

TRANSPORTATION IMPACT ASSESSMENT

PROPOSED RESIDENTIAL DEVELOPMENT
19-35 RIVER STREET
WINCHESTER, MASSACHUSETTS

Prepared for:

19-35 RIVER STREET LLC
Winchester, Massachusetts

May 2019

Prepared by:

VANASSE & ASSOCIATES, INC.
35 New England Business Center Drive
Suite 140
Andover, MA 01810
(978) 474-8800
www.rdva.com

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35 New England Business Center Drive
Suite 140
Andover, MA 01810-1066
Office 978-474-8800
Fax 978-688-6508
Web: www.rdva.com

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 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, P.E., PTOE, FITE
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 147-unit multifamily residential community to be located at 19-35 River Street in Winchester, Massachusetts (hereafter referred to as the “Project”).

This assessment was prepared in consultation with the Town of Winchester, the City of Woburn and the Massachusetts Department of Transportation (MassDOT); was performed in accordance with MassDOT’s *Transportation Impact Assessment (TIA) Guidelines*; and was conducted pursuant to 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 800 vehicle trips on an average weekday (two-way, 24-hour volume), with 50 vehicle trips expected during the weekday morning peak-hour and 64 vehicle trips expected during the weekday evening peak-hour;
2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with Project-related impacts generally defined as an increase in motorist delay of up to 37.2 seconds (River Street approach to Cross Street) and in vehicle queuing of up to two (2) vehicles;
3. Independent of the Project, it was noted that one or more movements at the study area intersections were identified to be operating at or over capacity (defined as a level-of-service (LOS) “E” or “F”, respectively) during one or both weekday peak hours, with the Main Street/Cross Street/Border Street, Cross Street/Holton Street/ East Street/ Lowell Avenue and Cross Street/Loring Avenue intersections appearing to meet the criteria for the installation of a traffic control signal in order to accommodate current traffic demands;

¹*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

4. All movements at the Project site driveway intersections with River Street are expected to operate at LOS A during both the weekday morning and evening peak hours, with negligible vehicle queuing predicted;
5. With the exception of the Main Street/Cross Street/Border Street intersection, the study area intersections were found to have motor vehicle crash rates that were below the MassDOT average crash rates. Recommendations have been provided as a part of this assessment to advance safety-related improvements at this intersection (discussion follows); and
6. Lines of sight to and from the Cross Street/River Street/Verplast Avenue intersection and at the Project site driveway intersections with River Street were found to exceed the required minimum distance for the intersections to function in a safe manner.

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 will be provided by way of two (2) driveways that will be configured as follows: an entrance-only driveway that will intersect the west side of River Street approximately 160 feet south of Cross Street and will provide access to the surface parking area and the underground parking garage, and a full access driveway that will intersect the west side of River Street approximately 560 feet south of Cross Street and will provide access to the parking garage beneath the proposed residential building. A gated emergency vehicle access will also be provided to the Project site that will intersect the west side of River Street approximately 610 feet south of Cross Street. Secondary access to River Street and the Project site for emergency vehicles is currently provided by way of a gated connection to The Village residential condominium community which is accessed from Swanson Street. The following recommendations are offered with respect to Project access and internal circulation, many of which are reflected on the Site Plans:

- The one-way driveway serving the Project site will be a minimum of 20-feet in width or as required to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Winchester Fire Department. “One-Way” and “Do Not Enter” signs with accompanying pavement markings will be installed to reinforce the one-way operation of the drives.
- The full access Project site driveway will be a minimum of 24-feet and provide one entering and one exiting travel lane.

- The emergency vehicle access should be 20-feet in width unless otherwise approved by the Winchester Fire Department and secured by means of a gate or other device acceptable to the Fire Department.
- Vehicles exiting the Project site will be placed under STOP-sign control with a marked STOP-line provided.
- 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
- A sidewalk will be provided along the west side of River Street and will extend to the existing sidewalk along Cross Street to the extent that there is available public right-of-way for the extension beyond the Project site frontage.
- A school bus waiting area will be provided at an appropriate location defined in consultation with the Town.
- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas of the Project site driveways will be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveways will be promptly removed where such accumulations would impede sight lines.
- Consideration will be given to installing electric vehicle charging stations or the associated infrastructure capacity within the Project site.

Off-Site

Main Street at Cross Street and Border Street

The addition of Project-related traffic to the Main Street/Cross Street/Border Street intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that one or more movements at the intersection were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Main Street during the peak hours. In addition, the intersection was found to have a motor vehicle crash rate that was above the MassDOT District 4 average crash rate for an unsignalized intersection. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project.

An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD³ indicates that the installation of a traffic control signal at the intersection in order to improve operating conditions may be warranted under existing conditions. In an effort to advance operational and safety improvements at this intersection that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the completion of a Road Safety Audit (RSA) in order to identify improvement strategies for this intersection.

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

³Ibid.

Cross Street at River Street and Verplast Avenue

Independent of the Project, it is recommended that a STOP-sign and marked STOP-line be provided on the Verplast Avenue approach to Cross Street in order to formalize the assignment of the vehicular right-of way at this intersection.

Cross Street at Holton Street, East Street and Lowell Avenue

The addition of Project-related traffic to the Cross Street/Holton Street/East Street/Lowell Avenue intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that one or more movements at the intersection were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Cross Street during the peak hours. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project. An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD indicates that the installation of a traffic control signal in order to improve operating conditions at the intersection may be warranted under existing conditions.

Recognizing the importance of this intersection in providing access to the Project and the residences and businesses in the area, the Project proponent will undertake a formal Traffic Signal Warrants Analysis (TSWA) for the intersection in accordance with the methodology outlined in the MUTCD, including performing a continuous 12-hour (7:00 AM to 7:00 PM) manual turning movement count, and will summarize the results of the analysis in a technical memorandum that will be provided to the Town. To the extent that the installation of a traffic control signal is found to be warranted and is desired by the Town, the Project proponent will contribute a “fair-share” portion of the cost to design and construct a traffic control signal at the intersection based on the increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

In addition, it is recommended that a STOP-sign and marked STOP-line be provided on the East Street and Lowell Avenue approaches to the intersection in order to formalize the assignment of the vehicular right-of way and the desired stopping point for vehicles on these approaches to the intersection.

Cross Street at Loring Avenue

The addition of Project-related traffic to the Cross Street/Loring Avenue intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that all movements from Loring Avenue were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Cross Street during the peak hours. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project. An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD indicates that the installation of a traffic control signal in order to improve operating conditions at the intersection may be warranted under existing conditions. That being said, installing a traffic signal at this location may induce additional traffic to use Loring Avenue.

Recognizing the importance of this intersection in providing access to the Project and the residences and businesses in the area, the Project proponent will undertake a formal TSWA for the intersection in accordance with the methodology outlined in the MUTCD, including performing a continuous 12-hour (7:00 AM to 7:00 PM) manual turning movement count, and will summarize the results of the analysis in a technical memorandum that will be provided to the Town. To the extent that the

installation of a traffic control signal is found to be warranted and is desired by the Town, the Project proponent will contribute a “fair-share” portion of the cost to design and construct a traffic control signal or alternative improvement measure at the intersection based on the increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

Transportation Demand Management

Public transportation services are provided within the study area by the Massachusetts Bay Transportation Authority (MBTA) by way of bus Route 134, *North Woburn – Wellington Station*, and Winchester Center Station on the Lowell Line of the commuter rail system. MBTA bus Route 134 provides service along Main Street with a stop at Lydon Court, which is within an approximate 12-minute walking distance (approximately 0.60 miles) of the Project site. Winchester Center Station on the MBTA commuter rail system is located approximately 1.5 miles south of the Project site (an approximate 5 minute driving distance) at 29 Waterfield Road, and is served by the Route 134 bus. In addition, the MBTA provides The RIDE paratransit services to eligible persons who cannot use fixed-route transit (bus, subway, trolley) due to a physical, cognitive or mental disability in compliance with the Americans with Disabilities Act (ADA).

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

- The owner or property manager will contact MassRIDES to obtain information on facilitating and encouraging healthy transportation options for residents of the Project;
- 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 through MassRIDES’ and their Bay State Commute program which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work;
- Residents will be made aware of the Emergency Ride Home (ERH) program available through MassRIDES, which reimburses employees of a participating MassRIDES employer partner worksite that is registered for ERH and that carpool, take transit, bicycle, walk or vanpool to work;
- Pedestrian accommodations will be provided consisting of a sidewalk along the Project site frontage that will extend to the sidewalk along Cross Street to the extent that there is available public right-of-way for the extension beyond the Project site frontage;
- A mail drop will be provided in a central location; and
- Secure bicycle parking will be provided consisting of: i) exterior bicycle parking conveniently located proximate to the building entrance; and ii) weather protected bicycle parking located in a secure area within the building.

In addition, the Project proponent will participate with the Town and other area multifamily residential communities and business to discuss opportunities to establish a Transportation Management Association (TMA) for Winchester as a means of providing a local shuttle service for

residents and businesses. This service may take the form of an expansion of the shuttle service that is currently operated by Winchester Hospital.

With implementation of the above recommendations, safe and efficient vehicular, pedestrian and bicycle access will 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 147-unit multifamily residential community to be located at 19 - 35 River Street in Winchester, 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 Cross Street and at the following specific intersections: Main Street at Cross Street and Border Street; Cross Street at River Street and Verplast Avenue; Cross Street at Holton Street, East Street and Lowell Avenue; Cross Street at Loring Avenue; and Swanton Street at Loring Avenue.

PROJECT DESCRIPTION

The Project will entail the construction of a 147-unit multifamily residential community to be located at 19-35 River Street in Winchester, Massachusetts. The Project site encompasses approximately 3.15± acres of land that is bounded by residential properties to the north; commercial properties to the south; River Street to the east; and residential properties to the west. Figure 1 depicts the Project site location in relation to the existing roadway network. At present the Project site contains two (2) commercial buildings and associated appurtenances that will be removed to accommodate the Project.

Access to the Project will be provided by way of two (2) driveways that will be configured as follows: an entrance-only driveway that will intersect the west side of River Street approximately 160 feet south of Cross Street and will provide access to the surface parking area and the underground parking garage, and a full access driveway that will intersect the west side of River Street approximately 560 feet south of Cross Street and will provide access to the parking garage beneath the proposed residential building. A gated emergency vehicle access will also be provided to the Project site that will intersect the west side of River Street approximately 610 feet south of Cross Street. Secondary access to River Street and the Project site for emergency vehicles is currently provided by way of a gated connection to The Village residential condominium community which is accessed from Swanson Street.



Figure 1
Site Location Map

On-site parking will be provided for 224 vehicles consisting of 178 parking spaces in a garage to be located beneath the proposed residential building and 46 surface parking spaces, or a parking ratio of approximately 1.52 spaces per dwelling unit. This parking ratio (1.52 spaces per dwelling unit) is below that required pursuant to Section 5.0 General Regulations - *Table Of Off-Street Parking Requirements*, of the Town of Winchester Zoning Bylaw (2.0 spaces per dwelling unit are required), but is within the range of values documented by the Institute of Transportation Engineers (ITE) for a multifamily residential community in a suburban setting.⁴

STUDY METHODOLOGY

This study was prepared in consultation with the Town of Winchester, the City of Woburn 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; on-street parking; public transportation services; observations of traffic flow; and collection of pedestrian, bicycle and vehicle 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 analysis conducted in stage two identifies existing or projected future capacity, safety, and access issues, as these areas relate to the transportation infrastructure.

The third stage of the study presents and evaluates measures to address deficiencies in the transportation infrastructure, if any, identified in stage two of the study.

⁴*Parking Generation Manual*, 5th Edition; Institute of Transportation Engineers; Washington, D.C.; 2019. Observed parking demand ratios for an affordable housing community were found to range from 0.32 to 1.66 spaces per dwelling unit, with an average parking demand of 0.99 spaces per dwelling unit and an 85th percentile peak parking demand of 1.33 spaces per dwelling unit. For a traditional multifamily residential community, the average parking demand was reported to be 1.31 spaces per dwelling unit and the 85th percentile peak parking demand was identified to be 1.47 spaces per dwelling unit.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in August and September 2018, and in April 2019. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; on-street parking; 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 for the Project was selected to contain the major roadway providing access to the Project site, Cross Street, as well as the following specific intersections: Main Street at Cross Street and Border Street; Cross Street at River Street and Verplast Avenue; Cross Street at Holton Street, East Street and Lowell Avenue; Cross Street at Loring Avenue; and Swanton Street at Loring Avenue.

The following describes the study area roadways and intersections as observed in August 2018 and April 2019.

Roadway

Cross Street

- Two-lane urban collector roadway under Town jurisdiction
- Traverses a general east-west direction between Washington Street and Main Street
- Provides two 14 to 19-foot wide travel lanes separated by a double-yellow centerline with variable width (1 to 4-foot wide) marked shoulders
- Posted speed limit is 30 miles per hour (mph)
- Sidewalks are provided along both sides of the roadway
- Illumination is provided by way of street lights mounted on wood poles
- Land use within the study area consists of the Project site and residential and commercial uses

Intersections

Table 1 and Figure 2 summarize lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in August 2018 and April 2019.

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) |
|--|---|---|--|---|---|
| Cross St./ Holton St./ East St./ Lowell Ave. | S | 1 general purpose lane on all approaches, with the Holton St. approach functioning as 2-lanes during the weekday peak periods | Yes – 1 to 4 feet on Cross St. | Yes – Sidewalks along both sides of Holton St., East St and Cross St. west of Holton St. and along the north side of Cross St. east of Holton St.; crosswalks provided across Cross St. west leg and Holton St. | Yes –shared traveled-way ^b on Cross St. |
| Cross St./ River St./ Verplast Ave. | S | 1 general purpose lane on all approaches | Yes – 1 to 4 feet on Cross St. | Yes – Sidewalks along both sides of Cross St. | Yes –shared traveled-way on Cross St. |
| Main St./ Cross St./ Border St. | S | 1 general purpose lane on all approaches, with the Cross St. approach functioning as 2-lanes during the weekday peak periods | No | Yes – Sidewalks along both sides of the intersecting roadways; crosswalks provided across Main St. north leg, Cross St. and Border St. | Yes –shared traveled-way on both Main St. and Cross St. |
| Cross St./ Loring Ave. | S | 1 general purpose lane on all approaches | Yes – 1-foot on Cross St. | Yes – Sidewalks along both sides of the intersecting roadways | Yes –shared traveled-way on Cross St. |
| Swanton St./ Loring Ave. | S | 1 general purpose lane on all approaches | Yes – 2 to 3 feet on Cross St. | Yes – Sidewalks along both sides of the intersecting roadways | Yes –shared traveled-way on Swanton St. |

^aTS = traffic signal control; F = flashing signal/beacon; S = STOP-sign control; NC = no control present.

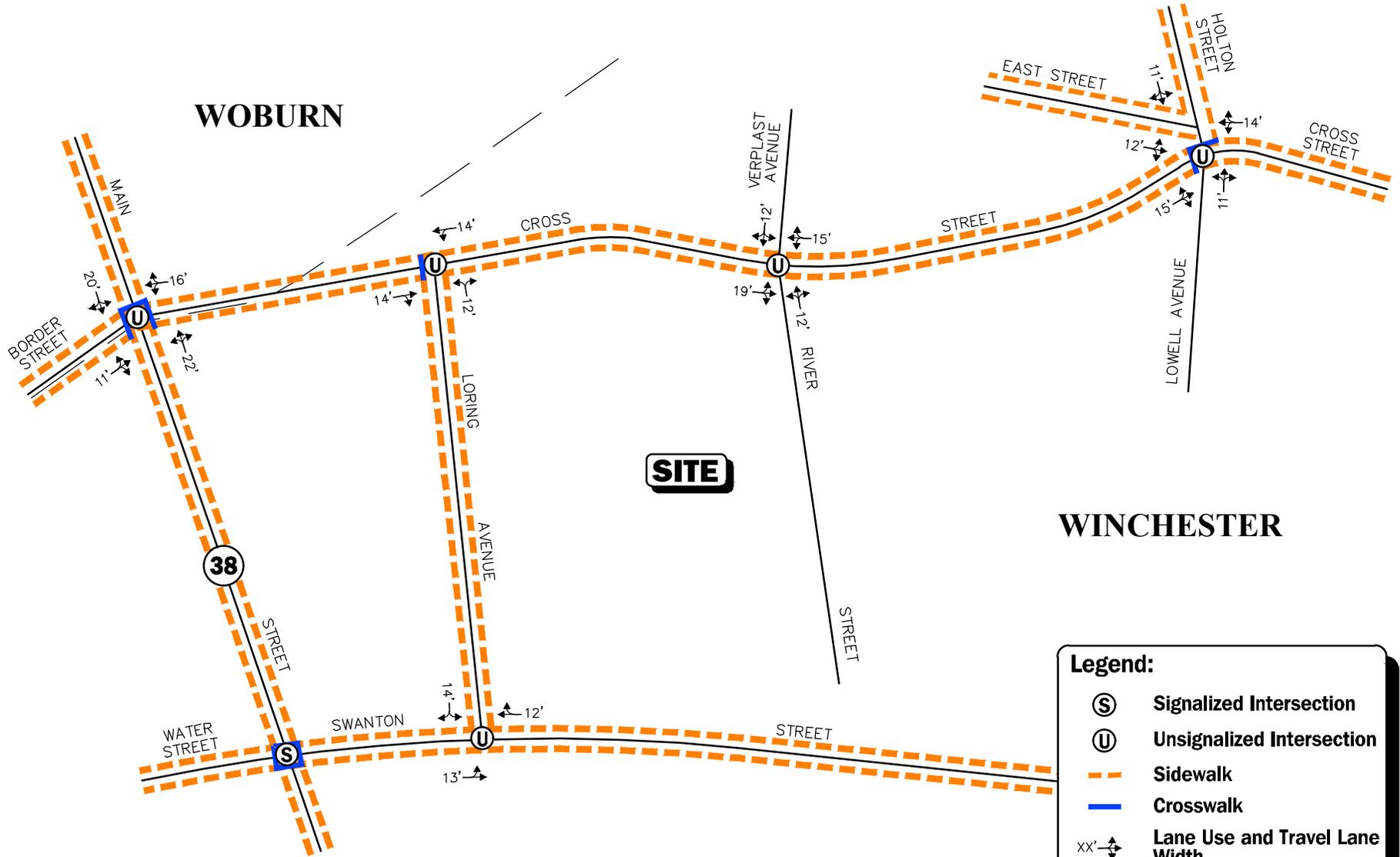
^bCombined shoulder and travel lane width equal to or exceed 14 feet.

EXISTING TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, manual turning movement counts (TMCs) and vehicle classification counts were completed in September 2018 and April 2019 while public schools were in session. The ATR counts were conducted over a continuous 48-hour period on Cross 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 (3:00 to 6:00 PM) peak period manual TMCs performed at the study intersections. 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.

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. 4169 located on Interstate 93



Legend:

- Ⓢ Signalized Intersection
- Ⓤ Unsignalized Intersection
- - - Sidewalk
- Crosswalk
- xx' ↔ Lane Use and Travel Lane Width

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

Figure 2
Existing Intersection Lane Use, Travel Lane Width and Pedestrian Facilities

(I-93) in Stoneham were reviewed.⁵ Based on a review of this data, it was determined that traffic volumes for the month of April are approximately 0.3 percent below average-month conditions, with traffic volumes for the month of September approximately 4.5 percent above average-month conditions. As such, the April traffic volumes were adjusted upward to average-month conditions, with no adjustment required to the September traffic volumes as they are representative of traffic volume conditions that are higher than those under average-month conditions. In addition to the seasonal adjustment (where necessary), the traffic volume data that was collected in September 2018 was adjusted to 2019 conditions by applying a general background traffic growth rate of 1.5 percent (discussed in further detail in the *General Background Traffic Growth* section of this report).

The 2019 Existing traffic volumes are summarized in Table 2, with the weekday morning and evening peak-hour traffic volumes graphically depicted on Figures 3 and 4, respectively. Note that the peak-hour traffic volumes presented in Table 2 were obtained from Figures 3 and 4.

Table 2
2019 EXISTING TRAFFIC VOLUMES

| Location | AWT ^a | Weekday Morning Peak-Hour (7:30 – 8:30 AM) | | | Weekday Evening Peak-Hour (4:30 – 5:30 PM) | | |
|---------------------------------------|------------------|---|-----------------------|-----------------------------|---|----------|-----------------------------|
| | | VPH ^b | K Factor ^c | Directional Distribution | VPH | K Factor | Directional Distribution |
| Cross Street, east of River Street | 12,640 | 1,228 | 9.7 | 72.0% WB | 1,366 | 10.8 | 58.3% EB |

^aAverage weekday traffic in vehicles per day.

^bVehicles per hour.

^cPercent of daily traffic occurring during the peak-hour.

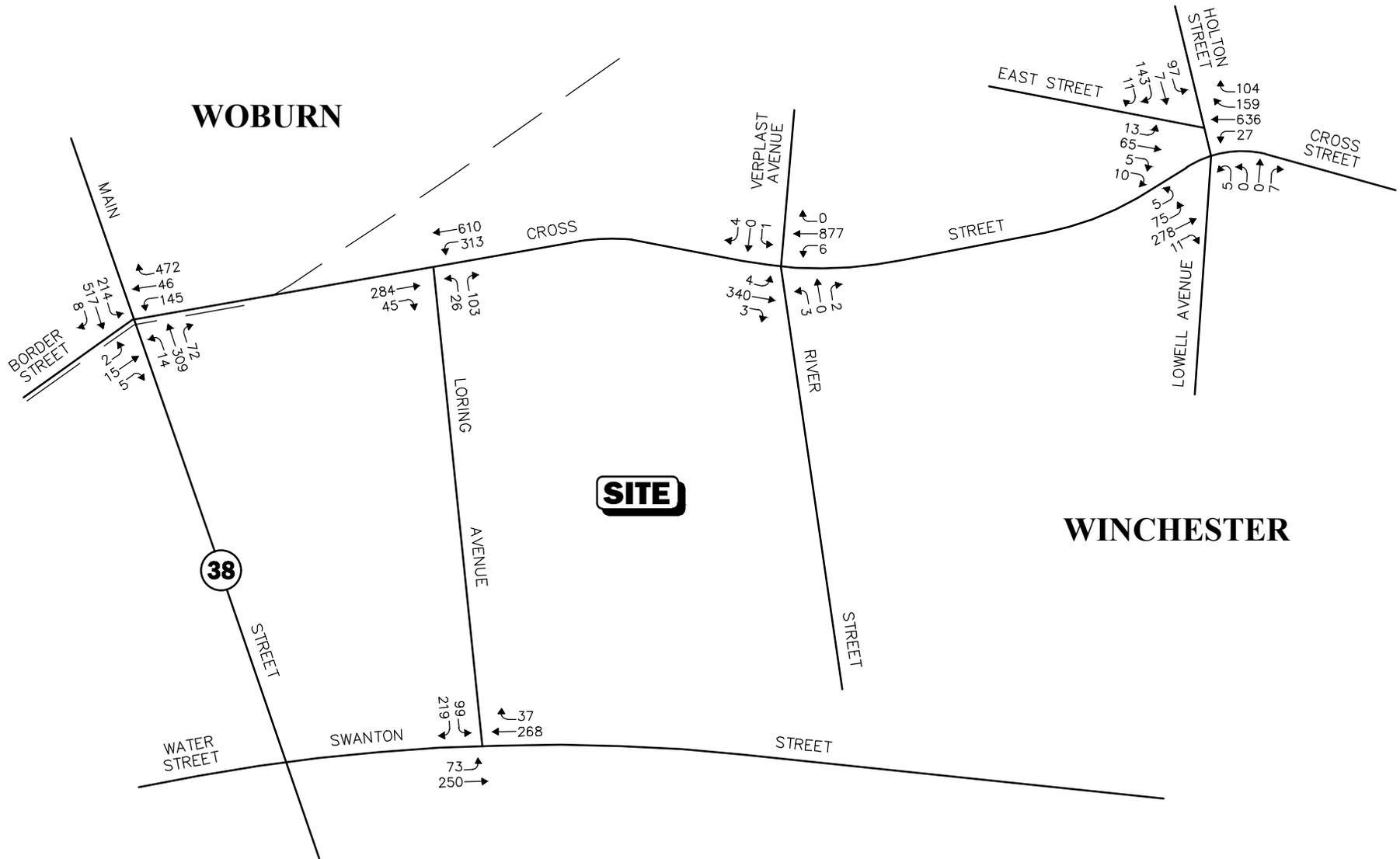
EB = eastbound; WB = westbound.

As can be seen in Table 2, Cross Street in the vicinity of the Project site was found to accommodate approximately 12,640 vehicles on an average weekday (two-way, 24-hour volume), with approximately 1,228 vehicles per hour (vph) during the weekday morning peak-hour and 1,366 vph during the weekday evening peak-hour.

SPOT SPEED MEASUREMENTS

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

⁵MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2018.

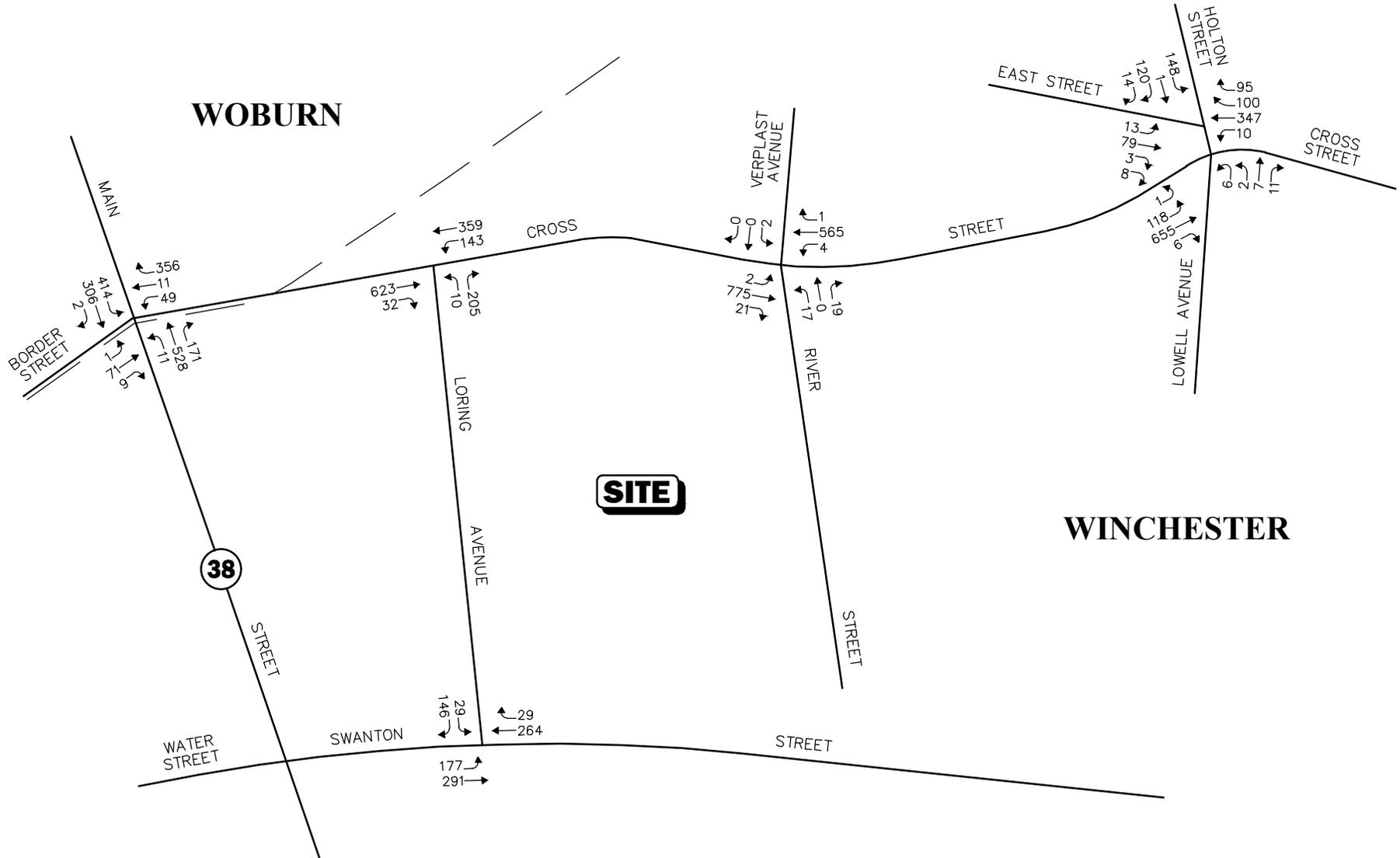


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 3

2019 Existing
Weekday Morning
Peak Hour Traffic Volumes



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

Not To Scale

Figure 4

2019 Existing
Weekday Evening
Peak Hour Traffic Volumes

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

| | Cross Street | |
|---|--------------|-----------|
| | Eastbound | Westbound |
| Mean Travel Speed (mph) | 31 | 29 |
| 85 th Percentile Speed (mph) | 35 | 34 |
| Posted Speed Limit (mph) | 30 | 30 |

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Cross Street in the vicinity of the Project site was found to be 31 mph in the eastbound direction and 29 mph westbound. 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 35 mph in the eastbound direction and 34 mph westbound, which is 4 to 5 mph above the posted speed limit (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.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in August 2018 and April 2019. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities. As detailed on Figure 2, sidewalks are provided along both sides of Main Street, Holton Street, East Street, Loring Avenue, Swanton Street and Cross Street west of Holton Street, and along the north side of Cross Street east of Holton Street, with marked crosswalks provided for crossing one or more of the approaches to the Cross Street/Holton Street/East Street/Lowell Avenue, Main Street/Cross Street/Border Street and Cross Street/Loring Avenue intersections.

Formal bicycle facilities were not identified within the study area; however, Cross Street, Swanton Street and Main Street generally provide sufficient width (paved shoulder or combined travel lane and paved shoulder) to support bicycle travel in a shared traveled-way configuration.⁶

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the Massachusetts Bay Transportation Authority (MBTA) by way of bus Route 134, *North Woburn – Wellington Station*, and Winchester Center Station on the Lowell Line of the commuter rail system. MBTA bus Route 134 provides service along Main Street with a stop at Lydon Court, which is within an approximate 12-minute walking distance (approximately 0.60 miles) of the Project site. Winchester Center Station on the MBTA commuter rail system is located approximately 1.5 miles

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

south of the Project site (an approximate 5 minute driving distance) at 29 Waterfield Road, and is served by the Route 134 bus.

In addition, the MBTA provides The RIDE paratransit services to eligible persons who cannot use fixed-route transit (bus, subway, trolley) due to a physical, cognitive or mental disability in compliance with the Americans with Disabilities Act (ADA).

The public transportation schedules and fare information are provided in the Appendix.

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2012 through 2016, 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, with the exception of the Main Street/Cross Street/Border Street intersection, the study area intersections experienced an average of approximately one (1) reported motor vehicle crash per year over the five-year review period and were found to have a motor vehicle crash rate below both the MassDOT statewide and District averages for an unsignalized intersection for the MassDOT Highway Division District in which the intersections are located (District 4). The majority of the crashes were reported to have occurred on a weekday; during daylight; under clear weather conditions; and involved angle-type collisions that resulted in property damage only.

The Main Street/Cross Street/Border Street intersection was reported to have experienced a total of 34 crashes over the five-year review period, the majority of which resulted in property damage only; occurred on a weekday; under clear weather and during daylight; and were classified as angle-type crashes. This intersection was found to have a motor vehicle crash rate that was above both the MassDOT statewide and District average crash rate (District 4) for an unsignalized intersection.

A review of the MassDOT statewide High Crash Location List indicated that there were no locations within the study area that were 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 intersections over the five-year review period.

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

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

| | Cross St./Holton St./ East St./Lowell Ave. | Cross St./ River St./ Verplast Ave. | Main St./ Cross St./ Border St. | Cross St./ Loring Ave. | Swanton St./ Loring Ave. |
|------------------------------------|---|---|---------------------------------------|---------------------------|-----------------------------|
| Traffic Control Type: ^b | U | U | U | U | U |
| <i>Year:</i> | | | | | |
| 2012 | 3 | 0 | 7 | 0 | 1 |
| 2013 | 1 | 0 | 8 | 0 | 0 |
| 2014 | 0 | 1 | 7 | 0 | 2 |
| 2015 | 1 | 0 | 5 | 2 | 1 |
| <u>2016</u> | <u>0</u> | <u>0</u> | <u>7</u> | <u>2</u> | <u>1</u> |
| Total | 5 | 1 | 34 | 4 | 5 |
| Average | 1.00 | 0.20 | 6.80 | 0.80 | 1.00 |
| Rate ^c | 0.14 | 0.04 | 0.87 | 0.14 | 0.26 |
| MassDOT Crash Rate: ^d | 0.57/0.57 | 0.57/0.57 | 0.57/0.57 | 0.57/0.57 | 0.57/0.57 |
| Significant? ^e | No | No | Yes | No | No |
| <i>Type:</i> | | | | | |
| Angle | 4 | 1 | 25 | 2 | 4 |
| Rear-End | 1 | 0 | 4 | 2 | 1 |
| Head-On | 0 | 0 | 4 | 0 | 0 |
| Sideswipe | 0 | 0 | 0 | 0 | 0 |
| Fixed Object | 0 | 0 | 0 | 0 | 0 |
| Pedestrian/Bicycle | 0 | 0 | 0 | 0 | 0 |
| <u>Unknown/Other</u> | <u>0</u> | <u>0</u> | <u>1</u> | <u>0</u> | <u>0</u> |
| Total | 5 | 1 | 34 | 4 | 5 |
| <i>Conditions:</i> | | | | | |
| Clear | 2 | 1 | 31 | 3 | 4 |
| Cloudy | 0 | 0 | 2 | 1 | 0 |
| Rain | 1 | 0 | 0 | 0 | 0 |
| <u>Snow/Ice</u> | <u>2</u> | <u>0</u> | <u>1</u> | <u>0</u> | <u>1</u> |
| Total | 5 | 1 | 34 | 4 | 5 |
| <i>Lighting:</i> | | | | | |
| Daylight | 4 | 0 | 25 | 2 | 3 |
| Dawn/Dusk | 0 | 0 | 3 | 1 | 0 |
| Dark (Road Lit) | 0 | 1 | 6 | 1 | 2 |
| <u>Dark (Road Unlit)</u> | <u>1</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Total | 5 | 1 | 34 | 4 | 5 |
| <i>Day of Week:</i> | | | | | |
| Monday through Friday | 5 | 1 | 32 | 3 | 5 |
| Saturday | 0 | 0 | 1 | 0 | 0 |
| <u>Sunday</u> | <u>0</u> | <u>0</u> | <u>1</u> | <u>1</u> | <u>0</u> |
| Total | 5 | 0 | 34 | 4 | 5 |
| <i>Severity:</i> | | | | | |
| Property Damage Only | 4 | 1 | 28 | 2 | 5 |
| Personal Injury | 1 | 0 | 6 | 2 | 0 |
| <u>Fatality</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> | <u>0</u> |
| Total | 5 | 1 | 34 | 4 | 5 |

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2012 through 2016.

^bTraffic Control Type: U = unsignalized; TS = traffic signal.

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

^eThe 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 4).

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2026, 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 2026 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2026 No-Build traffic volumes reflect 2026 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 Winchester Planning Department and the City of Woburn Planning Board were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on these discussions, the following projects were identified for inclusion in this assessment:

- ***Winchester Community Park, 120 Cross Street, Winchester, Massachusetts.*** This project will entail the construction of an indoor/outdoor soccer facility that will include two (2) synthetic turf fields, a natural grass field and a field house. This project is currently under construction.
- ***Residential Development, Washington Street, Winchester, Massachusetts.*** This proposed project will entail the construction of a 50-unit multifamily residential community to be situated on the northwest corner of the intersection of Washington Street at Swanton Street.
- ***Residential Development, Garfield Avenue, Woburn, Massachusetts.*** This proposed project will entail the construction of an 8-unit multifamily residential community to be located off Garfield Avenue. Traffic volumes associated with this project are expected to be relatively minor and would also be reflected in the general background traffic growth rate (discussion follows).
- ***Warehouse Development, Garfield Avenue, Woburn, Massachusetts.*** This proposed project will entail the construction of a small warehouse building to be located off Garfield Avenue. Traffic volumes associated with this project are expected to be relatively minor and would also be reflected in the general background traffic growth rate.

In addition to the above projects, the Winchester Planning Department estimated there will likely be an additional 100 housing units added along Main Street south of Cross Street over the next several years. Traffic volumes associated with the aforementioned specific development projects by others (including the 100 housing units) were estimated using trip-generation information available from the Institute of Transportation Engineers (ITE)⁷ for the appropriate land use and were assigned onto the study area roadway network based on existing traffic patterns where no other information was available. 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 Continuous Count Station No. 4169 located on I-93 in Stoneham was reviewed. Based on a review of this data, it was determined that traffic volumes within the study area have increased by approximately 1.23 percent per year over the past several years. In order to provide a prudent planning condition for the Project, a 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, the Town of Winchester and the City of Woburn were contacted in order to determine if there were any planned future roadway improvement projects expected to be complete by 2026 within the study area. Based on these discussions, the following roadway improvement project was identified within the study area:

- ***Cross Street Corridor Study, Winchester, Massachusetts.*** The Town of Winchester has contracted with Toole Design Group, Inc. to conduct a Corridor Study of the Cross Street

⁷Ibid 1

corridor in order to identify multimodal solutions to improving access, circulation and safety. This study is currently underway and the Project proponent has provided supporting data to the Town for use in conducting the study.

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

No-Build Traffic Volumes

The 2026 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 2019 Existing peak-hour traffic volumes and then adding the peak-hour traffic volumes associated with the identified specific development projects by others. The resulting 2026 No-Build weekday morning and evening peak-hour traffic volumes shown on Figures 5 and 6, respectively.

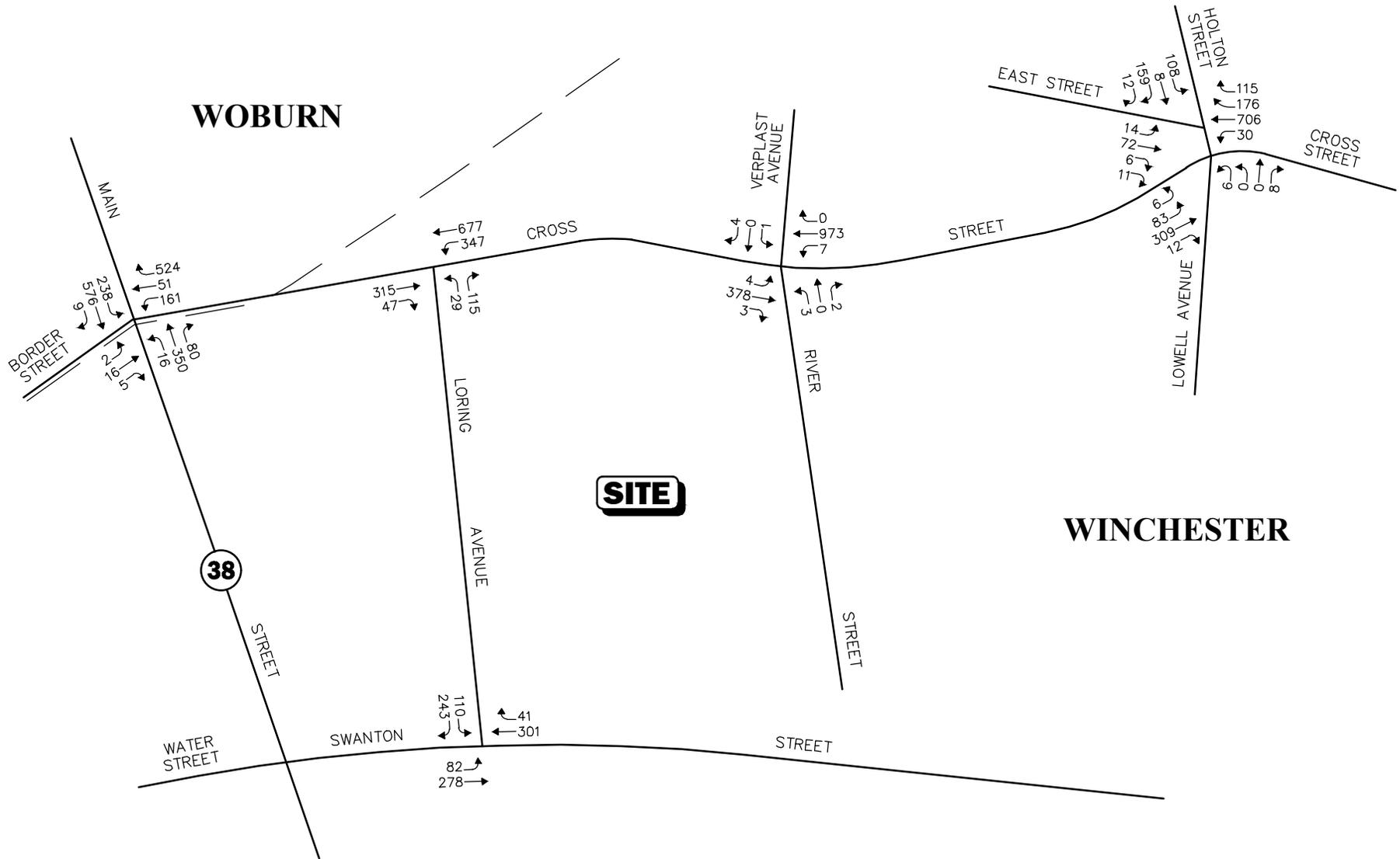
PROJECT-GENERATED TRAFFIC

Design year (2026 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 147-unit multifamily residential community. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁸ for a similar land use as that proposed were used. ITE Land Use Code (LUC) 221, *Multifamily Housing (Mid-Rise)*, was used to develop the base traffic characteristics of the Project.

Table 5 summarizes the traffic characteristics of the Project using the above methodology.

⁸Ibid 1.

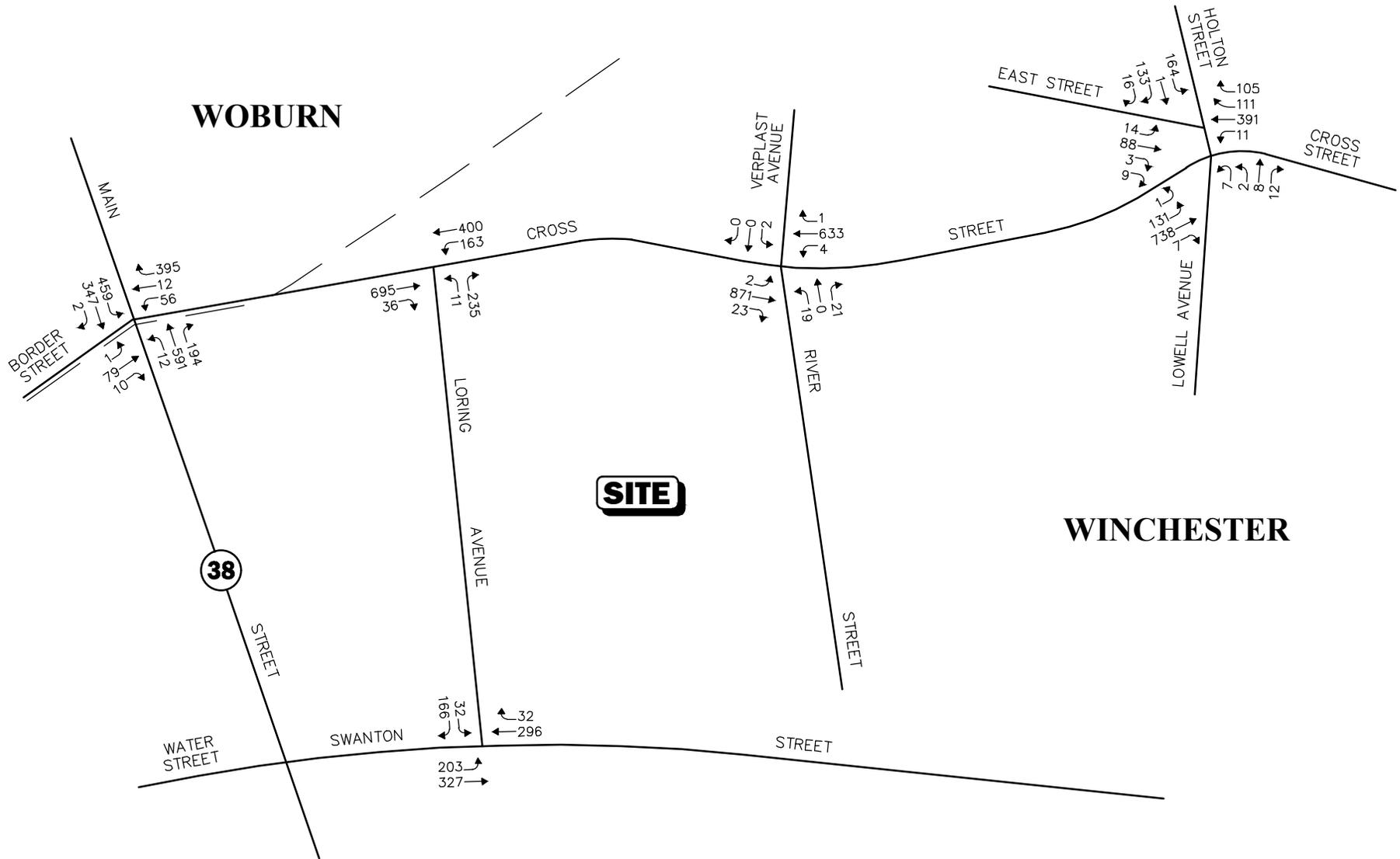


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 5

2026 No-Build
Weekday Morning
Peak Hour Traffic Volumes



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

Not To Scale



Figure 6

2026 No-Build
Weekday Evening
Peak Hour Traffic Volumes

Table 5
TRIP GENERATION SUMMARY

| Time Period/Direction | Vehicle Trips |
|-----------------------------------|---|
| | Proposed Residential Community (147 Units) ^a |
| <i>Average Weekday Daily:</i> | |
| Entering | 400 |
| <u>Exiting</u> | <u>400</u> |
| Total | 800 |
| <i>Weekday Morning Peak Hour:</i> | |
| Entering | 13 |
| <u>Exiting</u> | <u>37</u> |
| Total | 50 |
| <i>Weekday Evening Peak Hour:</i> | |
| Entering | 39 |
| <u>Exiting</u> | <u>25</u> |
| Total | 64 |

^aBased on ITE LUC 221, *Multifamily Housing (Mid-Rise)*.

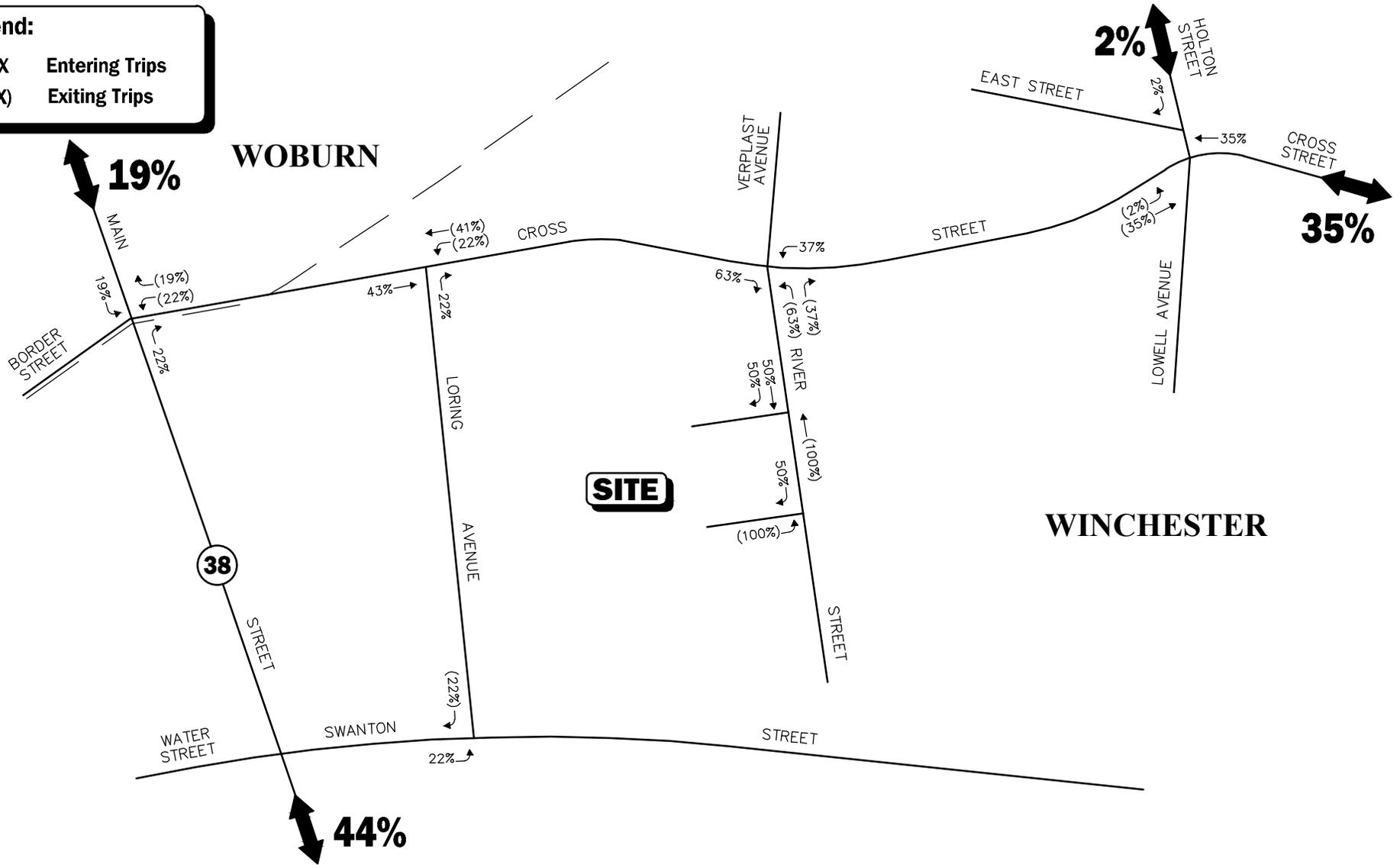
Project-Generated Traffic Volume Summary

As can be seen in Table 5, the Project is expected to generate approximately 800 vehicle trips on an average weekday (two-way, 24-hour volume, or 400 vehicles entering and 400 exiting), with 50 vehicle trips (13 vehicles entering and 37 exiting) expected during the weekday morning peak-hour and 64 vehicle trips (39 vehicles entering and 25 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 Winchester, and then refined based on existing traffic patterns within the study area during the commuter peak periods. This methodology is consistent with the residential nature of the Project and commuter traffic patterns during the peak hours. The general trip distribution for the Project is graphically depicted on Figure 7. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figures 8 and 9.

