

Transportation Impact Assessment

Proposed Grove Street Redevelopment
485 Grove Street
Worcester, Massachusetts

Prepared for:

Colony Retirements Homes, Inc.
101 Chadwick Street
Worcester, Massachusetts

March 2024

Prepared by:

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EXECUTIVE SUMMARY

DESCRIPTION OF PROJECT

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) to identify traffic impacts associated with a proposed residential development to be located at 485 Grove Street in Worcester, Massachusetts (the “Project”). The purpose of this TIA is to review existing and future traffic conditions in the vicinity of the site, determine the traffic 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 traffic impact.

PROPOSED PROJECT

The site is bounded by Grove Street (Route 122A) to the north, Chadwick Street and single-family residential homes to the south, single-family residential homes to the east, and the Forest Grove Middle School to the west. Currently, the site contains 13 residential buildings providing a total of 139 senior housing units. The site currently has three curb cuts onto Route 122A. The Project entails razing the existing buildings and constructing four residential buildings consisting of a total of 220 senior housing units. The site will provide 165 parking spaces, which complies with the City of Worcester zoning requirements. Site access is proposed to be provided via four curb cuts onto Route 122A.

EXISTING CONDITIONS

A comprehensive field inventory was conducted to collect existing roadway geometrics, traffic volumes, operating characteristics, speed limits, and sight distances, as well as land use information. Traffic volumes were collected in November 2023 at the intersections expected to receive the traffic impact from the Project. The study area locations were discussed with representatives of the Worcester Department of Transportation and Mobility (DTM). These are listed below:

- Route 122A at Chadwick Street
- Route 122A at West Way (site driveway)
- Route 122A at Judson Road/Mid Way (site driveway)
- Route 122A at East Way (site driveway)

- Route 122A at Rosemont Road
- Chadwick Street at Rosemont Road

FUTURE CONDITIONS

Traffic volumes within the study area were projected to 2030, which reflects 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 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-GENERATED TRAFFIC

The Project is expected to generate 234 new vehicle trips on an average weekday (two-way, 24-hour volume), with 16 new vehicle trips (6 entering and 10 exiting) expected during the weekday morning peak hour and 20 new vehicle trips (11 entering and 9 exiting) expected during the weekday evening peak hour.

Project-related traffic-volume increases external to the study area relative to 2030 No-Build conditions are anticipated to range from 1 to 13 vehicles or 0.5 to 1.1 percent during the peak periods

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 four curb cuts onto Route 122A. The following recommendations are offered with respect to the design and operation of the Project site driveways:

- 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 (snow drifts created by snowplows) within sight triangle areas of the Project site driveways should be promptly removed where such accumulations would impede sightlines.

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

Transportation Demand Management (TDM) Plan

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

- A “welcome packet” should be provided to residents and employees detailing available public transportation services, bicycle, micro-mobility devices, walking alternatives, and available commuter options.
- In order to encourage the use of public transportation, the property management team will make available public transportation schedules which will be posted in a centralized location for the residents.
- The property management team will provide information on available pedestrian and bicycle facilities in the vicinity of the Project site. This information will be posted in a centralized location.

CONCLUSIONS

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

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) in order to identify the traffic impacts associated with the proposed residential development to be located at 485 Grove Street in Worcester, Massachusetts. This report identifies and analyzes existing and future traffic conditions both with and without the Project and reviews access requirements, potential off-site improvements, and safety considerations.

STUDY METHODOLOGY

This study was prepared in coordination with the Worcester Department of Transportation and Mobility (DTM) and in accordance with the State guidelines for TIAs and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway 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 address traffic and safety issues, if any are necessary, based on the results from stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in November 2023. The field investigation consisted of an inventory of existing roadway geometrics; 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 roadway which provides access to the Project, as well as the intersections which are expected to accommodate the majority of Project-related traffic. The study area locations were discussed with representations of the Worcester Department of Transportation and Mobility (DTM). The study area is listed below and graphically depicted on Figure 1.

