Transportation Impact Assessment

Proposed Manufacturing Center Enhancement Project
P&G Gillette Facility
30 Burtt Road
Andover, Massachusetts

Prepared for:

The Gillette Company, LLC
Andover, Massachusetts

April 2024

Prepared by:

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DESCRIPTION OF PROJECT

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) to identify transportation impacts associated with P&G Gillette's proposed manufacturing center expansion to its existing facilities located at 30 Burtt Road in Andover, Massachusetts (the "Project"). The purpose of this TIA is to review existing and future traffic conditions in the vicinity of the site, determine the transportation impact of the proposed Project at key intersections expected to experience increased traffic levels from the Project, and review the need for improvements to mitigate the Project's transportation impact, as necessary.

PROPOSED PROJECT

The P&G Gillette site is bounded by commercial properties to the north, Burtt Road to the west, and areas of open and wooded space to the south and east. Currently, the site contains one large commercial development consisting of warehousing and manufacturing, office, and laboratory uses. The site has three existing curb cuts; two onto Burtt Road and one onto Gillette Way. The southernmost existing Burtt Road curb cut is gated and is expected to either remain gated or function as emergency-only access. The northernmost existing Burtt Road curb cut is also currently gated but will be reactivated for the Project. The existing Gillette Way curb cut is expected to remain and serve as the primary truck access to the site. The Project entails expanding the existing commercial development with an additional 136,460 square feet (sf) of manufacturing space. The Project will be constructed predominantly on the existing surface parking lot.

EXISTING CONDITIONS

An extensive inventory was conducted to collect traffic volumes, operating characteristics, speed limits, and sight distances, as well as land use information. Traffic volumes were collected in June 2023 and February 2024 at the intersections expected to receive the traffic impact from the Project. These are listed below:

- Lowell Junction Road at River Street
- Lowell Junction Road at Connector Road
- Connector Road at River Street

- Lowell Junction Road at Gillette Way
- Andover Street at River Street

FUTURE CONDITIONS

Traffic volumes within the study area were projected over a seven-year planning horizon consistent with State traffic study guidelines. These conditions incorporate traffic growth due to general background traffic increases as well as known development projects currently being proposed/permitted or under construction and expected to generate traffic in the future. This condition is referred to as the No-Build condition.

Project-related traffic-volume increases external to the study area relative to 2031 No-Build conditions are anticipated to range from 4 to 145 vehicles or 0.7 to 23.1 percent during the peak periods. The largest increases are expected on River Street south of Connector Road.

PROJECT-GENERATED TRAFFIC

The Project is expected to generate 678 passenger car trips (approximately 339 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 113 passenger car trips (107 entering and 6 exiting) expected during the weekday morning peak hour and 186 passenger car trips (79 entering and 107 exiting) expected during the weekday evening peak hour.

The Project is also expected to generate 26 truck trips (approximately 13 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 2 truck trips (1 entering and 1 exiting) expected during the weekday morning peak hour and 2 truck trips (1 entering and 1 exiting) expected during the weekday evening peak hour.

It should be noted that these estimates are based on provided employee shift data provided by P&G Gillette which results in higher estimates of traffic volumes than are indicated by ITE data. This data was used to provide a conservative analysis scenario for impact analysis. The derived truck trips are based on the existing truck trip generation for the site.

TRAFFIC OPERATIONS ANALYSIS

In future conditions, operations are generally preserved with minor increases in delays and vehicle queue lengths on the various approaches.

RECOMMENDATIONS

Access to the Project site will be provided via the reactivated northernmost Burtt Road curb cut for passenger vehicle traffic and the existing Gillette Way curb cut for truck traffic. The following recommendations are offered with respect to the design and operation of the Project site driveway:

- The driveways should be placed under STOP-sign (*Manual on Uniform Traffic Control*

Devices (MUTCD)[1] R1-1) control, with a painted STOP-bar included.

- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- Signs and landscaping adjacent to the Project site driveways should be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveways should be promptly removed where such accumulations would impede sightlines.

CONCLUSIONS

Traffic analysis indicated minimal changes in operations at area intersections and minor traffic volume increases. In general, operations were determined to be within acceptable ranges with intersection Level-of-Service (LOS) C or better with or without the Project. However, the intersection of Andover Street and River Street was determined to operate at LOS F during the weekday evening peak hour under existing and future conditions, with or without the Project. At the location of Connector Road and Lowell Junction Road, the Project increases delays on Connector Road and is expected to increase the maximum vehicle queue by 4 vehicles or less. However, this is an infrequent event, and the queue can still be contained on Connector Road without impacting the closest driveways to the intersection. Accordingly, there is no need for improvements to rectify any deficiencies caused by the Project or any that currently exist.

As documented in this study, Project-related traffic increases will not result in significant increases on overall traffic volumes or traffic delays within the study area. The existing site driveways will provide efficient access to and from the development. In general, Project-related traffic can be adequately accommodated within the existing infrastructure with minimal impact on the traffic operations within the study area. Accordingly, no off-site project-related mitigation is required.

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

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) in order to identify the transportation impacts associated with P&G Gillette's proposed manufacturing center expansion to its existing facilities located at 30 Burtt Road in Andover, Massachusetts. This report identifies and analyzes baseline and future transportation conditions both with and without the Project and reviews access requirements, potential off-site improvements, and safety considerations, as warranted.

STUDY METHODOLOGY

This study was prepared in accordance with the State guidelines for TIAs and was conducted in three distinct stages.

The first stage involved an assessment of baseline conditions in the study area and included an inventory of roadway geometry, observations of traffic flow, and collection of peak-period traffic counts.

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

The third stage of the study presents and evaluates measures to mitigate traffic and safety issues, if any are necessary, based on the results from stage two of the study.

BASELINE CONDITIONS

An extensive inventory of baseline conditions within the study area was conducted in June 2023 and February 2024. The field investigation consisted of an inventory of baseline traffic volumes; and operating characteristics; as well as posted speed limits, sight distance, and land use information within the study area. The study area for the Project contains the major roadways which provide access to the Project site, as well as the intersections which are expected to accommodate the majority of Project-related traffic. The intersection of Andover Street and River Street was also added at the request of Andover Town Staff. The study area is listed below and graphically depicted on Figure 1.

- Lowell Junction Road at River Street
- Lowell Junction Road at Connector Road
- Connector Road at River Street
- Lowell Junction Road at Gillette Way
- Andover Street at River Street

The following describes the study area roadway which provides access/egress to the Project site.

GEOMETRY

Roadways

River Street

River Street is classified as a minor arterial roadway under Town jurisdiction. River Street runs in a general north-to-south alignment throughout the study area. River Street provides one general-purpose travel lane in each direction. Land use along River Street throughout the study area generally consists of commercial and areas of open and wooded space.

Connector Road

Connector Road is classified as a minor arterial roadway under Town jurisdiction. Connector Road runs in a general north-to-south alignment throughout the study area. Connector Road provides one general-purpose travel lane in each direction. Land use along Connector Road throughout the study area generally consists of commercial and areas of open and wooded space.

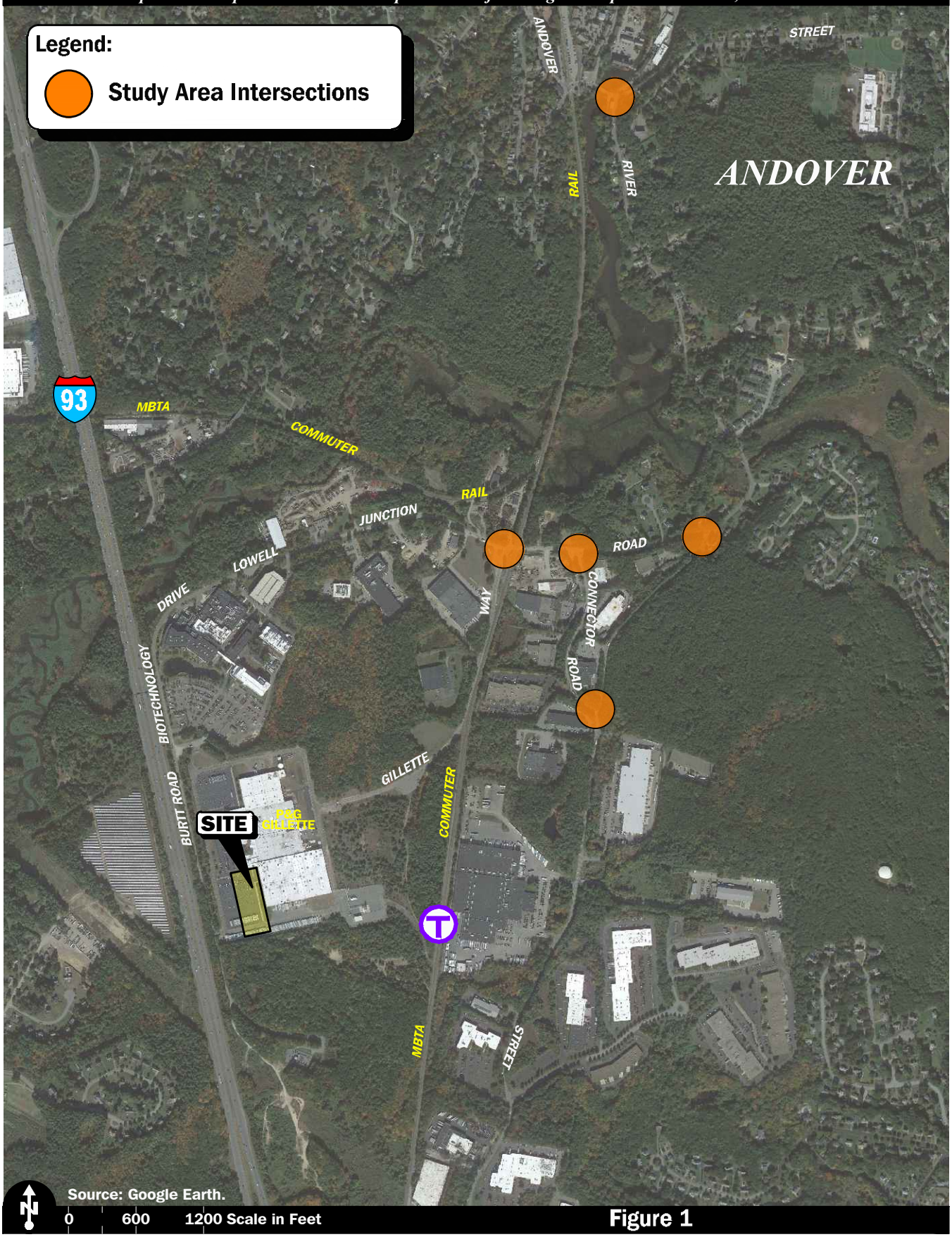

Figure 1

Site Location and Study Area Map

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Lowell Junction Road/Biotechnology Drive/Burtt Road

Lowell Junction Road/Biotechnology Drive/Burtt Road is classified as a local roadway under Town jurisdiction. Lowell Junction Road/Biotechnology Drive runs in a general east-to-west alignment until it turns into a general north-to-south alignment and becomes Burtt Road. Lowell Junction Road/Biotechnology Drive/Burtt Road provides one general-purpose travel lane in each direction. Land use along Lowell Junction Road/Biotechnology Drive/Burtt Road throughout the study area generally consists of commercial and areas of open and wooded space.

Gillette Way

Gillette Way is a private roadway. Gillette Way runs in a general north-to-south alignment throughout the study area. Gillette Way provides one general-purpose travel lane in each direction. Land use along Gillette Way throughout the study area generally consists of commercial and areas of open and wooded space.

Andover Street

Andover Street is classified as a minor collector roadway under Town jurisdiction. Andover Street runs in a general east-to-west alignment throughout the study area. Andover Street provides one general-purpose travel lane in each direction. Land use along Andover Street throughout the study area generally consists of commercial.

Intersections

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

BASELINE TRAFFIC VOLUMES

In order to establish base traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) were completed in June 2023 and February 2024. The TMCs were conducted during the weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak periods. Bicycles and pedestrians were also counted with most locations observed to have fewer than 5 pedestrians and bicyclists during the entire two-hour morning or two-hour evening count periods. The exception was the Andover Street/River Street intersection which was observed to have between 8 and 33 pedestrians and bicyclists during the same count periods.

Traffic-Volume Adjustments

In order to develop 2024 Baseline traffic-volume conditions, the Massachusetts Department of Transportation (MassDOT) weekday seasonal factors for Urban Groups 4-7 (major and minor collectors and local roads and streets, the functional classifications of the majority of the study area roadways) were reviewed.[2] Based on a review of this data, it was determined that traffic volumes for the month of June are 14 percent *above* average-month conditions and the month of February represents average-month conditions. As such, the traffic volumes were not adjusted in order to be

[2]MassDOT statewide Traffic Data Collection; 2019 Weekday Seasonal Factors, Groups U4-7.

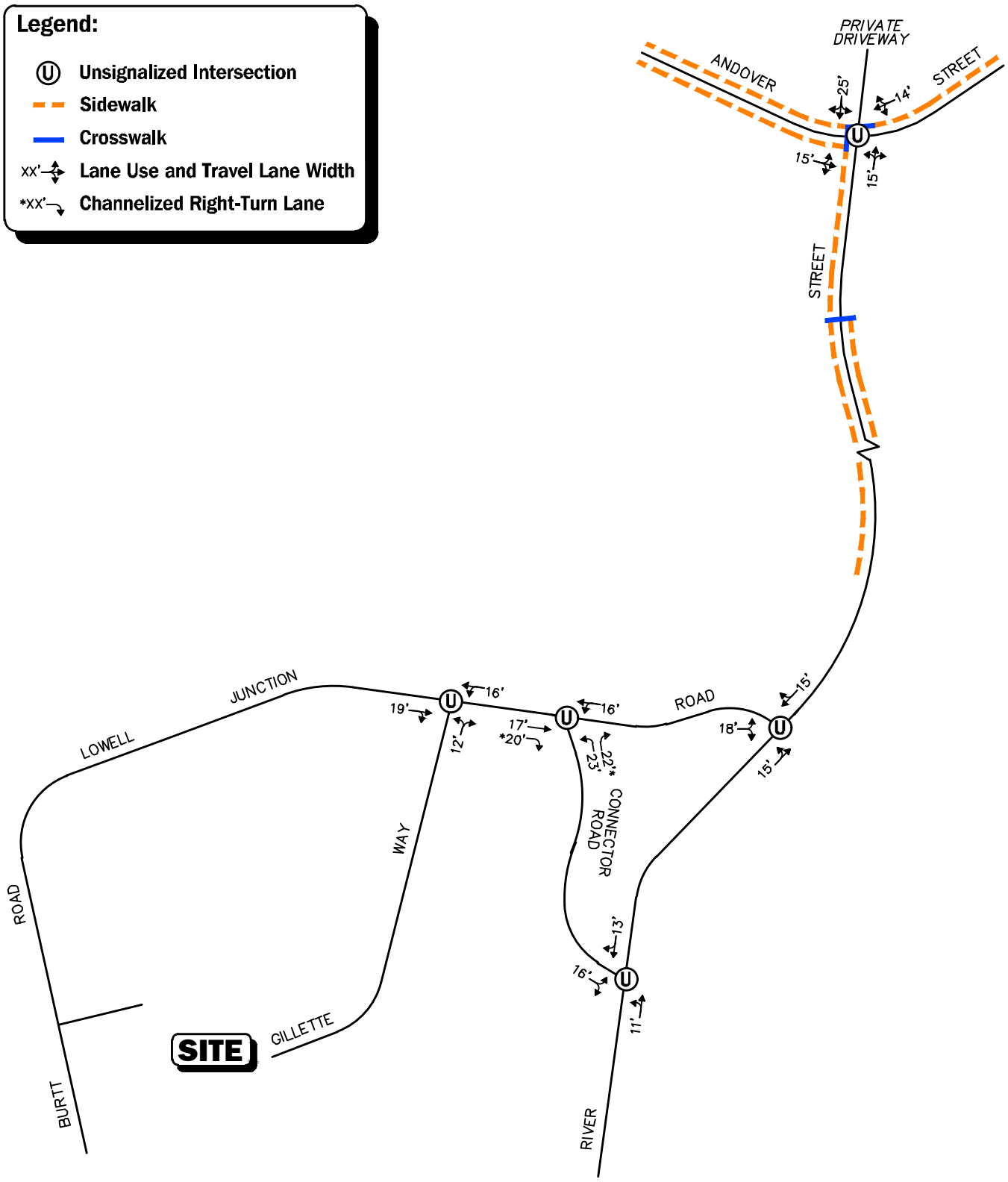

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Figure 2

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

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representative of average-month conditions. However, the volumes from June 2023 were adjusted to 2024 conditions using a background growth rate of 1.0 percent per year applied for a one-year period. This 1.0 percent growth rate will be further discussed later in this report.

MassDOT no longer requires pandemic-related adjustment of traffic counts performed after March 2022 except in locations where the predominant land use consists of offices or similar uses.[3] Given that the predominant land use within the study area is residential, no further adjustment (beyond the seasonal adjustment) is necessary.

As can be seen in Table 1, Lowell Junction Road is observed to carry approximately 5,234 vehicles per day (vpd) during an average weekday with 563 vehicles per hour (vph) during the weekday morning peak hour and 476 vph during the weekday evening peak hour. During the weekday morning peak hour, 89 percent of the traffic is traveling westbound and during the weekday evening peak hour, 90 percent of the traffic is traveling eastbound. The baseline weekday morning and evening peak-hour traffic volumes for the study area intersections are graphically depicted on Figure 3 and Figure 4, respectively.

Table 1
2024 BASELINE ROADWAY TRAFFIC-VOLUME SUMMARY

	Weekday	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
Location	Daily Volume (vpd)[a]	Volume (vph)[b]	Percent of Daily Traffic[c]	Predominant Flow	Volume (vph)	Percent of Daily Traffic	Predominant Flow
Lowell Junction Road, east of Gillette Way	5,234	563	10.8	88.5% WB	476	9.1	90.0% EB

[a]Two-way daily traffic expressed in vehicles per day.
[b]Two-way peak-hour volume expressed in vehicles per hour.
[c]The percent of daily traffic that occurs during the peak hour.
EB = eastbound, WB = westbound.

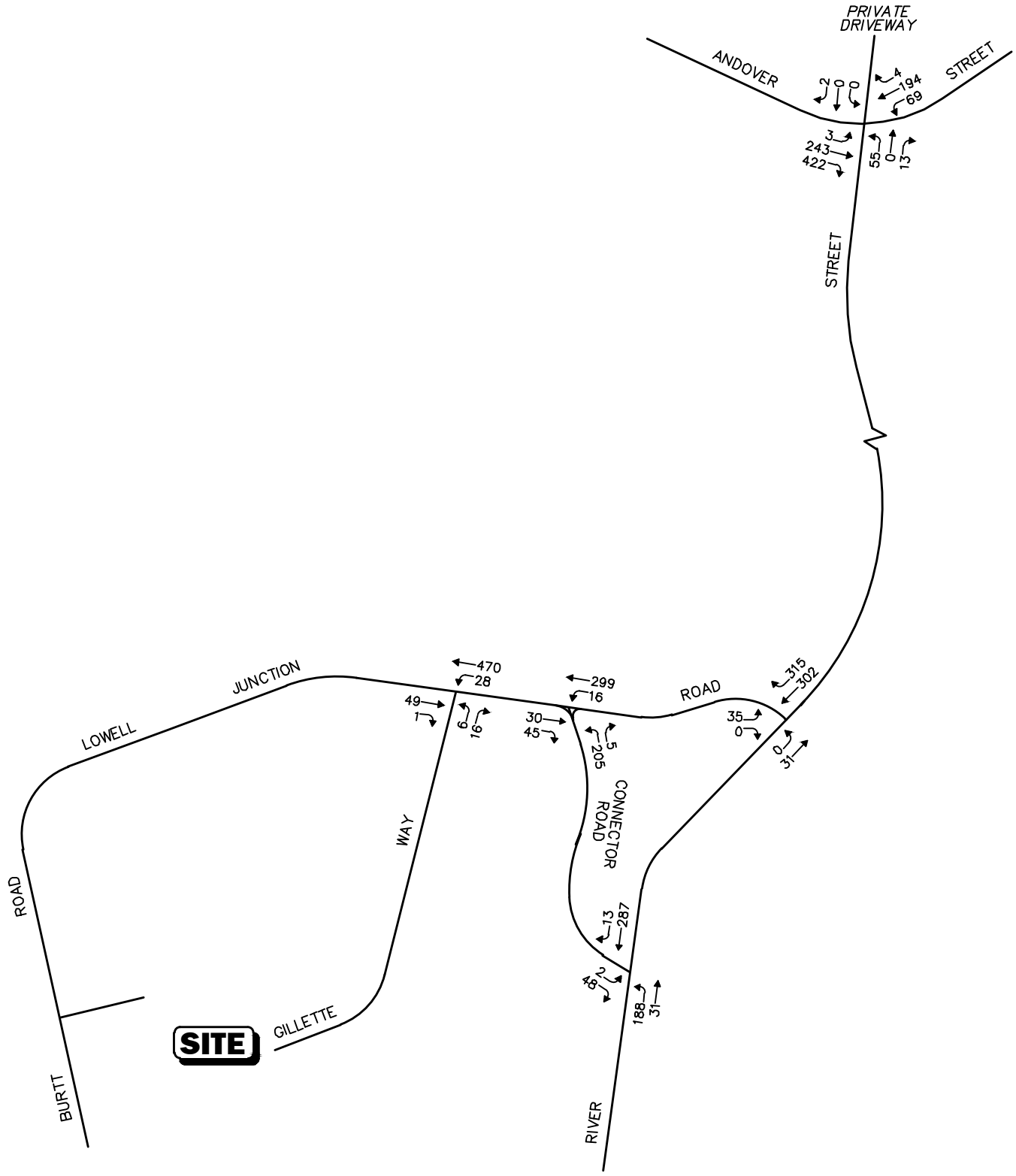
PEDESTRIAN AND BICYCLE FACILITIES

An extensive inventory of pedestrian and bicycle facilities within the study area was undertaken in June 2023. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study area roadways and at the study area intersections, as well as the location of bicycle facilities. The full field inventory of the study area is shown in Figure 2.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the Massachusetts Bay Transportation Authority (MBTA). The MBTA provides commuter rail service to North Station in Boston on the Haverhill Line by way of Ballardvale Station, which is located at 195 Andover Street, approximately 2 miles north of the Project site.

[3] *25% Design Submission Guidelines*; MassDOT Highway Division, Traffic and Safety Engineering; Revised May 31, 2022.



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

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Figure 3

2024 Baseline
Weekday Morning
Peak-Hour Traffic Volumes

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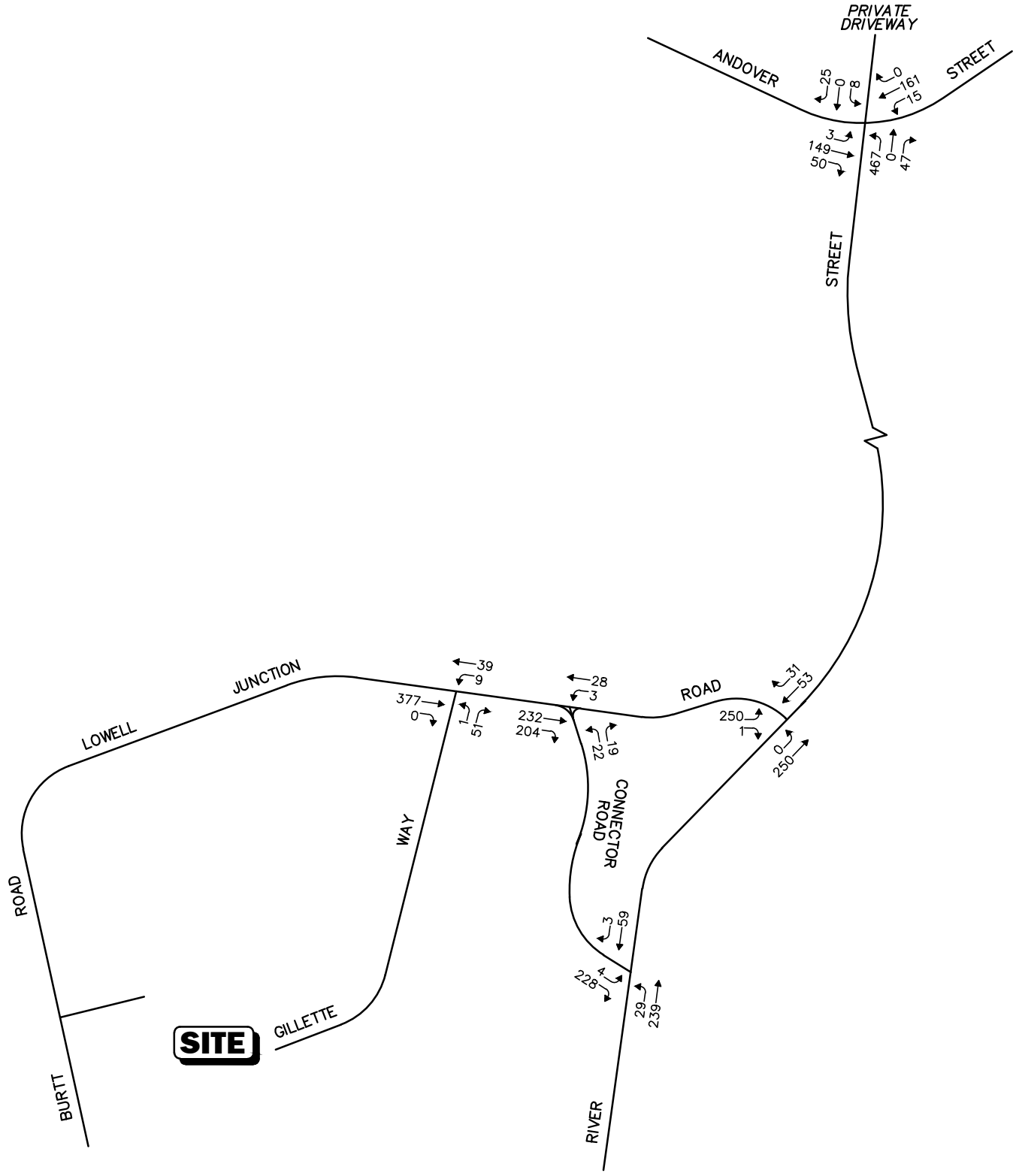

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 4

2024 Baseline
Weekday Evening
Peak-Hour Traffic Volumes

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Table 2 summarizes the characteristics of these services. The public transportation schedules and fare information are provided in the Appendix.

Table 2
PUBLIC TRANSPORTATION SERVICES

Transit	Stop Closest to Site	Distance from Site	Weekday Hours of Operation	Weekday Headway (minutes)
Commuter Rail: Haverhill Line	Ballardvale	~2.0 miles north	5:48 AM – 11:41 PM	45-90

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Safety Management/Traffic Operations Unit for the most recent five-year period available (2016 through 2020) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized in Table 3 by intersection, type, weather condition, lighting condition, pavement condition, and severity.

As can be seen in Table 3, the intersection of Lowell Junction Road at River Street experienced 4 accidents over the five-year review period, averaging 0.8 accidents per year. The majority of the accidents were angle collisions, occurred on dry pavement, during the daylight, in clear weather, and caused property damage only. The intersection of Andover Street at River Street experienced 3 accidents over the five-year review period, averaging 0.6 accidents per year. The accidents were a rear-end collision, a collision with a fixed object, and an unknown accident, these accidents occurred on dry or icy pavement, during the dawn or in the dark on a lighted roadway, in clear or cloudy weather, and caused property damage or personal injury. The intersections of Lowell Junction Road at Connector Road, Connector Road at River Street and Lowell Junction Road at Gillette Way experienced no accidents over the five-year review period. The crash rates for the intersections were observed to be lower than the MassDOT District 4 crash rates for unsignalized intersections.

Table 3
MOTOR VEHICLE CRASH DATA SUMMARY[a]

	Lowell Junction Road/ River Street	Lowell Junction Road/ Connector Road	Connector Road/ River Street	Lowell Junction Road/ Gillette Way	Andover Street/ River Street
Year:					
2016	0	0	0	0	0
2017	1	0	0	0	1
2018	1	0	0	0	1
2019	0	0	0	0	0
2020	2	0	0	0	1
Total	4	0	0	0	3
Average[a]	0.80	0.0	0.0	0.0	0.6
Crash Rate[b]	0.34	0.0	0.0	0.0	0.16
Significant[c]	No	No	No	No	No
Type:					
Angle	2	0	0	0	0
Rear-End	0	0	0	0	1
Head-On	0	0	0	0	0
Sideswipe	0	0	0	0	0
Fixed Object	1	0	0	0	1
Pedestrian/Bicycle	0	0	0	0	0
Unknown/Other	1	0	0	0	1
Total	4	0	0	0	3
Conditions:					
Clear	2	0	0	0	2
Cloudy	0	0	0	0	1
Rain	0	0	0	0	0
Fog/Smog/Smoke	0	0	0	0	0
Snow/Ice	2	0	0	0	0
Total	4	0	0	0	3
Lighting:					
Daylight	2	0	0	0	0
Dawn/Dusk	1	0	0	0	2
Dark (Road Lit)	1	0	0	0	1
Dark (Road Unlit)	0	0	0	0	0
Total	4	0	0	0	3
Pavement Conditions :					
Dry	2	0	0	0	2
Wet	0	0	0	0	0
Snow/Ice	2	0	0	0	1
Unknown/Other	0	0	0	0	0
Total	4	0	0	0	3
Severity:					
Property Damage Only	3	0	0	0	1
Personal Injury	1	0	0	0	2
Fatality	0	0	0	0	0
Unknown	0	0	0	0	0
Total	4	0	0	0	3

[a]Average number of crashes over a five-year period.
[b]Crash rate per million entering vehicles (mev).
[c]Significant if crash rate > 0.57 for unsignalized intersections (MassDOT District 4 rates).
Source: MassDOT Crash Data, 2016 through 2020.

VEHICLE SPEEDS

Existing vehicle speeds along Lowell Junction Road, east of Gillette Way were recorded to determine the average and 85th percentile vehicle speeds. The speed limit on Lowell Junction Road is posted at 25 miles per hour (mph). The results of the speed measurements are shown in Table 4.

Table 4
OBSERVED VEHICLE SPEEDS (In Miles Per Hour)

Location/Direction	Average Speed	85th Percentile Speed[a]
Lowell Junction Road, east of Gillette Way:		
Eastbound	22	26
Westbound	25	30

[a]The 85th percentile speed is the speed at which 85 percent of the traffic is traveling at or below. It is commonly used for setting speed limits on roadways.

As can be seen from Table 4, the average speed recorded eastbound on Lowell Junction Road was 22 mph and the 85th percentile speed recorded was 26 mph. The average speed recorded westbound was 25 mph and the 85th percentile speed was 30 mph.

FUTURE CONDITIONS

To determine the impact of site-generated traffic volumes on the roadway network under future conditions, baseline traffic volumes in the study area were projected to the year 2031. Traffic volumes on the roadway network at that time, in the absence of the Project (that is, the No-Build condition), would include baseline traffic, new traffic due to general background traffic growth, and traffic related to specific known development by others expected to be completed by 2031. Inclusion of these factors resulted in the development of 2031 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2031 Build traffic-volume conditions.

FUTURE TRAFFIC GROWTH

Traffic growth on area roadways is a function of the expected land development impacting the study area. Several methods are used to estimate this growth. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage to all baseline traffic volumes under study. The drawback to such a procedure is that some turning volumes may grow at either a higher or a lower rate at particular intersections.

In addition, we identified the location and type of planned development affecting the study area, estimated the traffic to be generated by that development, and assigned it to the area roadway network. This produces a more realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and development external to the study area would not be accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were used in this TIA.

General Background Growth

Traffic-volume data compiled by MassDOT from permanent count stations and historic traffic counts in the area were reviewed in order to determine general background traffic growth trends. Based on a review of this data, it was determined that the traffic volumes are increasing in the area by approximately 1.44 percent per year on average. Therefore, a 1.5 percent per year compounded annual background traffic growth rate was used to account for future traffic growth including presently unforeseen development within the study area.

Specific Development by Others

The Town of Andover was contacted in order to determine if there are any planned or approved development projects that are expected to influence future traffic volumes within the study area. Based on these discussions, the following project was identified for inclusion in this assessment:

- ***Proposed Burtt Road Development – Executive Place.*** This project entails construction of a 224,900 sf warehouse development to be located on 3, 3R, and 4 Executive Place in Andover, Massachusetts. Traffic volumes from the *Transportation Memorandum*[4] submitted by The Engineering Corp (TEC) dated October 2019 were added to the future condition networks.

