*	*	*	*	0	1
1:00	*	*	1	0	0	1	*	*	*	*	*	*	*	*	0	0
2:00	*	*	1	0	1	1	*	*	*	*	*	*	*	*	1	0
3:00	*	*	0	0	0	0	*	*	*	*	*	*	*	*	0	0
4:00	*	*	3	1	2	1	*	*	*	*	*	*	*	*	2	1
5:00	*	*	11	5	6	6	*	*	*	*	*	*	*	*	8	6
6:00	*	*	17	7	28	9	*	*	*	*	*	*	*	*	22	8
7:00	*	*	43	14	49	19	*	*	*	*	*	*	*	*	46	16
8:00	*	*	32	12	42	24	*	*	*	*	*	*	*	*	37	18
9:00	*	*	22	22	19	27	*	*	*	*	*	*	*	*	20	24
10:00	*	*	23	13	29	29	*	*	*	*	*	*	*	*	26	21
11:00	*	*	23	23	26	27	*	*	*	*	*	*	*	*	24	25
12:00 PM	*	*	33	25	18	33	*	*	*	*	*	*	*	*	26	29
1:00	*	*	16	32	23	20	*	*	*	*	*	*	*	*	20	26
2:00	*	*	15	25	21	22	*	*	*	*	*	*	*	*	18	24
3:00	*	*	42	38	31	36	*	*	*	*	*	*	*	*	36	37
4:00	*	*	41	46	39	50	*	*	*	*	*	*	*	*	40	48
5:00	*	*	25	39	31	37	*	*	*	*	*	*	*	*	28	38
6:00	*	*	18	36	21	34	*	*	*	*	*	*	*	*	20	35
7:00	*	*	14	29	23	28	*	*	*	*	*	*	*	*	18	28
8:00	*	*	8	22	18	20	*	*	*	*	*	*	*	*	13	21
9:00	*	*	7	19	10	17	*	*	*	*	*	*	*	*	8	18
10:00	*	*	6	10	6	7	*	*	*	*	*	*	*	*	6	8
11:00	*	*	2	4	0	1	*	*	*	*	*	*	*	*	1	2
Total	0	0	403	423	444	450	0	0	0	0	0	0	0	0	420	434
Day	0		826		894		0		0		0		0		854	
AM Peak			7:00	11:00	7:00	10:00									7:00	11:00
Volume			43	23	49	29									46	25
PM Peak			3:00	4:00	4:00	4:00									4:00	4:00
Volume			42	46	39	50									40	48
Comb Total	0		826		894		0		0		0		0		854	
ADT	ADT: 863		AADT: 863													

TURNING MOVEMENT COUNT DATA

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 1

Groups Printed- Cars - Trucks

	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	1	0	37	3	0	3	0	6	21	0	71
07:15 AM	0	0	2	0	63	1	0	1	1	10	27	0	105
07:30 AM	0	1	2	0	60	1	0	4	1	3	36	0	108
07:45 AM	0	1	6	0	57	2	0	0	1	7	30	0	104
Total	0	2	11	0	217	7	0	8	3	26	114	0	388
08:00 AM	0	0	1	0	48	3	1	0	1	5	18	0	77
08:15 AM	0	0	3	0	38	1	0	1	2	2	22	0	69
08:30 AM	2	0	2	2	42	1	0	1	0	4	27	0	81
08:45 AM	2	1	2	1	41	1	1	3	2	6	19	1	80
Total	4	1	8	3	169	6	2	5	5	17	86	1	307
Grand Total	4	3	19	3	386	13	2	13	8	43	200	1	695
Apprch %	15.4	11.5	73.1	0.7	96	3.2	8.7	56.5	34.8	17.6	82	0.4	
Total %	0.6	0.4	2.7	0.4	55.5	1.9	0.3	1.9	1.2	6.2	28.8	0.1	
Cars	4	3	19	2	385	13	2	13	7	43	197	1	689
% Cars	100	100	100	66.7	99.7	100	100	100	87.5	100	98.5	100	99.1
Trucks	0	0	0	1	1	0	0	0	1	0	3	0	6
% Trucks	0	0	0	33.3	0.3	0	0	0	12.5	0	1.5	0	0.9

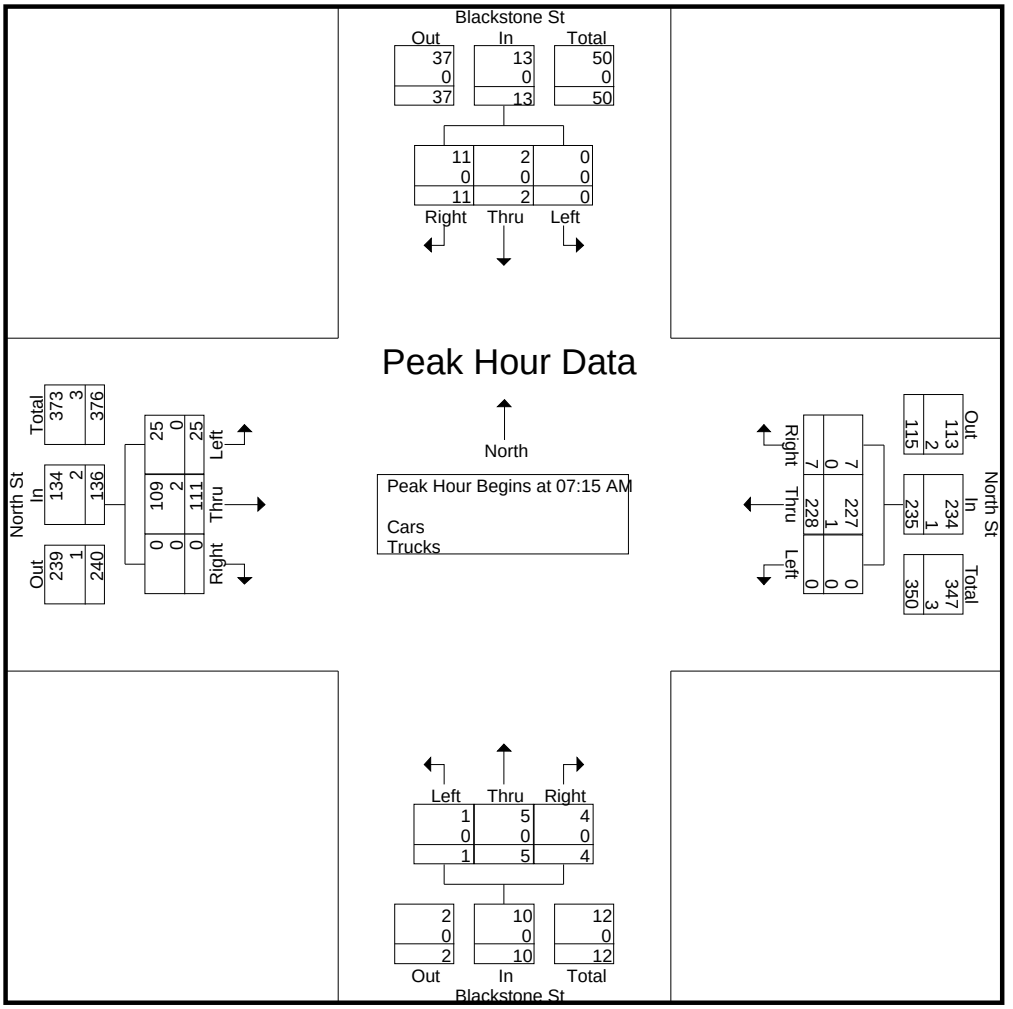
	Blackstone St From North				North St From East				Blackstone St From South				North St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	2	2	0	**63**	1	**64**	0	1	**1**	2	**10**	27	0	37	105
07:30 AM	0	**1**	2	3	0	60	1	61	0	**4**	1	**5**	3	**36**	0	**39**	**108**
07:45 AM	0	1	**6**	**7**	0	57	2	59	0	0	1	1	7	30	0	37	104
08:00 AM	0	0	1	1	0	48	**3**	51	**1**	0	1	2	5	18	0	23	77
Total Volume	0	2	11	13	0	228	7	235	1	5	4	10	25	111	0	136	394
% App. Total	0	15.4	84.6		0	97	3		10	50	40		18.4	81.6	0		
PHF	.000	.500	.458	.464	.000	.905	.583	.918	.250	.313	1.00	.500	.625	.771	.000	.872	.912
Cars	0	2	11	13	0	227	7	234	1	5	4	10	25	109	0	134	391
% Cars	0	100	100	100	0	99.6	100	99.6	100	100	100	100	100	98.2	0	98.5	99.2
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
% Trucks	0	0	0	0	0	0.4	0	0.4	0	0	0	0	0	1.8	0	1.5	0.8

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
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:

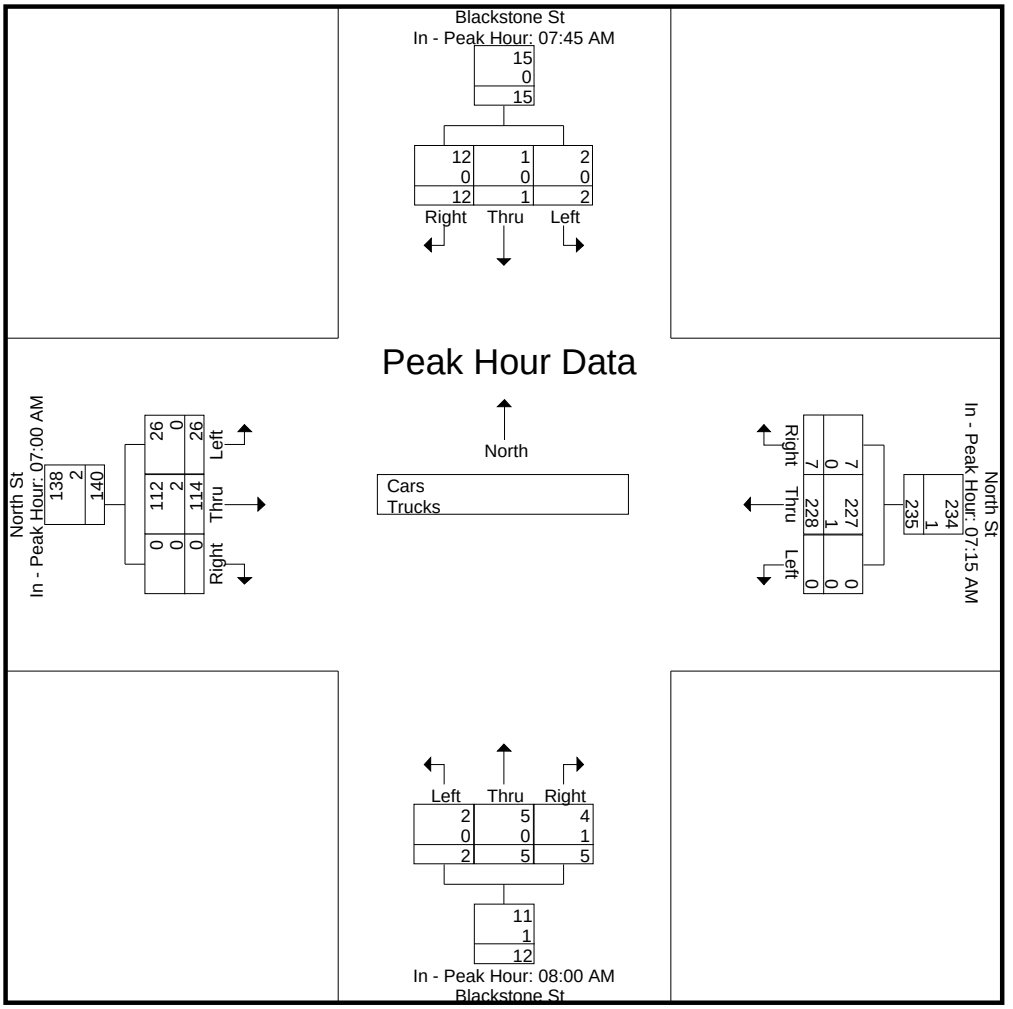
	07:45 AM				07:15 AM				08:00 AM				07:00 AM			
+0 mins.	0	**1**	**6**	**7**	0	**63**	1	**64**	**1**	0	1	2	6	21	0	27
+15 mins.	0	0	1	1	0	60	1	61	0	1	**2**	3	**10**	27	0	37
+30 mins.	0	0	3	3	0	57	2	59	0	1	0	1	3	**36**	0	**39**
+45 mins.	**2**	0	2	4	0	48	**3**	51	1	**3**	2	**6**	7	30	0	37
Total Volume	2	1	12	15	0	228	7	235	2	5	5	12	26	114	0	140
% App. Total	13.3	6.7	80		0	97	3		16.7	41.7	41.7		18.6	81.4	0	
PHF	.250	.250	.500	.536	.000	.905	.583	.918	.500	.417	.625	.500	.650	.792	.000	.897
Cars	2	1	12	15	0	227	7	234	2	5	4	11	26	112	0	138
% Cars	100	100	100	100	0	99.6	100	99.6	100	100	80	91.7	100	98.2	0	98.6
Trucks	0	0	0	0	0	1	0	1	0	0	1	1	0	2	0	2
% Trucks	0	0	0	0	0	0.4	0	0.4	0	0	20	8.3	0	1.8	0	1.4

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 4

Groups Printed- Cars

	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	1	0	37	3	0	3	0	6	21	0	71
07:15 AM	0	0	2	0	62	1	0	1	1	10	27	0	104
07:30 AM	0	1	2	0	60	1	0	4	1	3	36	0	108
07:45 AM	0	1	6	0	57	2	0	0	1	7	28	0	102
Total	0	2	11	0	216	7	0	8	3	26	112	0	385
08:00 AM	0	0	1	0	48	3	1	0	1	5	18	0	77
08:15 AM	0	0	3	0	38	1	0	1	2	2	22	0	69
08:30 AM	2	0	2	2	42	1	0	1	0	4	26	0	80
08:45 AM	2	1	2	0	41	1	1	3	1	6	19	1	78
Total	4	1	8	2	169	6	2	5	4	17	85	1	304
Grand Total	4	3	19	2	385	13	2	13	7	43	197	1	689
Apprch %	15.4	11.5	73.1	0.5	96.2	3.2	9.1	59.1	31.8	17.8	81.7	0.4	
Total %	0.6	0.4	2.8	0.3	55.9	1.9	0.3	1.9	1	6.2	28.6	0.1	

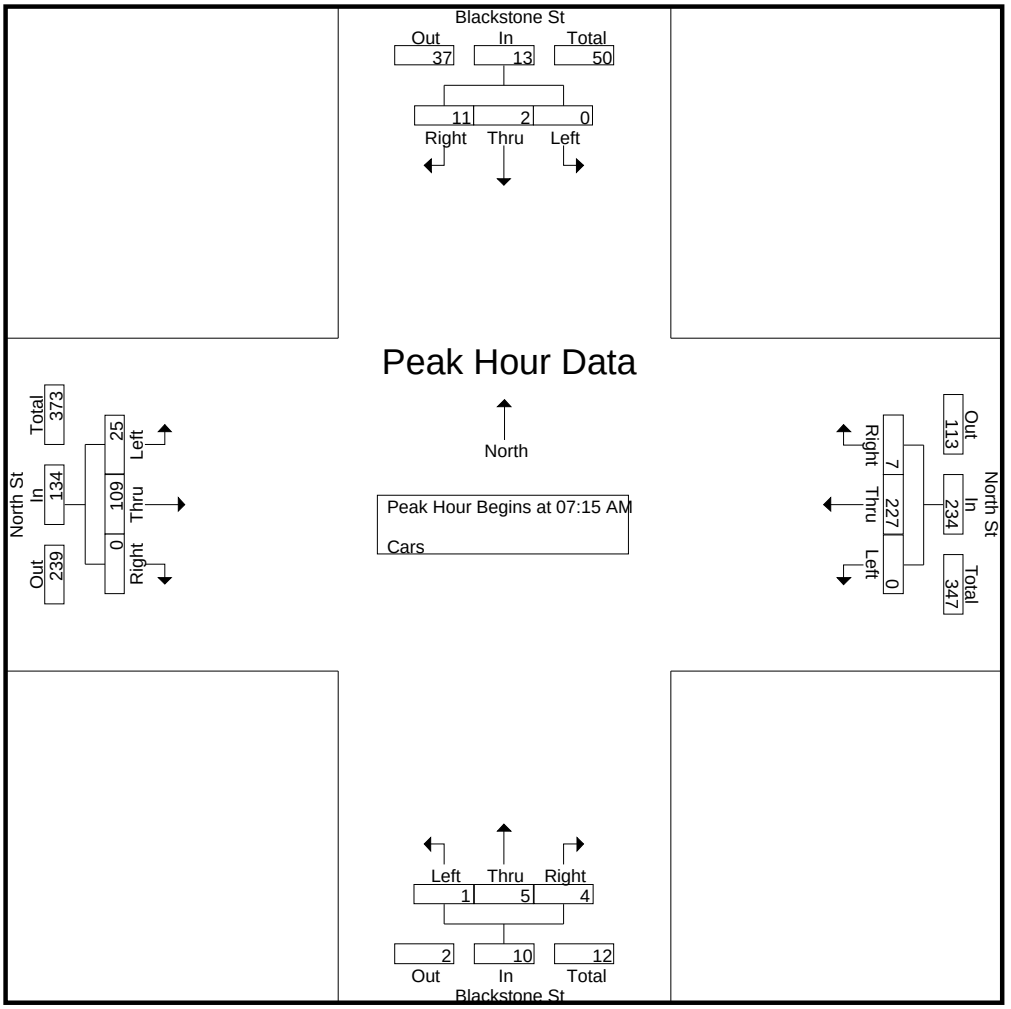
	Blackstone St From North				North St From East				Blackstone St From South				North St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	2	2	0	**62**	1	**63**	0	1	**1**	2	**10**	27	0	37	104
07:30 AM	0	**1**	2	3	0	60	1	61	0	**4**	1	**5**	3	**36**	0	**39**	**108**
07:45 AM	0	1	**6**	**7**	0	57	2	59	0	0	1	1	7	28	0	35	102
08:00 AM	0	0	1	1	0	48	**3**	51	**1**	0	1	2	5	18	0	23	77
Total Volume	0	2	11	13	0	227	7	234	1	5	4	10	25	109	0	134	391
% App. Total	0	15.4	84.6		0	97	3		10	50	40		18.7	81.3	0		
PHF	.000	.500	.458	.464	.000	.915	.583	.929	.250	.313	1.00	.500	.625	.757	.000	.859	.905