- Route 122A at Chadwick Street
- Route 122A at West Way (site driveway)
- Route 122A at Judson Road/Mid Way (site driveway)
- Route 122A at East Way (site driveway)
- Route 122A at Rosemont Road
- Chadwick Street at Rosemont Road

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

GEOMETRY

Roadway

Route 122A

Route 122A is classified as an urban principal arterial roadway under City jurisdiction. Route 122A runs in a general east-to-west alignment throughout the study area and provides one general-purpose travel lane in each direction separated by a double-yellow centerline with exclusive turn lanes provided at some intersections. Land uses along Route 122A throughout the study area generally consist of commercial uses, residential uses, and open and wooded areas.

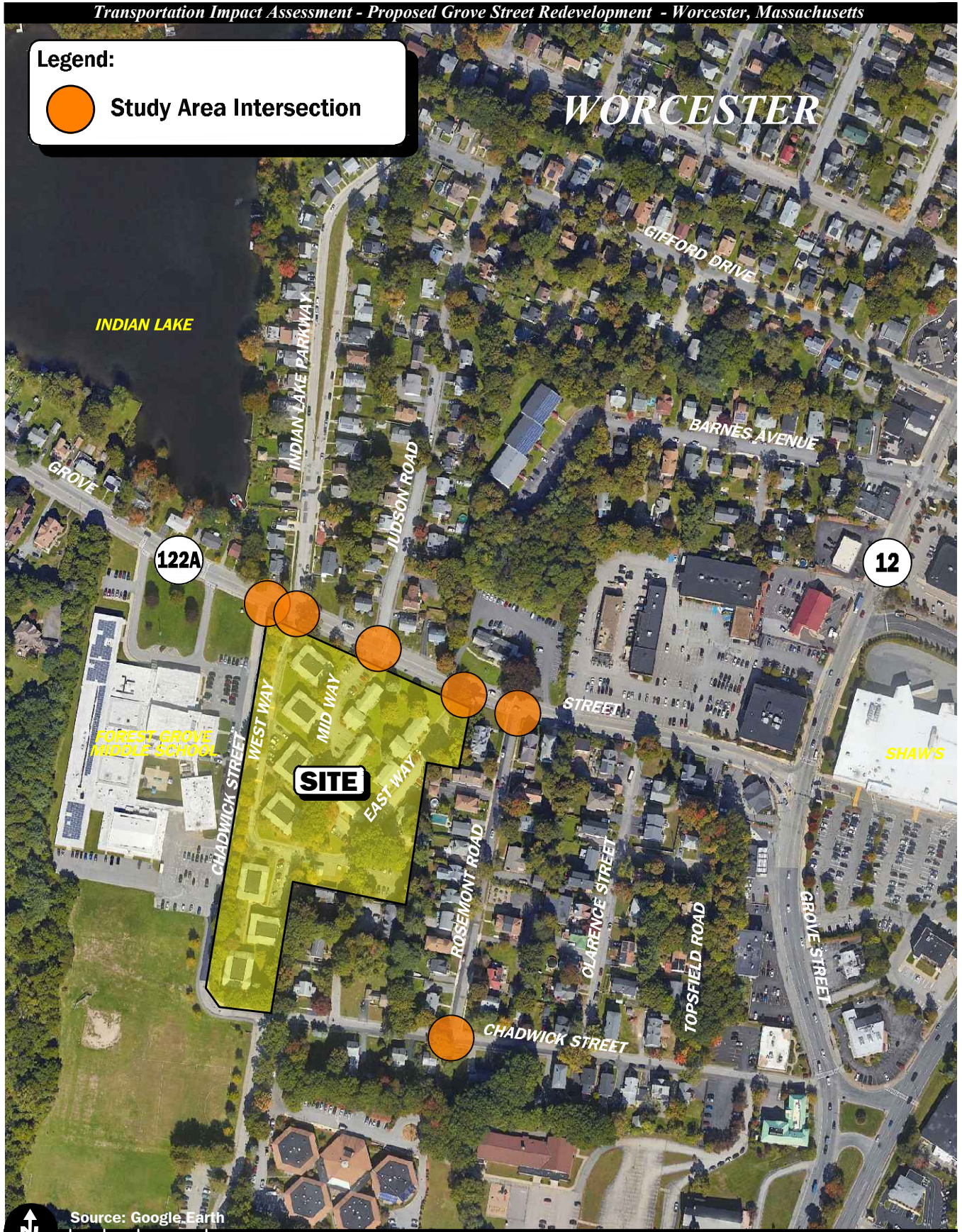
Intersections

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

Legend:

Study Area Intersection

WORCESTER



Source: Google Earth
0 150 300 Scale in Feet

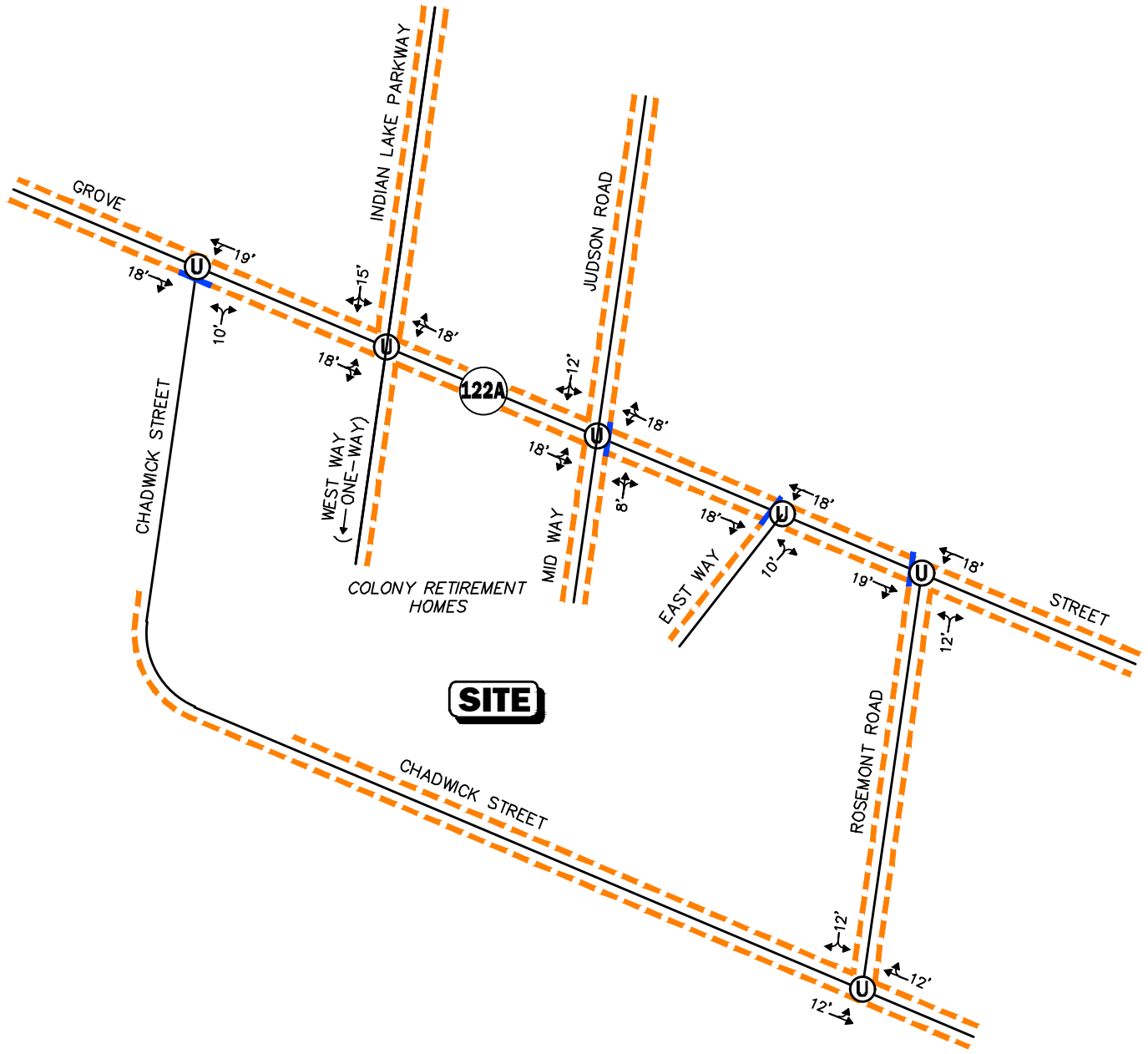
Figure 1

Site Location and Study Area Map



Legend:

- ⊕ Unsignalized Intersection
- Sidewalk
- Crosswalk
- xx' ↔ Lane Use and Travel Lane Width



North Arrow
Not To Scale



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

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EXISTING TRAFFIC VOLUMES

In order to establish base traffic-volume demands and flow patterns within the study area, manual turning movement counts (TMCs) were completed in November 2023. 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.