No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate of 1.5 percent.

Planned Roadway Improvements

The Town of Andover and MassDOT were contacted in order to determine if there are any planned roadway improvement projects expected to be completed within the study area in the seven-year planning horizon. Based on these discussions, no roadway improvement projects are planned within the study area beyond general maintenance.

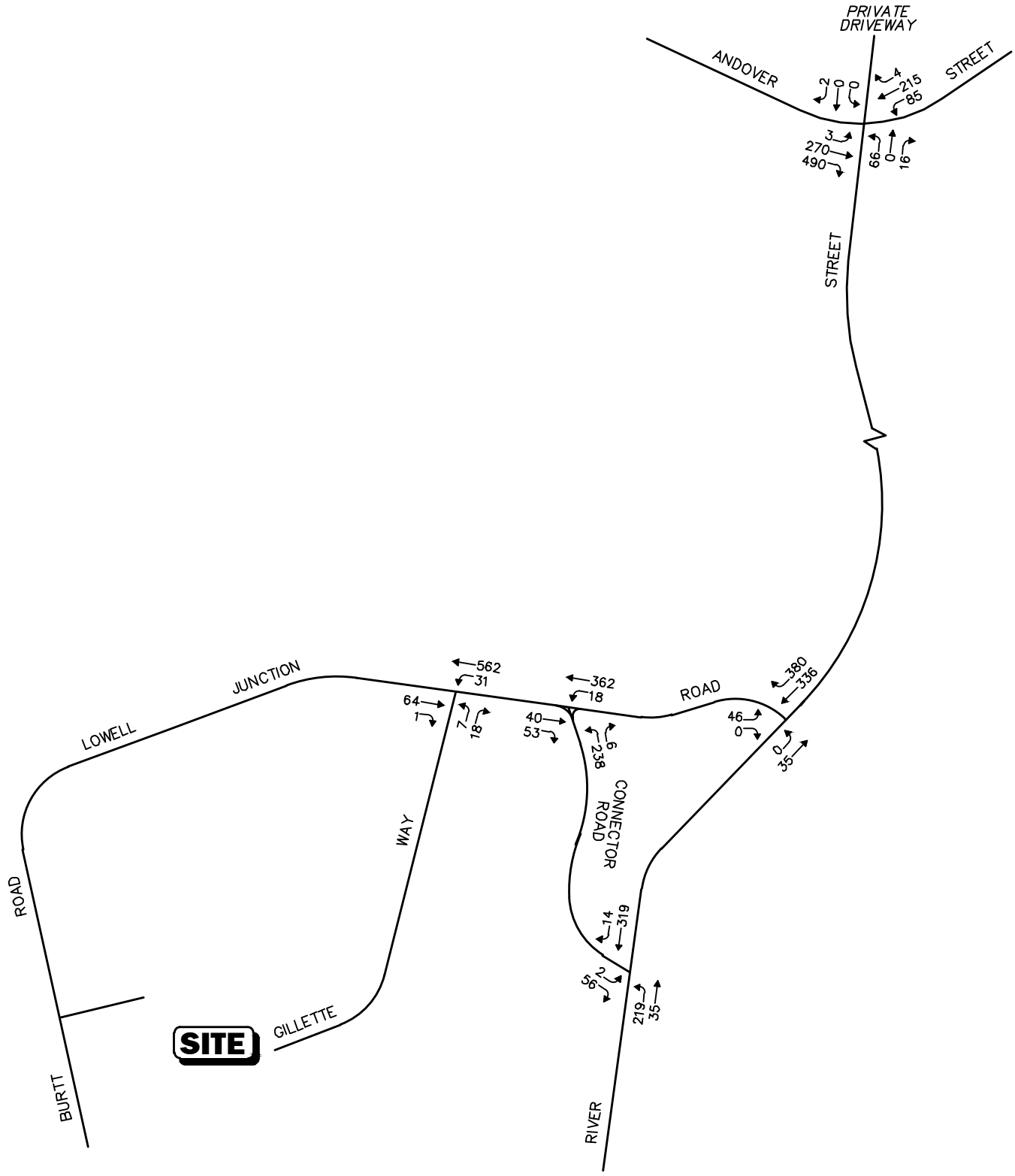
No-Build Traffic Volumes

The 2031 No-Build peak-hour traffic-volume networks were developed by applying the 1.5 percent per year compounded annual background traffic growth rate to the 2024 Baseline peak-hour traffic volumes. The resulting 2031 No-Build weekday morning and evening peak-hour traffic-volume networks are shown on Figure 5, and Figure 6, respectively.

PROJECT-GENERATED TRAFFIC

The Project entails expanding the existing mixed-use building with a building addition of 201,684 gsf of manufacturing space. In order to develop the traffic characteristics of the proposed Project, employee shift information was provided indicating the start and end times of shifts and the numbers of employees in each shift. The developed trips are summarized in Table 5.

[4]*Transportation Impact Assessment*, 3, 3R, and 4 Executive Place, Andover, Massachusetts; TEC; October 2019.



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

Not To Scale

Figure 5

2031 No-Build
Weekday Morning
Peak-Hour Traffic Volumes

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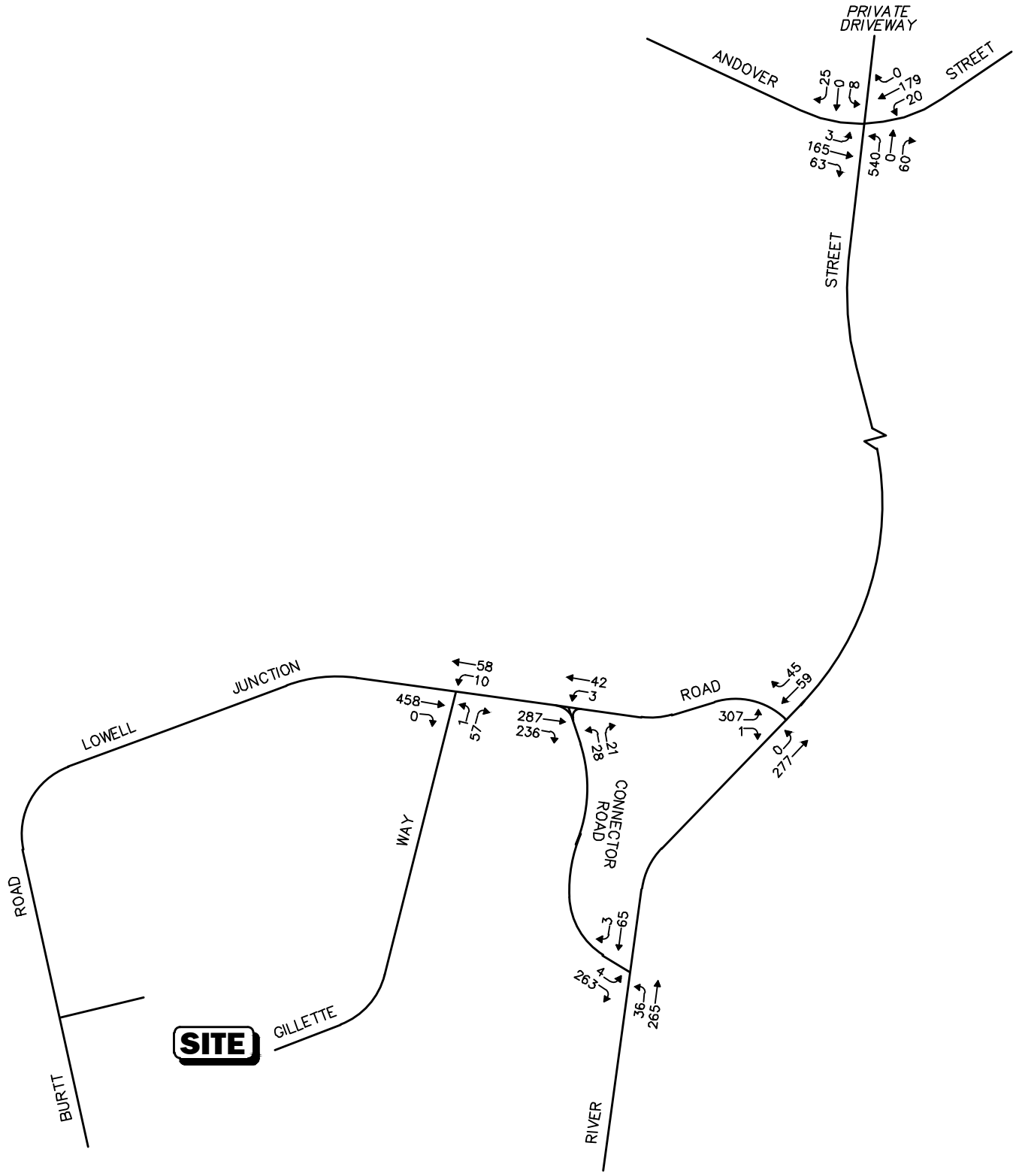

Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 6

2031 No-Build
Weekday Evening
Peak-Hour Traffic Volumes

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Table 5
PROPOSED SITE TRIP-GENERATION SUMMARY[a]

Time Period/ Directional Distribution	Passenger Vehicle Trips	Truck Trips	Total Trips
Weekday Daily	678	26	704
Weekday Morning Peak Hour:			
Entering	107[b]	1	108
Exiting	6[c]	1	7
Total	113	2	115
Weekday Evening Peak Hour:			
Entering	79[d]	1	80
Exiting	107[e]	1	108
Total	186	2	188

[a]Based on 339 employees (Office, A, and C shift plus 5% Office drop-offs).
[b]Based on entering Office employees only.
[c]Assumes 5 percent of entering employee trips are drop-offs that immediately leave the facility.
[d]Assumes entering evening shift Factory employees (73) plus 5 percent of exiting Office employees.
[e]Assumes exiting Office employees.

As can be seen in Table 5, the Project is expected to generate 678 passenger car trips (approximately 339 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 113 passenger car trips (107 entering and 6 exiting) expected during the weekday morning peak hour and 186 passenger car trips (79 entering and 107 exiting) expected during the weekday evening peak hour.

The Project is also expected to generate 26 truck trips (approximately 13 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 2 truck trips (1 entering and 1 exiting) expected during the weekday morning peak hour and 2 truck trips (1 entering and 1 exiting) expected during the weekday evening peak hour. This is based on existing counts of truck activity at the site.

It should be noted that these estimates are based on the provided employee shift data which were found to provide higher estimates of traffic volumes than are proposed by ITE data. The derived truck trips are based on the existing truck trip generation for the site. The Applicant does not anticipate that actual traffic levels will approximate the trip generation estimates provided above; however, these estimates were utilized in order to provide a conservative treatment of project impacts in the study area.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of the site-generated trips to and from the Project was determined based on a combination of a review of baseline travel patterns at the study area intersections and employee residence zip code data for employees expected to transfer from existing facilities to the proposed site. The trip distribution for the Project is summarized in Table 6 and graphically depicted on Figure 7 for passenger cars and Figure 8 for trucks.

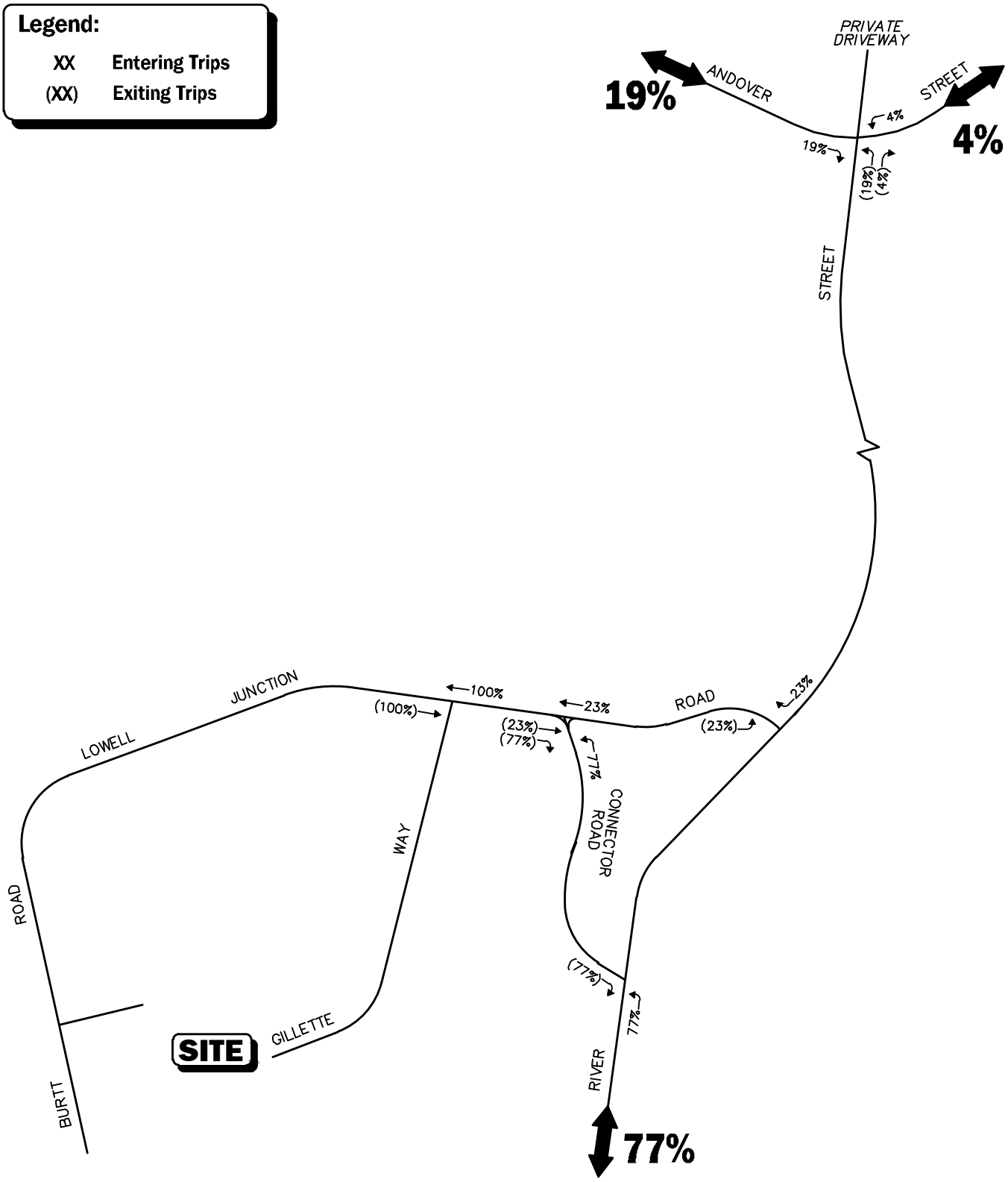

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Figure 7

Trip Distribution Map
Passenger Car

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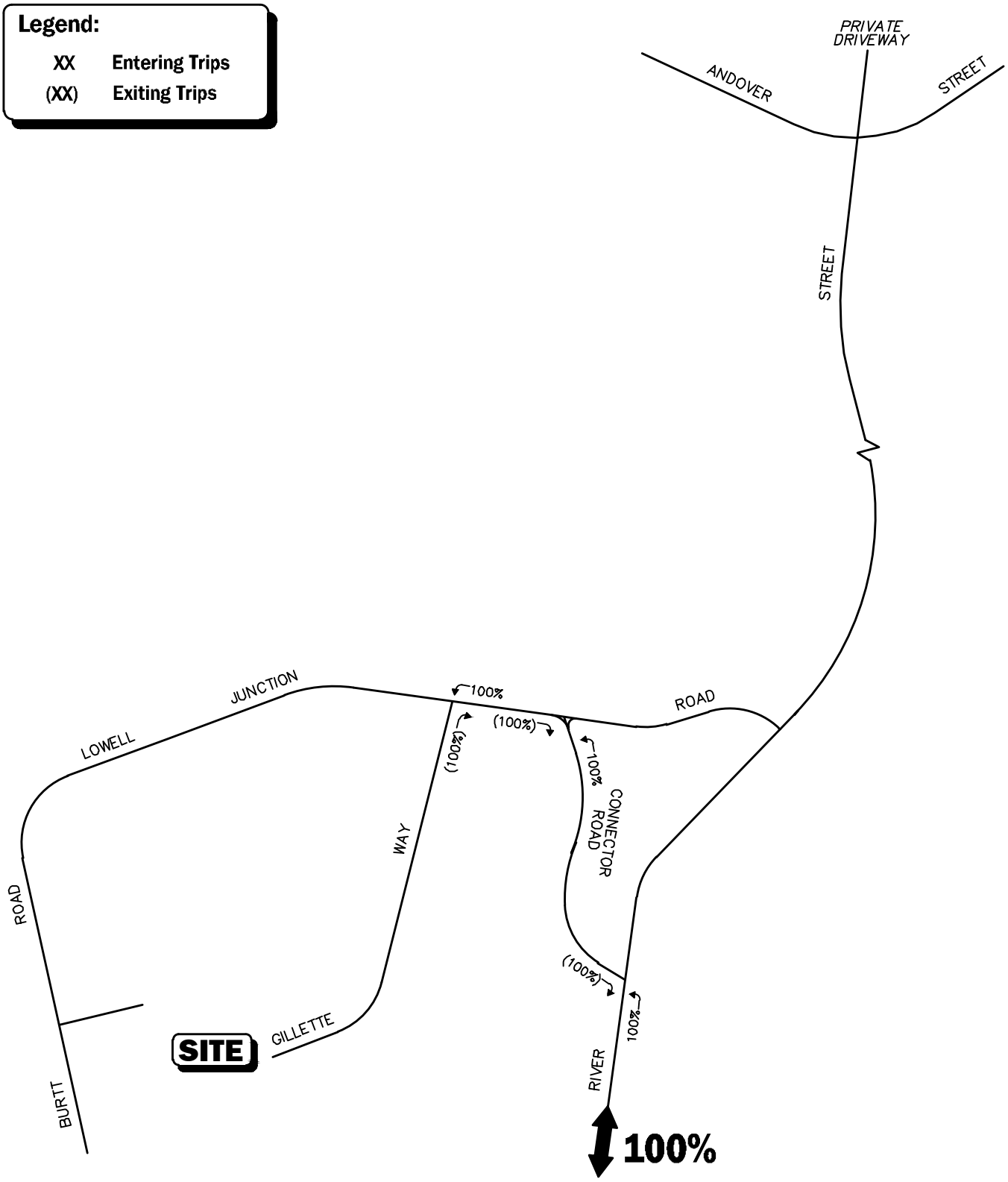

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Figure 8

Trip Distribution Map
Trucks

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Table 6
TRIP-DISTRIBUTION SUMMARY[a]

Roadway	Direction (To/From)	Percent (Passenger Cars)	Percent (Trucks)
Andover Street	East	19	0
Andover Street	West	4	0
River Street	South	77	100
TOTAL		100	100

[a]Based on employee residence zip code data provided by the Applicant.

The weekday morning and evening peak-hour passenger car and truck traffic volumes expected to be generated by the Project were assigned on the study area roadway network as shown on Figures 9 and 10 and Figures 11 and 12. All trucks will be instructed to use Ballardvale Street to access Interstate 93 as this roadway is more suited to carry commercial traffic than River Street to the north.

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2031 Build condition networks consist of the 2031 No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2031 Build weekday morning and evening peak-hour traffic-volume networks are graphically depicted on Figure 13 and Figure 14, respectively.

A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 7. These volumes are based on the expected increases from the Project.

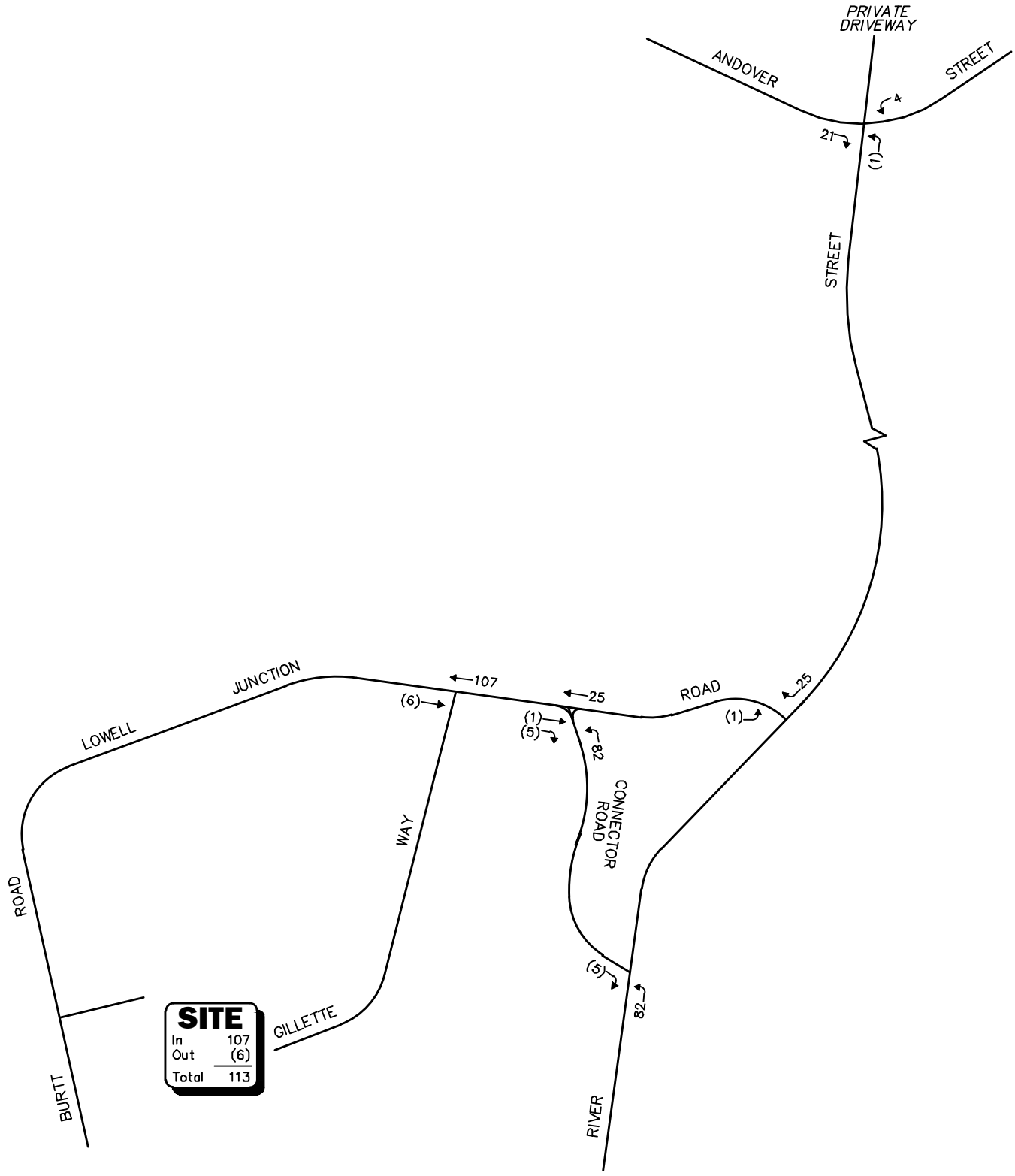

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Figure 9

Site-Generated Weekday Morning Peak-Hour Traffic Volumes Passenger Car Trips

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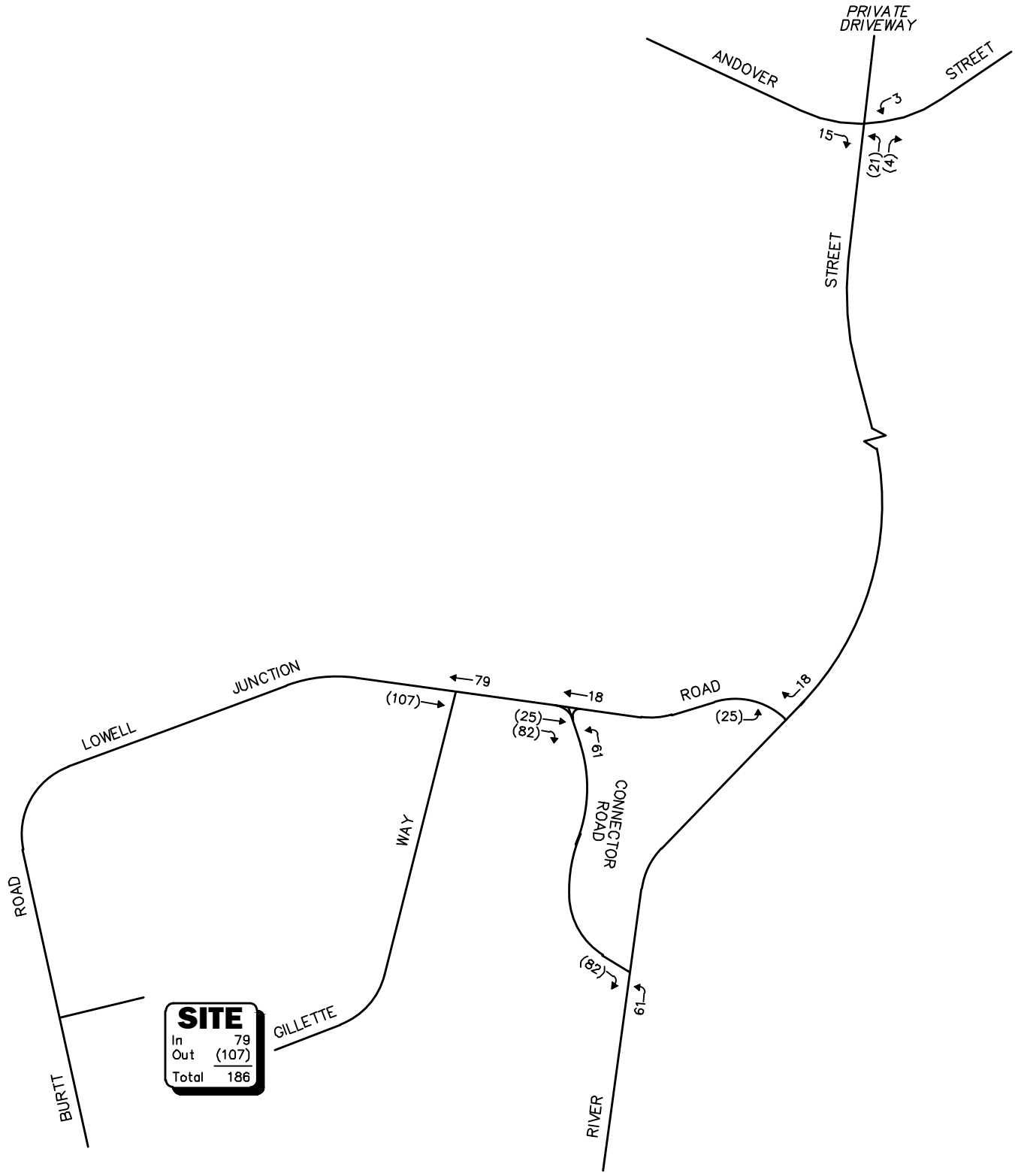
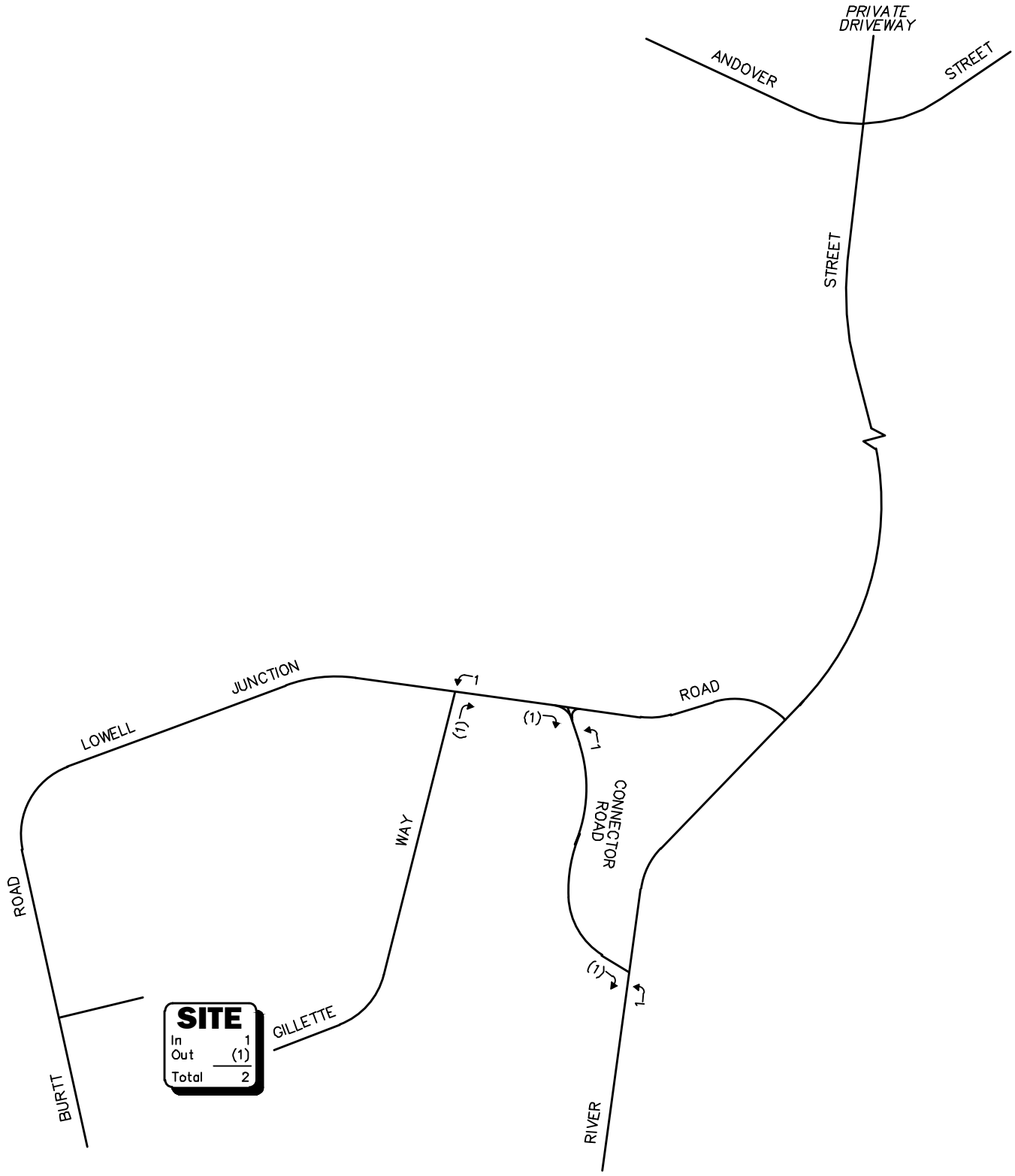