Legend:
XX Entering Trips
(XX) Exiting Trips

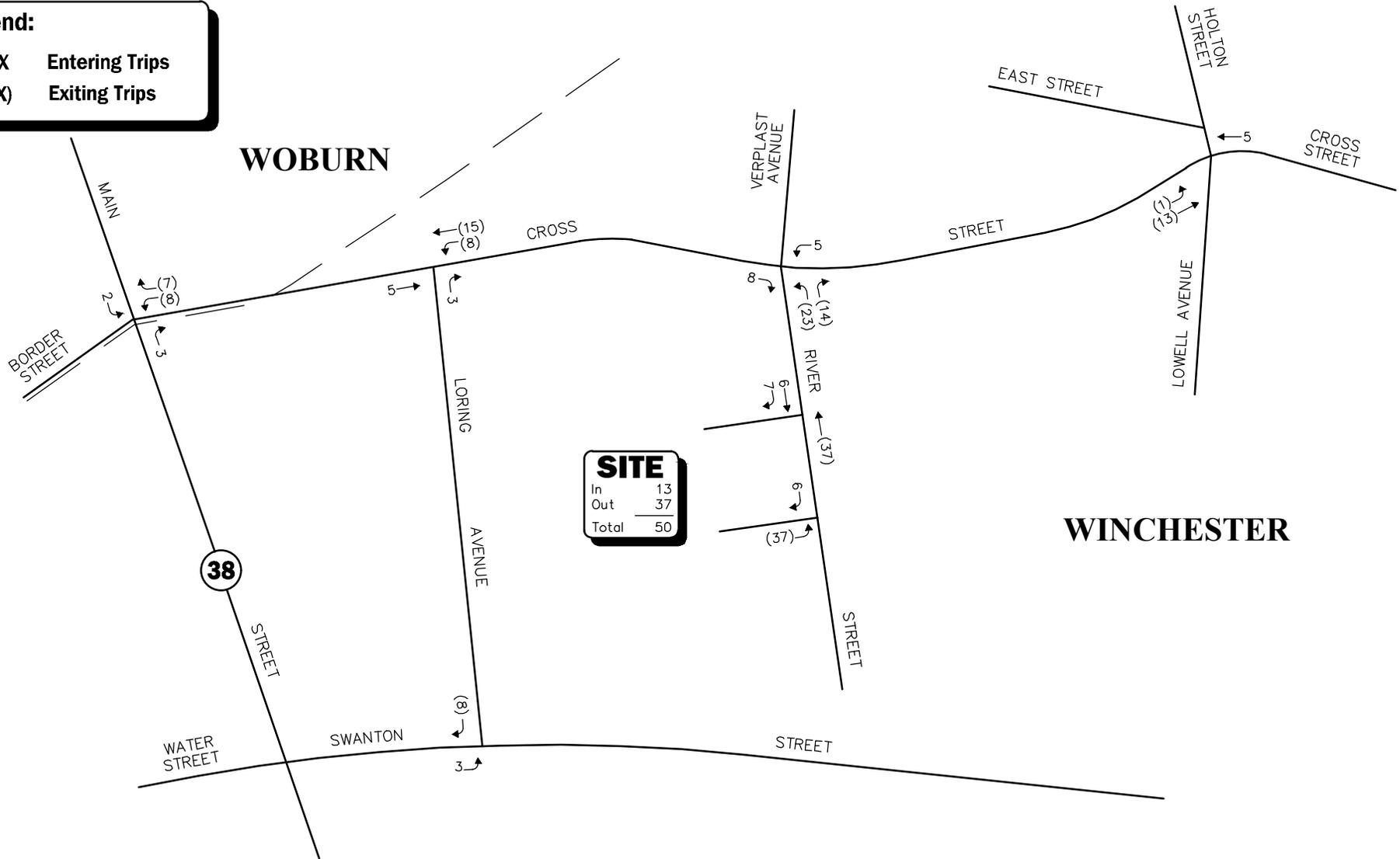


Not To Scale

Figure 7
 Trip Distribution Map

Legend:

XX Entering Trips
(XX) Exiting Trips



Not To Scale



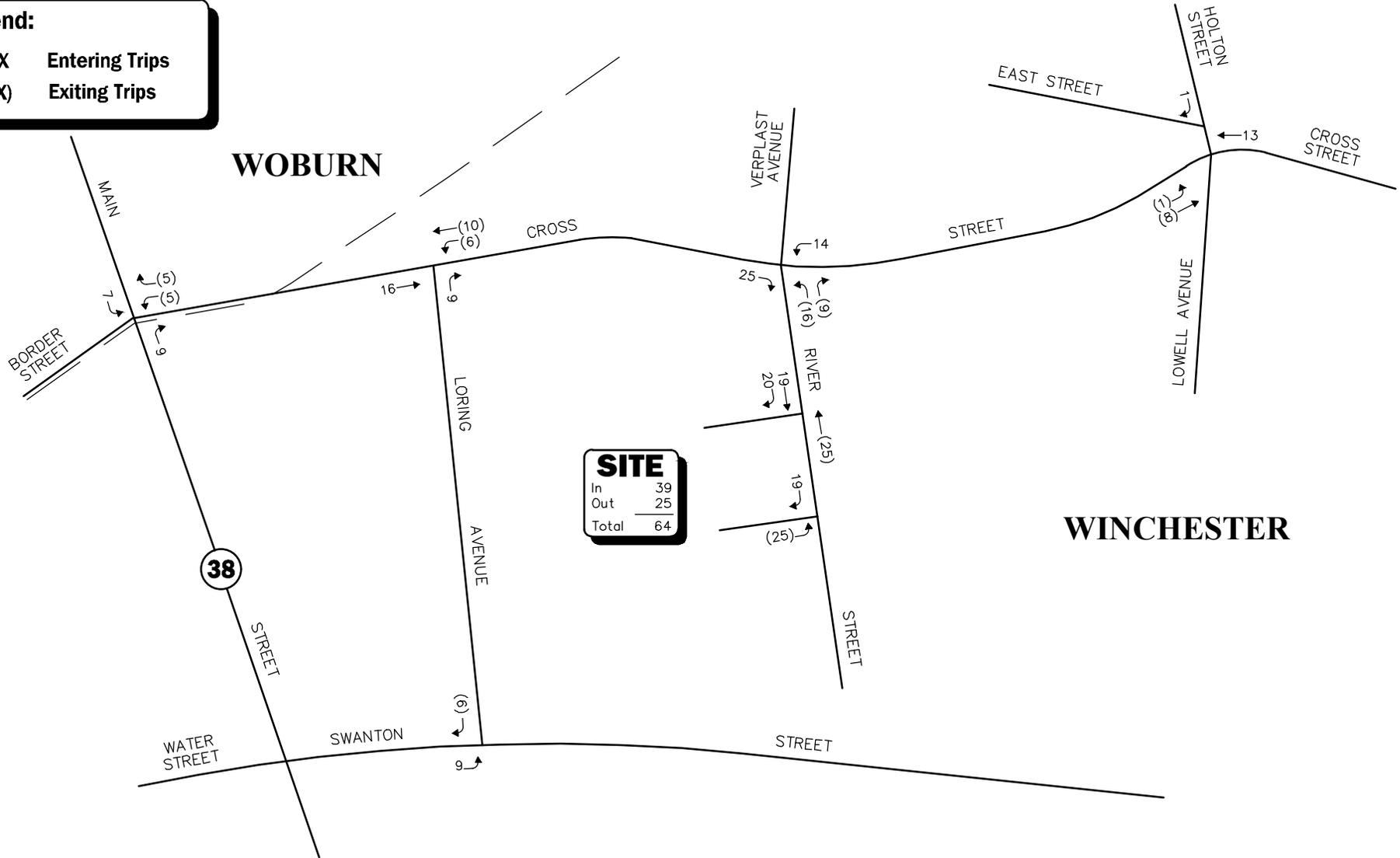
Figure 8

**Project-Generated
 Weekday Morning
 Peak Hour Traffic Volumes**

R:\7745\May 2019\7745nt0.dwg, Mon May 20 10:59:07 2019

Legend:

XX Entering Trips
(XX) Exiting Trips



Not To Scale



Figure 9
Project-Generated
Weekday Evening
Peak Hour Traffic Volumes

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FUTURE TRAFFIC VOLUMES - BUILD CONDITION

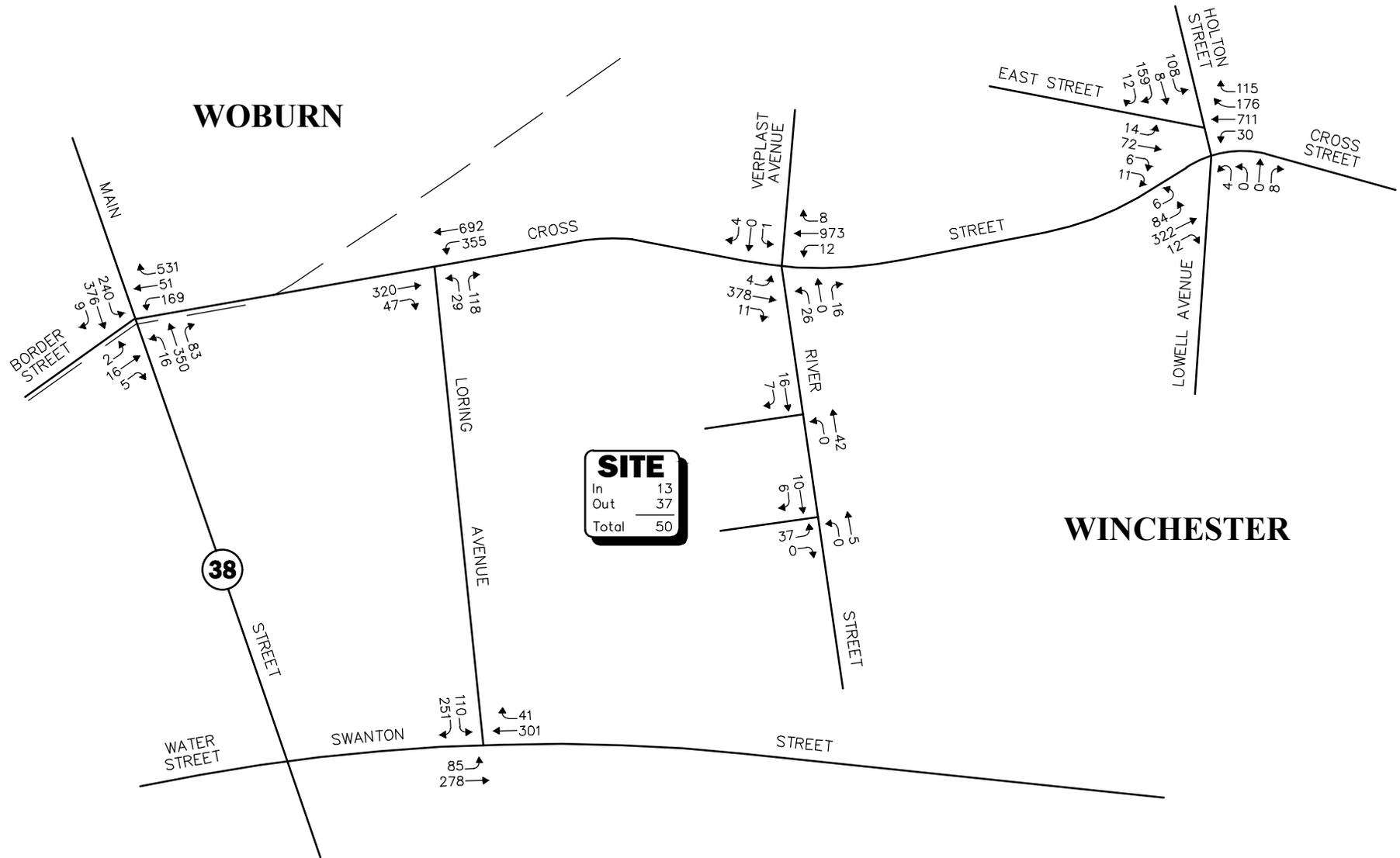
The 2026 Build condition traffic volumes were developed by adding the traffic expected to be generated by the Project to the 2026 No-Build condition traffic volumes. The 2026 Build weekday morning and evening peak-hour traffic-volumes are graphically depicted on Figures 10 and 11, respectively.

A summary of peak-hour projected traffic-volume increases outside of the study area that is the subject of this assessment is shown in Table 6. These volumes are based on the expected increases from the Project.

**Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES**

| Location/Peak Hour | 2019 Existing | 2026 No-Build | 2026 Build | Traffic Volume Increase Over No-Build | Percent Increase Over No-Build |
|---|------------------|------------------|---------------|---|---|
| <i>Main Street, north of Cross Street:</i> | | | | | |
| Weekday Morning | 1,522 | 1,699 | 1,708 | 9 | 0.5 |
| Weekday Evening | 1,607 | 1,795 | 1,807 | 12 | 0.7 |
| <i>Main Street, south of Cross Street:</i> | | | | | |
| Weekday Morning | 1,062 | 1,188 | 1,199 | 11 | 0.9 |
| Weekday Evening | 1,074 | 1,210 | 1,224 | 14 | 1.2 |
| <i>Holton Street, north of Cross Street:</i> | | | | | |
| Weekday Morning | 450 | 499 | 500 | 1 | 0.2 |
| Weekday Evening | 516 | 572 | 574 | 2 | 0.3 |
| <i>Cross Street, east of Holton Street:</i> | | | | | |
| Weekday Morning | 1,373 | 1,524 | 1,542 | 18 | 1.2 |
| Weekday Evening | 1,445 | 1,620 | 1,641 | 21 | 1.3 |
| <i>Swanton Street, west of Loring Avenue:</i> | | | | | |
| Weekday Morning | 810 | 904 | 915 | 18 | 1.2 |
| Weekday Evening | 878 | 992 | 1,007 | 21 | 1.5 |

As shown in Table 6, Project-related traffic-volume increases outside of the study area relative to 2026 No-Build conditions are anticipated to range from 0.2 to 1.5 percent during the peak periods, with vehicle increases shown to range from 1 to 21 vehicles. ***When dispersed over the peak-hour, the identified traffic volume increases would not result in a significant impact (increase) on motorist delays or vehicle queuing outside of the immediate study area that is the subject of this assessment.***



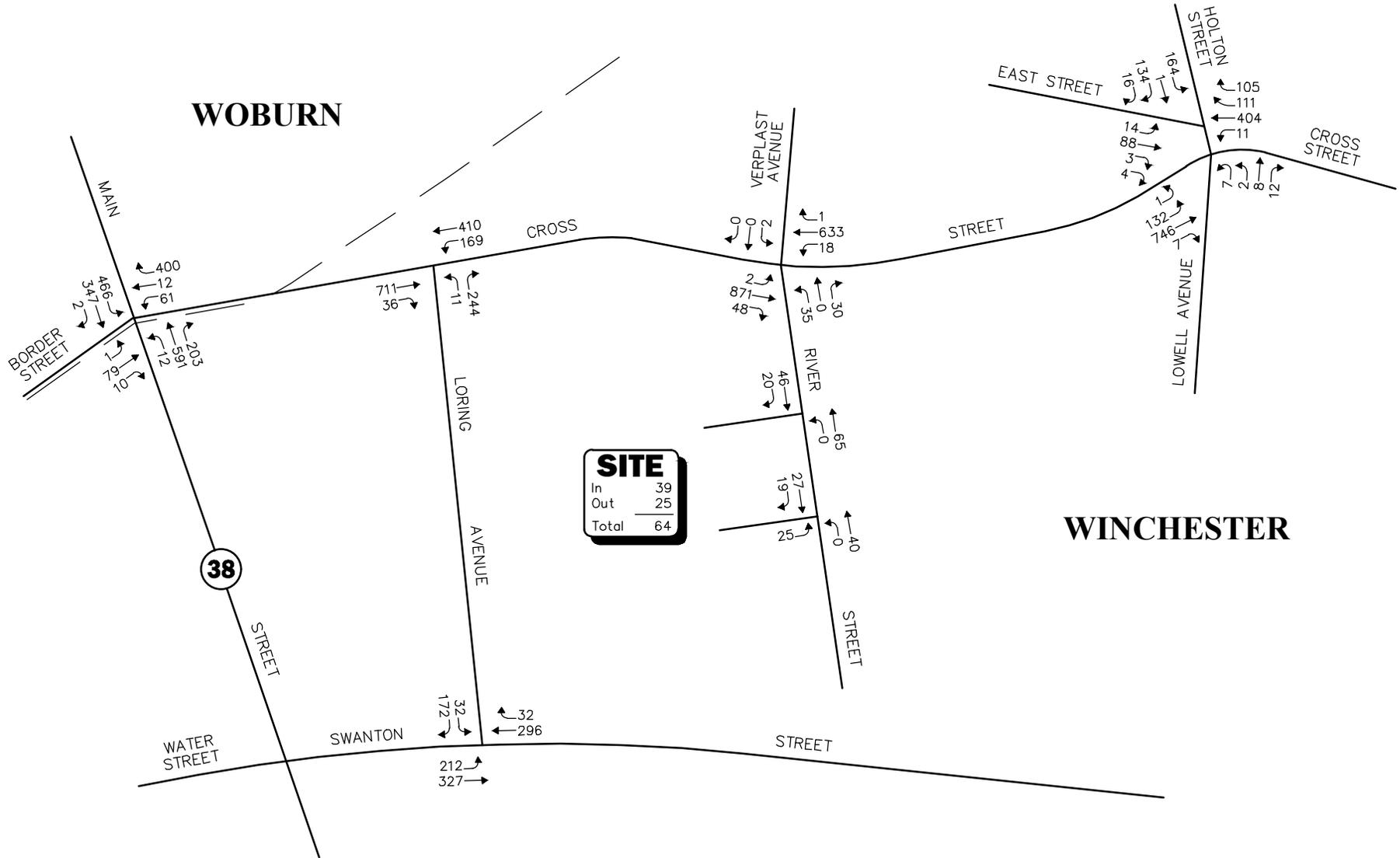
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 10

2026 Build
Weekday Morning
Peak Hour Traffic Volumes





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

Not To Scale

Figure 11

2026 Build
Weekday Evening
Peak Hour Traffic Volumes

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

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

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

⁹The 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*.¹⁰ 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) |
|--|-------------|--|
| $v/c \leq 1.0$ | $v/c > 1.0$ | |
| 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 |

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010; page 19-2.

¹⁰*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 six seconds or more at an intersection. 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 three 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).

Vehicle queue observations were performed at the Cross Street/Holton Street/East Street/Lowell Avenue and Main Street/Cross Street/Border Street intersections during the weekday morning and evening peak period in order to calibrate the existing vehicle queues on the Holton Street and Cross street approaches to the subject intersections.

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2019 Existing, 2026 No-Build and 2026 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Table 8. The detailed analysis results are 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.

Cross Street at Holton Street, East Street and Lowell Avenue

No change in LOS or vehicle queuing is predicted to occur over No-Build conditions, with Project-related impacts defined as an increase in average motorist delay of up to 17.4 seconds. Independent of the Project it was noted that left-turn movements from Holton Street and all movements from Lowell Avenue were operating at or over capacity (defined as LOS "E" or "F", respectively) during both the weekday morning and evening peak hours, with residual vehicle queuing of up to 14 vehicles.

Cross Street at River Street and Verplast Avenue

The addition of Project-related traffic was shown to result in a change in LOS for the River Street approach from LOS D to LOS E during the weekday morning peak-hour as a result of an increase in average motorist delay of 14.8 seconds, with vehicle queues predicted to increase by up to two (2) vehicles, and from LOS E to LOS F during the weekday evening peak-hour as a result of an increase in average motorist delay of 37.2 seconds, with vehicle queues also predicted to increase by up to two (2) vehicles. In addition, it was noted that all movements from Verplast Avenue were identified to be operating at or over capacity during the weekday evening peak-hour independent of the Project.

Main Street at Cross Street and Border Street

No change in LOS is predicted to occur over No-Build conditions, with Project-related impacts defined as an increase in vehicle queuing of up to one (1) vehicle. Independent of the Project, it was noted that all movements from Border Street and left-turn/through movements from Cross Street were identified to be operating over capacity during both the weekday morning and evening peak hours, with residual vehicle queuing of up to 22 vehicles. Project-related impacts on these movements were identified as a predicted increase in vehicle queuing of up to one (1) vehicle.

Cross Street at Loring Avenue

The addition of Project-related traffic was shown to result in a change in LOS for the Loring Avenue approach from LOS E to LOS F during the weekday evening peak-hour as a result of an increase in average motorist delay of 9.5 seconds, with vehicle queues predicted to increase by up to one (1) vehicle. Independent of the Project, it was noted that all movements from Loring Avenue were identified to be operating at or over capacity during both the weekday morning and evening peak-hours, with residual vehicle queuing of up to 14 vehicles.

Swanton Street at Loring Avenue

No change in LOS is predicted to occur over No-Build conditions, with Project-related impacts defined as an increase in vehicle queuing of up to one (1) vehicle. Independent of the Project, it was noted that all movements from Loring Avenue were identified to be operating over capacity during the weekday morning peak-hour, with residual vehicle queuing of up to 12 vehicles. Project-related impacts on these movements were identified as a predicted increase in vehicle queuing of up to one (1) vehicle.

River Street at the Project Site Driveways

All movements and the Project site driveway intersections with River Street were shown to operate at LOS A during both the weekday morning and evening peak hours with negligible vehicle queuing predicted.

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

| Unsignalized Intersection/ Peak Hour/Movement | 2019 Existing | | | | 2026 No-Build | | | | 2026 Build | | | |
|--|---------------------|--------------------|------------------|--|---------------|-------|-----|---------------------------|------------|-------|-----|---------------------------|
| | Demand ^a | Delay ^b | LOS ^c | Queue ^d 95 th | Demand | Delay | LOS | Queue 95 th | Demand | Delay | LOS | Queue 95 th |
| <i>Cross Street at Holton Street, East Street and Lowell Avenue</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| Cross Street EB LT/TH/RT | 369 | 3.4 | A | 1 | 410 | 4.0 | A | 1 | 424 | 4.0 | A | 1 |
| Cross Street WB LT/TH/RT | 926 | 0.6 | A | 0 | 1,027 | 0.7 | A | 0 | 1,032 | 0.7 | A | 0 |
| East Street SEB LT/TH/RT | 93 | 11.5 | B | 1 | 103 | 12.2 | B | 1 | 103 | 12.2 | B | 1 |
| Lowell Avenue NB LT/TH/RT | 12 | 39.6 | E | 1 | 14 | >50.0 | F | 1 | 14 | >50.0 | F | 1 |
| Holton Street SB LT | 162 | >50.0 | F | 8 | 180 | >50.0 | F | 12 | 180 | >50.0 | F | 12 |
| Holton Street SB TH/RT | 165 | 24.2 | C | 3 | 184 | 33.3 | D | 4 | 184 | 34.0 | D | 4 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| Cross Street EB LT/TH/RT | 780 | 3.0 | A | 1 | 877 | 3.6 | A | 1 | 886 | 3.7 | A | 1 |
| Cross Street WB LT/TH/RT | 552 | 0.3 | A | 0 | 618 | 0.3 | A | 0 | 631 | 0.3 | A | 0 |
| East Street SEB LT/TH/RT | 103 | 11.4 | B | 1 | 114 | 11.9 | B | 1 | 114 | 11.9 | B | 1 |
| Lowell Avenue NB LT/TH/RT | 26 | 41.1 | E | 1 | 29 | >50.0 | F | 2 | 29 | >50.0 | F | 2 |
| Holton Street SB LT | 227 | >50.0 | F | 8 | 252 | >50.0 | F | 14 | 252 | >50.0 | F | 14 |
| Holton Street SB TH/RT | 132 | 11.4 | B | 1 | 146 | 12.0 | B | 1 | 147 | 12.1 | B | 1 |
| <i>Cross Street at River Street and Verplast Avenue</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| Cross Street EB LT/TH/RT | 347 | 0.2 | A | 0 | 385 | 0.3 | A | 0 | 393 | 0.3 | A | 0 |
| Cross Street WB LT/TH/RT | 883 | 0.2 | A | 0 | 980 | 0.2 | A | 0 | 985 | 0.4 | A | 0 |
| River Street NB LT/TH/RT | 5 | 26.4 | D | 0 | 5 | 32.1 | D | 0 | 42 | 46.9 | E | 2 |
| Verplast Avenue SB LT/TH/RT | 5 | 21.0 | C | 0 | 5 | 24.3 | C | 0 | 5 | 25.0 | C | 0 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| Cross Street EB LT/TH/RT | 798 | 0.1 | A | 0 | 896 | 0.1 | A | 0 | 921 | 0.1 | A | 0 |
| Cross Street WB LT/TH/RT | 570 | 0.1 | A | 0 | 638 | 0.2 | A | 0 | 652 | 0.8 | A | 0 |
| River Street NB LT/TH/RT | 36 | 33.1 | D | 1 | 40 | 47.8 | E | 2 | 65 | >50.0 | F | 4 |
| Verplast Avenue SB LT/TH/RT | 2 | 44.3 | E | 0 | 2 | >50.0 | F | 0 | 2 | >50.0 | F | 0 |
| <i>Main Street at Cross Street and Border Street</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| Border Street EB LT/TH/RT | 22 | >50.0 | F | 1 | 23 | >50.0 | F | 2 | 23 | >50.0 | F | 2 |
| Cross Street WB LT/TH | 191 | >50.0 | F | 15 | 212 | >50.0 | F | 21 | 220 | >50.0 | F | 22 |
| Cross Street WB RT | 472 | 13.3 | B | 4 | 524 | 15.3 | C | 5 | 531 | 15.5 | C | 5 |
| Main Street NB LT/TH/RT | 395 | 0.5 | A | 0 | 446 | 0.5 | A | 0 | 449 | 0.5 | A | 0 |
| Main Street SB LT/TH/RT | 739 | 4.3 | A | 1 | 823 | 4.9 | A | 1 | 825 | 5.0 | A | 1 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| Border Street EB LT/TH/RT | 81 | >50.0 | F | 10 | 90 | >50.0 | F | 11 | 90 | >50.0 | F | 11 |
| Cross Street WB LT/TH | 60 | >50.0 | F | 7 | 68 | >50.0 | F | 9 | 73 | >50.0 | F | 10 |
| Cross Street WB RT | 356 | 35.5 | E | 7 | 395 | >50.0 | F | 12 | 400 | >50.0 | F | 12 |
| Main Street NB LT/TH/RT | 710 | 0.3 | A | 0 | 797 | 0.3 | A | 0 | 806 | 0.3 | A | 0 |
| Main Street SB LT/TH/RT | 722 | 11.4 | B | 3 | 808 | 15.0 | C | 5 | 815 | 15.6 | C | 5 |

See notes at end of table.

Table 8 (Continued)

UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

| Unsignalized Intersection/ Peak Hour/Movement | 2019 Existing | | | | 2026 No-Build | | | | 2026 Build | | | |
|---|---------------------|--------------------|------------------|--|---------------|-------|-----|---------------------------|------------|-------|-----|---------------------------|
| | Demand ^a | Delay ^b | LOS ^c | Queue ^d 95 th | Demand | Delay | LOS | Queue 95 th | Demand | Delay | LOS | Queue 95 th |
| <i>Cross Street at Loring Avenue</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| Cross Street EB TH/RT | 329 | 0.0 | A | 0 | 362 | 0.0 | A | 0 | 367 | 0.0 | A | 0 |
| Cross Street WB LT/TH | 923 | 8.1 | A | 2 | 1,024 | 10.2 | B | 2 | 1,047 | 10.4 | B | 3 |
| Loring Avenue NB LT/RT | 129 | >50.0 | F | 8 | 144 | >50.0 | F | 13 | 147 | >50.0 | F | 14 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| Cross Street EB TH/RT | 655 | 0.0 | A | 0 | 731 | 0.0 | A | 0 | 747 | 0.0 | A | 0 |
| Cross Street WB LT/TH | 502 | 4.9 | A | 1 | 563 | 5.9 | A | 1 | 579 | 6.2 | A | 1 |
| Loring Avenue NB LT/RT | 215 | 28.5 | D | 4 | 246 | 49.1 | E | 7 | 255 | >50.0 | F | 8 |
| <i>Swanton Street at Loring Avenue</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| Swanton Street EB LT/TH | 323 | 2.5 | A | 1 | 360 | 2.6 | A | 1 | 363 | 2.7 | A | 1 |
| Swanton Street WB TH/RT | 305 | 0.0 | A | 0 | 342 | 0.0 | A | 0 | 342 | 0.0 | A | 0 |
| Loring Avenue SB LT/RT | 318 | 30.3 | D | 7 | 353 | >50.0 | F | 11 | 361 | >50.0 | F | 12 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| Swanton Street EB LT/TH | 468 | 4.3 | A | 1 | 530 | 4.7 | A | 1 | 539 | 4.8 | A | 1 |
| Swanton Street WB TH/RT | 293 | 0.0 | A | 0 | 328 | 0.0 | A | 0 | 328 | 0.0 | A | 0 |
| Loring Avenue SB LT/RT | 175 | 15.7 | C | 2 | 198 | 19.0 | C | 3 | 204 | 19.6 | C | 3 |
| <i>River Street at the North Project Site Driveway</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| River Street NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 42 | 0.0 | A | 0 |
| River Street SB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 23 | 0.0 | A | 0 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| River Street NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 65 | 0.0 | A | 0 |
| River Street SB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 66 | 0.0 | A | 0 |
| <i>River Street at the South Project Site Driveway</i> | | | | | | | | | | | | |
| <i>Weekday Morning:</i> | | | | | | | | | | | | |
| River Street NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 5 | 0.0 | A | 0 |
| River Street SB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 16 | 0.0 | A | 0 |
| South Project Site Driveway WB LT/RT | -- | -- | -- | -- | -- | -- | -- | -- | 37 | 8.8 | A | 0 |
| <i>Weekday Evening:</i> | | | | | | | | | | | | |
| River Street NB LT/TH | -- | -- | -- | -- | -- | -- | -- | -- | 40 | 0.0 | A | 0 |
| River Street SB TH/RT | -- | -- | -- | -- | -- | -- | -- | -- | 46 | 0.0 | A | 0 |
| South Project Site Driveway WB LT/RT | -- | -- | -- | -- | -- | -- | -- | -- | 25 | 9.0 | A | 0 |

^aDemand in vehicles per hour.

^bAverage control delay per vehicle (in seconds).

^cLevel-of-Service.

^dQueue length in vehicles.

NB = northbound; SB = southbound; SEB = southeastbound 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 River Street and for the River Street approach to the Cross Street/River Street/Verplast Avenue intersection, the primary access to the Project site, in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)¹¹ 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.

¹¹*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 |
| <i>Cross Street at River Street and Verplast Avenue</i> | | | |
| <i>Stopping Sight Distance:</i> | | | |
| Cross Street approaching from the east | 250 | -- | 500+ |
| Cross Street approaching from the west | 250 | -- | 490 |
| <i>Intersection Sight Distance:</i> | | | |
| Looking to the east from River Street | 250 | 335/390 | 422 |
| Looking to the west from River Street | 250 | 335/390 | 500+ |
| <i>River Street at the North Project Site Driveway</i> | | | |
| <i>Stopping Sight Distance:</i> | | | |
| River Street approaching from the north | 200 | -- | 200+ ^c |
| River Street approaching from the south | 115 | -- | 500+ ^d |
| <i>River Street at the South Project Site Driveway</i> | | | |
| <i>Stopping Sight Distance:</i> | | | |
| River Street approaching from the north | 200 | -- | 500+ |
| River Street approaching from the south | 115 | -- | 180 ^d |
| <i>Intersection Sight Distance:</i> | | | |
| Looking to the north from the South Project Site Driveway | 200 | 290/335 | 500+ |
| Looking to the south from the South Project Site Driveway | 115 | 195/225 | 180 ^d |

^aRecommended 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 Cross Street and a 30 mph approach speed along River Street approaching from the north and 20 mph approaching from the south.

^bValues shown are the intersection sight distance for a vehicle turning right/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.

^cClear line of sight is provided from Cross Street

^dClear line of sight is provided to/from the south end of River Street

As can be seen in Table 9, the available lines of sight to and from River Street at the Cross Street/River Street/Verplast Avenue intersection were found to exceed the required minimum sight distance (SSD) to function in a safe manner based on a 35 mph approach speed along Cross Street, which is consistent with the measured 85th percentile vehicle travel speed and 5 mph above the posted speed limit (30 mph). Lines of sight at the Project site driveway intersections with River Street were also found to exceed the required minimum sight distance for safe operation based on a 30 mph approach speed for vehicles approaching the driveways from the north and a 20 mph approach speed for vehicles approaching from the south given that River Street ends approximately 140 feet south of the Project site.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of a 147-unit multifamily residential community to be located at 19-35 River Street in Winchester, 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 ITE,¹² the Project is expected to generate approximately 800 vehicle trips on an average weekday (two-way, 24-hour volume), with 50 vehicle trips expected during the weekday morning peak-hour and 64 vehicle trips expected during the weekday evening peak-hour;
2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with Project-related impacts generally defined as an increase in motorist delay of up to 37.2 seconds (River Street approach to Cross Street) and in vehicle queuing of up to two (2) vehicles;
3. Independent of the Project, it was noted that one or more movements at the study area intersections were identified to be operating at or over capacity (defined as LOS “E” or “F”, respectively) during one or both weekday peak hours, with the Main Street/ Cross Street/Border Street, Cross Street/Holton Street/ East Street/Lowell Avenue and Cross Street/Loring Avenue intersections appearing to meet the criteria for the installation of a traffic control signal in order to accommodate current traffic demands;
4. All movements at the Project site driveway intersections with River Street are expected to operate at LOS A during both the weekday morning and evening peak hours, with negligible vehicle queuing predicted;

¹²Ibid 1.

5. With the exception of the Main Street/Cross Street/Border Street intersection, the study area intersections were found to have motor vehicle crash rates that were below the MassDOT average crash rates. Recommendations have been provided as a part of this assessment to advance safety-related improvements at this intersection (discussion follows); and
6. Lines of sight to and from the Cross Street/River Street/Verplast Avenue intersection and at the Project site driveway intersections with River Street were found to exceed the required minimum distance for the intersections to function in a safe manner.

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 will be provided by way of two (2) driveways that will be configured as follows: an entrance-only driveway that will intersect the west side of River Street approximately 160 feet south of Cross Street and will provide access to the surface parking area and the underground parking garage, and a full access driveway that will intersect the west side of River Street approximately 560 feet south of Cross Street and will provide access to the parking garage beneath the proposed residential building. A gated emergency vehicle access will also be provided to the Project site that will intersect the west side of River Street approximately 610 feet south of Cross Street. Secondary access to River Street and the Project site for emergency vehicles is currently provided by way of a gated connection to The Village residential condominium community which is accessed from Swanson Street. The following recommendations are offered with respect to Project access and internal circulation, many of which are reflected on the Site Plans:

- The one-way driveway serving the Project site will be a minimum of 20-feet in width or as required to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Winchester Fire Department. “One-Way” and “Do Not Enter” signs with accompanying pavement markings will be installed to reinforce the one-way operation of the drives.
- The full access Project site driveway will be a minimum of 24-feet and provide one entering and one exiting travel lane.
- The emergency vehicle access should be 20-feet in width unless otherwise approved by the Winchester Fire Department and secured by means of a gate or other device acceptable to the Fire Department.

- Vehicles exiting the Project site will be placed under STOP-sign control with a marked STOP-line provided.
- 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).¹³
- A sidewalk will be provided along the west side of River Street and will extend to the exiting sidewalk along Cross Street to the extent that there is available public right-of-way for the extension beyond the Project site frontage.
- A school bus waiting area will be provided at an appropriate location defined in consultation with the Town.
- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas of the Project site driveways will be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveways will be promptly removed where such accumulations would impede sight lines.
- Consideration will be given to installing electric vehicle charging stations or the associated infrastructure capacity within the Project site.

Off-Site

Main Street at Cross Street and Border Street

The addition of Project-related traffic to the Main Street/Cross Street/Border Street intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that one or more movements at the intersection were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Main Street during the peak hours. In addition, the intersection was found to have a motor vehicle crash rate that was above the MassDOT District 4 average crash rate for an unsignalized intersection. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project.

An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD¹⁴ indicates that the installation of a traffic control signal at the intersection in order to improve operating conditions may be warranted under existing conditions. In an effort to advance operational and safety improvements at this intersection that are warranted as a result of existing conditions unrelated to the Project, the Project proponent will facilitate the completion of a Road Safety Audit (RSA) in order to identify improvement strategies for this intersection.

Cross Street at River Street and Verplast Avenue

Independent of the Project, it is recommended that a STOP-sign and marked STOP-line be provided on the Verplast Avenue approach to Cross Street in order to formalize the assignment of the vehicular right-of way at this intersection.

¹³Ibid 2.

¹⁴Ibid 2.

Cross Street at Holton Street, East Street and Lowell Avenue

The addition of Project-related traffic to the Cross Street/Holton Street/East Street/Lowell Avenue intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that one or more movements at the intersection were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Cross Street during the peak hours. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project. An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD indicates that the installation of a traffic control signal in order to improve operating conditions at the intersection may be warranted under existing conditions.

Recognizing the importance of this intersection in providing access to the Project and the residences and businesses in the area, the Project proponent will undertake a formal Traffic Signal Warrants Analysis (TSWA) for the intersection in accordance with the methodology outlined in the MUTCD, including performing a continuous 12-hour (7:00 AM to 7:00 PM) manual turning movement count, and will summarize the results of the analysis in a technical memorandum that will be provided to the Town. To the extent that the installation of a traffic control signal is found to be warranted and is desired by the Town, the Project proponent will contribute a “fair-share” portion of the cost to design and construct a traffic control signal at the intersection based on the increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

In addition, it is recommended that a STOP-sign and marked STOP-line be provided on the East Street and Lowell Avenue approaches to the intersection in order to formalize the assignment of the vehicular right-of way and the desired stopping point for vehicles on these approaches to the intersection.

Cross Street at Loring Avenue

The addition of Project-related traffic to the Cross Street/Loring Avenue intersection was not shown to result in a significant increase in motorist delays or vehicle queuing over No-Build conditions; however, it was noted that all movements from Loring Avenue were operating at or over capacity independent of the Project due to the relatively large volume of conflicting traffic on Cross Street during the peak hours. Absent improvements, motorist delays are expected to further increase in the future, again, independent of the Project. An initial review of the four-hour traffic signal warrant (Warrant 2) presented in the MUTCD indicates that the installation of a traffic control signal in order to improve operating conditions at the intersection may be warranted under existing conditions. That being said, installing a traffic signal at this location may induce additional traffic to use Loring Avenue.

Recognizing the importance of this intersection in providing access to the Project and the residences and businesses in the area, the Project proponent will undertake a formal TSWA for the intersection in accordance with the methodology outlined in the MUTCD, including performing a continuous 12-hour (7:00 AM to 7:00 PM) manual turning movement count, and will summarize the results of the analysis in a technical memorandum that will be provided to the Town. To the extent that the installation of a traffic control signal is found to be warranted and is desired by the Town, the Project proponent will contribute a “fair-share” portion of the cost to design and construct a traffic control signal or alternative improvement measure at the intersection based on the increase in peak-hour traffic at the intersection that the Project represents over No-Build conditions.

Transportation Demand Management

Public transportation services are provided within the study area by the MBTA by way of bus Route 134, *North Woburn – Wellington Station*, and Winchester Center Station on the Lowell Line of the commuter rail system. MBTA bus Route 134 provides service along Main Street with a stop at Lydon Court, which is within an approximate 12-minute walking distance (approximately 0.60 miles) of the Project site. Winchester Center Station on the MBTA commuter rail system is located approximately 1.5 miles south of the Project site (an approximate 5 minute driving distance) at 29 Waterfield Road, and is served by the Route 134 bus. In addition, the MBTA provides The RIDE paratransit services to eligible persons who cannot use fixed-route transit (bus, subway, trolley) due to a physical, cognitive or mental disability in compliance with the Americans with Disabilities Act (ADA).

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

- The owner or property manager will contact MassRIDES to obtain information on facilitating and encouraging healthy transportation options for residents of the Project;
- 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 through MassRIDES’ and their Bay State Commute program which rewards individuals that choose to walk, bicycle, carpool, vanpool or that use public transportation to travel to and from work;
- Residents will be made aware of the Emergency Ride Home (ERH) program available through MassRIDES, which reimburses employees of a participating MassRIDES employer partner worksite that is registered for ERH and that carpool, take transit, bicycle, walk or vanpool to work;
- Pedestrian accommodations will be provided consisting of a sidewalk along the Project site frontage that will extend to the sidewalk along Cross Street to the extent that there is available public right-of-way for the extension beyond the Project site frontage;
- A mail drop will be provided in a central location; and
- Secure bicycle parking will be provided consisting of: i) exterior bicycle parking conveniently located proximate to the building entrance; and ii) weather protected bicycle parking located in a secure area within the building.

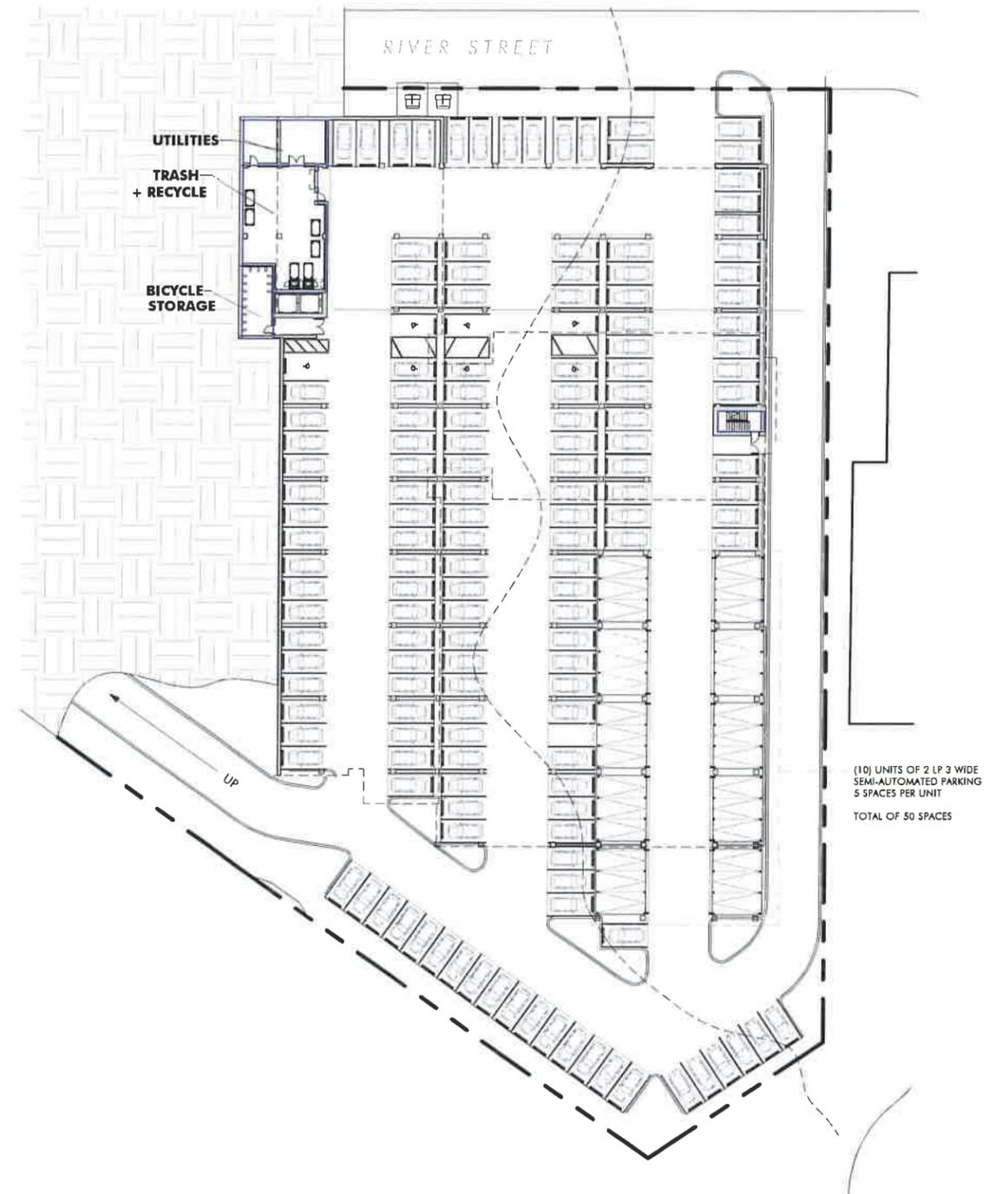
In addition, the Project proponent will participate with the Town and other area multifamily residential communities and business to discuss opportunities to establish a Transportation Management Association (TMA) for Winchester as a means of providing a local shuttle service for residents and businesses. This service may take the form of an expansion of the shuttle service that is currently operated by Winchester Hospital.

With implementation of the above recommendations, safe and efficient vehicular, pedestrian and bicycle access will 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
MANUAL TURNING MOVEMENT COUNT DATA
SEASONAL ADJUSTMENT DATA
VEHICLE TRAVEL SPEED DATA
PUBLIC TRANSPORTATION SCHEDULES
MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING
BACKGROUND DEVELOPMENT TRAFFIC-VOLUME NETWORKS
GENERAL BACKGROUND TRAFFIC GROWTH
TRIP-GENERATION CALCULATIONS
JOURNEY TO WORK TRIP DISTRIBUTION
CAPACITY ANALYSIS WORKSHEETS

PROJECT SITE PLAN



1 FIRST FLOOR ENTRY GRADE PLAN
1" = 60'-0"

2 PARKING LEVEL PLAN
1" = 60'-0"

EMBARC

GROUND FLOOR PLAN



19-35 RIVER ST
19-35 RIVER ST, WINCHESTER,
MA 01890

A16

05/03/2019

AUTOMATIC TRAFFIC RECORDER COUNT DATA

Accurate Counts
978-664-2565

Location : Cross Street
Location : East of River Street
City/State: Winchester, MA

7745VOL1

| Start Time | 9/19/2018 Wed | WB | | Hour Totals | | EB | | Hour Totals | | Combined Totals | |
|------------|------------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| | | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon |
| 12:00 | | 6 | 69 | | | 2 | 77 | | | | |
| 12:15 | | 4 | 57 | | | 1 | 80 | | | | |
| 12:30 | | 4 | 80 | | | 3 | 81 | | | | |
| 12:45 | | 4 | 84 | 18 | 290 | 2 | 89 | 8 | 327 | 26 | 617 |
| 01:00 | | 2 | 89 | | | 3 | 70 | | | | |
| 01:15 | | 1 | 91 | | | 0 | 95 | | | | |
| 01:30 | | 1 | 82 | | | 2 | 75 | | | | |
| 01:45 | | 0 | 84 | 4 | 346 | 1 | 95 | 6 | 335 | 10 | 681 |
| 02:00 | | 1 | 82 | | | 1 | 84 | | | | |
| 02:15 | | 1 | 87 | | | 0 | 104 | | | | |
| 02:30 | | 0 | 77 | | | 1 | 128 | | | | |
| 02:45 | | 3 | 74 | 5 | 320 | 0 | 113 | 2 | 429 | 7 | 749 |
| 03:00 | | 0 | 97 | | | 3 | 126 | | | | |
| 03:15 | | 1 | 109 | | | 0 | 151 | | | | |
| 03:30 | | 3 | 117 | | | 2 | 130 | | | | |
| 03:45 | | 0 | 107 | 4 | 430 | 0 | 148 | 5 | 555 | 9 | 985 |
| 04:00 | | 0 | 100 | | | 0 | 151 | | | | |
| 04:15 | | 2 | 102 | | | 2 | 168 | | | | |
| 04:30 | | 5 | 119 | | | 3 | 166 | | | | |
| 04:45 | | 5 | 109 | 12 | 430 | 4 | 190 | 9 | 675 | 21 | 1105 |
| 05:00 | | 7 | 116 | | | 16 | 162 | | | | |
| 05:15 | | 16 | 114 | | | 21 | 186 | | | | |
| 05:30 | | 11 | 136 | | | 10 | 153 | | | | |
| 05:45 | | 22 | 125 | 56 | 491 | 25 | 161 | 72 | 662 | 128 | 1153 |
| 06:00 | | 24 | 117 | | | 30 | 129 | | | | |
| 06:15 | | 49 | 94 | | | 43 | 154 | | | | |
| 06:30 | | 71 | 97 | | | 47 | 101 | | | | |
| 06:45 | | 126 | 55 | 270 | 363 | 64 | 99 | 184 | 483 | 454 | 846 |
| 07:00 | | 129 | 77 | | | 51 | 81 | | | | |
| 07:15 | | 183 | 50 | | | 83 | 94 | | | | |
| 07:30 | | 237 | 71 | | | 91 | 75 | | | | |
| 07:45 | | 195 | 59 | 744 | 257 | 90 | 61 | 315 | 311 | 1059 | 568 |
| 08:00 | | 188 | 56 | | | 69 | 40 | | | | |
| 08:15 | | 197 | 29 | | | 107 | 50 | | | | |
| 08:30 | | 148 | 42 | | | 96 | 39 | | | | |
| 08:45 | | 120 | 28 | 653 | 155 | 86 | 29 | 358 | 158 | 1011 | 313 |
| 09:00 | | 92 | 27 | | | 71 | 24 | | | | |
| 09:15 | | 101 | 24 | | | 65 | 20 | | | | |
| 09:30 | | 91 | 27 | | | 57 | 28 | | | | |
| 09:45 | | 61 | 24 | 345 | 102 | 85 | 15 | 278 | 87 | 623 | 189 |
| 10:00 | | 79 | 23 | | | 64 | 20 | | | | |
| 10:15 | | 87 | 16 | | | 57 | 14 | | | | |
| 10:30 | | 69 | 14 | | | 62 | 10 | | | | |
| 10:45 | | 78 | 21 | 313 | 74 | 70 | 6 | 253 | 50 | 566 | 124 |
| 11:00 | | 59 | 14 | | | 80 | 9 | | | | |
| 11:15 | | 73 | 14 | | | 63 | 2 | | | | |
| 11:30 | | 122 | 5 | | | 62 | 3 | | | | |
| 11:45 | | 82 | 3 | 336 | 36 | 77 | 6 | 282 | 20 | 618 | 56 |
| Total | | 2760 | 3294 | | | 1772 | 4092 | | | 4532 | 7386 |
| Percent | | 45.6% | 54.4% | | | 30.2% | 69.8% | | | 38.0% | 62.0% |

Accurate Counts
978-664-2565

Location : Cross Street
Location : East of River Street
City/State: Winchester, MA

7745VOL1

| Start Time | 9/20/2018 Thu | WB | | Hour Totals | | EB | | Hour Totals | | Combined Totals | |
|-------------|------------------|---------|-----------|-------------|-----------|---------|-----------|-------------|-----------|-----------------|-----------|
| | | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon | Morning | Afternoon |
| 12:00 | | 6 | 94 | | | 2 | 80 | | | | |
| 12:15 | | 1 | 82 | | | 1 | 91 | | | | |
| 12:30 | | 2 | 97 | | | 1 | 86 | | | | |
| 12:45 | | 4 | 83 | 13 | 356 | 1 | 93 | 5 | 350 | 18 | 706 |
| 01:00 | | 3 | 83 | | | 3 | 88 | | | | |
| 01:15 | | 4 | 90 | | | 1 | 61 | | | | |
| 01:30 | | 1 | 89 | | | 0 | 90 | | | | |
| 01:45 | | 0 | 84 | 8 | 346 | 0 | 95 | 4 | 334 | 12 | 680 |
| 02:00 | | 0 | 91 | | | 0 | 101 | | | | |
| 02:15 | | 1 | 89 | | | 0 | 118 | | | | |
| 02:30 | | 0 | 74 | | | 1 | 137 | | | | |
| 02:45 | | 3 | 87 | 4 | 341 | 0 | 139 | 1 | 495 | 5 | 836 |
| 03:00 | | 2 | 99 | | | 1 | 145 | | | | |
| 03:15 | | 1 | 98 | | | 2 | 156 | | | | |
| 03:30 | | 1 | 115 | | | 3 | 165 | | | | |
| 03:45 | | 2 | 120 | 6 | 432 | 2 | 168 | 8 | 634 | 14 | 1066 |
| 04:00 | | 1 | 123 | | | 1 | 158 | | | | |
| 04:15 | | 1 | 105 | | | 5 | 188 | | | | |
| 04:30 | | 4 | 122 | | | 4 | 200 | | | | |
| 04:45 | | 6 | 108 | 12 | 458 | 7 | 201 | 17 | 747 | 29 | 1205 |
| 05:00 | | 10 | 168 | | | 8 | 216 | | | | |
| 05:15 | | 16 | 131 | | | 20 | 194 | | | | |
| 05:30 | | 10 | 146 | | | 17 | 183 | | | | |
| 05:45 | | 20 | 111 | 56 | 556 | 25 | 175 | 70 | 768 | 126 | 1324 |
| 06:00 | | 27 | 114 | | | 41 | 157 | | | | |
| 06:15 | | 54 | 124 | | | 41 | 169 | | | | |
| 06:30 | | 69 | 114 | | | 42 | 148 | | | | |
| 06:45 | | 116 | 72 | 266 | 424 | 70 | 124 | 194 | 598 | 460 | 1022 |
| 07:00 | | 159 | 75 | | | 60 | 105 | | | | |
| 07:15 | | 209 | 54 | | | 60 | 85 | | | | |
| 07:30 | | 266 | 62 | | | 76 | 79 | | | | |
| 07:45 | | 198 | 60 | 832 | 251 | 82 | 66 | 278 | 335 | 1110 | 586 |
| 08:00 | | 218 | 68 | | | 90 | 49 | | | | |
| 08:15 | | 212 | 58 | | | 95 | 41 | | | | |
| 08:30 | | 168 | 57 | | | 106 | 34 | | | | |
| 08:45 | | 148 | 36 | 746 | 219 | 101 | 29 | 392 | 153 | 1138 | 372 |
| 09:00 | | 97 | 32 | | | 97 | 37 | | | | |
| 09:15 | | 119 | 27 | | | 54 | 28 | | | | |
| 09:30 | | 88 | 24 | | | 74 | 22 | | | | |
| 09:45 | | 88 | 22 | 392 | 105 | 79 | 15 | 304 | 102 | 696 | 207 |
| 10:00 | | 88 | 14 | | | 62 | 18 | | | | |
| 10:15 | | 69 | 13 | | | 83 | 10 | | | | |
| 10:30 | | 64 | 7 | | | 75 | 13 | | | | |
| 10:45 | | 71 | 15 | 292 | 49 | 84 | 10 | 304 | 51 | 596 | 100 |
| 11:00 | | 69 | 13 | | | 80 | 5 | | | | |
| 11:15 | | 90 | 12 | | | 75 | 5 | | | | |
| 11:30 | | 65 | 8 | | | 84 | 9 | | | | |
| 11:45 | | 77 | 6 | 301 | 39 | 80 | 4 | 319 | 23 | 620 | 62 |
| Total | | 2928 | 3576 | | | 1896 | 4590 | | | 4824 | 8166 |
| Percent | | 45.0% | 55.0% | | | 29.2% | 70.8% | | | 37.1% | 62.9% |
| Grand Total | | 5688 | 6870 | | | 3668 | 8682 | | | 9356 | 15552 |
| Percent | | 45.3% | 54.7% | | | 29.7% | 70.3% | | | 37.6% | 62.4% |