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 5



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

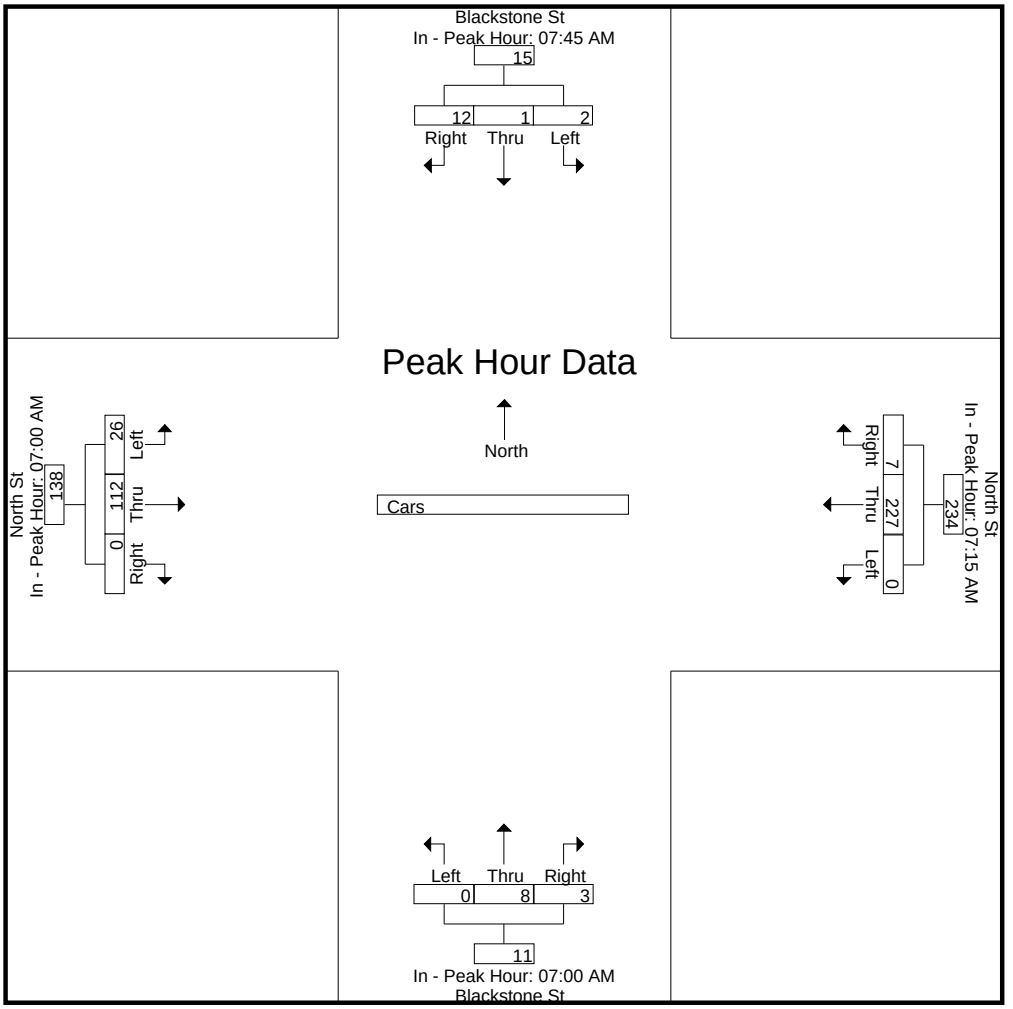
	07:45 AM				07:15 AM				07:00 AM				07:00 AM			
+0 mins.	0	**1**	**6**	**7**	0	**62**	1	**63**	0	3	0	3	6	21	0	27
+15 mins.	0	0	1	1	0	60	1	61	0	1	**1**	2	**10**	27	0	37
+30 mins.	0	0	3	3	0	57	2	59	0	**4**	1	**5**	3	**36**	0	**39**
+45 mins.	**2**	0	2	4	0	48	**3**	51	0	0	1	1	7	28	0	35
Total Volume	2	1	12	15	0	227	7	234	0	8	3	11	26	112	0	138
% App. Total	13.3	6.7	80		0	97	3		0	72.7	27.3		18.8	81.2	0	
PHF	.250	.250	.500	.536	.000	.915	.583	.929	.000	.500	.750	.550	.650	.778	.000	.885

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022

Groups Printed- Trucks

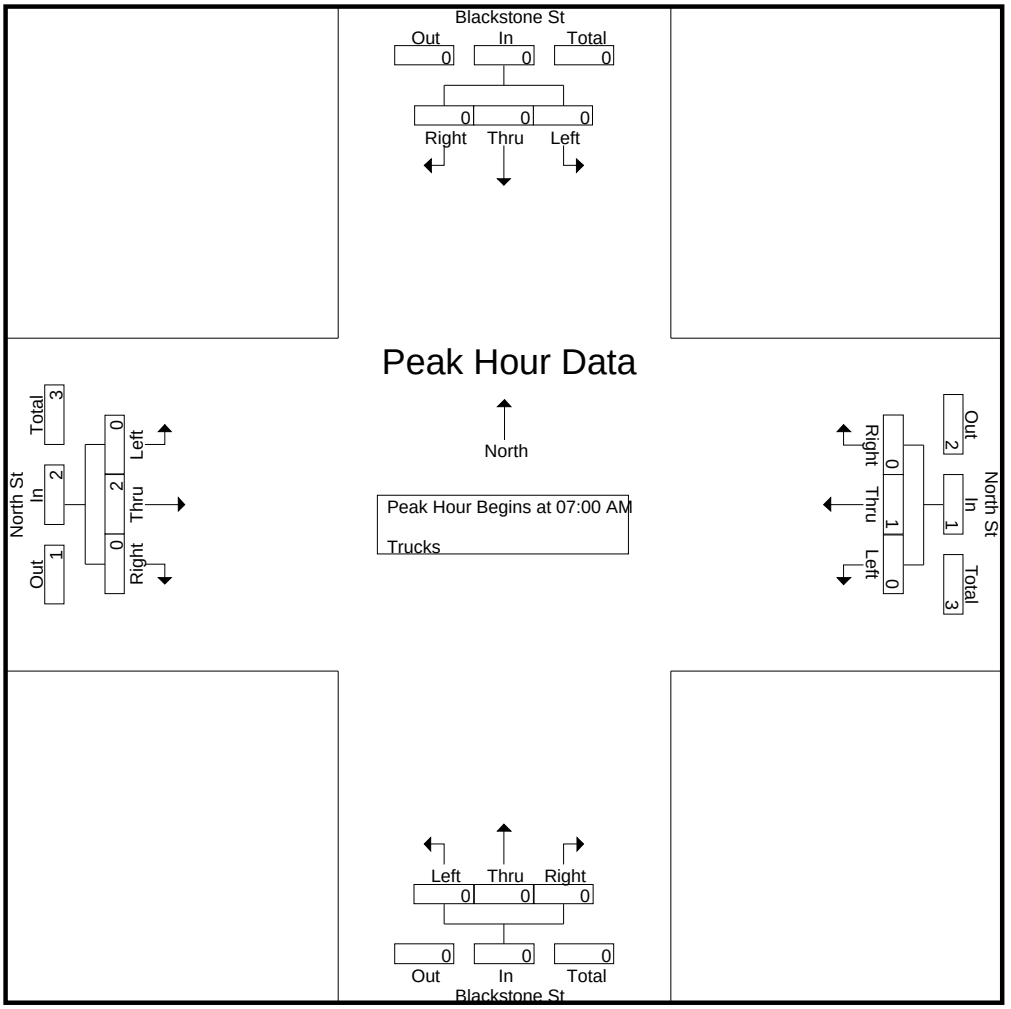
	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	1	0	0	0	0	0	2	0	3
08:00 AM	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	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	0	1	0	0	0	0	1	0	0	0	2
Total	0	0	0	1	0	0	0	0	1	0	1	0	3
Grand Total	0	0	0	1	1	0	0	0	1	0	3	0	6
Apprch %	0	0	0	50	50	0	0	0	100	0	100	0	
Total %	0	0	0	16.7	16.7	0	0	0	16.7	0	50	0	

	Blackstone St From North				North St From East				Blackstone St From South				North 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 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	1
07:30 AM	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	**2**	0	**2**	**2**
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.375

Accurate Counts
978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

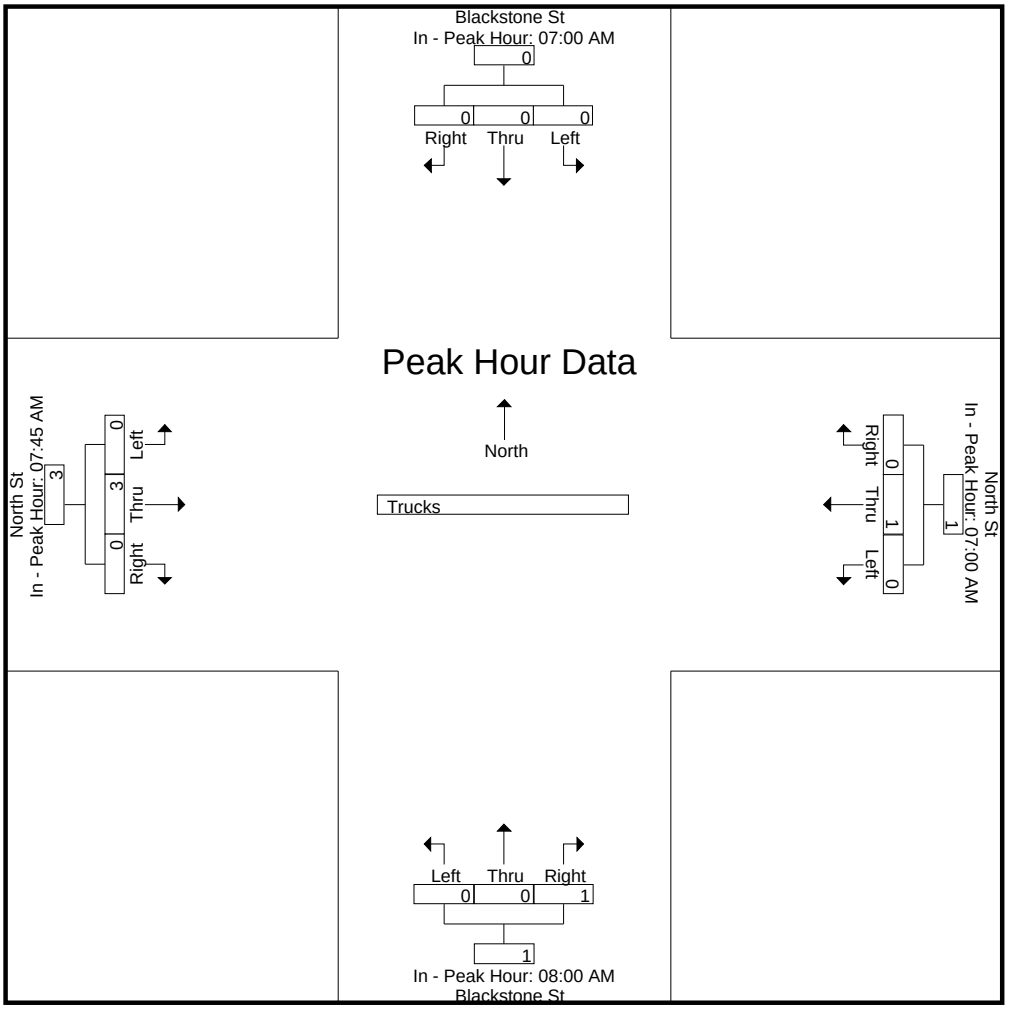
	07:00 AM				07:00 AM				08:00 AM				07:45 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**
+15 mins.	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	**1**	**1**	0	1	0	1
Total Volume	0	0	0	0	0	1	0	1	0	0	1	1	0	3	0	3
% App. Total	0	0	0		0	100	0		0	0	100		0	100	0	
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.250	.250	.000	.375	.000	.375

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022

Groups Printed- Bikes Peds

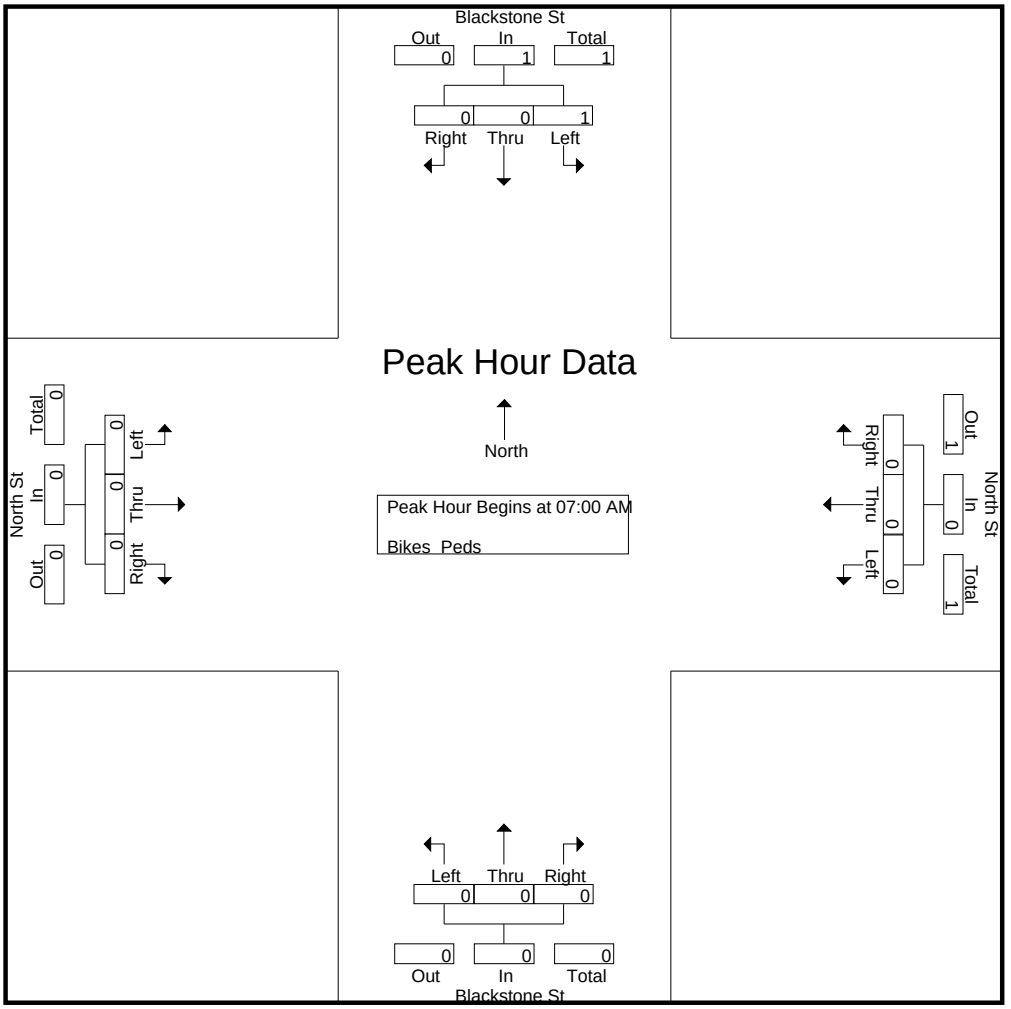
	Blackstone St From North				North St From East				Blackstone St From South				North St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:00 AM	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	2	0	0	0	2	0	0	0	0	4	0	4
08:30 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	4	0	4
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	8	0	8
Grand Total	1	0	0	2	0	0	0	2	0	0	0	2	0	0	0	2	8	1	9
Apprch %	100	0	0		0	0	0		0	0	0		0	0	0				
Total %	100	0	0		0	0	0		0	0	0		0	0	0		88.9	11.1	