Not To Scale

Figure 10

Site-Generated Weekday Evening Peak-Hour Traffic Volumes Passenger Car Trips

Vanasse & Associates inc

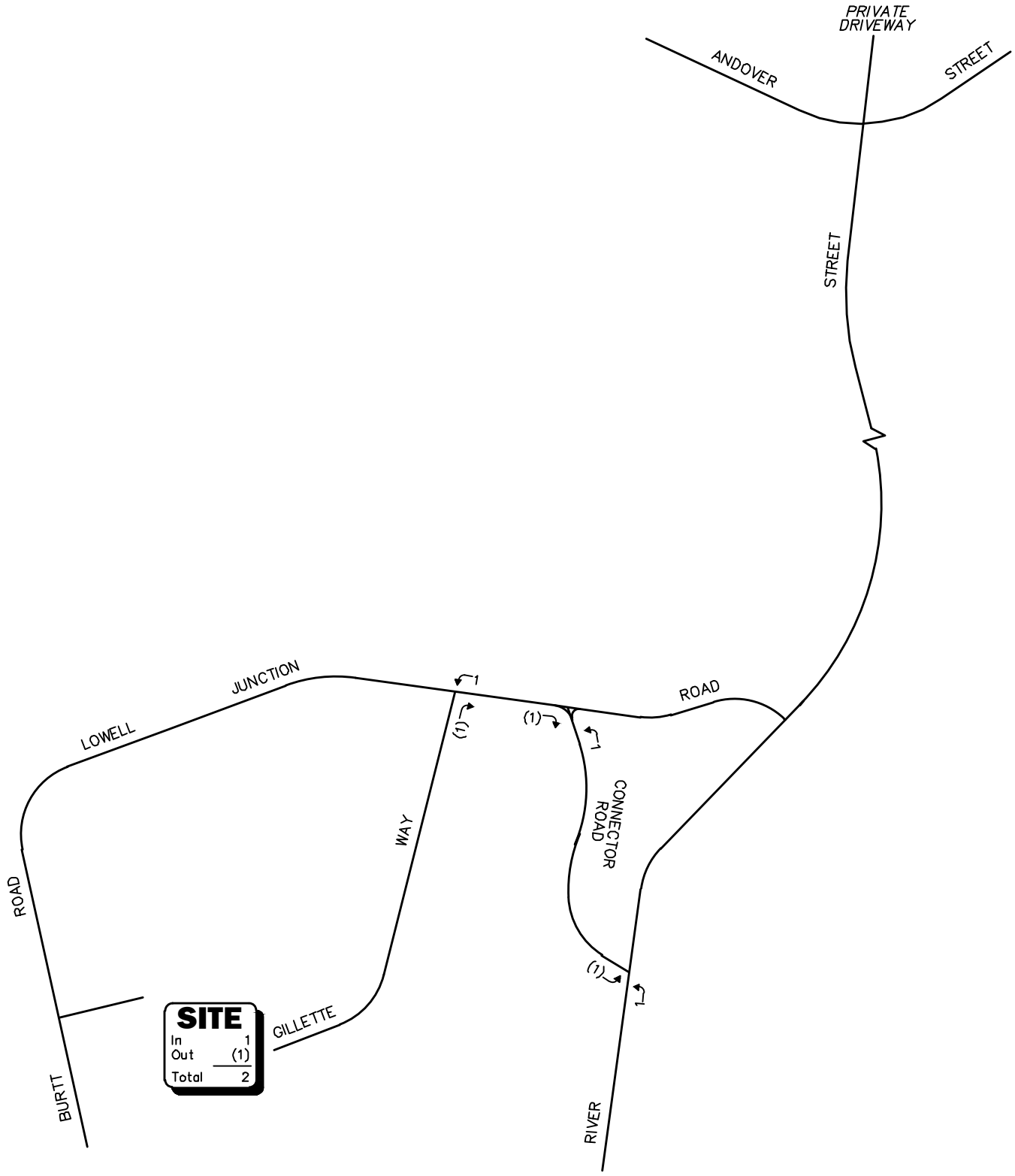


Not To Scale

Figure 11

Site-Generated
Weekday Morning
Peak-Hour Traffic Volumes
Truck Trips

Vanasse & Associates inc

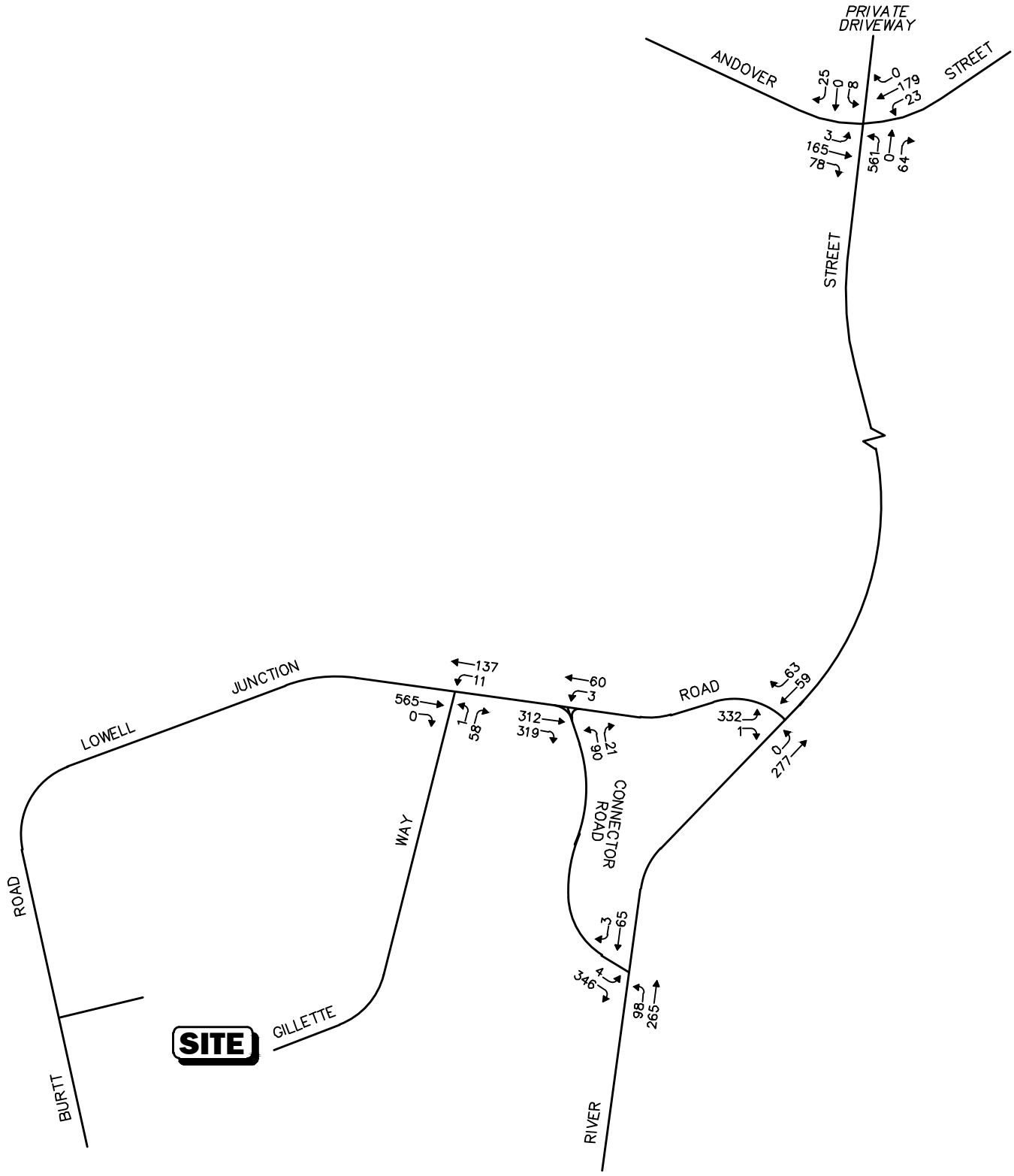


Not To Scale

Figure 12

Site-Generated
Weekday Evening
Peak-Hour Traffic Volumes
Truck Trips

Vanasse & Associates inc



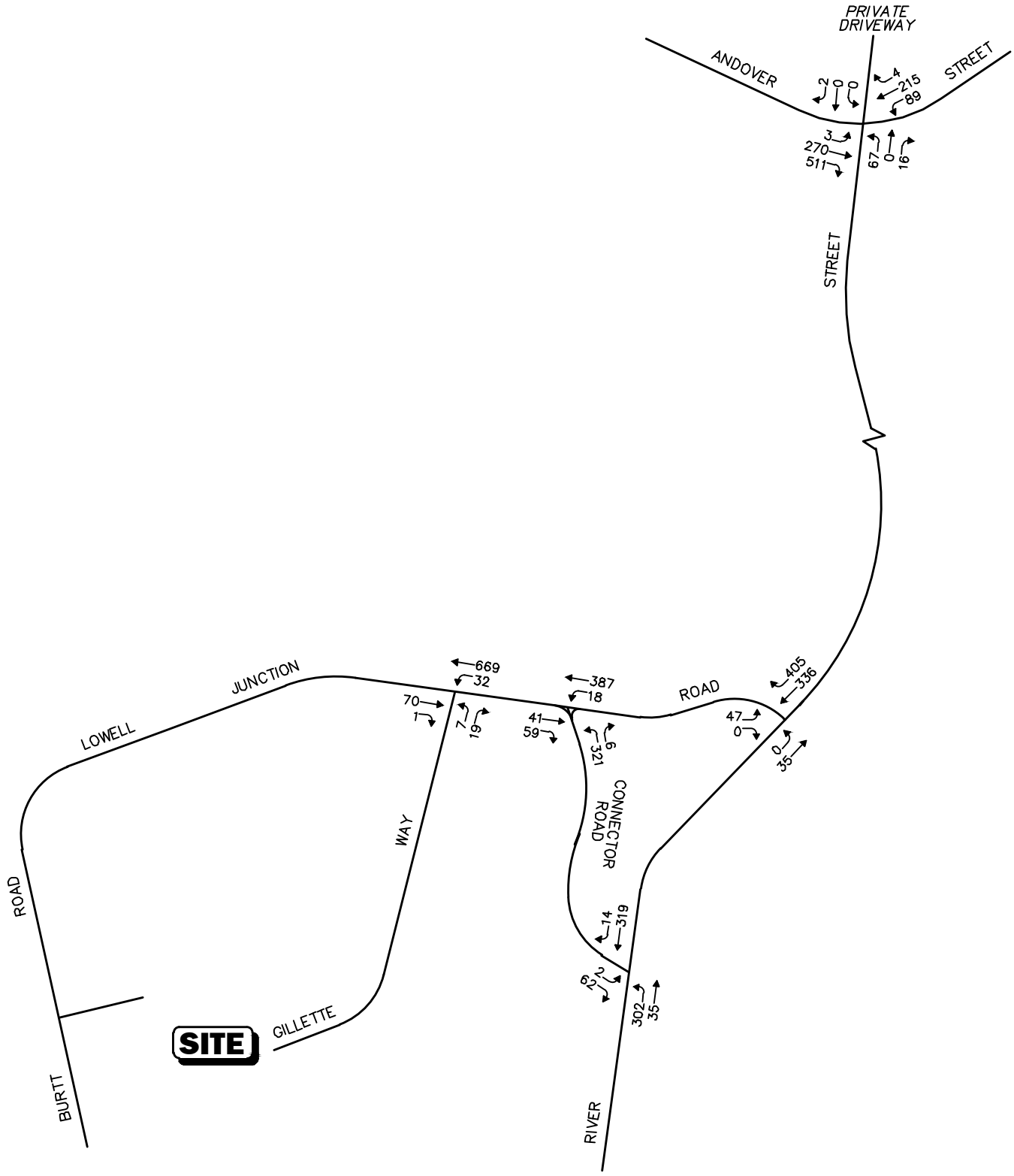
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 14

2031 Build
Weekday Evening
Peak-Hour Traffic Volumes

Vanasse & Associates inc



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

Not To Scale

Figure 13

2031 Build
Weekday Morning
Peak-Hour Traffic Volumes

Vanasse & Associates inc

Table 7
PEAK-HOUR TRAFFIC-VOLUME INCREASES[a]

Location/Peak Hour	2031 No-Build	2031 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
Andover Street, east of River Street:				
Weekday Morning	590	594	4	0.7
Weekday Evening	432	439	7	1.6
Andover Street, west of River Street:				
Weekday Morning	1,046	1,068	22	2.1
Weekday Evening	975	1,011	36	3.7
River Street, south of Connector Road:				
Weekday Morning	629	718	89	14.1
Weekday Evening	629	774	145	23.1

[a]Two-way traffic volume in vehicles per hour.

As shown in Table 7, Project-related traffic-volume increases external to the study area relative to 2031 No-Build conditions are anticipated to range from 4 to 145 vehicles or 0.7 to 23.1 percent during the peak periods.

TRAFFIC OPERATIONS ANALYSIS

Measuring baseline 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 Baseline, 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.[5] 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.

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

Unsignalized Intersections

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

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

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2000 *Highway Capacity Manual (2000 HCM).* Use of the *2000 HCM* is appropriate since some intersections within the study area are under yield-control and later versions of the HCM do not accommodate this type of intersection control.

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 *2000 Highway Capacity Manual*. Table 8 summarizes the relationship between level of service and average control delay.

Table 8
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS[a]

Level of Service	Average Control Delay (Seconds Per Vehicle)
A	≤ 10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	>50.0

[a]Source: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; page 17-2.

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2024 Baseline, 2031 No-Build, and 2031 Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Table 9.

Unsignalized Intersection

River Street at Lowell Junction Road

Under 2024 Baseline conditions, the critical movement at this intersection operates at LOS B during the weekday morning and evening peak hours. Under 2031 No-Build conditions, the critical movement at this intersection operates at LOS B during the weekday morning peak hour and operates at LOS C during the weekday evening peak hour. No changes to the critical movement level of service occur as a result of the addition of Project volumes under 2031 Build conditions. Critical movement delay increases by less than 2 seconds and the maximum queue length increases by at most 1 vehicle under 2031 Build conditions compared to 2031 No-Build conditions.

Connector Road at Lowell Junction Road

Under 2024 Baseline and 2031 No-Build conditions, the critical movement at this intersection operates at LOS C during the weekday morning peak hour and operates at LOS B during the weekday evening peak hour. Under 2031 Build conditions, the Connector Road movement changes to a LOS E during the weekday morning peak hour. However, there is no change to the level of service during the weekday evening peak hour for this critical movement as a result of the addition of Project volumes under 2031 Build conditions. The maximum queue length for the weekday morning peak hour increased by 4 vehicles under 2031 Build conditions compared to 2031 No-Build conditions.

River Street at Connector Road

Under 2024 Baseline and 2031 No-Build conditions, the critical movement at this intersection operates at LOS B during the weekday morning and evening peak hours. No changes to the critical movement level of service occur as a result of the addition of Project volumes under 2031 Build conditions. Critical movement delay increases by less than 1 second and the maximum queue length increases by at most 1 vehicle under 2031 Build conditions compared to 2031 No-Build conditions.

Gillette Way at Lowell Junction Road

Under 2024 Baseline and 2031 No-Build conditions, the critical movement at this intersection operates at LOS B during the weekday morning and evening peak hours. No changes to the critical movement level of service occur as a result of the addition of Project volumes under 2031 Build conditions. Critical movement delay increases by less than 2 seconds and the maximum queue length stays the same under 2031 Build conditions compared to 2031 No-Build conditions.

Andover Street at River Street and Private Driveway

Under 2024 Baseline conditions, the critical movements at this intersection operate at LOS D or better during the weekday morning peak hour and at LOS F or better during the weekday evening peak hour. Under 2031 No-Build or 2031 Build conditions, the critical movements at this

intersection operate at LOS E or better during the weekday morning peak hour and operates at LOS F or better during the weekday evening peak hour. No changes to the critical movement level of service occur as a result of the addition of Project volumes under 2031 Build conditions. The maximum queue length was observed to increase by 4 vehicles under 2031 Build conditions compared to 2031 No-Build conditions.

Table 9
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/	2024 Baseline				2031 No-Build				2031 Build			
Critical Movement/Peak Hour	Demand[a]	Delay[b]	LOS[c]	Maximum Queue[d]	Demand	Delay	LOS	Maximum Queue	Demand	Delay	LOS	Maximum Queue
River Street at Lowell Junction Road												
Weekday Morning:												
Lowell Junction Road LT/RT	35	13.2	B	1	46	14.5	B	1	47	14.7	B	1
Weekday Evening:												
Lowell Junction Road LT/RT	251	14.8	B	2	308	18.2	C	3	333	20.1	C	4
Connector Road at Lowell Junction Road												
Weekday Morning:												
Connector Road LT/RT	210	16.0	C	2	244	21.4	C	4	327	38.6	E	8
Weekday Evening:												
Connector Road LT/RT	41	10.3	B	1	49	11.0	B	1	111	12.8	B	1
River Street at Connector Road												
Weekday Morning:												
Connector Road LT/RT	50	12.0	B	1	58	12.6	B	1	64	13.0	B	1
Weekday Evening:												
Connector Road LT/RT	232	10.0	B	1	267	10.4	B	1	350	11.3	B	2
Gillette Way at Lowell Junction Road												
Weekday Morning:												
Gillette Way LT/RT	22	10.4	B	1	25	11.0	B	1	26	11.7	B	1
Weekday Evening:												
Gillette Way LT/RT	52	11.4	B	1	58	12.4	B	1	59	14.0	B	1
Andover Street at River Street and Private Driveway												
Weekday Morning:												
River Street LT/TH/RT	68	26.9	D	1	82	40.7	E	2	83	43.5	E	3
Private Driveway LT/TH/RT	2	10.1	B	0	2	10.3	B	0	2	10.3	B	0
Weekday Evening:												
River Street LT/TH/RT	514	>50.0	F	23	600	>50.0	F	38	625	>50.0	F	42
Private Driveway LT/TH/RT	33	10.9	B	1	33	11.4	B	1	33	11.5	B	1

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

RECOMMENDATIONS AND CONCLUSIONS

VAI has prepared this TIA in order to evaluate potential traffic impacts associated with impacts associated with P&G Gillette's proposed manufacturing center expansion to its existing facilities located at 30 Burtt Road in Andover, Massachusetts. This study was prepared in accordance with MassDOT Guidelines for *Transportation Impact Assessments (TIAs);* and was conducted pursuant to the standards of the traffic engineering and transportation planning professions for the preparation of such reports. Based on the results of this study, the following can be concluded:

- The study area intersection crash rates were observed to be lower than the MassDOT District 4 crash rates for unsignalized and signalized intersections.

- The Project is expected to generate 678 passenger car trips (approximately 339 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 113 passenger car trips (107 entering and 6 exiting) expected during the weekday morning peak hour and 186 passenger car trips (79 entering and 107 exiting) expected during the weekday evening peak hour.

- The Project is also expected to generate 26 truck trips (approximately 13 vehicles entering and exiting) on an average weekday (two-way, 24-hour volume), with 2 truck trips (1 entering and 1 exiting) expected during the weekday morning peak hour and 2 truck trips (1 entering and 1 exiting) expected during the weekday evening peak hour.

- It should be noted that these estimates are based on provided employee shift data which results in higher estimates of traffic volumes than are indicated by ITE data. This data was used to provide a conservative analysis scenario for impact analysis. The derived truck trips are based on the existing truck trip generation for the site.

- The analysis has indicated that the Project will generally result in minimal additional impact on motorist delays and vehicle queue lengths at the study intersections. The intersection of Andover Street and River Street experiences LOS F delays under existing conditions during the weekday evening peak hour, but the project results in an increase to the maximum queue of 4 vehicles, which is a minor increase during this 60-minute period.

RECOMMENDATIONS

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

Project Access

Access to the Project site will be provided via the reactivated northernmost Burtt Road curb cut for passenger vehicle traffic and the existing Gillette Way curb cut for truck traffic. The following recommendations are offered with respect to the design and operation of the Project site driveway:

- The driveways should be placed under STOP-sign (*Manual on Uniform Traffic Control Devices* (MUTCD)[6] R1-1) control, with a painted STOP-bar included.
- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- Signs and landscaping adjacent to the Project site driveways should be designed and maintained so as not to restrict lines of sight.
- Snow windrows within sight triangle areas of the Project site driveways should be promptly removed where such accumulations would impede sightlines.

CONCLUSIONS

Traffic analysis indicated minimal changes in operations at area intersections and minor traffic volume increases. In general, operations were determined to be within acceptable ranges with intersection Level-of-Service (LOS) C or better with or without the Project. However, the intersection of Andover Street and River Street was determined to operate at LOS F during the weekday evening peak hour under existing and future conditions, with or without the Project. At the location of Connector Road and Lowell Junction Road, the Project increases delays on Connector Road and is expected to increase the maximum vehicle queue by 4 vehicles or less. However, this is an infrequent event, and the queue can still be contained on Connector Road without impacting the closest driveways to the intersection. Accordingly, there is no need for improvements to rectify any deficiencies caused by the Project or any that currently exist.

As documented in this study, Project-related traffic increases will not result in significant increases on overall traffic volumes or traffic delays within the study area. The existing site driveways will provide efficient access to and from the development. In general, Project-related traffic can be adequately accommodated within the existing infrastructure with minimal impact on the traffic operations within the study area. Accordingly, no off-site project-related mitigation is required.

[6]Ibid 1.

APPENDIX

TRAFFIC COUNT DATA
SEASONAL ADJUSTMENT DATA
PUBLIC TRANSPORTATION SCHEDULES
MASSDOT CRASH RATE WORKSHEETS
VEHICLE SPEED DATA
GROWTH RATE DATA
TRIP GENERATION DATA
JOURNEY TO WORK
CAPACITY ANALYSIS

TRAFFIC COUNT DATA

Accurate Counts

978-664-2565

Location : Lowell Junction Road 96770001
Location : East of Gillette Way
City/State: Andover, MA

6/14/2023	EB		Hour Totals		WB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	35			0	33				
12:15	2	16			2	21				
12:30	1	17			0	35				
12:45	3	26	7	94	2	30	4	119	11	213
1:00	4	28			0	36				
1:15	2	26			2	29				
1:30	2	45			0	67				
1:45	1	29	9	128	1	70	3	202	12	330
2:00	3	67			0	46				
2:15	1	46			1	27				
2:30	4	138			0	18				
2:45	2	54	10	305	1	19	2	110	12	415
3:00	1	72			2	17				
3:15	0	103			2	18				
3:30	3	83			2	20				
3:45	2	83	6	341	0	18	6	73	12	414
4:00	16	102			3	14				
4:15	2	98			5	9				
4:30	3	78			8	14				
4:45	1	92	22	370	20	7	36	44	58	414
5:00	1	77			24	2				
5:15	2	59			45	5				
5:30	16	44			134	2				
5:45	6	48	25	228	141	6	344	15	369	243
6:00	10	43			96	7				
6:15	11	48			65	3				
6:30	39	51			79	6				
6:45	10	44	70	186	107	8	347	24	417	210
7:00	23	58			104	4				
7:15	14	27			94	4				
7:30	11	23			109	10				
7:45	17	16	65	124	115	7	422	25	487	149
8:00	7	17			121	15				
8:15	12	7			124	1				
8:30	22	9			106	4				
8:45	14	0	55	33	135	5	486	25	541	58
9:00	15	5			96	3				
9:15	14	7			81	12				
9:30	16	5			63	18				
9:45	14	2	59	19	56	15	296	48	355	67
10:00	13	4			29	8				
10:15	15	1			28	1				
10:30	21	62			33	5				
10:45	10	5	59	72	30	4	120	18	179	90
11:00	24	16			24	6				
11:15	28	4			25	1				
11:30	24	3			28	0				
11:45	27	0	103	23	34	0	111	7	214	30
Total	490	1923			2177	710			2667	2633
Percent	20.3%	79.7%			75.4%	24.6%			50.3%	49.7%

Accurate Counts
978-664-2565

Location : Lowell Junction Road 96770001
Location : East of Gillette Way
City/State: Andover, MA

6/15/2023	EB		Hour Totals		WB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	29			1	35				
12:15	6	25			3	26				
12:30	3	30			0	40				
12:45	5	23	17	107	1	36	5	137	22	244
1:00	3	18			0	37				
1:15	4	27			0	41				
1:30	4	84			1	44				
1:45	3	33	14	162	0	73	1	195	15	357
2:00	3	65			1	35				
2:15	1	57			0	23				
2:30	3	99			2	24				
2:45	0	71	7	292	1	15	4	97	11	389
3:00	0	66			4	11				
3:15	1	89			2	22				
3:30	4	89			3	13				
3:45	4	85	9	329	2	15	11	61	20	390
4:00	2	87			5	15				
4:15	4	97			6	6				
4:30	1	90			13	9				
4:45	1	81	8	355	22	11	46	41	54	396
5:00	2	87			20	10				
5:15	2	43			46	6				
5:30	8	53			120	6				
5:45	14	30	26	213	138	4	324	26	350	239
6:00	16	35			99	3				
6:15	12	28			84	12				
6:30	40	24			81	4				
6:45	11	14	79	101	95	5	359	24	438	125
7:00	15	44			117	3				
7:15	12	19			80	4				
7:30	20	65			85	5				
7:45	14	16	61	144	113	14	395	26	456	170
8:00	15	8			119	3				
8:15	12	3			139	4				
8:30	14	4			124	6				
8:45	20	2	61	17	106	4	488	17	549	34
9:00	17	8			113	4				
9:15	16	3			69	11				
9:30	18	7			58	19				
9:45	13	4	64	22	48	15	288	49	352	71
10:00	8	16			32	5				
10:15	14	8			35	6				
10:30	11	47			29	4				
10:45	16	5	49	76	30	4	126	19	175	95
11:00	19	10			19	1				
11:15	28	1			29	0				
11:30	17	2			30	1				
11:45	40	2	104	15	30	2	108	4	212	19
Total	499	1833			2155	696			2654	2529
Percent	21.4%	78.6%			75.6%	24.4%			51.2%	48.8%
Grand Total	989	3756			4332	1406			5321	5162
Percent	20.8%	79.2%			75.5%	24.5%			50.8%	49.2%
ADT		ADT: 5,242		AADT: 5,242						

Accurate Counts
978-664-2565

Location : Lowell Junction Road
Location : East of Gillette Way
City/State: Andover, MA

96770001

6/12/2023	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB
12:00 AM	*	*	*	*	7	4	17	5	*	*	*	*	*	*	12	4
1:00	*	*	*	*	9	3	14	1	*	*	*	*	*	*	12	2
2:00	*	*	*	*	10	2	7	4	*	*	*	*	*	*	8	3
3:00	*	*	*	*	6	6	9	11	*	*	*	*	*	*	8	8
4:00	*	*	*	*	22	36	8	46	*	*	*	*	*	*	15	41
5:00	*	*	*	*	25	344	26	324	*	*	*	*	*	*	26	334
6:00	*	*	*	*	70	347	79	359	*	*	*	*	*	*	74	353
7:00	*	*	*	*	65	422	61	395	*	*	*	*	*	*	63	408
8:00	*	*	*	*	55	486	61	488	*	*	*	*	*	*	58	487
9:00	*	*	*	*	59	296	64	288	*	*	*	*	*	*	62	292
10:00	*	*	*	*	59	120	49	126	*	*	*	*	*	*	54	123
11:00	*	*	*	*	103	111	104	108	*	*	*	*	*	*	104	110
12:00 PM	*	*	*	*	94	119	107	137	*	*	*	*	*	*	100	128
1:00	*	*	*	*	128	202	162	195	*	*	*	*	*	*	145	198
2:00	*	*	*	*	305	110	292	97	*	*	*	*	*	*	298	104
3:00	*	*	*	*	341	73	329	61	*	*	*	*	*	*	335	67
4:00	*	*	*	*	370	44	355	41	*	*	*	*	*	*	362	42
5:00	*	*	*	*	228	15	213	26	*	*	*	*	*	*	220	20
6:00	*	*	*	*	186	24	101	24	*	*	*	*	*	*	144	24
7:00	*	*	*	*	124	25	144	26	*	*	*	*	*	*	134	26
8:00	*	*	*	*	33	25	17	17	*	*	*	*	*	*	25	21
9:00	*	*	*	*	19	48	22	49	*	*	*	*	*	*	20	48
10:00	*	*	*	*	72	18	76	19	*	*	*	*	*	*	74	18
11:00	*	*	*	*	23	7	10	1	*	*	*	*	*	*	16	4
Total	0	0	0	0	2413	2887	2327	2848	0	0	0	0	0	0	2369	2865
Day	0		0		5300		5175		0		0		0		5234	
AM Peak					11:00	8:00	11:00	8:00							11:00	8:00
Volume					103	486	104	488							104	487
PM Peak					4:00	1:00	4:00	1:00							4:00	1:00
Volume					370	202	355	195							362	198
Comb Total	0		0		5300		5175		0		0		0		5234	
ADT	ADT: 5,242		AADT: 5,242													

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	83	60	0	13	10	0	166
07:15 AM	82	72	0	6	7	0	167
07:30 AM	60	67	0	7	10	0	144
07:45 AM	73	68	0	5	8	0	154
Total	298	267	0	31	35	0	631
08:00 AM	45	85	0	13	2	2	147
08:15 AM	58	85	1	2	5	0	151
08:30 AM	36	63	1	7	13	2	122
08:45 AM	33	79	0	4	7	1	124
Total	172	312	2	26	27	5	544
Grand Total	470	579	2	57	62	5	1175
Apprch %	44.8	55.2	3.4	96.6	92.5	7.5	
Total %	40	49.3	0.2	4.9	5.3	0.4	
Cars	461	569	2	50	58	5	1145
% Cars	98.1	98.3	100	87.7	93.5	100	97.4
Trucks	9	10	0	7	4	0	30
% Trucks	1.9	1.7	0	12.3	6.5	0	2.6

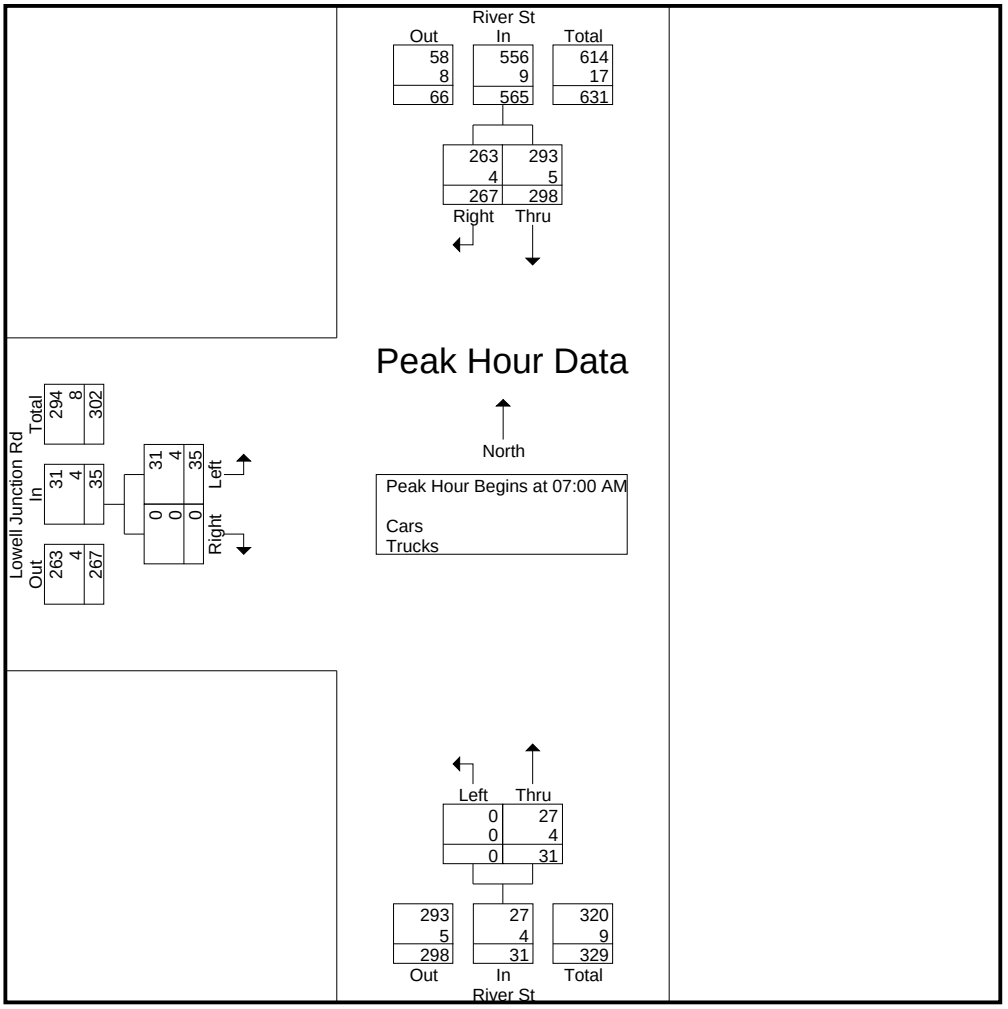
	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	**83**	60	143	0	**13**	**13**	**10**	0	**10**	166
07:15 AM	82	**72**	**154**	0	6	6	7	0	7	**167**
07:30 AM	60	67	127	0	7	7	10	0	10	144
07:45 AM	73	68	141	0	5	5	8	0	8	154
Total Volume	298	267	565	0	31	31	35	0	35	631
% App. Total	52.7	47.3		0	100		100	0		
PHF	.898	.927	.917	.000	.596	.596	.875	.000	.875	.945
Cars	293	263	556	0	27	27	31	0	31	614
% Cars	98.3	98.5	98.4	0	87.1	87.1	88.6	0	88.6	97.3
Trucks	5	4	9	0	4	4	4	0	4	17
% Trucks	1.7	1.5	1.6	0	12.9	12.9	11.4	0	11.4	2.7