ADT ADT 12,454 AADT 12,454

Accurate Counts

978-664-2565

Location : Cross Street
 Location : East of River Street
 City/State: Winchester, MA

| Start Time | 9/17/2018 | | Tue | | Wed | | Thu | | Fri | | Sat | | Sun | | Week Average | |
|-------------|------------|------------|------------|------------|------------|------------|-----|----|-----|----|-----|----|-----|------------|--------------|-----|
| | WB | EB | WB | EB | WB | EB | WB | EB | WB | EB | WB | EB | WB | EB | WB | EB |
| 12:00 AM | * | * | 18 | 8 | 13 | 5 | * | * | * | * | * | * | * | * | 16 | 6 |
| 01:00 | * | * | 4 | 6 | 8 | 4 | * | * | * | * | * | * | * | * | 6 | 5 |
| 02:00 | * | * | 5 | 2 | 4 | 1 | * | * | * | * | * | * | * | * | 4 | 2 |
| 03:00 | * | * | 4 | 5 | 6 | 8 | * | * | * | * | * | * | * | * | 5 | 6 |
| 04:00 | * | * | 12 | 9 | 12 | 17 | * | * | * | * | * | * | * | * | 12 | 13 |
| 05:00 | * | * | 56 | 72 | 56 | 70 | * | * | * | * | * | * | * | * | 56 | 71 |
| 06:00 | * | * | 270 | 184 | 266 | 194 | * | * | * | * | * | * | * | * | 268 | 189 |
| 07:00 | * | * | 744 | 315 | 832 | 278 | * | * | * | * | * | * | * | 788 | 296 | |
| 08:00 | * | * | 653 | 358 | 746 | 392 | * | * | * | * | * | * | * | 700 | 375 | |
| 09:00 | * | * | 345 | 278 | 392 | 304 | * | * | * | * | * | * | * | 368 | 291 | |
| 10:00 | * | * | 313 | 253 | 292 | 304 | * | * | * | * | * | * | * | 302 | 278 | |
| 11:00 | * | * | 336 | 282 | 301 | 319 | * | * | * | * | * | * | * | 318 | 300 | |
| 12:00 PM | * | * | 290 | 327 | 356 | 350 | * | * | * | * | * | * | * | 323 | 338 | |
| 01:00 | * | * | 346 | 335 | 346 | 334 | * | * | * | * | * | * | * | 346 | 334 | |
| 02:00 | * | * | 320 | 429 | 341 | 495 | * | * | * | * | * | * | * | 330 | 462 | |
| 03:00 | * | * | 430 | 555 | 432 | 634 | * | * | * | * | * | * | * | 431 | 594 | |
| 04:00 | * | * | 430 | 675 | 458 | 747 | * | * | * | * | * | * | * | 444 | 711 | |
| 05:00 | * | * | 491 | 662 | 556 | 768 | * | * | * | * | * | * | * | 524 | 715 | |
| 06:00 | * | * | 363 | 483 | 424 | 598 | * | * | * | * | * | * | * | 394 | 540 | |
| 07:00 | * | * | 257 | 311 | 251 | 335 | * | * | * | * | * | * | * | 254 | 323 | |
| 08:00 | * | * | 155 | 158 | 219 | 153 | * | * | * | * | * | * | * | 187 | 156 | |
| 09:00 | * | * | 102 | 87 | 105 | 102 | * | * | * | * | * | * | * | 104 | 94 | |
| 10:00 | * | * | 74 | 50 | 49 | 51 | * | * | * | * | * | * | * | 62 | 50 | |
| 11:00 | * | * | 36 | 20 | 39 | 23 | * | * | * | * | * | * | * | 38 | 22 | |
| Lane | 0 | 0 | 6054 | 5864 | 6504 | 6486 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6280 | 6171 | |
| Day | 0 | 0 | 11918 | 12990 | 12990 | 12990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12451 | 12451 | |
| AM Peak | - | - | 07:00 | 08:00 | 07:00 | 08:00 | - | - | - | - | - | - | - | 07:00 | 08:00 | |
| Vol. | - | - | 744 | 358 | 832 | 392 | - | - | - | - | - | - | - | 788 | 375 | |
| PM Peak | - | - | 17:00 | 16:00 | 17:00 | 17:00 | - | - | - | - | - | - | - | 17:00 | 17:00 | |
| Vol. | - | - | 491 | 675 | 556 | 768 | - | - | - | - | - | - | - | 524 | 715 | |
| Comb. Total | 0 | 0 | 11918 | 12990 | 12990 | 12990 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12451 | 12451 | |
| ADT | ADT 12,454 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ADT 12,454 | ADT 12,454 | |

MANUAL TURNING MOVEMENT COUNT DATA

Accurate Counts

978-664-2565

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 2

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

| Start Time | Holton St | | | | | Cross St | | | | | Lowell Ave | | | | | Cross St | | | | | East St | | | | | | | | | | |
|--|------------|------|-------|------|------------|-----------|------|------|-------|------|------------|------|------|------|-------|-----------|------------|------|------|-------|----------------|------------|------|------|------|-------|------|------------|------------|--|--|
| | From North | | | | | From East | | | | | From South | | | | | From West | | | | | From Northwest | | | | | | | | | | |
| | Left | Thru | Right | HdRt | App. Total | Left | Thru | BrRt | Right | HdL | App. Total | Left | Thru | BrL | Right | HdL | App. Total | Left | Thru | Right | HdL | App. Total | Left | Thru | BrL | Right | HdRt | App. Total | Int. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 07:30 AM | 25 | 2 | 50 | 4 | 81 | 0 | 170 | 25 | 17 | 212 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 75 | 0 | 87 | 4 | 20 | 0 | 2 | 26 | 406 | | | | |
| 07:45 AM | 33 | 1 | 37 | 1 | 72 | 5 | 130 | 39 | 24 | 198 | 0 | 0 | 0 | 1 | 1 | 2 | 19 | 71 | 3 | 95 | 4 | 15 | 1 | 3 | 23 | 389 | | | | | |
| 08:00 AM | 19 | 1 | 30 | 4 | 54 | 5 | 163 | 47 | 33 | 248 | 1 | 0 | 0 | 1 | 2 | 3 | 18 | 71 | 4 | 96 | 3 | 15 | 1 | 2 | 21 | 421 | | | | | |
| 08:15 AM | 19 | 3 | 24 | 2 | 48 | 17 | 164 | 46 | 28 | 255 | 4 | 0 | 0 | 5 | 9 | 0 | 25 | 57 | 4 | 86 | 2 | 14 | 3 | 3 | 22 | 420 | | | | | |
| Total Volume | 96 | 7 | 141 | 11 | 255 | 27 | 627 | 157 | 102 | 913 | 5 | 0 | 0 | 7 | 12 | 5 | 74 | 274 | 11 | 364 | 13 | 64 | 5 | 10 | 92 | 1636 | | | | | |
| % App. Total | 37.6 | 2.7 | 55.3 | 4.3 | .787 | 3 | 68.7 | 17.2 | 11.2 | 41.7 | 0 | 0 | 0 | 58.3 | 3 | 1.4 | 20.3 | 75.3 | 3 | 14.1 | 69.6 | 5.4 | 10.9 | | | | | | | | |
| PHF | .727 | .583 | .705 | .688 | .787 | .397 | .922 | .835 | .773 | .895 | .313 | .000 | .000 | .350 | .333 | .417 | .740 | .913 | .688 | .948 | .813 | .800 | .417 | .833 | .885 | .971 | | | | | |
| Cars | 94 | 6 | 141 | 9 | 250 | 27 | 625 | 157 | 102 | 911 | 5 | 0 | 0 | 7 | 12 | 4 | 70 | 274 | 10 | 358 | 12 | 64 | 5 | 7 | 88 | 1619 | | | | | |
| % Cars | 97.9 | 85.7 | 100 | 81.8 | 98.0 | 100 | 99.7 | 100 | 100 | 99.8 | 100 | 0 | 0 | 100 | 100 | 80.0 | 94.6 | 100 | 90.9 | 98.4 | 92.3 | 100 | 100 | 70.0 | 95.7 | 99.0 | | | | | |
| Trucks | 2 | 1 | 0 | 2 | 5 | 0 | 2 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 1 | 6 | 1 | 0 | 0 | 3 | 4 | 17 | | | | | |
| % Trucks | 2.1 | 14.3 | 0 | 18.2 | 2.0 | 0 | 0.3 | 0 | 0 | 0.2 | 0 | 0 | 0 | 0 | 0 | 20.0 | 5.4 | 0 | 9.1 | 1.6 | 7.7 | 0 | 0 | 30.0 | 4.3 | 1.0 | | | | | |

Accurate Counts
978-664-2565

N/S Street : Holton St / Lowell Ave
E/W Street : Cross St / East St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450001
Site Code : 77450001
Start Date : 9/20/2018
Page No : 5

| Start Time | Groups Printed- Cars | | | | | | | | | | | | HdRt | Int. Total | | | | |
|-------------|----------------------|-----------|------|------------|-------|------|------------|-------|------|----------------|-------|------|------|------------|---------|------------|-----|------|
| | Holton St | | | Cross St | | | Lowell Ave | | | Cross St | | | | | East St | | | |
| | From North | From East | | From South | | | From West | | | From Northwest | | | | | | | | |
| Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | HdLt | BrLt | BrRt | HdRt | Int. Total | | |
| 07:00 AM | 35 | 0 | 34 | 2 | 88 | 18 | 19 | 0 | 0 | 0 | 0 | 11 | 55 | 2 | 2 | 12 | 0 | 282 |
| 07:15 AM | 26 | 0 | 67 | 1 | 129 | 13 | 12 | 1 | 0 | 0 | 0 | 18 | 41 | 1 | 2 | 13 | 0 | 330 |
| 07:30 AM | 25 | 2 | 50 | 4 | 169 | 25 | 17 | 0 | 0 | 0 | 0 | 12 | 75 | 0 | 4 | 20 | 0 | 405 |
| 07:45 AM | 33 | 1 | 37 | 0 | 130 | 39 | 24 | 0 | 0 | 0 | 1 | 16 | 71 | 2 | 3 | 15 | 1 | 382 |
| Total | 119 | 3 | 188 | 7 | 516 | 95 | 72 | 2 | 1 | 0 | 1 | 57 | 242 | 5 | 11 | 60 | 1 | 1399 |
| 08:00 AM | 19 | 1 | 30 | 3 | 163 | 47 | 33 | 1 | 0 | 0 | 1 | 18 | 71 | 4 | 3 | 15 | 1 | 418 |
| 08:15 AM | 17 | 2 | 24 | 2 | 163 | 46 | 28 | 4 | 0 | 0 | 5 | 24 | 57 | 4 | 2 | 14 | 3 | 414 |
| 08:30 AM | 26 | 2 | 16 | 2 | 112 | 35 | 29 | 9 | 1 | 1 | 9 | 21 | 59 | 14 | 3 | 8 | 4 | 371 |
| 08:45 AM | 25 | 2 | 32 | 5 | 96 | 36 | 28 | 1 | 0 | 1 | 2 | 29 | 62 | 5 | 5 | 11 | 0 | 352 |
| Total | 87 | 7 | 102 | 12 | 534 | 164 | 118 | 15 | 1 | 2 | 17 | 92 | 249 | 27 | 13 | 48 | 8 | 1555 |
| Grand Total | 206 | 10 | 290 | 19 | 1050 | 259 | 190 | 17 | 2 | 2 | 18 | 149 | 491 | 32 | 24 | 108 | 9 | 2954 |
| Apprch % | 39.2 | 1.9 | 55.2 | 3.6 | 67.3 | 16.6 | 12.2 | 43.6 | 5.1 | 5.1 | 46.2 | 22 | 72.6 | 4.7 | 15.6 | 70.1 | 5.8 | 8.4 |
| Total % | 7 | 0.3 | 9.8 | 0.6 | 35.5 | 8.8 | 6.4 | 0.6 | 0.1 | 0.1 | 0.6 | 5 | 16.6 | 1.1 | 0.8 | 3.7 | 0.3 | 0.4 |

Accurate Counts

978-664-2565

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 9

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

Groups Printed- Trucks

| Start Time | Holton St From North | | | Cross St From East | | | Lowell Ave From South | | | Cross St From West | | | East St From Northwest | | | | | | |
|--------------------|----------------------|----------|----------|--------------------|----------|----------|-----------------------|----------|----------|--------------------|-----------|------------|------------------------|------------|-------------|----------|----------|----------|------------|
| | Left | Right | HdRt | Left | BrRt | Right | Left | BrLt | Thru | Right | Thru | Left | Thru | Right | HdLt | BrLt | BrRt | HdRt | Int. Total |
| | | | | | | | | | | | | | | | | | | | |
| 07:00 AM | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 9 |
| 07:15 AM | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 2 | 7 |
| 07:30 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 1 | 0 | 0 | 1 | 7 |
| Total | 2 | 0 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 1 | 3 | 0 | 0 | 3 | 24 |
| 08:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| 08:15 AM | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 6 |
| 08:30 AM | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 7 |
| 08:45 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 |
| Total | 2 | 1 | 2 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 2 | 3 | 1 | 2 | 1 | 0 | 0 | 2 | 19 |
| Grand Total | 4 | 1 | 4 | 3 | 2 | 1 | 0 | 1 | 1 | 3 | 11 | 6.2 | 68.8 | 6.2 | 44.4 | 4 | 0 | 5 | 43 |
| Approch % | 36.4 | 9.1 | 36.4 | 50 | 33.3 | 16.7 | 0 | 0 | 100 | 0 | 25.6 | 2.3 | 25.6 | 2.3 | 9.3 | 0 | 0 | 55.6 | |
| Total % | 9.3 | 2.3 | 9.3 | 7 | 4.7 | 2.3 | 0 | 0 | 2.3 | 0 | 2.3 | 2.3 | 2.3 | 2.3 | 9.3 | 0 | 0 | 11.6 | |

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 14

| Start Time | Holton St From North | | | Cross St From East | | | Lowell Ave From South | | | Cross St From West | | | East St From Northwest | | | | | |
|--------------|----------------------|------|-------|--------------------|------|-------|-----------------------|------|-------|--------------------|------|-------|------------------------|------|------|------|------------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | HdLt | BtLt | BtRt | HdRt | App. Total | Int. Total |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .250 |

Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 07:30 AM

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 1

| Start Time | Holton St | | | | | | | | | | | | Cross St | | | | | | | | | | | | Lowell Ave | | | | | | | | | | | | Cross St | | | | | | | | | | | | East St | | | | | | | | | | | |
|-------------|------------|------|-------|------|------|------|-----------|------|------|-------|------|------|------------|------|------|-------|------|------|-----------|------|------|-------|------|------|----------------|------|------|-------|------|------|----------------|------|------|-------|------|------|----------------|------|------|-------|------|------|-------|-----|-----|------|------|-----|---------|------|-----|------|-----|----|-----|------|---|-----|--|--|
| | From North | | | | | | From East | | | | | | From South | | | | | | From West | | | | | | From Northwest | | | | | | From Southwest | | | | | | From Northeast | | | | | | | | | | | | | | | | | | | | | | | |
| | Left | Thru | Right | HdRt | Left | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | Left | Thru | Right | HdLl | Thru | Right | | | | | | | | | | | | | | | | | |
| 03:00 PM | 26 | 3 | 23 | 4 | 9 | 18 | 12 | 55 | 18 | 17 | 0 | 0 | 18 | 0 | 23 | 101 | 13 | 4 | 14 | 5 | 1 | 346 | 0 | 23 | 101 | 13 | 4 | 14 | 5 | 1 | 346 | 0 | 23 | 101 | 13 | 4 | 14 | 5 | 1 | 346 | 0 | 23 | 101 | 13 | 4 | 14 | 5 | 1 | 346 | 0 | 23 | 101 | 13 | 4 | 14 | 5 | 1 | 346 | | |
| 03:15 PM | 27 | 1 | 16 | 0 | 5 | 73 | 22 | 7 | 0 | 3 | 9 | 2 | 26 | 104 | 2 | 4 | 8 | 0 | 1 | 337 | 3 | 26 | 104 | 2 | 4 | 8 | 0 | 1 | 337 | 3 | 26 | 104 | 2 | 4 | 8 | 0 | 1 | 337 | 3 | 26 | 104 | 2 | 4 | 8 | 0 | 1 | 337 | 3 | 26 | 104 | 2 | 4 | 8 | 0 | 1 | 337 | | | | |
| 03:30 PM | 29 | 0 | 21 | 3 | 3 | 86 | 27 | 4 | 1 | 3 | 5 | 1 | 34 | 116 | 1 | 3 | 14 | 2 | 3 | 376 | 1 | 34 | 116 | 1 | 3 | 14 | 2 | 3 | 376 | 1 | 34 | 116 | 1 | 3 | 14 | 2 | 3 | 376 | 1 | 34 | 116 | 1 | 3 | 14 | 2 | 3 | 376 | 1 | 34 | 116 | 1 | 3 | 14 | 2 | 3 | 376 | | | | |
| 03:45 PM | 20 | 0 | 24 | 1 | 1 | 78 | 34 | 37 | 0 | 0 | 6 | 6 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 355 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 3 | 355 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 3 | 355 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 3 | 355 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 3 | 355 | | | | |
| Total | 102 | 4 | 84 | 8 | 18 | 292 | 98 | 98 | 28 | 1 | 6 | 38 | 4 | 109 | 430 | 17 | 15 | 47 | 7 | 1414 | 4 | 109 | 430 | 17 | 15 | 47 | 7 | 8 | 1414 | 4 | 109 | 430 | 17 | 15 | 47 | 7 | 8 | 1414 | 4 | 109 | 430 | 17 | 15 | 47 | 7 | 8 | 1414 | 4 | 109 | 430 | 17 | 15 | 47 | 7 | 8 | 1414 | | | | |
| 04:00 PM | 50 | 0 | 35 | 4 | 1 | 83 | 27 | 26 | 0 | 0 | 3 | 7 | 0 | 43 | 160 | 2 | 7 | 22 | 0 | 470 | 0 | 43 | 160 | 2 | 7 | 22 | 0 | 0 | 470 | 0 | 43 | 160 | 2 | 7 | 22 | 0 | 0 | 470 | 0 | 43 | 160 | 2 | 7 | 22 | 0 | 0 | 470 | 0 | 43 | 160 | 2 | 7 | 22 | 0 | 0 | 470 | | | | |
| 04:15 PM | 34 | 2 | 15 | 1 | 1 | 72 | 23 | 25 | 2 | 0 | 0 | 1 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 307 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 1 | 307 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 1 | 307 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 1 | 307 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 1 | 307 | | | | |
| 04:30 PM | 39 | 1 | 26 | 7 | 1 | 85 | 20 | 25 | 1 | 1 | 2 | 2 | 1 | 35 | 169 | 1 | 6 | 17 | 1 | 445 | 1 | 35 | 169 | 1 | 6 | 17 | 1 | 5 | 445 | 1 | 35 | 169 | 1 | 6 | 17 | 1 | 5 | 445 | 1 | 35 | 169 | 1 | 6 | 17 | 1 | 5 | 445 | 1 | 35 | 169 | 1 | 6 | 17 | 1 | 5 | 445 | | | | |
| 04:45 PM | 23 | 0 | 24 | 2 | 1 | 58 | 28 | 41 | 0 | 1 | 0 | 3 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 397 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 0 | 397 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 0 | 397 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 0 | 397 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 0 | 397 | | | | |
| Total | 146 | 3 | 100 | 14 | 4 | 298 | 98 | 117 | 3 | 2 | 5 | 13 | 1 | 123 | 569 | 5 | 22 | 89 | 1 | 1619 | 1 | 123 | 569 | 5 | 22 | 89 | 1 | 6 | 1619 | 1 | 123 | 569 | 5 | 22 | 89 | 1 | 6 | 1619 | 1 | 123 | 569 | 5 | 22 | 89 | 1 | 6 | 1619 | 1 | 123 | 569 | 5 | 22 | 89 | 1 | 6 | 1619 | | | | |
| 05:00 PM | 35 | 0 | 36 | 3 | 2 | 112 | 19 | 15 | 2 | 0 | 3 | 5 | 0 | 26 | 164 | 2 | 1 | 17 | 0 | 444 | 0 | 26 | 164 | 2 | 1 | 17 | 0 | 2 | 444 | 0 | 26 | 164 | 2 | 1 | 17 | 0 | 2 | 444 | 0 | 26 | 164 | 2 | 1 | 17 | 0 | 2 | 444 | 0 | 26 | 164 | 2 | 1 | 17 | 0 | 2 | 444 | | | | |
| 05:15 PM | 49 | 0 | 32 | 2 | 6 | 87 | 32 | 13 | 3 | 0 | 2 | 1 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 434 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 1 | 434 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 1 | 434 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 1 | 434 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 1 | 434 | | | | |
| 05:30 PM | 41 | 0 | 22 | 1 | 9 | 115 | 24 | 7 | 1 | 0 | 1 | 7 | 0 | 13 | 169 | 1 | 1 | 22 | 0 | 436 | 0 | 13 | 169 | 1 | 1 | 22 | 0 | 2 | 436 | 0 | 13 | 169 | 1 | 1 | 22 | 0 | 2 | 436 | 0 | 13 | 169 | 1 | 1 | 22 | 0 | 2 | 436 | 0 | 13 | 169 | 1 | 1 | 22 | 0 | 2 | 436 | | | | |
| 05:45 PM | 12 | 0 | 12 | 3 | 1 | 113 | 32 | 20 | 4 | 0 | 0 | 7 | 0 | 18 | 128 | 1 | 3 | 16 | 0 | 370 | 0 | 18 | 128 | 1 | 3 | 16 | 0 | 0 | 370 | 0 | 18 | 128 | 1 | 3 | 16 | 0 | 0 | 370 | 0 | 18 | 128 | 1 | 3 | 16 | 0 | 0 | 370 | 0 | 18 | 128 | 1 | 3 | 16 | 0 | 0 | 370 | | | | |
| Total | 137 | 0 | 102 | 9 | 18 | 427 | 107 | 55 | 10 | 0 | 6 | 20 | 0 | 79 | 622 | 6 | 8 | 71 | 2 | 1684 | 0 | 79 | 622 | 6 | 8 | 71 | 2 | 5 | 1684 | 0 | 79 | 622 | 6 | 8 | 71 | 2 | 5 | 1684 | 0 | 79 | 622 | 6 | 8 | 71 | 2 | 5 | 1684 | 0 | 79 | 622 | 6 | 8 | 71 | 2 | 5 | 1684 | | | | |
| Grand Total | 385 | 7 | 286 | 31 | 40 | 1017 | 303 | 270 | 41 | 3 | 17 | 71 | 5 | 311 | 1621 | 28 | 45 | 207 | 10 | 4717 | 5 | 311 | 1621 | 28 | 45 | 207 | 10 | 19 | 4717 | 5 | 311 | 1621 | 28 | 45 | 207 | 10 | 19 | 4717 | 5 | 311 | 1621 | 28 | 45 | 207 | 10 | 19 | 4717 | 5 | 311 | 1621 | 28 | 45 | 207 | 10 | 19 | 4717 | | | | |
| Approch % | 54.3 | 1 | 40.3 | 4.4 | 2.5 | 62.4 | 18.6 | 16.6 | 31.1 | 2.3 | 12.9 | 53.8 | 0.3 | 15.8 | 82.5 | 1.4 | 16 | 73.7 | 3.6 | 6.8 | 0.3 | 15.8 | 82.5 | 1.4 | 16 | 73.7 | 3.6 | 6.8 | 0.3 | 15.8 | 82.5 | 1.4 | 16 | 73.7 | 3.6 | 6.8 | 0.3 | 15.8 | 82.5 | 1.4 | 16 | 73.7 | 3.6 | 6.8 | 0.3 | 15.8 | 82.5 | 1.4 | 16 | 73.7 | 3.6 | 6.8 | | | | | | | | |
| Total % | 8.2 | 0.1 | 6.1 | 0.7 | 0.8 | 21.6 | 6.4 | 5.7 | 0.9 | 0.1 | 0.4 | 1.5 | 0.1 | 6.6 | 34.4 | 0.6 | 1 | 4.4 | 0.2 | 0.4 | 0.1 | 6.6 | 34.4 | 0.6 | 1 | 4.4 | 0.2 | 0.4 | 0.1 | 6.6 | 34.4 | 0.6 | 1 | 4.4 | 0.2 | 0.4 | 0.1 | 6.6 | 34.4 | 0.6 | 1 | 4.4 | 0.2 | 0.4 | 0.1 | 6.6 | 34.4 | 0.6 | 1 | 4.4 | 0.2 | 0.4 | | | | | | | | |
| % Cars | 376 | 7 | 282 | 29 | 40 | 1013 | 303 | 262 | 40 | 3 | 16 | 71 | 4 | 299 | 1618 | 28 | 41 | 207 | 9 | 4667 | 4 | 299 | 1618 | 28 | 41 | 207 | 9 | 19 | 4667 | 4 | 299 | 1618 | 28 | 41 | 207 | 9 | 19 | 4667 | 4 | 299 | 1618 | 28 | 41 | 207 | 9 | 19 | 4667 | 4 | 299 | 1618 | 28 | 41 | 207 | 9 | 19 | 4667 | | | | |
| % Trucks | 97.7 | 100 | 98.6 | 93.5 | 100 | 99.6 | 100 | 97 | 97.6 | 100 | 94.1 | 100 | 80 | 96.1 | 99.8 | 100 | 91.1 | 100 | 90 | 98.9 | 80 | 96.1 | 99.8 | 100 | 91.1 | 100 | 90 | 100 | 98.9 | 80 | 96.1 | 99.8 | 100 | 91.1 | 100 | 90 | 100 | 98.9 | 80 | 96.1 | 99.8 | 100 | 91.1 | 100 | 90 | 100 | 98.9 | 80 | 96.1 | 99.8 | 100 | 91.1 | 100 | 90 | 100 | 98.9 | | | | |
| % Trucks | 2.3 | 0 | 1.4 | 6.5 | 0 | 0.4 | 0 | 3 | 2.4 | 0 | 5.9 | 0 | 20 | 3.9 | 0.2 | 0 | 8.9 | 0 | 1.1 | 20 | 3.9 | 0.2 | 0 | 8.9 | 0 | 10 | 0 | 1.1 | 20 | 3.9 | 0.2 | 0 | 8.9 | 0 | 10 | 0 | 1.1 | 20 | 3.9 | 0.2 | 0 | 8.9 | 0 | 10 | 0 | 1.1 | | | | | | | | | | | | | | |

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 2

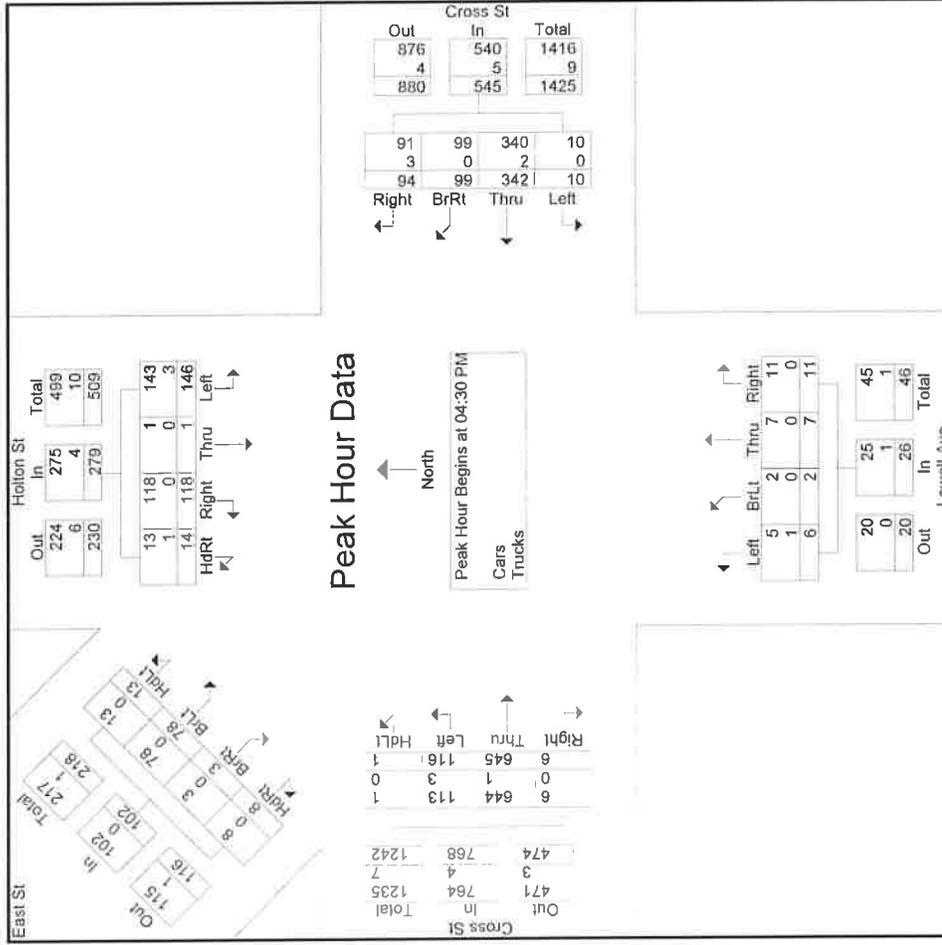
| Start Time | Holton St | | | | | | Cross St | | | | | | Lowell Ave | | | | | | East St | | | | | | | | | | | | | | |
|--|------------|------|-------|-----------|------|-------|------------|------|-------|-----------|------|-------|----------------|------|-------|----------------|------|-------|----------------|------|-------|----------------|------|-------|------|------|-------|------|------|-------|------------|------------|--|
| | From North | | | From East | | | From South | | | From West | | | From Northwest | | | From Southwest | | | From Northwest | | | From Southwest | | | | | | | | | | | |
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | App. Total | Int. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 04:30 PM | 39 | 1 | 26 | 7 | 73 | 1 | 85 | 20 | 25 | 131 | 1 | 1 | 2 | 2 | 6 | 1 | 35 | 169 | 1 | 206 | 6 | 6 | 17 | 1 | 5 | 29 | 445 | | | | | | |
| 04:45 PM | 23 | 0 | 24 | 2 | 49 | 1 | 58 | 28 | 41 | 128 | 0 | 1 | 0 | 3 | 4 | 0 | 33 | 151 | 1 | 185 | 3 | 4 | 28 | 0 | 0 | 31 | 397 | | | | | | |
| 05:00 PM | 35 | 0 | 36 | 3 | 74 | 2 | 112 | 19 | 15 | 148 | 2 | 0 | 3 | 5 | 10 | 0 | 26 | 164 | 2 | 192 | 1 | 10 | 17 | 0 | 2 | 20 | 444 | | | | | | |
| 05:15 PM | 49 | 0 | 32 | 2 | 83 | 6 | 87 | 32 | 13 | 138 | 3 | 0 | 2 | 1 | 6 | 0 | 22 | 161 | 2 | 185 | 3 | 6 | 16 | 2 | 1 | 22 | 434 | | | | | | |
| Total Volume | 146 | 1 | 118 | 14 | 279 | 10 | 342 | 99 | 94 | 545 | 6 | 2 | 7 | 11 | 26 | 1 | 116 | 645 | 6 | 768 | 13 | 26 | 78 | 3 | 8 | 102 | 1720 | | | | | | |
| % App. Total | .745 | .250 | .819 | .500 | .840 | .417 | .763 | .773 | .573 | .921 | .500 | .500 | .583 | .550 | .650 | .250 | .829 | .954 | .750 | .932 | .542 | .696 | .375 | .400 | .823 | .966 | | | | | | | |
| Cars | 143 | 1 | 118 | 13 | 275 | 10 | 340 | 99 | 91 | 540 | 5 | 2 | 7 | 11 | 25 | 1 | 113 | 644 | 6 | 764 | 13 | 25 | 78 | 3 | 8 | 102 | 1706 | | | | | | |
| % Cars | 97.9 | 100 | 100 | 92.9 | 98.6 | 100 | 99.4 | 100 | 96.8 | 99.1 | 83.3 | 100 | 100 | 100 | 96.2 | 100 | 97.4 | 99.8 | 100 | 99.5 | 100 | 100 | 100 | 100 | 100 | 100 | 99.2 | | | | | | |
| Trucks | 3 | 0 | 0 | 1 | 4 | 0 | 2 | 0 | 3 | 5 | 1 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 14 | | | | | | |
| % Trucks | 2.1 | 0 | 0 | 7.1 | 1.4 | 0 | 0.6 | 0 | 3.2 | 0.9 | 16.7 | 0 | 0 | 0 | 3.8 | 0 | 2.6 | 0.2 | 0 | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0.8 | | | | | | |

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 3



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

| | 04:30 PM | | | | 03:00 PM | | | | 05:00 PM | | | | | | | | | | | | | | | | |
|--------------|----------|------|------|------|----------|------|------|------|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| +0 mins. | 39 | 1 | 26 | 7 | 73 | 2 | 112 | 19 | 15 | 148 | 17 | 0 | 0 | 18 | 35 | 1 | 35 | 169 | 1 | 206 | 7 | 22 | 0 | 0 | 29 |
| +15 mins. | 23 | 0 | 24 | 2 | 49 | 6 | 87 | 32 | 13 | 138 | 7 | 0 | 3 | 9 | 19 | 0 | 33 | 151 | 1 | 185 | 6 | 22 | 0 | 1 | 29 |
| +30 mins. | 35 | 0 | 36 | 3 | 74 | 9 | 115 | 24 | 7 | 155 | 4 | 1 | 3 | 5 | 13 | 0 | 26 | 164 | 2 | 192 | 6 | 17 | 1 | 5 | 29 |
| +45 mins. | 49 | 0 | 32 | 2 | 83 | 1 | 113 | 32 | 20 | 166 | 0 | 0 | 0 | 6 | 6 | 0 | 22 | 161 | 2 | 185 | 3 | 28 | 0 | 0 | 31 |
| Total Volume | 146 | 1 | 118 | 14 | 279 | 18 | 427 | 107 | 55 | 607 | 28 | 1 | 6 | 38 | 73 | 1 | 116 | 645 | 6 | 768 | 22 | 89 | 1 | 6 | 118 |
| % App. Total | .523 | 0.4 | 42.3 | 5 | .840 | .500 | .928 | .836 | .688 | .914 | .412 | .250 | .500 | .528 | .521 | .250 | .829 | .954 | .750 | .932 | .786 | .795 | .250 | .300 | .952 |
| PHF | .745 | .250 | .819 | .500 | .840 | .500 | .928 | .836 | .688 | .914 | .412 | .250 | .500 | .528 | .521 | .250 | .829 | .954 | .750 | .932 | .786 | .795 | .250 | .300 | .952 |
| Cats | 143 | 1 | 118 | 13 | 275 | 18 | 427 | 107 | 55 | 607 | 28 | 1 | 6 | 38 | 73 | 1 | 113 | 644 | 6 | 764 | 19 | 89 | 1 | 6 | 115 |

Accurate Counts
978-664-2565

N/S Street : Holton St / Lowell Ave
E/W Street : Cross St / East St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450001
Site Code : 77450001
Start Date : 9/20/2018
Page No : 5

Groups Printed-Cars

| Start Time | Holton St | | | | Cross St | | | | Lowell Ave | | | | Cross St | | | | East St | | | | Int. Total | | |
|-------------|------------|-------|-----------|------|------------|-------|-----------|------|------------|-------|------------|------|-----------|-------|------------|------|------------|-------|------|------|------------|------|-------|
| | From North | | From East | | From South | | From West | | From North | | From South | | From West | | From North | | From South | | | | | | |
| | Left | Right | HdRt | Left | BrRt | Right | Left | BrLt | Thru | Right | Left | BrLt | Thru | Right | HdLt | BrLt | Thru | Right | HdLt | BrLt | | Thru | Right |
| 03:00 PM | 26 | 3 | 22 | 4 | 9 | 53 | 18 | 11 | 17 | 0 | 0 | 0 | 18 | 13 | 0 | 22 | 101 | 13 | 3 | 14 | 4 | 1 | 339 |
| 03:15 PM | 27 | 1 | 16 | 0 | 5 | 73 | 26 | 22 | 7 | 0 | 3 | 9 | 2 | 2 | 3 | 25 | 104 | 2 | 4 | 8 | 0 | 1 | 336 |
| 03:30 PM | 27 | 0 | 20 | 3 | 3 | 86 | 20 | 26 | 4 | 1 | 3 | 5 | 1 | 1 | 0 | 30 | 115 | 1 | 3 | 14 | 2 | 3 | 366 |
| 03:45 PM | 19 | 0 | 24 | 1 | 1 | 78 | 34 | 37 | 0 | 0 | 0 | 6 | 1 | 1 | 0 | 26 | 109 | 1 | 4 | 11 | 0 | 3 | 354 |
| Total | 99 | 4 | 82 | 8 | 18 | 290 | 98 | 96 | 28 | 1 | 6 | 38 | 17 | 3 | 103 | 429 | 17 | 14 | 47 | 6 | 8 | 8 | 1395 |
| 04:00 PM | 47 | 0 | 33 | 3 | 1 | 83 | 27 | 23 | 0 | 0 | 2 | 7 | 2 | 2 | 0 | 42 | 159 | 2 | 4 | 22 | 0 | 0 | 455 |
| 04:15 PM | 34 | 2 | 15 | 1 | 1 | 72 | 23 | 25 | 2 | 0 | 0 | 1 | 1 | 1 | 0 | 12 | 89 | 1 | 6 | 22 | 0 | 1 | 307 |
| 04:30 PM | 38 | 1 | 26 | 6 | 1 | 84 | 20 | 22 | 1 | 1 | 2 | 2 | 1 | 1 | 34 | 169 | 1 | 6 | 17 | 1 | 1 | 5 | 438 |
| 04:45 PM | 23 | 0 | 24 | 2 | 1 | 57 | 28 | 41 | 0 | 1 | 0 | 3 | 1 | 1 | 0 | 33 | 151 | 1 | 3 | 28 | 0 | 0 | 396 |
| Total | 142 | 3 | 98 | 12 | 4 | 296 | 98 | 111 | 3 | 2 | 4 | 13 | 5 | 1 | 121 | 568 | 5 | 19 | 89 | 1 | 6 | 6 | 1596 |
| 05:00 PM | 35 | 0 | 36 | 3 | 2 | 112 | 19 | 15 | 2 | 0 | 3 | 5 | 2 | 2 | 0 | 24 | 163 | 2 | 1 | 17 | 0 | 2 | 441 |
| 05:15 PM | 47 | 0 | 32 | 2 | 6 | 87 | 32 | 13 | 2 | 0 | 2 | 1 | 1 | 2 | 0 | 22 | 161 | 2 | 3 | 16 | 2 | 1 | 431 |
| 05:30 PM | 41 | 0 | 22 | 1 | 9 | 115 | 24 | 7 | 1 | 0 | 1 | 7 | 1 | 1 | 0 | 12 | 169 | 1 | 1 | 22 | 0 | 2 | 435 |
| 05:45 PM | 12 | 0 | 12 | 3 | 1 | 113 | 32 | 20 | 4 | 0 | 0 | 7 | 1 | 1 | 0 | 17 | 128 | 1 | 3 | 16 | 0 | 0 | 369 |
| Total | 135 | 0 | 102 | 9 | 18 | 427 | 107 | 55 | 9 | 0 | 6 | 20 | 6 | 6 | 0 | 75 | 621 | 6 | 8 | 71 | 2 | 5 | 1676 |
| Grand Total | 376 | 7 | 282 | 29 | 40 | 1013 | 303 | 262 | 40 | 3 | 16 | 71 | 28 | 41 | 299 | 1618 | 28 | 41 | 207 | 9 | 19 | 19 | 4667 |
| Apprch % | 54.2 | 1 | 40.6 | 4.2 | 2.5 | 62.6 | 18.7 | 16.2 | 30.8 | 2.3 | 12.3 | 54.6 | 1.4 | 14.9 | 15.3 | 83 | 1.4 | 14.9 | 75 | 3.3 | 6.9 | 6.9 | |
| Total % | 8.1 | 0.1 | 6 | 0.6 | 0.9 | 21.7 | 6.5 | 5.6 | 0.9 | 0.1 | 0.3 | 1.5 | 0.6 | 0.9 | 6.4 | 34.7 | 0.6 | 0.9 | 4.4 | 0.2 | 0.2 | 0.4 | |

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 9

| Start Time | Groups Printed- Trucks | | | | | | | | | | | | Int. Total | | | | | | |
|--------------------|------------------------|-------------|-------------|--------------------|-------------|-------------|-----------------------|----------|-----------|--------------------|----------|----------|------------|------------------------|-------------|-----------|----------|-----------|-----------|
| | Holton St From North | | | Cross St From East | | | Lowell Ave From South | | | Cross St From West | | | | East St From Northwest | | | | | |
| | Left | Right | HdRt | Left | BrRt | Right | Left | BrLt | Thru | HdLt | Thru | Right | | Left | BrLt | Thru | HdLt | BrRt | HdRt |
| 03:00 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 7 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 03:30 PM | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 10 |
| 03:45 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 3 | 2 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 6 | 1 | 1 | 1 | 0 | 1 | 19 |
| 04:00 PM | 3 | 2 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 3 | 0 | 0 | 15 |
| 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 | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 |
| 04:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total | 4 | 2 | 2 | 0 | 2 | 6 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 0 | 0 | 23 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 3 |
| 05:15 PM | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 1 |
| Total | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 8 |
| Grand Total | 9 | 4 | 2 | 0 | 4 | 8 | 1 | 0 | 1 | 0 | 0 | 0 | 12 | 3 | 3 | 4 | 0 | 1 | 50 |
| Apprch % | 60 | 26.7 | 13.3 | 0 | 33.3 | 66.7 | 50 | 0 | 50 | 0 | 0 | 0 | 6.2 | 75 | 18.8 | 80 | 0 | 20 | 0 |
| Total % | 18 | 8 | 4 | 0 | 8 | 16 | 2 | 0 | 2 | 0 | 0 | 0 | 24 | 6 | 6 | 8 | 0 | 2 | 0 |

Accurate Counts

978-664-2565

N/S Street : Holton St / Lowell Ave
 E/W Street : Cross St / East St
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450001
 Site Code : 77450001
 Start Date : 9/20/2018
 Page No : 14

| Start Time | Holton St From North | | | | Cross St From East | | | | Lowell Ave From South | | | | Cross St From West | | | | East St From Northwest | | | | | |
|--------------|----------------------|------------|------------|------------|--------------------|------------|------------|------------|-----------------------|------------|------------|------------|--------------------|------------|------------|------------|------------------------|------------|------------|------------|------------|------|
| | Left | | Right | | Left | | Right | | Left | | Right | | Left | | Right | | Left | | Right | | | |
| | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | Thru | HdRt | | |
| App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | App. Total | Int. Total | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .375 |

Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 1

Groups Printed- Cars - Trucks

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|--------------------|-------------------------|----------|------------|--------------------|-------------|----------|---------------------|----------|------------|--------------------|-------------|------------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 153 | 0 | 3 | 0 | 0 | 0 | 52 | 0 | 208 |
| 07:15 AM | 0 | 0 | 1 | 2 | 196 | 0 | 0 | 0 | 0 | 0 | 58 | 1 | 258 |
| 07:30 AM | 1 | 0 | 0 | 1 | 263 | 0 | 0 | 0 | 1 | 1 | 76 | 0 | 343 |
| 07:45 AM | 0 | 0 | 2 | 1 | 188 | 0 | 1 | 0 | 0 | 0 | 77 | 0 | 269 |
| Total | 1 | 0 | 3 | 4 | 800 | 0 | 4 | 0 | 1 | 1 | 263 | 1 | 1078 |
| 08:00 AM | 0 | 0 | 1 | 0 | 208 | 0 | 1 | 0 | 0 | 1 | 91 | 3 | 305 |
| 08:15 AM | 0 | 0 | 1 | 4 | 205 | 0 | 1 | 0 | 1 | 2 | 91 | 0 | 305 |
| 08:30 AM | 0 | 0 | 2 | 0 | 167 | 0 | 1 | 0 | 2 | 0 | 105 | 1 | 278 |
| 08:45 AM | 0 | 0 | 0 | 0 | 146 | 0 | 0 | 0 | 0 | 0 | 97 | 0 | 243 |
| Total | 0 | 0 | 4 | 4 | 726 | 0 | 3 | 0 | 3 | 3 | 384 | 4 | 1131 |
| Grand Total | 1 | 0 | 7 | 8 | 1526 | 0 | 7 | 0 | 4 | 4 | 647 | 5 | 2209 |
| Apprch % | 12.5 | 0 | 87.5 | 0.5 | 99.5 | 0 | 63.6 | 0 | 36.4 | 0.6 | 98.6 | 0.8 | |
| Total % | 0 | 0 | 0.3 | 0.4 | 69.1 | 0 | 0.3 | 0 | 0.2 | 0.2 | 29.3 | 0.2 | |
| Cars | 1 | 0 | 7 | 8 | 1507 | 0 | 7 | 0 | 4 | 4 | 635 | 5 | 2178 |
| % Cars | 100 | 0 | 100 | 100 | 98.8 | 0 | 100 | 0 | 100 | 100 | 98.1 | 100 | 98.6 |
| Trucks | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 31 |
| % Trucks | 0 | 0 | 0 | 0 | 1.2 | 0 | 0 | 0 | 0 | 0 | 1.9 | 0 | 1.4 |

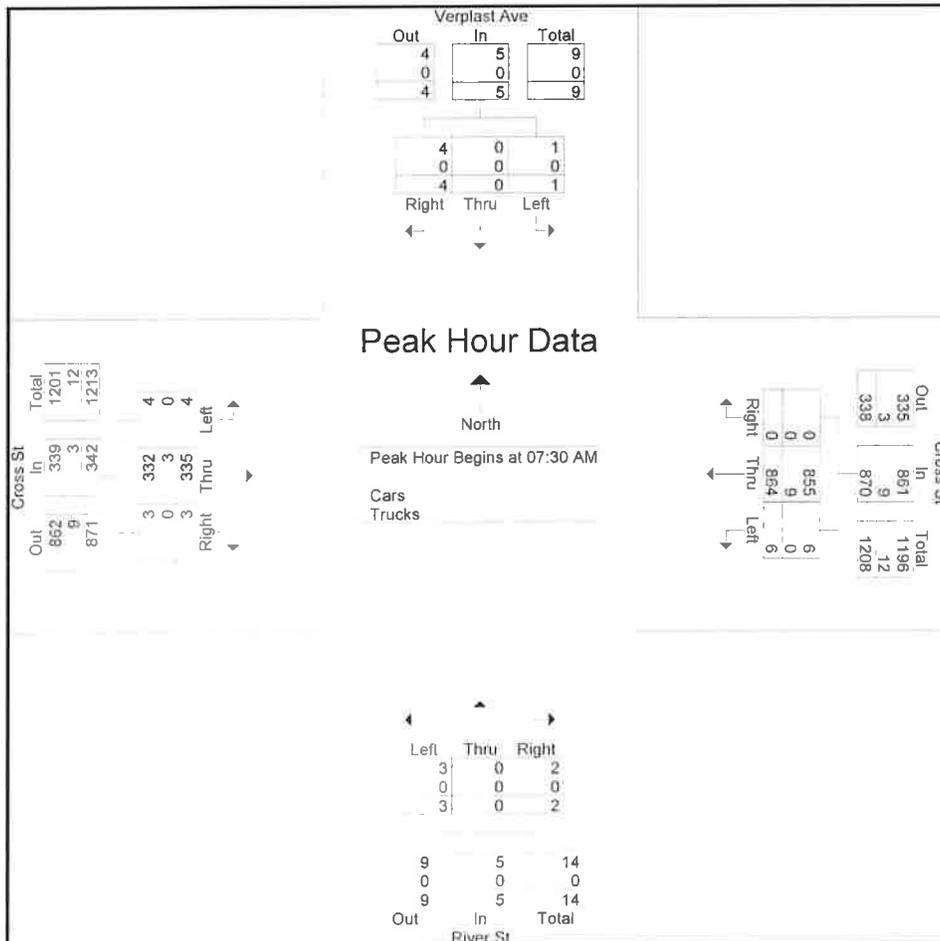
Accurate Counts

978-664-2565

N/S Street : Verplast Ave / River St
 E/W Street : Cross Street
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450002
 Site Code : 77450002
 Start Date : 9/20/2018
 Page No : 2

| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Int. Total |
|--|----------------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|-----------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 1 | 0 | 0 | 1 | 1 | 263 | 0 | 264 | 0 | 0 | 1 | 1 | 1 | 76 | 0 | 77 | 343 |
| 07:45 AM | 0 | 0 | 2 | 2 | 1 | 188 | 0 | 189 | 1 | 0 | 0 | 1 | 0 | 77 | 0 | 77 | 269 |
| 08:00 AM | 0 | 0 | 1 | 1 | 0 | 208 | 0 | 208 | 1 | 0 | 0 | 1 | 1 | 91 | 3 | 95 | 305 |
| 08:15 AM | 0 | 0 | 1 | 1 | 4 | 205 | 0 | 209 | 1 | 0 | 1 | 2 | 2 | 91 | 0 | 93 | 305 |
| Total Volume | 1 | 0 | 4 | 5 | 6 | 864 | 0 | 870 | 3 | 0 | 2 | 5 | 4 | 335 | 3 | 342 | 1222 |
| % App. Total | 20 | 0 | 80 | | 0.7 | 99.3 | 0 | | 60 | 0 | 40 | | 1.2 | 98 | 0.9 | | |
| PHF | .250 | .000 | .500 | .625 | .375 | .821 | .000 | .824 | .750 | .000 | .500 | .625 | .500 | .920 | .250 | .900 | .891 |
| Cars | 1 | 0 | 4 | 5 | 6 | 855 | 0 | 861 | 3 | 0 | 2 | 5 | 4 | 332 | 3 | 339 | 1210 |
| % Cars | 100 | 0 | 100 | 100 | 100 | 99.0 | 0 | 99.0 | 100 | 0 | 100 | 100 | 100 | 99.1 | 100 | 99.1 | 99.0 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 12 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 1.0 | 0 | 1.0 | 0 | 0 | 0 | 0 | 0 | 0.9 | 0 | 0.9 | 1.0 |



Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 4

Groups Printed- Cars

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|-------------|----------------------------|------|-------|-----------------------|------|-------|------------------------|------|-------|-----------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 151 | 0 | 3 | 0 | 0 | 0 | 48 | 0 | 202 |
| 07:15 AM | 0 | 0 | 1 | 2 | 192 | 0 | 0 | 0 | 0 | 0 | 57 | 1 | 253 |
| 07:30 AM | 1 | 0 | 0 | 1 | 259 | 0 | 0 | 0 | 1 | 1 | 75 | 0 | 338 |
| 07:45 AM | 0 | 0 | 2 | 1 | 187 | 0 | 1 | 0 | 0 | 0 | 75 | 0 | 266 |
| Total | 1 | 0 | 3 | 4 | 789 | 0 | 4 | 0 | 1 | 1 | 255 | 1 | 1059 |
| 08:00 AM | 0 | 0 | 1 | 0 | 205 | 0 | 1 | 0 | 0 | 1 | 91 | 3 | 302 |
| 08:15 AM | 0 | 0 | 1 | 4 | 204 | 0 | 1 | 0 | 1 | 2 | 91 | 0 | 304 |
| 08:30 AM | 0 | 0 | 2 | 0 | 166 | 0 | 1 | 0 | 2 | 0 | 101 | 1 | 273 |
| 08:45 AM | 0 | 0 | 0 | 0 | 143 | 0 | 0 | 0 | 0 | 0 | 97 | 0 | 240 |
| Total | 0 | 0 | 4 | 4 | 718 | 0 | 3 | 0 | 3 | 3 | 380 | 4 | 1119 |
| Grand Total | 1 | 0 | 7 | 8 | 1507 | 0 | 7 | 0 | 4 | 4 | 635 | 5 | 2178 |
| Apprch % | 12.5 | 0 | 87.5 | 0.5 | 99.5 | 0 | 63.6 | 0 | 36.4 | 0.6 | 98.6 | 0.8 | |
| Total % | 0 | 0 | 0.3 | 0.4 | 69.2 | 0 | 0.3 | 0 | 0.2 | 0.2 | 29.2 | 0.2 | |

Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 7

Groups Printed- Trucks

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|--------------------|----------------------------|------|-------|-----------------------|------|-------|------------------------|------|-------|-----------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 6 |
| 07:15 AM | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 07:30 AM | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 |
| 07:45 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 19 |
| 08:00 AM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 5 |
| 08:45 AM | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| Total | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 12 |
| Grand Total | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 31 |
| Apprch % | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | |
| Total % | 0 | 0 | 0 | 0 | 61.3 | 0 | 0 | 0 | 0 | 0 | 38.7 | 0 | |

Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 10

Groups Printed- Bikes Peds

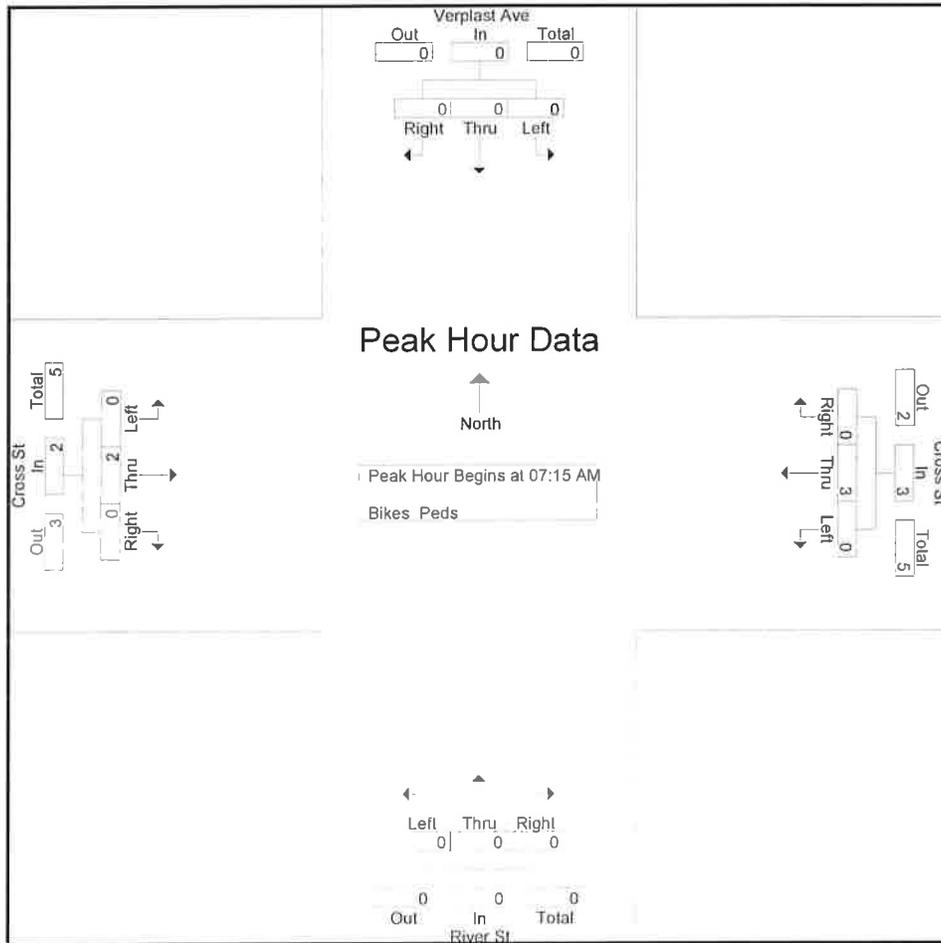
| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|----------------------------|------|-------|------|-----------------------|------|-------|------|------------------------|------|-------|------|-----------------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 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 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 07:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 4 | 1 | 5 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 2 | 4 | 6 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 0 | 5 | 5 | 10 |
| Grand Total | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 9 | 6 | 15 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 66.7 | 0 | | 0 | 0 | 0 | | 0 | 33.3 | 0 | | 60 | 40 | |

Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 11

| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Int. Total |
|--|----------------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|-----------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. 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 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 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 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 5 |
| % App. Total | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | |
| PHF | .000 | .000 | .000 | .000 | .000 | .375 | .000 | .375 | .000 | .000 | .000 | .000 | .000 | .250 | .000 | .250 | .313 |



Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 1

Groups Printed- Cars - Trucks

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|-------------|-------------------------|------|-------|--------------------|------|-------|---------------------|------|-------|--------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 0 | 0 | 1 | 2 | 99 | 0 | 1 | 0 | 2 | 0 | 148 | 3 | 256 |
| 03:15 PM | 0 | 0 | 0 | 2 | 103 | 0 | 3 | 0 | 2 | 1 | 152 | 11 | 274 |
| 03:30 PM | 0 | 0 | 0 | 1 | 117 | 0 | 2 | 0 | 3 | 0 | 154 | 8 | 285 |
| 03:45 PM | 0 | 0 | 0 | 2 | 117 | 0 | 0 | 0 | 0 | 1 | 168 | 1 | 289 |
| Total | 0 | 0 | 1 | 7 | 436 | 0 | 6 | 0 | 7 | 2 | 622 | 23 | 1104 |
| 04:00 PM | 0 | 0 | 1 | 3 | 98 | 0 | 1 | 0 | 1 | 0 | 134 | 3 | 241 |
| 04:15 PM | 0 | 0 | 0 | 5 | 98 | 1 | 2 | 0 | 1 | 1 | 179 | 8 | 295 |
| 04:30 PM | 0 | 0 | 0 | 1 | 117 | 0 | 11 | 1 | 8 | 0 | 187 | 2 | 327 |
| 04:45 PM | 2 | 0 | 0 | 0 | 110 | 0 | 0 | 0 | 4 | 0 | 200 | 3 | 319 |
| Total | 2 | 0 | 1 | 9 | 423 | 1 | 14 | 1 | 14 | 1 | 700 | 16 | 1182 |
| 05:00 PM | 0 | 0 | 0 | 1 | 164 | 0 | 0 | 0 | 2 | 1 | 205 | 3 | 376 |
| 05:15 PM | 0 | 0 | 0 | 3 | 127 | 1 | 3 | 0 | 5 | 1 | 188 | 9 | 337 |
| 05:30 PM | 0 | 0 | 0 | 0 | 156 | 0 | 14 | 0 | 8 | 0 | 171 | 6 | 355 |
| 05:45 PM | 0 | 0 | 0 | 1 | 108 | 0 | 5 | 0 | 1 | 0 | 177 | 2 | 294 |
| Total | 0 | 0 | 0 | 5 | 555 | 1 | 22 | 0 | 16 | 2 | 741 | 20 | 1362 |
| Grand Total | 2 | 0 | 2 | 21 | 1414 | 2 | 42 | 1 | 37 | 5 | 2063 | 59 | 3648 |
| Apprch % | 50 | 0 | 50 | 1.5 | 98.4 | 0.1 | 52.5 | 1.2 | 46.2 | 0.2 | 97 | 2.8 | |
| Total % | 0.1 | 0 | 0.1 | 0.6 | 38.8 | 0.1 | 1.2 | 0 | 1 | 0.1 | 56.6 | 1.6 | |
| Cars | 2 | 0 | 2 | 20 | 1403 | 2 | 40 | 1 | 37 | 5 | 2048 | 56 | 3616 |
| % Cars | 100 | 0 | 100 | 95.2 | 99.2 | 100 | 95.2 | 100 | 100 | 100 | 99.3 | 94.9 | 99.1 |
| Trucks | 0 | 0 | 0 | 1 | 11 | 0 | 2 | 0 | 0 | 0 | 15 | 3 | 32 |
| % Trucks | 0 | 0 | 0 | 4.8 | 0.8 | 0 | 4.8 | 0 | 0 | 0 | 0.7 | 5.1 | 0.9 |

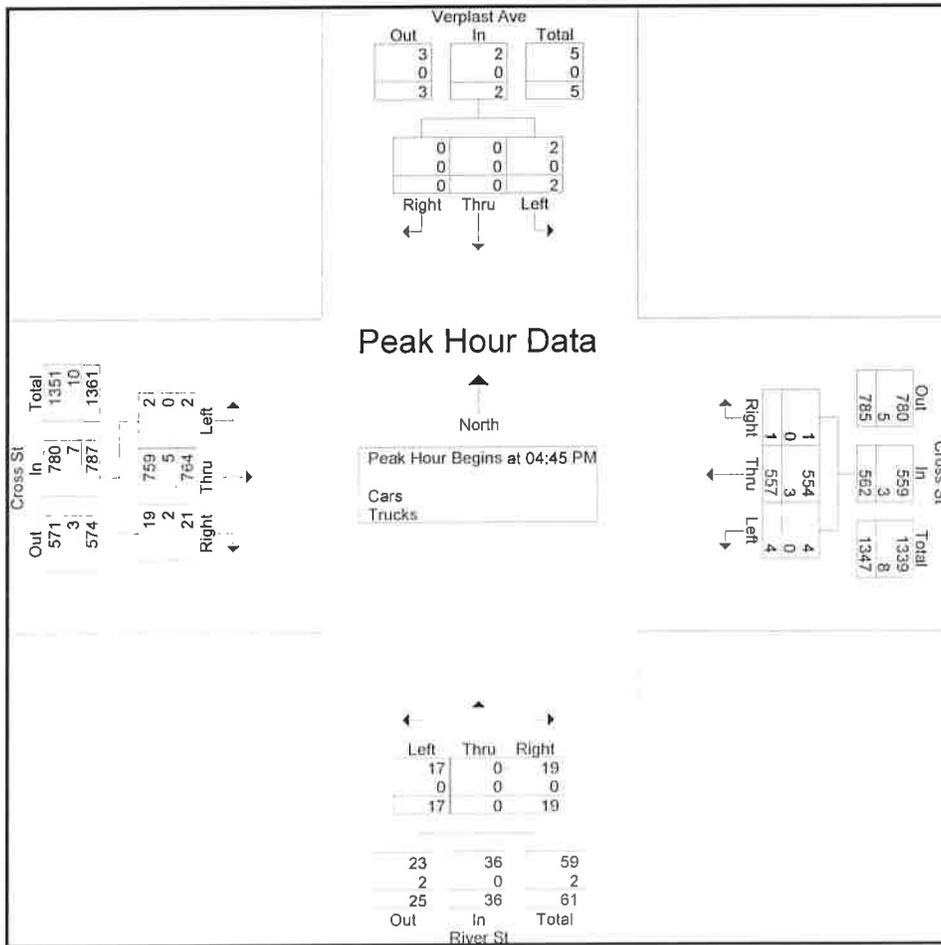
Accurate Counts

978-664-2565

N/S Street : Verplast Ave / River St
 E/W Street : Cross Street
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450002
 Site Code : 77450002
 Start Date : 9/20/2018
 Page No : 2

| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Int. Total |
|--|----------------------------|----------|----------|------------|-----------------------|-------------|------------|------------|------------------------|----------|-------------|------------|-----------------------|-------------|------------|------------|-------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 2 | 0 | 0 | 2 | 0 | 110 | 0 | 110 | 0 | 0 | 4 | 4 | 0 | 200 | 3 | 203 | 319 |
| 05:00 PM | 0 | 0 | 0 | 0 | 1 | 164 | 0 | 165 | 0 | 0 | 2 | 2 | 1 | 205 | 3 | 209 | 376 |
| 05:15 PM | 0 | 0 | 0 | 0 | 3 | 127 | 1 | 131 | 3 | 0 | 5 | 8 | 1 | 188 | 9 | 198 | 337 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 156 | 0 | 156 | 14 | 0 | 8 | 22 | 0 | 171 | 6 | 177 | 355 |
| Total Volume | 2 | 0 | 0 | 2 | 4 | 557 | 1 | 562 | 17 | 0 | 19 | 36 | 2 | 764 | 21 | 787 | 1387 |
| % App. Total | 100 | 0 | 0 | | 0.7 | 99.1 | 0.2 | | 47.2 | 0 | 52.8 | | 0.3 | 97.1 | 2.7 | | |
| PHF | .250 | .000 | .000 | .250 | .333 | .849 | .250 | .852 | .304 | .000 | .594 | .409 | .500 | .932 | .583 | .941 | .922 |
| Cars | 2 | 0 | 0 | 2 | 4 | 554 | 1 | 559 | 17 | 0 | 19 | 36 | 2 | 759 | 19 | 780 | 1377 |
| % Cars | 100 | 0 | 0 | 100 | 100 | 99.5 | 100 | 99.5 | 100 | 0 | 100 | 100 | 100 | 99.3 | 90.5 | 99.1 | 99.3 |
| Trucks | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 7 | 10 |
| % Trucks | 0 | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 0 | 0 | 0 | 0 | 0.7 | 9.5 | 0.9 | 0.7 |



Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 4

Groups Printed- Cars

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|--------------------|----------------------------|----------|----------|-----------------------|-------------|----------|------------------------|----------|-----------|-----------------------|-------------|-----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 0 | 0 | 1 | 1 | 95 | 0 | 1 | 0 | 2 | 0 | 148 | 3 | 251 |
| 03:15 PM | 0 | 0 | 0 | 2 | 103 | 0 | 3 | 0 | 2 | 1 | 152 | 11 | 274 |
| 03:30 PM | 0 | 0 | 0 | 1 | 116 | 0 | 1 | 0 | 3 | 0 | 149 | 8 | 278 |
| 03:45 PM | 0 | 0 | 0 | 2 | 117 | 0 | 0 | 0 | 0 | 1 | 168 | 1 | 289 |
| Total | 0 | 0 | 1 | 6 | 431 | 0 | 5 | 0 | 7 | 2 | 617 | 23 | 1092 |
| 04:00 PM | 0 | 0 | 1 | 3 | 97 | 0 | 0 | 0 | 1 | 0 | 133 | 3 | 238 |
| 04:15 PM | 0 | 0 | 0 | 5 | 98 | 1 | 2 | 0 | 1 | 1 | 178 | 7 | 293 |
| 04:30 PM | 0 | 0 | 0 | 1 | 116 | 0 | 11 | 1 | 8 | 0 | 185 | 2 | 324 |
| 04:45 PM | 2 | 0 | 0 | 0 | 109 | 0 | 0 | 0 | 4 | 0 | 199 | 3 | 317 |
| Total | 2 | 0 | 1 | 9 | 420 | 1 | 13 | 1 | 14 | 1 | 695 | 15 | 1172 |
| 05:00 PM | 0 | 0 | 0 | 1 | 164 | 0 | 0 | 0 | 2 | 1 | 202 | 3 | 373 |
| 05:15 PM | 0 | 0 | 0 | 3 | 126 | 1 | 3 | 0 | 5 | 1 | 188 | 8 | 335 |
| 05:30 PM | 0 | 0 | 0 | 0 | 155 | 0 | 14 | 0 | 8 | 0 | 170 | 5 | 352 |
| 05:45 PM | 0 | 0 | 0 | 1 | 107 | 0 | 5 | 0 | 1 | 0 | 176 | 2 | 292 |
| Total | 0 | 0 | 0 | 5 | 552 | 1 | 22 | 0 | 16 | 2 | 736 | 18 | 1352 |
| Grand Total | 2 | 0 | 2 | 20 | 1403 | 2 | 40 | 1 | 37 | 5 | 2048 | 56 | 3616 |
| Apprch % | 50 | 0 | 50 | 1.4 | 98.5 | 0.1 | 51.3 | 1.3 | 47.4 | 0.2 | 97.1 | 2.7 | |
| Total % | 0.1 | 0 | 0.1 | 0.6 | 38.8 | 0.1 | 1.1 | 0 | 1 | 0.1 | 56.6 | 1.5 | |

Accurate Counts
978-664-2565

N/S Street : Verplast Ave / River St
E/W Street : Cross Street
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450002
Site Code : 77450002
Start Date : 9/20/2018
Page No : 7

Groups Printed- Trucks

| Start Time | Verplast Ave From North | | | Cross St From East | | | River St From South | | | Cross St From West | | | Int. Total |
|--------------------|----------------------------|------|-------|-----------------------|------|-------|------------------------|------|-------|-----------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 7 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 5 | 0 | 12 |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 3 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 3 |
| 04:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 5 | 1 | 10 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 05:15 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 |
| 05:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 3 |
| 05:45 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 |
| Total | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 10 |
| Grand Total | 0 | 0 | 0 | 1 | 11 | 0 | 2 | 0 | 0 | 0 | 15 | 3 | 32 |
| Apprch % | 0 | 0 | 0 | 8.3 | 91.7 | 0 | 100 | 0 | 0 | 0 | 83.3 | 16.7 | |
| Total % | 0 | 0 | 0 | 3.1 | 34.4 | 0 | 6.2 | 0 | 0 | 0 | 46.9 | 9.4 | |

Accurate Counts

978-664-2565

N/S Street : Verplast Ave / River St
 E/W Street : Cross Street
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450002
 Site Code : 77450002
 Start Date : 9/20/2018
 Page No : 10

| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|-------------------------|------|-------|------|--------------------|------|-------|------|---------------------|------|-------|------|--------------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 4 | 0 | 4 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 7 | 0 | 7 |
| 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 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:45 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 1 | 3 |
| Total | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 5 | 1 | 6 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 4 | 4 |
| 05:45 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 | 4 | 6 |
| Grand Total | 0 | 0 | 0 | 9 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 3 | 0 | 0 | 14 | 5 | 19 |
| Apprch % | 0 | 0 | 0 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 100 | 0 | | | | |
| Total % | 0 | 0 | 0 | | 0 | 40 | 0 | | 0 | 0 | 0 | | 0 | 60 | 0 | | 73.7 | 26.3 | |

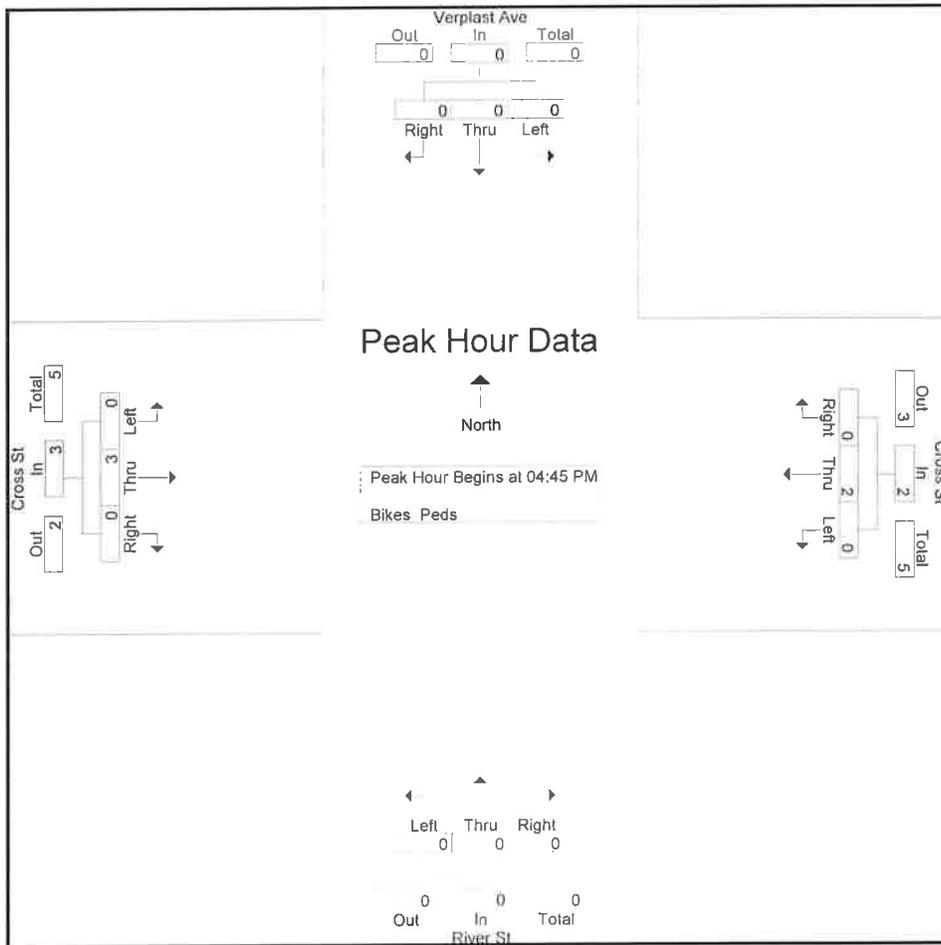
Accurate Counts

978-664-2565

N/S Street : Verplast Ave / River St
 E/W Street : Cross Street
 City/State : Winchester, MA
 Weather : Cloudy

File Name : 77450002
 Site Code : 77450002
 Start Date : 9/20/2018
 Page No : 11

| Start Time | Verplast Ave From North | | | | Cross St From East | | | | River St From South | | | | Cross St From West | | | | Int. Total |
|--|----------------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|-----------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:45 PM | | | | | | | | | | | | | | | | | |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 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 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 4 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 | 5 |
| % 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 | .375 | .000 | .375 | .313 |



Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 1

Groups Printed- Cars - Trucks

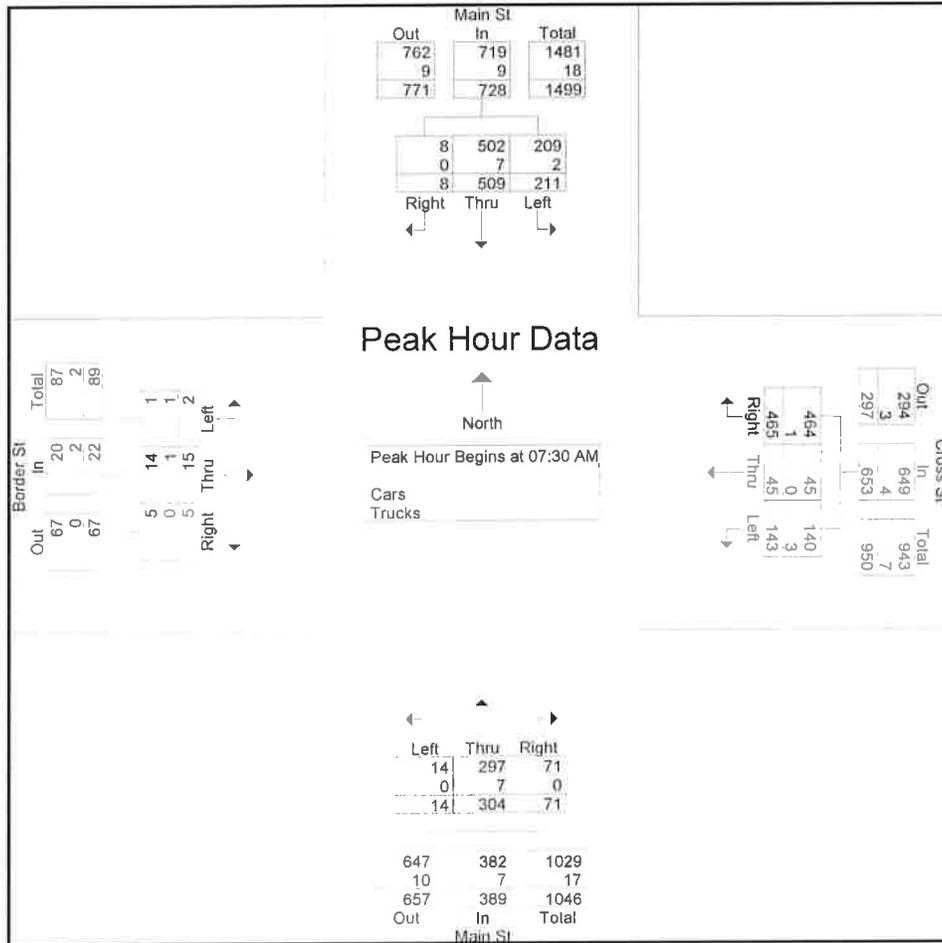
| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|--------------------|-----------------------|------------|-----------|-----------------------|-----------|------------|-----------------------|------------|------------|------------------------|-----------|----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 39 | 113 | 1 | 15 | 0 | 108 | 0 | 59 | 9 | 1 | 0 | 0 | 345 |
| 07:15 AM | 45 | 139 | 3 | 24 | 4 | 114 | 1 | 53 | 16 | 0 | 5 | 0 | 404 |
| 07:30 AM | 44 | 161 | 4 | 23 | 9 | 128 | 2 | 46 | 15 | 0 | 1 | 0 | 433 |
| 07:45 AM | 53 | 113 | 1 | 39 | 12 | 113 | 4 | 71 | 17 | 1 | 3 | 1 | 428 |
| Total | 181 | 526 | 9 | 101 | 25 | 463 | 7 | 229 | 57 | 2 | 9 | 1 | 1610 |
| 08:00 AM | 55 | 126 | 1 | 36 | 12 | 114 | 4 | 90 | 17 | 0 | 7 | 3 | 465 |
| 08:15 AM | 59 | 109 | 2 | 45 | 12 | 110 | 4 | 97 | 22 | 1 | 4 | 1 | 466 |
| 08:30 AM | 54 | 100 | 0 | 18 | 5 | 96 | 2 | 116 | 26 | 0 | 4 | 2 | 423 |
| 08:45 AM | 49 | 100 | 2 | 32 | 11 | 103 | 3 | 102 | 20 | 1 | 2 | 0 | 425 |
| Total | 217 | 435 | 5 | 131 | 40 | 423 | 13 | 405 | 85 | 2 | 17 | 6 | 1779 |
| Grand Total | 398 | 961 | 14 | 232 | 65 | 886 | 20 | 634 | 142 | 4 | 26 | 7 | 3389 |
| Apprch % | 29 | 70 | 1 | 19.6 | 5.5 | 74.9 | 2.5 | 79.6 | 17.8 | 10.8 | 70.3 | 18.9 | |
| Total % | 11.7 | 28.4 | 0.4 | 6.8 | 1.9 | 26.1 | 0.6 | 18.7 | 4.2 | 0.1 | 0.8 | 0.2 | |
| Cars | 389 | 946 | 14 | 228 | 65 | 881 | 20 | 621 | 141 | 3 | 25 | 7 | 3340 |
| % Cars | 97.7 | 98.4 | 100 | 98.3 | 100 | 99.4 | 100 | 97.9 | 99.3 | 75 | 96.2 | 100 | 98.6 |
| Trucks | 9 | 15 | 0 | 4 | 0 | 5 | 0 | 13 | 1 | 1 | 1 | 0 | 49 |
| % Trucks | 2.3 | 1.6 | 0 | 1.7 | 0 | 0.6 | 0 | 2.1 | 0.7 | 25 | 3.8 | 0 | 1.4 |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 2

| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|-----------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | | | | | | | | |
| 07:30 AM | 44 | 161 | 4 | 209 | 23 | 9 | 128 | 160 | 2 | 46 | 15 | 63 | 0 | 1 | 0 | 1 | 433 |
| 07:45 AM | 53 | 113 | 1 | 167 | 39 | 12 | 113 | 164 | 4 | 71 | 17 | 92 | 1 | 3 | 1 | 5 | 428 |
| 08:00 AM | 55 | 126 | 1 | 182 | 36 | 12 | 114 | 162 | 4 | 90 | 17 | 111 | 0 | 7 | 3 | 10 | 465 |
| 08:15 AM | 59 | 109 | 2 | 170 | 45 | 12 | 110 | 167 | 4 | 97 | 22 | 123 | 1 | 4 | 1 | 6 | 466 |
| Total Volume | 211 | 509 | 8 | 728 | 143 | 45 | 465 | 653 | 14 | 304 | 71 | 389 | 2 | 15 | 5 | 22 | 1792 |
| % App. Total | 29 | 69.9 | 1.1 | | 21.9 | 6.9 | 71.2 | | 3.6 | 78.1 | 18.3 | | 9.1 | 68.2 | 22.7 | | |
| PHF | .894 | .790 | .500 | .871 | .794 | .938 | .908 | .978 | .875 | .784 | .807 | .791 | .500 | .536 | .417 | .550 | .961 |
| Cars | 209 | 502 | 8 | 719 | 140 | 45 | 464 | 649 | 14 | 297 | 71 | 382 | 1 | 14 | 5 | 20 | 1770 |
| % Cars | 99.1 | 98.6 | 100 | 98.8 | 97.9 | 100 | 99.8 | 99.4 | 100 | 97.7 | 100 | 98.2 | 50.0 | 93.3 | 100 | 90.9 | 98.8 |
| Trucks | 2 | 7 | 0 | 9 | 3 | 0 | 1 | 4 | 0 | 7 | 0 | 7 | 1 | 1 | 0 | 2 | 22 |
| % Trucks | 0.9 | 1.4 | 0 | 1.2 | 2.1 | 0 | 0.2 | 0.6 | 0 | 2.3 | 0 | 1.8 | 50.0 | 6.7 | 0 | 9.1 | 1.2 |



Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 4

Groups Printed- Cars

| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|--------------------|-----------------------|------------|-----------|-----------------------|-----------|------------|-----------------------|------------|------------|------------------------|-----------|----------|-------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 35 | 111 | 1 | 14 | 0 | 108 | 0 | 58 | 9 | 1 | 0 | 0 | 337 |
| 07:15 AM | 44 | 138 | 3 | 24 | 4 | 113 | 1 | 53 | 16 | 0 | 5 | 0 | 401 |
| 07:30 AM | 42 | 158 | 4 | 23 | 9 | 128 | 2 | 45 | 15 | 0 | 1 | 0 | 427 |
| 07:45 AM | 53 | 113 | 1 | 38 | 12 | 113 | 4 | 71 | 17 | 0 | 2 | 1 | 425 |
| Total | 174 | 520 | 9 | 99 | 25 | 462 | 7 | 227 | 57 | 1 | 8 | 1 | 1590 |
| 08:00 AM | 55 | 123 | 1 | 34 | 12 | 114 | 4 | 86 | 17 | 0 | 7 | 3 | 456 |
| 08:15 AM | 59 | 108 | 2 | 45 | 12 | 109 | 4 | 95 | 22 | 1 | 4 | 1 | 462 |
| 08:30 AM | 52 | 98 | 0 | 18 | 5 | 95 | 2 | 114 | 25 | 0 | 4 | 2 | 415 |
| 08:45 AM | 49 | 97 | 2 | 32 | 11 | 101 | 3 | 99 | 20 | 1 | 2 | 0 | 417 |
| Total | 215 | 426 | 5 | 129 | 40 | 419 | 13 | 394 | 84 | 2 | 17 | 6 | 1750 |
| Grand Total | 389 | 946 | 14 | 228 | 65 | 881 | 20 | 621 | 141 | 3 | 25 | 7 | 3340 |
| Apprch % | 28.8 | 70.1 | 1 | 19.4 | 5.5 | 75 | 2.6 | 79.4 | 18 | 8.6 | 71.4 | 20 | |
| Total % | 11.6 | 28.3 | 0.4 | 6.8 | 1.9 | 26.4 | 0.6 | 18.6 | 4.2 | 0.1 | 0.7 | 0.2 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 7

Groups Printed- Trucks

| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|--------------------|-----------------------|-----------|----------|-----------------------|----------|----------|-----------------------|-----------|----------|------------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 07:00 AM | 4 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 |
| 07:15 AM | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| 07:30 AM | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 6 |
| 07:45 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 3 |
| Total | 7 | 6 | 0 | 2 | 0 | 1 | 0 | 2 | 0 | 1 | 1 | 0 | 20 |
| 08:00 AM | 0 | 3 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 9 |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 4 |
| 08:30 AM | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 0 | 0 | 0 | 8 |
| 08:45 AM | 0 | 3 | 0 | 0 | 0 | 2 | 0 | 3 | 0 | 0 | 0 | 0 | 8 |
| Total | 2 | 9 | 0 | 2 | 0 | 4 | 0 | 11 | 1 | 0 | 0 | 0 | 29 |
| Grand Total | 9 | 15 | 0 | 4 | 0 | 5 | 0 | 13 | 1 | 1 | 1 | 0 | 49 |
| Apprch % | 37.5 | 62.5 | 0 | 44.4 | 0 | 55.6 | 0 | 92.9 | 7.1 | 50 | 50 | 0 | |
| Total % | 18.4 | 30.6 | 0 | 8.2 | 0 | 10.2 | 0 | 26.5 | 2 | 2 | 2 | 0 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 10

Groups Printed- Bikes Peds

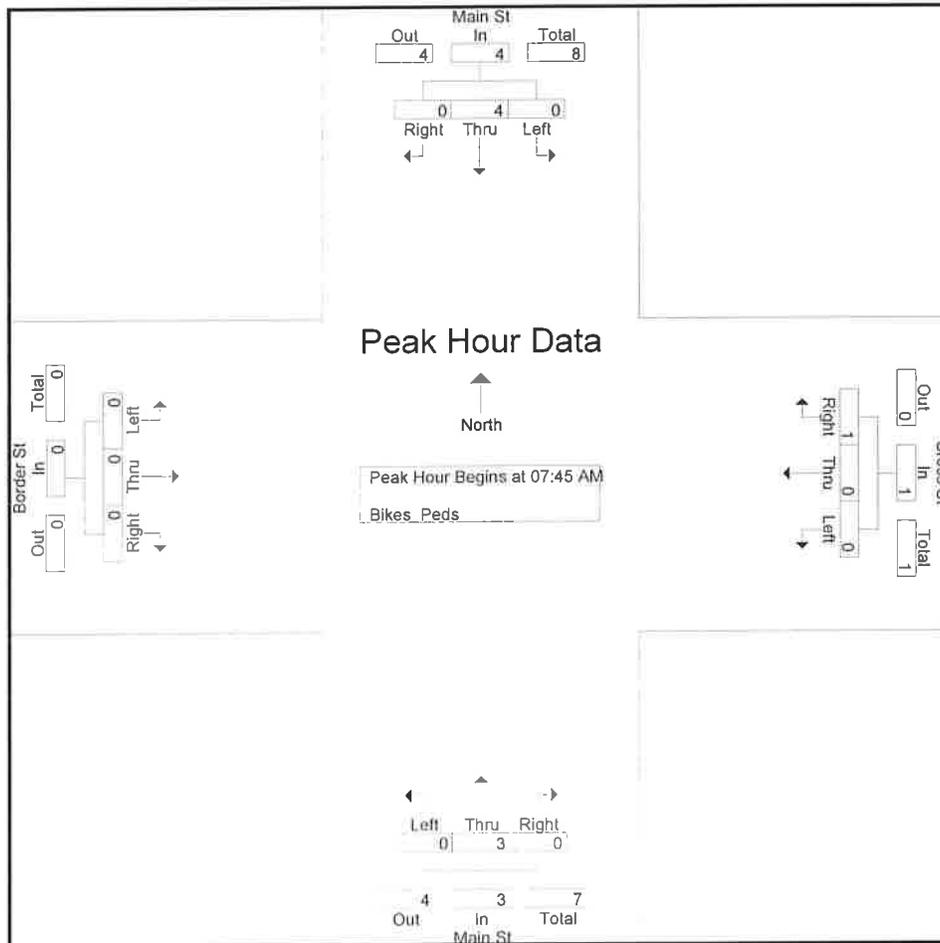
| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|-----------------------|----------|----------|----------|-----------------------|----------|----------|----------|-----------------------|----------|----------|----------|------------------------|----------|----------|----------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 07:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 1 | 6 |
| 07:15 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 |
| 07:30 AM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 4 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 6 | 15 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:15 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 3 |
| 08:30 AM | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 5 |
| 08:45 AM | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 5 | 0 | 5 |
| Total | 0 | 4 | 0 | 5 | 0 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 7 | 14 |
| Grand Total | 0 | 5 | 0 | 8 | 0 | 0 | 1 | 5 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 2 | 16 | 13 | 29 |
| Apprch % | 0 | 100 | 0 | | 0 | 0 | 100 | | 0 | 100 | 0 | | 0 | 0 | 0 | | | | |
| Total % | 0 | 38.5 | 0 | | 0 | 0 | 7.7 | | 0 | 53.8 | 0 | | 0 | 0 | 0 | | 55.2 | 44.8 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 11

| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Int. Total | |
|--|-----------------------|------|-------|------------|-----------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|------------|------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:45 AM | | | | | | | | | | | | | | | | | | |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:15 AM | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 08:30 AM | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 4 | 0 | 4 | 0 | 0 | 1 | 1 | 0 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 4 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 100 | | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | |
| PHF | .000 | .333 | .000 | .333 | .000 | .000 | .250 | .250 | .000 | .750 | .000 | .750 | .000 | .000 | .000 | .000 | .000 | .500 |



Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 1

Groups Printed- Cars - Trucks

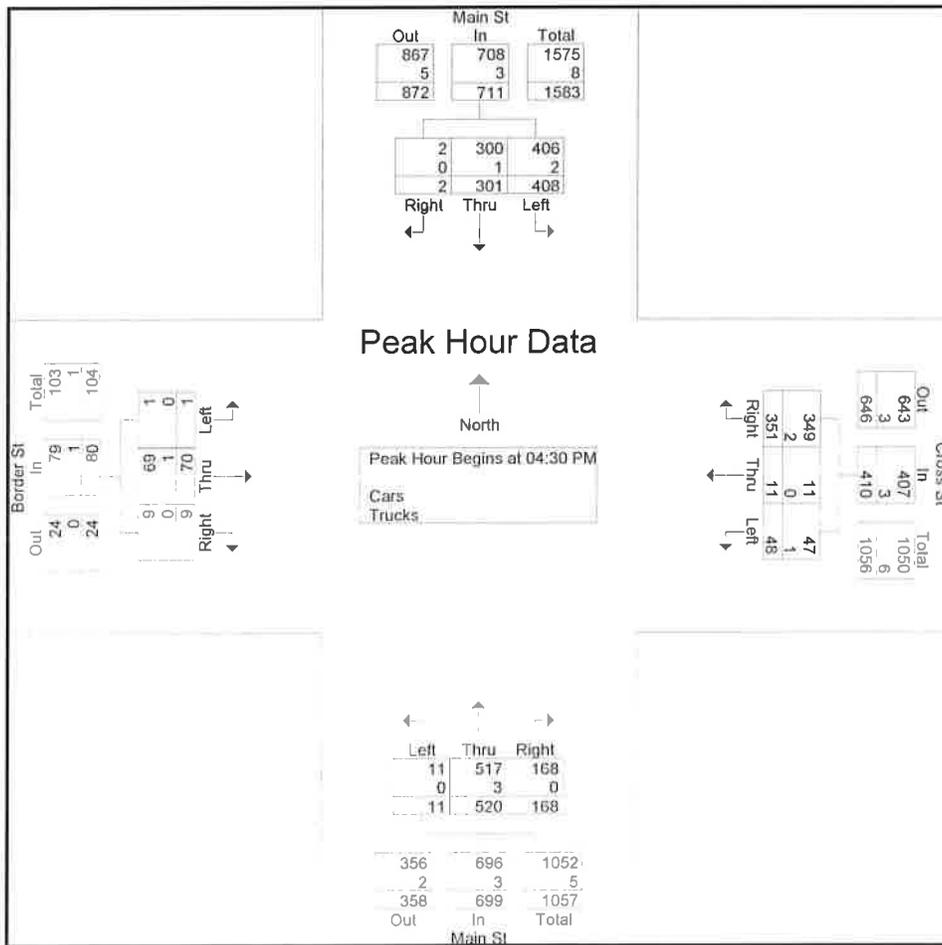
| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|-------------|-----------------------|------|-------|-----------------------|------|-------|-----------------------|------|-------|------------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 55 | 82 | 1 | 17 | 2 | 46 | 1 | 91 | 23 | 0 | 3 | 1 | 322 |
| 03:15 PM | 69 | 68 | 1 | 17 | 1 | 66 | 0 | 107 | 18 | 1 | 8 | 1 | 357 |
| 03:30 PM | 74 | 93 | 3 | 20 | 3 | 73 | 2 | 125 | 30 | 1 | 7 | 1 | 432 |
| 03:45 PM | 89 | 65 | 1 | 20 | 0 | 50 | 1 | 136 | 28 | 0 | 6 | 0 | 396 |
| Total | 287 | 308 | 6 | 74 | 6 | 235 | 4 | 459 | 99 | 2 | 24 | 3 | 1507 |
| 04:00 PM | 78 | 77 | 0 | 16 | 0 | 76 | 1 | 130 | 38 | 0 | 14 | 2 | 432 |
| 04:15 PM | 89 | 78 | 0 | 11 | 0 | 68 | 2 | 129 | 41 | 0 | 16 | 1 | 435 |
| 04:30 PM | 96 | 78 | 1 | 12 | 2 | 80 | 3 | 140 | 39 | 0 | 15 | 4 | 470 |
| 04:45 PM | 107 | 71 | 0 | 15 | 3 | 94 | 1 | 120 | 57 | 0 | 15 | 3 | 486 |
| Total | 370 | 304 | 1 | 54 | 5 | 318 | 7 | 519 | 175 | 0 | 60 | 10 | 1823 |
| 05:00 PM | 94 | 87 | 1 | 9 | 3 | 97 | 3 | 140 | 43 | 0 | 25 | 1 | 503 |
| 05:15 PM | 111 | 65 | 0 | 12 | 3 | 80 | 4 | 120 | 29 | 1 | 15 | 1 | 441 |
| 05:30 PM | 88 | 59 | 1 | 14 | 1 | 91 | 1 | 102 | 26 | 0 | 20 | 3 | 406 |
| 05:45 PM | 92 | 86 | 0 | 9 | 0 | 79 | 0 | 98 | 39 | 0 | 32 | 4 | 439 |
| Total | 385 | 297 | 2 | 44 | 7 | 347 | 8 | 460 | 137 | 1 | 92 | 9 | 1789 |
| Grand Total | 1042 | 909 | 9 | 172 | 18 | 900 | 19 | 1438 | 411 | 3 | 176 | 22 | 5119 |
| Apprch % | 53.2 | 46.4 | 0.5 | 15.8 | 1.7 | 82.6 | 1 | 77 | 22 | 1.5 | 87.6 | 10.9 | |
| Total % | 20.4 | 17.8 | 0.2 | 3.4 | 0.4 | 17.6 | 0.4 | 28.1 | 8 | 0.1 | 3.4 | 0.4 | |
| Cars | 1032 | 904 | 8 | 168 | 18 | 894 | 19 | 1419 | 409 | 2 | 174 | 22 | 5069 |
| % Cars | 99 | 99.4 | 88.9 | 97.7 | 100 | 99.3 | 100 | 98.7 | 99.5 | 66.7 | 98.9 | 100 | 99 |
| Trucks | 10 | 5 | 1 | 4 | 0 | 6 | 0 | 19 | 2 | 1 | 2 | 0 | 50 |
| % Trucks | 1 | 0.6 | 11.1 | 2.3 | 0 | 0.7 | 0 | 1.3 | 0.5 | 33.3 | 1.1 | 0 | 1 |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 2

| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|-----------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | | | | | | | | |
| 04:30 PM | 96 | 78 | 1 | 175 | 12 | 2 | 80 | 94 | 3 | 140 | 39 | 182 | 0 | 15 | 4 | 19 | 470 |
| 04:45 PM | 107 | 71 | 0 | 178 | 15 | 3 | 94 | 112 | 1 | 120 | 57 | 178 | 0 | 15 | 3 | 18 | 486 |
| 05:00 PM | 94 | 87 | 1 | 182 | 9 | 3 | 97 | 109 | 3 | 140 | 43 | 186 | 0 | 25 | 1 | 26 | 503 |
| 05:15 PM | 111 | 65 | 0 | 176 | 12 | 3 | 80 | 95 | 4 | 120 | 29 | 153 | 1 | 15 | 1 | 17 | 441 |
| Total Volume | 408 | 301 | 2 | 711 | 48 | 11 | 351 | 410 | 11 | 520 | 168 | 699 | 1 | 70 | 9 | 80 | 1900 |
| % App. Total | 57.4 | 42.3 | 0.3 | | 11.7 | 2.7 | 85.6 | | 1.6 | 74.4 | 24 | | 1.2 | 87.5 | 11.2 | | |
| PHF | .919 | .865 | .500 | .977 | .800 | .917 | .905 | .915 | .688 | .929 | .737 | .940 | .250 | .700 | .563 | .769 | .944 |
| Cars | 406 | 300 | 2 | 708 | 47 | 11 | 349 | 407 | 11 | 517 | 168 | 696 | 1 | 69 | 9 | 79 | 1890 |
| % Cars | 99.5 | 99.7 | 100 | 99.6 | 97.9 | 100 | 99.4 | 99.3 | 100 | 99.4 | 100 | 99.6 | 100 | 98.6 | 100 | 98.8 | 99.5 |
| Trucks | 2 | 1 | 0 | 3 | 1 | 0 | 2 | 3 | 0 | 3 | 0 | 3 | 0 | 1 | 0 | 1 | 10 |
| % Trucks | 0.5 | 0.3 | 0 | 0.4 | 2.1 | 0 | 0.6 | 0.7 | 0 | 0.6 | 0 | 0.4 | 0 | 1.4 | 0 | 1.3 | 0.5 |



Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 4

Groups Printed- Cars

| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|-------------|-----------------------|------|-------|-----------------------|------|-------|-----------------------|------|-------|------------------------|------|-------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 55 | 82 | 1 | 17 | 2 | 46 | 1 | 88 | 23 | 0 | 3 | 1 | 319 |
| 03:15 PM | 67 | 67 | 0 | 15 | 1 | 65 | 0 | 107 | 16 | 1 | 8 | 1 | 348 |
| 03:30 PM | 73 | 92 | 3 | 20 | 3 | 73 | 2 | 122 | 30 | 0 | 7 | 1 | 426 |
| 03:45 PM | 89 | 64 | 1 | 20 | 0 | 50 | 1 | 131 | 28 | 0 | 6 | 0 | 390 |
| Total | 284 | 305 | 5 | 72 | 6 | 234 | 4 | 448 | 97 | 1 | 24 | 3 | 1483 |
| 04:00 PM | 77 | 77 | 0 | 15 | 0 | 74 | 1 | 128 | 38 | 0 | 14 | 2 | 426 |
| 04:15 PM | 85 | 78 | 0 | 11 | 0 | 68 | 2 | 128 | 41 | 0 | 16 | 1 | 430 |
| 04:30 PM | 96 | 77 | 1 | 12 | 2 | 80 | 3 | 140 | 39 | 0 | 15 | 4 | 469 |
| 04:45 PM | 106 | 71 | 0 | 15 | 3 | 92 | 1 | 119 | 57 | 0 | 15 | 3 | 482 |
| Total | 364 | 303 | 1 | 53 | 5 | 314 | 7 | 515 | 175 | 0 | 60 | 10 | 1807 |
| 05:00 PM | 93 | 87 | 1 | 9 | 3 | 97 | 3 | 138 | 43 | 0 | 24 | 1 | 499 |
| 05:15 PM | 111 | 65 | 0 | 11 | 3 | 80 | 4 | 120 | 29 | 1 | 15 | 1 | 440 |
| 05:30 PM | 88 | 58 | 1 | 14 | 1 | 90 | 1 | 102 | 26 | 0 | 20 | 3 | 404 |
| 05:45 PM | 92 | 86 | 0 | 9 | 0 | 79 | 0 | 96 | 39 | 0 | 31 | 4 | 436 |
| Total | 384 | 296 | 2 | 43 | 7 | 346 | 8 | 456 | 137 | 1 | 90 | 9 | 1779 |
| Grand Total | 1032 | 904 | 8 | 168 | 18 | 894 | 19 | 1419 | 409 | 2 | 174 | 22 | 5069 |
| Apprch % | 53.1 | 46.5 | 0.4 | 15.6 | 1.7 | 82.8 | 1 | 76.8 | 22.1 | 1 | 87.9 | 11.1 | |
| Total % | 20.4 | 17.8 | 0.2 | 3.3 | 0.4 | 17.6 | 0.4 | 28 | 8.1 | 0 | 3.4 | 0.4 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 7

Groups Printed- Trucks

| Start Time | Main St From North | | | Cross St From East | | | Main St From South | | | Border St From West | | | Int. Total |
|--------------------|-----------------------|----------|----------|-----------------------|----------|----------|-----------------------|-----------|----------|------------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | Left | Thru | Right | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 |
| 03:15 PM | 2 | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 9 |
| 03:30 PM | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 6 |
| 03:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 6 |
| Total | 3 | 3 | 1 | 2 | 0 | 1 | 0 | 11 | 2 | 1 | 0 | 0 | 24 |
| 04:00 PM | 1 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 6 |
| 04:15 PM | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 5 |
| 04:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 04:45 PM | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 4 |
| Total | 6 | 1 | 0 | 1 | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 16 |
| 05:00 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 4 |
| 05:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:30 PM | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 1 | 0 | 3 |
| Total | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 4 | 0 | 0 | 2 | 0 | 10 |
| Grand Total | 10 | 5 | 1 | 4 | 0 | 6 | 0 | 19 | 2 | 1 | 2 | 0 | 50 |
| Apprch % | 62.5 | 31.2 | 6.2 | 40 | 0 | 60 | 0 | 90.5 | 9.5 | 33.3 | 66.7 | 0 | |
| Total % | 20 | 10 | 2 | 8 | 0 | 12 | 0 | 38 | 4 | 2 | 4 | 0 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 10

Groups Printed- Bikes Peds

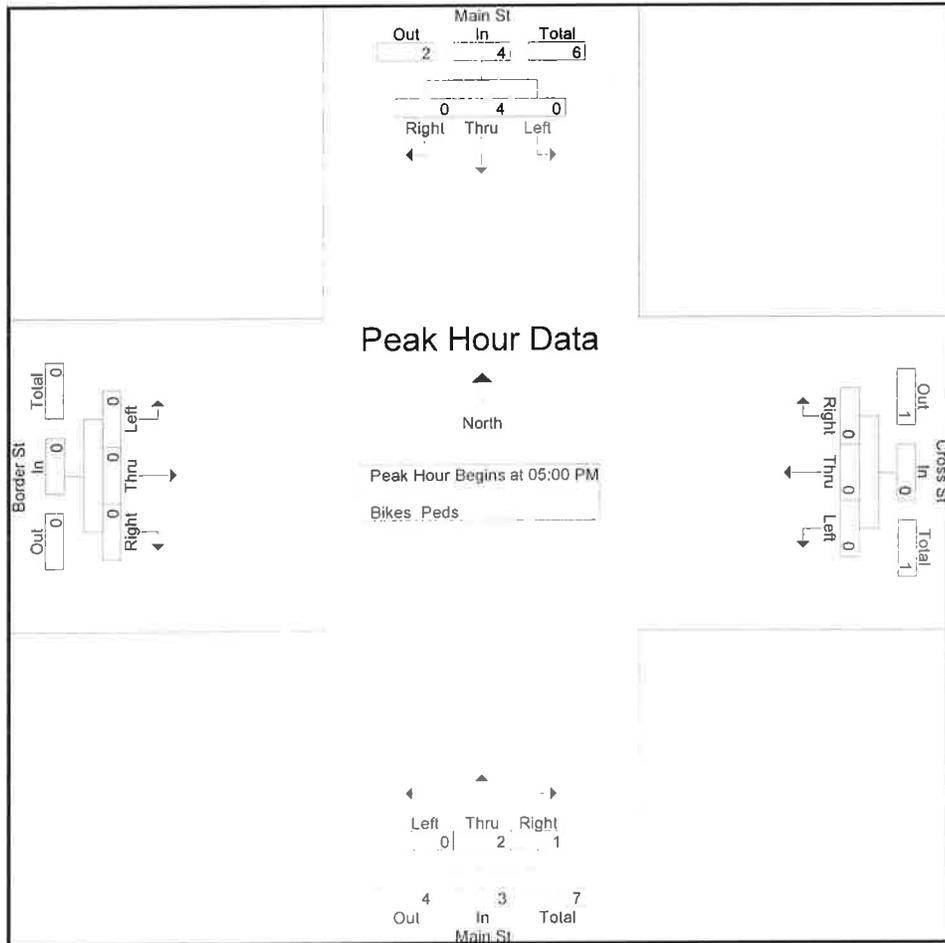
| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|-----------------------|------|-------|------|-----------------------|------|-------|------|-----------------------|------|-------|------|------------------------|------|-------|------|--------------|--------------|------------|
| | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | Left | Thru | Right | Peds | | | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 0 | 3 |
| Total | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 4 |
| 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 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 3 | 1 | 4 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:45 PM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| Total | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 7 | 2 | 9 |
| 05:00 PM | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 5 |
| 05:15 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 2 | 6 |
| 05:30 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:45 PM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 7 | 7 | 14 |
| Grand Total | 1 | 5 | 0 | 5 | 0 | 0 | 0 | 8 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 4 | 17 | 10 | 27 |
| Apprch % | 16.7 | 83.3 | 0 | | 0 | 0 | 0 | | 0 | 50 | 50 | | 0 | 0 | 0 | | | | |
| Total % | 10 | 50 | 0 | | 0 | 0 | 0 | | 0 | 20 | 20 | | 0 | 0 | 0 | | 63 | 37 | |

Accurate Counts
978-664-2565

N/S Street : Main Street
E/W Street: Cross St / Border St
City/State : Winchester, MA
Weather : Cloudy

File Name : 77450003
Site Code : 77450003
Start Date : 9/20/2018
Page No : 11

| Start Time | Main St From North | | | | Cross St From East | | | | Main St From South | | | | Border St From West | | | | Int. Total |
|--|-----------------------|------|-------|------------|-----------------------|------|-------|------------|-----------------------|------|-------|------------|------------------------|------|-------|------------|------------|
| | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | Left | Thru | Right | App. Total | |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 05:00 PM | | | | | | | | | | | | | | | | | |
| 05:00 PM | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 0 | 0 | 0 | 0 | 2 |
| 05:30 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 05:45 PM | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 2 |
| Total Volume | 0 | 4 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 0 | 0 | 0 | 0 | 7 |
| % App. Total | 0 | 100 | 0 | | 0 | 0 | 0 | | 0 | 66.7 | 33.3 | | 0 | 0 | 0 | | |
| PHF | .000 | .500 | .000 | .500 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .375 | .000 | .000 | .000 | .000 | .875 |



Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Swanton Street
City/State : Winchester, MA
Weather : Clear