	Blackstone St From North				North St From East				Blackstone St From South				North 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 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	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
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0		
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts
978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

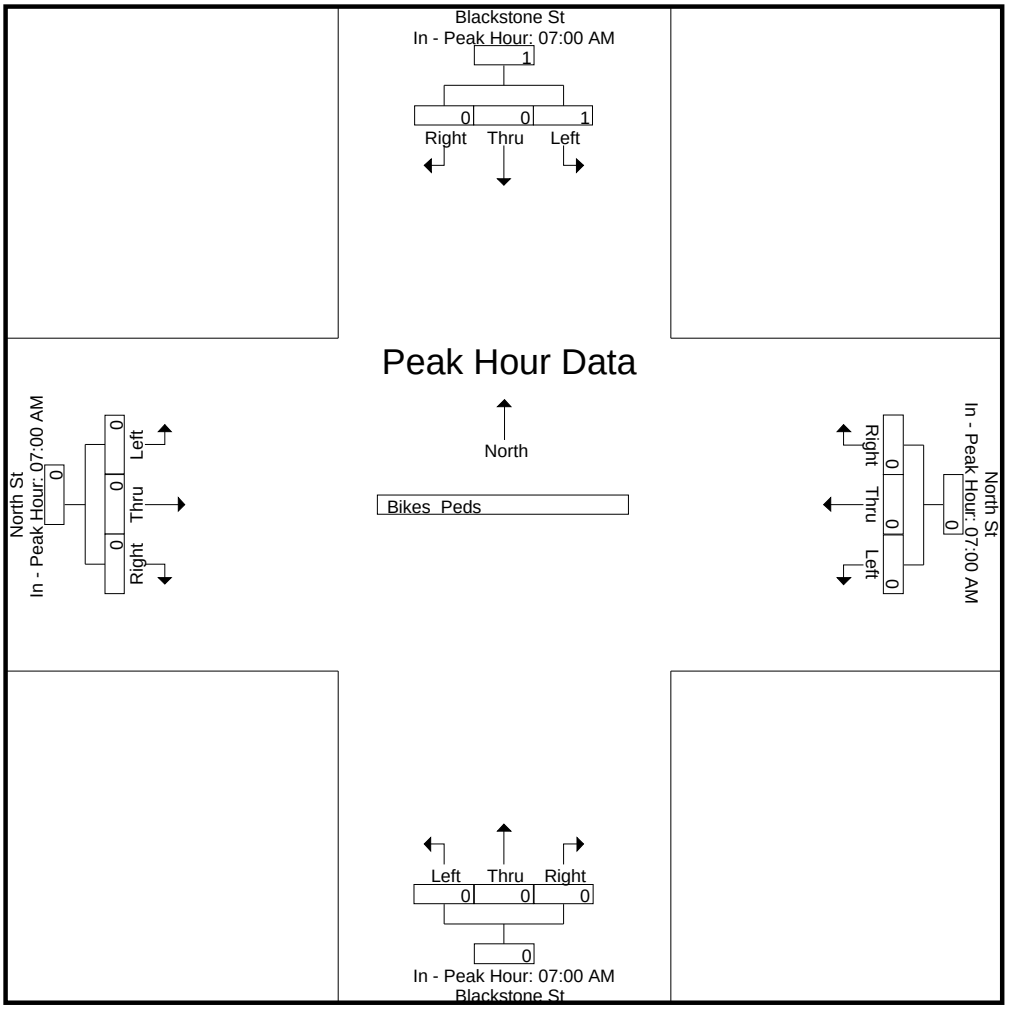
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	100	0	0		0	0	0		0	0	0		0	0	0	
PHF	.250	.000	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 1

Groups Printed- Cars - Trucks

	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	5	0	6	1	37	3	0	0	1	9	63	0	125
04:15 PM	4	1	10	2	34	3	1	4	0	4	71	0	134
04:30 PM	1	1	8	3	36	3	0	2	1	6	49	0	110
04:45 PM	3	1	3	0	32	0	1	2	3	5	42	1	93
Total	13	3	27	6	139	9	2	8	5	24	225	1	462
05:00 PM	0	2	5	0	34	3	1	0	0	3	62	0	110
05:15 PM	3	1	6	1	32	2	0	2	0	3	53	0	103
05:30 PM	6	0	4	1	42	0	0	0	0	3	52	1	109
05:45 PM	1	2	5	1	31	0	1	2	0	5	36	2	86
Total	10	5	20	3	139	5	2	4	0	14	203	3	408
Grand Total	23	8	47	9	278	14	4	12	5	38	428	4	870
Apprch %	29.5	10.3	60.3	3	92.4	4.7	19	57.1	23.8	8.1	91.1	0.9	
Total %	2.6	0.9	5.4	1	32	1.6	0.5	1.4	0.6	4.4	49.2	0.5	
Cars	23	8	47	9	278	14	4	12	5	38	428	4	870
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0

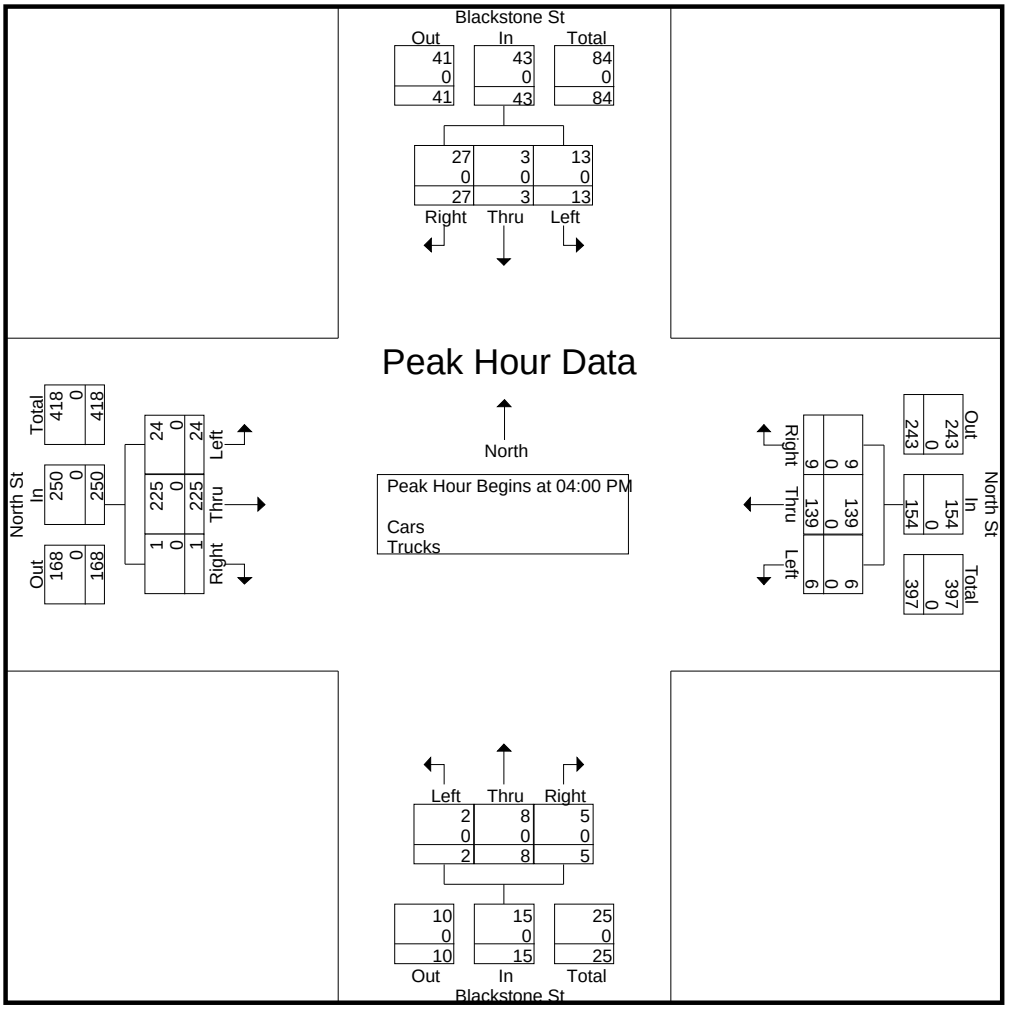
	Blackstone St From North				North St From East				Blackstone St From South				North St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**5**	0	6	11	1	**37**	**3**	41	0	0	1	1	**9**	63	0	72	125
04:15 PM	4	**1**	**10**	**15**	2	34	3	39	**1**	**4**	0	5	4	**71**	0	**75**	**134**
04:30 PM	1	1	8	10	**3**	36	3	**42**	0	2	1	3	6	49	0	55	110
04:45 PM	3	1	3	7	0	32	0	32	1	2	**3**	**6**	5	42	**1**	48	93
Total Volume	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250	462
% App. Total	30.2	7	62.8		3.9	90.3	5.8		13.3	53.3	33.3		9.6	90	0.4		
PHF	.650	.750	.675	.717	.500	.939	.750	.917	.500	.500	.417	.625	.667	.792	.250	.833	.862
Cars	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250	462
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
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:

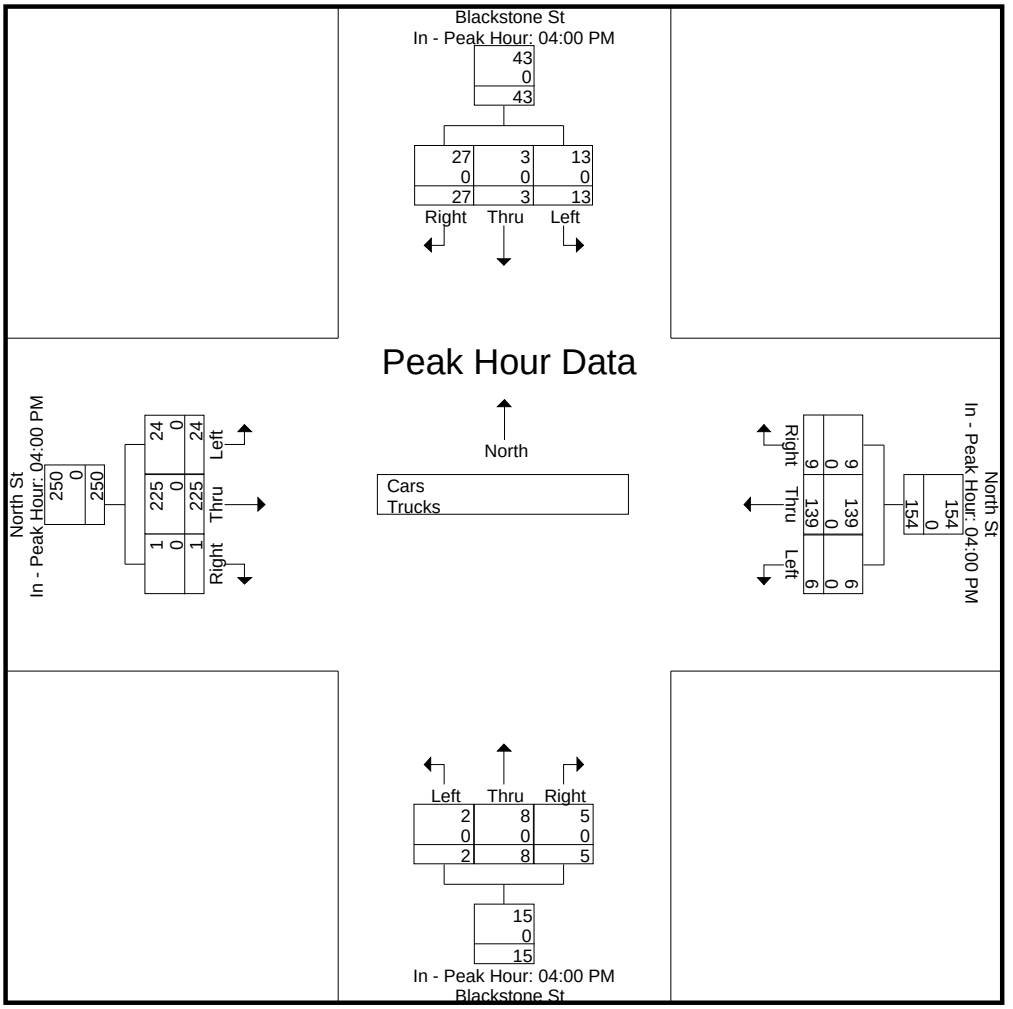
	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**5**	0	6	11	1	**37**	**3**	41	0	0	1	1	**9**	63	0	72
+15 mins.	4	**1**	**10**	**15**	2	34	3	39	**1**	**4**	0	5	4	**71**	0	**75**
+30 mins.	1	1	8	10	**3**	36	3	**42**	0	2	1	3	6	49	0	55
+45 mins.	3	1	3	7	0	32	0	32	1	2	**3**	**6**	5	42	**1**	48
Total Volume	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250
% App. Total	30.2	7	62.8		3.9	90.3	5.8		13.3	53.3	33.3		9.6	90	0.4	
PHF	.650	.750	.675	.717	.500	.939	.750	.917	.500	.500	.417	.625	.667	.792	.250	.833
Cars	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250
% Cars	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 4

Groups Printed- Cars

	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	5	0	6	1	37	3	0	0	1	9	63	0	125
04:15 PM	4	1	10	2	34	3	1	4	0	4	71	0	134
04:30 PM	1	1	8	3	36	3	0	2	1	6	49	0	110
04:45 PM	3	1	3	0	32	0	1	2	3	5	42	1	93
Total	13	3	27	6	139	9	2	8	5	24	225	1	462
05:00 PM	0	2	5	0	34	3	1	0	0	3	62	0	110
05:15 PM	3	1	6	1	32	2	0	2	0	3	53	0	103
05:30 PM	6	0	4	1	42	0	0	0	0	3	52	1	109
05:45 PM	1	2	5	1	31	0	1	2	0	5	36	2	86
Total	10	5	20	3	139	5	2	4	0	14	203	3	408
Grand Total	23	8	47	9	278	14	4	12	5	38	428	4	870
Apprch %	29.5	10.3	60.3	3	92.4	4.7	19	57.1	23.8	8.1	91.1	0.9	
Total %	2.6	0.9	5.4	1	32	1.6	0.5	1.4	0.6	4.4	49.2	0.5	

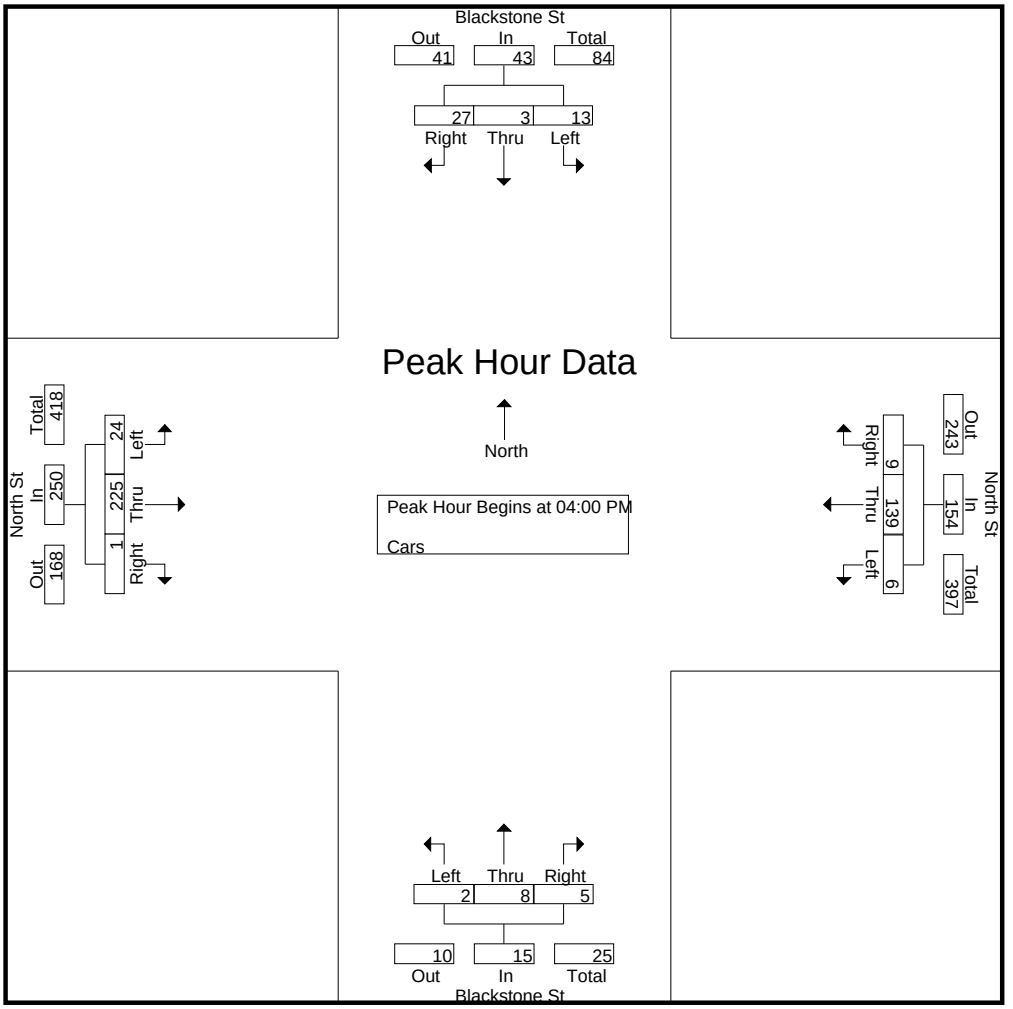
	Blackstone St From North				North St From East				Blackstone St From South				North St From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**5**	0	6	11	1	**37**	**3**	41	0	0	1	1	**9**	63	0	72	125
04:15 PM	4	**1**	**10**	**15**	2	34	3	39	**1**	**4**	0	5	4	**71**	0	**75**	**134**
04:30 PM	1	1	8	10	**3**	36	3	**42**	0	2	1	3	6	49	0	55	110
04:45 PM	3	1	3	7	0	32	0	32	1	2	**3**	**6**	5	42	**1**	48	93
Total Volume	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250	462
% App. Total	30.2	7	62.8		3.9	90.3	5.8		13.3	53.3	33.3		9.6	90	0.4		
PHF	.650	.750	.675	.717	.500	.939	.750	.917	.500	.500	.417	.625	.667	.792	.250	.833	.862