Traffic-Volume Adjustments

In order to develop 2023 Existing traffic-volume conditions, Massachusetts Department of Transportation (MassDOT) weekday seasonal factors for Urban Groups 3 (other principal arterials) were reviewed.² Based on a review of this data, it was determined that traffic volumes for the month of November are *above* average-month conditions. As such, the traffic volumes were not adjusted in order to be representative of average-month conditions.

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, Route 122A was observed to carry approximately 10,738 vehicles per day (vpd) with 1,109 vehicles per hour (vph) during the weekday morning peak hour and 1,042 vph during the weekday evening peak hour. During the weekday morning peak hour, 56 percent of the traffic is traveling eastbound and during the weekday evening peak hour, 64 percent of the traffic is traveling westbound. A majority of the study area intersections were observed to have a morning peak hour from 7:45 to 8:45 AM and an evening peak hour from 4:30 to 5:30 PM. The existing 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
2023 EXISTING ROADWAY TRAFFIC-VOLUME SUMMARY**

Location	Weekday	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Daily Volume (vpd) ^a	Volume (vph) ^b	Percent of Daily Traffic ^c	Predominant Flow	Volume (vph)	Percent of Daily Traffic	Predominant Flow
Route 122A, west of East Way	10,738	1,109	10.3	56.4% EB	1,042	9.7	63.6% WB

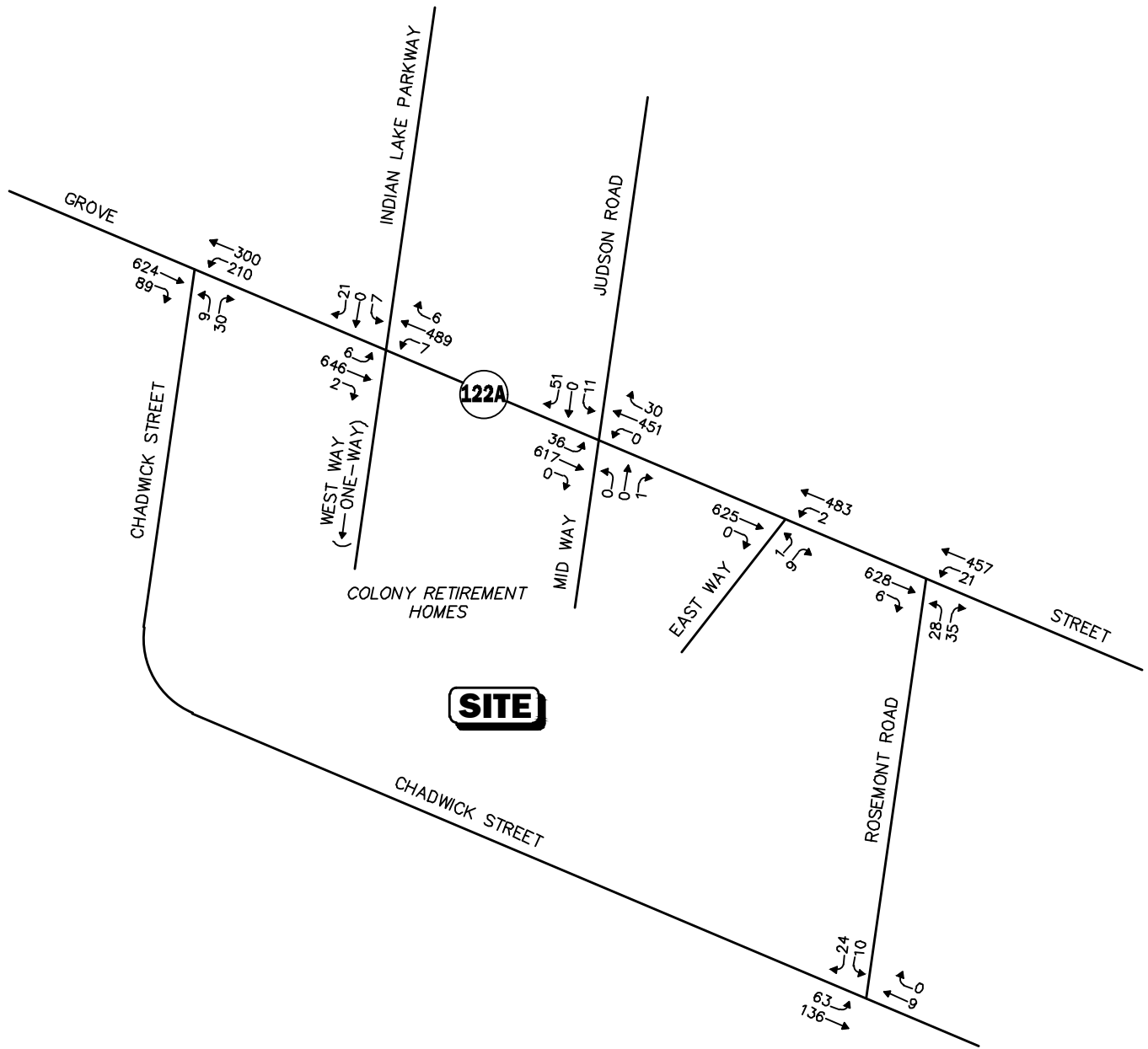
^aTwo-way daily traffic expressed in vehicles per day. Based on automatic traffic recorder counts collected in November 2023.