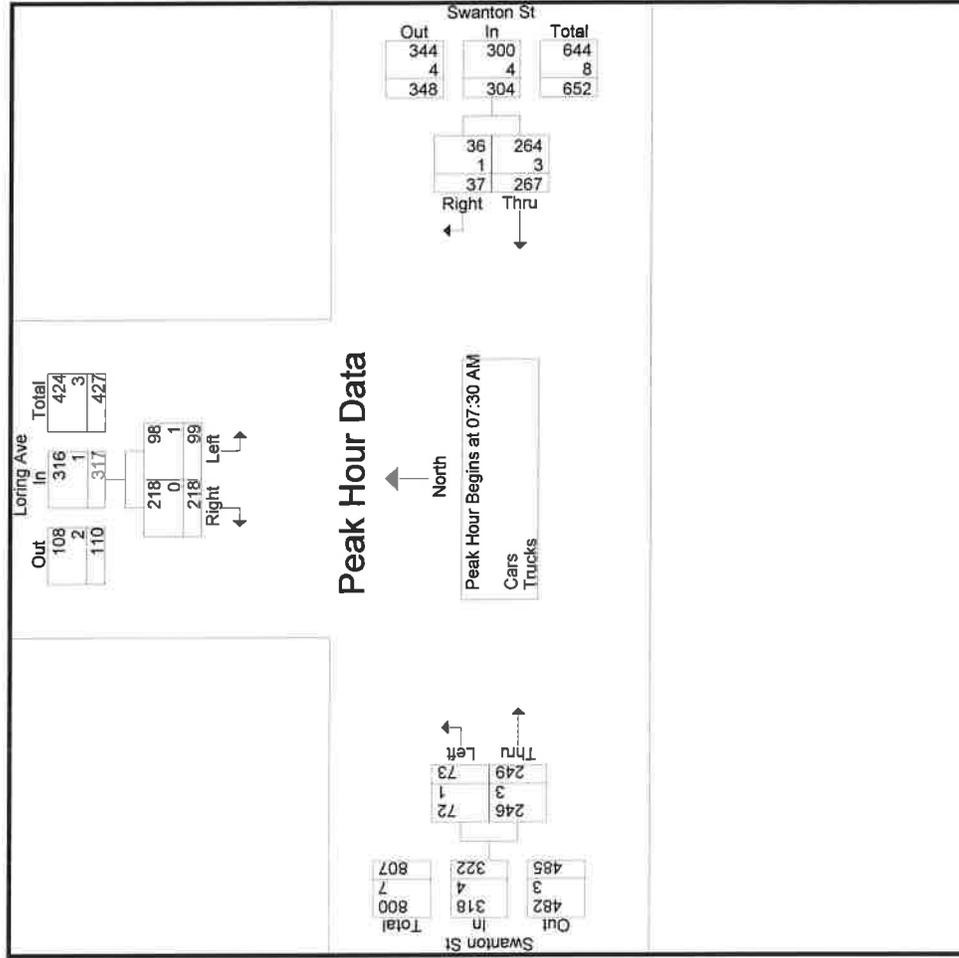
File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 2

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | Int. Total |
|--|--------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 17 | 79 | 96 | 78 | 8 | 86 | 13 | 55 | 68 | 250 |
| 07:45 AM | 21 | 66 | 87 | 71 | 7 | 78 | 22 | 54 | 76 | 241 |
| 08:00 AM | 29 | 40 | 69 | 61 | 8 | 69 | 9 | 65 | 74 | 212 |
| 08:15 AM | 32 | 33 | 65 | 57 | 14 | 71 | 29 | 75 | 104 | 240 |
| Total Volume | 99 | 218 | 317 | 267 | 37 | 304 | 73 | 249 | 322 | 943 |
| % App. Total | 31.2 | 68.8 | | 87.8 | 12.2 | | 22.7 | 77.3 | | |
| PHF | .773 | .690 | .826 | .856 | .661 | .884 | .629 | .830 | .774 | .943 |
| Cars | 98 | 218 | 316 | 264 | 36 | 300 | 72 | 246 | 318 | 934 |
| % Cars | 99.0 | 100 | 99.7 | 98.9 | 97.3 | 98.7 | 98.6 | 98.8 | 98.8 | 99.0 |
| Trucks | 1 | 0 | 1 | 3 | 1 | 4 | 1 | 3 | 4 | 9 |
| % Trucks | 1.0 | 0 | 0.3 | 1.1 | 2.7 | 1.3 | 1.4 | 1.2 | 1.2 | 1.0 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Swanton Street
City/State : Winchester, MA
Weather : Clear

File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 3



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

Peak Hour for Each Approach Begins at:

| | 07:15 AM | | 08:00 AM | | 08:00 AM | | 08:00 AM | |
|---------------------|----------|-----|----------|-----|----------|-----|----------|-----|
| +0 mins. | 12 | 59 | 71 | 61 | 8 | 69 | 9 | 74 |
| +15 mins. | 17 | 79 | 96 | 57 | 14 | 71 | 29 | 104 |
| +30 mins. | 21 | 66 | 87 | 88 | 14 | 102 | 41 | 107 |
| +45 mins. | 29 | 40 | 69 | 80 | 8 | 88 | 27 | 79 |
| Total Volume | 79 | 244 | 323 | 286 | 44 | 330 | 106 | 364 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 5

Groups Printed- Cars

| Start Time | Loring Ave From North | | Swanton St From East | | Swanton St From West | | Int. Total |
|--------------------|-----------------------|------------|----------------------|-----------|----------------------|------------|-------------|
| | Left | Right | Thru | Right | Left | Thru | |
| 07:00 AM | 6 | 37 | 47 | 3 | 9 | 37 | 139 |
| 07:15 AM | 12 | 59 | 52 | 4 | 14 | 28 | 169 |
| 07:30 AM | 16 | 79 | 77 | 8 | 13 | 55 | 248 |
| 07:45 AM | 21 | 66 | 71 | 7 | 22 | 53 | 240 |
| Total | 55 | 241 | 247 | 22 | 58 | 173 | 796 |
| 08:00 AM | 29 | 40 | 59 | 7 | 9 | 64 | 208 |
| 08:15 AM | 32 | 33 | 57 | 14 | 28 | 74 | 238 |
| 08:30 AM | 14 | 20 | 88 | 14 | 41 | 65 | 242 |
| 08:45 AM | 8 | 32 | 80 | 8 | 27 | 50 | 205 |
| Total | 83 | 125 | 284 | 43 | 105 | 253 | 893 |
| Grand Total | 138 | 366 | 531 | 65 | 163 | 426 | 1689 |
| Approch % | 27.4 | 72.6 | 89.1 | 10.9 | 27.7 | 72.3 | |
| Total % | 8.2 | 21.7 | 31.4 | 3.8 | 9.7 | 25.2 | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 EW Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 9

| Start Time | Loring Ave From North | | Swanton St From East | | Swanton St From West | | Int. Total |
|--------------------|-----------------------|----------|----------------------|------------|----------------------|-------------|------------|
| | Left | Right | Thru | Right | Left | Thru | |
| 07:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 07:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Total | 1 | 0 | 2 | 0 | 0 | 4 | 7 |
| 08:00 AM | 0 | 0 | 2 | 1 | 0 | 1 | 4 |
| 08:15 AM | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 2 | 2 |
| Total | 0 | 0 | 2 | 1 | 1 | 5 | 9 |
| Grand Total | 1 | 0 | 4 | 1 | 1 | 9 | 16 |
| Approch % | 100 | 0 | 80 | 20 | 10 | 90 | |
| Total % | 6.2 | 0 | 25 | 6.2 | 6.2 | 56.2 | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 EW Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 13

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | Groups Printed- Bikes Peds | | |
|--------------------|-----------------------|----------|----------|----------------------|----------|----------|----------------------|----------|----------|----------------------------|--------------|------------|
| | Left | Right | Peds | Thru | Right | Peds | Left | Thru | Peds | Exclu. Total | Inclu. Total | Int. Total |
| 07:00 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 2 |
| 07:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 2 | 5 |
| 08:00 AM | 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 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Total | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 |
| Grand Total | 1 | 0 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 2 | 7 |
| Approch % | 100 | 0 | | 0 | 0 | | 0 | 100 | | | | |
| Total % | 50 | 0 | | 0 | 0 | | 0 | 50 | | 71.4 | 28.6 | |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Swanton Street
City/State : Winchester, MA
Weather : Clear

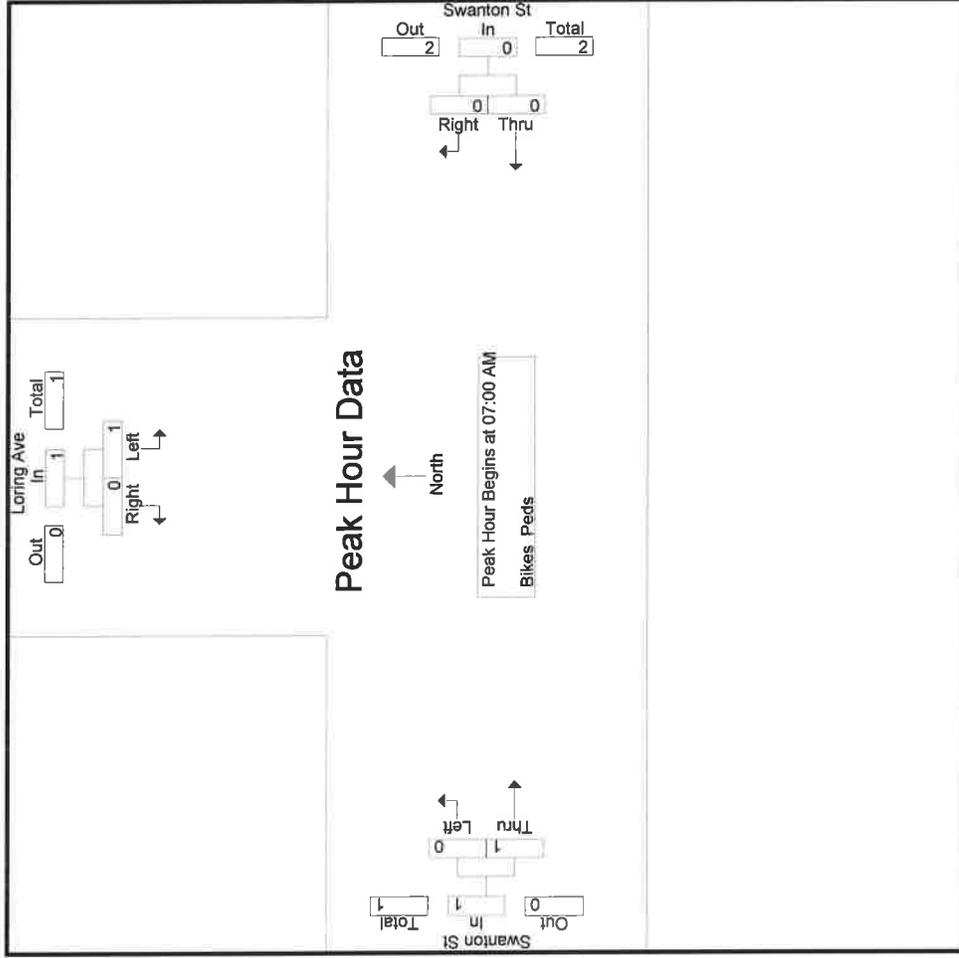
File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 14

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | Int. Total |
|--|--------------------------|-------|------------|-------------------------|-------|------------|-------------------------|------|------------|------------|
| | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. 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 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 07:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 |
| % App. Total | 100 | 0 | .250 | 0 | 0 | .000 | 0 | 100 | .250 | .500 |
| PHF | .250 | .000 | .250 | .000 | .000 | .000 | .000 | .250 | .250 | .500 |

Accurate Counts
978-664-2565

File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 15

N/S Street : Loring Avenue
E/W Street : Swanton Street
City/State : Winchester, MA
Weather : Clear



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 |
| +15 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| +30 mins. | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 1

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | Int. Total |
|--------------------|-----------------------|------------|------------|----------------------|------------|------------|----------------------|------------|------------|-------------|
| | Left | Right | Thru | Right | Thru | Left | Thru | Left | Thru | |
| 03:00 PM | 13 | 23 | 68 | 9 | 62 | 30 | 62 | 30 | 62 | 205 |
| 03:15 PM | 10 | 32 | 66 | 16 | 62 | 41 | 62 | 41 | 62 | 227 |
| 03:30 PM | 3 | 17 | 62 | 6 | 62 | 31 | 67 | 31 | 67 | 186 |
| 03:45 PM | 4 | 23 | 73 | 4 | 62 | 25 | 62 | 25 | 62 | 191 |
| Total | 30 | 95 | 269 | 35 | 253 | 127 | 253 | 127 | 253 | 809 |
| 04:00 PM | 7 | 20 | 67 | 5 | 71 | 31 | 71 | 31 | 71 | 201 |
| 04:15 PM | 9 | 28 | 50 | 9 | 54 | 53 | 54 | 53 | 54 | 203 |
| 04:30 PM | 4 | 30 | 52 | 7 | 74 | 35 | 74 | 35 | 74 | 202 |
| 04:45 PM | 5 | 41 | 64 | 8 | 71 | 42 | 71 | 42 | 71 | 231 |
| Total | 25 | 119 | 233 | 29 | 270 | 161 | 270 | 161 | 270 | 837 |
| 05:00 PM | 4 | 34 | 69 | 6 | 69 | 67 | 69 | 67 | 69 | 249 |
| 05:15 PM | 13 | 32 | 58 | 7 | 79 | 36 | 79 | 36 | 79 | 225 |
| 05:30 PM | 7 | 39 | 72 | 8 | 71 | 31 | 71 | 31 | 71 | 228 |
| 05:45 PM | 13 | 41 | 47 | 9 | 69 | 38 | 69 | 38 | 69 | 217 |
| Total | 37 | 146 | 246 | 30 | 288 | 172 | 288 | 172 | 288 | 919 |
| Grand Total | 92 | 360 | 748 | 94 | 811 | 460 | 811 | 460 | 811 | 2565 |
| Approach % | 20.4 | 79.6 | 88.8 | 11.2 | 63.8 | 36.2 | 63.8 | 36.2 | 63.8 | |
| Total % | 3.6 | 14 | 29.2 | 3.7 | 31.6 | 17.9 | 31.6 | 17.9 | 31.6 | |
| Cars | 92 | 360 | 748 | 94 | 807 | 460 | 807 | 460 | 807 | 2561 |
| % Cars | 100 | 100 | 100 | 100 | 99.5 | 100 | 99.5 | 100 | 99.5 | 99.8 |
| Trucks | 0 | 0 | 0 | 0 | 4 | 0 | 4 | 0 | 4 | 4 |
| % Trucks | 0 | 0 | 0 | 0 | 0.5 | 0 | 0.5 | 0 | 0.5 | 0.2 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Swanton Street
City/State : Winchester, MA
Weather : Clear

File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 5

| Start Time | Loring Ave From North | | | | | | Swanton St From East | | | | | | Swanton St From West | | | Int. Total |
|--------------------|-----------------------|--|-------|--|------|--|----------------------|--|------|--|------|--|----------------------|------------|--|------------|
| | Left | | Right | | Thru | | Right | | Thru | | Left | | Thru | Int. Total | | |
| | | | | | | | | | | | | | | | | |
| 03:00 PM | 13 | | 23 | | 68 | | 9 | | 30 | | 62 | | 205 | | | |
| 03:15 PM | 10 | | 32 | | 66 | | 16 | | 41 | | 59 | | 224 | | | |
| 03:30 PM | 3 | | 17 | | 62 | | 6 | | 31 | | 66 | | 185 | | | |
| 03:45 PM | 4 | | 23 | | 73 | | 4 | | 25 | | 62 | | 191 | | | |
| Total | 30 | | 95 | | 269 | | 35 | | 127 | | 249 | | 805 | | | |
| 04:00 PM | 7 | | 20 | | 67 | | 5 | | 31 | | 71 | | 201 | | | |
| 04:15 PM | 9 | | 28 | | 50 | | 9 | | 53 | | 54 | | 203 | | | |
| 04:30 PM | 4 | | 30 | | 52 | | 7 | | 35 | | 74 | | 202 | | | |
| 04:45 PM | 5 | | 41 | | 64 | | 8 | | 42 | | 71 | | 231 | | | |
| Total | 25 | | 119 | | 233 | | 29 | | 161 | | 270 | | 837 | | | |
| 05:00 PM | 4 | | 34 | | 69 | | 6 | | 67 | | 69 | | 249 | | | |
| 05:15 PM | 13 | | 32 | | 58 | | 7 | | 36 | | 79 | | 225 | | | |
| 05:30 PM | 7 | | 39 | | 72 | | 8 | | 31 | | 71 | | 228 | | | |
| 05:45 PM | 13 | | 41 | | 47 | | 9 | | 38 | | 69 | | 217 | | | |
| Total | 37 | | 146 | | 246 | | 30 | | 172 | | 288 | | 919 | | | |
| Grand Total | 92 | | 360 | | 748 | | 94 | | 460 | | 807 | | 2561 | | | |
| Approach % | 20.4 | | 79.6 | | 88.8 | | 11.2 | | 36.3 | | 63.7 | | | | | |
| Total % | 3.6 | | 14.1 | | 29.2 | | 3.7 | | 18 | | 31.5 | | | | | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 9

| Start Time | Loring Ave From North | | Swanton St From East | | Swanton St From West | | Int. Total |
|--------------------|-----------------------|----------|----------------------|----------|----------------------|------------|------------|
| | Left | Right | Thru | Right | Left | Thru | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grand Total | 0 | 0 | 0 | 0 | 0 | 4 | 4 |
| Approch % | 0 | 0 | 0 | 0 | 0 | 100 | 100 |
| Total % | 0 | 0 | 0 | 0 | 0 | 100 | 100 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 13

Groups Printed- Bikes Peds

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|-----------------------|----------|-----------|----------------------|----------|----------|----------------------|----------|----------|--------------|--------------|------------|
| | Left | Right | Peds | Thru | Right | Peds | Left | Thru | Peds | | | |
| 03:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:15 PM | 0 | 0 | 5 | 0 | 0 | 3 | 0 | 0 | 1 | 9 | 0 | 9 |
| 03:30 PM | 0 | 0 | 8 | 0 | 0 | 1 | 0 | 0 | 0 | 9 | 0 | 9 |
| 03:45 PM | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 4 | 0 | 4 |
| Total | 0 | 0 | 17 | 0 | 0 | 5 | 0 | 0 | 1 | 23 | 0 | 23 |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 04:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 04:45 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| Total | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 1 | 4 |
| 05:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 05:45 PM | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| Total | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| Grand Total | 0 | 0 | 25 | 0 | 1 | 5 | 0 | 0 | 1 | 31 | 1 | 32 |
| Approch % | 0 | 0 | | 0 | 100 | | 0 | 0 | | | | |
| Total % | 0 | 0 | | 0 | 100 | | 0 | 0 | | 96.9 | | 3.1 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Swanton Street
City/State : Winchester, MA
Weather : Clear

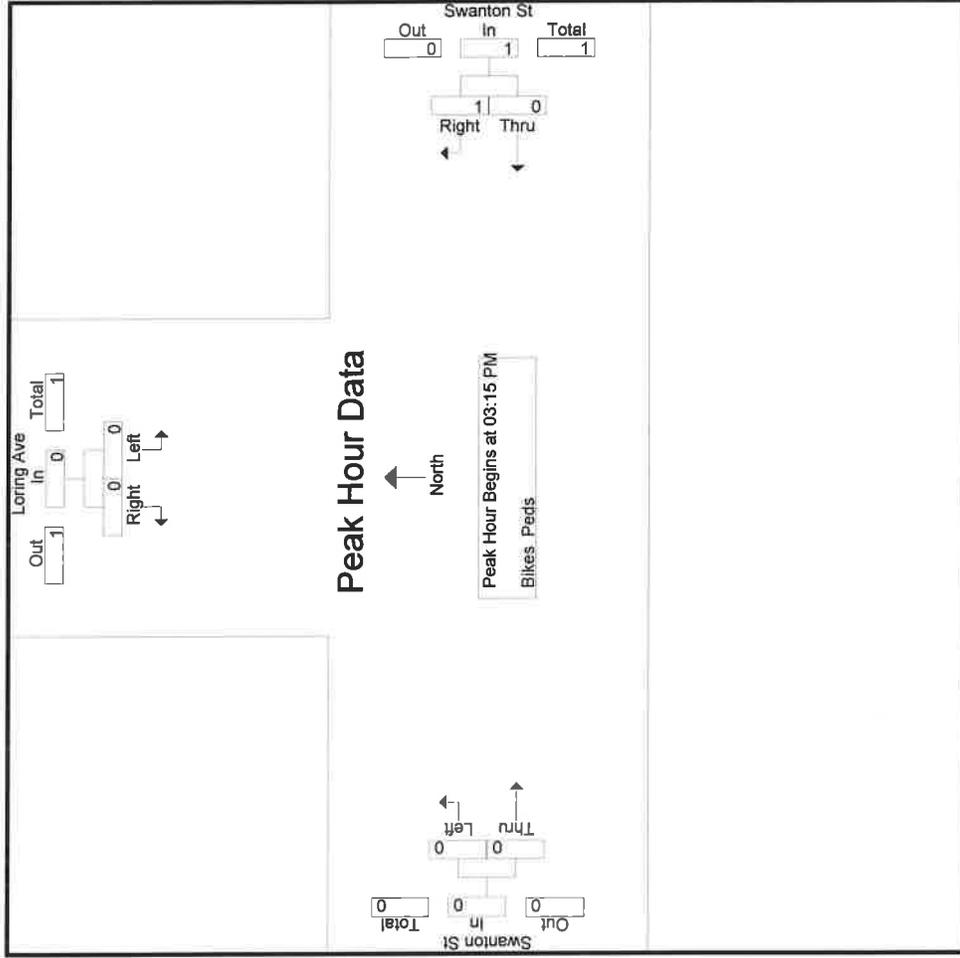
File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 14

| Start Time | Loring Ave From North | | | Swanton St From East | | | Swanton St From West | | | |
|--|-----------------------|-------|------------|----------------------|-------|------------|----------------------|------|------------|------------|
| | Left | Right | App. Total | Thru | Right | App. Total | Left | Thru | App. Total | Int. Total |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:00 PM | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 |
| % App. Total | 0 | 0 | 0 | 0 | 100 | 100 | 0 | 0 | 0 | 100 |
| PHF | .000 | .000 | .000 | .000 | .250 | .250 | .000 | .000 | .000 | .250 |

Accurate Counts
978-664-2565

File Name : 77450002
Site Code : 77450002
Start Date : 4/24/2019
Page No : 15

N/S Street : Loring Avenue
E/W Street : Swanton Street
City/State : Winchester, MA
Weather : Clear



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 03:00 PM | 03:15 PM | 03:00 PM | |
|--------------|----------|----------|----------|------|
| +0 mins. | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 0 |
| +45 mins. | 0 | 0 | 1 | 0 |
| Total Volume | 0 | 0 | 1 | 0 |
| % App. Total | 0 | 0 | 100 | 0 |
| PHF | .000 | .000 | .250 | .000 |
| | | | | .000 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 1

Groups Printed- Cars - Trucks

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | Int. Total |
|--------------------|--------------------|-------------|------------|-----------------------|------------|-----------|--------------------|-------|-------------|------------|
| | Left | Thru | Right | Left | Thru | Right | Thru | Right | | |
| 07:00 AM | 37 | 120 | 12 | 3 | 49 | 4 | | | 225 | |
| 07:15 AM | 63 | 114 | 17 | 5 | 48 | 9 | | | 256 | |
| 07:30 AM | 94 | 152 | 19 | 3 | 71 | 6 | | | 345 | |
| 07:45 AM | 82 | 150 | 30 | 7 | 69 | 11 | | | 349 | |
| Total | 276 | 536 | 78 | 18 | 237 | 30 | | | 1175 | |
| 08:00 AM | 90 | 150 | 18 | 6 | 81 | 15 | | | 360 | |
| 08:15 AM | 46 | 154 | 36 | 10 | 62 | 13 | | | 321 | |
| 08:30 AM | 34 | 134 | 45 | 8 | 69 | 8 | | | 298 | |
| 08:45 AM | 31 | 97 | 32 | 2 | 59 | 7 | | | 228 | |
| Total | 201 | 535 | 131 | 26 | 271 | 43 | | | 1207 | |
| Grand Total | 477 | 1071 | 209 | 44 | 508 | 73 | | | 2382 | |
| Apprch % | 30.8 | 69.2 | 82.6 | 17.4 | 87.4 | 12.6 | | | | |
| Total % | 20 | 45 | 8.8 | 1.8 | 21.3 | 3.1 | | | | |
| Cars | 474 | 1062 | 207 | 43 | 501 | 72 | | | 2359 | |
| % Cars | 99.4 | 99.2 | 99 | 97.7 | 98.6 | 98.6 | | | 99 | |
| Trucks | 3 | 9 | 2 | 1 | 7 | 1 | | | 23 | |
| % Trucks | 0.6 | 0.8 | 1 | 2.3 | 1.4 | 1.4 | | | 1 | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 2

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | |
|--|--------------------|------|------------|-----------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 07:30 AM | | | | | | | | | | |
| 07:30 AM | 94 | 152 | 246 | 3 | 19 | 22 | 71 | 6 | 77 | 345 |
| 07:45 AM | 82 | 150 | 232 | 7 | 30 | 37 | 69 | 11 | 80 | 349 |
| 08:00 AM | 90 | 150 | 240 | 6 | 18 | 24 | 81 | 15 | 96 | 360 |
| 08:15 AM | 46 | 154 | 200 | 10 | 36 | 46 | 62 | 13 | 75 | 321 |
| Total Volume | 312 | 606 | 918 | 26 | 103 | 129 | 283 | 45 | 328 | 1375 |
| % App. Total | 34 | 66 | | 20.2 | 79.8 | | 86.3 | 13.7 | | |
| PHF | .830 | .984 | .933 | .650 | .715 | .701 | .873 | .750 | .854 | .955 |
| Cars | 310 | 601 | 911 | 25 | 101 | 126 | 279 | 44 | 323 | 1360 |
| % Cars | 99.4 | 99.2 | 99.2 | 96.2 | 98.1 | 97.7 | 98.6 | 97.8 | 98.5 | 98.9 |
| Trucks | 2 | 5 | 7 | 1 | 2 | 3 | 4 | 1 | 5 | 15 |
| % Trucks | 0.6 | 0.8 | 0.8 | 3.8 | 1.9 | 2.3 | 1.4 | 2.2 | 1.5 | 1.1 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Cross Street
City/State : Winchester, MA
Weather : Clear

File Name : 77450001
Site Code : 77450001
Start Date : 4/24/2019
Page No : 5

| Start Time | Cross St From East | | | Thru | Loring Ave From South | | | Cross St From West | | | Int. Total |
|--------------------|--------------------|-------------|-------------|-------------|-----------------------|-------------|-------|--------------------|------|------|-------------|
| | Left | Thru | Right | | Left | Thru | Right | Thru | Left | Thru | |
| 07:00 AM | 37 | 119 | 12 | 3 | 49 | 4 | | | | | 224 |
| 07:15 AM | 62 | 114 | 17 | 5 | 47 | 9 | | | | | 254 |
| 07:30 AM | 94 | 151 | 19 | 3 | 70 | 6 | | | | | 343 |
| 07:45 AM | 82 | 150 | 30 | 7 | 67 | 11 | | | | | 347 |
| Total | 275 | 534 | 78 | 18 | 233 | 30 | | | | | 1168 |
| 08:00 AM | 90 | 149 | 17 | 6 | 80 | 14 | | | | | 356 |
| 08:15 AM | 44 | 151 | 35 | 9 | 62 | 13 | | | | | 314 |
| 08:30 AM | 34 | 133 | 45 | 8 | 68 | 8 | | | | | 296 |
| 08:45 AM | 31 | 95 | 32 | 2 | 58 | 7 | | | | | 225 |
| Total | 199 | 528 | 129 | 25 | 268 | 42 | | | | | 1191 |
| Grand Total | 474 | 1062 | 207 | 43 | 501 | 72 | | | | | 2359 |
| Approch % | 30.9 | 69.1 | 82.8 | 17.2 | 87.4 | 12.6 | | | | | |
| Total % | 20.1 | 45 | 8.8 | 1.8 | 21.2 | 3.1 | | | | | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 9

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | Int. Total |
|--------------------|--------------------|----------|----------|-----------------------|----------|----------|--------------------|----------|----------|------------|
| | Left | Thru | Right | Left | Thru | Right | Thru | Left | Right | |
| 07:00 AM | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| 07:15 AM | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 07:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| Total | 1 | 2 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 7 |
| 08:00 AM | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 4 |
| 08:15 AM | 2 | 3 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 7 |
| 08:30 AM | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 |
| 08:45 AM | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 3 |
| Total | 2 | 7 | 2 | 1 | 2 | 2 | 3 | 1 | 1 | 16 |
| Grand Total | 3 | 9 | 2 | 1 | 7 | 2 | 7 | 1 | 1 | 23 |
| Approch % | 25 | 75 | 66.7 | 33.3 | 87.5 | 12.5 | 87.5 | 12.5 | 12.5 | |
| Total % | 13 | 39.1 | 8.7 | 4.3 | 30.4 | 4.3 | 30.4 | 4.3 | 4.3 | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 13

| Start Time | Cross St From East | | | | Loring Ave From South | | | | Cross St From West | | | | Inclu. Total | Exclu. Total | Int. Total | |
|--------------------|--------------------|----------|----------|----------|-----------------------|----------|----------|----------|--------------------|----------|----------|----------|--------------|--------------|------------|-----------|
| | Thru | | Peds | | Left | | Right | | Thru | | Right | | | | | |
| | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | Left | Right | | | | |
| 07:00 AM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 07:30 AM | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| Total | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 7 | 2 | 9 |
| 08:00 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 5 |
| 08:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| 08:30 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 08:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 6 |
| Grand Total | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 9 | 13 | 2 | 15 |
| Approch % | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total % | 50 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 0 | 0 | 0 | 86.7 | 0 | 13.3 |

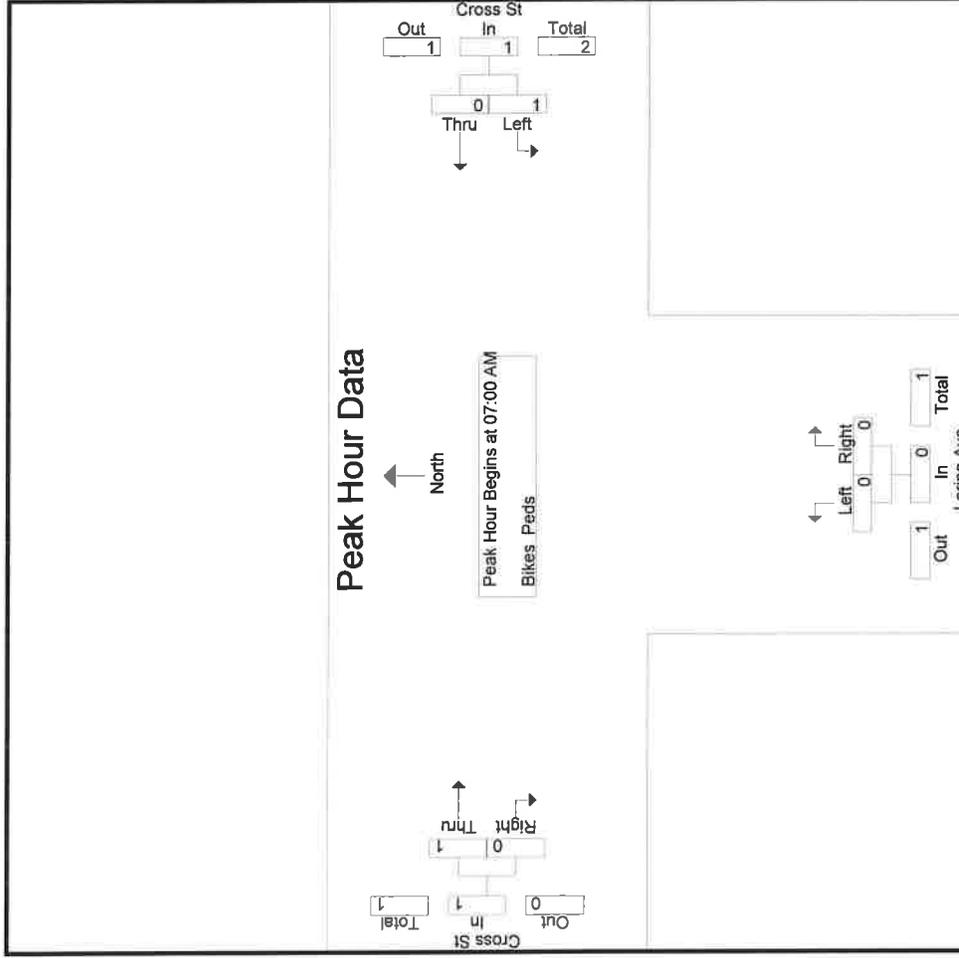
Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Cross Street
City/State : Winchester, MA
Weather : Clear

File Name : 77450001
Site Code : 77450001
Start Date : 4/24/2019
Page No : 14

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | |
|--|-----------------------|------|------------|--------------------------|-------|------------|-----------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | 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 |
| 07:15 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 07:30 AM | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 07:45 AM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| % App. Total | 100 | 0 | | 0 | 0 | | 100 | 0 | | |
| PHF | .250 | .000 | .250 | .000 | .000 | .000 | .250 | .000 | .250 | .250 |

N/S Street : Loring Avenue
E/W Street: Cross Street
City/State : Winchester, MA
Weather : Clear



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 |
| +15 mins. | 0 | 0 | 0 | 0 |
| +30 mins. | 1 | 0 | 0 | 1 |
| +45 mins. | 0 | 0 | 0 | 0 |
| Total Volume | 1 | 0 | 1 | 1 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 1

| Start Time | Groups Printed- Cars - Trucks | | | | | | | | | | Int. Total |
|--------------------|-------------------------------|-------------|------------|-----------------------|-------------|-----------|--------------------|-------|--|-------|-------------|
| | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | Right | |
| | Left | Thru | Right | Left | Thru | Right | Thru | Right | | | |
| 03:00 PM | 22 | 73 | 36 | 3 | 99 | 9 | | | | | 242 |
| 03:15 PM | 35 | 94 | 45 | 5 | 116 | 7 | | | | | 302 |
| 03:30 PM | 23 | 100 | 36 | 2 | 134 | 6 | | | | | 301 |
| 03:45 PM | 20 | 76 | 27 | 0 | 132 | 6 | | | | | 261 |
| Total | 100 | 343 | 144 | 10 | 481 | 28 | | | | | 1106 |
| 04:00 PM | 23 | 85 | 36 | 5 | 117 | 4 | | | | | 270 |
| 04:15 PM | 31 | 66 | 42 | 8 | 134 | 8 | | | | | 289 |
| 04:30 PM | 34 | 86 | 47 | 2 | 153 | 5 | | | | | 327 |
| 04:45 PM | 36 | 104 | 44 | 5 | 143 | 10 | | | | | 342 |
| Total | 124 | 341 | 169 | 20 | 547 | 27 | | | | | 1228 |
| 05:00 PM | 36 | 70 | 67 | 1 | 170 | 7 | | | | | 351 |
| 05:15 PM | 37 | 98 | 46 | 2 | 155 | 10 | | | | | 348 |
| 05:30 PM | 47 | 83 | 36 | 1 | 137 | 10 | | | | | 314 |
| 05:45 PM | 44 | 96 | 31 | 11 | 115 | 11 | | | | | 308 |
| Total | 164 | 347 | 180 | 15 | 577 | 38 | | | | | 1321 |
| Grand Total | 388 | 1031 | 493 | 45 | 1605 | 93 | | | | | 3655 |
| Approch % | 27.3 | 72.7 | 91.6 | 8.4 | 94.5 | 5.5 | | | | | |
| Total % | 10.6 | 28.2 | 13.5 | 1.2 | 43.9 | 2.5 | | | | | |
| Cars | 388 | 1029 | 492 | 45 | 1601 | 91 | | | | | 3646 |
| % Cars | 100 | 99.8 | 99.8 | 100 | 99.8 | 97.8 | | | | | 99.8 |
| Trucks | 0 | 2 | 1 | 0 | 4 | 2 | | | | | 9 |
| % Trucks | 0 | 0.2 | 0.2 | 0 | 0.2 | 2.2 | | | | | 0.2 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

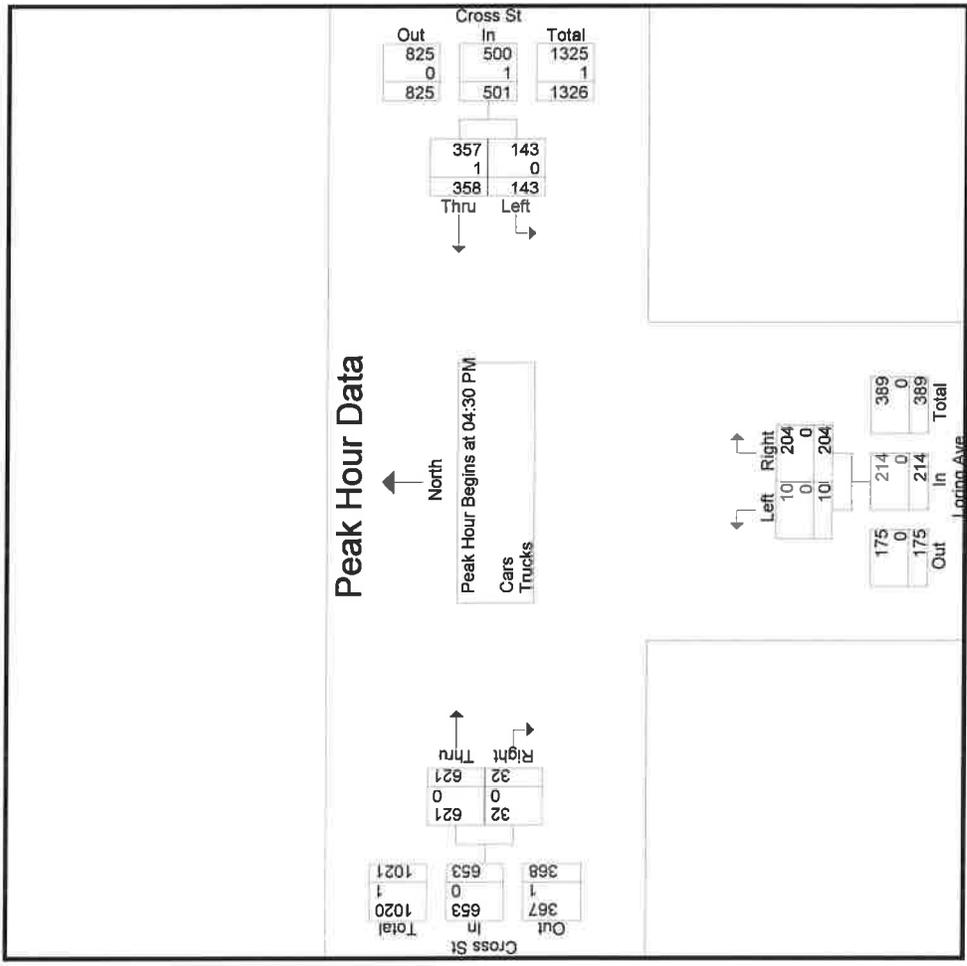
File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 2

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | |
|--|--------------------|------|------------|-----------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 04:30 PM | | | | | | | | | | |
| 04:30 PM | 34 | 86 | 120 | 2 | 47 | 49 | 153 | 5 | 158 | 327 |
| 04:45 PM | 36 | 104 | 140 | 5 | 44 | 49 | 143 | 10 | 153 | 342 |
| 05:00 PM | 36 | 70 | 106 | 1 | 67 | 68 | 170 | 7 | 177 | 351 |
| 05:15 PM | 37 | 98 | 135 | 2 | 46 | 48 | 155 | 10 | 165 | 348 |
| Total Volume | 143 | 358 | 501 | 10 | 204 | 214 | 621 | 32 | 653 | 1368 |
| % App. Total | 28.5 | 71.5 | | 4.7 | 95.3 | | 95.1 | 4.9 | | |
| PHF | .966 | .861 | .895 | .500 | .761 | .787 | .913 | .800 | .922 | .974 |
| Cars | 143 | 357 | 500 | 10 | 204 | 214 | 621 | 32 | 653 | 1367 |
| % Cars | 100 | 99.7 | 99.8 | 100 | 100 | 100 | 100 | 100 | 100 | 99.9 |
| Trucks | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| % Trucks | 0 | 0.3 | 0.2 | 0 | 0 | 0 | 0 | 0 | 0 | 0.1 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
 EW Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 3



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

| | 04:45 PM | 04:15 PM | 04:30 PM | |
|--------------|----------|----------|----------|------|
| +0 mins. | 36 | 8 | 50 | 5 |
| +15 mins. | 36 | 2 | 49 | 10 |
| +30 mins. | 37 | 5 | 49 | 7 |
| +45 mins. | 47 | 1 | 68 | 10 |
| Total Volume | 156 | 16 | 216 | 32 |
| % App. Total | 30.5 | 7.4 | 92.6 | 4.9 |
| PHF | .830 | .500 | .794 | .800 |
| | | | | .922 |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 5

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | Int. Total |
|--------------------|--------------------|-------------|-------------|-----------------------|-------------|-------------|--------------------|------------|-------------|------------|
| | Left | Thru | Right | Left | Right | Thru | Left | Right | Thru | |
| 03:00 PM | 22 | 73 | 36 | 3 | 36 | 96 | 9 | 9 | 239 | |
| 03:15 PM | 35 | 94 | 45 | 5 | 45 | 115 | 7 | 7 | 301 | |
| 03:30 PM | 23 | 100 | 35 | 2 | 35 | 134 | 5 | 5 | 299 | |
| 03:45 PM | 20 | 76 | 27 | 0 | 27 | 132 | 6 | 6 | 261 | |
| Total | 100 | 343 | 143 | 10 | 143 | 477 | 27 | 27 | 1100 | |
| 04:00 PM | 23 | 85 | 36 | 5 | 36 | 117 | 4 | 4 | 270 | |
| 04:15 PM | 31 | 65 | 42 | 8 | 42 | 134 | 8 | 8 | 288 | |
| 04:30 PM | 34 | 86 | 47 | 2 | 47 | 153 | 5 | 5 | 327 | |
| 04:45 PM | 36 | 104 | 44 | 5 | 44 | 143 | 10 | 10 | 342 | |
| Total | 124 | 340 | 169 | 20 | 169 | 547 | 27 | 27 | 1227 | |
| 05:00 PM | 36 | 69 | 67 | 1 | 67 | 170 | 7 | 7 | 350 | |
| 05:15 PM | 37 | 98 | 46 | 2 | 46 | 155 | 10 | 10 | 348 | |
| 05:30 PM | 47 | 83 | 36 | 1 | 36 | 137 | 9 | 9 | 313 | |
| 05:45 PM | 44 | 96 | 31 | 11 | 31 | 115 | 11 | 11 | 308 | |
| Total | 164 | 346 | 180 | 15 | 180 | 577 | 37 | 37 | 1319 | |
| Grand Total | 388 | 1029 | 492 | 45 | 492 | 1601 | 91 | 91 | 3646 | |
| Approch % | 27.4 | 72.6 | 91.6 | 8.4 | 91.6 | 94.6 | 5.4 | 5.4 | | |
| Total % | 10.6 | 28.2 | 13.5 | 1.2 | 13.5 | 43.9 | 2.5 | 2.5 | | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 9

Groups Printed- Trucks

| Start Time | Cross St From East | | Thru | Loring Ave From South | | Cross St From West | | Int. Total |
|--------------------|--------------------|----------|----------|-----------------------|----------|--------------------|----------|------------|
| | Left | Right | | Left | Right | Thru | Right | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 3 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 |
| 03:30 PM | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 0 | 0 | 1 | 4 | 1 | 6 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 05:00 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 05:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 2 |
| Grand Total | 0 | 0 | 2 | 0 | 1 | 4 | 2 | 9 |
| Approch % | 0 | 0 | 100 | 0 | 100 | 66.7 | 33.3 | |
| Total % | 0 | 0 | 22.2 | 0 | 11.1 | 44.4 | 22.2 | |

Accurate Counts

978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 13

Groups Printed- Bikes Peds

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | Exclu. Total | Inclu. Total | Int. Total |
|--------------------|--------------------|------|------|-----------------------|-------|------|--------------------|-------|------|--------------|--------------|------------|
| | Left | Thru | Peds | Left | Right | Peds | Thru | Right | Peds | | | |
| 03:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 0 | 12 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 4 | 1 | 5 |
| Total | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 16 | 16 | 1 | 17 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 1 | 3 |
| 04:15 PM | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 2 |
| 04:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 04:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| Total | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 4 | 5 | 1 | 6 |
| 05:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 1 |
| 05:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 2 |
| 05:30 PM | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 4 | 1 | 5 |
| 05:45 PM | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 4 | 6 | 0 | 6 |
| Total | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 11 | 13 | 1 | 14 |
| Grand Total | 0 | 0 | 1 | 1 | 0 | 2 | 1 | 1 | 31 | 34 | 3 | 37 |
| Approch % | 0 | 0 | 100 | 33.3 | 0 | 0 | 50 | 50 | 33.3 | 91.9 | 8.1 | 37 |
| Total % | 0 | 0 | 33.3 | 33.3 | 0 | 0 | 33.3 | 33.3 | 33.3 | 91.9 | 8.1 | 37 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
 E/W Street: Cross Street
 City/State : Winchester, MA
 Weather : Clear

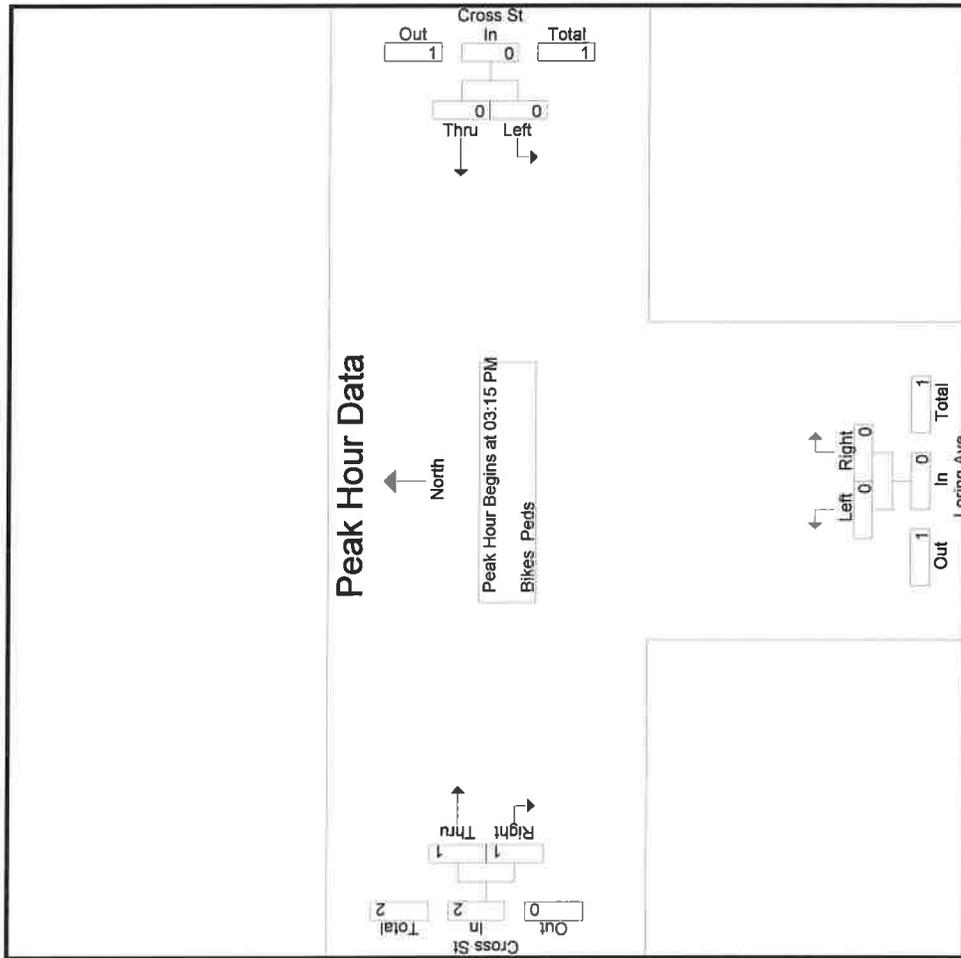
File Name : 77450001
 Site Code : 77450001
 Start Date : 4/24/2019
 Page No : 14

| Start Time | Cross St From East | | | Loring Ave From South | | | Cross St From West | | | |
|--|--------------------|------|------------|-----------------------|-------|------------|--------------------|-------|------------|------------|
| | Left | Thru | App. Total | Left | Right | App. Total | Thru | Right | App. Total | Int. Total |
| Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1 | | | | | | | | | | |
| Peak Hour for Entire Intersection Begins at 03:15 PM | | | | | | | | | | |
| 03:15 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:30 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 03:45 PM | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 04:00 PM | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| Total Volume | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 2 |
| % App. Total | 0 | 0 | 0 | 0 | 0 | 0 | 50 | 50 | 50 | 50 |
| PHF | .000 | .000 | .000 | .000 | .000 | .000 | .250 | .250 | .500 | .500 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
E/W Street: Cross Street
City/State : Winchester, MA
Weather : Clear

File Name : 77450001
Site Code : 77450001
Start Date : 4/24/2019
Page No : 15



Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

| | 03:00 PM | 03:15 PM | 04:45 PM | 05:00 PM |
|--------------|----------|----------|----------|----------|
| +0 mins. | 0 | 0 | 0 | 0 |
| +15 mins. | 0 | 0 | 0 | 0 |
| +30 mins. | 0 | 0 | 0 | 1 |
| +45 mins. | 0 | 1 | 0 | 0 |
| Total Volume | 0 | 1 | 0 | 1 |
| % App. Total | 0 | 100 | 0 | 50 |
| PHF | .000 | .250 | .000 | .250 |
| | | | | .500 |

Accurate Counts
978-664-2565

N/S Street : Loring Avenue
 EW Street: Swanton Street
 City/State : Winchester, MA
 Weather : Clear

File Name : 77450002
 Site Code : 77450002
 Start Date : 4/24/2019
 Page No : 1

| Start Time | Loring Ave From North | | Swanton St From East | | Swanton St From West | | Int. Total |
|--------------------|-----------------------|------------|----------------------|-----------|----------------------|------------|-------------|
| | Left | Right | Thru | Right | Left | Thru | |
| 07:00 AM | 6 | 37 | 48 | 3 | 9 | 37 | 140 |
| 07:15 AM | 12 | 59 | 52 | 4 | 14 | 31 | 172 |
| 07:30 AM | 17 | 79 | 78 | 8 | 13 | 55 | 250 |
| 07:45 AM | 21 | 66 | 71 | 7 | 22 | 54 | 241 |
| Total | 56 | 241 | 249 | 22 | 58 | 177 | 803 |
| 08:00 AM | 29 | 40 | 61 | 8 | 9 | 65 | 212 |
| 08:15 AM | 32 | 33 | 57 | 14 | 29 | 75 | 240 |
| 08:30 AM | 14 | 20 | 88 | 14 | 41 | 66 | 243 |
| 08:45 AM | 8 | 32 | 80 | 8 | 27 | 52 | 207 |
| Total | 83 | 125 | 286 | 44 | 106 | 258 | 902 |
| Grand Total | 139 | 366 | 535 | 66 | 164 | 435 | 1705 |
| Apprch % | 27.5 | 72.5 | 89 | 11 | 27.4 | 72.6 | |
| Total % | 8.2 | 21.5 | 31.4 | 3.9 | 9.6 | 25.5 | |
| Cars | 138 | 366 | 531 | 65 | 163 | 426 | 1689 |
| % Cars | 99.3 | 100 | 99.3 | 98.5 | 99.4 | 97.9 | 99.1 |
| Trucks | 1 | 0 | 4 | 1 | 1 | 9 | 16 |
| % Trucks | 0.7 | 0 | 0.7 | 1.5 | 0.6 | 2.1 | 0.9 |

SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department

4169: Monthly Hourly Volume for April 2017

Location ID: 4169
 County: Middlesex
 Functional Class: 1
 Location: INTERSTATE 93