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 5



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

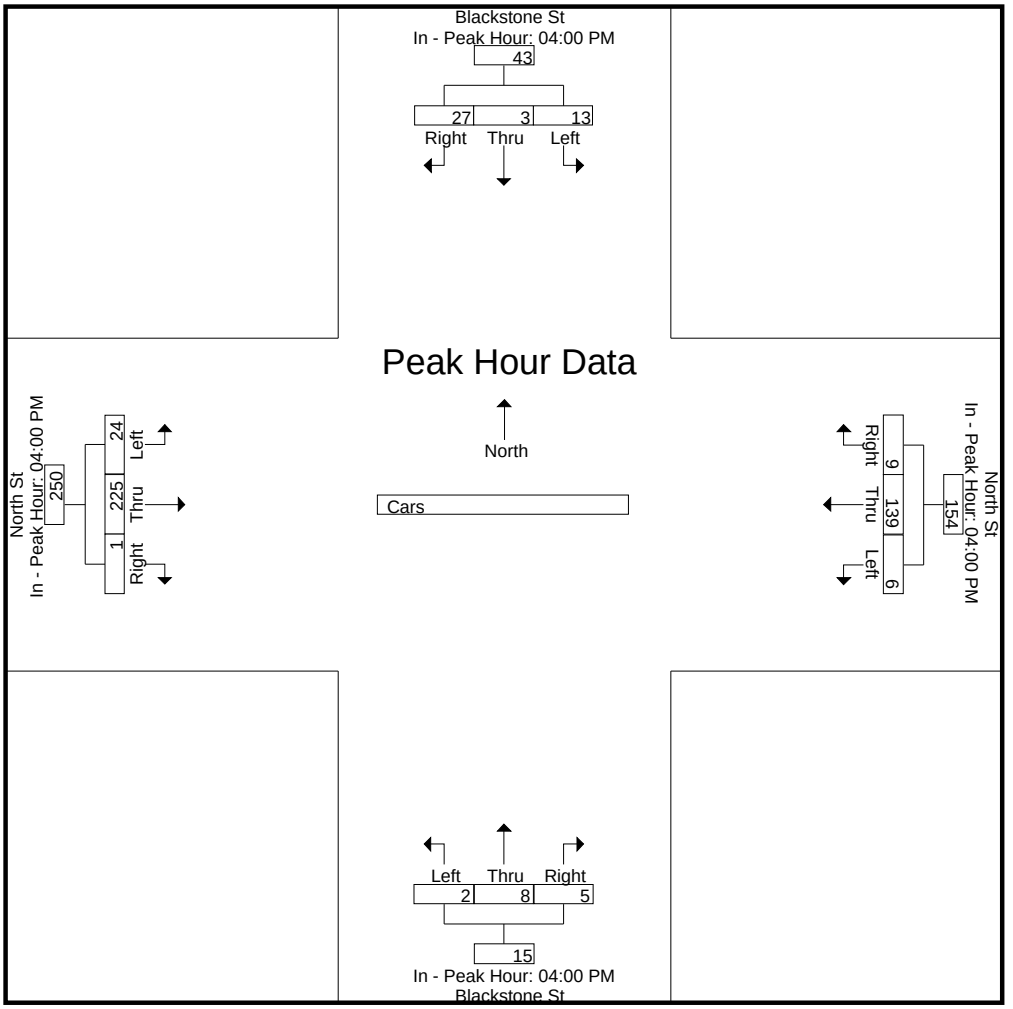
	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	**5**	0	6	11	1	**37**	**3**	41	0	0	1	1	**9**	63	0	72
+15 mins.	4	**1**	**10**	**15**	2	34	3	39	**1**	**4**	0	5	4	**71**	0	**75**
+30 mins.	1	1	8	10	**3**	36	3	**42**	0	2	1	3	6	49	0	55
+45 mins.	3	1	3	7	0	32	0	32	1	2	**3**	**6**	5	42	**1**	48
Total Volume	13	3	27	43	6	139	9	154	2	8	5	15	24	225	1	250
% App. Total	30.2	7	62.8		3.9	90.3	5.8		13.3	53.3	33.3		9.6	90	0.4	
PHF	.650	.750	.675	.717	.500	.939	.750	.917	.500	.500	.417	.625	.667	.792	.250	.833

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022

Groups Printed- Trucks

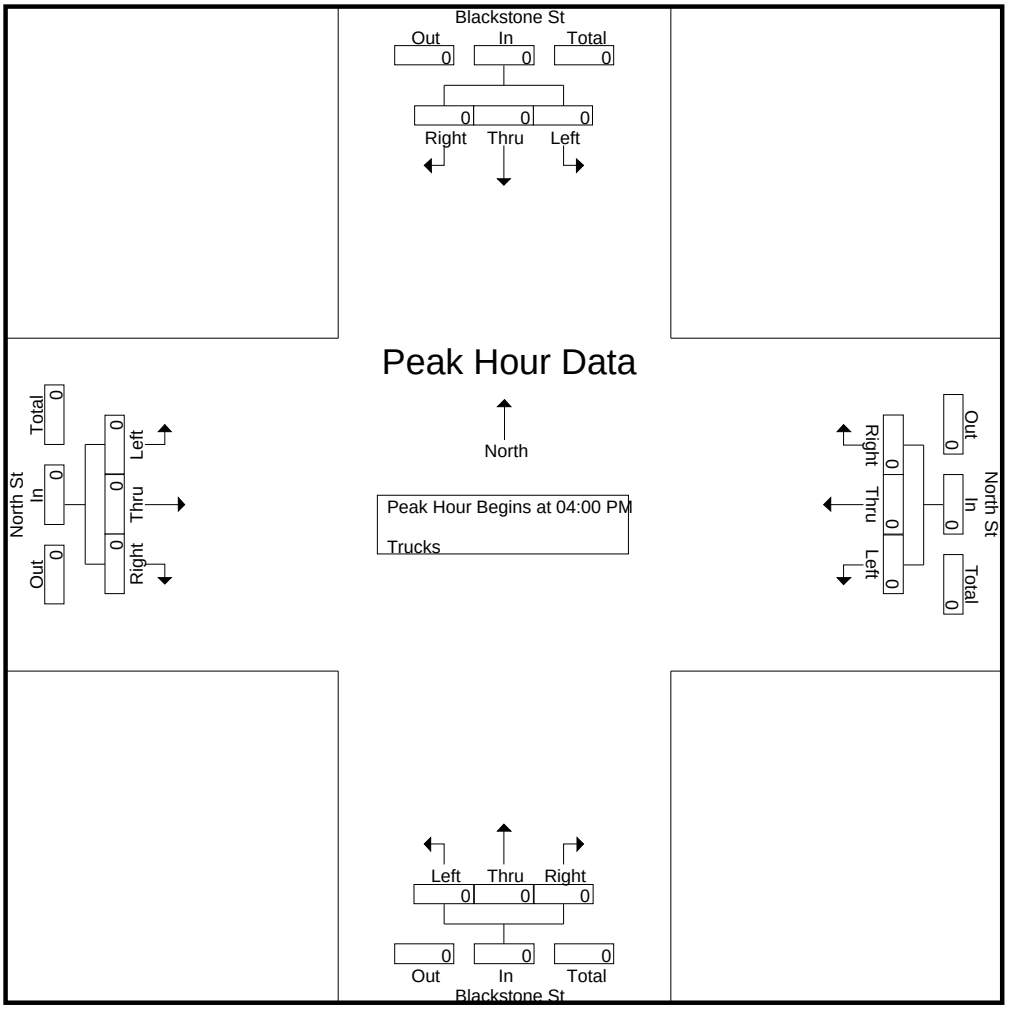
	Blackstone St From North			North St From East			Blackstone St From South			North St From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	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
05:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	
Total %													

	Blackstone St From North				North St From East				Blackstone St From South				North 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	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
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	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		
PHF	.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 : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

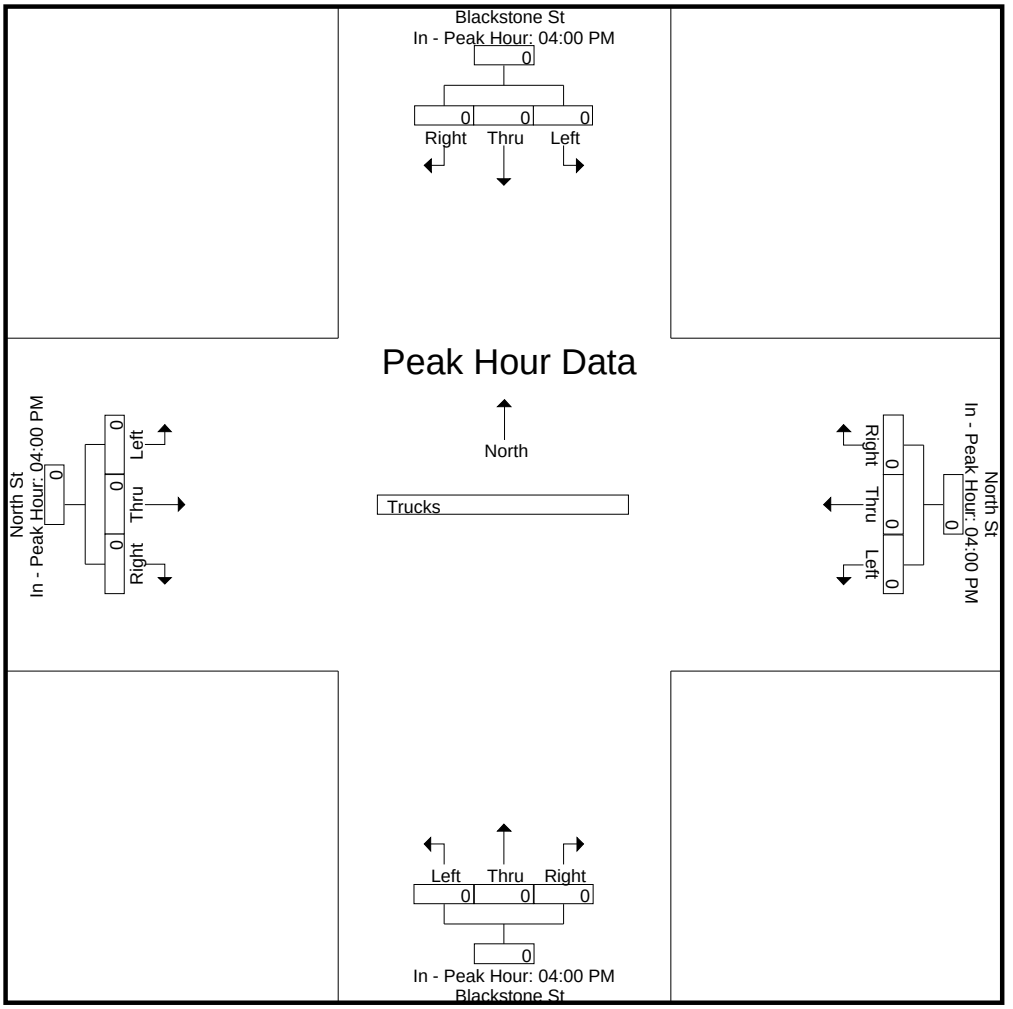
	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 10

Groups Printed- Bikes Peds

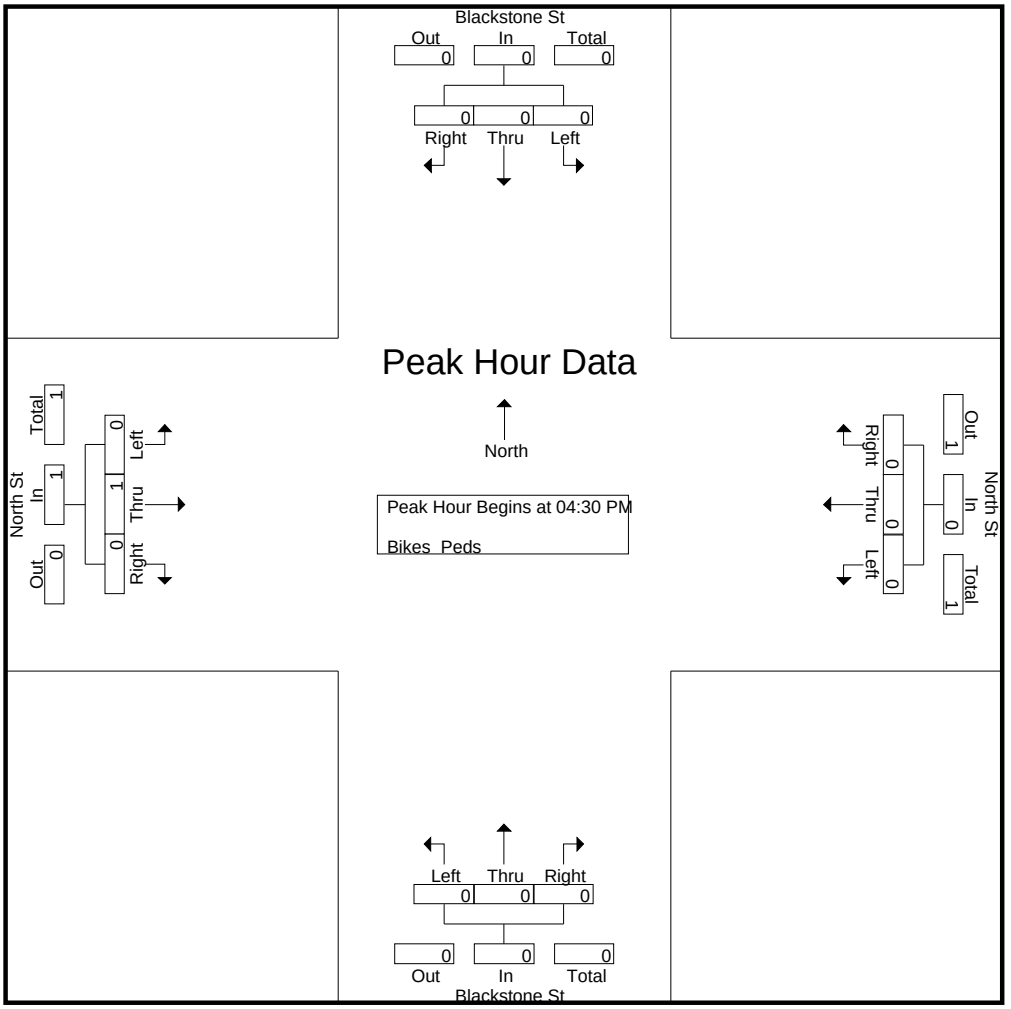
	Blackstone St From North				North St From East				Blackstone St From South				North St From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	1	0	0	0	1	1
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	1	0	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Apprch %	0	0	0		0	0	0		0	0	0		0	100	0				
Total %	0	0	0		0	0	0		0	0	0		0	100	0		0	100	

	Blackstone St From North				North St From East				Blackstone St From South				North 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 04:30 PM																	
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
05:00 PM	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	**1**	0	**1**	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250