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

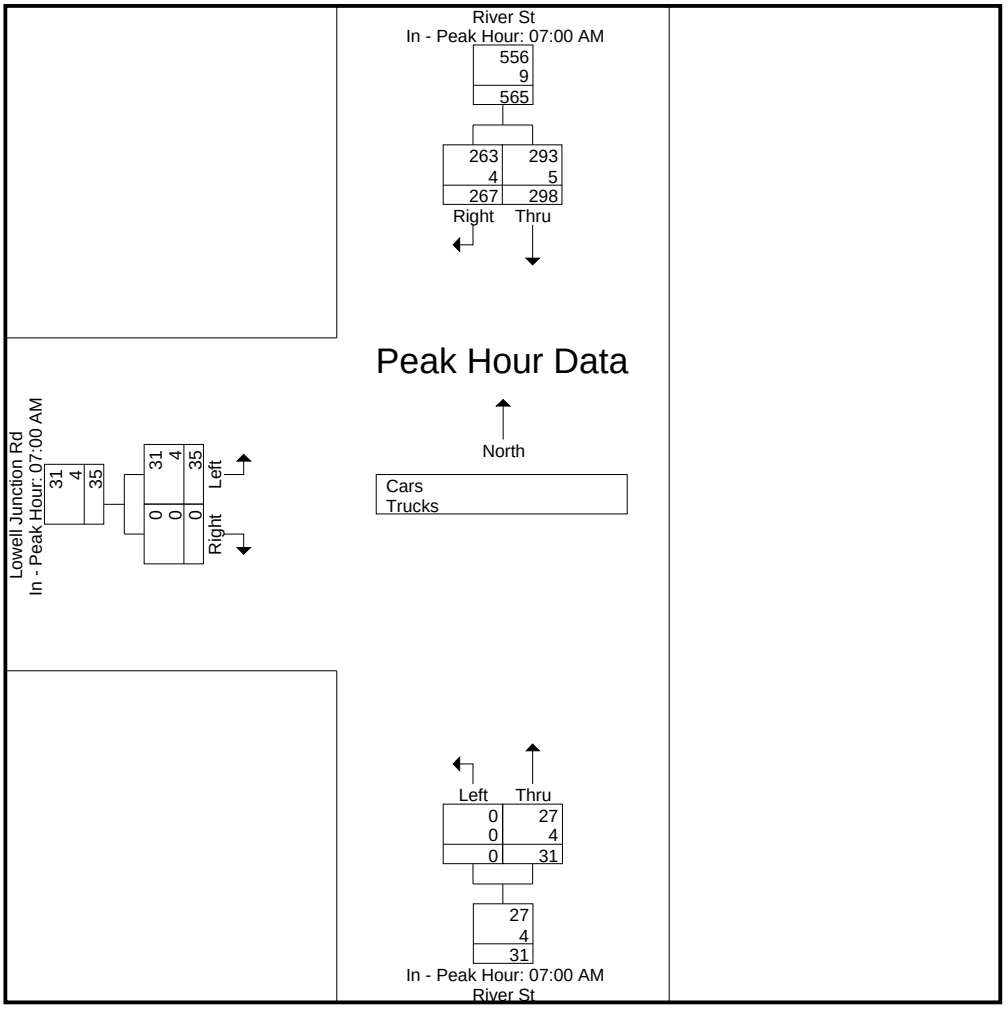
	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	**83**	60	143	0	**13**	**13**	**10**	0	**10**
+15 mins.	82	**72**	**154**	0	6	6	7	0	7
+30 mins.	60	67	127	0	7	7	10	0	10
+45 mins.	73	68	141	0	5	5	8	0	8
Total Volume	298	267	565	0	31	31	35	0	35
% App. Total	52.7	47.3		0	100		100	0	
PHF	.898	.927	.917	.000	.596	.596	.875	.000	.875
Cars	293	263	556	0	27	27	31	0	31
% Cars	98.3	98.5	98.4	0	87.1	87.1	88.6	0	88.6
Trucks	5	4	9	0	4	4	4	0	4
% Trucks	1.7	1.5	1.6	0	12.9	12.9	11.4	0	11.4

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Cars

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	83	59	0	11	10	0	163
07:15 AM	80	71	0	5	4	0	160
07:30 AM	59	65	0	7	9	0	140
07:45 AM	71	68	0	4	8	0	151
Total	293	263	0	27	31	0	614
08:00 AM	45	85	0	12	2	2	146
08:15 AM	56	83	1	1	5	0	146
08:30 AM	34	61	1	6	13	2	117
08:45 AM	33	77	0	4	7	1	122
Total	168	306	2	23	27	5	531
Grand Total	461	569	2	50	58	5	1145
Apprch %	44.8	55.2	3.8	96.2	92.1	7.9	
Total %	40.3	49.7	0.2	4.4	5.1	0.4	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	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	**83**	59	142	0	**11**	**11**	**10**	0	**10**	**163**
07:15 AM	80	**71**	**151**	0	5	5	4	0	4	160
07:30 AM	59	65	124	0	7	7	9	0	9	140
07:45 AM	71	68	139	0	4	4	8	0	8	151
Total Volume	293	263	556	0	27	27	31	0	31	614
% App. Total	52.7	47.3		0	100		100	0		
PHF	.883	.926	.921	.000	.614	.614	.775	.000	.775	.942

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Trucks

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	0	1	0	2	0	0	3
07:15 AM	2	1	0	1	3	0	7
07:30 AM	1	2	0	0	1	0	4
07:45 AM	2	0	0	1	0	0	3
Total	5	4	0	4	4	0	17
08:00 AM	0	0	0	1	0	0	1
08:15 AM	2	2	0	1	0	0	5
08:30 AM	2	2	0	1	0	0	5
08:45 AM	0	2	0	0	0	0	2
Total	4	6	0	3	0	0	13
Grand Total	9	10	0	7	4	0	30
Apprch %	47.4	52.6	0	100	100	0	
Total %	30	33.3	0	23.3	13.3	0	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	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	1	1	0	**2**	**2**	0	0	0	3
07:15 AM	**2**	1	**3**	0	1	1	**3**	0	**3**	**7**
07:30 AM	1	**2**	3	0	0	0	1	0	1	4
07:45 AM	2	0	2	0	1	1	0	0	0	3
Total Volume	5	4	9	0	4	4	4	0	4	17
% App. Total	55.6	44.4		0	100		100	0		
PHF	.625	.500	.750	.000	.500	.500	.333	.000	.333	.607

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	River St From North			River St From South			Lowell Junction Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	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
Total	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
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	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	0	1	1
Grand Total	0	1	0	0	0	0	0	0	0	0	1	1
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		0	100	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	12	12	0	69	69	0	162
04:15 PM	12	6	0	54	59	1	132
04:30 PM	11	7	0	62	61	0	141
04:45 PM	17	6	0	61	61	0	145
Total	52	31	0	246	250	1	580
05:00 PM	15	2	0	71	52	3	143
05:15 PM	11	5	0	26	46	0	88
05:30 PM	8	3	0	46	27	1	85
05:45 PM	9	5	0	28	35	0	77
Total	43	15	0	171	160	4	393
Grand Total	95	46	0	417	410	5	973
Apprch %	67.4	32.6	0	100	98.8	1.2	
Total %	9.8	4.7	0	42.9	42.1	0.5	
Cars	83	45	0	415	407	5	955
% Cars	87.4	97.8	0	99.5	99.3	100	98.2
Trucks	12	1	0	2	3	0	18
% Trucks	12.6	2.2	0	0.5	0.7	0	1.8

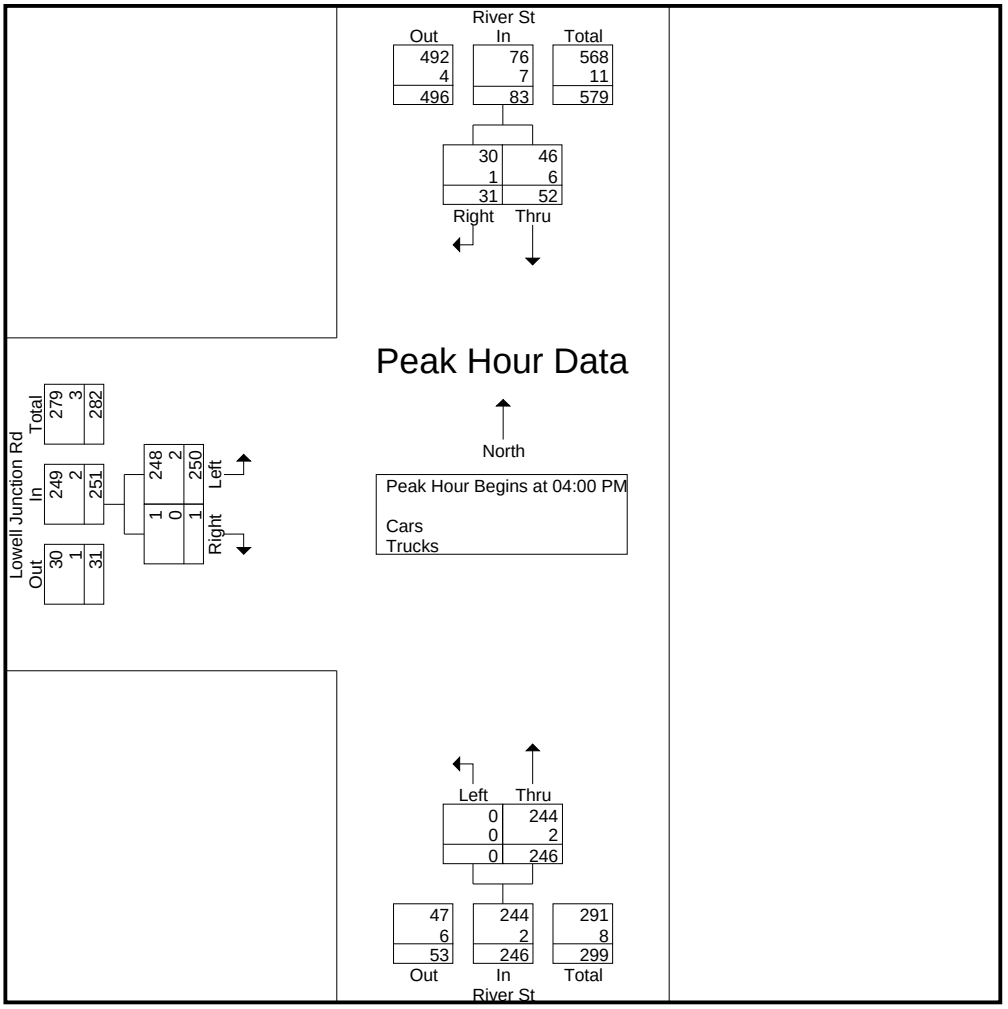
	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	12	**12**	**24**	0	**69**	**69**	**69**	0	**69**	**162**
04:15 PM	12	6	18	0	54	54	59	**1**	60	132
04:30 PM	11	7	18	0	62	62	61	0	61	141
04:45 PM	**17**	6	23	0	61	61	61	0	61	145
Total Volume	52	31	83	0	246	246	250	1	251	580
% App. Total	62.7	37.3		0	100		99.6	0.4		
PHF	.765	.646	.865	.000	.891	.891	.906	.250	.909	.895
Cars	46	30	76	0	244	244	248	1	249	569
% Cars	88.5	96.8	91.6	0	99.2	99.2	99.2	100	99.2	98.1
Trucks	6	1	7	0	2	2	2	0	2	11
% Trucks	11.5	3.2	8.4	0	0.8	0.8	0.8	0	0.8	1.9

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

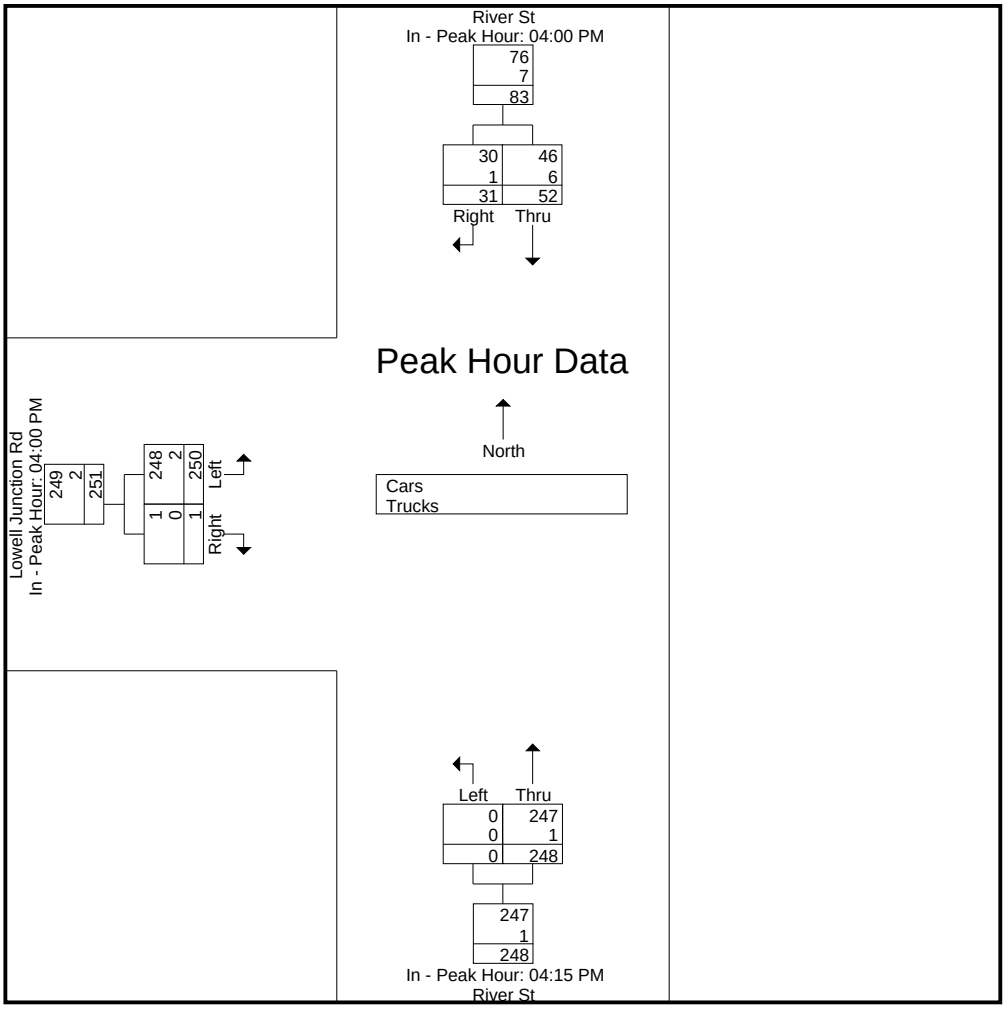
	04:00 PM			04:15 PM			04:00 PM		
+0 mins.	12	**12**	**24**	0	54	54	**69**	0	**69**
+15 mins.	12	6	18	0	62	62	59	**1**	60
+30 mins.	11	7	18	0	61	61	61	0	61
+45 mins.	**17**	6	23	0	**71**	**71**	61	0	61
Total Volume	52	31	83	0	248	248	250	1	251
% App. Total	62.7	37.3		0	100		99.6	0.4	
PHF	.765	.646	.865	.000	.873	.873	.906	.250	.909
Cars	46	30	76	0	247	247	248	1	249
% Cars	88.5	96.8	91.6	0	99.6	99.6	99.2	100	99.2
Trucks	6	1	7	0	1	1	2	0	2
% Trucks	11.5	3.2	8.4	0	0.4	0.4	0.8	0	0.8

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Cars

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	9	12	0	68	69	0	158
04:15 PM	12	6	0	54	58	1	131
04:30 PM	10	7	0	62	60	0	139
04:45 PM	15	5	0	60	61	0	141
Total	46	30	0	244	248	1	569
05:00 PM	13	2	0	71	51	3	140
05:15 PM	8	5	0	26	46	0	85
05:30 PM	8	3	0	46	27	1	85
05:45 PM	8	5	0	28	35	0	76
Total	37	15	0	171	159	4	386
Grand Total	83	45	0	415	407	5	955
Apprch %	64.8	35.2	0	100	98.8	1.2	
Total %	8.7	4.7	0	43.5	42.6	0.5	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	9	**12**	**21**	0	**68**	**68**	**69**	0	**69**	**158**
04:15 PM	12	6	18	0	54	54	58	**1**	59	131
04:30 PM	10	7	17	0	62	62	60	0	60	139
04:45 PM	**15**	5	20	0	60	60	61	0	61	141
Total Volume	46	30	76	0	244	244	248	1	249	569
% App. Total	60.5	39.5		0	100		99.6	0.4		
PHF	.767	.625	.905	.000	.897	.897	.899	.250	.902	.900

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Trucks

	River St From North		River St From South		Lowell Junction Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	3	0	0	1	0	0	4
04:15 PM	0	0	0	0	1	0	1
04:30 PM	1	0	0	0	1	0	2
04:45 PM	2	1	0	1	0	0	4
Total	6	1	0	2	2	0	11
05:00 PM	2	0	0	0	1	0	3
05:15 PM	3	0	0	0	0	0	3
05:30 PM	0	0	0	0	0	0	0
05:45 PM	1	0	0	0	0	0	1
Total	6	0	0	0	1	0	7
Grand Total	12	1	0	2	3	0	18
Apprch %	92.3	7.7	0	100	100	0	
Total %	66.7	5.6	0	11.1	16.7	0	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	1	0	1	0	0	0	**1**	0	**1**	2
04:45 PM	2	**1**	**3**	0	**1**	**1**	0	0	0	**4**
05:00 PM	2	0	2	0	0	0	1	0	1	3
05:15 PM	**3**	0	3	0	0	0	0	0	0	3
Total Volume	8	1	9	0	1	1	2	0	2	12
% App. Total	88.9	11.1		0	100		100	0		
PHF	.667	.250	.750	.000	.250	.250	.500	.000	.500	.750

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770001
Site Code : 96770001
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	River St From North			River St From South			Lowell Junction Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	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
05:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	1	0	0	0	1	0	1
Grand Total	0	0	0	0	0	1	0	0	0	1	0	1
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	River St From North			River St From South			Lowell Junction Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023
Page No : 1

Groups Printed- Cars - Trucks

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	4	59	43	0	11	16	133
07:15 AM	7	63	35	2	5	12	124
07:30 AM	2	66	48	1	7	5	129
07:45 AM	2	66	48	0	6	12	134
Total	15	254	174	3	29	45	520
08:00 AM	2	81	43	2	1	8	137
08:15 AM	4	85	45	0	5	9	148
08:30 AM	5	59	51	2	10	15	142
08:45 AM	5	74	66	0	8	13	166
Total	16	299	205	4	24	45	593
Grand Total	31	553	379	7	53	90	1113
Apprch %	5.3	94.7	98.2	1.8	37.1	62.9	
Total %	2.8	49.7	34.1	0.6	4.8	8.1	
Cars	27	547	350	6	50	54	1034
% Cars	87.1	98.9	92.3	85.7	94.3	60	92.9
Trucks	4	6	29	1	3	36	79
% Trucks	12.9	1.1	7.7	14.3	5.7	40	7.1

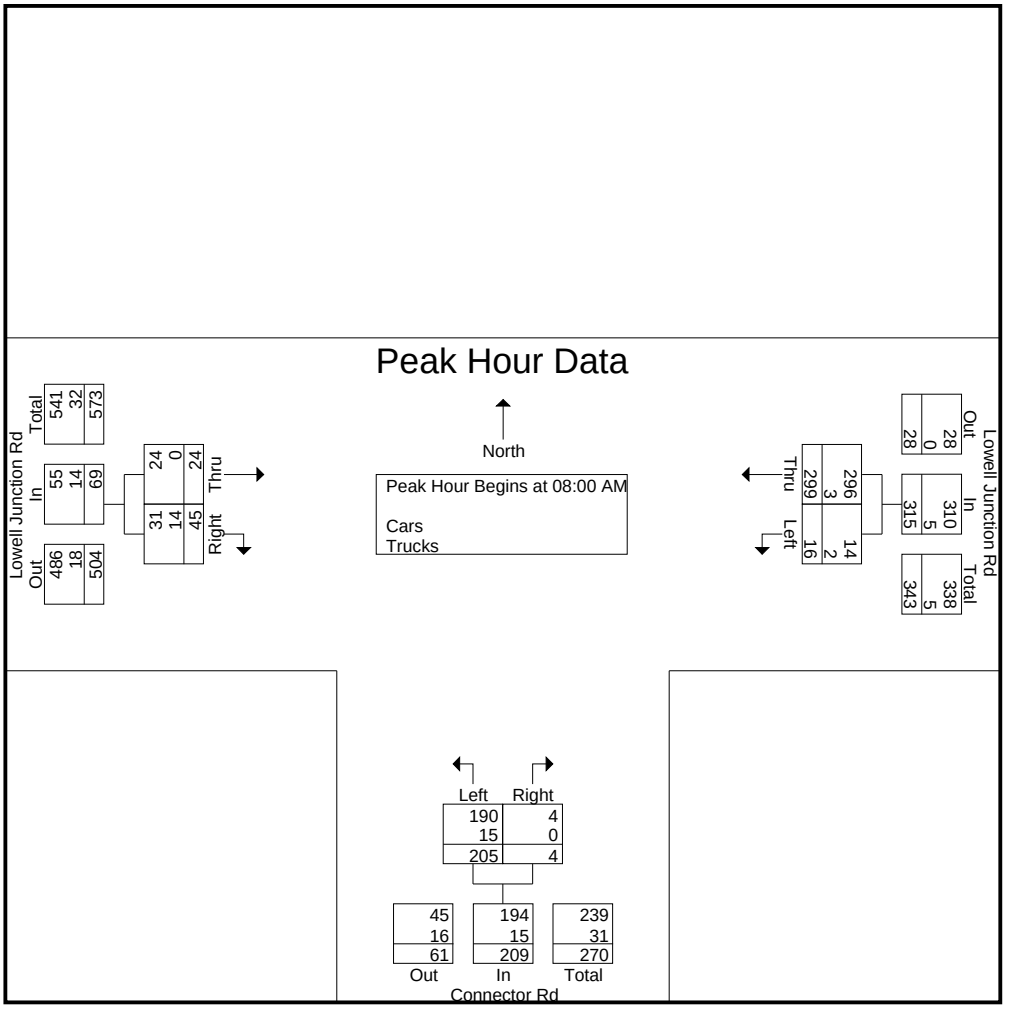
	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	81	83	43	**2**	45	1	8	9	137
08:15 AM	4	**85**	**89**	45	0	45	5	9	14	148
08:30 AM	**5**	59	64	51	2	53	**10**	**15**	**25**	142
08:45 AM	5	74	79	**66**	0	**66**	8	13	21	**166**
Total Volume	16	299	315	205	4	209	24	45	69	593
% App. Total	5.1	94.9		98.1	1.9		34.8	65.2		
PHF	.800	.879	.885	.777	.500	.792	.600	.750	.690	.893
Cars	14	296	310	190	4	194	24	31	55	559
% Cars	87.5	99.0	98.4	92.7	100	92.8	100	68.9	79.7	94.3
Trucks	2	3	5	15	0	15	0	14	14	34
% Trucks	12.5	1.0	1.6	7.3	0	7.2	0	31.1	20.3	5.7

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

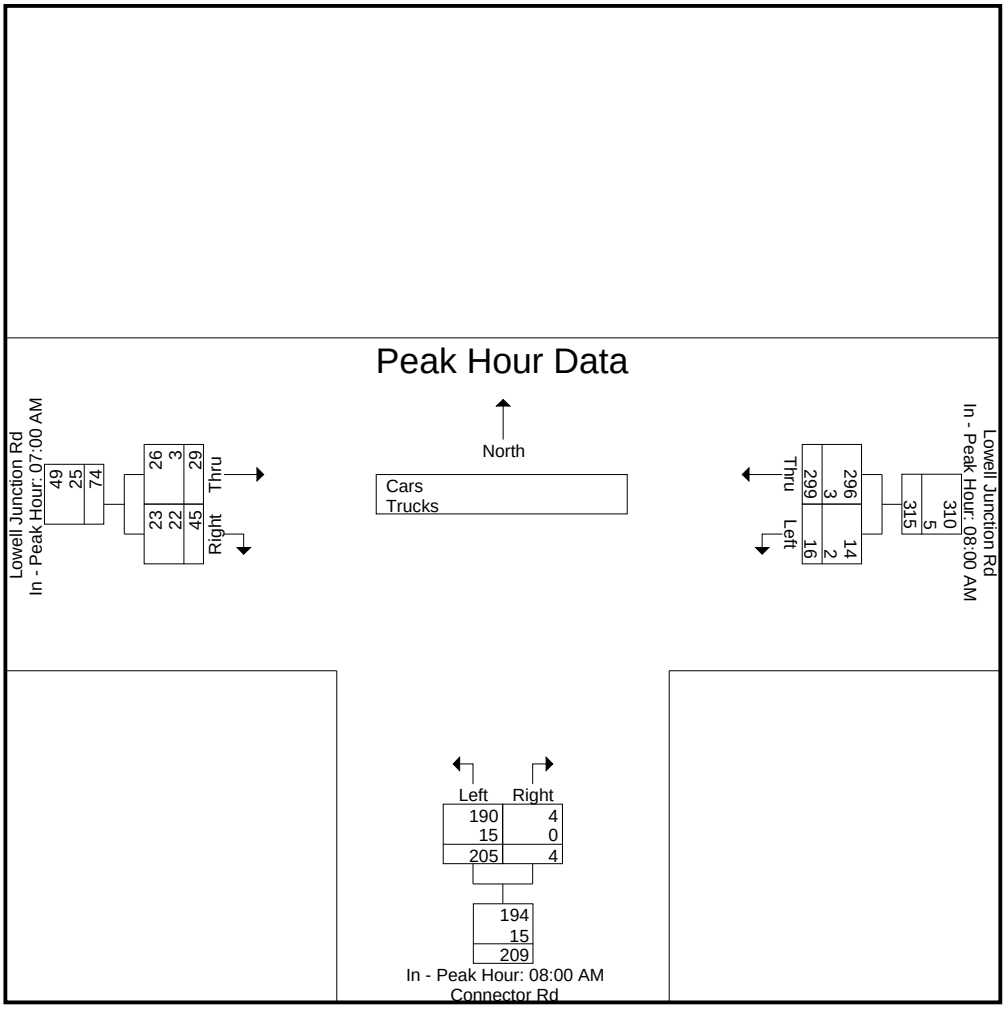
	08:00 AM			08:00 AM			07:00 AM		
+0 mins.	2	81	83	43	**2**	45	**11**	**16**	**27**
+15 mins.	4	**85**	**89**	45	0	45	5	12	17
+30 mins.	**5**	59	64	51	2	53	7	5	12
+45 mins.	5	74	79	**66**	0	**66**	6	12	18
Total Volume	16	299	315	205	4	209	29	45	74
% App. Total	5.1	94.9		98.1	1.9		39.2	60.8	
PHF	.800	.879	.885	.777	.500	.792	.659	.703	.685
Cars	14	296	310	190	4	194	26	23	49
% Cars	87.5	99	98.4	92.7	100	92.8	89.7	51.1	66.2
Trucks	2	3	5	15	0	15	3	22	25
% Trucks	12.5	1	1.6	7.3	0	7.2	10.3	48.9	33.8

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Cars

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	4	57	36	0	11	9	117
07:15 AM	6	63	33	1	3	3	109
07:30 AM	1	65	45	1	6	3	121
07:45 AM	2	66	46	0	6	8	128
Total	13	251	160	2	26	23	475
08:00 AM	2	81	42	2	1	3	131
08:15 AM	3	84	44	0	5	7	143
08:30 AM	4	58	46	2	10	11	131
08:45 AM	5	73	58	0	8	10	154
Total	14	296	190	4	24	31	559
Grand Total	27	547	350	6	50	54	1034
Apprch %	4.7	95.3	98.3	1.7	48.1	51.9	
Total %	2.6	52.9	33.8	0.6	4.8	5.2	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	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 08:00 AM										
08:00 AM	2	81	83	42	**2**	44	1	3	4	131
08:15 AM	3	**84**	**87**	44	0	44	5	7	12	143
08:30 AM	4	58	62	46	2	48	**10**	**11**	**21**	131
08:45 AM	**5**	73	78	**58**	0	**58**	8	10	18	**154**
Total Volume	14	296	310	190	4	194	24	31	55	559
% App. Total	4.5	95.5		97.9	2.1		43.6	56.4		
PHF	.700	.881	.891	.819	.500	.836	.600	.705	.655	.907

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Trucks

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	2	7	0	0	7	16
07:15 AM	1	0	2	1	2	9	15
07:30 AM	1	1	3	0	1	2	8
07:45 AM	0	0	2	0	0	4	6
Total	2	3	14	1	3	22	45
08:00 AM	0	0	1	0	0	5	6
08:15 AM	1	1	1	0	0	2	5
08:30 AM	1	1	5	0	0	4	11
08:45 AM	0	1	8	0	0	3	12
Total	2	3	15	0	0	14	34
Grand Total	4	6	29	1	3	36	79
Apprch %	40	60	96.7	3.3	7.7	92.3	
Total %	5.1	7.6	36.7	1.3	3.8	45.6	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	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	**2**	**2**	**7**	0	**7**	0	7	7	**16**
07:15 AM	**1**	0	1	2	**1**	3	**2**	**9**	**11**	15
07:30 AM	1	1	2	3	0	3	1	2	3	8
07:45 AM	0	0	0	2	0	2	0	4	4	6
Total Volume	2	3	5	14	1	15	3	22	25	45
% App. Total	40	60		93.3	6.7		12	88		
PHF	.500	.375	.625	.500	.250	.536	.375	.611	.568	.703

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	1	0	0	1	0	0	0	2	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	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
Total	0	0	1	0	0	1	0	0	0	2	0	2
08:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
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	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	0	0	1	0	0	0	1	1	2
Grand Total	0	1	1	0	0	2	0	0	0	3	1	4
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		75	25	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	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 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	1	9	5	7	60	55	137
04:15 PM	0	5	4	2	60	54	125
04:30 PM	1	7	9	5	49	43	114
04:45 PM	1	4	4	4	56	52	121
Total	3	25	22	18	225	204	497
05:00 PM	1	1	2	4	48	48	104
05:15 PM	0	4	0	3	44	41	92
05:30 PM	2	1	1	1	24	37	66
05:45 PM	0	4	3	1	34	30	72
Total	3	10	6	9	150	156	334
Grand Total	6	35	28	27	375	360	831
Apprch %	14.6	85.4	50.9	49.1	51	49	
Total %	0.7	4.2	3.4	3.2	45.1	43.3	
Cars	6	34	22	27	373	354	816
% Cars	100	97.1	78.6	100	99.5	98.3	98.2
Trucks	0	1	6	0	2	6	15
% Trucks	0	2.9	21.4	0	0.5	1.7	1.8

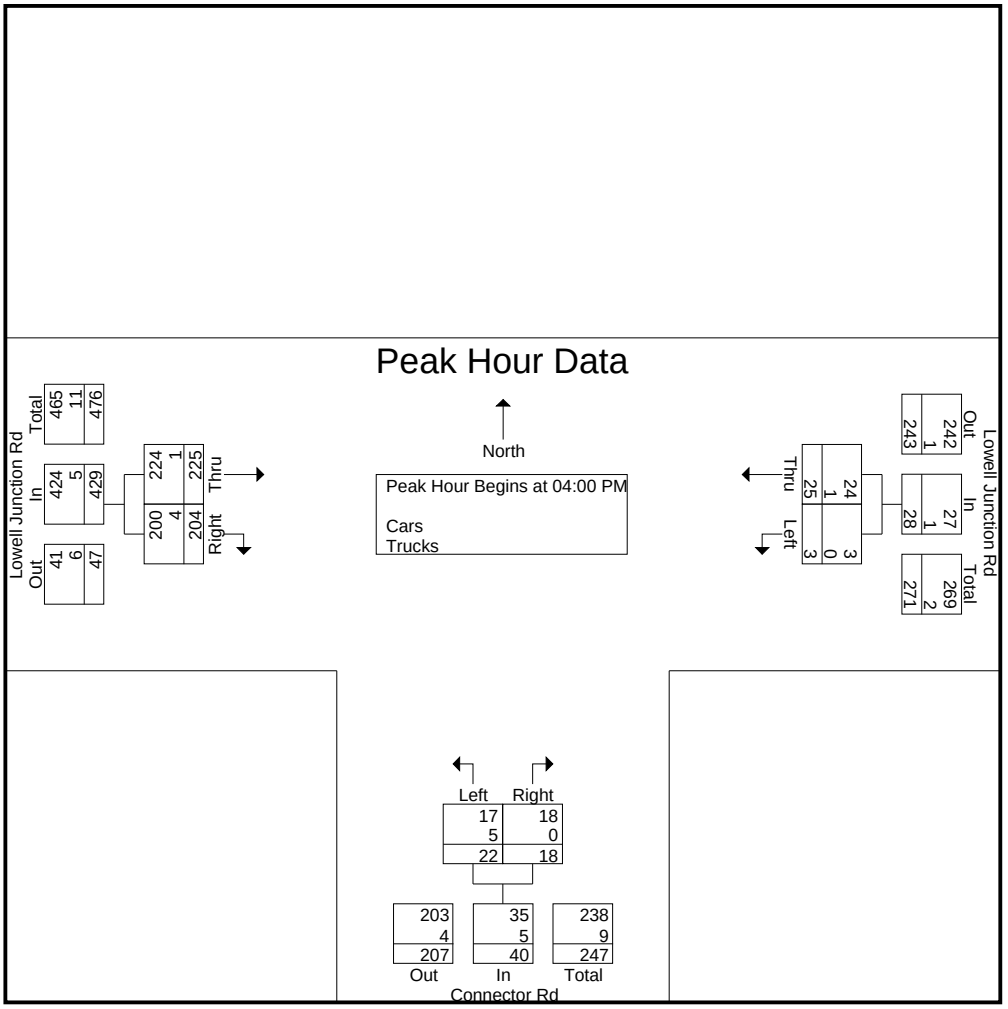
	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**1**	**9**	**10**	5	**7**	12	**60**	**55**	**115**	**137**
04:15 PM	0	5	5	4	2	6	60	54	114	125
04:30 PM	1	7	8	**9**	5	**14**	49	43	92	114
04:45 PM	1	4	5	4	4	8	56	52	108	121
Total Volume	3	25	28	22	18	40	225	204	429	497
% App. Total	10.7	89.3		55	45		52.4	47.6		
PHF	.750	.694	.700	.611	.643	.714	.938	.927	.933	.907
Cars	3	24	27	17	18	35	224	200	424	486
% Cars	100	96.0	96.4	77.3	100	87.5	99.6	98.0	98.8	97.8
Trucks	0	1	1	5	0	5	1	4	5	11
% Trucks	0	4.0	3.6	22.7	0	12.5	0.4	2.0	1.2	2.2