Seasonal Factor Group: U1-Boston
 Daily Factor Group:
 Axle Factor Group: U1-Boston
 Growth Factor Group:

| | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | TOTAL | |
|----|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--|
| 1 | 2254 | 1436 | 1231 | 955 | 1114 | 2439 | 3390 | 4489 | 5279 | 5808 | 6622 | 7230 | 7760 | 7545 | 8054 | 8215 | 8648 | 8418 | 7478 | 6192 | 5486 | 5056 | 5018 | 4044 | 124161 | |
| 2 | 2637 | 1818 | 1416 | 959 | 945 | 1603 | 2916 | 3888 | 4934 | 7094 | 9131 | 10656 | 11198 | 11083 | 11406 | 11384 | 11159 | 11016 | 10245 | 8278 | 6870 | 5277 | 4439 | 2957 | 153309 | |
| 3 | 1730 | 1006 | 766 | 1027 | 2746 | 8429 | 9568 | 9730 | 9257 | 9624 | 9988 | 9945 | 9647 | 10169 | 10022 | 11485 | 11684 | 12241 | 12495 | 9626 | 6364 | 5577 | 3915 | 2648 | 179689 | |
| 4 | 1432 | 932 | 718 | 967 | 2547 | 8009 | 9609 | 9527 | 8711 | 8084 | 9207 | 8867 | 9331 | 9715 | 10962 | 10604 | 12002 | 12198 | 12077 | 9263 | 6749 | 5785 | 5254 | 3075 | 175625 | |
| 5 | 1619 | 934 | 726 | 976 | 2489 | 8730 | 10283 | 10900 | 9763 | 8977 | 9440 | 9246 | 9955 | 10043 | 12036 | 12062 | 12282 | 13910 | 13204 | 9427 | 7562 | 6251 | 5268 | 4485 | 190568 | |
| 6 | 2161 | 1084 | 939 | 1093 | 2604 | 8767 | 10026 | 8286 | 7853 | 6913 | 8793 | 8898 | 9566 | 10148 | 11118 | 11034 | 11650 | 12452 | 12080 | 8810 | 6936 | 6081 | 5777 | 3364 | 176433 | |
| 7 | 2070 | 1343 | 1029 | 1202 | 2560 | 8357 | 10668 | 11024 | 10357 | 9935 | 10220 | 9520 | 10237 | 11396 | 12078 | 11841 | 12207 | 12996 | 12625 | 9818 | 7563 | 6255 | 5762 | 4657 | 195720 | |
| 8 | 2849 | 1802 | 1550 | 1158 | 1348 | 3109 | 4697 | 6591 | 8488 | 9509 | 10891 | 11405 | 11970 | 12072 | 12088 | 11591 | 11581 | 11595 | 11107 | 9058 | 7409 | 6813 | 6355 | 4964 | 180001 | |
| 9 | 3094 | 2193 | 1597 | 1043 | 888 | 1604 | 2946 | 4164 | 5455 | 7249 | 9526 | 10873 | 11356 | 11142 | 11509 | 11427 | 11291 | 10787 | 10581 | 8962 | 7436 | 5843 | 4276 | 3260 | 158502 | |
| 10 | 1524 | 992 | 802 | 995 | 2652 | 8806 | 10569 | 10279 | 9467 | 9501 | 9757 | 9661 | 9772 | 10643 | 11782 | 11448 | 12301 | 13257 | 12886 | 9678 | 6941 | 5635 | 4912 | 3110 | 187370 | |
| 11 | 1663 | 982 | 802 | 1010 | 2738 | 8932 | 10697 | 10289 | 9288 | 9518 | 10451 | 9798 | 10135 | 10431 | 11645 | 11921 | 12179 | 12447 | 13067 | 9736 | 7448 | 6056 | 5358 | 4088 | 190679 | |
| 12 | 1880 | 936 | 803 | 1019 | 2525 | 8752 | 10677 | 10382 | 9578 | 9054 | 9663 | 9755 | 10222 | 10956 | 12025 | 10072 | 10728 | 12622 | 12772 | 10467 | 7632 | 6422 | 5737 | 3930 | 188609 | |
| 13 | 1860 | 1092 | 796 | 1058 | 2624 | 8686 | 8865 | 8230 | 7124 | 6612 | 7825 | 9503 | 10579 | 11144 | 11600 | 10901 | 12085 | 13045 | 12497 | 11175 | 8746 | 7123 | 5311 | 3720 | 182201 | |
| 14 | 2125 | 1266 | 1017 | 1048 | 2522 | 8299 | 9879 | 10958 | 10194 | 9977 | 10606 | 10657 | 10496 | 9898 | 9556 | 10355 | 10816 | 12840 | 11516 | 9578 | 7566 | 6562 | 6091 | 4914 | 188736 | |
| 15 | 2711 | 1712 | 1442 | 1138 | 1319 | 2851 | 4369 | 5982 | 7764 | 9488 | 10782 | 11430 | 11934 | 11598 | 11558 | 11190 | 10566 | 10586 | 9912 | 8724 | 7547 | 6247 | 5543 | 4351 | 170744 | |
| 16 | 2647 | 1797 | 1336 | 891 | 812 | 1223 | 2081 | 3026 | 4441 | 6982 | 9871 | 11940 | 11964 | 11268 | 10267 | 9602 | 10710 | 11725 | 11971 | 11134 | 9776 | 7616 | 4949 | 2702 | 160731 | |
| 17 | 1522 | 972 | 839 | 962 | 2311 | 6215 | 8424 | 9747 | 9306 | 9275 | 9211 | 8929 | 8835 | 9065 | 10206 | 11020 | 11835 | 12387 | 10314 | 8019 | 6596 | 5139 | 4841 | 3061 | 169031 | |
| 18 | 1468 | 847 | 726 | 972 | 2550 | 8659 | 10556 | 9978 | 9268 | 9344 | 10306 | 10135 | 10479 | 10758 | 11439 | 11555 | 12272 | 12639 | 10610 | 9760 | 6939 | 5726 | 4913 | 3412 | 185311 | |
| 19 | 1571 | 892 | 730 | 1005 | 2524 | 8601 | 10747 | 10129 | 10112 | 9886 | 9994 | 10177 | 10574 | 10931 | 11700 | 11495 | 12774 | 13012 | 12673 | 9497 | 6987 | 5914 | 5420 | 3822 | 191167 | |
| 20 | 1647 | 979 | 779 | 1018 | 2658 | 8673 | 10724 | 11056 | 10270 | 9924 | 9204 | 5389 | 5223 | 4961 | 5153 | 5111 | 5564 | 6703 | 5900 | 4498 | 3455 | 2803 | 2291 | 1235 | 125218 | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Average Monthly = 173690.3

Yearly Average = 174257

Adjustment factor = 1.003

Massachusetts Highway Department

4169: Monthly Hourly Volume for September 2017

| Location ID: | 4169 | | Seasonal Factor Group: U1-Boston | | | | | | | | | | | | | | | | | | | | | | | | TOTAL |
|----------------|---------|---------------|----------------------------------|------|------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| | County: | Middlesex | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | |
| Function/Class | 1 | INTERSTATE 93 | Daily Factor Group: U1-Boston | | | | | | | | | | | | | | | | | | | | | | | | |
| Location: | 1 | INTERSTATE 93 | Growth Factor Group: | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 2965 | 1869 | 1595 | 1206 | 1441 | 3260 | 4637 | 6582 | 8166 | 9526 | 10486 | 11287 | 11704 | 11389 | 11422 | 11482 | 11224 | 10929 | 10230 | 8971 | 7510 | 6741 | 6810 | 5143 | 176575 | | |
| 2 | 3123 | 2021 | 1549 | 1015 | 959 | 1741 | 3002 | 4037 | 5823 | 7604 | 9979 | 11126 | 11670 | 11212 | 11369 | 11079 | 11077 | 11032 | 9859 | 8445 | 7278 | 5637 | 4067 | 2577 | 157281 | | |
| 3 | 1456 | 934 | 704 | 921 | 2880 | 9019 | 10314 | 10617 | 9143 | 8655 | 9210 | 9253 | 9422 | 10273 | 11068 | 11646 | 12358 | 13447 | 12539 | 9512 | 7139 | 5474 | 3867 | 2550 | 182501 | | |
| 4 | 1472 | 858 | 693 | 1035 | 2810 | 9136 | 10120 | 10024 | 8862 | 8955 | 9409 | 9724 | 10263 | 10577 | 11100 | 11669 | 12314 | 12991 | 13002 | 10574 | 7413 | 6130 | 4996 | 3800 | 187927 | | |
| 5 | 2065 | 978 | 861 | 1003 | 2654 | 9014 | 10942 | 9749 | 7557 | 7942 | 8965 | 9642 | 10179 | 11063 | 11466 | 11424 | 12471 | 13295 | 12945 | 10327 | 8010 | 6247 | 5466 | 3714 | 187979 | | |
| 6 | 1868 | 1072 | 881 | 1063 | 2908 | 9035 | 10487 | 9739 | 9238 | 8245 | 9271 | 10378 | 10537 | 11310 | 11629 | 11977 | 12265 | 13691 | 12914 | 10252 | 8970 | 6548 | 5470 | 4526 | 194274 | | |
| 7 | 2594 | 1345 | 988 | 1212 | 2809 | 8324 | 10332 | 10455 | 9497 | 9513 | 10209 | 10361 | 11254 | 11222 | 11013 | 11157 | 11454 | 11717 | 10248 | 10060 | 7916 | 6499 | 5769 | 5044 | 190992 | | |
| 8 | 2808 | 1806 | 1634 | 1231 | 1499 | 3498 | 5142 | 7113 | 8881 | 9897 | 10805 | 11457 | 12073 | 11730 | 11752 | 11145 | 10852 | 11318 | 10568 | 9321 | 7813 | 7167 | 6025 | 4386 | 178921 | | |
| 9 | 3258 | 2160 | 1578 | 1137 | 1040 | 1712 | 2974 | 4226 | 5780 | 8112 | 10204 | 11240 | 11916 | 11427 | 10756 | 10891 | 11457 | 10869 | 9893 | 9895 | 7702 | 5334 | 4346 | 2461 | 160368 | | |
| 10 | 1528 | 1120 | 910 | 1058 | 2934 | 8821 | 10525 | 10003 | 9200 | 9197 | 9521 | 9496 | 9655 | 10398 | 11776 | 11482 | 12378 | 13406 | 12483 | 9333 | 6695 | 5282 | 3914 | 2633 | 183748 | | |
| 11 | 1604 | 1097 | 869 | 1002 | 2764 | 8875 | 9893 | 9910 | 8960 | 8835 | 9670 | 9046 | 9625 | 10481 | 9202 | 10657 | 10979 | 12511 | 12432 | 9632 | 6795 | 5657 | 4615 | 2921 | 178032 | | |
| 12 | 1600 | 1001 | 704 | 944 | 2496 | 8619 | 9737 | 8166 | 8246 | 7509 | 8694 | 8986 | 9461 | 9974 | 10444 | 10667 | 11394 | 12784 | 12388 | 9737 | 7109 | 5918 | 4504 | 2819 | 173901 | | |
| 13 | 1597 | 1052 | 858 | 1035 | 2621 | 8881 | 10079 | 10298 | 9411 | 7916 | 9661 | 10009 | 10435 | 11168 | 11588 | 11540 | 12478 | 13378 | 12863 | 10552 | 7987 | 6844 | 5738 | 3478 | 191467 | | |
| 14 | 1878 | 1200 | 1000 | 1101 | 2715 | 8715 | 9834 | 9768 | 9461 | 9784 | 10118 | 10719 | 10959 | 10901 | 10657 | 10652 | 11249 | 12080 | 11801 | 10732 | 7420 | 6527 | 5889 | 5334 | 190494 | | |
| 15 | 2967 | 2056 | 1602 | 1168 | 1422 | 3391 | 5109 | 6962 | 8790 | 10150 | 10986 | 11334 | 11400 | 10990 | 11529 | 11793 | 11746 | 11746 | 10864 | 9935 | 8132 | 7157 | 6779 | 5600 | 183608 | | |
| 16 | 3428 | 2295 | 1777 | 1243 | 1142 | 1929 | 3146 | 4640 | 6282 | 8580 | 10631 | 11115 | 11566 | 10877 | 10882 | 10421 | 10790 | 10964 | 10731 | 10024 | 8235 | 6270 | 4117 | 2435 | 163520 | | |
| 17 | 1556 | 956 | 793 | 988 | 2962 | 9013 | 8926 | 10198 | 8918 | 8950 | 9514 | 9272 | 9927 | 10328 | 11203 | 11462 | 12458 | 13318 | 12919 | 9796 | 7030 | 5954 | 5347 | 3171 | 184959 | | |
| 18 | 1546 | 921 | 752 | 962 | 2769 | 8969 | 10111 | 8182 | 9433 | 8553 | 9334 | 9538 | 9951 | 10506 | 11390 | 11860 | 12266 | 13137 | 12815 | 10405 | 7759 | 6046 | 5235 | 3080 | 185520 | | |
| 19 | 1680 | 967 | 859 | 1034 | 2731 | 9070 | 9845 | 8273 | 7921 | 8011 | 9303 | 9668 | 10445 | 11039 | 11261 | 11723 | 10773 | 12941 | 13119 | 10695 | 8385 | 6510 | 5404 | 4276 | 185933 | | |
| 20 | 2111 | 1091 | 820 | 1039 | 2897 | 8700 | 10042 | 10197 | 8827 | 8938 | 9784 | 9914 | 10534 | 11015 | 11442 | 11414 | 12274 | 12451 | 12867 | 11203 | 8521 | 6958 | 5564 | 4873 | 193476 | | |
| 21 | 2330 | 1301 | 923 | 1072 | 2708 | 8915 | 10786 | 10569 | 9593 | 9252 | 9661 | 10815 | 11014 | 11085 | 11436 | 11762 | 12295 | 13043 | 12550 | 10714 | 8081 | 6304 | 5764 | 498276 | | | |
| 22 | 3284 | 1973 | 1522 | 1139 | 1408 | 3160 | 4712 | 6121 | 7868 | 8966 | 10278 | 10962 | 11309 | 10911 | 11176 | 10864 | 11116 | 11494 | 10371 | 8982 | 7068 | 6085 | 6155 | 5547 | 172471 | | |

Average = 181964.7
 Yearly Average = 174207
 Adjustment Factor = 181965/174207 = 1.045

VEHICLE TRAVEL SPEED DATA

Accurate Counts

978-664-2565

Location : Cross Street
 Location : East of River Street
 City/State: Winchester, MA

7745SPD1

WB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 999 | Total |
|--------------|------------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|-------------|-------------|-------------|------------|------------|-------------|-------|
| 09/19/18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 8 | 4 | 1 | 1 | 1 | 18 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 4 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 1 | 1 | 5 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 4 |
| 04:00 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 1 | 2 | 3 | 0 | 1 | 1 | 12 |
| 05:00 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 5 | 8 | 13 | 5 | 14 | 7 | 56 | |
| 06:00 | 9 | 0 | 0 | 0 | 0 | 0 | 5 | 7 | 8 | 51 | 89 | 56 | 33 | 12 | 270 | |
| 07:00 | 48 | 1 | 2 | 16 | 26 | 16 | 17 | 19 | 67 | 152 | 191 | 138 | 44 | 7 | 744 | |
| 08:00 | 44 | 5 | 17 | 28 | 14 | 6 | 5 | 10 | 57 | 136 | 160 | 130 | 34 | 7 | 653 | |
| 09:00 | 16 | 0 | 0 | 1 | 2 | 1 | 6 | 12 | 27 | 53 | 97 | 93 | 29 | 8 | 345 | |
| 10:00 | 12 | 0 | 0 | 0 | 0 | 0 | 4 | 6 | 20 | 45 | 109 | 77 | 31 | 9 | 313 | |
| 11:00 | 12 | 0 | 0 | 0 | 4 | 1 | 5 | 9 | 38 | 49 | 125 | 66 | 24 | 3 | 336 | |
| 12 PM | 21 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 14 | 54 | 87 | 71 | 25 | 7 | 290 | |
| 13:00 | 23 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 24 | 62 | 101 | 93 | 24 | 8 | 346 | |
| 14:00 | 25 | 0 | 0 | 0 | 1 | 3 | 5 | 6 | 20 | 61 | 102 | 67 | 23 | 7 | 320 | |
| 15:00 | 36 | 0 | 0 | 1 | 4 | 5 | 7 | 15 | 36 | 93 | 122 | 83 | 19 | 9 | 430 | |
| 16:00 | 45 | 0 | 0 | 1 | 1 | 3 | 18 | 10 | 36 | 75 | 132 | 74 | 30 | 5 | 430 | |
| 17:00 | 32 | 0 | 1 | 0 | 0 | 7 | 7 | 3 | 28 | 133 | 164 | 89 | 26 | 1 | 491 | |
| 18:00 | 12 | 0 | 0 | 0 | 1 | 1 | 3 | 4 | 35 | 71 | 137 | 69 | 21 | 9 | 363 | |
| 19:00 | 9 | 0 | 0 | 0 | 0 | 3 | 7 | 10 | 39 | 65 | 74 | 36 | 12 | 2 | 257 | |
| 20:00 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 15 | 40 | 46 | 25 | 16 | 5 | 155 | |
| 21:00 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 3 | 9 | 21 | 35 | 19 | 11 | 1 | 102 | |
| 22:00 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 5 | 10 | 18 | 13 | 13 | 8 | 74 | |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 5 | 11 | 11 | 5 | 1 | 36 | |
| Total | 356 | 6 | 20 | 47 | 53 | 51 | 102 | 135 | 489 | 1188 | 1828 | 1223 | 436 | 120 | 6054 | |

Daily

- 15th Percentile : 24 MPH
- 50th Percentile : 30 MPH
- 85th Percentile : 34 MPH
- 95th Percentile : 36 MPH

Mean Speed(Average) : 29 MPH

10 MPH Pace Speed : 27-36 MPH

Number in Pace : 4402

Percent in Pace : 72.7%

Number of Vehicles > 35 MPH : 964

Percent of Vehicles > 35 MPH : 15.9%

Accurate Counts

978-664-2565

Location : Cross Street
 Location : East of River Street
 City/State: Winchester, MA

7745SPD1

WB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 999 | Total |
|--------------|------------|----------|----------|-----------|-----------|-----------|-----------|------------|------------|-------------|-------------|-------------|------------|-----------|-------------|-------|
| 09/20/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 6 | 2 | 1 | 1 | 13 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 3 | 1 | 1 | 1 | 8 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 4 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 1 | 1 | 1 | 1 | 6 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 2 | 3 | 1 | 2 | 2 | 12 |
| 05:00 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 8 | 6 | 11 | 15 | 5 | 8 | 8 | 56 |
| 06:00 | 8 | 0 | 0 | 0 | 0 | 1 | 3 | 4 | 12 | 36 | 59 | 94 | 37 | 12 | 266 | |
| 07:00 | 60 | 5 | 7 | 19 | 34 | 51 | 22 | 41 | 62 | 149 | 229 | 123 | 27 | 3 | 832 | |
| 08:00 | 49 | 0 | 0 | 0 | 4 | 12 | 19 | 28 | 68 | 175 | 222 | 136 | 29 | 4 | 746 | |
| 09:00 | 12 | 0 | 0 | 1 | 0 | 2 | 7 | 20 | 37 | 85 | 120 | 76 | 26 | 6 | 392 | |
| 10:00 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 13 | 15 | 70 | 99 | 71 | 8 | 4 | 292 | |
| 11:00 | 16 | 0 | 0 | 0 | 0 | 2 | 5 | 8 | 15 | 58 | 113 | 58 | 18 | 8 | 301 | |
| 12 PM | 8 | 0 | 0 | 1 | 0 | 1 | 1 | 6 | 32 | 54 | 121 | 87 | 39 | 6 | 356 | |
| 13:00 | 21 | 0 | 0 | 0 | 1 | 3 | 7 | 6 | 16 | 64 | 107 | 85 | 25 | 11 | 346 | |
| 14:00 | 22 | 1 | 0 | 0 | 0 | 3 | 4 | 15 | 19 | 55 | 124 | 64 | 30 | 4 | 341 | |
| 15:00 | 37 | 0 | 1 | 0 | 0 | 2 | 2 | 12 | 56 | 83 | 124 | 81 | 30 | 4 | 432 | |
| 16:00 | 56 | 0 | 0 | 0 | 1 | 4 | 14 | 10 | 28 | 96 | 136 | 83 | 24 | 6 | 458 | |
| 17:00 | 61 | 0 | 0 | 2 | 1 | 2 | 5 | 17 | 51 | 121 | 182 | 83 | 29 | 2 | 556 | |
| 18:00 | 36 | 0 | 0 | 0 | 0 | 2 | 3 | 9 | 43 | 86 | 142 | 76 | 24 | 3 | 424 | |
| 19:00 | 6 | 0 | 0 | 1 | 0 | 0 | 1 | 3 | 23 | 74 | 79 | 52 | 8 | 4 | 251 | |
| 20:00 | 5 | 0 | 0 | 0 | 0 | 0 | 1 | 7 | 29 | 68 | 56 | 38 | 13 | 2 | 219 | |
| 21:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 11 | 27 | 33 | 19 | 12 | 2 | 105 | |
| 22:00 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 10 | 13 | 15 | 3 | 0 | 49 | |
| 23:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 9 | 9 | 11 | 6 | 1 | 39 | |
| Total | 410 | 6 | 8 | 24 | 41 | 88 | 99 | 203 | 535 | 1331 | 1984 | 1281 | 398 | 96 | 6504 | |

Daily

- 15th Percentile : 24 MPH
- 50th Percentile : 30 MPH
- 85th Percentile : 34 MPH
- 95th Percentile : 36 MPH
- Mean Speed(Average) : 29 MPH
- 10 MPH Pace Speed : 27-36 MPH
- Number in Pace : 4774
- Percent in Pace : 73.4%
- Number of Vehicles > 35 MPH : 921
- Percent of Vehicles > 35 MPH : 14.2%

| | | | | | | | | | | | | | | | |
|-------------|-----|----|----|----|----|-----|-----|-----|------|------|------|------|-----|-----|-------|
| Grand Total | 766 | 12 | 28 | 71 | 94 | 139 | 201 | 338 | 1024 | 2519 | 3812 | 2504 | 834 | 216 | 12558 |
|-------------|-----|----|----|----|----|-----|-----|-----|------|------|------|------|-----|-----|-------|

Overall

- 15th Percentile : 24 MPH
- 50th Percentile : 30 MPH
- 85th Percentile : 34 MPH
- 95th Percentile : 36 MPH
- Mean Speed(Average) : 29 MPH
- 10 MPH Pace Speed : 27-36 MPH
- Number in Pace : 9176
- Percent in Pace : 73.1%
- Number of Vehicles > 35 MPH : 1885
- Percent of Vehicles > 35 MPH : 15.0%

Accurate Counts

978-664-2565

Location : Cross Street
 Location : East of River Street
 City/State: Winchester, MA

7745SPD1

EB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 999 | Total |
|--------------|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-------------|-------------|------------|------------|-------------|-------|
| 09/19/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 1 | 3 | 8 | 8 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 4 | 0 | 1 | 6 | 6 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 2 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 5 | 5 |
| 04:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 2 | 0 | 3 | 9 | 9 |
| 05:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 7 | 23 | 11 | 18 | 12 | 72 | 72 |
| 06:00 | 6 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 10 | 48 | 63 | 44 | 11 | 184 | 184 |
| 07:00 | 31 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 10 | 30 | 99 | 97 | 37 | 8 | 315 | 315 |
| 08:00 | 27 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 14 | 55 | 121 | 96 | 31 | 9 | 358 | 358 |
| 09:00 | 8 | 0 | 0 | 0 | 0 | 2 | 2 | 2 | 7 | 38 | 80 | 102 | 26 | 11 | 278 | 278 |
| 10:00 | 9 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 7 | 22 | 85 | 81 | 36 | 6 | 253 | 253 |
| 11:00 | 9 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 8 | 35 | 93 | 89 | 36 | 7 | 282 | 282 |
| 12 PM | 7 | 0 | 0 | 0 | 1 | 0 | 3 | 6 | 5 | 46 | 98 | 114 | 39 | 8 | 327 | 327 |
| 13:00 | 10 | 0 | 0 | 0 | 1 | 1 | 4 | 3 | 16 | 44 | 99 | 104 | 45 | 8 | 335 | 335 |
| 14:00 | 21 | 0 | 1 | 10 | 5 | 13 | 7 | 6 | 16 | 57 | 136 | 103 | 46 | 8 | 429 | 429 |
| 15:00 | 27 | 0 | 2 | 0 | 2 | 2 | 3 | 8 | 23 | 83 | 172 | 164 | 59 | 10 | 555 | 555 |
| 16:00 | 20 | 0 | 0 | 0 | 0 | 1 | 13 | 15 | 28 | 120 | 227 | 172 | 59 | 20 | 675 | 675 |
| 17:00 | 29 | 0 | 0 | 0 | 1 | 1 | 6 | 6 | 14 | 100 | 235 | 191 | 64 | 15 | 662 | 662 |
| 18:00 | 15 | 0 | 0 | 1 | 0 | 3 | 5 | 3 | 9 | 64 | 158 | 148 | 61 | 16 | 483 | 483 |
| 19:00 | 8 | 0 | 0 | 0 | 0 | 1 | 3 | 7 | 13 | 55 | 87 | 87 | 36 | 14 | 311 | 311 |
| 20:00 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 17 | 44 | 58 | 30 | 4 | 158 | 158 |
| 21:00 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 10 | 16 | 32 | 16 | 5 | 87 | 87 |
| 22:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 14 | 12 | 9 | 50 | 50 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 6 | 4 | 3 | 6 | 20 | 20 |
| Total | 234 | 0 | 4 | 11 | 11 | 33 | 57 | 59 | 178 | 802 | 1840 | 1740 | 699 | 196 | 5864 | |

Daily

15th Percentile : 27 MPH
 50th Percentile : 32 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

Mean Speed(Average) : 31 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 4615
 Percent in Pace : 78.7%
 Number of Vehicles > 35 MPH : 1475
 Percent of Vehicles > 35 MPH : 25.2%

Accurate Counts
978-664-2565

Location : Cross Street
Location : East of River Street
City/State: Winchester, MA

7745SPD1

EB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 999 | Total |
|--------------|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|------------|------------|-------------|-------------|------------|------------|-------------|-------|
| 09/20/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 2 | 0 | 1 | 1 | 5 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 2 | 4 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 3 | 1 | 8 | 8 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 5 | 5 | 17 | 17 |
| 05:00 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 6 | 15 | 17 | 18 | 10 | 70 | 70 |
| 06:00 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 18 | 33 | 66 | 47 | 23 | 194 | 194 |
| 07:00 | 31 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 12 | 31 | 81 | 86 | 22 | 11 | 278 | 278 |
| 08:00 | 36 | 0 | 1 | 1 | 0 | 0 | 1 | 3 | 24 | 63 | 118 | 99 | 37 | 9 | 392 | 392 |
| 09:00 | 7 | 0 | 0 | 0 | 0 | 0 | 1 | 4 | 25 | 43 | 112 | 74 | 27 | 11 | 304 | 304 |
| 10:00 | 7 | 0 | 0 | 0 | 0 | 2 | 5 | 6 | 22 | 59 | 112 | 66 | 23 | 2 | 304 | 304 |
| 11:00 | 8 | 0 | 0 | 3 | 1 | 0 | 4 | 12 | 25 | 67 | 113 | 60 | 22 | 4 | 319 | 319 |
| 12 PM | 9 | 0 | 0 | 0 | 0 | 0 | 1 | 10 | 13 | 56 | 119 | 98 | 37 | 7 | 350 | 350 |
| 13:00 | 11 | 0 | 0 | 0 | 2 | 0 | 2 | 3 | 12 | 42 | 97 | 97 | 55 | 13 | 334 | 334 |
| 14:00 | 20 | 0 | 0 | 5 | 7 | 5 | 4 | 2 | 27 | 70 | 162 | 144 | 42 | 7 | 495 | 495 |
| 15:00 | 34 | 1 | 2 | 5 | 5 | 7 | 3 | 11 | 10 | 89 | 223 | 178 | 52 | 14 | 634 | 634 |
| 16:00 | 26 | 1 | 0 | 2 | 1 | 4 | 6 | 13 | 28 | 112 | 258 | 224 | 57 | 13 | 747 | 747 |
| 17:00 | 47 | 0 | 0 | 0 | 3 | 7 | 10 | 10 | 31 | 111 | 270 | 214 | 59 | 8 | 768 | 768 |
| 18:00 | 12 | 0 | 0 | 1 | 0 | 1 | 3 | 6 | 19 | 89 | 202 | 194 | 64 | 7 | 598 | 598 |
| 19:00 | 9 | 0 | 0 | 1 | 0 | 0 | 5 | 5 | 11 | 45 | 112 | 107 | 37 | 3 | 335 | 335 |
| 20:00 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 28 | 44 | 51 | 16 | 7 | 153 | 153 |
| 21:00 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 5 | 15 | 33 | 30 | 11 | 6 | 102 | 102 |
| 22:00 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 15 | 12 | 8 | 7 | 51 | 51 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 5 | 8 | 5 | 3 | 23 | 23 |
| Total | 271 | 2 | 4 | 19 | 19 | 26 | 48 | 68 | 276 | 949 | 2132 | 1832 | 647 | 173 | 6486 | |

Daily
 15th Percentile : 27 MPH
 50th Percentile : 32 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

 Mean Speed(Average) : 31 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 5129
 Percent in Pace : 79.1%
 Number of Vehicles > 35 MPH : 1431
 Percent of Vehicles > 35 MPH : 22.1%

| | | | | | | | | | | | | | | | |
|-------------|-----|---|---|----|----|----|-----|-----|-----|------|------|------|------|-----|-------|
| Grand Total | 505 | 2 | 8 | 30 | 30 | 59 | 105 | 147 | 454 | 1751 | 3972 | 3572 | 1346 | 369 | 12350 |
|-------------|-----|---|---|----|----|----|-----|-----|-----|------|------|------|------|-----|-------|

Overall
 15th Percentile : 27 MPH
 50th Percentile : 32 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

 Mean Speed(Average) : 31 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 9744
 Percent in Pace : 78.9%
 Number of Vehicles > 35 MPH : 2906
 Percent of Vehicles > 35 MPH : 23.5%

Accurate Counts
978-664-2565

Location : Cross Street
Location : East of River Street
City/State: Winchester, MA

7745SPD1

WB, EB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | Total |
|--------------|------------|----------|-----------|-----------|-----------|-----------|------------|------------|------------|-------------|-------------|-------------|-------------|------------|--------------|
| | 3 | 6 | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 | 39 | 999 | |
| 09/19/18 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 9 | 6 | 2 | 4 | 26 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 4 | 0 | 1 | 10 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 1 | 3 | 7 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 4 | 2 | 0 | 1 | 9 |
| 04:00 | 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 3 | 1 | 4 | 5 | 0 | 4 | 21 |
| 05:00 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 5 | 15 | 36 | 16 | 32 | 19 | 128 |
| 06:00 | 15 | 0 | 0 | 0 | 0 | 1 | 6 | 7 | 8 | 61 | 137 | 119 | 77 | 23 | 454 |
| 07:00 | 79 | 1 | 2 | 16 | 26 | 17 | 18 | 20 | 77 | 182 | 290 | 235 | 81 | 15 | 1059 |
| 08:00 | 71 | 5 | 18 | 28 | 15 | 7 | 6 | 11 | 71 | 191 | 281 | 226 | 65 | 16 | 1011 |
| 09:00 | 24 | 0 | 0 | 1 | 2 | 3 | 8 | 14 | 34 | 91 | 177 | 195 | 55 | 19 | 623 |
| 10:00 | 21 | 0 | 0 | 0 | 0 | 5 | 6 | 6 | 27 | 67 | 194 | 158 | 67 | 15 | 566 |
| 11:00 | 21 | 0 | 0 | 0 | 4 | 2 | 9 | 9 | 46 | 84 | 218 | 155 | 60 | 10 | 618 |
| 12 PM | 28 | 0 | 0 | 0 | 1 | 0 | 8 | 12 | 19 | 100 | 185 | 185 | 64 | 15 | 617 |
| 13:00 | 33 | 0 | 0 | 0 | 1 | 1 | 9 | 9 | 40 | 106 | 200 | 197 | 69 | 16 | 681 |
| 14:00 | 46 | 0 | 1 | 10 | 6 | 16 | 12 | 12 | 36 | 118 | 238 | 170 | 69 | 15 | 749 |
| 15:00 | 63 | 0 | 2 | 1 | 6 | 7 | 10 | 23 | 59 | 176 | 294 | 247 | 78 | 19 | 985 |
| 16:00 | 65 | 0 | 0 | 1 | 1 | 4 | 31 | 25 | 64 | 195 | 359 | 246 | 89 | 25 | 1105 |
| 17:00 | 61 | 0 | 1 | 0 | 1 | 8 | 13 | 9 | 42 | 233 | 399 | 280 | 90 | 16 | 1153 |
| 18:00 | 27 | 0 | 0 | 1 | 1 | 4 | 8 | 7 | 44 | 135 | 295 | 217 | 82 | 25 | 846 |
| 19:00 | 17 | 0 | 0 | 0 | 0 | 4 | 10 | 17 | 52 | 120 | 161 | 123 | 48 | 16 | 568 |
| 20:00 | 7 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 17 | 57 | 90 | 83 | 46 | 9 | 313 |
| 21:00 | 4 | 0 | 0 | 0 | 0 | 1 | 1 | 4 | 13 | 31 | 51 | 51 | 27 | 6 | 189 |
| 22:00 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 16 | 25 | 27 | 25 | 17 | 124 |
| 23:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 2 | 6 | 17 | 15 | 8 | 7 | 56 |
| Total | 590 | 6 | 24 | 58 | 64 | 84 | 159 | 194 | 667 | 1990 | 3668 | 2963 | 1135 | 316 | 11918 |

Daily
 15th Percentile : 26 MPH
 50th Percentile : 31 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

 Mean Speed(Average) : 30 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 8999
 Percent in Pace : 75.5%
 Number of Vehicles > 35 MPH : 2439
 Percent of Vehicles > 35 MPH : 20.5%

Accurate Counts
978-664-2565

Location : Cross Street
Location : East of River Street
City/State: Winchester, MA

7745SPD1

WB, EB

| Start Time | 1 | 4 | 7 | 10 | 13 | 16 | 19 | 22 | 25 | 28 | 31 | 34 | 37 | 40 | 999 | Total |
|--------------|------------|----------|-----------|-----------|-----------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|------------|--------------|-------|
| 09/20/18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 1 | 2 | 8 | 2 | 2 | 2 | 18 |
| 01:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 4 | 1 | 3 | 3 | 12 |
| 02:00 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 2 | 2 | 5 |
| 03:00 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 2 | 3 | 4 | 2 | 2 | 14 |
| 04:00 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 2 | 7 | 5 | 6 | 7 | 7 | 29 |
| 05:00 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 9 | 12 | 26 | 32 | 23 | 18 | 18 | 126 |
| 06:00 | 12 | 0 | 0 | 0 | 0 | 1 | 3 | 5 | 14 | 54 | 92 | 160 | 84 | 35 | 460 | 460 |
| 07:00 | 91 | 5 | 8 | 20 | 34 | 51 | 23 | 42 | 74 | 180 | 310 | 209 | 49 | 14 | 1110 | 1110 |
| 08:00 | 85 | 0 | 1 | 1 | 4 | 12 | 20 | 31 | 92 | 238 | 340 | 235 | 66 | 13 | 1138 | 1138 |
| 09:00 | 19 | 0 | 0 | 1 | 0 | 2 | 8 | 24 | 62 | 128 | 232 | 150 | 53 | 17 | 696 | 696 |
| 10:00 | 16 | 0 | 0 | 0 | 0 | 3 | 7 | 19 | 37 | 129 | 211 | 137 | 31 | 6 | 596 | 596 |
| 11:00 | 24 | 0 | 0 | 3 | 1 | 2 | 9 | 20 | 40 | 125 | 226 | 118 | 40 | 12 | 620 | 620 |
| 12 PM | 17 | 0 | 0 | 1 | 0 | 1 | 2 | 16 | 45 | 110 | 240 | 185 | 76 | 13 | 706 | 706 |
| 13:00 | 32 | 0 | 0 | 0 | 3 | 3 | 9 | 9 | 28 | 108 | 204 | 182 | 80 | 24 | 680 | 680 |
| 14:00 | 42 | 1 | 0 | 5 | 7 | 8 | 8 | 17 | 46 | 125 | 286 | 208 | 72 | 11 | 836 | 836 |
| 15:00 | 71 | 1 | 3 | 5 | 5 | 9 | 5 | 23 | 66 | 172 | 347 | 259 | 82 | 18 | 1066 | 1066 |
| 16:00 | 84 | 1 | 0 | 2 | 2 | 8 | 20 | 23 | 56 | 208 | 394 | 307 | 81 | 19 | 1205 | 1205 |
| 17:00 | 108 | 0 | 0 | 2 | 4 | 9 | 15 | 27 | 82 | 232 | 452 | 297 | 88 | 8 | 1324 | 1324 |
| 18:00 | 48 | 0 | 0 | 1 | 0 | 3 | 6 | 15 | 62 | 175 | 344 | 270 | 88 | 10 | 1022 | 1022 |
| 19:00 | 15 | 0 | 0 | 2 | 0 | 0 | 6 | 8 | 34 | 119 | 191 | 159 | 45 | 7 | 586 | 586 |
| 20:00 | 8 | 0 | 0 | 0 | 0 | 0 | 2 | 7 | 32 | 96 | 100 | 89 | 29 | 9 | 372 | 372 |
| 21:00 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 16 | 42 | 66 | 49 | 23 | 8 | 207 | 207 |
| 22:00 | 4 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 8 | 13 | 28 | 27 | 11 | 7 | 100 | 100 |
| 23:00 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 10 | 14 | 19 | 11 | 4 | 4 | 62 | 62 |
| Total | 681 | 8 | 12 | 43 | 60 | 114 | 147 | 291 | 811 | 2280 | 4116 | 3113 | 1045 | 269 | 12990 | |

Daily
 15th Percentile : 26 MPH
 50th Percentile : 31 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

 Mean Speed(Average) : 30 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 9857
 Percent In Pace : 75.9%
 Number of Vehicles > 35 MPH : 2352
 Percent of Vehicles > 35 MPH : 18.1%

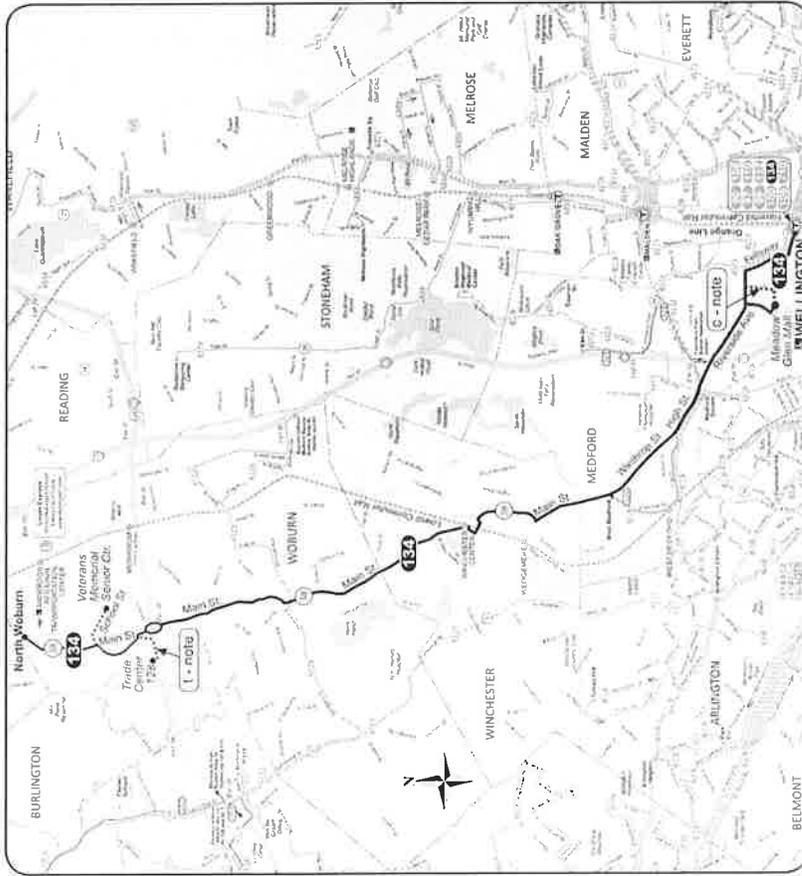
| | | | | | | | | | | | | | | | |
|--------------------|-------------|-----------|-----------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|------------|--------------|
| Grand Total | 1271 | 14 | 36 | 101 | 124 | 198 | 306 | 485 | 1478 | 4270 | 7784 | 6076 | 2180 | 585 | 24908 |
|--------------------|-------------|-----------|-----------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|------------|--------------|

Overall
 15th Percentile : 26 MPH
 50th Percentile : 31 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

 Mean Speed(Average) : 30 MPH
 10 MPH Pace Speed : 28-37 MPH
 Number in Pace : 18857
 Percent In Pace : 75.7%
 Number of Vehicles > 35 MPH : 4790
 Percent of Vehicles > 35 MPH : 19.2%

PUBLIC TRANSPORTATION SCHEDULES

Route 134 North Woburn - Wellington Station



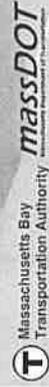
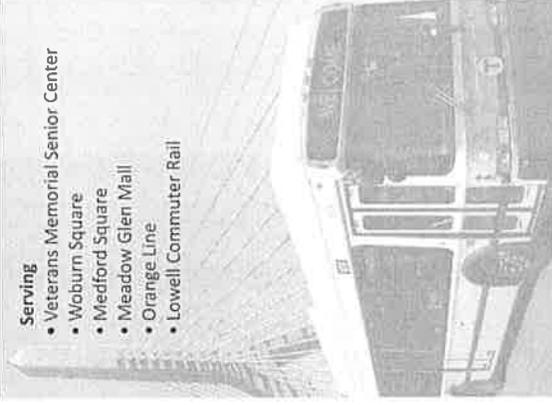
134

Effective September 2, 2018

North Woburn- Wellington Station

Serving

- Veterans Memorial Senior Center
- Woburn Square
- Medford Square
- Meadow Glen Mall
- Orange Line
- Lowell Commuter Rail



Massachusetts Bay
Transportation Authority
Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

134

Weekday

| Inbound | | Outbound | |
|--------------------|--|-------------------------------------|--------------------|
| Leave North Woburn | Lv/Arrive Playstead Rd. & Winthrop St. | Arrive Playstead Rd. & Winthrop St. | Leave North Woburn |
| m 5:50A | 6:01A | 5:33A | 5:51A |
| 6:15 | 6:31 | 6:10 | 6:52 |
| 6:32 | 6:48 | 6:35 | 6:53 |
| 7:00 | 7:20 | ds 6:55 | 7:12 |
| 7:15 | 7:33 | ds 7:10 | ds 7:28 |
| s 7:25 | 7:48 | t 7:10 | 7:35 |
| 7:40 | 8:02 | c 7:25 | 7:49 |
| 7:57 | 8:20 | c 7:40 | 8:02 |
| 8:15 | 8:37 | 18:10 | 8:31 |
| 8:38 | 8:59 | c 8:40 | 9:00 |
| 9:10 | 9:28 | 19:10 | 9:27 |
| t 9:10 | 9:36 | 9:40 | 9:58 |
| c 10:05 | 10:23 | al 10:10 | 10:28 |
| t 10:10 | 10:34 | c 10:40 | 10:58 |
| 11:10 | 11:28 | al 11:10 | 11:28 |
| 11:38 | 11:59 | 11:40 | 11:58 |
| c 12:05P | 12:23P | t 12:10P | 12:29P |
| 12:37P | 12:57P | c 12:40 | 1:00 |
| 1:10 | 1:30 | t 1:10 | 1:30 |
| 1:37 | 1:57 | 1:40 | 2:01 |
| c 2:05 | 2:25 | 1:45 | 2:31 |
| ds 2:25 | ds 2:54 | c 2:40 | 3:03 |
| 2:43 | 3:03 | 3:08 | 3:32 |
| ds 2:30 | ds 2:58 | 3:30 | 3:50 |
| ds 2:40 | ds 3:08 | 3:50 | 4:12 |
| 3:10 | 3:32 | 4:13 | 4:37 |
| 3:46 | 4:06 | 4:30 | 4:53 |
| c 4:00 | 4:22 | 4:50 | 5:13 |
| c 4:20 | 4:41 | 5:08 | 5:32 |
| c 5:00 | 5:20 | 5:40 | 6:03 |
| 5:17 | 5:37 | 6:10 | 6:32 |
| 5:37 | 5:57 | 6:35 | 6:56 |
| 6:10 | 6:30 | 7:00 | 7:21 |
| 6:32 | 6:54 | b 7:40 | 7:54 |
| 7:10 | 7:32 | b 7:58 | 8:12 |
| 7:48 | 8:11 | b 9:00 | 9:11 |
| m 8:15 | 8:25 | b 10:00 | 10:11 |
| m 8:20 | 8:36 | b 11:00 | 11:11 |
| m 9:15 | 9:25 | b 12:00M | 12:10A |
| m 10:15 | 10:25 | bw 1:00A | 1:10 |
| m 11:15 | 11:24 | | |
| m 12:15A | 12:24A | | |

134

Saturday

| Inbound | | Outbound | |
|--------------------|--|-------------------------------------|--------------------|
| Leave North Woburn | Lv/Arrive Playstead Rd. & Winthrop St. | Arrive Playstead Rd. & Winthrop St. | Leave North Woburn |
| 6:15A | 6:29A | 6:15A | 6:27A |
| 6:40 | 6:54 | 6:40 | 6:55 |
| 7:05 | 7:19 | 7:10 | 7:24 |
| 7:29 | 7:44 | 7:40 | 7:55 |
| 8:02 | 8:20 | 8:10 | 8:26 |
| 8:32 | 8:50 | 8:40 | 8:57 |
| 9:05 | 9:22 | 9:10 | 9:26 |
| 9:32 | 9:54 | 9:40 | 9:57 |
| 10:05 | 10:22 | 10:10 | 10:29 |
| 10:34 | 10:56 | 10:40 | 10:59 |
| 11:05 | 11:25 | 11:10 | 11:30 |
| 11:37 | 11:59 | 11:40 | 12:01P |
| 12:05P | 12:25P | 12:10P | 12:29P |
| 12:37 | 12:59 | 12:40 | 1:01 |
| 1:05 | 1:25 | 1:10 | 1:29 |
| 1:33 | 1:56 | 1:40 | 2:01 |
| 2:05 | 2:24 | 2:10 | 2:29 |
| 2:33 | 2:56 | 2:40 | 3:01 |
| 3:05 | 3:24 | 3:10 | 3:29 |
| 3:33 | 3:56 | 3:40 | 4:01 |
| 4:05 | 4:24 | 4:10 | 4:29 |
| 4:33 | 4:54 | 4:40 | 5:01 |
| 5:05 | 5:24 | 5:10 | 5:28 |
| 5:31 | 5:52 | 5:40 | 6:00 |
| 6:05 | 6:22 | 6:10 | 6:28 |
| 6:31 | 6:48 | 6:40 | 7:00 |
| 7:00 | 7:21 | 7:10 | 7:28 |
| m 8:15 | 8:29 | b 8:05 | 8:18 |
| m 8:55 | 9:07 | b 8:55 | 9:08 |
| m 9:55 | 10:06 | b 9:55 | 10:07 |
| m 10:55 | 11:06 | b 10:55 | 11:06 |
| m 11:55 | 12:06A | b 11:55 | 12:06A |
| | | bw 1:05A | 1:16 |

- a - Via Veterans Memorial Senior Center
- b - To Medford Square only
- c - Via Commercial Street and Cambridge District Court Avenue at Second Square
- d - To/from Winthrop Street at Brooks Street-Middlesex
- m - From Medford Square
- s - Does NOT run during school vacation
- t - Via Trade Center 128/Middlesex Superior Court
- w - Waits for last train to arrive at Wellington Station.

134

Sunday

| Inbound | | Outbound | |
|--------------------|--|-------------------------------------|--------------------|
| Leave North Woburn | Lv/Arrive Playstead Rd. & Winthrop St. | Arrive Playstead Rd. & Winthrop St. | Leave North Woburn |
| 6:15A | 6:32A | 6:15A | 6:27A |
| 7:21 | 7:32 | 7:21 | 7:32 |
| 8:21 | 8:31 | 8:21 | 8:31 |
| 9:21 | 9:33 | 9:21 | 9:33 |
| 10:15 | 10:27 | 10:15 | 10:27 |
| 10:55A | 11:10 | 10:55A | 11:16 |
| 11:55 | 12:10P | 11:55 | 12:26P |
| 12:55P | 1:12P | 12:55P | 1:18 |
| 1:55 | 2:12 | 1:55 | 2:19 |
| 2:55 | 3:12 | 2:55 | 3:18 |
| 3:55 | 4:12 | 3:55 | 4:18 |
| 4:55 | 5:12 | 4:55 | 5:18 |
| 5:55 | 6:10 | 5:55 | 6:18 |
| 6:55 | 7:09 | 6:55 | 7:17 |
| 8:15 | 8:25 | 8:15 | 8:25 |
| 8:55 | 9:05 | 8:55 | 9:05 |
| 9:55 | 10:05 | 9:55 | 10:06 |
| 10:55 | 11:05 | 10:55 | 11:06 |
| 11:55 | 12:05A | 11:55 | 12:11A |

All buses are accessible to persons with disabilities

| Fare | Local Bus | Bus + Bus | Rapid Transit | Bus + Rapid Transit |
|----------------|-----------|-----------|---------------|---------------------|
| CharlieCard | \$1.70 | \$1.70 | \$2.25 | \$2.25 |
| CharlieTicket | \$2.00 | \$2.00 | \$2.75 | \$4.75 |
| Cash-on-Board | \$2.00 | \$4.00 | \$2.75 | \$4.75 |
| Student/Youth* | \$0.85 | \$0.85 | \$1.10 | \$1.10 |
| Senior/TAP** | \$0.85 | \$0.85 | \$1.10 | \$1.10 |

VALID PASSES: LinkPass (\$84.50/mo.), Local Bus (\$55/mo.), Student/Youth LinkPass (\$30.00/mo.), Senior/TAP LinkPass (\$30/mo.), and express bus, commuter rail, and FREE PASSES: Children 11 and under ride free when accompanied by an adult; Blind Access; CharlieCard holders ride free and if using a guide, the guide rides free. * Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available at www.mbta.com/youthpass for details. ** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

NOTE: Approximate running time from Playstead Road & Winthrop Street to Medford Square is five minutes.

Route 134
North Woburn-Wellington Station

Fall 2018 & Winter 2019 Holidays
 11/22/18, 12/25/18, 1/1/19, see Sunday
 1/2/19 & 2/18/19, see Saturday

Stations > Winchester Center

WINCHESTER CENTER



Zone 1



Station Info

Departures

29 Waterfield Rd, Winchester, MA 01890



Parking

Winchester Center Lower Aberjona Parking Lot

[Get directions to this parking facility](#)

Capacity
Total parking spaces: 124
Accessible spaces:
1
Type: Surface Lot

Payment
Daily fee: Town permit required

Management
Managed by: Town of Winchester
Contact: Town of Winchester, Engineering Department
Contact phone: 781-721-7120

Winchester Center Waterfield Parking Lot

[Get directions to this parking facility](#)

Capacity
Total parking spaces: 113
Accessible spaces:
1
Type: Surface Lot

Payment
Daily fee: Town permit required

Management
Managed by: Town of Winchester
Contact: Town of Winchester, Engineering Department
Contact phone: 781-721-7120

[Learn more about parking](#)

Accessibility

Significant accessibility barriers exist at Winchester Center.

[Learn more about accessibility](#)

Fares

Commuter Rail Fares

Zone 1 One Way 

CharlieTicket, Cash, \$6.25
or mTicket App

Zone 1 Monthly Pass 



CharlieTicket \$200.25

[View Commuter Rail Zone 1 fares list](#)

Nearby MBTA fare retail sales locations

PLS Check Cashing 2.3 mi
112 Medford St,
Medford, MA 02155

LA Market 3.1 mi
1305 Broadway,
Somerville, MA 02144

7-Eleven 3.8 mi
4 College Ave,
Somerville, MA 02144

7-Eleven 3.9 mi
582 Broadway,
Somerville, MA 02143

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Winchester COUNT DATE : Sep-18

DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : River Street/Verplast Avenue

**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) : | 798 | 570 | 36 | 2 | | 1,406 |

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Below MassDOT District 4 crash rate
 Project Title & Date: Proposed Residential Development May 2019

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Winchester COUNT DATE : Apr-19

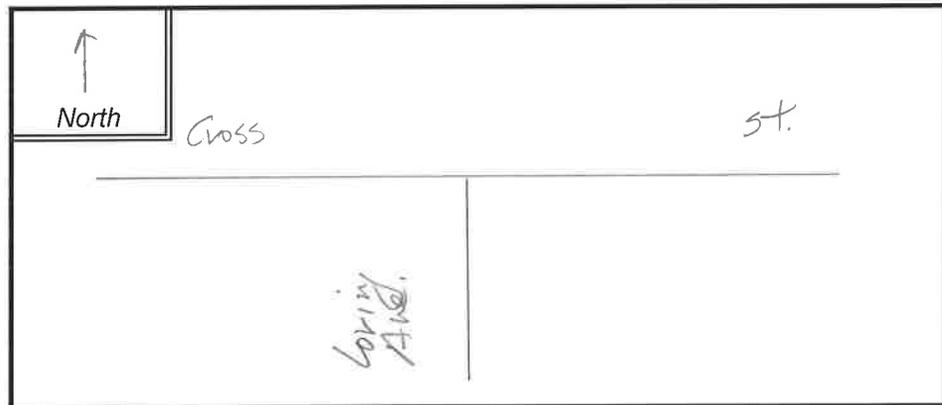
DISTRICT : 4 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Cross Street

MINOR STREET(S) : Loring Avenue

**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) : | 655 | 502 | 215 | | | 1,372 |

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Below MassDOT District 4 crash rate
 Project Title & Date : Proposed Residential Development May 2019

Top Crash Locations

cross street, winchester, ma X Q

Show search results for cross street, w...