Accurate Counts
978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 11



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

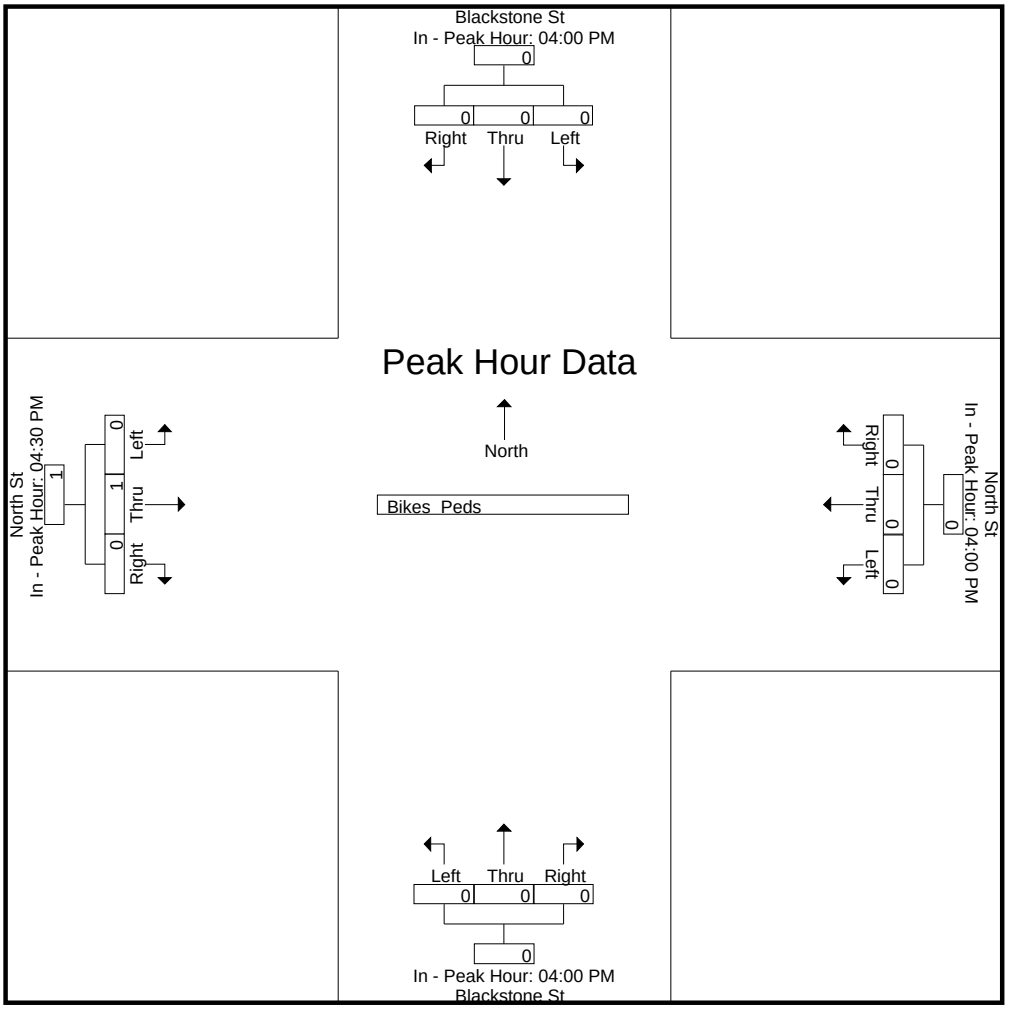
	04:00 PM				04:00 PM				04:00 PM				04:30 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	**1**
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
% App. Total	0	0	0		0	0	0		0	0	0		0	100	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250

Accurate Counts

978-664-2565

N/S Street : Blackstone Street
E/W Street : North Street
City/State : Bellingham, MA
Weather : Clear

File Name : 93450001
Site Code : 93450001
Start Date : 8/2/2022
Page No : 12



SEASONAL ADJUSTMENT DATA

2019 Average Count Data – Sta. 6125

Year ADT: 93,346

August ADT: 98,171

Seasonal Adjustment

$$\frac{93{,}346}{98{,}171} = 0.951$$

COVID-19 ADJUSTMENT DATA

2019 Average Count Data – Sta. 6125

August ADT: 98,171

2022 Average Count Data – Sta. 6125

August ADT: 95,382

COVID Adjustment

$$\frac{98{,}171}{95{,}382} = 1.029$$

VEHICLE TRAVEL SPEED DATA

Accurate Counts

978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: WB,

8/2/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	2	0	3	0	0	0	0	0	0	0	0	0	5
1:00	0	0	0	3	2	0	0	0	0	0	0	0	0	5
2:00	0	1	0	1	2	1	0	0	0	0	0	0	0	5
3:00	0	1	2	5	1	1	0	0	0	0	0	0	0	10
4:00	0	1	9	10	6	2	0	0	0	0	0	0	0	28
5:00	0	2	36	39	31	13	4	1	0	0	0	0	0	126
6:00	0	2	25	62	67	18	3	1	0	0	0	0	0	178
7:00	0	1	30	65	53	36	4	0	0	0	0	0	0	189
8:00	0	3	23	57	45	15	5	0	1	0	0	0	0	149
9:00	0	1	23	38	39	13	4	1	0	0	0	0	0	119
10:00	0	3	37	28	17	9	1	0	0	0	0	0	0	95
11:00	0	2	28	34	26	8	1	1	0	0	0	0	0	100
12:00 PM	0	2	35	42	23	14	1	1	0	0	0	0	0	118
1:00	0	2	21	37	28	12	1	2	0	1	0	0	0	104
2:00	0	4	20	42	38	17	6	0	0	0	0	0	0	127
3:00	0	2	24	49	42	17	2	0	0	0	0	0	0	136
4:00	0	1	27	40	49	16	5	1	0	1	0	0	0	140
5:00	0	1	23	45	34	16	7	3	0	0	0	0	0	129
6:00	0	6	33	33	32	11	2	2	0	0	0	0	0	119
7:00	1	5	28	35	23	5	2	0	0	0	0	0	0	99
8:00	0	5	27	36	19	6	1	1	0	0	0	0	0	95
9:00	0	2	17	10	2	3	0	0	0	0	0	0	0	34
10:00	0	2	9	14	10	0	1	0	0	0	0	0	0	36
11:00	0	0	3	2	1	1	0	0	0	0	0	0	0	7
Total	1	51	480	730	590	234	50	14	1	2	0	0	0	2153

Percentile	15th	50th	85th	95th
Speed	24	29	35	38

Mean Speed (Average)	29.2
10 MPH Pace Speed	25-34
Number in Pace	1318
Percent in Pace	61.2%
Number > 35 MPH	301
Percent > 35 MPH	14.0%

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: WB,

8/3/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	1	1	3	2	1	0	0	0	0	0	0	0	8
1:00	0	0	1	3	3	0	0	0	0	0	0	0	0	7
2:00	0	0	3	0	2	1	0	0	0	0	0	0	0	6
3:00	0	0	1	5	0	0	0	0	0	0	0	0	0	6
4:00	0	0	10	7	4	3	0	1	0	0	0	0	0	25
5:00	0	1	24	40	31	9	4	0	0	0	0	0	0	109
6:00	0	2	29	64	65	26	6	1	0	0	0	0	0	193
7:00	0	1	29	77	76	36	5	4	0	0	0	0	0	228
8:00	0	6	27	64	58	17	4	1	0	0	0	0	0	177
9:00	0	6	19	39	36	13	3	0	0	0	0	0	0	116
10:00	0	3	22	32	29	8	1	0	0	0	0	0	0	95
11:00	0	4	33	26	26	9	1	0	0	0	0	0	0	99
12:00 PM	1	6	37	25	29	5	0	0	0	0	0	0	0	103
1:00	0	1	22	47	25	13	1	1	0	0	0	0	0	110
2:00	0	5	23	39	31	16	3	1	0	0	0	0	0	118
3:00	0	5	24	35	32	12	5	2	0	0	0	0	0	115
4:00	0	1	30	55	40	21	6	1	1	0	0	0	0	155
5:00	0	0	28	50	41	16	2	1	0	0	0	0	0	138
6:00	0	3	23	49	36	13	5	0	0	0	0	0	0	129
7:00	0	4	20	33	20	8	0	0	0	0	0	0	0	85
8:00	0	3	37	33	15	5	3	0	0	0	0	0	0	96
9:00	0	1	25	17	11	0	0	1	0	0	0	0	0	55
10:00	0	2	4	14	10	1	0	0	0	0	0	0	0	31
11:00	0	0	2	2	1	0	0	0	0	0	0	0	0	5
Total	1	55	474	759	623	233	49	14	1	0	0	0	0	2209
			Percentile	15th	50th	85th	95th							
			Speed	24	29	35	38							
			Mean Speed (Average)	29.2										
			10 MPH Pace Speed	25-34										
			Number in Pace	1379										
			Percent in Pace	62.4%										
			Number > 35 MPH	297										
			Percent > 35 MPH	13.4%										
Grand Total	2	106	954	1489	1213	467	99	28	2	2	0	0	0	4362
Stats			Percentile	15th	50th	85th	95th							
			Speed	24	29	35	38							
			Mean Speed (Average)	29.2										
			10 MPH Pace Speed	25-34										
			Number in Pace	2697										
			Percent in Pace	61.8%										
			Number > 35 MPH	598										
			Percent > 35 MPH	13.7%										

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: EB,

8/2/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	2	3	6	6	3	1	0	0	0	0	0	0	21
1:00	0	0	2	5	4	1	0	0	0	0	0	0	0	12
2:00	0	0	1	4	0	2	0	0	0	0	0	0	0	7
3:00	0	0	1	4	4	0	0	1	0	0	0	0	0	10
4:00	0	0	2	3	4	0	0	0	0	0	0	0	0	9
5:00	0	0	10	15	10	3	1	0	0	0	0	0	0	39
6:00	0	0	18	44	25	7	1	0	0	0	0	0	0	95
7:00	1	1	18	55	36	15	2	1	0	0	0	0	0	129
8:00	0	2	23	47	19	7	0	1	0	0	0	0	0	99
9:00	2	6	10	39	31	10	2	0	0	0	0	0	0	100
10:00	1	4	17	48	23	4	1	0	0	0	0	0	0	98
11:00	0	3	24	45	26	7	0	1	0	0	0	0	0	106
12:00 PM	1	0	15	54	39	8	2	0	0	0	0	0	0	119
1:00	0	2	17	50	37	14	2	0	0	0	0	0	0	122
2:00	0	2	24	53	41	18	5	2	0	1	0	0	0	146
3:00	0	3	43	93	61	16	4	0	0	0	0	0	0	220
4:00	0	6	31	102	80	17	4	1	0	0	0	0	0	241
5:00	3	6	45	76	66	16	2	1	0	0	0	0	0	215
6:00	1	4	26	50	47	9	2	0	0	0	0	0	0	139
7:00	1	3	21	59	35	13	1	1	0	0	0	0	0	134
8:00	0	2	21	36	21	4	0	0	0	0	0	0	0	84
9:00	0	2	9	26	19	8	2	0	0	0	0	0	0	66
10:00	0	1	4	10	13	3	0	0	0	0	0	0	0	31
11:00	0	1	1	8	12	6	4	0	0	0	0	0	0	32
Total	10	50	386	932	659	191	36	9	0	1	0	0	0	2274

Percentile	15th	50th	85th	95th
Speed	24	29	34	37

Mean Speed (Average)	29.0
10 MPH Pace Speed	25-34
Number in Pace	1586
Percent in Pace	69.7%
Number > 35 MPH	237
Percent > 35 MPH	10.4%

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: EB,

8/3/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	0	2	9	2	7	0	0	0	0	0	0	0	20
1:00	0	1	3	9	4	2	1	0	0	0	0	0	0	20
2:00	0	0	0	2	0	0	1	0	0	0	0	0	0	3
3:00	0	0	0	1	4	0	1	0	0	0	0	0	0	6
4:00	0	1	0	5	7	0	0	0	0	0	0	0	0	13
5:00	0	1	12	17	8	4	0	0	0	0	0	0	0	42
6:00	0	3	19	39	26	13	1	0	0	0	0	0	0	101
7:00	0	2	16	57	33	13	2	1	0	0	0	0	0	124
8:00	0	4	19	34	33	8	0	0	0	0	0	0	0	98
9:00	0	3	11	30	31	10	4	0	0	0	0	0	0	89
10:00	0	2	25	33	28	6	1	0	0	0	0	0	0	95
11:00	0	4	17	47	22	12	2	0	0	0	0	0	0	104
12:00 PM	1	11	22	53	22	7	2	0	0	0	0	0	0	118
1:00	1	2	15	42	35	18	0	0	0	0	0	0	0	113
2:00	0	1	24	59	43	14	2	0	0	0	0	0	0	143
3:00	1	9	39	79	77	18	4	2	0	0	0	0	0	229
4:00	1	2	51	103	61	20	4	1	0	0	0	0	0	243
5:00	0	9	34	95	64	32	3	0	0	0	0	0	0	237
6:00	0	1	21	69	41	17	1	0	0	0	0	0	0	150
7:00	0	5	23	46	40	8	2	0	0	0	0	0	0	124
8:00	0	2	24	46	22	2	0	0	0	0	0	0	0	96
9:00	0	1	13	33	23	4	2	0	0	0	0	0	0	76
10:00	0	1	12	25	6	2	0	0	0	0	0	0	0	46
11:00	0	0	0	5	5	1	2	0	0	0	0	0	0	13
Total	4	65	402	938	637	218	35	4	0	0	0	0	0	2303
			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	37							
			Mean Speed (Average)	29.0										
			10 MPH Pace Speed	25-34										
			Number in Pace	1570										
			Percent in Pace	68.2%										
			Number > 35 MPH	257										
			Percent > 35 MPH	11.2%										
Grand Total	14	115	788	1870	1296	409	71	13	0	1	0	0	0	4577
Stats			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	37							
			Mean Speed (Average)	29.0										
			10 MPH Pace Speed	25-34										
			Number in Pace	3156										
			Percent in Pace	69.0%										
			Number > 35 MPH	494										
			Percent > 35 MPH	10.8%										

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: Combined

8/2/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	4	3	9	6	3	1	0	0	0	0	0	0	26
1:00	0	0	2	8	6	1	0	0	0	0	0	0	0	17
2:00	0	1	1	5	2	3	0	0	0	0	0	0	0	12
3:00	0	1	3	9	5	1	0	1	0	0	0	0	0	20
4:00	0	1	11	13	10	2	0	0	0	0	0	0	0	37
5:00	0	2	46	54	41	16	5	1	0	0	0	0	0	165
6:00	0	2	43	106	92	25	4	1	0	0	0	0	0	273
7:00	1	2	48	120	89	51	6	1	0	0	0	0	0	318
8:00	0	5	46	104	64	22	5	1	1	0	0	0	0	248
9:00	2	7	33	77	70	23	6	1	0	0	0	0	0	219
10:00	1	7	54	76	40	13	2	0	0	0	0	0	0	193
11:00	0	5	52	79	52	15	1	2	0	0	0	0	0	206
12:00 PM	1	2	50	96	62	22	3	1	0	0	0	0	0	237
1:00	0	4	38	87	65	26	3	2	0	1	0	0	0	226
2:00	0	6	44	95	79	35	11	2	0	1	0	0	0	273
3:00	0	5	67	142	103	33	6	0	0	0	0	0	0	356
4:00	0	7	58	142	129	33	9	2	0	1	0	0	0	381
5:00	3	7	68	121	100	32	9	4	0	0	0	0	0	344
6:00	1	10	59	83	79	20	4	2	0	0	0	0	0	258
7:00	2	8	49	94	58	18	3	1	0	0	0	0	0	233
8:00	0	7	48	72	40	10	1	1	0	0	0	0	0	179
9:00	0	4	26	36	21	11	2	0	0	0	0	0	0	100
10:00	0	3	13	24	23	3	1	0	0	0	0	0	0	67
11:00	0	1	4	10	13	7	4	0	0	0	0	0	0	39
Total	11	101	866	1662	1249	425	86	23	1	3	0	0	0	4427

Percentile	15th	50th	85th	95th
Speed	24	29	34	38

Mean Speed (Average)	29.1
10 MPH Pace Speed	25-34
Number in Pace	2903
Percent in Pace	65.6%
Number > 35 MPH	538
Percent > 35 MPH	12.2%

Accurate Counts
978-664-2565

Location : North Street 93450001
Location : West of Blackstone Street
City/State: Bellingham, MA
Direction: Combined

8/3/2022 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	1	3	12	4	8	0	0	0	0	0	0	0	28
1:00	0	1	4	12	7	2	1	0	0	0	0	0	0	27
2:00	0	0	3	2	2	1	1	0	0	0	0	0	0	9
3:00	0	0	1	6	4	0	1	0	0	0	0	0	0	12
4:00	0	1	10	12	11	3	0	1	0	0	0	0	0	38
5:00	0	2	36	57	39	13	4	0	0	0	0	0	0	151
6:00	0	5	48	103	91	39	7	1	0	0	0	0	0	294
7:00	0	3	45	134	109	49	7	5	0	0	0	0	0	352
8:00	0	10	46	98	91	25	4	1	0	0	0	0	0	275
9:00	0	9	30	69	67	23	7	0	0	0	0	0	0	205
10:00	0	5	47	65	57	14	2	0	0	0	0	0	0	190
11:00	0	8	50	73	48	21	3	0	0	0	0	0	0	203
12:00 PM	2	17	59	78	51	12	2	0	0	0	0	0	0	221
1:00	1	3	37	89	60	31	1	1	0	0	0	0	0	223
2:00	0	6	47	98	74	30	5	1	0	0	0	0	0	261
3:00	1	14	63	114	109	30	9	4	0	0	0	0	0	344
4:00	1	3	81	158	101	41	10	2	1	0	0	0	0	398
5:00	0	9	62	145	105	48	5	1	0	0	0	0	0	375
6:00	0	4	44	118	77	30	6	0	0	0	0	0	0	279
7:00	0	9	43	79	60	16	2	0	0	0	0	0	0	209
8:00	0	5	61	79	37	7	3	0	0	0	0	0	0	192
9:00	0	2	38	50	34	4	2	1	0	0	0	0	0	131
10:00	0	3	16	39	16	3	0	0	0	0	0	0	0	77
11:00	0	0	2	7	6	1	2	0	0	0	0	0	0	18
Total	5	120	876	1697	1260	451	84	18	1	0	0	0	0	4512
			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	37							
			Mean Speed (Average)	29.1										
			10 MPH Pace Speed	25-34										
			Number in Pace	2949										
			Percent in Pace	65.4%										
			Number > 35 MPH	554										
			Percent > 35 MPH	12.3%										
Grand Total	16	221	1742	3359	2509	876	170	41	2	3	0	0	0	8939
Stats			Percentile	15th	50th	85th	95th							
			Speed	24	29	34	38							
			Mean Speed (Average)	29.1										
			10 MPH Pace Speed	25-34										
			Number in Pace	5853										
			Percent in Pace	65.5%										
			Number > 35 MPH	1092										
			Percent > 35 MPH	12.2%										