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

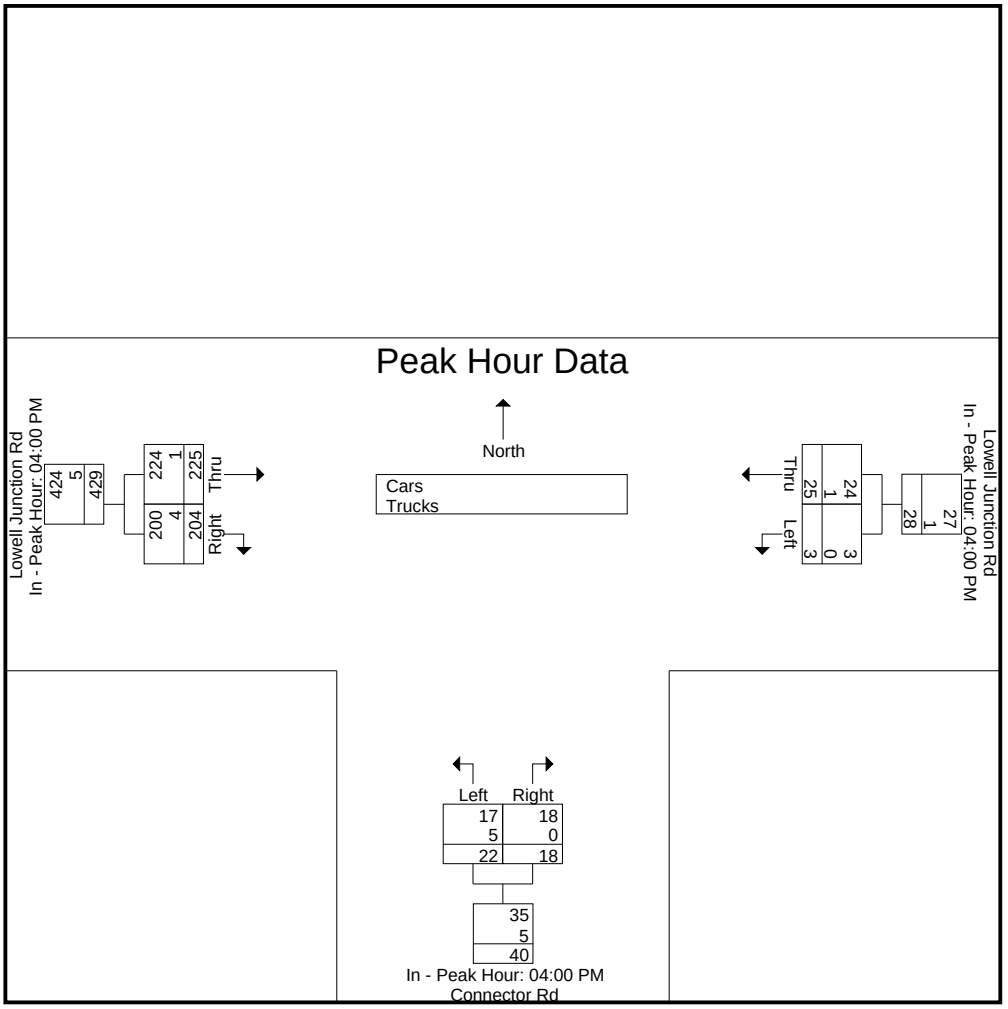
	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	**1**	**9**	**10**	5	**7**	12	**60**	**55**	**115**
+15 mins.	0	5	5	4	2	6	60	54	114
+30 mins.	1	7	8	**9**	5	**14**	49	43	92
+45 mins.	1	4	5	4	4	8	56	52	108
Total Volume	3	25	28	22	18	40	225	204	429
% App. Total	10.7	89.3		55	45		52.4	47.6	
PHF	.750	.694	.700	.611	.643	.714	.938	.927	.933
Cars	3	24	27	17	18	35	224	200	424
% Cars	100	96	96.4	77.3	100	87.5	99.6	98	98.8
Trucks	0	1	1	5	0	5	1	4	5
% Trucks	0	4	3.6	22.7	0	12.5	0.4	2	1.2

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Cars

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	1	9	5	7	60	52	134
04:15 PM	0	5	2	2	59	54	122
04:30 PM	1	7	8	5	49	42	112
04:45 PM	1	3	2	4	56	52	118
Total	3	24	17	18	224	200	486
05:00 PM	1	1	2	4	47	47	102
05:15 PM	0	4	0	3	44	41	92
05:30 PM	2	1	1	1	24	36	65
05:45 PM	0	4	2	1	34	30	71
Total	3	10	5	9	149	154	330
Grand Total	6	34	22	27	373	354	816
Apprch %	15	85	44.9	55.1	51.3	48.7	
Total %	0.7	4.2	2.7	3.3	45.7	43.4	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**1**	**9**	**10**	5	**7**	12	**60**	52	112	**134**
04:15 PM	0	5	5	2	2	4	59	**54**	**113**	122
04:30 PM	1	7	8	**8**	5	**13**	49	42	91	112
04:45 PM	1	3	4	2	4	6	56	52	108	118
Total Volume	3	24	27	17	18	35	224	200	424	486
% App. Total	11.1	88.9		48.6	51.4		52.8	47.2		
PHF	.750	.667	.675	.531	.643	.673	.933	.926	.938	.907

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Trucks

	Lowell Junction Rd From East		Connector Rd From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	0	0	3	3
04:15 PM	0	0	2	0	1	0	3
04:30 PM	0	0	1	0	0	1	2
04:45 PM	0	1	2	0	0	0	3
Total	0	1	5	0	1	4	11
05:00 PM	0	0	0	0	1	1	2
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	1
05:45 PM	0	0	1	0	0	0	1
Total	0	0	1	0	1	2	4
Grand Total	0	1	6	0	2	6	15
Apprch %	0	100	100	0	25	75	
Total %	0	6.7	40	0	13.3	40	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	**3**	**3**	**3**
04:15 PM	0	0	0	**2**	0	**2**	**1**	0	1	3
04:30 PM	0	0	0	1	0	1	0	1	1	2
04:45 PM	0	**1**	**1**	2	0	2	0	0	0	3
Total Volume	0	1	1	5	0	5	1	4	5	11
% App. Total	0	100		100	0		20	80		
PHF	.000	.250	.250	.625	.000	.625	.250	.333	.417	.917

Accurate Counts

978-664-2565

N/S Street : Connector Road
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770002
Site Code : 96770002
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	1	0	0	0	1	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	2
Grand Total	0	0	0	0	0	2	0	0	0	2	0	2
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Lowell Junction Rd From East			Connector Rd From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	77	5	50	12	1	16	161
07:15 AM	80	1	40	6	0	12	139
07:30 AM	58	3	51	6	1	6	125
07:45 AM	68	4	47	7	0	14	140
Total	283	13	188	31	2	48	565
08:00 AM	41	0	45	13	0	12	111
08:15 AM	56	0	47	5	0	11	119
08:30 AM	34	3	54	8	1	16	116
08:45 AM	30	3	66	7	0	16	122
Total	161	6	212	33	1	55	468
Grand Total	444	19	400	64	3	103	1033
Apprch %	95.9	4.1	86.2	13.8	2.8	97.2	
Total %	43	1.8	38.7	6.2	0.3	10	
Cars	437	17	369	57	2	59	941
% Cars	98.4	89.5	92.2	89.1	66.7	57.3	91.1
Trucks	7	2	31	7	1	44	92
% Trucks	1.6	10.5	7.8	10.9	33.3	42.7	8.9

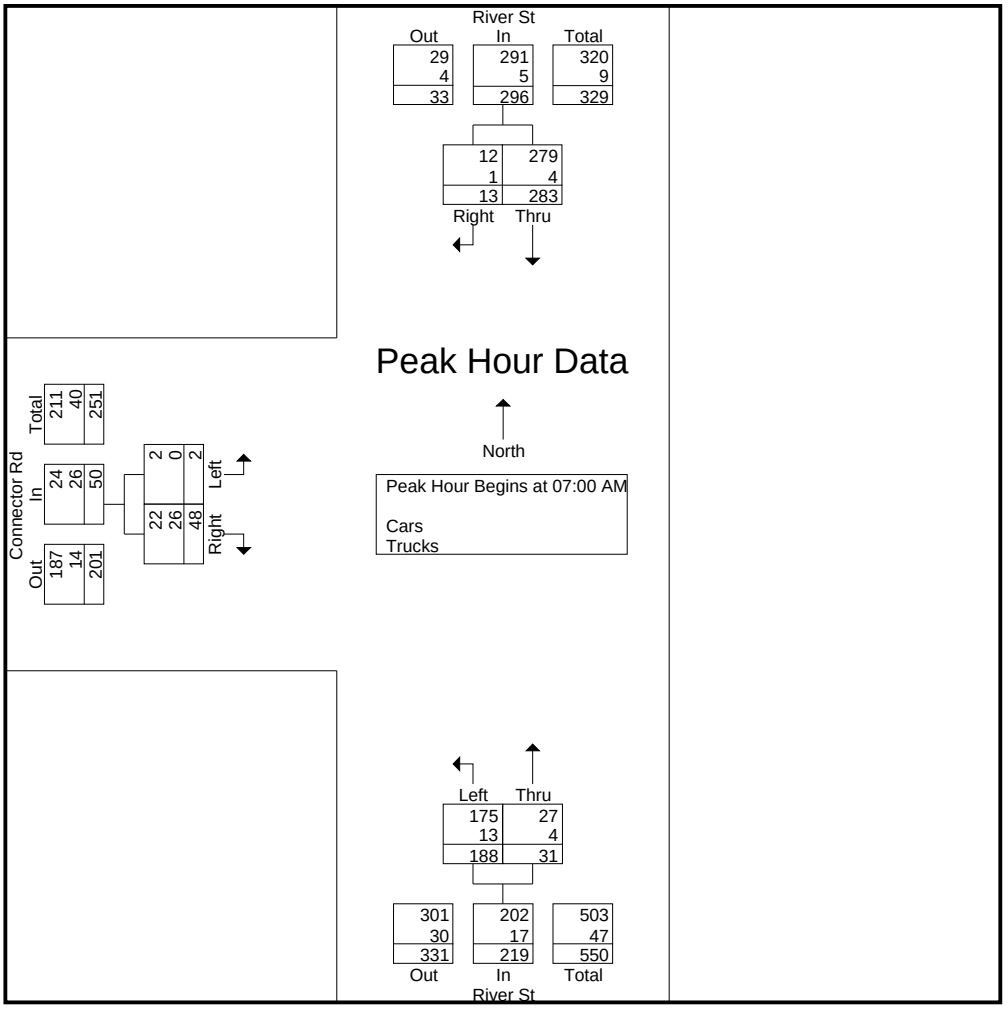
	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	77	**5**	**82**	50	**12**	**62**	**1**	**16**	**17**	**161**
07:15 AM	**80**	1	81	40	6	46	0	12	12	139
07:30 AM	58	3	61	**51**	6	57	1	6	7	125
07:45 AM	68	4	72	47	7	54	0	14	14	140
Total Volume	283	13	296	188	31	219	2	48	50	565
% App. Total	95.6	4.4		85.8	14.2		4	96		
PHF	.884	.650	.902	.922	.646	.883	.500	.750	.735	.877
Cars	279	12	291	175	27	202	2	22	24	517
% Cars	98.6	92.3	98.3	93.1	87.1	92.2	100	45.8	48.0	91.5
Trucks	4	1	5	13	4	17	0	26	26	48
% Trucks	1.4	7.7	1.7	6.9	12.9	7.8	0	54.2	52.0	8.5

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

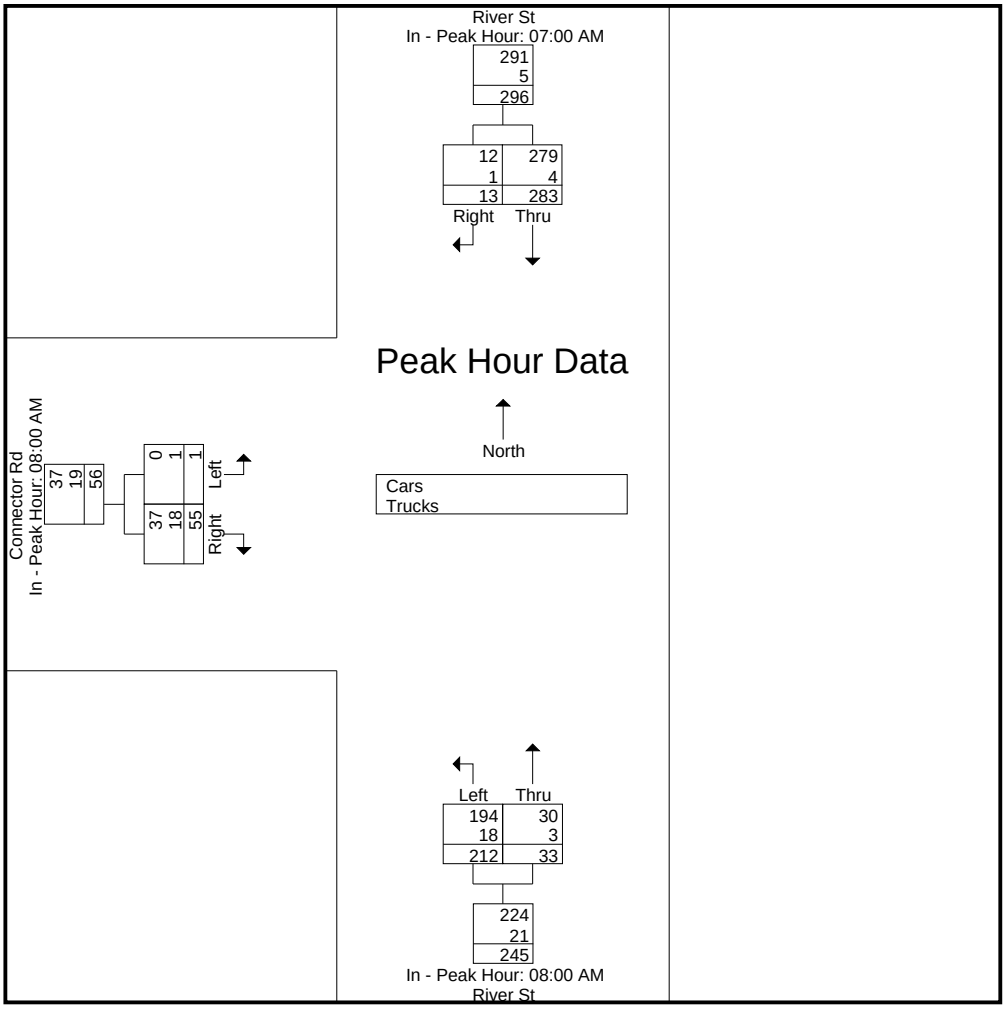
	07:00 AM			08:00 AM			08:00 AM		
+0 mins.	77	**5**	**82**	45	**13**	58	0	12	12
+15 mins.	**80**	1	81	47	5	52	0	11	11
+30 mins.	58	3	61	54	8	62	**1**	**16**	**17**
+45 mins.	68	4	72	**66**	7	**73**	0	16	16
Total Volume	283	13	296	212	33	245	1	55	56
% App. Total	95.6	4.4		86.5	13.5		1.8	98.2	
PHF	.884	.650	.902	.803	.635	.839	.250	.859	.824
Cars	279	12	291	194	30	224	0	37	37
% Cars	98.6	92.3	98.3	91.5	90.9	91.4	0	67.3	66.1
Trucks	4	1	5	18	3	21	1	18	19
% Trucks	1.4	7.7	1.7	8.5	9.1	8.6	100	32.7	33.9

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Cars

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	77	5	43	10	1	7	143
07:15 AM	79	0	38	5	0	4	126
07:30 AM	57	3	48	6	1	1	116
07:45 AM	66	4	46	6	0	10	132
Total	279	12	175	27	2	22	517
08:00 AM	41	0	42	12	0	7	102
08:15 AM	55	0	44	4	0	7	110
08:30 AM	32	2	50	7	0	12	103
08:45 AM	30	3	58	7	0	11	109
Total	158	5	194	30	0	37	424
Grand Total	437	17	369	57	2	59	941
Apprch %	96.3	3.7	86.6	13.4	3.3	96.7	
Total %	46.4	1.8	39.2	6.1	0.2	6.3	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	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	77	**5**	**82**	43	**10**	53	**1**	7	8	**143**
07:15 AM	**79**	0	79	38	5	43	0	4	4	126
07:30 AM	57	3	60	**48**	6	**54**	1	1	2	116
07:45 AM	66	4	70	46	6	52	0	**10**	**10**	132
Total Volume	279	12	291	175	27	202	2	22	24	517
% App. Total	95.9	4.1		86.6	13.4		8.3	91.7		
PHF	.883	.600	.887	.911	.675	.935	.500	.550	.600	.904

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Trucks

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	0	0	7	2	0	9	18
07:15 AM	1	1	2	1	0	8	13
07:30 AM	1	0	3	0	0	5	9
07:45 AM	2	0	1	1	0	4	8
Total	4	1	13	4	0	26	48
08:00 AM	0	0	3	1	0	5	9
08:15 AM	1	0	3	1	0	4	9
08:30 AM	2	1	4	1	1	4	13
08:45 AM	0	0	8	0	0	5	13
Total	3	1	18	3	1	18	44
Grand Total	7	2	31	7	1	44	92
Apprch %	77.8	22.2	81.6	18.4	2.2	97.8	
Total %	7.6	2.2	33.7	7.6	1.1	47.8	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	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	**7**	**2**	**9**	0	**9**	**9**	**18**
07:15 AM	1	**1**	**2**	2	1	3	0	8	8	13
07:30 AM	1	0	1	3	0	3	0	5	5	9
07:45 AM	**2**	0	2	1	1	2	0	4	4	8
Total Volume	4	1	5	13	4	17	0	26	26	48
% App. Total	80	20		76.5	23.5		0	100		
PHF	.500	.250	.625	.464	.500	.472	.000	.722	.722	.667

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	River St From North			River St From South			Connector Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	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
Total	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
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	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	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	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	14	0	7	69	1	66	157
04:15 PM	14	0	8	48	1	52	123
04:30 PM	13	3	9	64	0	57	146
04:45 PM	17	0	5	54	2	53	131
Total	58	3	29	235	4	228	557
05:00 PM	20	0	3	65	2	48	138
05:15 PM	16	0	0	26	0	45	87
05:30 PM	9	1	1	44	0	42	97
05:45 PM	8	1	3	25	1	31	69
Total	53	2	7	160	3	166	391
Grand Total	111	5	36	395	7	394	948
Apprch %	95.7	4.3	8.4	91.6	1.7	98.3	
Total %	11.7	0.5	3.8	41.7	0.7	41.6	
Cars	102	5	26	394	7	386	920
% Cars	91.9	100	72.2	99.7	100	98	97
Trucks	9	0	10	1	0	8	28
% Trucks	8.1	0	27.8	0.3	0	2	3

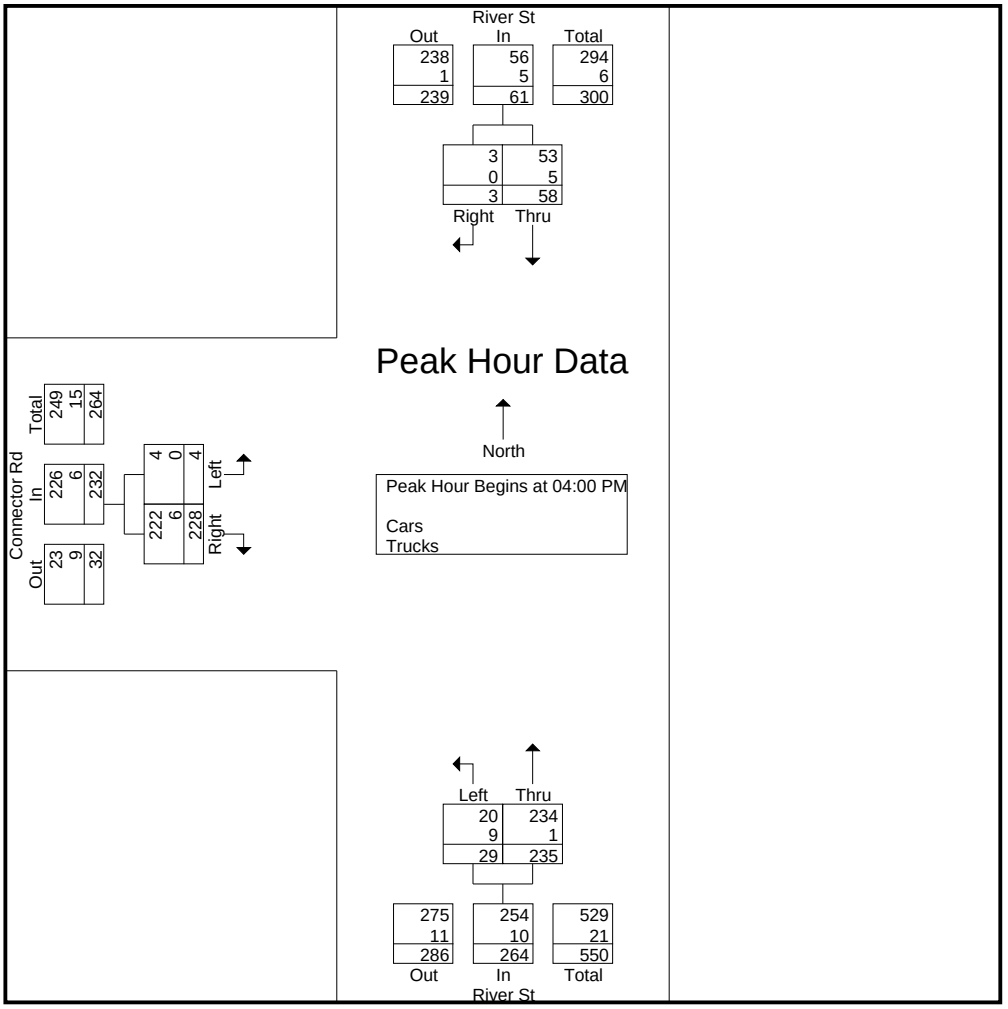
	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	14	0	14	7	**69**	**76**	1	**66**	**67**	**157**
04:15 PM	14	0	14	8	48	56	1	52	53	123
04:30 PM	13	**3**	16	**9**	64	73	0	57	57	146
04:45 PM	**17**	0	**17**	5	54	59	**2**	53	55	131
Total Volume	58	3	61	29	235	264	4	228	232	557
% App. Total	95.1	4.9		11	89		1.7	98.3		
PHF	.853	.250	.897	.806	.851	.868	.500	.864	.866	.887
Cars	53	3	56	20	234	254	4	222	226	536
% Cars	91.4	100	91.8	69.0	99.6	96.2	100	97.4	97.4	96.2
Trucks	5	0	5	9	1	10	0	6	6	21
% Trucks	8.6	0	8.2	31.0	0.4	3.8	0	2.6	2.6	3.8

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

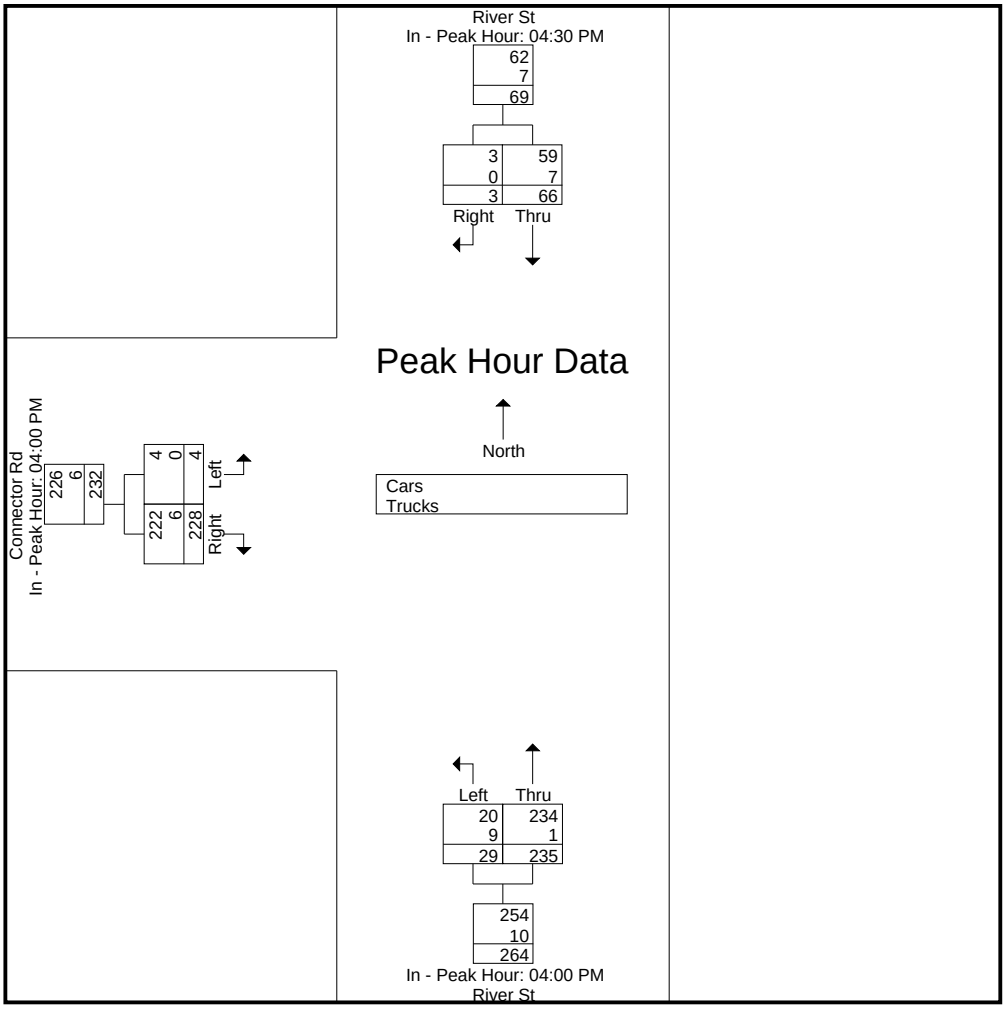
	04:30 PM			04:00 PM			04:00 PM		
+0 mins.	13	**3**	16	7	**69**	**76**	1	**66**	**67**
+15 mins.	17	0	17	8	48	56	1	52	53
+30 mins.	**20**	0	**20**	**9**	64	73	0	57	57
+45 mins.	16	0	16	5	54	59	**2**	53	55
Total Volume	66	3	69	29	235	264	4	228	232
% App. Total	95.7	4.3		11	89		1.7	98.3	
PHF	.825	.250	.863	.806	.851	.868	.500	.864	.866
Cars	59	3	62	20	234	254	4	222	226
% Cars	89.4	100	89.9	69	99.6	96.2	100	97.4	97.4
Trucks	7	0	7	9	1	10	0	6	6
% Trucks	10.6	0	10.1	31	0.4	3.8	0	2.6	2.6

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Cars

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	12	0	6	69	1	63	151
04:15 PM	14	0	4	48	1	52	119
04:30 PM	12	3	7	64	0	54	140
04:45 PM	15	0	3	53	2	53	126
Total	53	3	20	234	4	222	536
05:00 PM	18	0	3	65	2	47	135
05:15 PM	14	0	0	26	0	45	85
05:30 PM	9	1	1	44	0	41	96
05:45 PM	8	1	2	25	1	31	68
Total	49	2	6	160	3	164	384
Grand Total	102	5	26	394	7	386	920
Apprch %	95.3	4.7	6.2	93.8	1.8	98.2	
Total %	11.1	0.5	2.8	42.8	0.8	42	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	12	0	12	6	**69**	**75**	1	**63**	**64**	**151**
04:15 PM	14	0	14	4	48	52	1	52	53	119
04:30 PM	12	**3**	**15**	**7**	64	71	0	54	54	140
04:45 PM	**15**	0	15	3	53	56	**2**	53	55	126
Total Volume	53	3	56	20	234	254	4	222	226	536
% App. Total	94.6	5.4		7.9	92.1		1.8	98.2		
PHF	.883	.250	.933	.714	.848	.847	.500	.881	.883	.887

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Trucks

	River St From North		River St From South		Connector Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	2	0	1	0	0	3	6
04:15 PM	0	0	4	0	0	0	4
04:30 PM	1	0	2	0	0	3	6
04:45 PM	2	0	2	1	0	0	5
Total	5	0	9	1	0	6	21
05:00 PM	2	0	0	0	0	1	3
05:15 PM	2	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	1	1
05:45 PM	0	0	1	0	0	0	1
Total	4	0	1	0	0	2	7
Grand Total	9	0	10	1	0	8	28
Apprch %	100	0	90.9	9.1	0	100	
Total %	32.1	0	35.7	3.6	0	28.6	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	**2**	0	**2**	1	0	1	0	**3**	**3**	**6**
04:15 PM	0	0	0	**4**	0	**4**	0	0	0	4
04:30 PM	1	0	1	2	0	2	0	3	3	6
04:45 PM	2	0	2	2	**1**	3	0	0	0	5
Total Volume	5	0	5	9	1	10	0	6	6	21
% App. Total	100	0		90	10		0	100		
PHF	.625	.000	.625	.563	.250	.625	.000	.500	.500	.875

Accurate Counts

978-664-2565

N/S Street : River Street
E/W Street : Connector Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770003
Site Code : 96770003
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	River St From North			River St From South			Connector Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	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
05:45 PM	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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0		0	0		0	0				
Total %										0	0	

	River St From North			River St From South			Connector Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Cars - Trucks

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	12	90	0	6	19	0	127
07:15 AM	13	83	0	4	12	0	112
07:30 AM	12	101	0	1	10	0	124
07:45 AM	10	105	1	4	14	3	137
Total	47	379	1	15	55	3	500
08:00 AM	4	119	0	1	8	1	133
08:15 AM	9	119	2	3	11	0	144
08:30 AM	8	99	2	7	15	0	131
08:45 AM	7	133	2	5	15	0	162
Total	28	470	6	16	49	1	570
Grand Total	75	849	7	31	104	4	1070
Apprch %	8.1	91.9	18.4	81.6	96.3	3.7	
Total %	7	79.3	0.7	2.9	9.7	0.4	
Cars	71	820	6	25	73	4	999
% Cars	94.7	96.6	85.7	80.6	70.2	100	93.4
Trucks	4	29	1	6	31	0	71
% Trucks	5.3	3.4	14.3	19.4	29.8	0	6.6