Legend

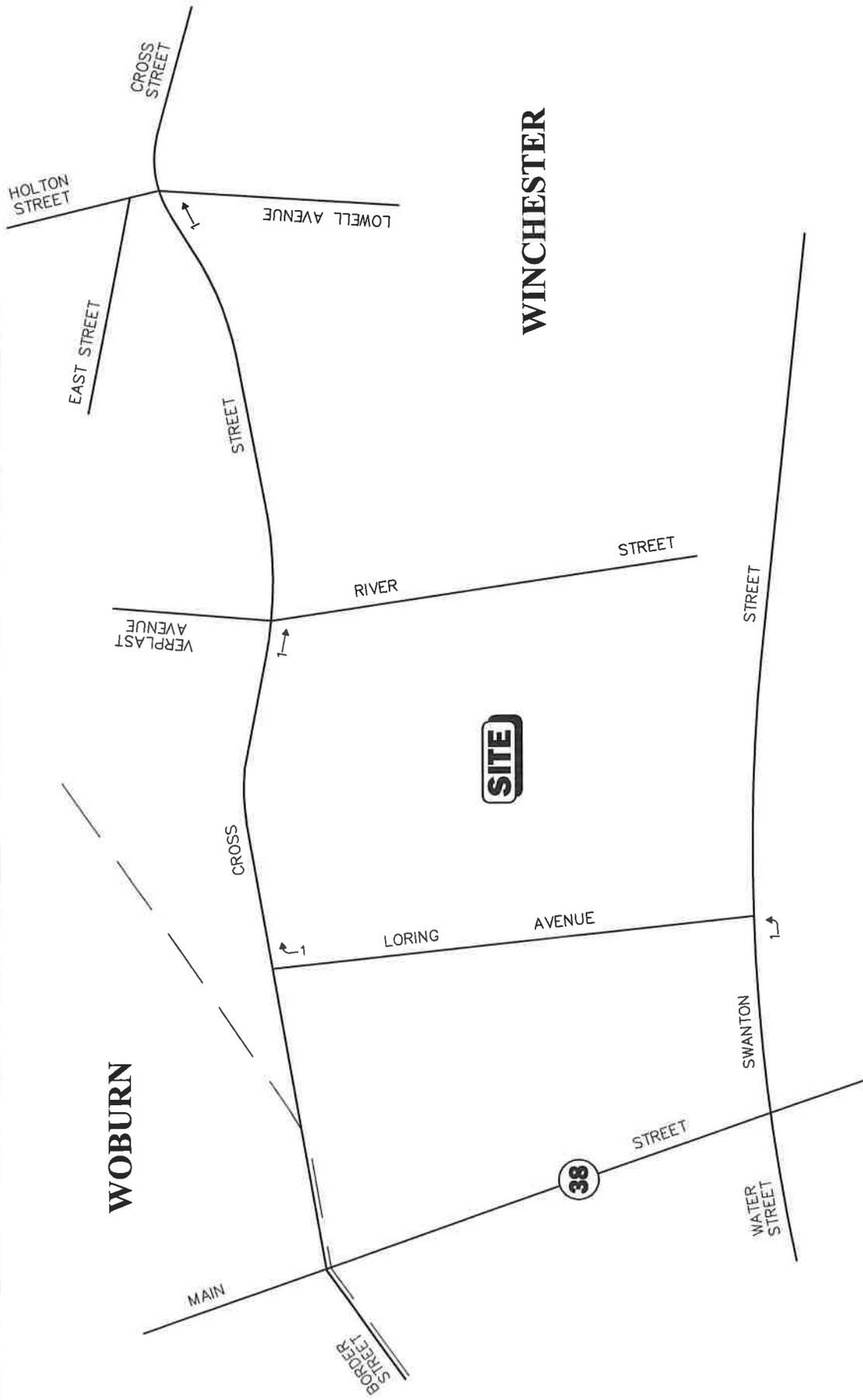
- Crash Clusters**
- Top 200 Intersection Cluster 2013-2015
- 2013-2015 HSIP Cluster
- 2006-2015 HSIP Bicycle Cluster
- 2006-2015 HSIP Pedestrian Cluster



0.2mi

71 112 42 463 Degrees

BACKGROUND DEVELOPMENT TRAFFIC-VOLUME NETWORKS



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

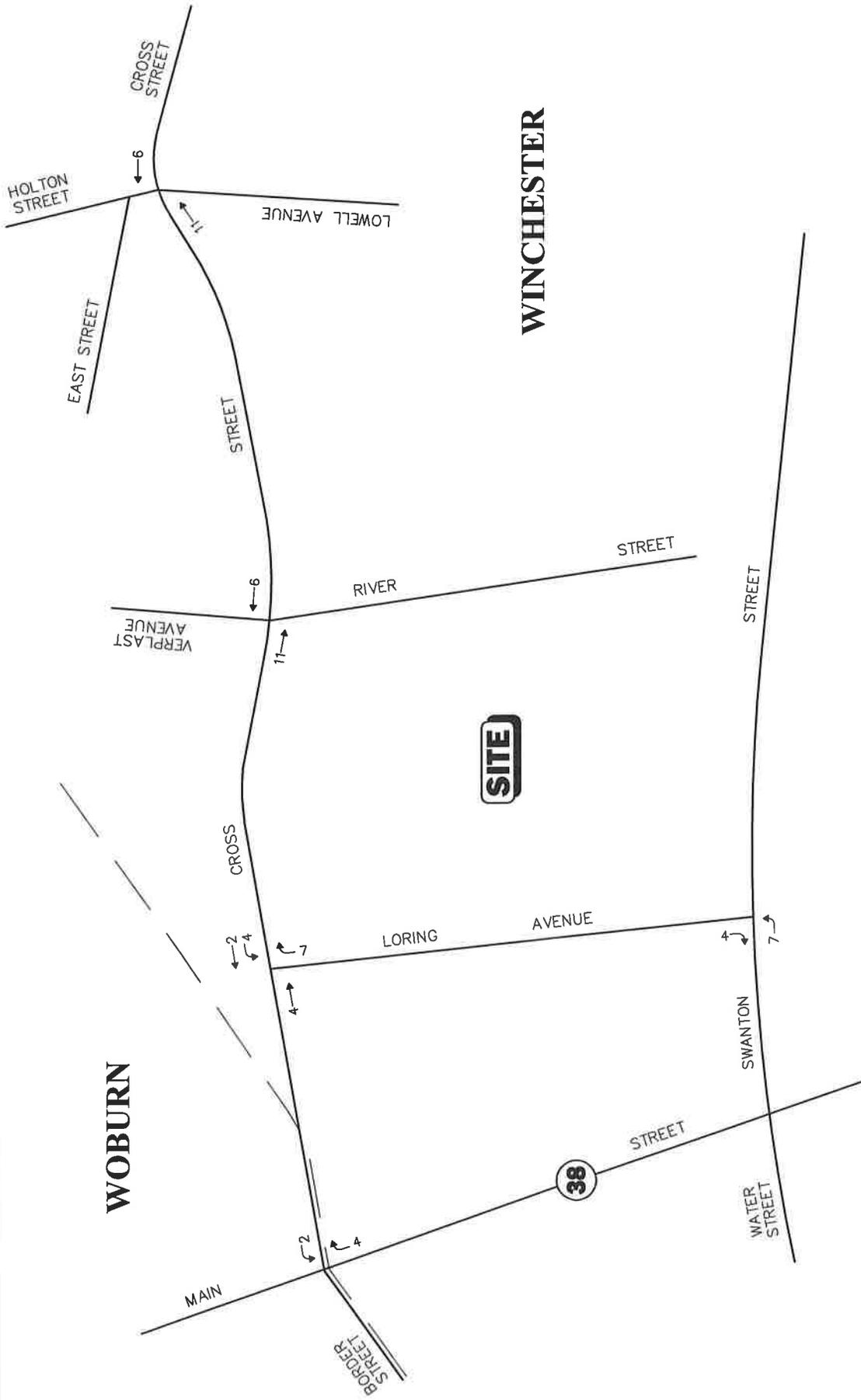


Vanasse & Associates, Inc.
Transportation Engineers & Planners



Figure A-1

**Winchester Community Park
Weekday Morning
Peak Hour Traffic Volumes**

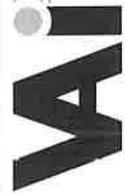


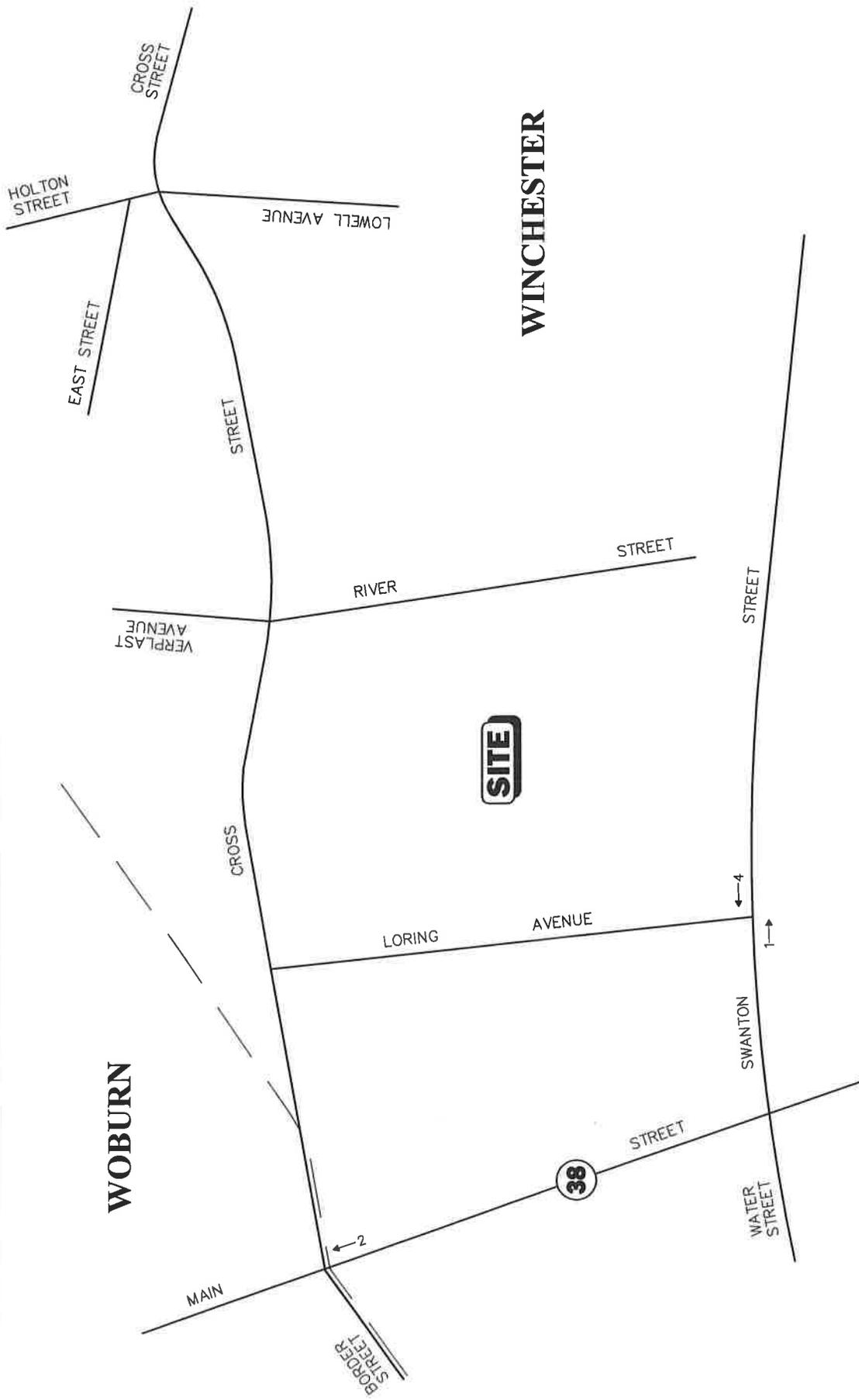
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale

Figure A-2

**Winchester Community Park
Weekday Evening
Peak Hour Traffic Volumes**

Vanasse & Associates, Inc.
Transportation Engineers & Planners





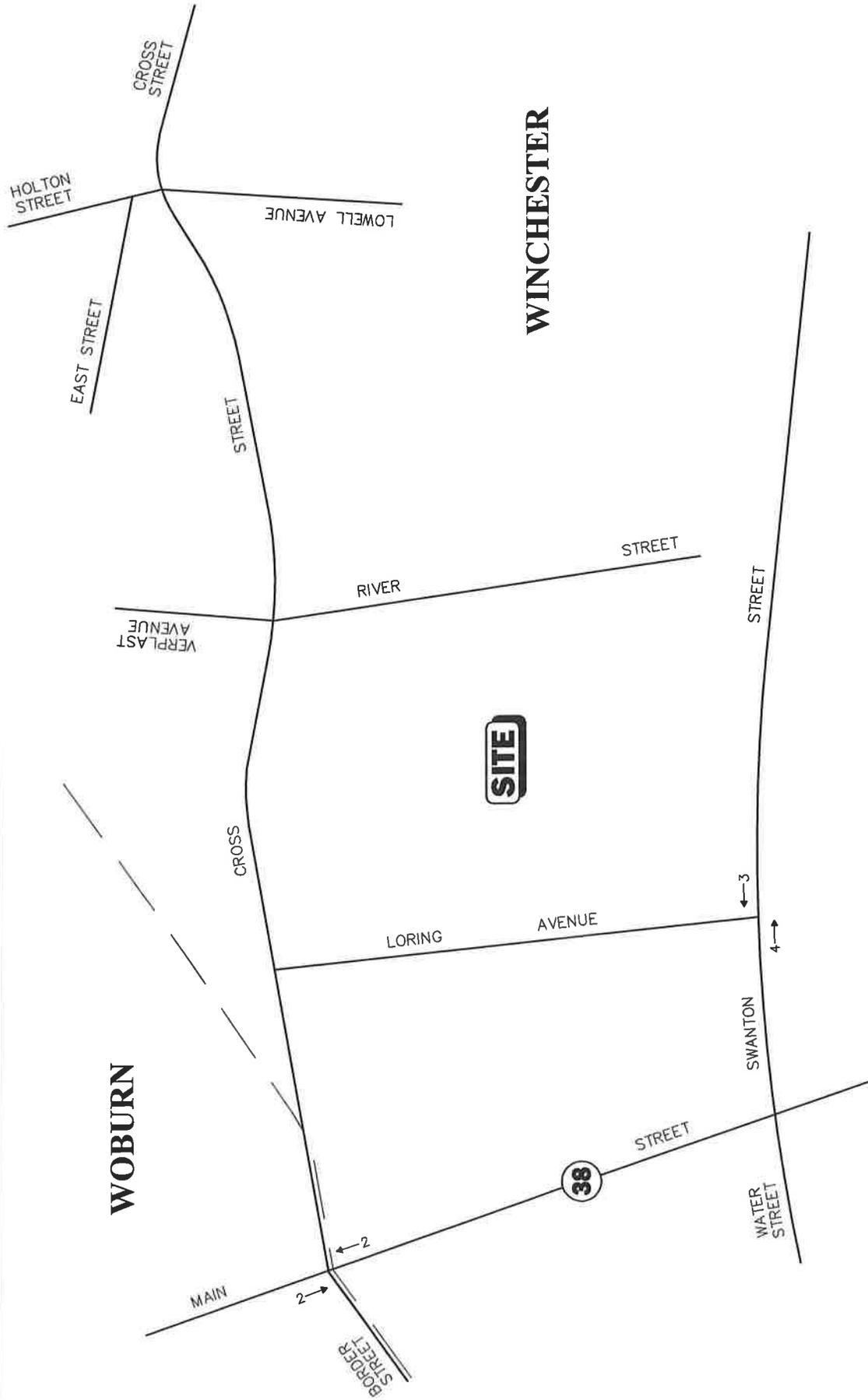
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale



Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-3

**Residential Community
Weekday Morning
Peak Hour Traffic Volumes**

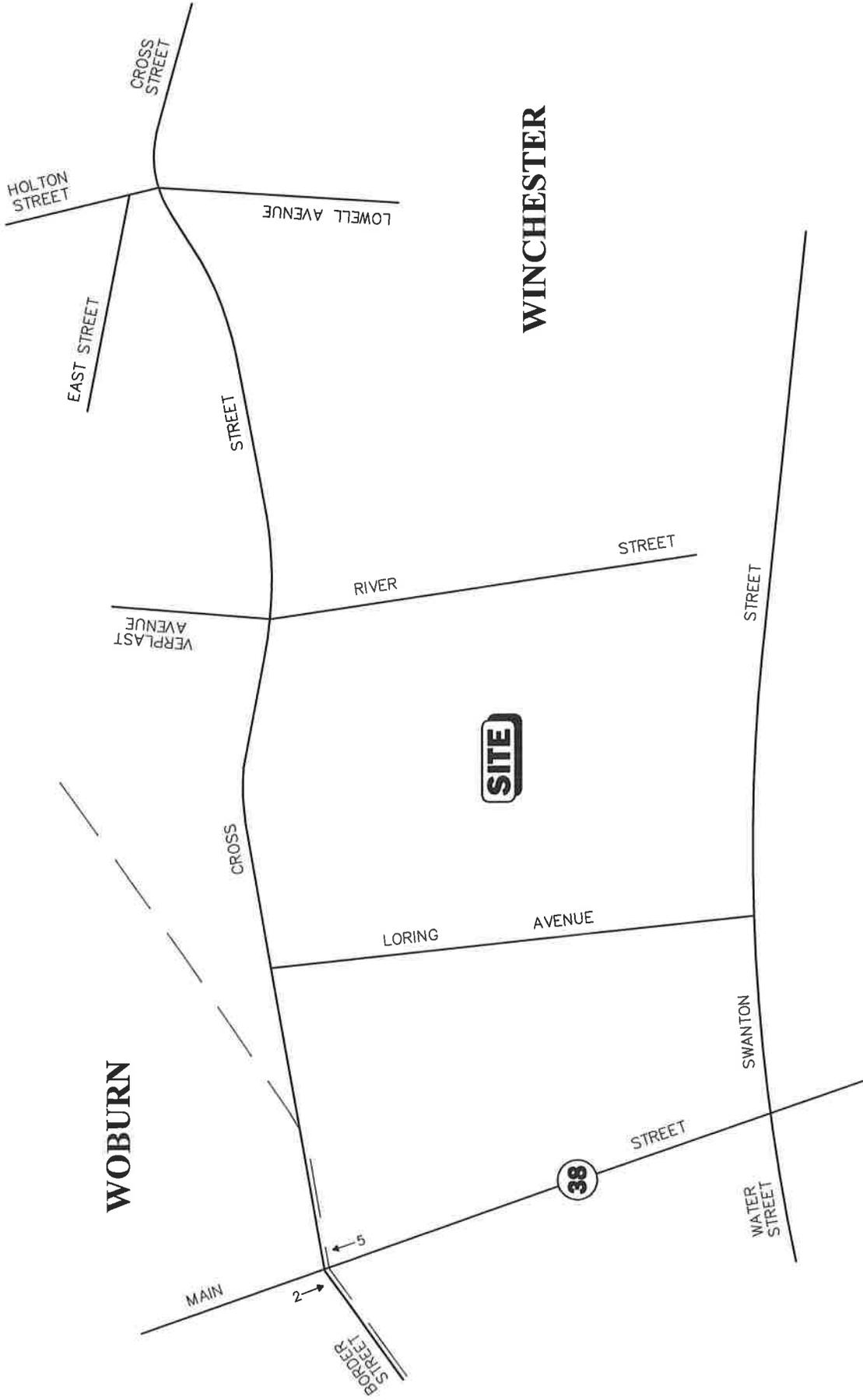


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
Not To Scale



WAI Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-4
Residential Community
Weekday Evening
Peak Hour Traffic Volumes



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

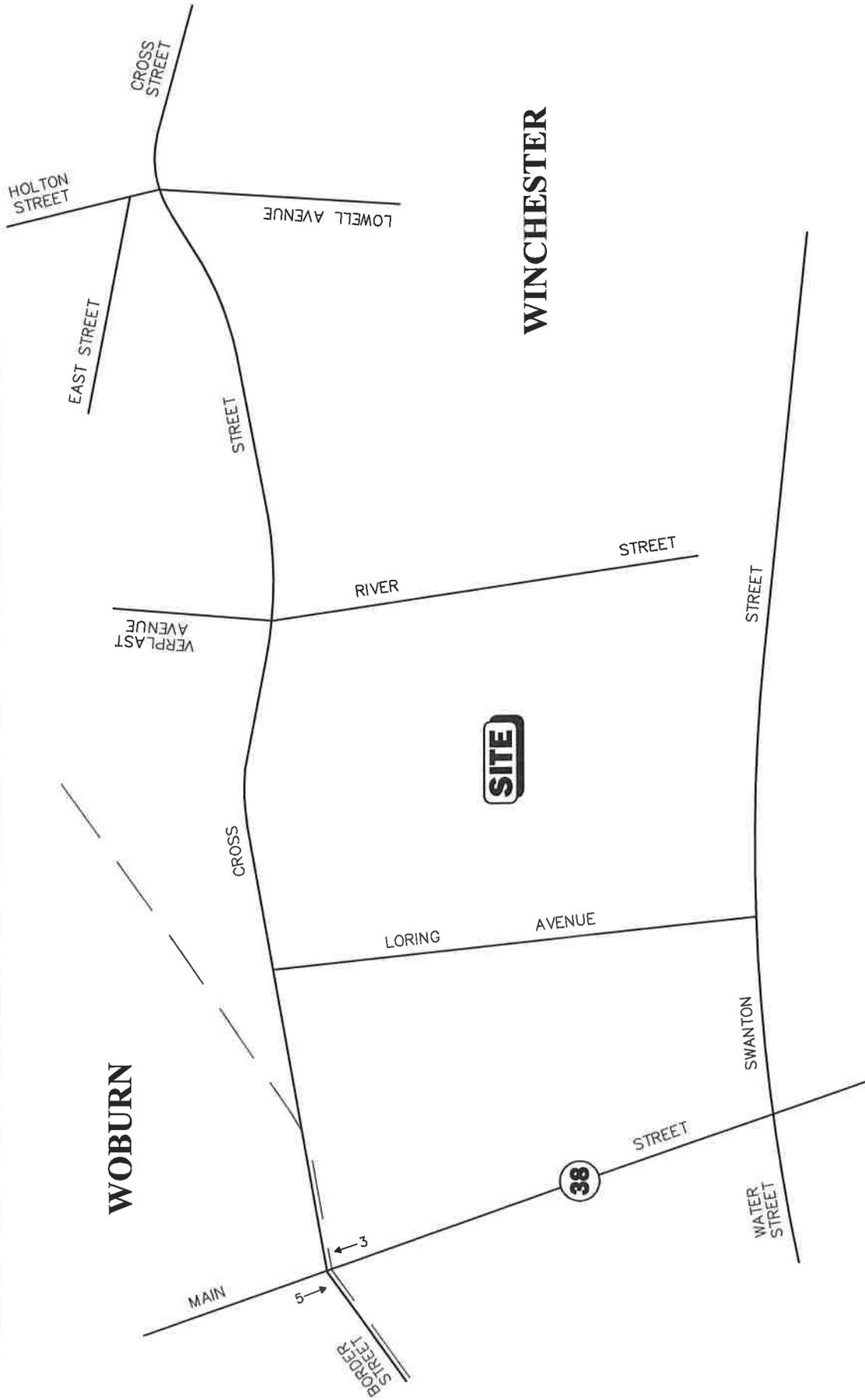
Not To Scale



VAI
Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-5

100 Housing Units
Weekday Morning
Peak Hour Traffic Volumes



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



VAI Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure A-6

100 Housing Units
Weekday Evening
Peak Hour Traffic Volumes

GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth - Daily Traffic Volumes

| CITY/TOWN | ROUTE/STREET | LOCATION | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | Average Annual |
|-----------|--------------|----------------------------|---------|---------|------|---------|---------|---------|---------|---------|---------|---------|---------|----------------|
| Stonham | I-93 | at Border Road (Sta. 4169) | 157,200 | 155,978 | | 155,978 | 156,592 | 169,451 | 169,821 | 169,400 | 152,640 | 177,460 | 174,207 | 1.23% |

TRIP-GENERATION CALCULATIONS

Multifamily Housing (Mid-Rise) (221)

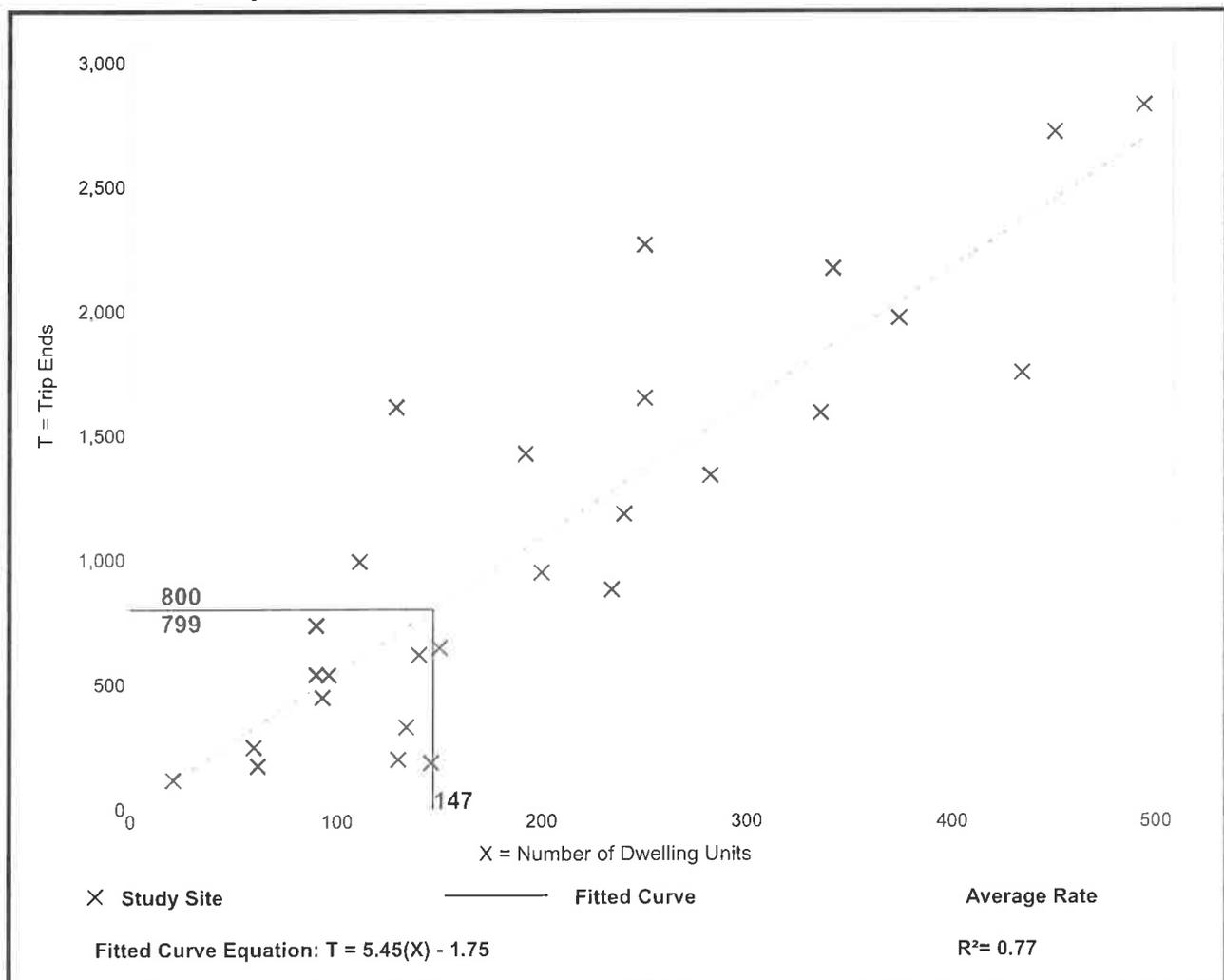
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. Num. of Dwelling Units: 205
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 5.44 | 1.27 - 12.50 | 2.03 |

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

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: 53

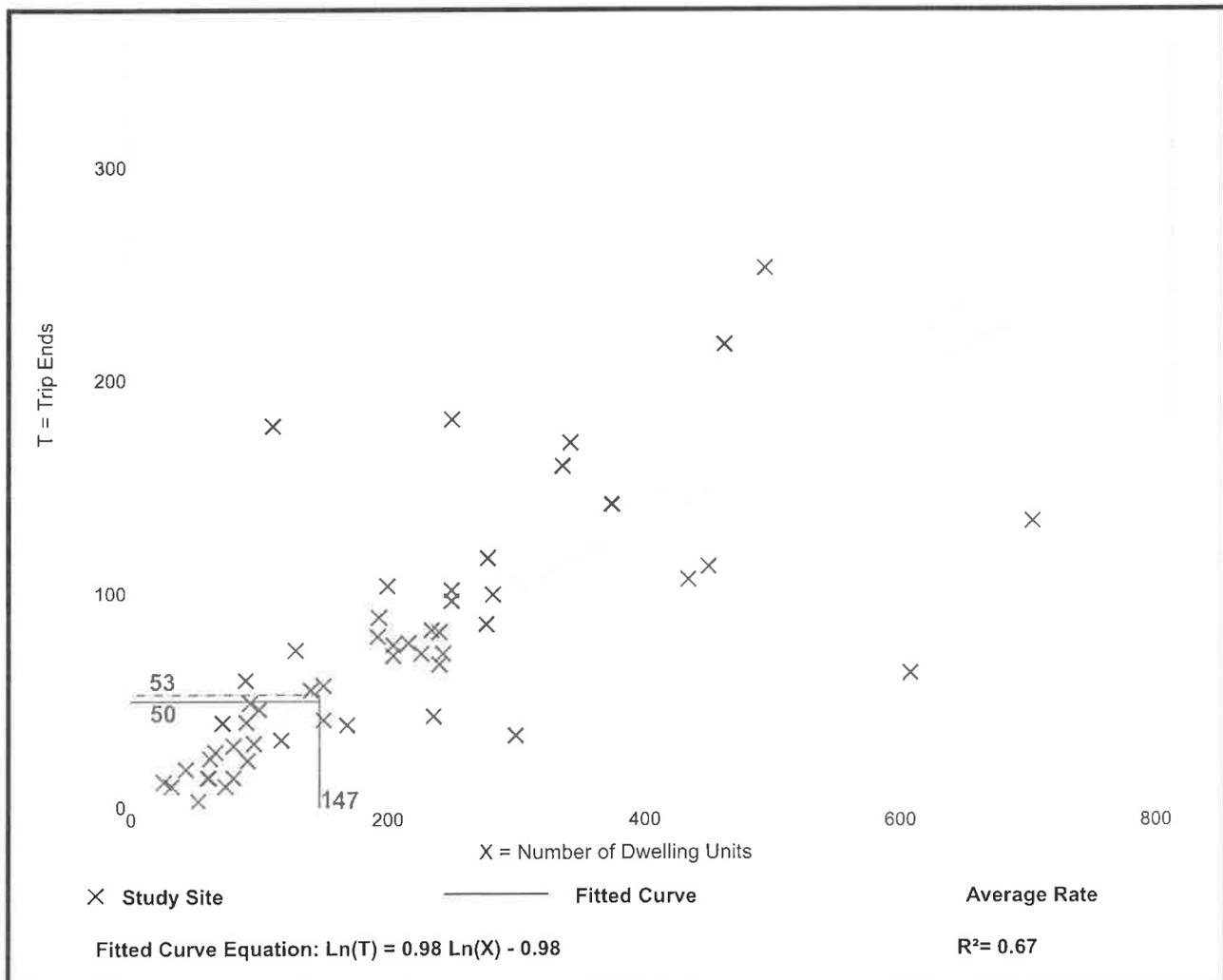
Avg. Num. of Dwelling Units: 207

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.36 | 0.06 - 1.61 | 0.19 |

Data Plot and Equation



Multifamily Housing (Mid-Rise) (221)

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: 60

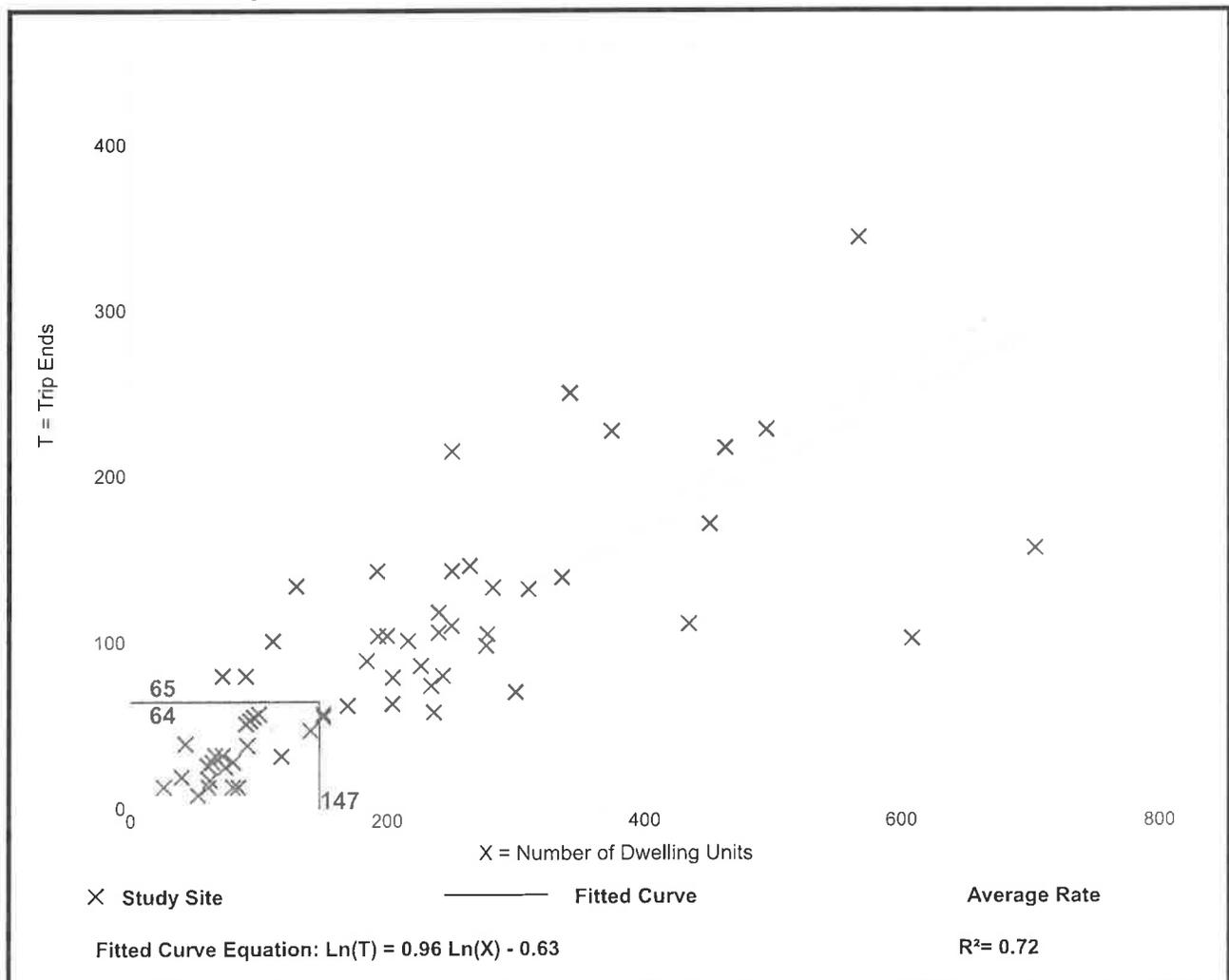
Avg. Num. of Dwelling Units: 208

Directional Distribution: 61% entering, 39% exiting

Vehicle Trip Generation per Dwelling Unit

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 0.44 | 0.15 - 1.11 | 0.19 |

Data Plot and Equation



JOURNEY TO WORK TRIP DISTRIBUTION

Trip-Distribution

| Residence | | Workplace | | Number | Main Street (North) | Main Street (South) | Cross Street (East) | Holton Street (North) |
|---------------|------------------|-----------------|---------------------|--------|---------------------|---------------------|---------------------|-----------------------|
| State | County | MCD | MCD | | | | | |
| Massachusetts | Middlesex County | Winchester town | Boston city | 2,444 | | 1222 | 1222 | |
| Massachusetts | Middlesex County | Winchester town | Winchester town | 1,708 | | 1025 | 598 | 85 |
| Massachusetts | Middlesex County | Winchester town | Cambridge city | 760 | | 570 | 190 | |
| Massachusetts | Middlesex County | Winchester town | Woburn city | 606 | 545 | | | 61 |
| Massachusetts | Middlesex County | Winchester town | Burlington town | 303 | 303 | | | |
| Massachusetts | Middlesex County | Winchester town | Medford city | 230 | | 58 | 172 | |
| Massachusetts | Middlesex County | Winchester town | Waltham city | 189 | 189 | | | |
| Massachusetts | Middlesex County | Winchester town | Lexington town | 165 | 165 | | | |
| Massachusetts | Middlesex County | Winchester town | Malden city | 130 | | | 130 | |
| Massachusetts | Middlesex County | Winchester town | Newton city | 127 | | 127 | | |
| Massachusetts | Middlesex County | Winchester town | Stoneham town | 127 | | | 127 | |
| Massachusetts | Middlesex County | Winchester town | Watertown Town city | 120 | | 120 | | |
| Massachusetts | Middlesex County | Winchester town | Arlington town | 118 | | 118 | | |
| Massachusetts | Middlesex County | Winchester town | Bedford town | 115 | | | | |
| Massachusetts | Middlesex County | Winchester town | Wakefield town | 113 | | | 113 | |
| Massachusetts | Middlesex County | Winchester town | Lowell city | 90 | 45 | | 45 | |
| | | | | 7,345 | 1,362 | 3,240 | 2,597 | 146 |
| | | | | | 19% | 44% | 35% | 2% |

CAPACITY ANALYSIS WORKSHEETS

Cross Street at Holton Street, East Street and Lowell Avenue

Cross Street at River Street and Verplast Avenue

Main Street at Cross Street and Border Street

Cross Street at Loring Avenue

Swanton Street at Loring Avenue

River Street at the North Project Site Driveway

River Street at the South Project Site Driveway

Cross Street at Holton Street, East Street and Lowell Avenue

2019 Existing Wkdy AM Peak

3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | |  | | |  | | |  | |  |  | |
| Traffic Volume (veh/h) | 80 | 278 | 11 | 27 | 636 | 263 | 5 | 0 | 7 | 162 | 12 | 153 |
| Future Volume (Veh/h) | 80 | 278 | 11 | 27 | 636 | 263 | 5 | 0 | 7 | 162 | 12 | 153 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 82 | 287 | 11 | 28 | 656 | 271 | 5 | 0 | 7 | 167 | 12 | 158 |
| Pedestrians | | 4 | | | | | | | | | 6 | |
| Lane Width (ft) | | 12.0 | | | | | | | | | 12.0 | |
| Walking Speed (ft/s) | | 3.5 | | | | | | | | | 3.5 | |
| Percent Blockage | | 0 | | | | | | | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 933 | | | 298 | | | 1472 | 1446 | 292 | 1317 | 1316 | 802 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 933 | | | 298 | | | 1472 | 1446 | 292 | 1317 | 1316 | 802 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | *6.1 | *6.1 | *6.1 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.1 | 3.3 |
| p0 queue free % | 89 | | | 98 | | | 91 | 100 | 99 | 3 | 92 | 60 |
| cM capacity (veh/h) | 725 | | | 1275 | | | 53 | 115 | 752 | 172 | 157 | 391 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 380 | 955 | 12 | 167 | 170 | | | | | | | |
| Volume Left | 82 | 28 | 5 | 167 | 0 | | | | | | | |
| Volume Right | 11 | 271 | 7 | 0 | 158 | | | | | | | |
| cSH | 725 | 1275 | 116 | 172 | 354 | | | | | | | |
| Volume to Capacity | 0.11 | 0.02 | 0.10 | 0.97 | 0.48 | | | | | | | |
| Queue Length 95th (ft) | 10 | 2 | 8 | 190 | 63 | | | | | | | |
| Control Delay (s) | 3.4 | 0.6 | 39.6 | 115.0 | 24.2 | | | | | | | |
| Lane LOS | A | A | E | F | C | | | | | | | |
| Approach Delay (s) | 3.4 | 0.6 | 39.6 | 69.2 | | | | | | | | |
| Approach LOS | | | E | F | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|-------|----------------------|--|---|
| Average Delay | | 15.3 | | | |
| Intersection Capacity Utilization | | 78.2% | ICU Level of Service | | D |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2019 Existing Wkdy AM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 13 | 80 | 164 | 179 | 247 | 11 |
| Future Volume (Veh/h) | 13 | 80 | 164 | 179 | 247 | 11 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 13 | 82 | 169 | 185 | 255 | 11 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | None | | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 784 | 260 | 266 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 784 | 260 | 266 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 89 | 87 | | | |
| cM capacity (veh/h) | 318 | 773 | 1304 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 95 | 354 | 266 | | | |
| Volume Left | 13 | 169 | 0 | | | |
| Volume Right | 82 | 0 | 11 | | | |
| cSH | 646 | 1304 | 1700 | | | |
| Volume to Capacity | 0.15 | 0.13 | 0.16 | | | |
| Queue Length 95th (ft) | 13 | 11 | 0 | | | |
| Control Delay (s) | 11.5 | 4.5 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 11.5 | 4.5 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 3.8 | | | |
| Intersection Capacity Utilization | | | 47.8% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

2019 Existing Wkdy PM Peak

3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | ↕ | ↕ | ↕ |
| Traffic Volume (veh/h) | 119 | 655 | 6 | 10 | 347 | 195 | 6 | 9 | 11 | 227 | 4 | 128 |
| Future Volume (Veh/h) | 119 | 655 | 6 | 10 | 347 | 195 | 6 | 9 | 11 | 227 | 4 | 128 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 123 | 675 | 6 | 10 | 358 | 201 | 6 | 9 | 11 | 234 | 4 | 132 |
| Pedestrians | | | | | | | | 2 | | | 12 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 11.5 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 571 | | | 683 | | | 1538 | 1517 | 680 | 1430 | 1420 | 470 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 571 | | | 683 | | | 1538 | 1517 | 680 | 1430 | 1420 | 470 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.3 | 6.5 | 6.2 | *4.5 | *4.5 | *4.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.7 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 88 | | | 99 | | | 90 | 91 | 98 | 8 | 98 | 82 |
| cM capacity (veh/h) | 986 | | | 918 | | | 63 | 103 | 454 | 255 | 259 | 738 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 804 | 569 | 26 | 234 | 136 | | | | | | | |
| Volume Left | 123 | 10 | 6 | 234 | 0 | | | | | | | |
| Volume Right | 6 | 201 | 11 | 0 | 132 | | | | | | | |
| cSH | 986 | 918 | 125 | 255 | 700 | | | | | | | |
| Volume to Capacity | 0.12 | 0.01 | 0.21 | 0.92 | 0.19 | | | | | | | |
| Queue Length 95th (ft) | 11 | 1 | 19 | 204 | 18 | | | | | | | |
| Control Delay (s) | 3.0 | 0.3 | 41.1 | 79.3 | 11.4 | | | | | | | |
| Lane LOS | A | A | E | F | B | | | | | | | |
| Approach Delay (s) | 3.0 | 0.3 | 41.1 | 54.4 | | | | | | | | |
| Approach LOS | | | E | F | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 13.4 | | | | | | | | | |
| Intersection Capacity Utilization | | | 101.8% | | ICU Level of Service | | | | | G | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

* User Entered Value

2019 Existing Wkdy PM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 13 | 90 | 103 | 220 | 269 | 14 |
| Future Volume (Veh/h) | 13 | 90 | 103 | 220 | 269 | 14 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 13 | 93 | 106 | 227 | 277 | 14 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 723 | 284 | 291 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 723 | 284 | 291 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 88 | 92 | | | |
| cM capacity (veh/h) | 363 | 760 | 1282 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 106 | 333 | 291 | | | |
| Volume Left | 13 | 106 | 0 | | | |
| Volume Right | 93 | 0 | 14 | | | |
| cSH | 670 | 1282 | 1700 | | | |
| Volume to Capacity | 0.16 | 0.08 | 0.17 | | | |
| Queue Length 95th (ft) | 14 | 7 | 0 | | | |
| Control Delay (s) | 11.4 | 3.1 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 11.4 | 3.1 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 3.1 | | | |
| Intersection Capacity Utilization | | | 48.6% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy AM Peak
 3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | ↔ | ↔ | ↔ |
| Traffic Volume (veh/h) | 89 | 309 | 12 | 30 | 706 | 291 | 6 | 0 | 8 | 180 | 14 | 170 |
| Future Volume (Veh/h) | 89 | 309 | 12 | 30 | 706 | 291 | 6 | 0 | 8 | 180 | 14 | 170 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 92 | 319 | 12 | 31 | 728 | 300 | 6 | 0 | 8 | 186 | 14 | 175 |
| Pedestrians | | 4 | | | | | | | | | | 6 |
| Lane Width (ft) | | 12.0 | | | | | | | | | 12.0 | |
| Walking Speed (ft/s) | | 3.5 | | | | | | | | | 3.5 | |
| Percent Blockage | | 0 | | | | | | | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1034 | | | 331 | | | 1635 | 1605 | 325 | 1463 | 1461 | 888 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1034 | | | 331 | | | 1635 | 1605 | 325 | 1463 | 1461 | 888 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | *6.1 | *6.1 | *6.1 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.1 | 3.3 |
| p0 queue free % | 86 | | | 97 | | | 82 | 100 | 99 | 0 | 89 | 50 |
| cM capacity (veh/h) | 664 | | | 1240 | | | 33 | 89 | 721 | 138 | 127 | 350 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 423 | 1059 | 14 | 186 | 189 | | | | | | | |
| Volume Left | 92 | 31 | 6 | 186 | 0 | | | | | | | |
| Volume Right | 12 | 300 | 8 | 0 | 175 | | | | | | | |
| cSH | 664 | 1240 | 72 | 138 | 309 | | | | | | | |
| Volume to Capacity | 0.14 | 0.03 | 0.20 | 1.34 | 0.61 | | | | | | | |
| Queue Length 95th (ft) | 12 | 2 | 17 | 296 | 94 | | | | | | | |
| Control Delay (s) | 4.0 | 0.7 | 67.0 | 255.4 | 33.3 | | | | | | | |
| Lane LOS | A | A | F | F | D | | | | | | | |
| Approach Delay (s) | 4.0 | 0.7 | 67.0 | 143.5 | | | | | | | | |
| Approach LOS | | | F | F | | | | | | | | |

| Intersection Summary | | |
|-----------------------------------|-------|------------------------|
| Average Delay | | 30.6 |
| Intersection Capacity Utilization | 85.4% | ICU Level of Service E |
| Analysis Period (min) | | 15 |

* User Entered Value

2026 No-Build Wkdy AM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 14 | 89 | 182 | 198 | 275 | 12 |
| Future Volume (Veh/h) | 14 | 89 | 182 | 198 | 275 | 12 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 14 | 92 | 188 | 204 | 284 | 12 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 870 | 290 | 296 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 870 | 290 | 296 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 95 | 88 | 85 | | | |
| cM capacity (veh/h) | 277 | 744 | 1271 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 106 | 392 | 296 | | | |
| Volume Left | 14 | 188 | 0 | | | |
| Volume Right | 92 | 0 | 12 | | | |
| cSH | 608 | 1271 | 1700 | | | |
| Volume to Capacity | 0.17 | 0.15 | 0.17 | | | |
| Queue Length 95th (ft) | 16 | 13 | 0 | | | |
| Control Delay (s) | 12.2 | 4.7 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 12.2 | 4.7 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.0 | | | |
| Intersection Capacity Utilization | | | 52.0% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy PM Peak

3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|------|------|------|-------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | ↕ | ↕ | |
| Traffic Volume (veh/h) | 132 | 738 | 7 | 11 | 391 | 216 | 9 | 8 | 12 | 252 | 4 | 142 |
| Future Volume (Veh/h) | 132 | 738 | 7 | 11 | 391 | 216 | 9 | 8 | 12 | 252 | 4 | 142 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 136 | 761 | 7 | 11 | 403 | 223 | 9 | 8 | 12 | 260 | 4 | 146 |
| Pedestrians | | | | | | | | 2 | | | 12 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 11.5 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 638 | | | 770 | | | 1723 | 1698 | 766 | 1601 | 1590 | 526 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 638 | | | 770 | | | 1723 | 1698 | 766 | 1601 | 1590 | 526 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.3 | 6.5 | 6.2 | *4.5 | *4.5 | *4.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.7 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 85 | | | 99 | | | 79 | 90 | 97 | 0 | 98 | 79 |
| cM capacity (veh/h) | 931 | | | 852 | | | 44 | 78 | 405 | 211 | 219 | 704 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 904 | 637 | 29 | 260 | 150 | | | | | | | |
| Volume Left | 136 | 11 | 9 | 260 | 0 | | | | | | | |
| Volume Right | 7 | 223 | 12 | 0 | 146 | | | | | | | |
| cSH | 931 | 852 | 86 | 211 | 665 | | | | | | | |
| Volume to Capacity | 0.15 | 0.01 | 0.34 | 1.23 | 0.23 | | | | | | | |
| Queue Length 95th (ft) | 13 | 1 | 32 | 335 | 22 | | | | | | | |
| Control Delay (s) | 3.6 | 0.3 | 67.2 | 184.3 | 12.0 | | | | | | | |
| Lane LOS | A | A | F | F | B | | | | | | | |
| Approach Delay (s) | 3.6 | 0.3 | 67.2 | 121.2 | | | | | | | | |
| Approach LOS | | | F | F | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|--------|----------------------|---|--|
| Average Delay | | 27.8 | | | |
| Intersection Capacity Utilization | | 112.0% | ICU Level of Service | H | |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2026 No-Build Wkdy PM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 14 | 100 | 112 | 236 | 298 | 16 |
| Future Volume (Veh/h) | 14 | 100 | 112 | 236 | 298 | 16 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 14 | 103 | 115 | 243 | 307 | 16 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 788 | 315 | 323 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 788 | 315 | 323 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 86 | 91 | | | |
| cM capacity (veh/h) | 329 | 730 | 1248 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 117 | 358 | 323 | | | |
| Volume Left | 14 | 115 | 0 | | | |
| Volume Right | 103 | 0 | 16 | | | |
| cSH | 637 | 1248 | 1700 | | | |
| Volume to Capacity | 0.18 | 0.09 | 0.19 | | | |
| Queue Length 95th (ft) | 17 | 8 | 0 | | | |
| Control Delay (s) | 11.9 | 3.2 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 11.9 | 3.2 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 3.2 | | | |
| Intersection Capacity Utilization | | | 52.2% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy AM Peak

3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|-------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | ↔ | ↔ | |
| Traffic Volume (veh/h) | 90 | 322 | 12 | 30 | 711 | 291 | 6 | 0 | 8 | 180 | 14 | 170 |
| Future Volume (Veh/h) | 90 | 322 | 12 | 30 | 711 | 291 | 6 | 0 | 8 | 180 | 14 | 170 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 93 | 332 | 12 | 31 | 733 | 300 | 6 | 0 | 8 | 186 | 14 | 175 |
| Pedestrians | | 4 | | | | | | | | | 6 | |
| Lane Width (ft) | | 12.0 | | | | | | | | | 12.0 | |
| Walking Speed (ft/s) | | 3.5 | | | | | | | | | 3.5 | |
| Percent Blockage | | 0 | | | | | | | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1039 | | | 344 | | | 1655 | 1625 | 338 | 1483 | 1481 | 893 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1039 | | | 344 | | | 1655 | 1625 | 338 | 1483 | 1481 | 893 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | *6.1 | *6.1 | *6.1 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.1 | 3.3 |
| p0 queue free % | 86 | | | 97 | | | 81 | 100 | 99 | 0 | 89 | 50 |
| cM capacity (veh/h) | 662 | | | 1226 | | | 31 | 86 | 709 | 135 | 123 | 347 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 437 | 1064 | 14 | 186 | 189 | | | | | | | |
| Volume Left | 93 | 31 | 6 | 186 | 0 | | | | | | | |
| Volume Right | 12 | 300 | 8 | 0 | 175 | | | | | | | |
| cSH | 662 | 1226 | 69 | 135 | 306 | | | | | | | |
| Volume to Capacity | 0.14 | 0.03 | 0.20 | 1.38 | 0.62 | | | | | | | |
| Queue Length 95th (ft) | 12 | 2 | 17 | 304 | 96 | | | | | | | |
| Control Delay (s) | 4.0 | 0.7 | 70.3 | 272.8 | 34.0 | | | | | | | |
| Lane LOS | A | A | F | F | D | | | | | | | |
| Approach Delay (s) | 4.0 | 0.7 | 70.3 | 152.4 | | | | | | | | |
| Approach LOS | | | F | F | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 32.1 | | | | | | | | | |
| Intersection Capacity Utilization | | | 86.6% | | ICU Level of Service | | | | E | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