Accurate Counts

978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: SB,

8/2/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	1	1	1	0	0	0	0	3
5:00	0	0	0	0	0	0	1	0	5	4	1	0	0	0	11
6:00	0	0	0	0	0	1	1	3	4	3	4	1	0	0	17
7:00	0	0	0	0	0	1	4	5	11	12	6	4	0	0	43
8:00	0	0	0	0	1	0	3	5	11	7	4	1	0	0	32
9:00	0	0	0	0	0	0	0	0	8	8	5	0	1	0	22
10:00	0	0	0	0	0	0	2	4	4	7	6	0	0	0	23
11:00	0	0	0	0	0	0	2	0	8	10	1	1	1	0	23
12:00 PM	0	0	0	0	0	0	2	2	12	11	5	0	1	0	33
1:00	0	0	0	0	0	0	2	1	6	4	2	1	0	0	16
2:00	0	0	0	0	0	0	0	2	3	7	0	2	1	0	15
3:00	0	0	0	0	0	0	1	4	21	6	9	0	1	0	42
4:00	0	0	0	0	0	0	2	6	11	12	8	2	0	0	41
5:00	0	0	0	0	0	0	4	0	10	5	3	2	1	0	25
6:00	0	0	0	0	0	0	0	6	8	3	0	1	0	0	18
7:00	0	0	0	0	0	0	0	5	4	2	3	0	0	0	14
8:00	0	0	0	0	0	0	2	3	2	0	1	0	0	0	8
9:00	0	0	0	0	0	0	0	1	4	1	0	0	0	1	7
10:00	0	0	0	0	1	0	0	5	0	0	0	0	0	0	6
11:00	0	0	0	0	0	0	0	1	0	1	0	0	0	0	2
Total	0	0	0	0	2	2	26	55	133	104	59	15	6	1	403

Percentile	15th	50th	85th	95th
Speed	23	27	30	34

Mean Speed (Average)	27.1
10 MPH Pace Speed	23-32
Number in Pace	314
Percent in Pace	77.9%
Number > 30 MPH	81
Percent > 30 MPH	20.1%

Accurate Counts
978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: SB,

8/3/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
5:00	0	0	0	0	0	0	0	0	4	2	0	0	0	0	6
6:00	0	0	0	0	0	0	2	2	10	11	2	1	0	0	28
7:00	0	0	0	0	0	0	3	6	13	17	8	2	0	0	49
8:00	0	0	0	0	1	1	2	7	13	13	5	0	0	0	42
9:00	0	0	0	0	0	0	2	1	7	5	1	3	0	0	19
10:00	0	0	0	0	0	1	3	6	7	8	4	0	0	0	29
11:00	0	0	0	0	0	0	2	8	8	4	2	1	1	0	26
12:00 PM	0	0	0	0	0	0	1	4	8	3	0	2	0	0	18
1:00	0	0	1	0	0	0	3	3	12	4	0	0	0	0	23
2:00	0	0	0	0	0	0	2	5	8	4	1	1	0	0	21
3:00	0	0	0	0	0	1	0	3	11	7	6	3	0	0	31
4:00	0	0	0	0	0	0	0	6	19	9	3	2	0	0	39
5:00	0	0	0	0	1	0	0	5	7	12	4	2	0	0	31
6:00	0	0	0	0	0	0	1	3	9	6	2	0	0	0	21
7:00	0	0	0	0	0	1	1	6	6	6	2	1	0	0	23
8:00	0	0	0	0	0	0	1	4	6	5	1	1	0	0	18
9:00	0	0	0	0	0	0	0	2	2	5	0	1	0	0	10
10:00	0	0	0	0	0	0	1	2	1	2	0	0	0	0	6
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	2	4	25	75	152	123	41	20	1	0	444
			Percentile	15th	50th	85th	95th								
			Speed	23	26	30	33								
		Mean Speed (Average)		26.3											
		10 MPH Pace Speed		21-30											
		Number in Pace		363											
		Percent in Pace		81.8%											
		Number > 30 MPH		62											
		Percent > 30 MPH		14.0%											
Grand Total	0	0	1	0	4	6	51	130	285	227	100	35	7	1	847
Stats			Percentile	15th	50th	85th	95th								
			Speed	23	27	30	34								
		Mean Speed (Average)		26.7											
		10 MPH Pace Speed		21-30											
		Number in Pace		674											
		Percent in Pace		79.6%											
		Number > 30 MPH		143											
		Percent > 30 MPH		16.9%											

Accurate Counts
978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: NB,

8/2/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00	0	0	0	0	0	0	0	1	3	0	1	0	0	0	5
6:00	0	0	0	0	0	0	0	0	1	3	3	0	0	0	7
7:00	0	0	1	0	0	0	0	0	4	1	5	2	0	1	14
8:00	0	0	0	0	0	0	0	1	1	5	2	3	0	0	12
9:00	0	0	0	1	0	0	1	1	5	7	3	4	0	0	22
10:00	0	0	0	0	0	0	0	3	3	4	3	0	0	0	13
11:00	0	0	0	0	0	0	0	0	5	6	8	2	1	1	23
12:00 PM	0	0	0	0	0	0	0	0	6	6	8	4	0	1	25
1:00	0	0	2	0	0	0	0	0	3	10	13	0	4	0	32
2:00	0	0	0	0	0	0	0	2	2	8	10	2	0	1	25
3:00	0	0	0	0	0	0	1	0	11	13	8	4	1	0	38
4:00	0	0	0	0	0	0	0	2	10	14	15	4	1	0	46
5:00	0	0	0	0	0	0	0	3	11	6	17	1	1	0	39
6:00	0	0	0	0	0	0	0	5	7	9	8	2	4	1	36
7:00	0	0	0	0	0	0	0	1	7	7	10	3	1	0	29
8:00	0	0	0	0	0	0	1	1	9	3	8	0	0	0	22
9:00	0	0	0	0	0	0	0	0	5	7	4	2	0	1	19
10:00	0	0	0	0	0	1	0	1	6	2	0	0	0	0	10
11:00	0	0	0	0	0	0	0	0	1	1	1	1	0	0	4
Total	0	0	3	1	0	1	3	21	100	114	127	34	13	6	423

Percentile	15th	50th	85th	95th
Speed	25	29	33	35

Mean Speed (Average)	30.6
10 MPH Pace Speed	24-33
Number in Pace	352
Percent in Pace	83.2%
Number > 30 MPH	180
Percent > 30 MPH	42.6%

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: NB,

8/3/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00	0	0	0	0	0	0	1	1	3	1	0	0	0	0	6
6:00	0	0	1	0	0	0	1	1	3	1	1	1	0	0	9
7:00	0	0	0	0	0	0	0	0	2	9	3	3	1	1	19
8:00	0	0	0	0	0	1	0	0	6	9	7	1	0	0	24
9:00	0	0	0	0	0	0	0	0	3	9	11	1	3	0	27
10:00	0	0	0	2	0	1	0	3	7	6	9	0	1	0	29
11:00	0	0	0	0	0	0	1	3	5	7	9	1	1	0	27
12:00 PM	0	0	0	0	0	0	0	1	8	16	7	1	0	0	33
1:00	0	0	0	0	1	0	0	1	8	4	3	3	0	0	20
2:00	0	0	0	0	0	0	0	2	6	8	2	2	2	0	22
3:00	0	0	0	0	0	0	0	1	5	13	8	7	1	1	36
4:00	0	0	0	0	0	0	1	3	17	11	14	4	0	0	50
5:00	0	0	1	0	0	0	0	2	14	9	6	4	1	0	37
6:00	0	0	0	0	0	0	1	2	7	8	12	3	1	0	34
7:00	0	0	0	0	0	0	1	1	4	11	6	2	2	1	28
8:00	0	0	0	0	0	0	0	1	2	8	6	2	1	0	20
9:00	0	0	0	0	0	0	0	4	4	2	6	1	0	0	17
10:00	0	0	0	0	0	0	0	0	1	2	3	1	0	0	7
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	2	2	1	2	6	26	105	136	115	38	14	3	450
			Percentile	15th	50th	85th	95th								
			Speed	25	29	33	35								
		Mean Speed (Average)		29.5											
		10 MPH Pace Speed		24-33											
		Number in Pace		368											
		Percent in Pace		81.8%											
		Number > 30 MPH		170											
		Percent > 30 MPH		37.8%											
Grand Total	0	0	5	3	1	3	9	47	205	250	242	72	27	9	873
Stats			Percentile	15th	50th	85th	95th								
			Speed	25	29	33	35								
		Mean Speed (Average)		30.0											
		10 MPH Pace Speed		24-33											
		Number in Pace		720											
		Percent in Pace		82.5%											
		Number > 30 MPH		350											
		Percent > 30 MPH		40.1%											

Accurate Counts
978-664-2565

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: Combined

8/2/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
1:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	0	1	1	2	0	0	0	0	4
5:00	0	0	0	0	0	0	1	1	8	4	2	0	0	0	16
6:00	0	0	0	0	0	1	1	3	5	6	7	1	0	0	24
7:00	0	0	1	0	0	1	4	5	15	13	11	6	0	1	57
8:00	0	0	0	0	1	0	3	6	12	12	6	4	0	0	44
9:00	0	0	0	1	0	0	1	1	13	15	8	4	1	0	44
10:00	0	0	0	0	0	0	2	7	7	11	9	0	0	0	36
11:00	0	0	0	0	0	0	2	0	13	16	9	3	2	1	46
12:00 PM	0	0	0	0	0	0	2	2	18	17	13	4	1	1	58
1:00	0	0	2	0	0	0	2	1	9	14	15	1	4	0	48
2:00	0	0	0	0	0	0	0	4	5	15	10	4	1	1	40
3:00	0	0	0	0	0	0	2	4	32	19	17	4	2	0	80
4:00	0	0	0	0	0	0	2	8	21	26	23	6	1	0	87
5:00	0	0	0	0	0	0	4	3	21	11	20	3	2	0	64
6:00	0	0	0	0	0	0	0	11	15	12	8	3	4	1	54
7:00	0	0	0	0	0	0	0	6	11	9	13	3	1	0	43
8:00	0	0	0	0	0	0	3	4	11	3	9	0	0	0	30
9:00	0	0	0	0	0	0	0	1	9	8	4	2	0	2	26
10:00	0	0	0	0	1	1	0	6	6	2	0	0	0	0	16
11:00	0	0	0	0	0	0	0	1	1	2	1	1	0	0	6
Total	0	0	3	1	2	3	29	76	233	218	186	49	19	7	826

Percentile	15th	50th	85th	95th
Speed	24	28	32	35

Mean Speed (Average)	28.9
10 MPH Pace Speed	23-32
Number in Pace	659
Percent in Pace	79.8%
Number > 30 MPH	261
Percent > 30 MPH	31.6%

Location : Blackstone Street 93450002
Location : North of North Street
City/State: Bellingham, MA
Direction: Combined

8/3/2022 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
2:00	0	0	0	0	0	0	0	0	1	0	1	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3
5:00	0	0	0	0	0	0	1	1	7	3	0	0	0	0	12
6:00	0	0	1	0	0	0	3	3	13	12	3	2	0	0	37
7:00	0	0	0	0	0	0	3	6	15	26	11	5	1	1	68
8:00	0	0	0	0	1	2	2	7	19	22	12	1	0	0	66
9:00	0	0	0	0	0	0	2	1	10	14	12	4	3	0	46
10:00	0	0	0	2	0	2	3	9	14	14	13	0	1	0	58
11:00	0	0	0	0	0	0	3	11	13	11	11	2	2	0	53
12:00 PM	0	0	0	0	0	0	1	5	16	19	7	3	0	0	51
1:00	0	0	1	0	1	0	3	4	20	8	3	3	0	0	43
2:00	0	0	0	0	0	0	2	7	14	12	3	3	2	0	43
3:00	0	0	0	0	0	1	0	4	16	20	14	10	1	1	67
4:00	0	0	0	0	0	0	1	9	36	20	17	6	0	0	89
5:00	0	0	1	0	1	0	0	7	21	21	10	6	1	0	68
6:00	0	0	0	0	0	0	2	5	16	14	14	3	1	0	55
7:00	0	0	0	0	0	1	2	7	10	17	8	3	2	1	51
8:00	0	0	0	0	0	0	1	5	8	13	7	3	1	0	38
9:00	0	0	0	0	0	0	0	6	6	7	6	2	0	0	27
10:00	0	0	0	0	0	0	1	2	2	4	3	1	0	0	13
11:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	3	2	3	6	31	101	257	259	156	58	15	3	894
			Percentile	15th	50th	85th	95th								
			Speed	24	27	32	34								
		Mean Speed (Average)		27.9											
		10 MPH Pace Speed		23-32											
		Number in Pace		704											
		Percent in Pace		78.7%											
		Number > 30 MPH		232											
		Percent > 30 MPH		26.0%											
Grand Total	0	0	6	3	5	9	60	177	490	477	342	107	34	10	1720
Stats			Percentile	15th	50th	85th	95th								
			Speed	24	28	32	35								
		Mean Speed (Average)		28.4											
		10 MPH Pace Speed		23-32											
		Number in Pace		1362											
		Percent in Pace		79.2%											
		Number > 30 MPH		493											
		Percent > 30 MPH		28.7%											

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAP

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Bellingham | COUNT DATE : Aug-22

DISTRICT : 3 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : North Street

MINOR STREET(S) : Blackstone 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 (PM) :	418	397	25	84		**924**

" K " FACTOR : **0.090** | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **10,267**

TOTAL # OF CRASHES : 10 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **2.00**

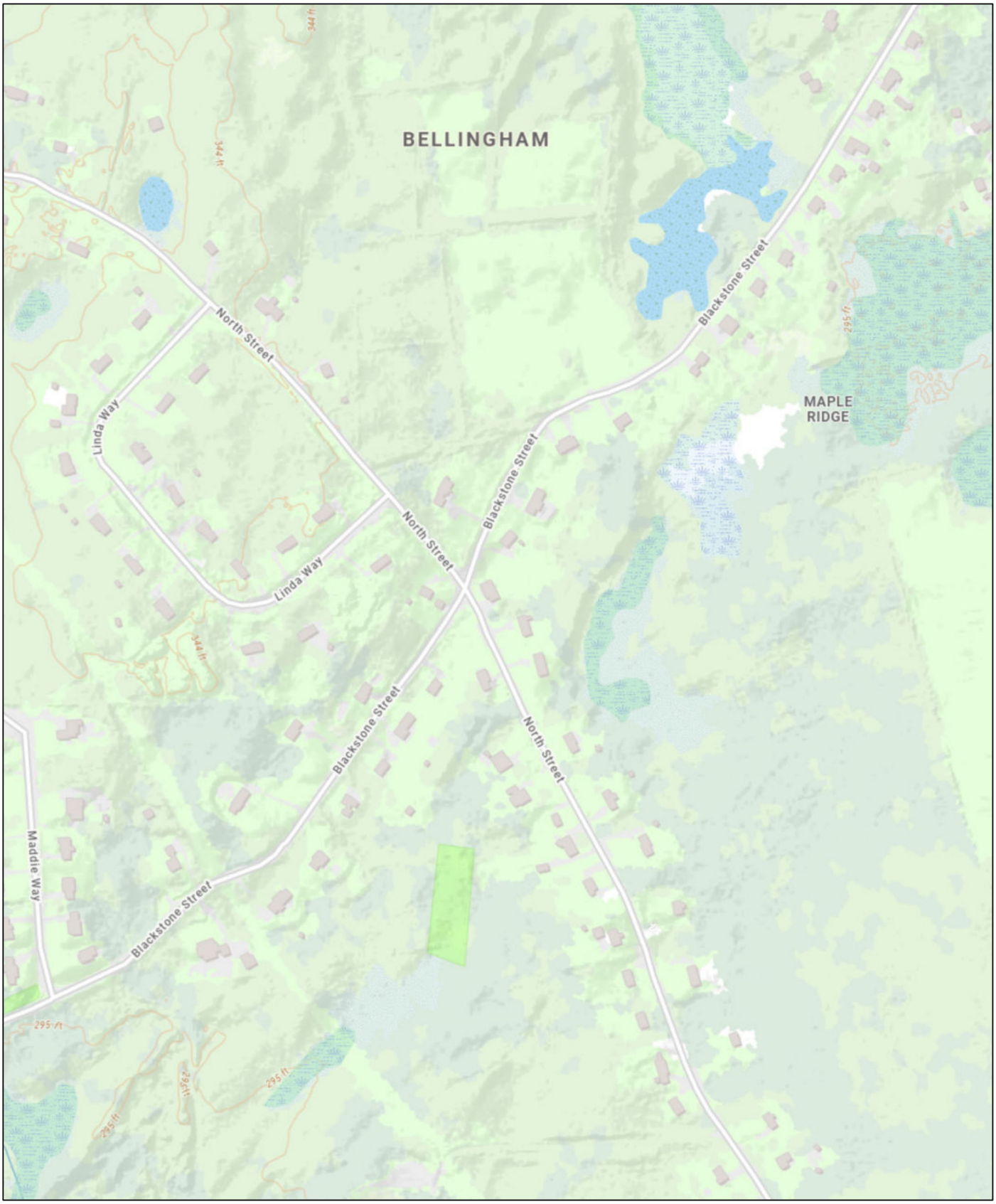
CRASH RATE CALCULATION : **0.53**

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Multifamily Residential Development