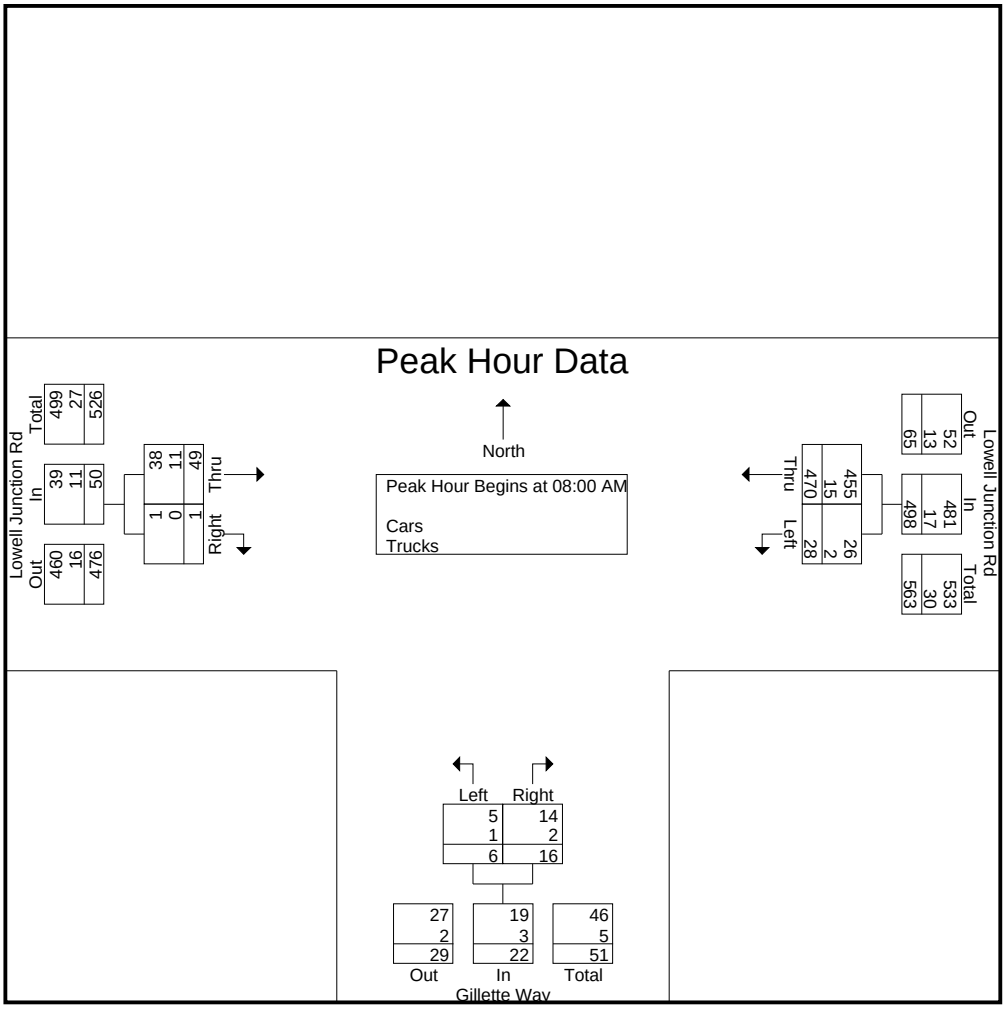
	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	4	119	123	0	1	1	8	**1**	9	133
08:15 AM	**9**	119	128	**2**	3	5	11	0	11	144
08:30 AM	8	99	107	2	**7**	**9**	**15**	0	**15**	131
08:45 AM	7	**133**	**140**	2	5	7	15	0	15	**162**
Total Volume	28	470	498	6	16	22	49	1	50	570
% App. Total	5.6	94.4		27.3	72.7		98	2		
PHF	.778	.883	.889	.750	.571	.611	.817	.250	.833	.880
Cars	26	455	481	5	14	19	38	1	39	539
% Cars	92.9	96.8	96.6	83.3	87.5	86.4	77.6	100	78.0	94.6
Trucks	2	15	17	1	2	3	11	0	11	31
% Trucks	7.1	3.2	3.4	16.7	12.5	13.6	22.4	0	22.0	5.4

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

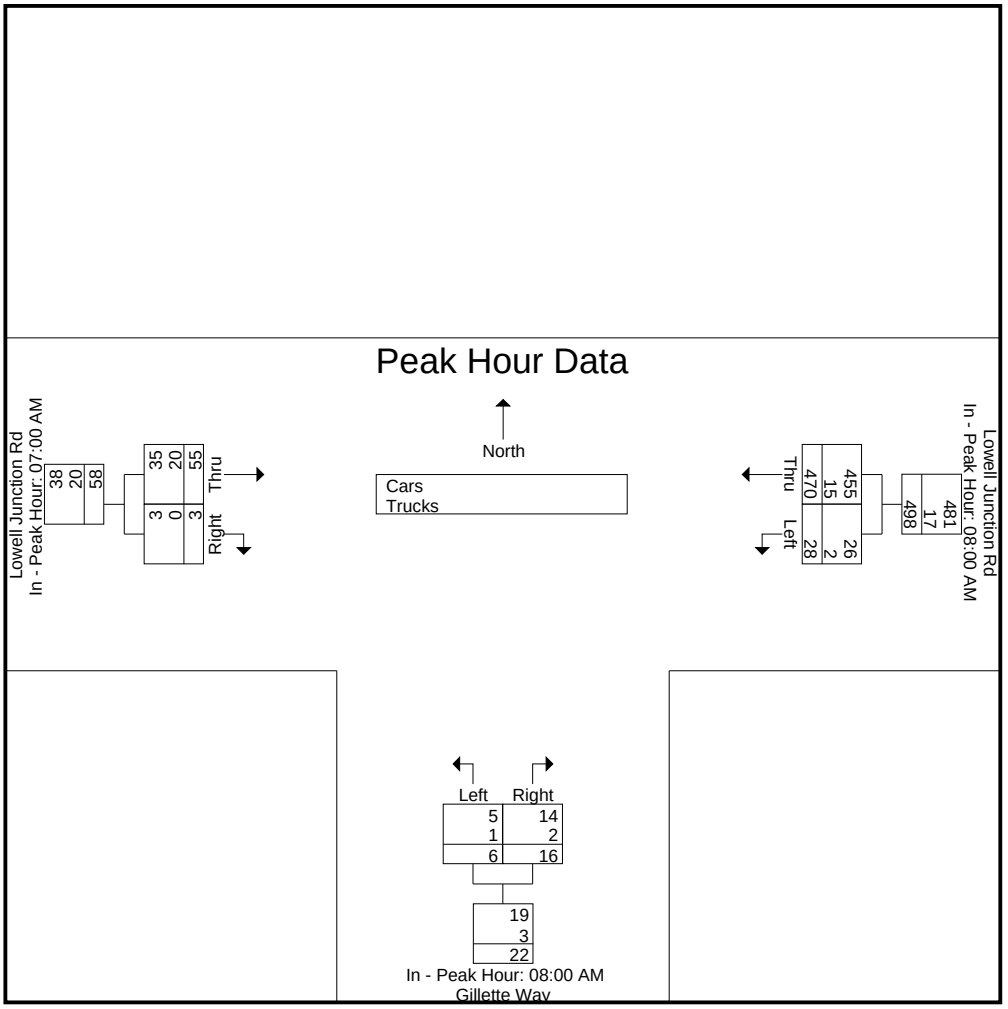
	08:00 AM			08:00 AM			07:00 AM		
+0 mins.	4	119	123	0	1	1	**19**	0	**19**
+15 mins.	**9**	119	128	**2**	3	5	12	0	12
+30 mins.	8	99	107	2	**7**	**9**	10	0	10
+45 mins.	7	**133**	**140**	2	5	7	14	**3**	17
Total Volume	28	470	498	6	16	22	55	3	58
% App. Total	5.6	94.4		27.3	72.7		94.8	5.2	
PHF	.778	.883	.889	.750	.571	.611	.724	.250	.763
Cars	26	455	481	5	14	19	35	3	38
% Cars	92.9	96.8	96.6	83.3	87.5	86.4	63.6	100	65.5
Trucks	2	15	17	1	2	3	20	0	20
% Trucks	7.1	3.2	3.4	16.7	12.5	13.6	36.4	0	34.5

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Cars

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	10	83	0	6	12	0	111
07:15 AM	13	81	0	2	3	0	99
07:30 AM	12	97	0	0	9	0	118
07:45 AM	10	104	1	3	11	3	132
Total	45	365	1	11	35	3	460
08:00 AM	4	118	0	1	5	1	129
08:15 AM	8	118	1	3	8	0	138
08:30 AM	7	95	2	5	13	0	122
08:45 AM	7	124	2	5	12	0	150
Total	26	455	5	14	38	1	539
Grand Total	71	820	6	25	73	4	999
Apprch %	8	92	19.4	80.6	94.8	5.2	
Total %	7.1	82.1	0.6	2.5	7.3	0.4	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	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 08:00 AM										
08:00 AM	4	118	122	0	1	1	5	**1**	6	129
08:15 AM	**8**	118	126	1	3	4	8	0	8	138
08:30 AM	7	95	102	**2**	**5**	**7**	**13**	0	**13**	122
08:45 AM	7	**124**	**131**	2	5	7	12	0	12	**150**
Total Volume	26	455	481	5	14	19	38	1	39	539
% App. Total	5.4	94.6		26.3	73.7		97.4	2.6		
PHF	.813	.917	.918	.625	.700	.679	.731	.250	.750	.898

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Trucks

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	2	7	0	0	7	0	16
07:15 AM	0	2	0	2	9	0	13
07:30 AM	0	4	0	1	1	0	6
07:45 AM	0	1	0	1	3	0	5
Total	2	14	0	4	20	0	40
08:00 AM	0	1	0	0	3	0	4
08:15 AM	1	1	1	0	3	0	6
08:30 AM	1	4	0	2	2	0	9
08:45 AM	0	9	0	0	3	0	12
Total	2	15	1	2	11	0	31
Grand Total	4	29	1	6	31	0	71
Apprch %	12.1	87.9	14.3	85.7	100	0	
Total %	5.6	40.8	1.4	8.5	43.7	0	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	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	**2**	**7**	**9**	0	0	0	7	0	7	**16**
07:15 AM	0	2	2	0	**2**	**2**	**9**	0	**9**	13
07:30 AM	0	4	4	0	1	1	1	0	1	6
07:45 AM	0	1	1	0	1	1	3	0	3	5
Total Volume	2	14	16	0	4	4	20	0	20	40
% App. Total	12.5	87.5		0	100		100	0		
PHF	.250	.500	.444	.000	.500	.500	.556	.000	.556	.625

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	1	0	0	0	1	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	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
Total	0	0	0	0	0	1	0	0	0	1	0	1
08:00 AM	0	1	0	0	0	0	0	0	0	0	1	1
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	0	0	0	1	0	0	0	1	0	1
Total	0	1	0	0	0	1	0	0	0	1	1	2
Grand Total	0	1	0	0	0	2	0	0	0	2	1	3
Apprch %	0	100		0	0		0	0				
Total %	0	100		0	0		0	0		66.7	33.3	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	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 07:15 AM										
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	**1**	**1**	0	0	0	0	0	0	**1**
Total Volume	0	1	1	0	0	0	0	0	0	1
% App. Total	0	100		0	0		0	0		
PHF	.000	.250	.250	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023
Page No : 1

Groups Printed- Cars - Trucks

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	1	14	0	14	104	0	133
04:15 PM	2	8	0	12	98	0	120
04:30 PM	3	13	0	9	85	0	110
04:45 PM	3	4	1	16	90	0	114
Total	9	39	1	51	377	0	477
05:00 PM	0	2	0	20	76	0	98
05:15 PM	0	5	0	8	77	0	90
05:30 PM	1	1	0	12	50	0	64
05:45 PM	0	6	0	2	60	0	68
Total	1	14	0	42	263	0	320
Grand Total	10	53	1	93	640	0	797
Apprch %	15.9	84.1	1.1	98.9	100	0	
Total %	1.3	6.6	0.1	11.7	80.3	0	
Cars	4	51	1	88	638	0	782
% Cars	40	96.2	100	94.6	99.7	0	98.1
Trucks	6	2	0	5	2	0	15
% Trucks	60	3.8	0	5.4	0.3	0	1.9

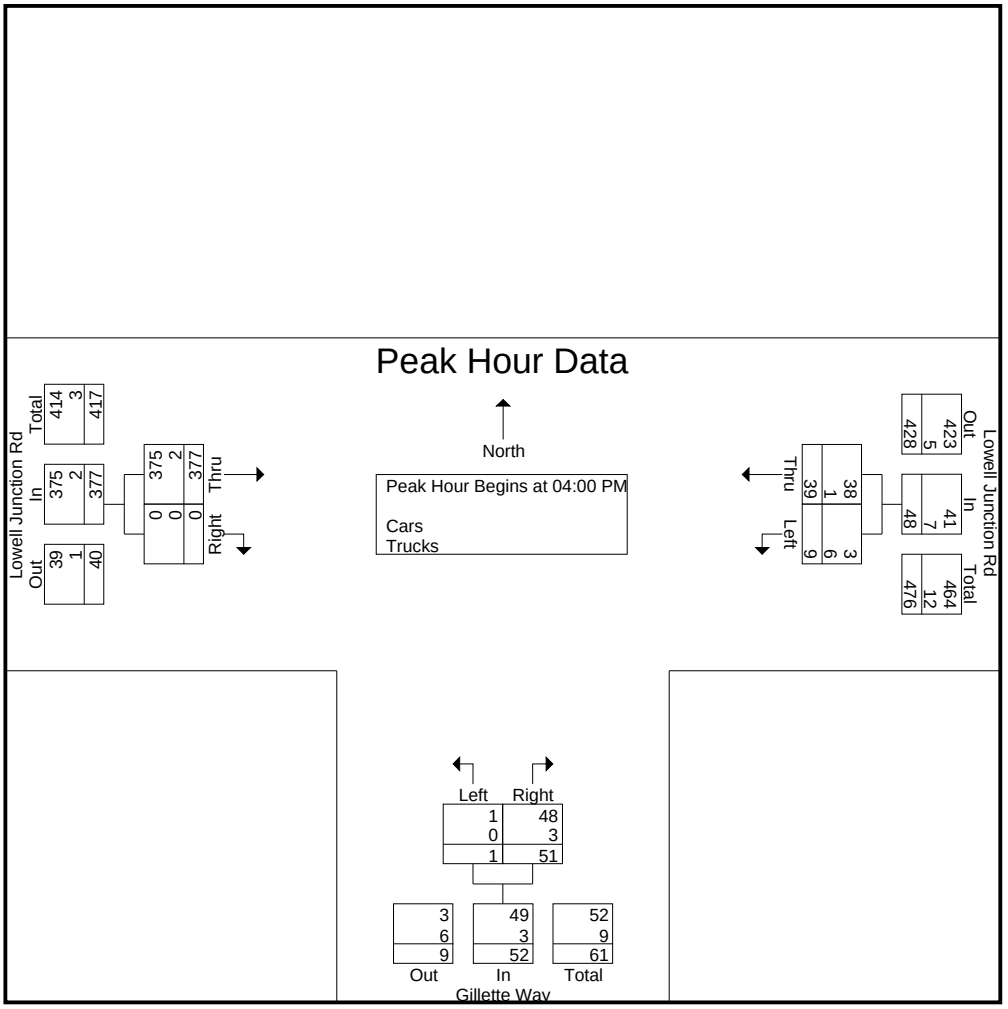
	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	**14**	15	0	14	14	**104**	0	**104**	**133**
04:15 PM	2	8	10	0	12	12	98	0	98	120
04:30 PM	**3**	13	**16**	0	9	9	85	0	85	110
04:45 PM	3	4	7	**1**	**16**	**17**	90	0	90	114
Total Volume	9	39	48	1	51	52	377	0	377	477
% App. Total	18.8	81.2		1.9	98.1		100	0		
PHF	.750	.696	.750	.250	.797	.765	.906	.000	.906	.897
Cars	3	38	41	1	48	49	375	0	375	465
% Cars	33.3	97.4	85.4	100	94.1	94.2	99.5	0	99.5	97.5
Trucks	6	1	7	0	3	3	2	0	2	12
% Trucks	66.7	2.6	14.6	0	5.9	5.8	0.5	0	0.5	2.5

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

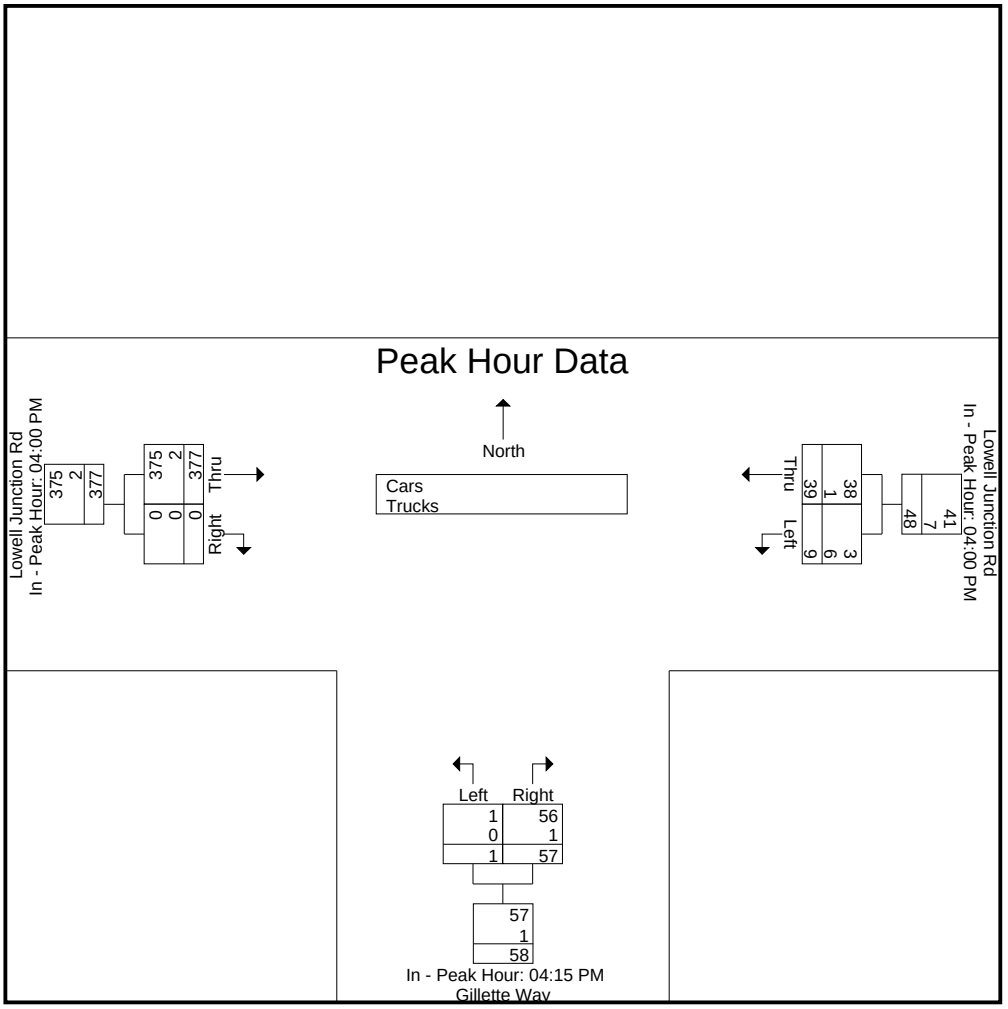
	04:00 PM			04:15 PM			04:00 PM		
+0 mins.	1	**14**	15	0	12	12	**104**	0	**104**
+15 mins.	2	8	10	0	9	9	98	0	98
+30 mins.	**3**	13	**16**	**1**	16	17	85	0	85
+45 mins.	3	4	7	0	**20**	**20**	90	0	90
Total Volume	9	39	48	1	57	58	377	0	377
% App. Total	18.8	81.2		1.7	98.3		100	0	
PHF	.750	.696	.750	.250	.713	.725	.906	.000	.906
Cars	3	38	41	1	56	57	375	0	375
% Cars	33.3	97.4	85.4	100	98.2	98.3	99.5	0	99.5
Trucks	6	1	7	0	1	1	2	0	2
% Trucks	66.7	2.6	14.6	0	1.8	1.7	0.5	0	0.5

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Cars

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	14	0	11	104	0	129
04:15 PM	0	7	0	12	97	0	116
04:30 PM	2	13	0	9	84	0	108
04:45 PM	1	4	1	16	90	0	112
Total	3	38	1	48	375	0	465
05:00 PM	0	2	0	19	76	0	97
05:15 PM	0	5	0	8	77	0	90
05:30 PM	1	1	0	11	50	0	63
05:45 PM	0	5	0	2	60	0	67
Total	1	13	0	40	263	0	317
Grand Total	4	51	1	88	638	0	782
Apprch %	7.3	92.7	1.1	98.9	100	0	
Total %	0.5	6.5	0.1	11.3	81.6	0	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	**14**	14	0	11	11	**104**	0	**104**	**129**
04:15 PM	0	7	7	0	12	12	97	0	97	116
04:30 PM	**2**	13	**15**	0	9	9	84	0	84	108
04:45 PM	1	4	5	**1**	**16**	**17**	90	0	90	112
Total Volume	3	38	41	1	48	49	375	0	375	465
% App. Total	7.3	92.7		2	98		100	0		
PHF	.375	.679	.683	.250	.750	.721	.901	.000	.901	.901

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Trucks

	Lowell Junction Rd From East		Gillette Way From South		Lowell Junction Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	1	0	0	3	0	0	4
04:15 PM	2	1	0	0	1	0	4
04:30 PM	1	0	0	0	1	0	2
04:45 PM	2	0	0	0	0	0	2
Total	6	1	0	3	2	0	12
05:00 PM	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	0	1
05:45 PM	0	1	0	0	0	0	1
Total	0	1	0	2	0	0	3
Grand Total	6	2	0	5	2	0	15
Apprch %	75	25	0	100	100	0	
Total %	40	13.3	0	33.3	13.3	0	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	1	0	1	0	**3**	**3**	0	0	0	**4**
04:15 PM	**2**	**1**	**3**	0	0	0	**1**	0	**1**	4
04:30 PM	1	0	1	0	0	0	1	0	1	2
04:45 PM	2	0	2	0	0	0	0	0	0	2
Total Volume	6	1	7	0	3	3	2	0	2	12
% App. Total	85.7	14.3		0	100		100	0		
PHF	.750	.250	.583	.000	.250	.250	.500	.000	.500	.750

Accurate Counts

978-664-2565

N/S Street : Gillette Way
E/W Street : Lowell Junction Road
City/State : Andover, MA
Weather : Cloudy

File Name : 96770004
Site Code : 96770004
Start Date : 6/14/2023

Groups Printed- Bikes Peds

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West					
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	1	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	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	1	0	0	0	1	0	1
Total	0	0	0	0	0	2	0	0	0	2	0	2
Grand Total	0	0	0	0	0	2	0	0	0	2	0	2
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	Lowell Junction Rd From East			Gillette Way From South			Lowell Junction Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department
Statewide Traffic Data Collection
2019 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.22	1.14	1.12	1.06	1.00	0.96	0.87	0.85	0.96	0.99	1.04	1.12	0.85
R2	0.95	0.96	0.98	0.97	0.97	0.93	0.97	0.94	0.96	0.90	0.92	0.93	0.96
R3	1.15	1.06	1.07	1.00	0.89	0.88	0.89	0.89	0.95	0.92	1.02	1.01	0.97
R4-R7	1.09	1.09	1.11	1.02	0.96	0.92	0.89	0.89	0.99	0.98	1.09	1.13	0.98
U1-Boston	1.03	1.01	0.98	0.94	0.94	0.92	0.95	0.93	0.94	0.94	0.97	1.04	0.96
U1-Essex	1.09	1.06	1.03	0.99	0.94	0.90	0.88	0.86	0.93	0.94	0.99	1.06	0.93
U1-Southeast	1.06	1.05	1.01	0.97	0.95	0.93	0.93	0.90	0.94	0.94	0.98	1.04	0.98
U1-West	1.19	1.14	1.09	0.95	0.92	0.89	0.89	0.86	0.91	0.95	0.97	1.07	0.84
U1-Worcester	1.02	1.04	0.97	0.94	0.93	0.91	0.95	0.91	0.93	0.92	0.95	1.10	0.88
U2	1.01	1.00	0.94	0.93	0.91	0.89	0.93	0.90	0.90	0.91	0.94	1.02	0.99
U3	1.06	1.03	0.98	0.94	0.93	0.91	0.95	0.91	0.92	0.93	0.97	1.00	0.98
U4-U7	1.01	1.00	0.95	0.92	0.88	0.86	0.92	0.91	0.92	0.94	0.99	1.04	0.99
Rec - East	1.04	1.16	1.12	0.98	0.92	0.88	0.77	0.81	0.94	1.02	1.08	1.12	0.99
Rec - West	1.30	1.23	1.32	1.18	0.95	0.82	0.70	0.69	0.97	0.96	1.16	1.15	0.98

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

U = Urban
R = Rural

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

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

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

7/28/2023

PUBLIC TRANSPORTATION SCHEDULES

HAVERHILL LINE SPRING/SUMMER SCHEDULE

Effective May 22, 2023

Monday to Friday

Inbound to Boston

ZONE	STATION	TRAIN #	280	200	202	282	204	284	206	286	208	288	210	290	212	292	214	294	216	218	296	298	220	222	224
	Bikes Allowed																								
7	Haverhill		-	5:27	6:12	-	7:25	-	8:27	-	9:57	-	11:27	-	12:57	-	2:27	-	3:57	5:20	-	-	6:57	8:17	9:32
7	Bradford		-	5:29	6:14	-	7:27	-	8:29	-	f 9:59	-	f 11:29	-	f 12:59	-	f 2:29	-	f 3:59	f 5:22	-	-	f 6:59	f 8:19	9:34
6	Lawrence		-	5:36	6:21	-	7:34	-	8:36	-	10:06	-	11:36	-	1:06	-	2:36	-	4:06	5:29	-	-	7:06	8:26	9:41
5	Andover		-	5:43	6:28	-	7:41	-	8:43	-	f 10:13	-	f 11:43	-	f 1:13	-	f 2:43	-	f 4:13	f 5:36	-	-	f 7:13	f 8:33	9:48
4	Ballardvale		-	5:48	6:33	-	7:46	-	8:48	-	f 10:18	-	f 11:48	-	f 1:18	-	f 2:48	-	f 4:18	f 5:41	-	-	f 7:18	f 8:38	9:53
3	North Wilmington		-	5:56	6:41	-	-	-	8:56	-	f 10:26	-	f 11:56	-	f 1:26	-	f 2:56	-	f 4:26	-	-	-	f 7:26	f 8:46	10:00
2	Reading		5:18	6:03	6:48	7:33	-	8:18	9:03	9:48	10:33	11:18	12:03	12:48	1:33	2:18	3:03	3:48	4:33	-	6:03	6:48	7:33	8:53	10:07
2	Wakefield		5:24	6:09	6:54	7:39	-	8:24	9:09	9:54	10:39	11:24	12:09	12:54	1:39	2:24	3:09	3:54	4:39	-	f 6:09	f 6:54	f 7:39	f 8:59	10:13
2	Greenwood		5:27	6:12	6:57	7:42	-	8:27	9:12	f 9:57	f 10:42	f 11:27	f 12:12	f 12:57	f 1:42	f 2:27	f 3:12	f 3:57	f 4:42	-	f 6:12	f 6:57	f 7:42	f 9:02	10:16
1	Melrose Highlands		5:29	6:14	6:59	7:44	-	8:29	9:14	9:59	10:44	11:29	12:14	12:59	1:44	2:29	3:14	3:59	4:44	-	f 6:14	f 6:59	f 7:44	f 9:04	10:18
1	Melrose/Cedar Park		5:31	6:16	7:01	7:46	-	8:31	9:16	f 10:01	f 10:46	f 11:31	f 12:16	f 1:01	f 1:46	f 2:31	f 3:16	f 4:01	f 4:46	-	f 6:16	f 7:01	f 7:46	f 9:06	10:20
1	Wyoming Hill		5:33	6:18	7:03	7:48	-	8:33	9:18	f 10:03	f 10:48	f 11:33	f 12:18	f 1:03	f 1:48	f 2:33	f 3:18	f 4:03	f 4:48	-	f 6:18	f 7:03	f 7:48	f 9:08	10:22
1A	Oak Grove		5:35	6:20	7:05	7:50	-	8:35	9:20	f 10:05	f 10:50	f 11:35	f 12:20	f 1:05	f 1:50	f 2:35	f 3:20	f 4:05	f 4:50	-	f 6:20	f 7:05	f 7:50	f 9:10	10:24
1A	Malden Center		L 5:38	L 6:23	L 7:08	L 7:53	-	L 8:38	L 9:23	L 10:08	L 10:53	L 11:38	L 12:23	L 1:08	L 1:53	L 2:38	L 3:23	L 4:08	L 4:53	-	L 6:23	L 7:08	L 7:53	L 9:13	L 10:27
1A	North Station		5:54	6:41	7:26	8:10	8:25	8:55	9:40	10:24	11:09	11:54	12:39	1:24	2:09	2:54	3:39	4:24	5:09	6:21	6:39	7:24	8:09	9:29	10:43

Monday to Friday

Outbound from Boston

ZONE	STATION	TRAIN #	201	281	283	203	285	205	287	207	289	209	291	211	293	213	215	295	217	297	219	221	223	225
	Bikes Allowed																							
1A	North Station		5:55	6:40	7:25	8:10	8:55	9:40	10:25	11:10	11:55	12:40	1:25	2:10	2:55	3:40	4:25	5:10	5:40	5:55	6:40	8:00	9:40	10:55
1A	Malden Center		f 6:06	f 6:51	f 7:36	f 8:21	f 9:06	f 9:51	f 10:36	f 11:21	f 12:06	f 12:51	f 1:36	f 2:21	f 3:06	3:51	4:36	5:21	-	6:06	6:51	f 8:11	f 9:51	11:06
1A	Oak Grove		f 6:08	f 6:53	f 7:38	f 8:23	f 9:08	f 9:53	f 10:38	f 11:23	f 12:08	f 12:53	f 1:38	f 2:23	f 3:08	3:53	4:38	5:23	-	6:08	6:53	f 8:13	f 9:53	11:08
1	Wyoming Hill		f 6:10	f 6:55	f 7:40	f 8:25	f 9:10	f 9:55	f 10:40	f 11:25	f 12:10	f 12:55	f 1:40	f 2:25	f 3:10	3:55	4:40	5:25	-	6:10	6:55	f 8:15	f 9:55	11:10
1	Melrose/Cedar Park		f 6:12	f 6:57	f 7:42	f 8:27	f 9:12	f 9:57	f 10:42	f 11:27	f 12:12	f 12:57	f 1:42	f 2:27	f 3:12	3:57	4:42	5:27	-	6:12	6:57	f 8:17	f 9:57	11:12
1	Melrose Highlands		f 6:15	f 7:00	f 7:45	f 8:30	f 9:15	10:00	10:45	11:30	12:15	1:00	1:45	2:30	3:15	4:00	4:45	5:30	-	6:15	7:00	8:20	f 10:00	11:15
2	Greenwood		f 6:18	f 7:03	f 7:48	f 8:33	f 9:18	f 10:03	f 10:48	f 11:33	f 12:18	f 1:03	f 1:48	f 2:33	f 3:18	4:03	4:48	5:33	-	6:18	7:03	f 8:23	f 10:03	11:18
2	Wakefield		f 6:22	f 7:07	f 7:52	f 8:37	f 9:22	10:07	10:52	11:37	12:22	1:07	1:52	2:37	3:22	4:07	4:52	5:37	-	6:22	7:07	8:27	f 10:07	11:22
2	Reading		6:28	7:16	8:01	8:43	9:31	10:13	11:01	11:43	12:31	1:13	2:01	2:43	3:31	4:13	4:58	5:46	-	6:31	7:13	8:33	10:13	11:28
3	North Wilmington		f 6:34	-	-	f 8:49	-	f 10:19	-	f 11:49	-	f 1:19	-	f 2:49	-	4:19	5:05	-	-	-	7:19	f 8:39	f 10:19	11:34
4	Ballardvale		f 6:42	-	-	f 8:57	-	f 10:27	-	f 11:57	-	f 1:27	-	f 2:57	-	4:27	5:13	-	6:12	-	7:27	8:47	f 10:26	11:41
5	Andover		f 6:47	-	-	f 9:02	-	f 10:32	-	f 12:02	-	f 1:32	-	f 3:02	-	4:32	5:18	-	6:17	-	7:32	8:52	f 10:31	11:46
6	Lawrence		6:54	-	-	9:09	-	10:39	-	12:09	-	1:39	-	3:09	-	4:39	5:25	-	6:24	-	7:39	8:59	10:38	11:53
7	Bradford		f 7:02	-	-	f 9:17	-	f 10:47	-	f 12:17	-	L 1:49	-	L 3:19	-	L 4:50	L 5:37	-	L 6:36	-	L 7:50	L 9:09	f 10:46	12:01
7	Haverhill		7:09	-	-	9:24	-	10:54	-	12:24	-	1:54	-	3:24	-	4:56	5:43	-	6:41	-	7:56	9:14	10:53	12:08