* User Entered Value

2026 Build Wkdy AM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 14 | 89 | 182 | 199 | 275 | 12 |
| Future Volume (Veh/h) | 14 | 89 | 182 | 199 | 275 | 12 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 14 | 92 | 188 | 205 | 284 | 12 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 871 | 290 | 296 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 871 | 290 | 296 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 95 | 88 | 85 | | | |
| cM capacity (veh/h) | 276 | 744 | 1271 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 106 | 393 | 296 | | | |
| Volume Left | 14 | 188 | 0 | | | |
| Volume Right | 92 | 0 | 12 | | | |
| cSH | 608 | 1271 | 1700 | | | |
| Volume to Capacity | 0.17 | 0.15 | 0.17 | | | |
| Queue Length 95th (ft) | 16 | 13 | 0 | | | |
| Control Delay (s) | 12.2 | 4.7 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 12.2 | 4.7 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 4.0 | | | |
| Intersection Capacity Utilization | | | 52.0% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy PM Peak

3: Lowell Avenue/Holton Street & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | ↕ | ↕ | ↕ |
| Traffic Volume (veh/h) | 133 | 746 | 7 | 11 | 404 | 216 | 9 | 8 | 12 | 252 | 4 | 143 |
| Future Volume (Veh/h) | 133 | 746 | 7 | 11 | 404 | 216 | 9 | 8 | 12 | 252 | 4 | 143 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 137 | 769 | 7 | 11 | 416 | 223 | 9 | 8 | 12 | 260 | 4 | 147 |
| Pedestrians | | | | | | | | 2 | | | 12 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 11.5 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 1 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 651 | | | 778 | | | 1747 | 1722 | 774 | 1624 | 1614 | 540 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 651 | | | 778 | | | 1747 | 1722 | 774 | 1624 | 1614 | 540 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.3 | 6.5 | 6.2 | *4.5 | *4.5 | *4.5 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.7 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 85 | | | 99 | | | 78 | 89 | 97 | 0 | 98 | 79 |
| cM capacity (veh/h) | 920 | | | 846 | | | 42 | 75 | 401 | 206 | 214 | 697 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | SB 2 | | | | | | | |
| Volume Total | 913 | 650 | 29 | 260 | 151 | | | | | | | |
| Volume Left | 137 | 11 | 9 | 260 | 0 | | | | | | | |
| Volume Right | 7 | 223 | 12 | 0 | 147 | | | | | | | |
| cSH | 920 | 846 | 82 | 206 | 657 | | | | | | | |
| Volume to Capacity | 0.15 | 0.01 | 0.35 | 1.26 | 0.23 | | | | | | | |
| Queue Length 95th (ft) | 13 | 1 | 34 | 346 | 22 | | | | | | | |
| Control Delay (s) | 3.7 | 0.3 | 70.9 | 197.9 | 12.1 | | | | | | | |
| Lane LOS | A | A | F | F | B | | | | | | | |
| Approach Delay (s) | 3.7 | 0.3 | 70.9 | 129.6 | | | | | | | | |
| Approach LOS | | | F | F | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|--------|--|----------------------|---|
| Average Delay | | 29.4 | | | |
| Intersection Capacity Utilization | | 113.1% | | ICU Level of Service | H |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2026 Build Wkdy PM Peak
4: Holton Street & East Street

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 14 | 100 | 112 | 237 | 299 | 16 |
| Future Volume (Veh/h) | 14 | 100 | 112 | 237 | 299 | 16 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 | 0.97 |
| Hourly flow rate (vph) | 14 | 103 | 115 | 244 | 308 | 16 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 790 | 316 | 324 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 790 | 316 | 324 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 86 | 91 | | | |
| cM capacity (veh/h) | 328 | 729 | 1247 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 117 | 359 | 324 | | | |
| Volume Left | 14 | 115 | 0 | | | |
| Volume Right | 103 | 0 | 16 | | | |
| cSH | 636 | 1247 | 1700 | | | |
| Volume to Capacity | 0.18 | 0.09 | 0.19 | | | |
| Queue Length 95th (ft) | 17 | 8 | 0 | | | |
| Control Delay (s) | 11.9 | 3.2 | 0.0 | | | |
| Lane LOS | B | A | | | | |
| Approach Delay (s) | 11.9 | 3.2 | 0.0 | | | |
| Approach LOS | B | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 3.2 | | | |
| Intersection Capacity Utilization | | | 52.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

Cross Street at River Street and Verplast Avenue

2019 Existing Wkdy AM Peak

2: River Street/Verplast Avenue & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 4 | 340 | 3 | 6 | 877 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 340 | 3 | 6 | 877 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 4 | 382 | 3 | 7 | 985 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Pedestrians | | | | | | | | 3 | | | 2 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 987 | | | 388 | | | 1398 | 1396 | 386 | 1394 | 1397 | 987 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 987 | | | 388 | | | 1398 | 1396 | 386 | 1394 | 1397 | 987 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 97 | 100 | 100 | 99 | 100 | 99 |
| cM capacity (veh/h) | 707 | | | 1178 | | | 116 | 140 | 664 | 118 | 140 | 302 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 389 | 992 | 5 | 5 | | | | | | | | |
| Volume Left | 4 | 7 | 3 | 1 | | | | | | | | |
| Volume Right | 3 | 0 | 2 | 4 | | | | | | | | |
| cSH | 707 | 1178 | 173 | 230 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.01 | 0.03 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 2 | 2 | | | | | | | | |
| Control Delay (s) | 0.2 | 0.2 | 26.4 | 21.0 | | | | | | | | |
| Lane LOS | A | A | D | C | | | | | | | | |
| Approach Delay (s) | 0.2 | 0.2 | 26.4 | 21.0 | | | | | | | | |
| Approach LOS | | | D | C | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 0.3 | | | | | | | | | |
| Intersection Capacity Utilization | | | 59.7% | | ICU Level of Service | | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

2019 Existing Wkdy PM Peak

2: River Street/Verplast Avenue & Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 775 | 21 | 4 | 565 | 1 | 17 | 0 | 19 | 2 | 0 | 0 |
| Future Volume (Veh/h) | 2 | 775 | 21 | 4 | 565 | 1 | 17 | 0 | 19 | 2 | 0 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 842 | 23 | 4 | 614 | 1 | 18 | 0 | 21 | 2 | 0 | 0 |
| Pedestrians | | | | | 1 | | | 4 | | | 2 | |
| Lane Width (ft) | | | | | 15.0 | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 617 | | | 869 | | | 1484 | 1486 | 858 | 1504 | 1498 | 616 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 617 | | | 869 | | | 1484 | 1486 | 858 | 1504 | 1498 | 616 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 99 | | | 82 | 100 | 94 | 98 | 100 | 100 |
| cM capacity (veh/h) | 971 | | | 781 | | | 103 | 124 | 357 | 94 | 122 | 493 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 867 | 619 | 39 | 2 | | | | | | | | |
| Volume Left | 2 | 4 | 18 | 2 | | | | | | | | |
| Volume Right | 23 | 1 | 21 | 0 | | | | | | | | |
| cSH | 971 | 781 | 167 | 94 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.01 | 0.23 | 0.02 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 22 | 2 | | | | | | | | |
| Control Delay (s) | 0.1 | 0.1 | 33.1 | 44.3 | | | | | | | | |
| Lane LOS | A | A | D | E | | | | | | | | |
| Approach Delay (s) | 0.1 | 0.1 | 33.1 | 44.3 | | | | | | | | |
| Approach LOS | | | D | E | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 1.0 | | | | | | | | | |
| Intersection Capacity Utilization | | | 53.7% | | ICU Level of Service | | | | A | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

2026 No-Build Wkdy AM Peak

2: River Street/Verplast Avenue & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|---|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 4 | 378 | 3 | 7 | 973 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 378 | 3 | 7 | 973 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 4 | 425 | 3 | 8 | 1093 | 0 | 3 | 0 | 2 | 1 | 0 | 4 |
| Pedestrians | | | | | | | | 3 | | | 2 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1095 | | | 431 | | | 1550 | 1548 | 430 | 1548 | 1550 | 1095 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1095 | | | 431 | | | 1550 | 1548 | 430 | 1548 | 1550 | 1095 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 97 | 100 | 100 | 99 | 100 | 98 |
| cM capacity (veh/h) | 644 | | | 1136 | | | 91 | 113 | 628 | 92 | 113 | 262 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 432 | 1101 | 5 | 5 | | | | | | | | |
| Volume Left | 4 | 8 | 3 | 1 | | | | | | | | |
| Volume Right | 3 | 0 | 2 | 4 | | | | | | | | |
| cSH | 644 | 1136 | 138 | 191 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.01 | 0.04 | 0.03 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 1 | 3 | 2 | | | | | | | | |
| Control Delay (s) | 0.2 | 0.2 | 32.1 | 24.3 | | | | | | | | |
| Lane LOS | A | A | D | C | | | | | | | | |
| Approach Delay (s) | 0.2 | 0.2 | 32.1 | 24.3 | | | | | | | | |
| Approach LOS | | | D | C | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 0.4 | | | | | | | | | |
| Intersection Capacity Utilization | | | 65.5% | | ICU Level of Service | | | | C | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

2026 No-Build Wkdy PM Peak
2: River Street/Verplast Avenue & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 871 | 23 | 4 | 633 | 1 | 19 | 0 | 21 | 2 | 0 | 0 |
| Future Volume (Veh/h) | 2 | 871 | 23 | 4 | 633 | 1 | 19 | 0 | 21 | 2 | 0 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 947 | 25 | 4 | 688 | 1 | 21 | 0 | 23 | 2 | 0 | 0 |
| Pedestrians | | | | | 1 | | | 4 | | | 2 | |
| Lane Width (ft) | | | | | 15.0 | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 691 | | | 976 | | | 1664 | 1666 | 964 | 1686 | 1678 | 690 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 691 | | | 976 | | | 1664 | 1666 | 964 | 1686 | 1678 | 690 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 99 | | | 73 | 100 | 93 | 97 | 100 | 100 |
| cM capacity (veh/h) | 911 | | | 712 | | | 77 | 96 | 311 | 69 | 95 | 447 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 974 | 693 | 44 | 2 | | | | | | | | |
| Volume Left | 2 | 4 | 21 | 2 | | | | | | | | |
| Volume Right | 25 | 1 | 23 | 0 | | | | | | | | |
| cSH | 911 | 712 | 127 | 69 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.01 | 0.35 | 0.03 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 0 | 35 | 2 | | | | | | | | |
| Control Delay (s) | 0.1 | 0.2 | 47.8 | 58.9 | | | | | | | | |
| Lane LOS | A | A | E | F | | | | | | | | |
| Approach Delay (s) | 0.1 | 0.2 | 47.8 | 58.9 | | | | | | | | |
| Approach LOS | | | E | F | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 1.4 | | | | | | | | | |
| Intersection Capacity Utilization | | | 58.9% | | ICU Level of Service | | | | | B | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

2026 Build Wkdy AM Peak

2: River Street/Verplast Avenue & Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↔ | | | ↔ | | | ↔ | |
| Traffic Volume (veh/h) | 4 | 378 | 11 | 12 | 973 | 0 | 26 | 0 | 16 | 1 | 0 | 4 |
| Future Volume (Veh/h) | 4 | 378 | 11 | 12 | 973 | 0 | 26 | 0 | 16 | 1 | 0 | 4 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 | 0.89 |
| Hourly flow rate (vph) | 4 | 425 | 12 | 13 | 1093 | 0 | 29 | 0 | 18 | 1 | 0 | 4 |
| Pedestrians | | | | | | | | 3 | | | 2 | |
| Lane Width (ft) | | | | | | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1095 | | | 440 | | | 1565 | 1563 | 434 | 1578 | 1569 | 1095 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1095 | | | 440 | | | 1565 | 1563 | 434 | 1578 | 1569 | 1095 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 99 | | | 99 | | | 67 | 100 | 97 | 99 | 100 | 98 |
| cM capacity (veh/h) | 644 | | | 1127 | | | 88 | 110 | 624 | 85 | 109 | 262 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 441 | 1106 | 47 | 5 | | | | | | | | |
| Volume Left | 4 | 13 | 29 | 1 | | | | | | | | |
| Volume Right | 12 | 0 | 18 | 4 | | | | | | | | |
| cSH | 644 | 1127 | 131 | 185 | | | | | | | | |
| Volume to Capacity | 0.01 | 0.01 | 0.36 | 0.03 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 1 | 37 | 2 | | | | | | | | |
| Control Delay (s) | 0.2 | 0.4 | 46.9 | 25.0 | | | | | | | | |
| Lane LOS | A | A | E | C | | | | | | | | |
| Approach Delay (s) | 0.2 | 0.4 | 46.9 | 25.0 | | | | | | | | |
| Approach LOS | | | E | C | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 1.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 71.4% | | ICU Level of Service | | | | | C | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

2026 Build Wkdy PM Peak

2: River Street/Verplast Avenue & Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|------|------|-------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 871 | 48 | 18 | 633 | 1 | 35 | 0 | 30 | 2 | 0 | 0 |
| Future Volume (Veh/h) | 2 | 871 | 48 | 18 | 633 | 1 | 35 | 0 | 30 | 2 | 0 | 0 |
| Sign Control | | Free | | | Free | | | Stop | | | Stop | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 2 | 947 | 52 | 20 | 688 | 1 | 38 | 0 | 33 | 2 | 0 | 0 |
| Pedestrians | | | | | 1 | | | 4 | | | 2 | |
| Lane Width (ft) | | | | | 15.0 | | | 12.0 | | | 12.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | None | | | None | | | | | | | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 691 | | | 1003 | | | 1710 | 1712 | 978 | 1742 | 1738 | 690 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 691 | | | 1003 | | | 1710 | 1712 | 978 | 1742 | 1738 | 690 |
| tC, single (s) | 4.1 | | | 4.1 | | | 7.1 | 6.5 | 6.2 | 7.1 | 6.5 | 6.2 |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 2.2 | | | 2.2 | | | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 |
| p0 queue free % | 100 | | | 97 | | | 46 | 100 | 89 | 97 | 100 | 100 |
| cM capacity (veh/h) | 911 | | | 696 | | | 70 | 88 | 305 | 59 | 85 | 447 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 1001 | 709 | 71 | 2 | | | | | | | | |
| Volume Left | 2 | 20 | 38 | 2 | | | | | | | | |
| Volume Right | 52 | 1 | 33 | 0 | | | | | | | | |
| cSH | 911 | 696 | 109 | 59 | | | | | | | | |
| Volume to Capacity | 0.00 | 0.03 | 0.65 | 0.03 | | | | | | | | |
| Queue Length 95th (ft) | 0 | 2 | 82 | 3 | | | | | | | | |
| Control Delay (s) | 0.1 | 0.8 | 85.0 | 67.6 | | | | | | | | |
| Lane LOS | A | A | F | F | | | | | | | | |
| Approach Delay (s) | 0.1 | 0.8 | 85.0 | 67.6 | | | | | | | | |
| Approach LOS | | | F | F | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 3.8 | | | | | | | | | |
| Intersection Capacity Utilization | | | 60.1% | | ICU Level of Service | | | | B | | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

Main Street at Cross Street and Border Street

2019 Existing Wkdy AM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↕ | | | ↕ | ↗ | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 15 | 5 | 145 | 46 | 472 | 14 | 309 | 72 | 214 | 517 | 8 |
| Future Volume (Veh/h) | 2 | 15 | 5 | 145 | 46 | 472 | 14 | 309 | 72 | 214 | 517 | 8 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 16 | 5 | 151 | 48 | 492 | 15 | 322 | 75 | 223 | 539 | 8 |
| Pedestrians | | | | | 5 | | | 1 | | | 3 | |
| Lane Width (ft) | | | | | 8.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 1898 | 1421 | 544 | 1398 | 1388 | 368 | 547 | | | 402 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1898 | 1421 | 544 | 1398 | 1388 | 368 | 547 | | | 402 | | |
| tC, single (s) | 7.1 | 6.6 | 6.2 | *6.5 | *6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.1 | 3.3 | *3.0 | *3.0 | *3.0 | 2.2 | | | 2.2 | | |
| p0 queue free % | 87 | 85 | 99 | 0 | 63 | 46 | 99 | | | 81 | | |
| cM capacity (veh/h) | 15 | 106 | 542 | 120 | 131 | 920 | 1033 | | | 1158 | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | |
| Volume Total | 23 | 199 | 492 | 412 | 770 | | | | | | | |
| Volume Left | 2 | 151 | 0 | 15 | 223 | | | | | | | |
| Volume Right | 5 | 0 | 492 | 75 | 8 | | | | | | | |
| cSH | 78 | 122 | 920 | 1033 | 1158 | | | | | | | |
| Volume to Capacity | 0.29 | 1.62 | 0.54 | 0.01 | 0.19 | | | | | | | |
| Queue Length 95th (ft) | 27 | 366 | 81 | 1 | 18 | | | | | | | |
| Control Delay (s) | 69.0 | 378.2 | 13.3 | 0.5 | 4.3 | | | | | | | |
| Lane LOS | F | F | B | A | A | | | | | | | |
| Approach Delay (s) | 69.0 | 118.4 | | 0.5 | 4.3 | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | |

Intersection Summary

| | | | |
|-----------------------------------|-------|----------------------|---|
| Average Delay | 45.9 | | |
| Intersection Capacity Utilization | 88.2% | ICU Level of Service | E |
| Analysis Period (min) | 15 | | |

* User Entered Value

2019 Existing Wkdy PM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR | |
|------------------------|-------|-------|------|------|------|------|------|------|------|------|------|------|--|
| Lane Configurations | | ↔ | | | ↔ | ↗ | | ↔ | | | ↔ | | |
| Traffic Volume (veh/h) | 0 | 72 | 9 | 0 | 60 | 356 | 11 | 528 | 171 | 414 | 306 | 2 | |
| Future Volume (Veh/h) | 0 | 72 | 9 | 0 | 60 | 356 | 11 | 528 | 171 | 414 | 306 | 2 | |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | |
| Hourly flow rate (vph) | 0 | 77 | 10 | 0 | 64 | 379 | 12 | 562 | 182 | 440 | 326 | 2 | |
| Pedestrians | | 1 | | | 8 | | | | | | 1 | | |
| Lane Width (ft) | | 11.0 | | | 8.0 | | | | | | 16.0 | | |
| Walking Speed (ft/s) | | 3.5 | | | 3.5 | | | | | | 3.5 | | |
| Percent Blockage | | 0 | | | 1 | | | | | | 0 | | |
| Right turn flare (veh) | | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | | |
| Median storage (veh) | | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | | |
| vC, conflicting volume | 2297 | 1984 | 328 | 1940 | 1894 | 662 | 329 | | | 752 | | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | | |
| vCu, unblocked vol | 2297 | 1984 | 328 | 1940 | 1894 | 662 | 329 | | | 752 | | | |
| tC, single (s) | 7.1 | 6.5 | 6.2 | 7.1 | *6.0 | *6.0 | 4.1 | | | 4.1 | | | |
| tC, 2 stage (s) | | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | | |
| p0 queue free % | 0 | 0 | 99 | 0 | 0 | 21 | 99 | | | 49 | | | |
| cM capacity (veh/h) | 0 | 30 | 717 | 0 | 44 | 479 | 1241 | | | 858 | | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | | |
| Volume Total | 87 | 64 | 379 | 756 | 768 | | | | | | | | |
| Volume Left | 0 | 0 | 0 | 12 | 440 | | | | | | | | |
| Volume Right | 10 | 0 | 379 | 182 | 2 | | | | | | | | |
| cSH | 33 | 44 | 479 | 1241 | 858 | | | | | | | | |
| Volume to Capacity | 2.62 | 1.45 | 0.79 | 0.01 | 0.51 | | | | | | | | |
| Queue Length 95th (ft) | 250 | 158 | 180 | 1 | 75 | | | | | | | | |
| Control Delay (s) | 987.9 | 441.7 | 35.5 | 0.3 | 11.4 | | | | | | | | |
| Lane LOS | F | F | E | A | B | | | | | | | | |
| Approach Delay (s) | 987.9 | 94.2 | | 0.3 | 11.4 | | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|-------|----------------------|--|---|
| Average Delay | | 66.5 | | | |
| Intersection Capacity Utilization | | 92.5% | ICU Level of Service | | F |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2026 No-Build Wkdy AM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↕ | | | ↕ | ↗ | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 16 | 5 | 161 | 51 | 524 | 16 | 350 | 80 | 238 | 576 | 9 |
| Future Volume (Veh/h) | 2 | 16 | 5 | 161 | 51 | 524 | 16 | 350 | 80 | 238 | 576 | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 17 | 5 | 168 | 53 | 546 | 17 | 365 | 83 | 248 | 600 | 9 |
| Pedestrians | | | | | 5 | | | 1 | | | 3 | |
| Lane Width (ft) | | | | | 8.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2116 | 1588 | 606 | 1560 | 1550 | 414 | 609 | | | 453 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2116 | 1588 | 606 | 1560 | 1550 | 414 | 609 | | | 453 | | |
| tC, single (s) | 7.1 | 6.6 | 6.2 | *6.5 | *6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.1 | 3.3 | *3.0 | *3.0 | *3.0 | 2.2 | | | 2.2 | | |
| p0 queue free % | 71 | 79 | 99 | 0 | 46 | 39 | 98 | | | 78 | | |
| cM capacity (veh/h) | 7 | 80 | 500 | 87 | 99 | 889 | 979 | | | 1109 | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | |
| Volume Total | 24 | 221 | 546 | 465 | 857 | | | | | | | |
| Volume Left | 2 | 168 | 0 | 17 | 248 | | | | | | | |
| Volume Right | 5 | 0 | 546 | 83 | 9 | | | | | | | |
| cSH | 47 | 89 | 889 | 979 | 1109 | | | | | | | |
| Volume to Capacity | 0.51 | 2.47 | 0.61 | 0.02 | 0.22 | | | | | | | |
| Queue Length 95th (ft) | 47 | 512 | 108 | 1 | 21 | | | | | | | |
| Control Delay (s) | 144.7 | 769.3 | 15.3 | 0.5 | 4.9 | | | | | | | |
| Lane LOS | F | F | C | A | A | | | | | | | |
| Approach Delay (s) | 144.7 | 232.5 | | 0.5 | 4.9 | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | |

Intersection Summary

| | |
|-----------------------------------|-------|
| Average Delay | 88.2 |
| Intersection Capacity Utilization | 96.6% |
| ICU Level of Service | F |
| Analysis Period (min) | 15 |

* User Entered Value

2026 No-Build Wkdy PM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|------------------------|--------|--------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↕ | ↗ | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 0 | 80 | 10 | 0 | 68 | 395 | 12 | 591 | 194 | 459 | 347 | 2 |
| Future Volume (Veh/h) | 0 | 80 | 10 | 0 | 68 | 395 | 12 | 591 | 194 | 459 | 347 | 2 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 0 | 85 | 11 | 0 | 72 | 420 | 13 | 629 | 206 | 488 | 369 | 2 |
| Pedestrians | | 1 | | | 8 | | | | | | 1 | |
| Lane Width (ft) | | 11.0 | | | 8.0 | | | | | | 16.0 | |
| Walking Speed (ft/s) | | 3.5 | | | 3.5 | | | | | | 3.5 | |
| Percent Blockage | | 0 | | | 1 | | | | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2562 | 2216 | 371 | 2166 | 2114 | 741 | 372 | | | 843 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2562 | 2216 | 371 | 2166 | 2114 | 741 | 372 | | | 843 | | |
| tC, single (s) | 7.1 | *5.5 | *5.5 | 7.1 | *6.0 | *6.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 0 | 98 | 0 | 0 | 3 | 99 | | | 38 | | |
| cM capacity (veh/h) | 0 | 31 | 729 | 0 | 26 | 434 | 1197 | | | 793 | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | |
| Volume Total | 96 | 72 | 420 | 848 | 859 | | | | | | | |
| Volume Left | 0 | 0 | 0 | 13 | 488 | | | | | | | |
| Volume Right | 11 | 0 | 420 | 206 | 2 | | | | | | | |
| cSH | 35 | 26 | 434 | 1197 | 793 | | | | | | | |
| Volume to Capacity | 2.76 | 2.76 | 0.97 | 0.01 | 0.62 | | | | | | | |
| Queue Length 95th (ft) | 273 | 220 | 293 | 1 | 108 | | | | | | | |
| Control Delay (s) | 1036.3 | 1111.9 | 66.9 | 0.3 | 15.0 | | | | | | | |
| Lane LOS | F | F | F | A | B | | | | | | | |
| Approach Delay (s) | 1036.3 | 219.8 | | 0.3 | 15.0 | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|--------|----------------------|---|--|
| Average Delay | | 96.2 | | | |
| Intersection Capacity Utilization | | 102.4% | ICU Level of Service | G | |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2026 Build Wkdy AM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------|---|---|---|---|---|---|--|---|---|---|---|---|
| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
| Lane Configurations | | ↔ | | | ↑ | ↗ | | ↕ | | | ↕ | |
| Traffic Volume (veh/h) | 2 | 16 | 5 | 169 | 51 | 531 | 16 | 350 | 83 | 240 | 576 | 9 |
| Future Volume (Veh/h) | 2 | 16 | 5 | 169 | 51 | 531 | 16 | 350 | 83 | 240 | 576 | 9 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Hourly flow rate (vph) | 2 | 17 | 5 | 176 | 53 | 553 | 17 | 365 | 86 | 250 | 600 | 9 |
| Pedestrians | | | | | 5 | | | 1 | | | 3 | |
| Lane Width (ft) | | | | | 8.0 | | | 16.0 | | | 16.0 | |
| Walking Speed (ft/s) | | | | | 3.5 | | | 3.5 | | | 3.5 | |
| Percent Blockage | | | | | 0 | | | 0 | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage (veh) | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2129 | 1594 | 606 | 1566 | 1556 | 416 | 609 | | | 456 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2129 | 1594 | 606 | 1566 | 1556 | 416 | 609 | | | 456 | | |
| tC, single (s) | 7.1 | 6.6 | 6.2 | *6.5 | *6.5 | *4.0 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.1 | 3.3 | *3.0 | *3.0 | *3.0 | 2.2 | | | 2.2 | | |
| p0 queue free % | 69 | 78 | 99 | 0 | 46 | 38 | 98 | | | 77 | | |
| cM capacity (veh/h) | 7 | 79 | 500 | 86 | 98 | 888 | 979 | | | 1107 | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | |
| Volume Total | 24 | 229 | 553 | 468 | 859 | | | | | | | |
| Volume Left | 2 | 176 | 0 | 17 | 250 | | | | | | | |
| Volume Right | 5 | 0 | 553 | 86 | 9 | | | | | | | |
| cSH | 45 | 88 | 888 | 979 | 1107 | | | | | | | |
| Volume to Capacity | 0.53 | 2.60 | 0.62 | 0.02 | 0.23 | | | | | | | |
| Queue Length 95th (ft) | 49 | 539 | 112 | 1 | 22 | | | | | | | |
| Control Delay (s) | 152.9 | 825.0 | 15.5 | 0.5 | 5.0 | | | | | | | |
| Lane LOS | F | F | C | A | A | | | | | | | |
| Approach Delay (s) | 152.9 | 252.6 | | 0.5 | 5.0 | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | |

Intersection Summary

| | | | | | |
|-----------------------------------|--|-------|----------------------|--|---|
| Average Delay | | 96.4 | | | |
| Intersection Capacity Utilization | | 97.3% | ICU Level of Service | | F |
| Analysis Period (min) | | 15 | | | |

* User Entered Value

2026 Build Wkdy PM Peak

1: Main Street /Main Street & Border Street/Cross Street

05/14/2019

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|-----------------------------------|--------|--------|--------|------|----------------------|------|------|------|------|------|------|------|
| Lane Configurations | | ↔ | | | ↔ | ↗ | | ↔ | | | ↔ | |
| Traffic Volume (veh/h) | 0 | 80 | 10 | 0 | 73 | 400 | 12 | 591 | 203 | 466 | 347 | 2 |
| Future Volume (Veh/h) | 0 | 80 | 10 | 0 | 73 | 400 | 12 | 591 | 203 | 466 | 347 | 2 |
| Sign Control | | Stop | | | Stop | | | Free | | | Free | |
| Grade | | 0% | | | 0% | | | 0% | | | 0% | |
| Peak Hour Factor | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Hourly flow rate (vph) | 0 | 85 | 11 | 0 | 78 | 426 | 13 | 629 | 216 | 496 | 369 | 2 |
| Pedestrians | | 1 | | | 8 | | | | | | 1 | |
| Lane Width (ft) | | 11.0 | | | 8.0 | | | | | | 16.0 | |
| Walking Speed (ft/s) | | 3.5 | | | 3.5 | | | | | | 3.5 | |
| Percent Blockage | | 0 | | | 1 | | | | | | 0 | |
| Right turn flare (veh) | | | | | | | | | | | | |
| Median type | | | | | | | | None | | | None | |
| Median storage veh | | | | | | | | | | | | |
| Upstream signal (ft) | | | | | | | | | | | | |
| pX, platoon unblocked | | | | | | | | | | | | |
| vC, conflicting volume | 2592 | 2242 | 371 | 2186 | 2135 | 746 | 372 | | | 853 | | |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 2592 | 2242 | 371 | 2186 | 2135 | 746 | 372 | | | 853 | | |
| tC, single (s) | 7.1 | *5.5 | *5.5 | 7.1 | *5.8 | *5.8 | 4.1 | | | 4.1 | | |
| tC, 2 stage (s) | | | | | | | | | | | | |
| tF (s) | 3.5 | 4.0 | 3.3 | 3.5 | 4.0 | 3.3 | 2.2 | | | 2.2 | | |
| p0 queue free % | 0 | 0 | 98 | 0 | 0 | 5 | 99 | | | 37 | | |
| cM capacity (veh/h) | 0 | 29 | 729 | 0 | 27 | 449 | 1197 | | | 786 | | |
| Direction, Lane # | EB 1 | WB 1 | WB 2 | NB 1 | SB 1 | | | | | | | |
| Volume Total | 96 | 78 | 426 | 858 | 867 | | | | | | | |
| Volume Left | 0 | 0 | 0 | 13 | 496 | | | | | | | |
| Volume Right | 11 | 0 | 426 | 216 | 2 | | | | | | | |
| cSH | 32 | 27 | 449 | 1197 | 786 | | | | | | | |
| Volume to Capacity | 2.96 | 2.84 | 0.95 | 0.01 | 0.63 | | | | | | | |
| Queue Length 95th (ft) | 279 | 236 | 282 | 1 | 114 | | | | | | | |
| Control Delay (s) | 1141.7 | 1134.5 | 61.1 | 0.3 | 15.6 | | | | | | | |
| Lane LOS | F | F | F | A | C | | | | | | | |
| Approach Delay (s) | 1141.7 | 227.2 | | 0.3 | 15.6 | | | | | | | |
| Approach LOS | F | F | | | | | | | | | | |
| Intersection Summary | | | | | | | | | | | | |
| Average Delay | | | 102.3 | | | | | | | | | |
| Intersection Capacity Utilization | | | 103.3% | | ICU Level of Service | | | | | G | | |
| Analysis Period (min) | | | 15 | | | | | | | | | |

* User Entered Value

Cross Street at Loring Avenue

2019 Existing Wkdy AM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↗ | | | ↖ | ↗ | |
| Traffic Volume (veh/h) | 284 | 45 | 313 | 610 | 26 | 103 |
| Future Volume (Veh/h) | 284 | 45 | 313 | 610 | 26 | 103 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.93 | 0.93 | 0.70 | 0.70 | 0.85 | 0.85 |
| Hourly flow rate (vph) | 305 | 48 | 447 | 871 | 31 | 121 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 353 | | 2094 | 329 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 353 | | 2094 | 329 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 63 | | 13 | 83 |
| cM capacity (veh/h) | | | 1211 | | 36 | 712 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 353 | 1318 | 152 | | | |
| Volume Left | 0 | 447 | 31 | | | |
| Volume Right | 48 | 0 | 121 | | | |
| cSH | 1700 | 1211 | 147 | | | |
| Volume to Capacity | 0.21 | 0.37 | 1.04 | | | |
| Queue Length 95th (ft) | 0 | 43 | 197 | | | |
| Control Delay (s) | 0.0 | 8.1 | 145.0 | | | |
| Lane LOS | | A | F | | | |
| Approach Delay (s) | 0.0 | 8.1 | 145.0 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 18.0 | | | |
| Intersection Capacity Utilization | | | 84.9% | ICU Level of Service | E | |
| Analysis Period (min) | | | 15 | | | |

2019 Existing Wkdy PM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↗ | | | ↖ | ↗ | |
| Traffic Volume (veh/h) | 623 | 32 | 143 | 359 | 10 | 205 |
| Future Volume (Veh/h) | 623 | 32 | 143 | 359 | 10 | 205 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.79 | 0.79 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 692 | 36 | 181 | 454 | 11 | 223 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 728 | | 1526 | 710 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 728 | | 1526 | 710 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 80 | | 89 | 49 |
| cM capacity (veh/h) | | | 885 | | 104 | 437 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 728 | 635 | 234 | | | |
| Volume Left | 0 | 181 | 11 | | | |
| Volume Right | 36 | 0 | 223 | | | |
| cSH | 1700 | 885 | 380 | | | |
| Volume to Capacity | 0.43 | 0.20 | 0.62 | | | |
| Queue Length 95th (ft) | 0 | 19 | 99 | | | |
| Control Delay (s) | 0.0 | 4.9 | 28.5 | | | |
| Lane LOS | | A | D | | | |
| Approach Delay (s) | 0.0 | 4.9 | 28.5 | | | |
| Approach LOS | | | D | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 6.1 | | | |
| Intersection Capacity Utilization | | | 84.8% | ICU Level of Service | | E |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy AM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↗ | ↖ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↑ | | | ↑ | ↑ | |
| Traffic Volume (veh/h) | 315 | 47 | 347 | 677 | 29 | 115 |
| Future Volume (Veh/h) | 315 | 47 | 347 | 677 | 29 | 115 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.93 | 0.93 | 0.70 | 0.70 | 0.85 | 0.85 |
| Hourly flow rate (vph) | 339 | 51 | 496 | 967 | 34 | 135 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 390 | | 2324 | 364 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 390 | | 2324 | 364 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 58 | | 0 | 80 |
| cM capacity (veh/h) | | | 1174 | | 23 | 680 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 390 | 1463 | 169 | | | |
| Volume Left | 0 | 496 | 34 | | | |
| Volume Right | 51 | 0 | 135 | | | |
| cSH | 1700 | 1174 | 102 | | | |
| Volume to Capacity | 0.23 | 0.42 | 1.65 | | | |
| Queue Length 95th (ft) | 0 | 54 | 329 | | | |
| Control Delay (s) | 0.0 | 10.2 | 404.8 | | | |
| Lane LOS | | B | F | | | |
| Approach Delay (s) | 0.0 | 10.2 | 404.8 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 41.2 | | | |
| Intersection Capacity Utilization | | | 93.0% | ICU Level of Service | | F |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy PM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↗ | | | ↖ | ↗ | |
| Traffic Volume (veh/h) | 695 | 36 | 163 | 400 | 11 | 235 |
| Future Volume (Veh/h) | 695 | 36 | 163 | 400 | 11 | 235 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.79 | 0.79 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 772 | 40 | 206 | 506 | 12 | 255 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | None | | | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 812 | | 1710 | 792 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 812 | | 1710 | 792 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 75 | | 84 | 35 |
| cM capacity (veh/h) | | | 823 | | 76 | 392 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 812 | 712 | 267 | | | |
| Volume Left | 0 | 206 | 12 | | | |
| Volume Right | 40 | 0 | 255 | | | |
| cSH | 1700 | 823 | 330 | | | |
| Volume to Capacity | 0.48 | 0.25 | 0.81 | | | |
| Queue Length 95th (ft) | 0 | 25 | 170 | | | |
| Control Delay (s) | 0.0 | 5.9 | 49.1 | | | |
| Lane LOS | | A | E | | | |
| Approach Delay (s) | 0.0 | 5.9 | 49.1 | | | |
| Approach LOS | | | E | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 9.7 | | | |
| Intersection Capacity Utilization | | | 94.0% | ICU Level of Service | | F |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy AM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↔ | | | ↔ | ↔ | |
| Traffic Volume (veh/h) | 320 | 47 | 355 | 692 | 29 | 118 |
| Future Volume (Veh/h) | 320 | 47 | 355 | 692 | 29 | 118 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.93 | 0.93 | 0.70 | 0.70 | 0.85 | 0.85 |
| Hourly flow rate (vph) | 344 | 51 | 507 | 989 | 34 | 139 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | | None | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 395 | | 2372 | 370 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 395 | | 2372 | 370 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 57 | | 0 | 79 |
| cM capacity (veh/h) | | | 1169 | | 21 | 676 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 395 | 1496 | 173 | | | |
| Volume Left | 0 | 507 | 34 | | | |
| Volume Right | 51 | 0 | 139 | | | |
| cSH | 1700 | 1169 | 96 | | | |
| Volume to Capacity | 0.23 | 0.43 | 1.80 | | | |
| Queue Length 95th (ft) | 0 | 56 | 354 | | | |
| Control Delay (s) | 0.0 | 10.4 | 471.9 | | | |
| Lane LOS | | B | F | | | |
| Approach Delay (s) | 0.0 | 10.4 | 471.9 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 47.1 | | | |
| Intersection Capacity Utilization | | | 94.6% | ICU Level of Service | F | |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy PM Peak
5: Loring Avenue & Cross Street

05/14/2019

| | → | ↘ | ↙ | ← | ↖ | ↗ |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Movement | EBT | EBR | WBL | WBT | NBL | NBR |
| Lane Configurations | ↗ | | | ↖ | ↗ | |
| Traffic Volume (veh/h) | 711 | 36 | 169 | 410 | 11 | 244 |
| Future Volume (Veh/h) | 711 | 36 | 169 | 410 | 11 | 244 |
| Sign Control | Free | | | Free | Stop | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.90 | 0.90 | 0.79 | 0.79 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 790 | 40 | 214 | 519 | 12 | 265 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | None | | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | | | 830 | | 1757 | 810 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | | | 830 | | 1757 | 810 |
| tC, single (s) | | | 4.1 | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | | | 2.2 | | 3.5 | 3.3 |
| p0 queue free % | | | 74 | | 83 | 31 |
| cM capacity (veh/h) | | | 811 | | 69 | 383 |
| Direction, Lane # | EB 1 | WB 1 | NB 1 | | | |
| Volume Total | 830 | 733 | 277 | | | |
| Volume Left | 0 | 214 | 12 | | | |
| Volume Right | 40 | 0 | 265 | | | |
| cSH | 1700 | 811 | 320 | | | |
| Volume to Capacity | 0.49 | 0.26 | 0.86 | | | |
| Queue Length 95th (ft) | 0 | 27 | 196 | | | |
| Control Delay (s) | 0.0 | 6.2 | 58.6 | | | |
| Lane LOS | | A | F | | | |
| Approach Delay (s) | 0.0 | 6.2 | 58.6 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.3 | | | |
| Intersection Capacity Utilization | | | 96.2% | ICU Level of Service | | F |
| Analysis Period (min) | | | 15 | | | |

Swanton Street at Loring Avenue

2019 Existing Wkdy AM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  | |
| Traffic Volume (veh/h) | 73 | 250 | 268 | 37 | 99 | 219 |
| Future Volume (Veh/h) | 73 | 250 | 268 | 37 | 99 | 219 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.88 | 0.88 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 95 | 325 | 305 | 42 | 119 | 264 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 347 | | | 841 | 326 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 347 | | | 841 | 326 | |
| tC, single (s) | 4.1 | | | 6.4 | 6.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | 3.5 | 3.3 | |
| p0 queue free % | 92 | | | 62 | 63 | |
| cM capacity (veh/h) | 1218 | | | 310 | 720 | |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 420 | 347 | 383 | | | |
| Volume Left | 95 | 0 | 119 | | | |
| Volume Right | 0 | 42 | 264 | | | |
| cSH | 1218 | 1700 | 510 | | | |
| Volume to Capacity | 0.08 | 0.20 | 0.75 | | | |
| Queue Length 95th (ft) | 6 | 0 | 161 | | | |
| Control Delay (s) | 2.5 | 0.0 | 30.3 | | | |
| Lane LOS | A | | D | | | |
| Approach Delay (s) | 2.5 | 0.0 | 30.3 | | | |
| Approach LOS | | | D | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 11.0 | | | |
| Intersection Capacity Utilization | | | 62.5% | ICU Level of Service | B | |
| Analysis Period (min) | | | 15 | | | |

2019 Existing Wkdy PM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  | |
| Traffic Volume (veh/h) | 177 | 291 | 264 | 29 | 29 | 146 |
| Future Volume (Veh/h) | 177 | 291 | 264 | 29 | 29 | 146 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.91 | 0.91 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 206 | 338 | 290 | 32 | 31 | 154 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 322 | | | 1056 | 306 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 322 | | | 1056 | 306 | |
| tC, single (s) | 4.1 | | | 6.4 | 6.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | 3.5 | 3.3 | |
| p0 queue free % | 84 | | | 85 | 79 | |
| cM capacity (veh/h) | 1249 | | | 210 | 739 | |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 544 | 322 | 185 | | | |
| Volume Left | 206 | 0 | 31 | | | |
| Volume Right | 0 | 32 | 154 | | | |
| cSH | 1249 | 1700 | 520 | | | |
| Volume to Capacity | 0.16 | 0.19 | 0.36 | | | |
| Queue Length 95th (ft) | 15 | 0 | 40 | | | |
| Control Delay (s) | 4.3 | 0.0 | 15.7 | | | |
| Lane LOS | A | | C | | | |
| Approach Delay (s) | 4.3 | 0.0 | 15.7 | | | |
| Approach LOS | | | C | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 5.0 | | | |
| Intersection Capacity Utilization | | | 61.4% | ICU Level of Service | B | |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy AM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  | |
| Traffic Volume (veh/h) | 82 | 278 | 301 | 41 | 110 | 243 |
| Future Volume (Veh/h) | 82 | 278 | 301 | 41 | 110 | 243 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.88 | 0.88 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 106 | 361 | 342 | 47 | 133 | 293 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 389 | | | | 938 | 366 |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 389 | | | | 938 | 366 |
| tC, single (s) | 4.1 | | | | 6.4 | 6.2 |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | | 3.5 | 3.3 |
| p0 queue free % | 91 | | | | 50 | 57 |
| cM capacity (veh/h) | 1175 | | | | 268 | 684 |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 467 | 389 | 426 | | | |
| Volume Left | 106 | 0 | 133 | | | |
| Volume Right | 0 | 47 | 293 | | | |
| cSH | 1175 | 1700 | 461 | | | |
| Volume to Capacity | 0.09 | 0.23 | 0.92 | | | |
| Queue Length 95th (ft) | 7 | 0 | 266 | | | |
| Control Delay (s) | 2.6 | 0.0 | 55.4 | | | |
| Lane LOS | A | | F | | | |
| Approach Delay (s) | 2.6 | 0.0 | 55.4 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 19.4 | | | |
| Intersection Capacity Utilization | | | 68.5% | ICU Level of Service | C | |
| Analysis Period (min) | | | 15 | | | |

2026 No-Build Wkdy PM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  |  |
| Traffic Volume (veh/h) | 203 | 327 | 296 | 32 | 32 | 166 |
| Future Volume (Veh/h) | 203 | 327 | 296 | 32 | 32 | 166 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.91 | 0.91 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 236 | 380 | 325 | 35 | 34 | 175 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 360 | | | 1194 | 342 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 360 | | | 1194 | 342 | |
| tC, single (s) | 4.1 | | | 6.4 | 6.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | 3.5 | 3.3 | |
| p0 queue free % | 80 | | | 80 | 75 | |
| cM capacity (veh/h) | 1210 | | | 167 | 705 | |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 616 | 360 | 209 | | | |
| Volume Left | 236 | 0 | 34 | | | |
| Volume Right | 0 | 35 | 175 | | | |
| cSH | 1210 | 1700 | 463 | | | |
| Volume to Capacity | 0.20 | 0.21 | 0.45 | | | |
| Queue Length 95th (ft) | 18 | 0 | 58 | | | |
| Control Delay (s) | 4.7 | 0.0 | 19.0 | | | |
| Lane LOS | A | | C | | | |
| Approach Delay (s) | 4.7 | 0.0 | 19.0 | | | |
| Approach LOS | | | C | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 5.8 | | | |
| Intersection Capacity Utilization | | | 68.0% | ICU Level of Service | C | |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy AM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  | |
| Traffic Volume (veh/h) | 85 | 278 | 301 | 41 | 110 | 251 |
| Future Volume (Veh/h) | 85 | 278 | 301 | 41 | 110 | 251 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.77 | 0.77 | 0.88 | 0.88 | 0.83 | 0.83 |
| Hourly flow rate (vph) | 110 | 361 | 342 | 47 | 133 | 302 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 389 | | | 946 | 366 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 389 | | | 946 | 366 | |
| tC, single (s) | 4.1 | | | 6.4 | 6.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | 3.5 | 3.3 | |
| p0 queue free % | 91 | | | 50 | 56 | |
| cM capacity (veh/h) | 1175 | | | 264 | 684 | |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 471 | 389 | 435 | | | |
| Volume Left | 110 | 0 | 133 | | | |
| Volume Right | 0 | 47 | 302 | | | |
| cSH | 1175 | 1700 | 460 | | | |
| Volume to Capacity | 0.09 | 0.23 | 0.95 | | | |
| Queue Length 95th (ft) | 8 | 0 | 282 | | | |
| Control Delay (s) | 2.7 | 0.0 | 59.5 | | | |
| Lane LOS | A | | F | | | |
| Approach Delay (s) | 2.7 | 0.0 | 59.5 | | | |
| Approach LOS | | | F | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 21.0 | | | |
| Intersection Capacity Utilization | | | 69.2% | ICU Level of Service | C | |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy PM Peak
6: Swanton Street & Loring Avenue

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBT | WBT | WBR | SBL | SBR |
| Lane Configurations | |  |  | |  | |
| Traffic Volume (veh/h) | 212 | 327 | 296 | 32 | 32 | 172 |
| Future Volume (Veh/h) | 212 | 327 | 296 | 32 | 32 | 172 |
| Sign Control | | Free | Free | | Stop | |
| Grade | | 0% | 0% | | 0% | |
| Peak Hour Factor | 0.86 | 0.86 | 0.91 | 0.91 | 0.95 | 0.95 |
| Hourly flow rate (vph) | 247 | 380 | 325 | 35 | 34 | 181 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | None | None | | | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 360 | | | 1216 | 342 | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 360 | | | 1216 | 342 | |
| tC, single (s) | 4.1 | | | 6.4 | 6.2 | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 2.2 | | | 3.5 | 3.3 | |
| p0 queue free % | 80 | | | 79 | 74 | |
| cM capacity (veh/h) | 1210 | | | 161 | 705 | |
| Direction, Lane # | EB 1 | WB 1 | SB 1 | | | |
| Volume Total | 627 | 360 | 215 | | | |
| Volume Left | 247 | 0 | 34 | | | |
| Volume Right | 0 | 35 | 181 | | | |
| cSH | 1210 | 1700 | 459 | | | |
| Volume to Capacity | 0.20 | 0.21 | 0.47 | | | |
| Queue Length 95th (ft) | 19 | 0 | 61 | | | |
| Control Delay (s) | 4.8 | 0.0 | 19.6 | | | |
| Lane LOS | A | | C | | | |
| Approach Delay (s) | 4.8 | 0.0 | 19.6 | | | |
| Approach LOS | | | C | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 6.0 | | | |
| Intersection Capacity Utilization | | | 68.8% | ICU Level of Service | C | |
| Analysis Period (min) | | | 15 | | | |

River Street at the North Project Site Driveway

2026 Build Wkdy AM Peak
7: River Street & North Site Drive

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | | |  |  | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 42 | 16 | 7 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 42 | 16 | 7 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 46 | 17 | 8 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 67 | 21 | 25 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 67 | 21 | 25 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 938 | 1056 | 1589 | | | |
| Direction, Lane # | NB 1 | SB 1 | | | | |
| Volume Total | 46 | 25 | | | | |
| Volume Left | 0 | 0 | | | | |
| Volume Right | 0 | 8 | | | | |
| cSH | 1589 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.01 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.0 | 0.0 | | | | |
| Lane LOS | | | | | | |
| Approach Delay (s) | 0.0 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 0.0 | | | |
| Intersection Capacity Utilization | | | 6.7% | ICU Level of Service | A | |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy PM Peak
7: River Street & North Site Drive

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations | | | | ↕ | ↕ | |
| Traffic Volume (veh/h) | 0 | 0 | 0 | 65 | 46 | 20 |
| Future Volume (Veh/h) | 0 | 0 | 0 | 65 | 46 | 20 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 0 | 0 | 0 | 71 | 50 | 22 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage veh | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 132 | 61 | 72 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 132 | 61 | 72 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 100 | 100 | 100 | | | |
| cM capacity (veh/h) | 862 | 1004 | 1528 | | | |
| Direction, Lane # | NB 1 | SB 1 | | | | |
| Volume Total | 71 | 72 | | | | |
| Volume Left | 0 | 0 | | | | |
| Volume Right | 0 | 22 | | | | |
| cSH | 1528 | 1700 | | | | |
| Volume to Capacity | 0.00 | 0.04 | | | | |
| Queue Length 95th (ft) | 0 | 0 | | | | |
| Control Delay (s) | 0.0 | 0.0 | | | | |
| Lane LOS | | | | | | |
| Approach Delay (s) | 0.0 | 0.0 | | | | |
| Approach LOS | | | | | | |
| Intersection Summary: | | | | | | |
| Average Delay | | | 0.0 | | | |
| Intersection Capacity Utilization | | | 7.0% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

River Street at the South Project Site Driveway

2026 Build Wkdy AM Peak
8: River Street & South Site Drive

05/14/2019

| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations | | | | | | |
| Traffic Volume (veh/h) | 37 | 0 | 0 | 5 | 10 | 6 |
| Future Volume (Veh/h) | 37 | 0 | 0 | 5 | 10 | 6 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 40 | 0 | 0 | 5 | 11 | 7 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 20 | 14 | 18 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 20 | 14 | 18 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 96 | 100 | 100 | | | |
| cM capacity (veh/h) | 998 | 1065 | 1599 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 40 | 5 | 18 | | | |
| Volume Left | 40 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 7 | | | |
| cSH | 998 | 1599 | 1700 | | | |
| Volume to Capacity | 0.04 | 0.00 | 0.01 | | | |
| Queue Length 95th (ft) | 3 | 0 | 0 | | | |
| Control Delay (s) | 8.8 | 0.0 | 0.0 | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 8.8 | 0.0 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 5.6 | | | |
| Intersection Capacity Utilization | | | 13.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |

2026 Build Wkdy PM Peak
8: River Street & South Drive Drive

05/14/2019

| |  |  |  |  |  |  |
|-----------------------------------|---|---|---|---|---|---|
| Movement | EBL | EBR | NBL | NBT | SBT | SBR |
| Lane Configurations |  | | |  |  | |
| Traffic Volume (veh/h) | 25 | 0 | 0 | 40 | 27 | 19 |
| Future Volume (Veh/h) | 25 | 0 | 0 | 40 | 27 | 19 |
| Sign Control | Stop | | | Free | Free | |
| Grade | 0% | | | 0% | 0% | |
| Peak Hour Factor | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Hourly flow rate (vph) | 27 | 0 | 0 | 43 | 29 | 21 |
| Pedestrians | | | | | | |
| Lane Width (ft) | | | | | | |
| Walking Speed (ft/s) | | | | | | |
| Percent Blockage | | | | | | |
| Right turn flare (veh) | | | | | | |
| Median type | | | | None | None | |
| Median storage (veh) | | | | | | |
| Upstream signal (ft) | | | | | | |
| pX, platoon unblocked | | | | | | |
| vC, conflicting volume | 82 | 40 | 50 | | | |
| vC1, stage 1 conf vol | | | | | | |
| vC2, stage 2 conf vol | | | | | | |
| vCu, unblocked vol | 82 | 40 | 50 | | | |
| tC, single (s) | 6.4 | 6.2 | 4.1 | | | |
| tC, 2 stage (s) | | | | | | |
| tF (s) | 3.5 | 3.3 | 2.2 | | | |
| p0 queue free % | 97 | 100 | 100 | | | |
| cM capacity (veh/h) | 919 | 1032 | 1557 | | | |
| Direction, Lane # | EB 1 | NB 1 | SB 1 | | | |
| Volume Total | 27 | 43 | 50 | | | |
| Volume Left | 27 | 0 | 0 | | | |
| Volume Right | 0 | 0 | 21 | | | |
| cSH | 919 | 1557 | 1700 | | | |
| Volume to Capacity | 0.03 | 0.00 | 0.03 | | | |
| Queue Length 95th (ft) | 2 | 0 | 0 | | | |
| Control Delay (s) | 9.0 | 0.0 | 0.0 | | | |
| Lane LOS | A | | | | | |
| Approach Delay (s) | 9.0 | 0.0 | 0.0 | | | |
| Approach LOS | A | | | | | |
| Intersection Summary | | | | | | |
| Average Delay | | | 2.0 | | | |
| Intersection Capacity Utilization | | | 13.3% | ICU Level of Service | | A |
| Analysis Period (min) | | | 15 | | | |