MassDOT Top Crash Locations



10/14/2022, 12:00:58 PM

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

MassGIS

MassDOT
MassGIS |

GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth
Bellingham	I-495 NB	Franklin Town Line	69,119	81,157	80,954	82,802			90,388	89,541	91,546	94,426	93,346	**3.25%**
Franklin	I-495 NB	South of Ramp to RT 140	72,318	72,712		80,371	77,245	83,722	88,584	87,263		83,551	89,222	**2.69%**
Medway	I-495	Medway Town Line	69,544	79,369	80,561	80,541	80,320		91,132	89,066	87,454	89,053	87,592	**1.43%**
Bellingham	Center Street	South of Cross Street	3,600	5,000	5,026	4,759	4786		4,102			4,361		**8.67%**
Bellingham	Mendon Street	Mendon Town Line	8,500	8,530	8,668	9,188	9,227		9,222					**2.10%**
Bellingham	Hartford Avenue	East of Hixson Street	16,881	16,900	17,171	17,532	17,468			19,151				**0.86%**
Franklin	Route 140	West of Beaver Street	20,620	20,846	20,217	20,697	20,719	20,109			21,200			**-0.48%**
Hopedale	Route 16	Mendon Town Line	14,400	14,451	14,996		13,824	12,886	14,095	13,691		14,064	13,227	**-0.35%**
Blackstone	Blackstone Street	North of Spruce Street	4,600	4,423	4,450	4,500	4,515		6,283			6,490		**-0.45%**
Bellingham	Grove Street	North of Hartford Avenue	1,400	1,392	1,427		1,477		2,409			2,555		**0.97%**
Blackstone	Summer Street	At Elm Street	6378	6322	6396	6613	6631	7038						**2.02%**
Bellingham	Maple Street	North of I-495	5100	5069	5064	5285	5438		6286			5265		**1.64%**
Milford	South Main Street	North of Fruit Street	12451	12588	14104	14575	14504				7048			**4.00%**
Blackstone	Route 122	West of Bridge Street	8725	8638	7989	8780	8727	5460			5959			**-7.33%**
Blackstone	Blackstone Street	North of Rte. 122	2979	4100	3838	4160	3772			3981			5080	**7.58%**
Milford	Route 140	West of Rte. 16	12403	12700	13539	14147	14074			12441			12580	**3.24%**
Milford	Route 140	East of Rte. 16	11754	11883	11903	12412	12358	12060			13329			**0.54%**
Milford	Route 16	North of Rte. 140	11455	11581	13073	13594	13525	10889			11143			**-0.41%**
Franklin	Union Street	Hutchinson Street	11900	11942	8301	8468	8507	7897			8395			**-6.97%**
														1.21%

TRIP-GENERATION CALCULATIONS

Single-Family Attached Housing
(215)

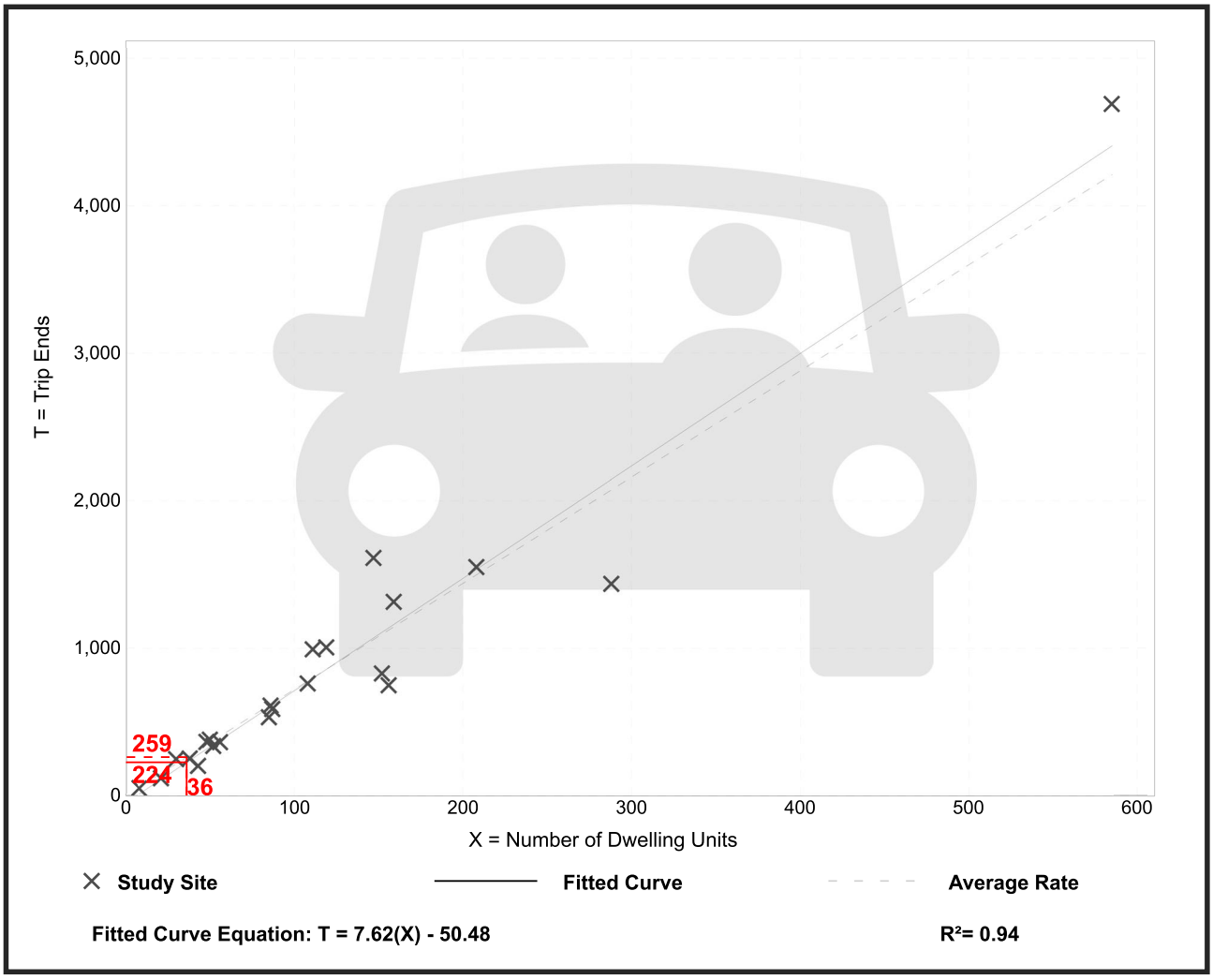
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



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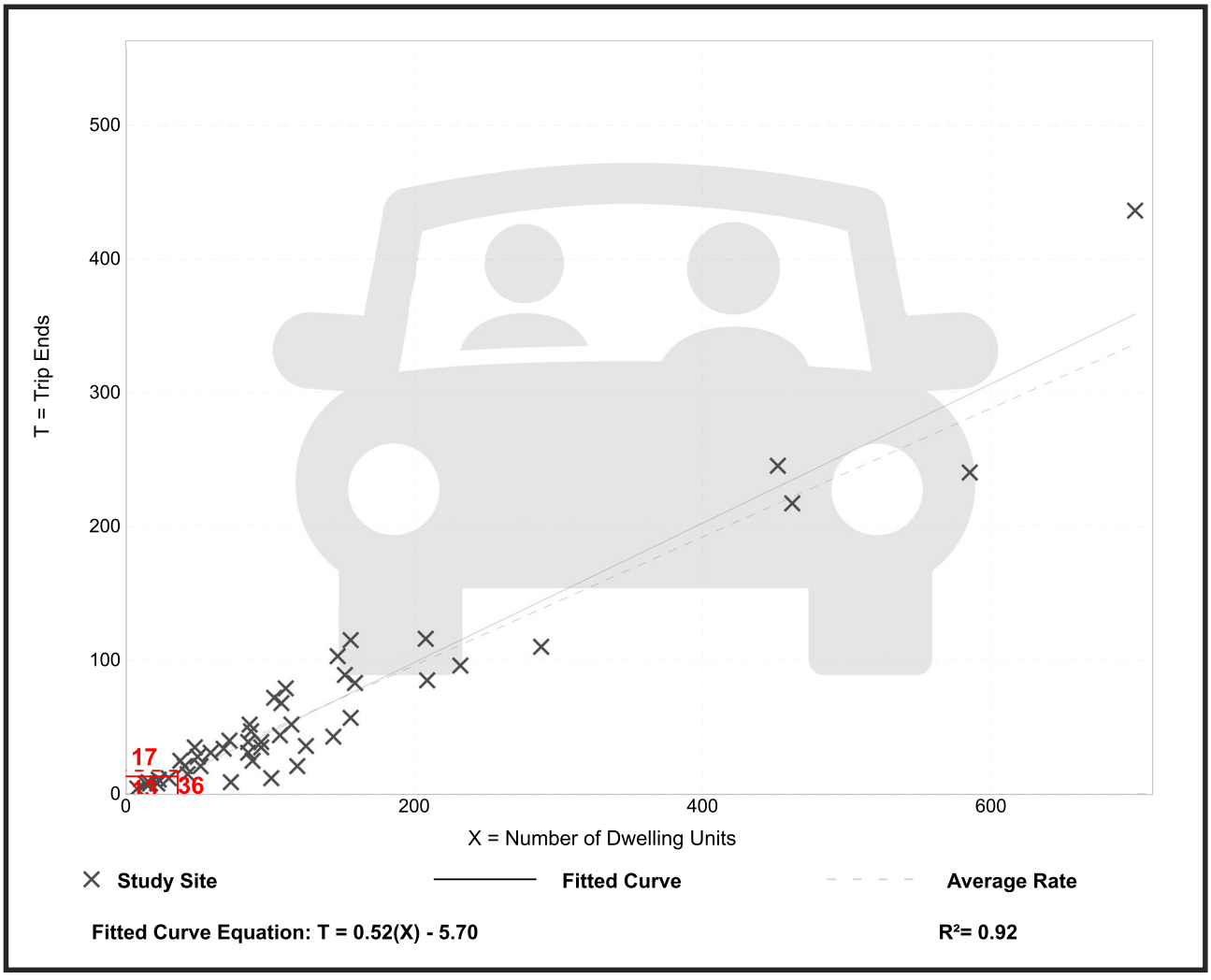
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: **Dwelling Units**
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: 46
Avg. Num. of Dwelling Units: 135
Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



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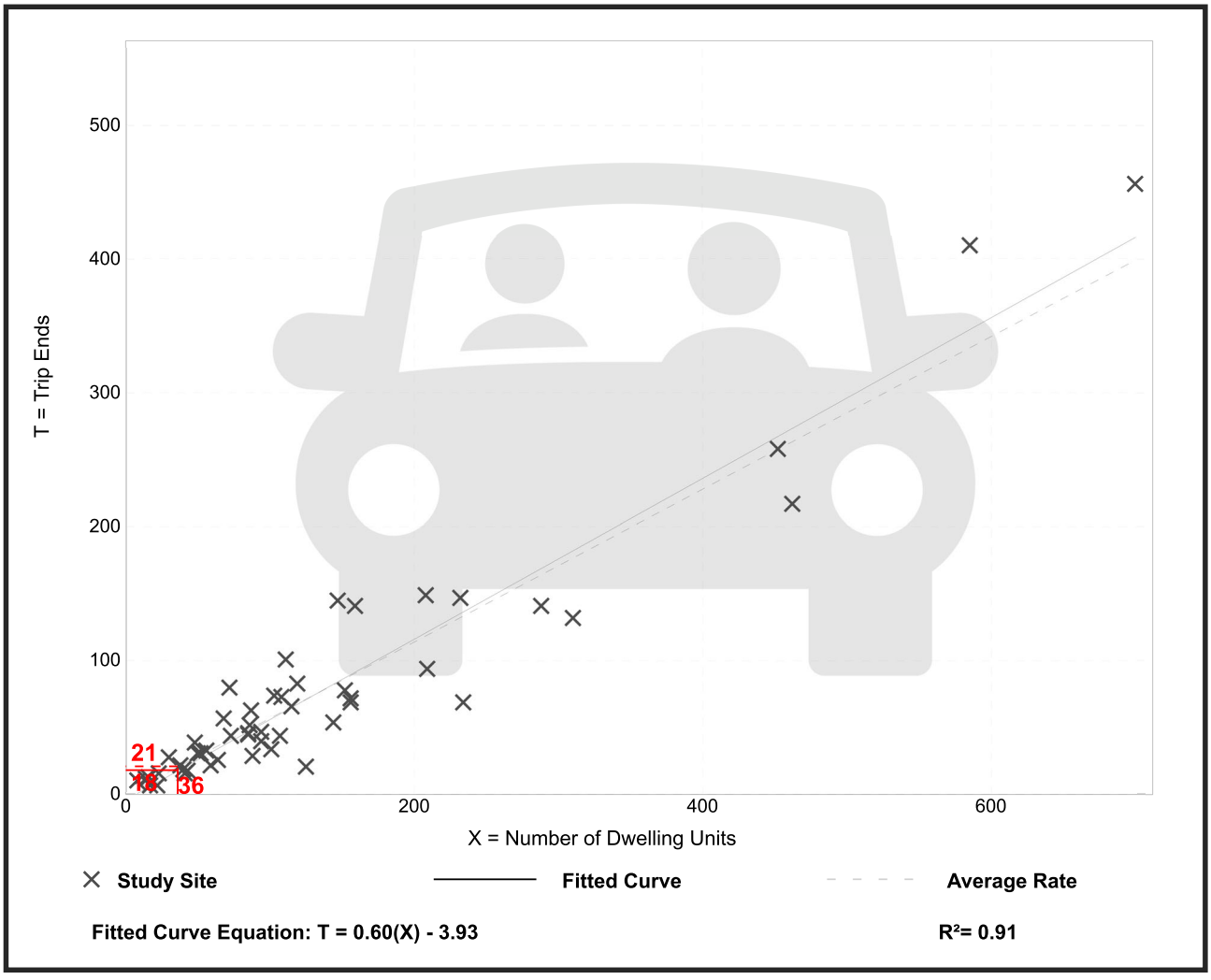
Single-Family Attached Housing
(215)

Vehicle Trip Ends vs: **Dwelling Units**
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: 51
Avg. Num. of Dwelling Units: 136
Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



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TRIP DISTRIBUTION

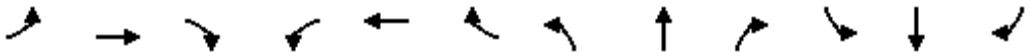
Proposed Multifamily Residential Development
Bellingham, Massachusetts

Residence	Workplace	Number	North Street (West)		Blackstone Street (North)		North Street (East)	
Bellingham town	Bellingham town	1,751		0	50%	876	50%	876
Bellingham town	Franklin Town city	888	50%	444	50%	444		0
Bellingham town	Milford town	602	100%	602		0		0
Bellingham town	Boston city	534		0	100%	534		0
Bellingham town	Framingham town	451		0	100%	451		0
Bellingham town	Natick town	267		0	100%	267		0
Bellingham town	Medway town	237	50%	119	50%	119		0
Bellingham town	Hopkinton town	199		0	100%	199		0
Bellingham town	Wellesley town	182		0	100%	182		0
Bellingham town	Needham town	161		0	100%	161		0
Bellingham town	Norwood town	153		0	100%	153		0
Bellingham town	Westborough town	124	50%	62	50%	62		0
Bellingham town	Woonsocket city	122		0		0	100%	122
Bellingham town	Walpole town	121		0	100%	121		0
Bellingham town	Sharon town	109		0	100%	109		0
Bellingham town	Marlborough city	108		0	100%	108		0
Bellingham town	Mansfield town	108		0	50%	54	50%	54
Bellingham town	Sudbury town	102		0	100%	102		0
Bellingham town	Worcester city	102	50%	51	50%	51		0
Bellingham town	Holliston town	98		0	100%	98		0
Bellingham town	Quincy city	88		0	50%	44	50%	44
Bellingham town	North Smithfield town	84		0		0	100%	84
Bellingham town	Wrentham town	80		0	50%	40	50%	40
Bellingham town	Providence city	79		0		0	100%	79
Bellingham town	Medfield town	77		0	100%	77		0
Bellingham town	Billerica town	73		0	100%	73		0
Bellingham town	Medford city	73		0	100%	73		0
Bellingham town	Newton city	73		0	100%	73		0
Bellingham town	Shrewsbury town	74	50%	37	50%	37		0
Bellingham town	Dedham town	69		0	100%	69		0
Bellingham town	Norfolk town	68		0	50%	34	50%	34
Bellingham town	Braintree Town city	66		0	50%	33	50%	33
Bellingham town	Fall River city	66		0	50%	33	50%	33
				0		0		0
				0		0		0
				0		0		0
				0		0		0
				0		0		0
				0		0		0
		7,389		1,315		4,676		1,399
				17.8%		63.3%		18.9%
		SAY		**20%**		**60%**		**20%**