Weekend

Inbound to Boston

ZONE	STATION	SATURDAY TRAIN # / SUNDAY TRAIN #	1200 / 2200	1202 / 2202	1204 / 2204	1206 / 2206	1208 / 2208	1210 / 2210	1212 / 2212	1214 / 2214
	Bikes Allowed									
7	Haverhill		5:35	8:35	10:35	12:35	2:35	4:35	6:35	9:35
7	Bradford		5:37	8:37	10:37	12:37	2:37	4:37	6:37	9:37
6	Lawrence		5:44	8:44	10:44	12:44	2:44	4:44	6:44	9:44
5	Andover		f 5:51	f 8:51	f 10:51	f 12:51	f 2:51	f 4:51	f 6:51	9:51
4	Ballardvale		f 5:56	f 8:56	f 10:56	f 12:56	f 2:56	f 4:56	f 6:56	9:56
3	North Wilmington		f 6:03	f 9:03	f 11:03	f 1:03	f 3:03	f 5:03	f 7:03	10:03
2	Reading		6:10	9:10	11:10	1:10	3:10	5:10	7:10	10:10
2	Wakefield		6:16	9:16	11:16	1:16	3:16	5:16	7:16	10:16
2	Greenwood		f 6:19	f 9:19	f 11:19	f 1:19	f 3:19	f 5:19	f 7:19	10:19
1	Melrose Highlands		6:21	9:21	11:21	1:21	3:21	5:21	7:21	10:21
1	Melrose/Cedar Park		f 6:23	f 9:23	f 11:23	f 1:23	f 3:23	f 5:23	f 7:23	10:23
1	Wyoming Hill		f 6:25	f 9:25	f 11:25	f 1:25	f 3:25	f 5:25	f 7:25	10:25
1A	Oak Grove		f 6:27	f 9:27	f 11:27	f 1:27	f 3:27	f 5:27	f 7:27	10:27
1A	Malden Center		L 6:30	L 9:30	L 11:30	L 1:30	L 3:30	L 5:30	L 7:30	L 10:30
1A	North Station		6:45	9:45	11:45	1:45	3:45	5:45	7:45	10:45

Weekend

Outbound from Boston

ZONE	STATION	SATURDAY TRAIN # / SUNDAY TRAIN #	1201 / 2201	1203 / 2203	1205 / 2205	1207 / 2207	1209 / 2209	1211 / 2211	1213 / 2213	1215 / 2215
	Bikes Allowed									
1A	North Station		7:00	9:00	11:00	1:00	3:00	5:00	8:00	10:55
1A	Malden Center		f 7:11	f 9:11	f 11:11	f 1:11	f 3:11	f 5:11	f 8:11	11:06
1A	Oak Grove		f 7:13	f 9:13	f 11:13	f 1:13	f 3:13	f 5:13	f 8:13	11:08
1	Wyoming Hill		f 7:15	f 9:15	f 11:15	f 1:15	f 3:15	f 5:15	f 8:15	11:10
1	Melrose/Cedar Park		f 7:17	f 9:17	f 11:17	f 1:17	f 3:17	f 5:17	f 8:17	11:12
1	Melrose Highlands		7:20	9:20	11:20	1:20	3:20	5:20	8:20	11:15
2	Greenwood		f 7:23	f 9:23	f 11:23	f 1:23	f 3:23	f 5:23	f 8:23	11:18
2	Wakefield		7:27	9:27	11:27	1:27	3:27	5:27	8:27	11:22
2	Reading		7:33	9:33	11:33	1:33	3:33	5:33	8:33	11:28
3	North Wilmington		f 7:39	f 9:39	f 11:39	f 1:39	f 3:39	f 5:39	f 8:39	11:34
4	Ballardvale		f 7:46	f 9:46	f 11:46	f 1:46	f 3:46	f 5:46	f 8:46	11:41
5	Andover		f 7:51	f 9:51	f 11:51	f 1:51	f 3:51	f 5:51	f 8:51	11:46
6	Lawrence		7:58	9:58	11:58	1:58	3:58	5:58	8:58	11:53
7	Bradford		f 8:06	f 10:06	f 12:06	f 2:06	f 4:06	f 6:06	f 9:06	12:01
7	Haverhill		8:13	10:13	12:13	2:13	4:13	6:13	9:13	12:08

Keep in Mind:

This schedule will be effective from May 22, 2023 and will replace the schedule of October 17, 2022.

Holiday Service

On Monday, May 29th (Memorial Day), Tuesday, July 4th (Independence Day) and Monday, September 4th (Labor Day), all lines will operate on a weekend schedule.

On Monday, June 19th (Juneteenth), Monday, July 3rd (Day before Independence Day), and Monday, October 9th (Columbus Day), all lines will operate on a regular weekday schedule.

For all holiday schedules, please check MBTA.com/holidays or call 617-222-3200.

Times in purple with "f" indicate a flag stop: Passengers must tell the conductor that they wish to leave. Passengers waiting to board must be visible on the platform for the train to stop.

Times in blue with "L" indicate an early departure: The train may leave ahead of schedule at these stops.

Bikes: Bicycles are allowed on trains with the bicycle symbol shown below the train number.

High level platform and bridge plate available. Visit **mbta.com/accessibility** for more information.

MASSDOT CRASH RATE WORKSHEETS

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover | COUNT DATE : Jun-23

DISTRICT : 4 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Lowell Junction Road

MINOR STREET(S) : River Street

INTERSECTION DIAGRAM (Label Approaches)

↑ *North*

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	251		246	83		**580**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **6,444**

TOTAL # OF CRASHES : 4 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : **0.80**

CRASH RATE CALCULATION : **0.34**

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Manufacturing Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover | COUNT DATE : Jun-23

DISTRICT : 4 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Lowell Junction Road

MINOR STREET(S) : Connector Road

INTERSECTION DIAGRAM
(Label Approaches)

↑ *North*

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	436	31	41			**508**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **5,644**

TOTAL # OF CRASHES : 0

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Manufacturing Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover | COUNT DATE : Jun-23

DISTRICT : 4 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : River Street

MINOR STREET(S) : Connector Road

INTERSECTION DIAGRAM (Label Approaches)

↑ *North*

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	232		264	61		**557**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **6,189**

TOTAL # OF CRASHES : 0

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Manufacturing Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover | COUNT DATE : Jun-23

DISTRICT : 4 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : River Street

MINOR STREET(S) : Connector Road

INTERSECTION DIAGRAM (Label Approaches)

↑ *North*

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	377	48	52			**477**

" K " FACTOR : **0.090**

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **5,300**

TOTAL # OF CRASHES : 0

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : **0.00**

CRASH RATE CALCULATION : **0.00**

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

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Manufacturing Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Andover COUNT DATE : Feb-24

DISTRICT : 4 UNSIGNALIZED : X SIGNALIZED :

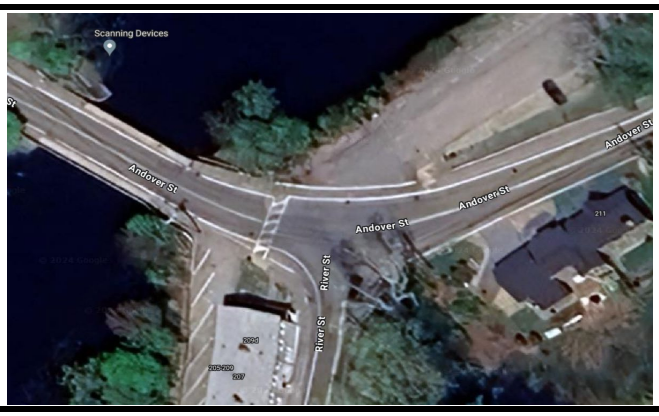
~ INTERSECTION DATA ~

MAJOR STREET : Andover Street

MINOR STREET(S) : River Street

INTERSECTION DIAGRAM (Label Approaches)

↑ *North*



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM) :	202	176	514	33		**925**

" K " FACTOR : **0.090** INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : **10,278**

TOTAL # OF CRASHES : 3 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR (**A**) : **0.60**

CRASH RATE CALCULATION : **0.16** RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : Below Statewide and District Crash Rates

Project Title & Date: Proposed Manufacturing Development

VEHICLE SPEED DATA

Accurate Counts
978-664-2565

Location : Lowell Junction Road 96770001
Location : East of Gillette Way
City/State: Andover, MA
Direction: EB

6/15/2023 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	1	0	4	0	4	5	0	3	0	0	0	17
1:00	0	0	0	0	0	6	1	1	3	1	2	0	0	0	14
2:00	0	0	1	1	0	3	2	0	0	0	0	0	0	0	7
3:00	0	0	0	2	1	2	1	1	2	0	0	0	0	0	9
4:00	0	0	1	0	1	3	3	0	0	0	0	0	0	0	8
5:00	0	0	0	0	3	3	12	3	2	2	0	0	0	1	26
6:00	0	0	0	1	7	11	32	20	6	2	0	0	0	0	79
7:00	0	0	0	2	2	10	15	19	9	4	0	0	0	0	61
8:00	0	0	0	0	5	8	13	16	9	7	2	1	0	0	61
9:00	0	0	0	1	12	9	10	9	12	8	2	1	0	0	64
10:00	0	0	0	1	7	7	14	13	4	3	0	0	0	0	49
11:00	0	0	0	1	6	9	33	22	18	10	3	1	1	0	104
12:00 PM	0	0	0	6	12	12	23	29	12	11	2	0	0	0	107
1:00	0	0	0	1	8	17	50	46	29	8	2	1	0	0	162
2:00	0	0	6	3	14	36	64	79	56	31	1	0	1	1	292
3:00	0	0	0	3	11	37	78	96	71	24	8	0	1	0	329
4:00	0	0	0	4	8	38	97	116	67	20	1	2	2	0	355
5:00	0	0	0	0	10	17	41	57	56	27	3	2	0	0	213
6:00	0	0	0	1	2	13	16	26	31	8	4	0	0	0	101
7:00	0	0	0	2	17	19	42	30	20	8	2	1	2	1	144
8:00	0	0	0	0	4	2	2	5	2	1	1	0	0	0	17
9:00	0	0	0	2	3	3	4	5	2	2	1	0	0	0	22
10:00	0	0	0	0	4	10	19	16	13	11	3	0	0	0	76
11:00	0	0	0	1	0	4	2	1	2	0	0	0	0	0	10
Total	0	0	8	33	137	283	574	614	431	188	40	9	7	3	2327
			Percentile	15th	50th	85th	95th								
			Speed	17	22	26	29								
		Mean Speed (Average)		21.8											
		10 MPH Pace Speed		17-26											
		Number in Pace		1708											
		Percent in Pace		73.4%											
		Number > 24 MPH		678											
		Percent > 24 MPH		29.1%											
Grand Total	0	0	9	52	291	526	1148	1318	882	381	89	24	12	8	4740
Stats			Percentile	15th	50th	85th	95th								
			Speed	17	22	26	29								
		Mean Speed (Average)		22.0											
		10 MPH Pace Speed		17-26											
		Number in Pace		3511											
		Percent in Pace		74.1%											
		Number > 24 MPH		1396											
		Percent > 24 MPH		29.5%											

Location : Lowell Junction Road 96770001
Location : East of Gillette Way
City/State: Andover, MA
Direction: WB

6/15/2023 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	0	0	0	2	0	1	0	1	0	1	0	5
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00	0	0	1	0	1	0	0	0	1	0	0	0	1	0	4
3:00	0	0	0	0	0	0	1	3	2	2	2	0	1	0	11
4:00	0	0	0	0	0	1	3	7	11	11	9	3	1	0	46
5:00	0	0	2	3	4	5	19	60	123	71	28	7	2	0	324
6:00	0	0	3	4	11	11	35	60	85	76	42	24	4	4	359
7:00	0	0	0	0	3	4	27	78	111	91	62	15	3	1	395
8:00	0	0	4	5	1	14	57	83	115	106	80	13	9	1	488
9:00	0	0	8	6	20	15	28	42	55	63	36	12	3	0	288
10:00	0	0	0	4	4	6	17	30	26	24	7	6	2	0	126
11:00	0	0	0	1	5	7	9	11	35	24	9	7	0	0	108
12:00 PM	0	0	0	2	4	3	6	25	41	33	14	6	3	0	137
1:00	0	0	2	1	7	10	30	31	46	41	24	2	0	1	195
2:00	0	0	0	4	3	2	10	18	23	18	12	5	2	0	97
3:00	0	0	0	0	1	2	8	11	11	15	10	1	0	2	61
4:00	0	0	0	1	3	4	6	5	4	9	6	2	1	0	41
5:00	0	0	0	2	6	2	3	6	3	2	2	0	0	0	26
6:00	0	0	0	0	4	0	3	4	5	4	4	0	0	0	24
7:00	0	0	2	1	0	1	2	1	7	7	3	2	0	0	26
8:00	0	0	0	0	0	1	2	3	8	2	1	0	0	0	17
9:00	0	0	0	0	0	0	11	14	15	4	1	4	0	0	49
10:00	0	0	0	1	0	1	3	3	4	2	2	3	0	0	19
11:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total	0	0	22	35	77	90	282	495	732	605	355	113	33	9	2848
			Percentile	15th	50th	85th	95th								
			Speed	20	25	30	34								
		Mean Speed (Average)		25.8											
		10 MPH Pace Speed		21-30											
		Number in Pace		1948											
		Percent in Pace		68.4%											
		Number > 24 MPH		1847											
		Percent > 24 MPH		64.9%											
Grand Total	0	0	63	84	186	215	549	956	1467	1212	696	221	64	22	5735
Stats			Percentile	15th	50th	85th	95th								
			Speed	19	25	30	34								
		Mean Speed (Average)		25.6											
		10 MPH Pace Speed		21-30											
		Number in Pace		3862											
		Percent in Pace		67.3%											
		Number > 24 MPH		3682											
		Percent > 24 MPH		64.2%											

Location : Lowell Junction Road 96770001
Location : East of Gillette Way
City/State: Andover, MA
Direction: Combined

6/15/2023 Time	0 - 3 MPH	> 3 - 6 MPH	> 6 - 9 MPH	> 9 - 12 MPH	> 12 - 15 MPH	> 15 - 18 MPH	> 18 - 21 MPH	> 21 - 24 MPH	> 24 - 27 MPH	> 27 - 30 MPH	> 30 - 33 MPH	> 33 - 36 MPH	> 36 - 39 MPH	> 39 MPH	Total
12:00 AM	0	0	0	1	0	4	2	4	6	0	4	0	1	0	22
1:00	0	0	0	0	0	7	1	1	3	1	2	0	0	0	15
2:00	0	0	2	1	1	3	2	0	1	0	0	0	1	0	11
3:00	0	0	0	2	1	2	2	4	4	2	2	0	1	0	20
4:00	0	0	1	0	1	4	6	7	11	11	9	3	1	0	54
5:00	0	0	2	3	7	8	31	63	125	73	28	7	2	1	350
6:00	0	0	3	5	18	22	67	80	91	78	42	24	4	4	438
7:00	0	0	0	2	5	14	42	97	120	95	62	15	3	1	456
8:00	0	0	4	5	6	22	70	99	124	113	82	14	9	1	549
9:00	0	0	8	7	32	24	38	51	67	71	38	13	3	0	352
10:00	0	0	0	5	11	13	31	43	30	27	7	6	2	0	175
11:00	0	0	0	2	11	16	42	33	53	34	12	8	1	0	212
12:00 PM	0	0	0	8	16	15	29	54	53	44	16	6	3	0	244
1:00	0	0	2	2	15	27	80	77	75	49	26	3	0	1	357
2:00	0	0	6	7	17	38	74	97	79	49	13	5	3	1	389
3:00	0	0	0	3	12	39	86	107	82	39	18	1	1	2	390
4:00	0	0	0	5	11	42	103	121	71	29	7	4	3	0	396
5:00	0	0	0	2	16	19	44	63	59	29	5	2	0	0	239
6:00	0	0	0	1	6	13	19	30	36	12	8	0	0	0	125
7:00	0	0	2	3	17	20	44	31	27	15	5	3	2	1	170
8:00	0	0	0	0	4	3	4	8	10	3	2	0	0	0	34
9:00	0	0	0	2	3	3	15	19	17	6	2	4	0	0	71
10:00	0	0	0	1	4	11	22	19	17	13	5	3	0	0	95
11:00	0	0	0	1	0	4	2	1	2	0	0	1	0	0	11
Total	0	0	30	68	214	373	856	1109	1163	793	395	122	40	12	5175
			Percentile	15th	50th	85th	95th								
			Speed	18	24	29	32								
		Mean Speed (Average)		24.0											
		10 MPH Pace Speed		18-27											
		Number in Pace		3378											
		Percent in Pace		65.3%											
		Number > 24 MPH		2525											
		Percent > 24 MPH		48.8%											
Grand Total	0	0	72	136	477	741	1697	2274	2349	1593	785	245	76	30	10475
Stats			Percentile	15th	50th	85th	95th								
			Speed	18	24	29	32								
		Mean Speed (Average)		24.0											
		10 MPH Pace Speed		18-27											
		Number in Pace		6823											
		Percent in Pace		65.1%											
		Number > 24 MPH		5078											
		Percent > 24 MPH		48.5%											

GROWTH RATE DATA

General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth Rate
Andover	I-93	North of Route 125	134,844	137,116		135,921	136,213	136,495	142,104	145,189	151,255	148,240	151,424	**1.38%**
Andover	Clark Road	South of Dascomb Road							5,035	5,347	5,438	5,454	5,432	**1.78%**
Andover	I-93	North of Dascomb Road		135,000				140,509	138,230	144,523	145,535	140,454	151,111	**1.17%**
														1.44%

TRIP GENERATION DATA

Institute of Transportation Engineers (ITE)
Trip Generation, 11th Edition
Land Use Code (LUC) 140 - Manufacturing

Average Vehicle Trips Ends vs: 1000 Sq. Feet Gross Floor Area
Independent Variable (X): 136.46

AVERAGE WEEKDAY DAILY

T = 4.75 * (X)
T = 4.75 * 136.46
T = 648.19
T = 648 vehicle trips
with 50% (324 vph) entering and 50% (324 vph) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.68 * (X)
T = 0.68 * 136.46
T = 92.79
T = 93 vehicle trips
with 76% (71 vph) entering and 23% (22 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

T = 0.74 * (X)
T = 0.74 * 136.46
T = 100.98
T = 101 vehicle trips
with 31% (31 vph) entering and 69% (70 vph) exiting.

	COUNT	Day Shift	A	B	C	D	A/C	B/D	A/C/Day
	Shift Hours	8AM-5PM	6AM-6PM	6PM-6AM	6AM-6PM	6PM-6AM	6AM-6PM	6PM-6AM	
Group A	155	20	34	34	34	33	68	67	88
Group B	0	0	0	0	0	0	0	0	0
Group C	59	59	0	0	0	0	0	0	59
Group D	7	7	0	0	0	0	0	0	7
Group E	6	12	0	0	0	0	0	0	12
Group F	15	7	2	2	2	2	4	4	11
Group G	8	2	2	1	2	1	4	2	6
Group H	0	0	0	0	0	0	0	0	0
Group I	0	0	0	0	0	0	0	0	0
Group J	150	0	150	0	0	0	0	0	150
Totals	400	107	188	37	38	36	76	73	333

JOURNEY TO WORK

Postal Code		latitude	longitude
01010	Brimfield,Massachusetts	42.1225482	-72.2005059
01083	WARREN,Massachusetts	42.2125423	-72.191185
01420	Fitchburg,Massachusetts	42.5834228	-71.8022955
01453	Leominster,Massachusetts	42.5250906	-71.759794
01463	Pepperell,Massachusetts	42.6659232	-71.5884363
01510	Clinton,Massachusetts	42.4167635	-71.6829081
01519	Grafton,Massachusetts	42.2070391	-71.6856236
01523	Lancaster,Massachusetts	42.4556452	-71.6731242
01545	Shrewsbury,Massachusetts	42.2959267	-71.7128471
01571	Dudley,Massachusetts	42.0433661	-71.9276033
01602	Worcester,Massachusetts	42.2625932	-71.8022934
01609	Worcester,Massachusetts	42.2625932	-71.8022934
01701	Framingham,Massachusetts	42.279286	-71.4161565
01701	Framingham,Massachusetts	42.279286	-71.4161565
01721	Ashland,Massachusetts	42.2612067	-71.4633956
01801	woburn,Massachusetts	42.4792618	-71.1522765
01801	Woburn,Massachusetts	42.4792618	-71.1522765
01801	Woburn,Massachusetts	42.4792618	-71.1522765
01803	Burlington,Massachusetts	42.5047161	-71.1956205
01803	Burlington,Massachusetts	42.5047161	-71.1956205
01821	Billerica,Massachusetts	42.5584218	-71.2689461
01821	BILLERICA,Massachusetts	42.5584218	-71.2689461
01821	Billerica,Massachusetts	42.5584218	-71.2689461
01826	Dracut,Massachusetts	42.6703687	-71.3020052
01830	haverhill, Massachusetts	42.7762015	-71.0772796
01830	Haverhill,Massachusetts	42.7762015	-71.0772796
01830	Haverhill,Massachusetts	42.7762015	-71.0772796
01832	Haverhill,Massachusetts	42.7762015	-71.0772796
01832	Haverhill,Massachusetts	42.7762015	-71.0772796
01832	Haverhill,Massachusetts	42.7762015	-71.0772796
01833	Georgetown,Massachusetts	42.7250918	-70.9911659
01840	Lawrence,Massachusetts	42.7070354	-71.1631137
01841	lawrence,Massachusetts	42.7070354	-71.1631137
01841	Lawrence,Massachusetts	42.7070354	-71.1631137
01843	Lawrence,Massachusetts	42.7070354	-71.1631137
01843	Lawrence,Massachusetts	42.7070354	-71.1631137
01843	lawrence,Massachusetts	42.7070354	-71.1631137
01843	Lawrence,Massachusetts	42.7070354	-71.1631137
01843	lawrence,Massachusetts	42.7070354	-71.1631137
01843	lawrence,Massachusetts	42.7070354	-71.1631137
01843	Lawrence,Massachusetts	42.7070354	-71.1631137
01844	Methuen,Massachusetts	42.7262016	-71.1908924
01844	Methuen,Massachusetts	42.7262016	-71.1908924

01844	Methuen,Massachusetts	42.7262016	-71.1908924
01844	Methuen,Massachusetts	42.7262016	-71.1908924
01851	Lowell,Massachusetts	42.6334247	-71.3161718
01852	Lowell,Massachusetts	42.6334247	-71.3161718
01852	lowell,Massachusetts	42.6334247	-71.3161718
01854	Lowell,Massachusetts	42.6334247	-71.3161718
01867	reading,Massachusetts	42.5235564	-71.1029921
01867	Reading,Massachusetts	42.5235564	-71.1029921
01867	Reading,Massachusetts	42.5235564	-71.1029921
01867	READING,Massachusetts	42.5235564	-71.1029921
01876	Tewksbury,Massachusetts	42.6106478	-71.2342248
01879	Tyngsboro,Massachusetts	42.6766696	-71.4244224
01880	Wakefield,Massachusetts	42.5018307	-71.0750488
01880	Wakefield,Massachusetts	42.5018307	-71.0750488
01887	Wilmington,Massachusetts	42.5481714	-71.1724467
01901	Lynn,Massachusetts	42.466763	-70.9494938
01902	Lynn,Massachusetts	42.466763	-70.9494938
01902	Lynn,Massachusetts	42.466763	-70.9494938
01902	Lynn,Massachusetts	42.466763	-70.9494938
01904	Lynn,Massachusetts	42.466763	-70.9494938
01904	Lynn,Massachusetts	42.466763	-70.9494938
01904	LYNN,Massachusetts	42.466763	-70.9494938
01904	LYNN,Massachusetts	42.466763	-70.9494938
01905	Lynn,Massachusetts	42.466763	-70.9494938
01907	Swampscott,Massachusetts	42.4709437	-70.9175562
01913	Amesbury,Massachusetts	42.8583925	-70.9300376
01913	Amesbury,Massachusetts	42.8583925	-70.9300376
01940	lynnfield,Massachusetts	42.53869	-71.0465638
01940	Lynnfield,Massachusetts	42.53869	-71.0465638
01960	Peabody,Massachusetts	42.5278731	-70.9286609
01960	Peabody,Massachusetts	42.5278731	-70.9286609
01960	Peabody,Massachusetts	42.5278731	-70.9286609
01970	Salem,Massachusetts	42.5197473	-70.8954626
01970	Salem,Massachusetts	42.5197473	-70.8954626
02021	Canton,Massachusetts	42.1584324	-71.1447732
02021	Canton,Massachusetts	42.1584324	-71.1447732
02035	Foxborough,Massachusetts	42.0653812	-71.2478251
02038	Franklin,Massachusetts	42.0834313	-71.396725
02038	Franklin,Massachusetts	42.0834313	-71.396725
02038	Franklin,Massachusetts	42.0834313	-71.396725
02045	Hull,Massachusetts	42.3020647	-70.9078346
02048	Mansfield,Massachusetts	42.0334565	-71.2190578
02050	Marshfield,Massachusetts	42.0917453	-70.7055871
02056	Norfolk,Massachusetts	42.1195426	-71.3250563

02061	Norwell,Massachusetts	42.1615157	-70.7927832
02062	Norwood,Massachusetts	42.1943909	-71.1989695
02062	NORWOOD,Massachusetts	42.1943909	-71.1989695
02072	Stoughton ,Massachusetts	42.1229099	-71.1092012
02072	Stoughton,Massachusetts	42.1229099	-71.1092012
02072	Stoughton,Massachusetts	42.1229099	-71.1092012
02072	STOUGHTON,Massachusetts	42.1229099	-71.1092012
02081	Walpole,Massachusetts	42.1470851	-71.2517835
02113	Boston,Massachusetts	42.3600825	-71.0588801
02114	BOSTON,Massachusetts	42.3600825	-71.0588801
02114	Boston,Massachusetts	42.3600825	-71.0588801
02115	Boston,Massachusetts	42.3600825	-71.0588801
02118	Boston,Massachusetts	42.3600825	-71.0588801
02119	roxbury,Massachusetts	42.3125672	-71.0898796
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Boston,Massachusetts	42.3600825	-71.0588801
02121	Dochester,Massachusetts	42.2994848	-71.0648529
02122	Boston,Massachusetts	42.3600825	-71.0588801
02122	Boston,Massachusetts	42.3600825	-71.0588801
02122	Dorchester,Massachusetts	42.2994848	-71.0648529
02122	Dorchester,Massachusetts	42.2994848	-71.0648529
02122	Dorchester,Massachusetts	42.2994848	-71.0648529
02122	Dorchester,Massachusetts	42.2994848	-71.0648529
02122-1900	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Boston,Massachusetts	42.3600825	-71.0588801
02124	boston,Massachusetts	42.3600825	-71.0588801
02124	Boston,Massachusetts	42.3600825	-71.0588801
02124	boston,Massachusetts	42.3600825	-71.0588801
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02124	Dorchester,Massachusetts	42.2994848	-71.0648529
02125	Boston,Massachusetts	42.3600825	-71.0588801
02125	Boston,Massachusetts	42.3600825	-71.0588801
02125	Boston,Massachusetts	42.3600825	-71.0588801
02125	Boston,Massachusetts	42.3600825	-71.0588801

02125	Boston,Massachusetts	42.3600825	-71.0588801
02125	Dorchester,Massachusetts	42.2994848	-71.0648529
02125	Dorchester,Massachusetts	42.2994848	-71.0648529
02125	Dorchester,Massachusetts	42.2994848	-71.0648529
02125	Dorchester,Massachusetts	42.2994848	-71.0648529
02126	Mattapan,Massachusetts	42.2771787	-71.093483
02126	Mattapan,Massachusetts	42.2771787	-71.093483
02127	Boston,Massachusetts	42.3600825	-71.0588801
02127	Boston,Massachusetts	42.3600825	-71.0588801
02127	Boston,Massachusetts	42.3600825	-71.0588801
02127	Boston,Massachusetts	42.3600825	-71.0588801
02128	Boston,Massachusetts	42.3600825	-71.0588801
02128	Boston,Massachusetts	42.3600825	-71.0588801
02128	Boston,Massachusetts	42.3600825	-71.0588801
02128	Boston,Massachusetts	42.3600825	-71.0588801
02128	Boston,Massachusetts	42.3600825	-71.0588801
02131	BOSTON,Massachusetts	42.3600825	-71.0588801
02131	Roslindale,Massachusetts	42.2831916	-71.1265469
02132	West Roxbury,Massachusetts	42.2782373	-71.1599757
02134	Allston,Massachusetts	42.3555087	-71.1328247
02136	Hyde Park,Massachusetts	42.2556619	-71.1255855
02136	Hyde park,Massachusetts	42.2556619	-71.1255855
02136	Readville,Massachusetts	42.2384918	-71.1299976
02138	Cambridge,Massachusetts	42.3736158	-71.1097335
02139	Cambridge,Massachusetts	42.3736158	-71.1097335
02139	Cambridge,Massachusetts	42.3736158	-71.1097335
02140	Cambridge,Massachusetts	42.3736158	-71.1097335
02142	Cambridge,Massachusetts	42.3736158	-71.1097335
02142	Cambridge,Massachusetts	42.3736158	-71.1097335
02142	Cambridge,Massachusetts	42.3736158	-71.1097335
02142	Cambridge,Massachusetts	42.3736158	-71.1097335
02143	Somerville,Massachusetts	42.3875968	-71.0994968
02143	Somerville,Massachusetts	42.3875968	-71.0994968
02143	SOMERVILLE,Massachusetts	42.3875968	-71.0994968
02145	somerville,Massachusetts	42.3875968	-71.0994968
02145	Somerville,Massachusetts	42.3875968	-71.0994968
02145	Somerville,Massachusetts	42.3875968	-71.0994968
02148	Malden,Massachusetts	42.4250964	-71.066163
02148	Malden,Massachusetts	42.4250964	-71.066163
02148	MALDEN,Massachusetts	42.4250964	-71.066163
02148	Malden,Massachusetts	42.4250964	-71.066163
02148	Malden,Massachusetts	42.4250964	-71.066163
02148	Malden,Massachusetts	42.4250964	-71.066163
02149	Everett,Massachusetts	42.40843	-71.0536625

02149	EVERETT,Massachusetts	42.40843	-71.0536625
02149	Everett,Massachusetts	42.40843	-71.0536625
02150	Chelsea,Massachusetts	42.3917638	-71.0328284
02150	chelsea,Massachusetts	42.3917638	-71.0328284
02150	Chelsea,Massachusetts	42.3917638	-71.0328284
02150	CHELSEA,Massachusetts	42.3917638	-71.0328284
02150	chelsea,Massachusetts	42.3917638	-71.0328284
02150-4415	Chelsea,Massachusetts	42.3917638	-71.0328284
02151	Revere,Massachusetts	42.4084302	-71.0119948
02151	Revere,Massachusetts	42.4084302	-71.0119948
02151	Revere,Massachusetts	42.4084302	-71.0119948
02152	Winthrop,Massachusetts	42.374776	-70.9862693
02152	winthrop,Massachusetts	42.374776	-70.9862693
02155	BOSTON,Massachusetts	42.3600825	-71.0588801
02155	Medford,Massachusetts	42.4184296	-71.1061639
02155	Medford,Massachusetts	42.4184296	-71.1061639
02155	Medford,Massachusetts	42.4184296	-71.1061639
02155	Medford,Massachusetts	42.4184296	-71.1061639
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	QUINCY,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02169	Quincy,Massachusetts	42.2528772	-71.0022705
02170	QUINCY ,Massachusetts	42.2528772	-71.0022705
02170	QUINCY,Massachusetts	42.2528772	-71.0022705
02170	Quincy,Massachusetts	42.2528772	-71.0022705
02170	quincy,Massachusetts	42.2528772	-71.0022705
02170	Quincy,Massachusetts	42.2528772	-71.0022705
02171	Quincy,Massachusetts	42.2528772	-71.0022705
02171	Quincy,Massachusetts	42.2528772	-71.0022705
02171	Quincy,Massachusetts	42.2528772	-71.0022705
02171	Quincy,Massachusetts	42.2528772	-71.0022705
02171	Quincy,Massachusetts	42.2528772	-71.0022705
02176	melrose,Massachusetts	42.4547874	-71.06547
02176	Melrose,Massachusetts	42.4547874	-71.06547
02176-3765	Melrose,Massachusetts	42.4547874	-71.06547
02180	Stoneham,Massachusetts	42.4816758	-71.1001891