^bTwo-way peak-hour volume expressed in vehicles per hour.

^cThe percent of daily traffic that occurs during the peak hour. EB = eastbound; WB = westbound.

²MassDOT statewide Traffic Data Collection; 2019 Weekday Seasonal Factors, Groups U3.

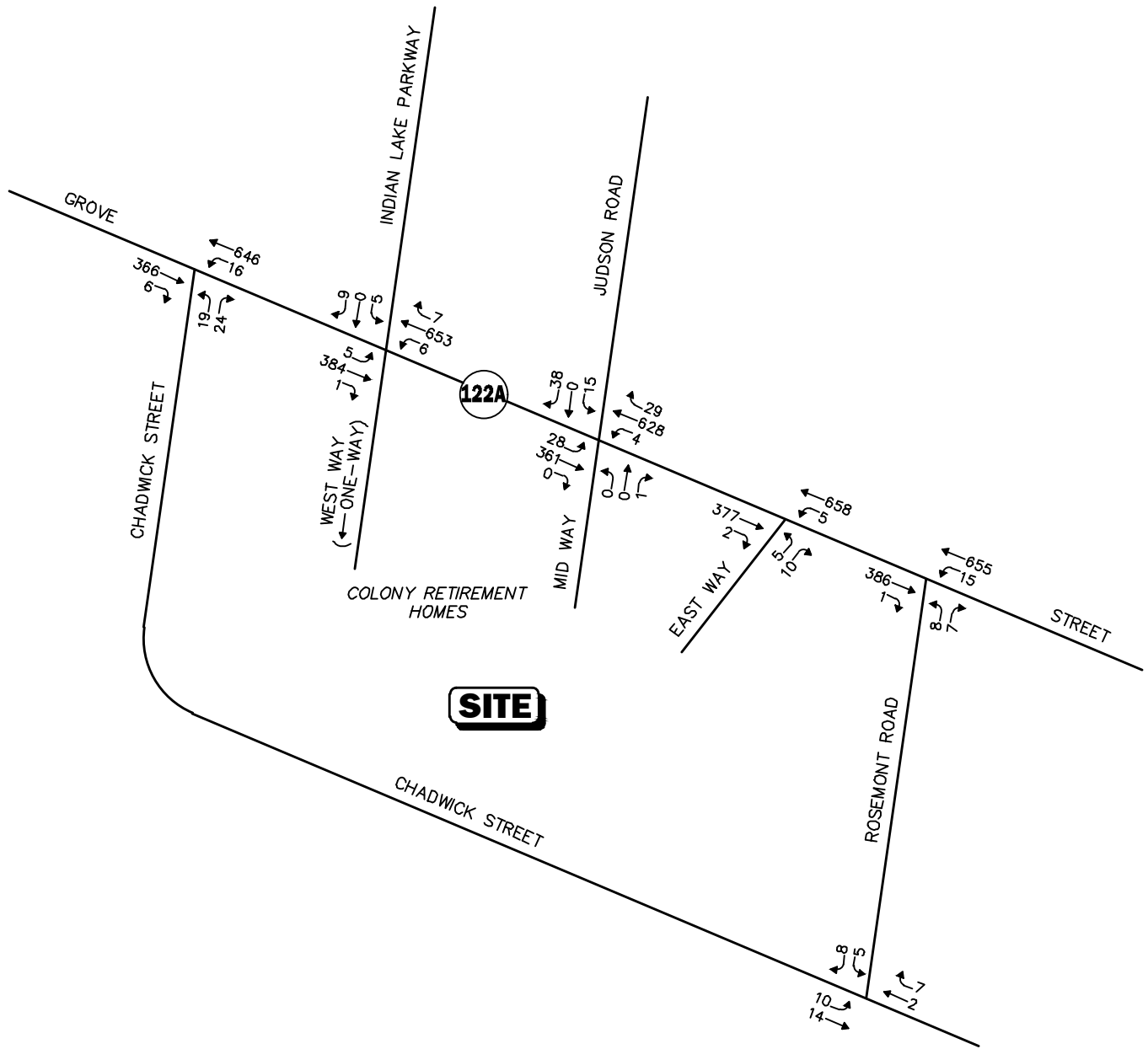
³25% Design Submission Guidelines; MassDOT Highway Division, Traffic and Safety Engineering; Revised May 31, 2022.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale **Figure 3**