CAPACITY ANALYSIS WORKSHEETS

Blackstone Street at North Street
North Street at Project Site Driveway
Blackstone Street at Project Site Driveway

Blackstone Street at North Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	111	0	0	228	7	1	5	4	0	2	11
Future Volume (vph)	25	111	0	0	228	7	1	5	4	0	2	11
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.946			0.884	
Flt Protected		0.991						0.995				
Satd. Flow (prot)	0	1784	0	0	1829	0	0	1729	0	0	1624	0
Flt Permitted		0.991						0.995				
Satd. Flow (perm)	0	1784	0	0	1829	0	0	1729	0	0	1624	0
Adj. Flow (vph)	29	128	0	0	248	8	2	10	8	0	4	24
Lane Group Flow (vph)	0	157	0	0	256	0	0	20	0	0	28	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

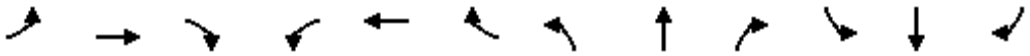
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	25	111	0	0	228	7	1	5	4	0	2	11
Future Vol, veh/h	25	111	0	0	228	7	1	5	4	0	2	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	92	92	92	50	50	50	46	46	46
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	128	0	0	248	8	2	10	8	0	4	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	128	0	0	452	442	128	447	438	252
Stage 1	-	-	-	-	-	-	186	186	-	252	252	-
Stage 2	-	-	-	-	-	-	266	256	-	195	186	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1309	-	-	1470	-	-	521	513	927	525	515	792
Stage 1	-	-	-	-	-	-	820	750	-	757	702	-
Stage 2	-	-	-	-	-	-	744	699	-	811	750	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1309	-	-	1470	-	-	493	501	927	503	503	792
Mov Cap-2 Maneuver	-	-	-	-	-	-	493	501	-	503	503	-
Stage 1	-	-	-	-	-	-	800	732	-	739	702	-
Stage 2	-	-	-	-	-	-	717	699	-	774	732	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	0	11.1	10.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	613	1309	-	-	1470	-	-	728
HCM Lane V/C Ratio	0.033	0.022	-	-	-	-	-	0.039
HCM Control Delay (s)	11.1	7.8	0	-	0	-	-	10.1
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	225	1	6	139	9	2	8	5	13	3	27
Future Volume (vph)	24	225	1	6	139	9	2	8	5	13	3	27
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.955			0.914	
Flt Protected		0.995			0.998			0.994			0.985	
Satd. Flow (prot)	0	1827	0	0	1818	0	0	1743	0	0	1654	0
Flt Permitted		0.995			0.998			0.994			0.985	
Satd. Flow (perm)	0	1827	0	0	1818	0	0	1743	0	0	1654	0
Adj. Flow (vph)	29	271	1	7	151	10	3	13	8	18	4	38
Lane Group Flow (vph)	0	301	0	0	168	0	0	24	0	0	60	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

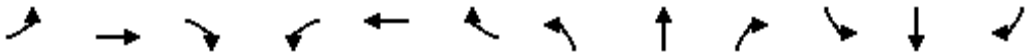
Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	24	225	1	6	139	9	2	8	5	13	3	27
Future Vol, veh/h	24	225	1	6	139	9	2	8	5	13	3	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	92	92	92	63	63	63	72	72	72
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	29	271	1	7	151	10	3	13	8	18	4	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	161	0	0	272	0	0	521	505	272	510	500	156
Stage 1	-	-	-	-	-	-	330	330	-	170	170	-
Stage 2	-	-	-	-	-	-	191	175	-	340	330	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1430	-	-	1303	-	-	469	473	772	477	476	895
Stage 1	-	-	-	-	-	-	687	649	-	837	762	-
Stage 2	-	-	-	-	-	-	815	758	-	679	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1430	-	-	1303	-	-	436	459	772	452	462	895
Mov Cap-2 Maneuver	-	-	-	-	-	-	436	459	-	452	462	-
Stage 1	-	-	-	-	-	-	671	633	-	817	757	-
Stage 2	-	-	-	-	-	-	772	753	-	643	633	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	12.2	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	526	1430	-	-	1303	-	-	657
HCM Lane V/C Ratio	0.045	0.02	-	-	0.005	-	-	0.091
HCM Control Delay (s)	12.2	7.6	0	-	7.8	0	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	123	0	0	253	8	1	6	4	0	2	12
Future Volume (vph)	28	123	0	0	253	8	1	6	4	0	2	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.996			0.951			0.883	
Flt Protected		0.991						0.995				
Satd. Flow (prot)	0	1784	0	0	1829	0	0	1738	0	0	1622	0
Flt Permitted		0.991						0.995				
Satd. Flow (perm)	0	1784	0	0	1829	0	0	1738	0	0	1622	0
Adj. Flow (vph)	32	141	0	0	275	9	2	12	8	0	4	26
Lane Group Flow (vph)	0	173	0	0	284	0	0	22	0	0	30	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

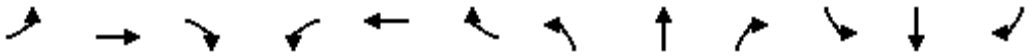
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	28	123	0	0	253	8	1	6	4	0	2	12
Future Vol, veh/h	28	123	0	0	253	8	1	6	4	0	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	92	92	92	50	50	50	46	46	46
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	32	141	0	0	275	9	2	12	8	0	4	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	284	0	0	141	0	0	500	489	141	495	485	280
Stage 1	-	-	-	-	-	-	205	205	-	280	280	-
Stage 2	-	-	-	-	-	-	295	284	-	215	205	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1278	-	-	1455	-	-	484	482	912	488	485	764
Stage 1	-	-	-	-	-	-	802	736	-	731	683	-
Stage 2	-	-	-	-	-	-	718	680	-	792	736	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1278	-	-	1455	-	-	454	469	912	465	472	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	454	469	-	465	472	-
Stage 1	-	-	-	-	-	-	780	716	-	711	683	-
Stage 2	-	-	-	-	-	-	689	680	-	751	716	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	11.6	10.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	568	1278	-	-	1455	-	-	702
HCM Lane V/C Ratio	0.039	0.025	-	-	-	-	-	0.043
HCM Control Delay (s)	11.6	7.9	0	-	0	-	-	10.4
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	250	1	7	154	10	2	9	6	14	3	30
Future Volume (vph)	27	250	1	7	154	10	2	9	6	14	3	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.992			0.950			0.913	
Flt Protected		0.995			0.998			0.994			0.986	
Satd. Flow (prot)	0	1827	0	0	1818	0	0	1734	0	0	1653	0
Flt Permitted		0.995			0.998			0.994			0.986	
Satd. Flow (perm)	0	1827	0	0	1818	0	0	1734	0	0	1653	0
Adj. Flow (vph)	33	301	1	8	167	11	3	14	10	19	4	42
Lane Group Flow (vph)	0	335	0	0	186	0	0	27	0	0	65	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

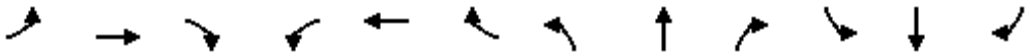
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	27	250	1	7	154	10	2	9	6	14	3	30
Future Vol, veh/h	27	250	1	7	154	10	2	9	6	14	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	92	92	92	63	63	63	72	72	72
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	33	301	1	8	167	11	3	14	10	19	4	42

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	302	0	0	580	562	302	569	557	173
Stage 1	-	-	-	-	-	-	368	368	-	189	189	-
Stage 2	-	-	-	-	-	-	212	194	-	380	368	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1410	-	-	1270	-	-	429	439	742	436	442	876
Stage 1	-	-	-	-	-	-	656	625	-	817	748	-
Stage 2	-	-	-	-	-	-	795	744	-	646	625	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1410	-	-	1270	-	-	395	424	742	408	427	876
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	424	-	408	427	-
Stage 1	-	-	-	-	-	-	638	608	-	794	743	-
Stage 2	-	-	-	-	-	-	748	739	-	605	608	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	12.7	11.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	495	1410	-	-	1270	-	-	622
HCM Lane V/C Ratio	0.055	0.023	-	-	0.006	-	-	0.105
HCM Control Delay (s)	12.7	7.6	0	-	7.9	0	-	11.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.3



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	124	0	0	253	9	1	6	4	1	2	12
Future Volume (vph)	28	124	0	0	253	9	1	6	4	1	2	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.995			0.951			0.890	
Flt Protected		0.991						0.995			0.997	
Satd. Flow (prot)	0	1784	0	0	1827	0	0	1738	0	0	1630	0
Flt Permitted		0.991						0.995			0.997	
Satd. Flow (perm)	0	1784	0	0	1827	0	0	1738	0	0	1630	0
Adj. Flow (vph)	32	143	0	0	275	10	2	12	8	2	4	26
Lane Group Flow (vph)	0	175	0	0	285	0	0	22	0	0	32	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

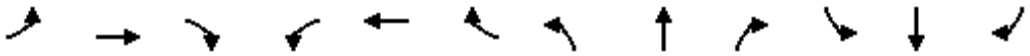
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	124	0	0	253	9	1	6	4	1	2	12
Future Vol, veh/h	28	124	0	0	253	9	1	6	4	1	2	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	92	92	92	50	50	50	46	46	46
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	32	143	0	0	275	10	2	12	8	2	4	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	285	0	0	143	0	0	502	492	143	497	487	280
Stage 1	-	-	-	-	-	-	207	207	-	280	280	-
Stage 2	-	-	-	-	-	-	295	285	-	217	207	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1277	-	-	1452	-	-	483	481	910	487	484	764
Stage 1	-	-	-	-	-	-	800	734	-	731	683	-
Stage 2	-	-	-	-	-	-	718	679	-	790	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1277	-	-	1452	-	-	454	468	910	464	471	764
Mov Cap-2 Maneuver	-	-	-	-	-	-	454	468	-	464	471	-
Stage 1	-	-	-	-	-	-	778	714	-	711	683	-
Stage 2	-	-	-	-	-	-	689	679	-	749	714	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0	11.6	10.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	566	1277	-	-	1452	-	-	678
HCM Lane V/C Ratio	0.039	0.025	-	-	-	-	-	0.048
HCM Control Delay (s)	11.6	7.9	0	-	0	-	-	10.6
HCM Lane LOS	B	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	250	1	7	155	11	2	9	6	15	3	30
Future Volume (vph)	27	250	1	7	155	11	2	9	6	15	3	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.991			0.952			0.916	
Flt Protected		0.995			0.998			0.994			0.985	
Satd. Flow (prot)	0	1792	0	0	1816	0	0	1738	0	0	1657	0
Flt Permitted		0.995			0.998			0.994			0.985	
Satd. Flow (perm)	0	1792	0	0	1816	0	0	1738	0	0	1657	0
Adj. Flow (vph)	31	287	1	8	168	12	4	18	12	33	7	65
Lane Group Flow (vph)	0	319	0	0	188	0	0	34	0	0	105	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	3

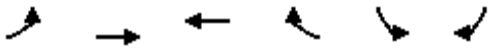
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	250	1	7	155	11	2	9	6	15	3	30
Future Vol, veh/h	27	250	1	7	155	11	2	9	6	15	3	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	92	92	92	50	50	50	46	46	46
Heavy Vehicles, %	2	2	2	0	0	0	0	0	0	0	0	0
Mvmt Flow	31	287	1	8	168	12	4	18	12	33	7	65

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	180	0	0	288	0	0	576	546	288	555	540	174
Stage 1	-	-	-	-	-	-	350	350	-	190	190	-
Stage 2	-	-	-	-	-	-	226	196	-	365	350	-
Critical Hdwy	4.12	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.218	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1396	-	-	1286	-	-	431	448	756	445	451	875
Stage 1	-	-	-	-	-	-	671	636	-	816	747	-
Stage 2	-	-	-	-	-	-	781	742	-	658	636	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1396	-	-	1286	-	-	384	433	756	413	436	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	384	433	-	413	436	-
Stage 1	-	-	-	-	-	-	654	619	-	795	742	-
Stage 2	-	-	-	-	-	-	711	737	-	612	619	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.3	12.7	12
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	501	1396	-	-	1286	-	-	619
HCM Lane V/C Ratio	0.068	0.022	-	-	0.006	-	-	0.169
HCM Control Delay (s)	12.7	7.6	0	-	7.8	0	-	12
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	0.6

North Street at Project Site Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	151	266	0	1	2
Future Volume (vph)	1	151	266	0	1	2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.910	
Flt Protected					0.984	
Satd. Flow (prot)	0	1863	1863	0	1668	0
Flt Permitted					0.984	
Satd. Flow (perm)	0	1863	1863	0	1668	0
Adj. Flow (vph)	1	164	289	0	1	2
Lane Group Flow (vph)	0	165	289	0	3	0
Sign Control		Free	Free		Stop	

Intersection Summary
Control Type: Unsignalized

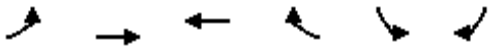
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	1	151	266	0	1	2
Future Vol, veh/h	1	151	266	0	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	164	289	0	1	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	289	0	-	0	455	289
Stage 1	-	-	-	-	289	-
Stage 2	-	-	-	-	166	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1273	-	-	-	563	750
Stage 1	-	-	-	-	760	-
Stage 2	-	-	-	-	863	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1273	-	-	-	562	750
Mov Cap-2 Maneuver	-	-	-	-	562	-
Stage 1	-	-	-	-	759	-
Stage 2	-	-	-	-	863	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1273	-	-	-	675
HCM Lane V/C Ratio	0.001	-	-	-	0.005
HCM Control Delay (s)	7.8	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	2	276	186	1	0	2
Future Volume (vph)	2	276	186	1	0	2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.999		0.865	
Flt Protected						
Satd. Flow (prot)	0	1863	1861	0	1611	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1861	0	1611	0
Adj. Flow (vph)	2	300	202	1	0	2
Lane Group Flow (vph)	0	302	203	0	2	0
Sign Control		Free	Free		Stop	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.1

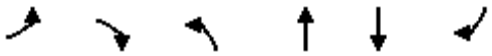
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	276	186	1	0	2
Future Vol, veh/h	2	276	186	1	0	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	300	202	1	0	2

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	203	0	-	0	507	203
Stage 1	-	-	-	-	203	-
Stage 2	-	-	-	-	304	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1369	-	-	-	525	838
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	748	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1369	-	-	-	524	838
Mov Cap-2 Maneuver	-	-	-	-	524	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	748	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	9.3
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1369	-	-	-	838
HCM Lane V/C Ratio	0.002	-	-	-	0.003
HCM Control Delay (s)	7.6	0	-	-	9.3
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Blackstone Street at Project Site Driveway



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	42	14	2
Future Volume (vph)	5	1	1	42	14	2
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.984	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1747	0	0	1861	1833	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1747	0	0	1861	1833	0
Adj. Flow (vph)	5	1	1	46	15	2
Lane Group Flow (vph)	6	0	0	47	17	0
Sign Control	Stop			Free	Free	

Intersection Summary
Control Type: Unsignalized

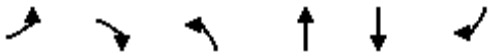
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1	1	42	14	2
Future Vol, veh/h	5	1	1	42	14	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	1	1	46	15	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	64	16	17	0	-	0
Stage 1	16	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	942	1063	1600	-	-	-
Stage 1	1007	-	-	-	-	-
Stage 2	974	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	941	1063	1600	-	-	-
Mov Cap-2 Maneuver	941	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	974	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1600	-	959	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	46	47	6
Future Volume (vph)	5	1	1	46	47	6
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.977				0.984	
Flt Protected	0.960			0.999		
Satd. Flow (prot)	1747	0	0	1861	1833	0
Flt Permitted	0.960			0.999		
Satd. Flow (perm)	1747	0	0	1861	1833	0
Adj. Flow (vph)	5	1	1	50	51	7
Lane Group Flow (vph)	6	0	0	51	58	0
Sign Control	Stop			Free	Free	

Intersection Summary
Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1	1	46	47	6
Future Vol, veh/h	5	1	1	46	47	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	1	1	50	51	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	107	55	58	0	-	0
Stage 1	55	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	891	1012	1546	-	-	-
Stage 1	968	-	-	-	-	-
Stage 2	970	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1012	1546	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	970	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1546	-	908	-	-
HCM Lane V/C Ratio	0.001	-	0.007	-	-
HCM Control Delay (s)	7.3	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-