02184	Braintree,Massachusetts	42.2079017	-71.0040013
02184	Braintree,Massachusetts	42.2079017	-71.0040013
02186	Milton,Massachusetts	42.2495321	-71.0661653
02186	Milton,Massachusetts	42.2495321	-71.0661653
02188	Weymouth,Massachusetts	42.2180724	-70.9410356
02188	Weymouth,Massachusetts	42.2180724	-70.9410356
02189	Weymouth,Massachusetts	42.2180724	-70.9410356
02189	WEYMOUTH,Massachusetts	42.2180724	-70.9410356
02190	weymouth,Massachusetts	42.2180724	-70.9410356
02205	BOSTON,Massachusetts	42.3600825	-71.0588801
02301	Brockton ,Massachusetts	42.0834335	-71.0183787
02301	Brockton,Massachusetts	42.0834335	-71.0183787
02301	Brockton,Massachusetts	42.0834335	-71.0183787
02301	Brockton,Massachusetts	42.0834335	-71.0183787
02301	brockton,Massachusetts	42.0834335	-71.0183787
02301	Brockton,Massachusetts	42.0834335	-71.0183787
02301	Brockton,Massachusetts	42.0834335	-71.0183787
02301	Brocton,Massachusetts	42.0834335	-71.0183787
02302	Brockton,Massachusetts	42.0834335	-71.0183787
02302	Brockton,Massachusetts	42.0834335	-71.0183787
02302	Brockton,Massachusetts	42.0834335	-71.0183787
02322	Avon,Massachusetts	42.1306554	-71.0411582
02324	Bridgewater,Massachusetts	41.9903519	-70.9750541
02324	Bridgewater,Massachusetts	41.9903519	-70.9750541
02330	carver,Massachusetts	41.8834363	-70.7625376
02333	East Bridgewater,Massachusetts	42.0334341	-70.9592096
02333	East Bridgewater,Massachusetts	42.0334341	-70.9592096
02339	hanover,Massachusetts	42.1162217	-70.8476708
02339	hanover,Massachusetts	42.1162217	-70.8476708
02341	Hanson,Massachusetts	42.0751892	-70.8800187
02343	Holbrook,Massachusetts	42.144846	-71.014118
02346	Middleboro,Massachusetts	41.8929942	-70.9107708
02351	Abington,Massachusetts	42.1048228	-70.9453218
02351	ABINGTON,Massachusetts	42.1048228	-70.9453218
02359	Pembroke,Massachusetts	42.0714925	-70.8092
02359	Pembroke,Massachusetts	42.0714925	-70.8092
02359	Pembroke,Massachusetts	42.0714925	-70.8092
02359	Pembroke,Massachusetts	42.0714925	-70.8092
02360	Plymouth,Massachusetts	41.9584457	-70.6672621
02360	Plymouth,Massachusetts	41.9584457	-70.6672621
02360	Plymouth,Massachusetts	41.9584457	-70.6672621
02368	Randolph,Massachusetts	42.1619739	-71.042551
02368	Randolph,Massachusetts	42.1619739	-71.042551
02368	Randolph,Massachusetts	42.1619739	-71.042551

02368	Randolph,Massachusetts	42.1619739	-71.042551
02368	randolph,Massachusetts	42.1619739	-71.042551
02368	Randolph,Massachusetts	42.1619739	-71.042551
02368	Randolph,Massachusetts	42.1619739	-71.042551
02368	Randolph,Massachusetts	42.1619739	-71.042551
02370	Rockland,Massachusetts	42.1306563	-70.9161551
02370	Rockland,Massachusetts	42.1306563	-70.9161551
02370	Rockland,Massachusetts	42.1306563	-70.9161551
02370	Rockland,Massachusetts	42.1306563	-70.9161551
02375	Easton,Massachusetts	42.0245442	-71.1286594
02375	Easton,Massachusetts	42.0245442	-71.1286594
02375	Easton,Massachusetts	42.0245442	-71.1286594
02379	West Bridgewater,Massachusetts	42.0189894	-71.0078215
02382	Whitman,Massachusetts	42.0806564	-70.935599
02382	Whitman,Massachusetts	42.0806564	-70.935599
02382	Whitman,Massachusetts	42.0806564	-70.935599
02453	Waltham,Massachusetts	42.3764852	-71.2356113
02474	Arlington,Massachusetts	42.4153925	-71.1564729
02493	Weston,Massachusetts	42.3667625	-71.3031132
02538	East Wareham,Massachusetts	41.7604755	-70.6739673
02558	Onset,Massachusetts	41.7417714	-70.6578104
02645	Harwich,Massachusetts	41.6716498	-70.0622231
02702	Assonet,Massachusetts	41.7959352	-71.0678212
02703	Attleboro,Massachusetts	41.9445441	-71.2856082
02715	Dighton,Massachusetts	41.843859	-71.1567344
02718	E. Taunton,Massachusetts	41.900101	-71.0897674
02721	Fall River,Massachusetts	41.7014912	-71.1550451
02721	Fall River,Massachusetts	41.7014912	-71.1550451
02721	Fall River,Massachusetts	41.7014912	-71.1550451
02721	Fall River,Massachusetts	41.7014912	-71.1550451
02726	Somerset,Massachusetts	41.7695425	-71.1286194
02743	Acushnet,Massachusetts	41.7223696	-70.8952337
02748	S. Dartmouth,Massachusetts	41.6130323	-70.9704787
02748	South Dartmouth,Massachusetts	41.591251	-70.9431633
02760	North Attelboro,Massachusetts	41.9695516	-71.3565439
02767	Raynham,Massachusetts	41.9487077	-71.0731162
02767	Raynham,Massachusetts	41.9487077	-71.0731162
02769	Rehoboth,Massachusetts	41.8470056	-71.2393933
02777	Swansea,Massachusetts	41.748162	-71.1895617
02777	Swansea,Massachusetts	41.748162	-71.1895617
02779	Berkley,Massachusetts	41.8459347	-71.0828222
02780	Taunton,Massachusetts	41.900101	-71.0897674
02780	TAUNTON,Massachusetts	41.900101	-71.0897674
02780	taunton,Massachusetts	41.900101	-71.0897674

02780	Taunton,Massachusetts	41.900101	-71.0897674
02860	Pawtucket,Rhode Island	41.878711	-71.3825558
02860	Pawtucket,Rhode Island	41.878711	-71.3825558
02861	Pawtucket,Rhode Island	41.878711	-71.3825558
02861	Pawtucket,Rhode Island	41.878711	-71.3825558
02865	Lincoln,Rhode Island	41.9110123	-71.4418101
03032	Auburn,New Hampshire	43.0045288	-71.348398
03038	Derry,New Hampshire	42.8806437	-71.3273346
03038	Derry,New Hampshire	42.8806437	-71.3273346
03054	Merrimack,New Hampshire	42.8678693	-71.4948322
03054	Merrimack,New Hampshire	42.8678693	-71.4948322
03063	Nashua,New Hampshire	42.7653662	-71.467566
03076	Pelham,New Hampshire	42.7345339	-71.3245067
03076	Pelham,New Hampshire	42.7345339	-71.3245067
03079	Salem,New Hampshire	42.7885553	-71.2008912
03079	Salem,New Hampshire	42.7885553	-71.2008912
03104	Manchester,New Hampshire	42.9956397	-71.4547891
03106	hooksett,New Hampshire	43.0967213	-71.4651283
03235	Franklin,New Hampshire	43.4442432	-71.6472988
03820	Dover,New Hampshire	43.1978624	-70.8736698
03841	Hampstead,New Hampshire	42.8744882	-71.1809803
03858	Newton,New Hampshire	42.8695335	-71.0345018
03865	Plaistow,New Hampshire	42.8364781	-71.0947805
03865	Plaistow,New Hampshire	42.8364781	-71.0947805
03873	Sandow,New Hampshire	42.928698	-71.1870053
04001	Acton,Maine	43.5233821	-70.9277544
33143	Miami,Massachusetts	42.4072107	-71.3824374

CAPACITY ANALYSIS

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

2024 Baseline Weekday Morning Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	35	0	0	31	302	315
Future Volume (Veh/h)	35	0	0	31	302	315
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	40	0	0	52	328	342
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	551	499	670			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	551	499	670			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	92	100	100			
cM capacity (veh/h)	480	576	930			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	40	52	670
Volume Left	40	0	0
Volume Right	0	0	342
cSH	480	930	1700
Volume to Capacity	0.08	0.00	0.39
Queue Length 95th (ft)	7	0	0
Control Delay (s)	13.2	0.0	0.0
Lane LOS	B		
Approach Delay (s)	13.2	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	30	45	16	299	205	5
Future Volume (Veh/h)	30	45	16	299	205	5
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.89	0.89	0.79	0.79
Hourly flow rate (vph)	43	65	18	336	259	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			43		415	43
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			43		415	43
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		55	99
cM capacity (veh/h)			1498		577	1033

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	43	65	354	265
Volume Left	0	0	18	259
Volume Right	0	65	0	6
cSH	1700	1700	1498	591
Volume to Capacity	0.03	0.04	0.01	0.45
Queue Length 95th (ft)	0	0	1	58
Control Delay (s)	0.0	0.0	0.5	16.0
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	16.0
Approach LOS				C

Intersection Summary			
Average Delay	6.1		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	188	31	287	13	2	48
Future Volume (Veh/h)	188	31	287	13	2	48
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.90	0.90	0.74	0.74
Hourly flow rate (vph)	214	35	319	14	3	65
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	333				789	326
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333				789	326
tC, single (s)	4.2				6.4	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.8
p0 queue free %	82				99	89
cM capacity (veh/h)	1199				298	610

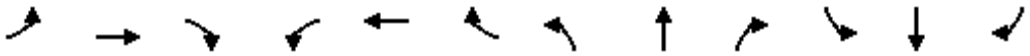
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	249	333	68
Volume Left	214	0	3
Volume Right	0	14	65
cSH	1199	1700	583
Volume to Capacity	0.18	0.20	0.12
Queue Length 95th (ft)	16	0	10
Control Delay (s)	7.7	0.0	12.0
Lane LOS	A		B
Approach Delay (s)	7.7	0.0	12.0
Approach LOS			B

Intersection Summary			
Average Delay	4.2		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	49	1	28	470	6	16
Future Volume (Veh/h)	49	1	28	470	6	16
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.89	0.89	0.61	0.61
Hourly flow rate (vph)	59	1	31	528	10	26
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			60		650	60
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			60		650	60
tC, single (s)			4.2		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.4
p0 queue free %			98		98	97
cM capacity (veh/h)			1512		403	976

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	60	559	36
Volume Left	0	31	10
Volume Right	1	0	26
cSH	1700	1512	700
Volume to Capacity	0.04	0.02	0.05
Queue Length 95th (ft)	0	2	4
Control Delay (s)	0.0	0.6	10.4
Lane LOS		A	B
Approach Delay (s)	0.0	0.6	10.4
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	243	422	69	194	4	55	0	13	0	0	2
Future Volume (Veh/h)	3	243	422	69	194	4	55	0	13	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.86	0.86	0.86	0.86	0.86	0.86	0.50	0.50	0.50
Hourly flow rate (vph)	4	293	508	80	226	5	64	0	15	0	0	4
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	231			801			948	946	547	958	1198	228
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	231			801			948	946	547	958	1198	228
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.5	4.0	3.8
p0 queue free %	100			90			70	100	97	100	100	99
cM capacity (veh/h)	1349			831			215	237	525	214	169	705

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	805	311	79	4
Volume Left	4	80	64	0
Volume Right	508	5	15	4
cSH	1349	831	242	705
Volume to Capacity	0.00	0.10	0.33	0.01
Queue Length 95th (ft)	0	8	34	0
Control Delay (s)	0.1	3.3	26.9	10.1
Lane LOS	A	A	D	B
Approach Delay (s)	0.1	3.3	26.9	10.1
Approach LOS			D	B

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

2024 Baseline Weekday Evening Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	250	1	0	250	53	31
Future Volume (Veh/h)	250	1	0	250	53	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.89	0.89	0.87	0.87
Hourly flow rate (vph)	275	1	0	281	61	36
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	79	97			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	360	79	97			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	57	100	100			
cM capacity (veh/h)	641	987	1509			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	276	281	97
Volume Left	275	0	0
Volume Right	1	0	36
cSH	642	1509	1700
Volume to Capacity	0.43	0.00	0.06
Queue Length 95th (ft)	54	0	0
Control Delay (s)	14.8	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.8	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	232	204	3	28	22	19
Future Volume (Veh/h)	232	204	3	28	22	19
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.70	0.70	0.71	0.71
Hourly flow rate (vph)	249	219	4	40	31	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			249		297	249
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			249		297	249
tC, single (s)			4.1		6.6	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			100		95	97
cM capacity (veh/h)			1328		650	795

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	249	219	44	58
Volume Left	0	0	4	31
Volume Right	0	219	0	27
cSH	1700	1700	1328	1217
Volume to Capacity	0.15	0.13	0.00	0.05
Queue Length 95th (ft)	0	0	0	4
Control Delay (s)	0.0	0.0	0.7	10.3
Lane LOS			A	B
Approach Delay (s)	0.0		0.7	10.3
Approach LOS				B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	29	239	59	3	4	228
Future Volume (Veh/h)	29	239	59	3	4	228
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87
Hourly flow rate (vph)	33	275	66	3	5	262
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	69				408	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	69				408	68
tC, single (s)	4.4				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	98				99	74
cM capacity (veh/h)	1366				588	993

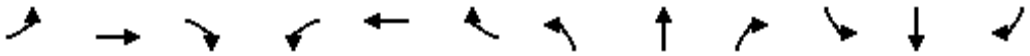
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	308	69	267
Volume Left	33	0	5
Volume Right	0	3	262
cSH	1366	1700	980
Volume to Capacity	0.02	0.04	0.27
Queue Length 95th (ft)	2	0	28
Control Delay (s)	1.0	0.0	10.0
Lane LOS	A		B
Approach Delay (s)	1.0	0.0	10.0
Approach LOS			B

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	377	0	9	39	1	51
Future Volume (Veh/h)	377	0	9	39	1	51
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.75	0.75	0.77	0.77
Hourly flow rate (vph)	414	0	12	52	1	66
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			414		490	414
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			414		490	414
tC, single (s)			4.8		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.8		3.5	3.4
p0 queue free %			99		100	90
cM capacity (veh/h)			868		534	630

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	414	64	67
Volume Left	0	12	1
Volume Right	0	0	66
cSH	1700	868	628
Volume to Capacity	0.24	0.01	0.11
Queue Length 95th (ft)	0	1	9
Control Delay (s)	0.0	1.8	11.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.8	11.4
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	149	50	15	161	0	467	0	47	8	0	25
Future Volume (Veh/h)	3	149	50	15	161	0	467	0	47	8	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.90	0.90	0.90	0.38	0.38	0.38
Hourly flow rate (vph)	3	171	57	18	196	0	519	0	52	21	0	66
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	196			228			504	438	200	490	466	196
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	196			228			504	438	200	490	466	196
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			0	100	94	95	100	92
cM capacity (veh/h)	1389			1352			439	508	847	457	489	840

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	231	214	571	87
Volume Left	3	18	519	21
Volume Right	57	0	52	66
cSH	1389	1352	459	699
Volume to Capacity	0.00	0.01	1.24	0.12
Queue Length 95th (ft)	0	1	581	11
Control Delay (s)	0.1	0.8	153.9	10.9
Lane LOS	A	A	F	B
Approach Delay (s)	0.1	0.8	153.9	10.9
Approach LOS			F	B

Intersection Summary				
Average Delay	80.7			
Intersection Capacity Utilization	59.4%	ICU Level of Service	B	
Analysis Period (min)	15			

2031 No-Build Weekday Morning Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	46	0	0	35	336	380
Future Volume (Veh/h)	46	0	0	35	336	380
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	52	0	0	58	365	413
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	630	572	778			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	630	572	778			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	88	100	100			
cM capacity (veh/h)	432	524	848			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	52	58	778
Volume Left	52	0	0
Volume Right	0	0	413
cSH	432	848	1700
Volume to Capacity	0.12	0.00	0.46
Queue Length 95th (ft)	10	0	0
Control Delay (s)	14.5	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.5	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	40	53	18	362	238	6
Future Volume (Veh/h)	40	53	18	362	238	6
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.89	0.89	0.79	0.79
Hourly flow rate (vph)	58	77	20	407	301	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			58		505	58
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			58		505	58
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		41	99
cM capacity (veh/h)			1479		511	1014

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	58	77	427	309
Volume Left	0	0	20	301
Volume Right	0	77	0	8
cSH	1700	1700	1479	522
Volume to Capacity	0.03	0.05	0.01	0.59
Queue Length 95th (ft)	0	0	1	95
Control Delay (s)	0.0	0.0	0.5	21.4
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	21.4
Approach LOS				C

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	219	35	319	14	2	56
Future Volume (Veh/h)	219	35	319	14	2	56
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.90	0.90	0.74	0.74
Hourly flow rate (vph)	249	40	354	16	3	76
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	370				900	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370				900	362
tC, single (s)	4.2				6.4	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.8
p0 queue free %	79				99	87
cM capacity (veh/h)	1161				245	581

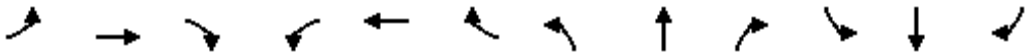
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	289	370	79
Volume Left	249	0	3
Volume Right	0	16	76
cSH	1161	1700	552
Volume to Capacity	0.21	0.22	0.14
Queue Length 95th (ft)	20	0	12
Control Delay (s)	8.0	0.0	12.6
Lane LOS	A		B
Approach Delay (s)	8.0	0.0	12.6
Approach LOS			B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	45.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	64	1	31	562	7	18
Future Volume (Veh/h)	64	1	31	562	7	18
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.89	0.89	0.61	0.61
Hourly flow rate (vph)	77	1	35	631	11	30
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			78		778	78
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			78		778	78
tC, single (s)			4.2		6.6	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.4
p0 queue free %			98		97	97
cM capacity (veh/h)			1489		336	954

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	78	666	41
Volume Left	0	35	11
Volume Right	1	0	30
cSH	1700	1489	639
Volume to Capacity	0.05	0.02	0.06
Queue Length 95th (ft)	0	2	5
Control Delay (s)	0.0	0.7	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	11.0
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	48.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	270	490	85	215	4	66	0	16	0	0	2
Future Volume (Veh/h)	3	270	490	85	215	4	66	0	16	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.86	0.86	0.86	0.86	0.86	0.85	0.50	0.50	0.50
Hourly flow rate (vph)	4	325	590	99	250	5	77	0	19	0	0	4
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	255			915			1082	1081	620	1098	1374	252
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			915			1082	1081	620	1098	1374	252
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.5	4.0	3.8
p0 queue free %	100			87			54	100	96	100	100	99
cM capacity (veh/h)	1322			754			169	190	477	165	127	682

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	919	354	96	4
Volume Left	4	99	77	0
Volume Right	590	5	19	4
cSH	1322	754	193	682
Volume to Capacity	0.00	0.13	0.50	0.01
Queue Length 95th (ft)	0	11	62	0
Control Delay (s)	0.1	4.1	40.7	10.3
Lane LOS	A	A	E	B
Approach Delay (s)	0.1	4.1	40.7	10.3
Approach LOS			E	B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	82.0%	ICU Level of Service	E
Analysis Period (min)	15		

2031 No-Build Weekday Evening Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	307	1	0	277	59	45
Future Volume (Veh/h)	307	1	0	277	59	45
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.89	0.89	0.87	0.87
Hourly flow rate (vph)	337	1	0	311	68	52
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	405	94	120			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	405	94	120			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	44	100	100			
cM capacity (veh/h)	604	968	1480			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	338	311	120
Volume Left	337	0	0
Volume Right	1	0	52
cSH	604	1480	1700
Volume to Capacity	0.56	0.00	0.07
Queue Length 95th (ft)	86	0	0
Control Delay (s)	18.2	0.0	0.0
Lane LOS	C		
Approach Delay (s)	18.2	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	8.0		
Intersection Capacity Utilization	38.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	287	236	3	42	28	21
Future Volume (Veh/h)	287	236	3	42	28	21
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.70	0.70	0.71	0.71
Hourly flow rate (vph)	309	254	4	60	39	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			309		377	309
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			309		377	309
tC, single (s)			4.1		6.6	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.3
p0 queue free %			100		93	96
cM capacity (veh/h)			1263		583	736

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	309	254	64	69
Volume Left	0	0	4	39
Volume Right	0	254	0	30
cSH	1700	1700	1263	1032
Volume to Capacity	0.18	0.15	0.00	0.07
Queue Length 95th (ft)	0	0	0	5
Control Delay (s)	0.0	0.0	0.5	11.0
Lane LOS			A	B
Approach Delay (s)	0.0		0.5	11.0
Approach LOS				B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	25.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	36	265	65	3	4	263
Future Volume (Veh/h)	36	265	65	3	4	263
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87
Hourly flow rate (vph)	41	305	72	3	5	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	75				460	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				460	74
tC, single (s)	4.4				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.5				3.5	3.3
p0 queue free %	97				99	69
cM capacity (veh/h)	1359				546	986

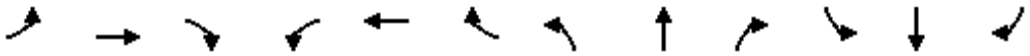
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	346	75	307
Volume Left	41	0	5
Volume Right	0	3	302
cSH	1359	1700	973
Volume to Capacity	0.03	0.04	0.32
Queue Length 95th (ft)	2	0	34
Control Delay (s)	1.2	0.0	10.4
Lane LOS	A		B
Approach Delay (s)	1.2	0.0	10.4
Approach LOS			B

Intersection Summary			
Average Delay	4.9		
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	458	0	10	58	1	57
Future Volume (Veh/h)	458	0	10	58	1	57
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.75	0.75	0.77	0.77
Hourly flow rate (vph)	503	0	13	77	1	74
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			503		606	503
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			503		606	503
tC, single (s)			4.8		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.8		3.5	3.4
p0 queue free %			98		100	87
cM capacity (veh/h)			797		456	561

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	503	90	75
Volume Left	0	13	1
Volume Right	0	0	74
cSH	1700	797	559
Volume to Capacity	0.30	0.02	0.13
Queue Length 95th (ft)	0	1	12
Control Delay (s)	0.0	1.5	12.4
Lane LOS		A	B
Approach Delay (s)	0.0	1.5	12.4
Approach LOS			B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	34.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	165	63	20	179	0	540	0	60	8	0	25
Future Volume (Veh/h)	3	165	63	20	179	0	540	0	60	8	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.90	0.90	0.90	0.38	0.38	0.38
Hourly flow rate (vph)	3	190	72	24	218	0	600	0	67	21	0	66
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	218			262			564	498	226	565	534	218
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			262			564	498	226	565	534	218
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			98			0	100	92	95	100	92
cM capacity (veh/h)	1364			1314			398	467	818	396	446	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	265	242	667	87
Volume Left	3	24	600	21
Volume Right	72	0	67	66
cSH	1364	1314	419	650
Volume to Capacity	0.00	0.02	1.59	0.13
Queue Length 95th (ft)	0	1	941	12
Control Delay (s)	0.1	0.9	301.0	11.4
Lane LOS	A	A	F	B
Approach Delay (s)	0.1	0.9	301.0	11.4
Approach LOS			F	B

Intersection Summary			
Average Delay	160.2		
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

2031 Build Weekday Morning Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	47	0	0	35	336	405
Future Volume (Veh/h)	47	0	0	35	336	405
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.60	0.60	0.92	0.92
Hourly flow rate (vph)	53	0	0	58	365	440
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	643	585	805			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	643	585	805			
tC, single (s)	6.5	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.3	2.2			
p0 queue free %	88	100	100			
cM capacity (veh/h)	425	515	828			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	53	58	805
Volume Left	53	0	0
Volume Right	0	0	440
cSH	425	828	1700
Volume to Capacity	0.12	0.00	0.47
Queue Length 95th (ft)	11	0	0
Control Delay (s)	14.7	0.0	0.0
Lane LOS	B		
Approach Delay (s)	14.7	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	41	59	18	387	321	6
Future Volume (Veh/h)	41	59	18	387	321	6
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.69	0.69	0.89	0.89	0.79	0.79
Hourly flow rate (vph)	59	86	20	435	406	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		534	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		534	59
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		17	99
cM capacity (veh/h)			1477		491	1012

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	59	86	455	414
Volume Left	0	0	20	406
Volume Right	0	86	0	8
cSH	1700	1700	1477	498
Volume to Capacity	0.03	0.05	0.01	0.83
Queue Length 95th (ft)	0	0	1	206
Control Delay (s)	0.0	0.0	0.5	38.6
Lane LOS			A	E
Approach Delay (s)	0.0		0.5	38.6
Approach LOS				E

Intersection Summary			
Average Delay	16.0		
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	302	35	319	14	2	62
Future Volume (Veh/h)	302	35	319	14	2	62
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.90	0.90	0.74	0.74
Hourly flow rate (vph)	343	40	354	16	3	84
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	370				1088	362
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	370				1088	362
tC, single (s)	4.2				6.4	6.7
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.8
p0 queue free %	70				98	86
cM capacity (veh/h)	1161				170	582

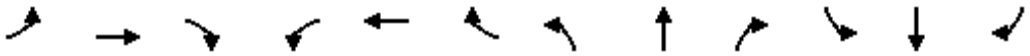
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	383	370	87
Volume Left	343	0	3
Volume Right	0	16	84
cSH	1161	1700	537
Volume to Capacity	0.30	0.22	0.16
Queue Length 95th (ft)	31	0	14
Control Delay (s)	8.7	0.0	13.0
Lane LOS	A		B
Approach Delay (s)	8.7	0.0	13.0
Approach LOS			B

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	70	1	32	669	7	19
Future Volume (Veh/h)	70	1	32	669	7	19
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.89	0.89	0.61	0.61
Hourly flow rate (vph)	84	1	36	752	11	31
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			85		908	84
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		908	84
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			98		96	97
cM capacity (veh/h)			1462		280	932

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	85	788	42
Volume Left	0	36	11
Volume Right	1	0	31
cSH	1700	1462	579
Volume to Capacity	0.05	0.02	0.07
Queue Length 95th (ft)	0	2	6
Control Delay (s)	0.0	0.7	11.7
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	11.7
Approach LOS			B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	270	511	89	215	4	67	0	16	0	0	2
Future Volume (Veh/h)	3	270	511	89	215	4	67	0	16	0	0	2
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.86	0.86	0.86	0.86	0.86	0.86	0.50	0.50	0.50
Hourly flow rate (vph)	4	325	616	103	250	5	78	0	19	0	0	4
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	255			941			1104	1102	633	1118	1408	252
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	255			941			1104	1102	633	1118	1408	252
tC, single (s)	4.1			4.1			7.2	6.5	6.3	7.1	6.5	6.7
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.6	4.0	3.4	3.5	4.0	3.8
p0 queue free %	100			86			52	100	96	100	100	99
cM capacity (veh/h)	1322			737			163	183	469	159	120	682

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	945	358	97	4
Volume Left	4	103	78	0
Volume Right	616	5	19	4
cSH	1322	737	186	682
Volume to Capacity	0.00	0.14	0.52	0.01
Queue Length 95th (ft)	0	12	66	0
Control Delay (s)	0.1	4.3	43.5	10.3
Lane LOS	A	A	E	B
Approach Delay (s)	0.1	4.3	43.5	10.3
Approach LOS			E	B

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	83.6%	ICU Level of Service	E	
Analysis Period (min)	15			

2031 Build Weekday Evening Peak Hour

Movement	EBL	EBR	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Volume (veh/h)	332	1	0	277	59	63
Future Volume (Veh/h)	332	1	0	277	59	63
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.89	0.89	0.87	0.87
Hourly flow rate (vph)	365	1	0	311	68	72
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	415	104	140			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	415	104	140			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	39	100	100			
cM capacity (veh/h)	596	956	1456			

Direction, Lane #	EB 1	NE 1	SW 1
Volume Total	366	311	140
Volume Left	365	0	0
Volume Right	1	0	72
cSH	596	1456	1700
Volume to Capacity	0.61	0.00	0.08
Queue Length 95th (ft)	104	0	0
Control Delay (s)	20.1	0.0	0.0
Lane LOS	C		
Approach Delay (s)	20.1	0.0	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	9.0		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	312	319	3	60	90	21
Future Volume (Veh/h)	312	319	3	60	90	21
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.70	0.70	0.71	0.71
Hourly flow rate (vph)	335	343	4	86	127	30
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						2
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			335		429	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			335		429	335
tC, single (s)			4.1		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.3
p0 queue free %			100		77	96
cM capacity (veh/h)			1236		557	712

Direction, Lane #	EB 1	EB 2	WB 1	NB 1
Volume Total	335	343	90	157
Volume Left	0	0	4	127
Volume Right	0	343	0	30
cSH	1700	1700	1236	689
Volume to Capacity	0.20	0.20	0.00	0.23
Queue Length 95th (ft)	0	0	0	22
Control Delay (s)	0.0	0.0	0.4	12.8
Lane LOS			A	B
Approach Delay (s)	0.0		0.4	12.8
Approach LOS				B

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	29.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	98	265	65	3	4	346
Future Volume (Veh/h)	98	265	65	3	4	346
Sign Control		Free	Free		Yield	
Grade		0%	0%		0%	
Peak Hour Factor	0.87	0.87	0.90	0.90	0.87	0.87
Hourly flow rate (vph)	113	305	72	3	5	398
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	75				604	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	75				604	74
tC, single (s)	4.3				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.4				3.5	3.3
p0 queue free %	92				99	60
cM capacity (veh/h)	1412				427	986

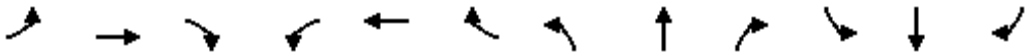
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	418	75	403
Volume Left	113	0	5
Volume Right	0	3	398
cSH	1412	1700	970
Volume to Capacity	0.08	0.04	0.42
Queue Length 95th (ft)	7	0	52
Control Delay (s)	2.7	0.0	11.3
Lane LOS	A		B
Approach Delay (s)	2.7	0.0	11.3
Approach LOS			B

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	54.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	565	0	11	137	1	58
Future Volume (Veh/h)	565	0	11	137	1	58
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.75	0.75	0.77	0.77
Hourly flow rate (vph)	621	0	15	183	1	75
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			621		834	621
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			621		834	621
tC, single (s)			4.8		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.8		3.5	3.4
p0 queue free %			98		100	84
cM capacity (veh/h)			702		334	477

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	621	198	76
Volume Left	0	15	1
Volume Right	0	0	75
cSH	1700	702	474
Volume to Capacity	0.37	0.02	0.16
Queue Length 95th (ft)	0	2	14
Control Delay (s)	0.0	1.0	14.0
Lane LOS		A	B
Approach Delay (s)	0.0	1.0	14.0
Approach LOS			B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	40.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	165	78	23	179	0	561	0	64	8	0	25
Future Volume (Veh/h)	3	165	78	23	179	0	561	0	64	8	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.87	0.87	0.82	0.82	0.82	0.90	0.90	0.90	0.38	0.38	0.38
Hourly flow rate (vph)	3	190	90	28	218	0	623	0	71	21	0	66
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	218			280			581	515	235	586	560	218
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	218			280			581	515	235	586	560	218
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			98			0	100	91	94	100	92
cM capacity (veh/h)	1364			1294			386	455	809	380	429	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	283	246	694	87
Volume Left	3	28	623	21
Volume Right	90	0	71	66
cSH	1364	1294	408	640
Volume to Capacity	0.00	0.02	1.70	0.14
Queue Length 95th (ft)	0	2	1048	12
Control Delay (s)	0.1	1.1	349.1	11.5
Lane LOS	A	A	F	B
Approach Delay (s)	0.1	1.1	349.1	11.5
Approach LOS			F	B

Intersection Summary			
Average Delay	186.0		
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		