2023 Existing Weekday Morning Peak-Hour Traffic Volumes



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale **Figure 4**



**2023 Existing
 Weekday Evening
 Peak-Hour Traffic Volumes**

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PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in November 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. Sidewalks are provided along both sides of Route 122A, Rosemont Road, Indian Lake Parkway, and Judson Road; along both sides of Chadwick Street east of Rosemont Road, on the north side for 375 feet and the south side for 745 feet west of Rosemont Road. There are sidewalks along the east side of West Way and Mid Way and on the west side of East Way. Crosswalks are provided across the Route 122A west approach of the intersection of Route 122A at Rosemont Road, across the Route 122A west approach of the intersection of Route 122A at East Way, across the Route 122A east approach of the intersection of Route 122A at Judson Road and Mid Way, and across the Chadwick Street approach of the intersection of Route 122A at Chadwick Street.

AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE

The sidewalk and crosswalks along Route 122A were inventoried for ADA compliance as asked by the City of Worcester. Based on these inventories there are several points on the sidewalk where the width is limited due to light poles in the middle of the sidewalk and narrow walls. There are also points where there are deep depressions in the sidewalks. All of the crosswalks across Route 122A have tactile warning panels on the north side of the crosswalk but no panels on the south side.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by the Worcester Regional Transit Authority (WRTA). The WRTA provides fixed-route services for several bus routes with a bus stop at the intersection of Route 122A at West Boylston Street, which is located approximately 0.2 miles (a 4-minute walk) to the east of the Project site. Table 2 summarizes the characteristics of these services. Currently the WRTA is Fare free through June 2024. The schedules for the fixed-route services are provided in the Appendix.

Table 2
PUBLIC TRANSPORTATION SERVICES

Service	Weekday		Saturday		Sunday	
	Hours of Operation	Headway (minutes)	Hours of Operation	Headway (minutes)	Hours of Operation	Headway (minutes)
WRTA: Route 30	5:30 AM – 11:15 PM	15-45	5:50 AM – 9:35 PM	50-70	11:00 AM – 6:00 PM	60
WRTA: Route 31	6:15 AM – 10:11 PM	40-80	8:25 AM – 5:05 PM	40-80	N/A	N/A
WRTA: Route 825	6:15 AM – 8:45 PM	75-85	N/A	N/A	N/A	N/A

^aBased on latest schedule and route information available from WRTA.

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 Route 122A at Indian Lake Parkway and West Way experienced 4 accidents over the five-year review period, averaging 0.8 accidents per year. The majority of the accidents were angled or rear-end collisions (4 out of 4), occurred on dry pavement (3 out of 4), during the night, on a lighted roadway (2 out of 4), in clear weather (2 out of 4), and caused property damage only (3 out of 4). The intersection of Route 122A at Judson Road and Mid Way experienced 3 accidents over the five-year review period, averaging 0.6 accidents per year. The majority of the accidents were rear-end collisions (2 out of 3), occurred on dry pavement (2 out of 3), during daylight (2 out of 3), in clear or cloudy, or snowy weather (3 out of 3), and caused non-fatal injuries (2 out of 3). All other intersections within the study area had no accidents reported over the 5-year review period. No fatalities were reported over the five-year period reviewed. The crash rates for the intersections were observed to be lower than the MassDOT District 3 crash rates for unsignalized intersections.

Table 3
MOTOR VEHICLE CRASH DATA SUMMARY

Scenario	Route 122A at Chadwick St	Route 122A at Indian Lake Prkwy and West Way	Route 122A at Judson Rd and Mid Way	Route 122A at East Way	Route 122A at Rosemont Rd	Rosemont Rd at Chadwick St
<i>Year:</i>						
2016	0	0	0	0	0	0
2017	0	1	0	0	0	0
2018	0	1	1	0	0	0
2019	0	0	1	0	0	0
<u>2020</u>	<u>0</u>	<u>2</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0
Average ^a	0.0	0.8	0.6	0.0	0.0	0.0
Crash Rate ^b	0.00	0.18	0.13	0.00	0.00	0.00
Significant ^c	No	No	No	No	No	No
<i>Type:</i>						
Angle	0	2	1	0	0	0
Rear-End	0	2	2	0	0	0
Head-On	0	0	0	0	0	0
Sideswipe	0	0	0	0	0	0
Fixed Object	0	0	0	0	0	0
Pedestrian	0	0	0	0	0	0
Bicyclist	0	0	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0
<i>Weather Conditions:</i>						
Clear	0	2	1	0	0	0
Cloudy/Rain	0	1	1	0	0	0
Snow/Ice	0	1	0	0	0	0
Fog	0	0	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0
<i>Lighting Conditions:</i>						
Daylight	0	1	2	0	0	0
Dawn/Dusk	0	1	0	0	0	0
Dark (lit)	0	2	1	0	0	0
Dark (unlit)	0	0	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0
<i>Pavement Conditions :</i>						
Dry	0	3	2	0	0	0
Wet	0	0	1	0	0	0
Snow/Ice	0	1	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0
<i>Severity:</i>						
Property Damage Only	0	3	1	0	0	0
Personal Injury	0	1	2	0	0	0
Fatality	0	0	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	4	3	0	0	0

^aAverage number of crashes over a five-year period.

^bCrash rate per million entering vehicles (mev).

^cSignificant if crash rate > 0.61 for unsignalized intersections (MassDOT District 3 rates).

Source: MassDOT Crash Data, 2016 through 2020.

VEHICLE SPEEDS

Existing vehicle speeds along Route 122A, west of East Way, were recorded to determine the average and 85th percentile vehicle speeds. The speed limit on Route 122A is posted at 30 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	85 th Percentile Speed ^a
<i>Route 122A, west of East Way:</i>		
Eastbound	30	34
Westbound	26	30

^aThe 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 Route 122A was 30 mph and the 85th percentile speed recorded was 34 mph, which is 4 mph above the posted speed limit. The average speed recorded westbound was 26 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, existing traffic volumes in the study area were projected to the year 2030. Traffic volumes on the roadway network at that time, in the absence of the Project (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others expected to be completed by 2030. Inclusion of these factors resulted in the development of 2030 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2030 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 existing traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

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 and other area traffic studies, it was determined that the traffic volumes are increasing in the area by approximately 0.39 percent per year on average. Therefore, a 1.0 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 City of Worcester 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, no development projects are planned within the study area.

Planned Roadway Improvements

The City of Worcester 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 2030 No-Build peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2023 Existing peak-hour traffic volumes. The resulting 2030 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 razing the existing buildings and constructing four senior housing buildings consisting of 220 units. In order to develop the traffic characteristics of the proposed Project, trip-generation statistics published by the Institute of Transportation Engineers (ITE)⁴ for Land Use Code (LUC) 252, *Senior Housing - Multifamily* was used.

Since the existing site is a senior housing development, a comparison between the existing count information for the site and ITE data was conducted. This is shown in Table 5.

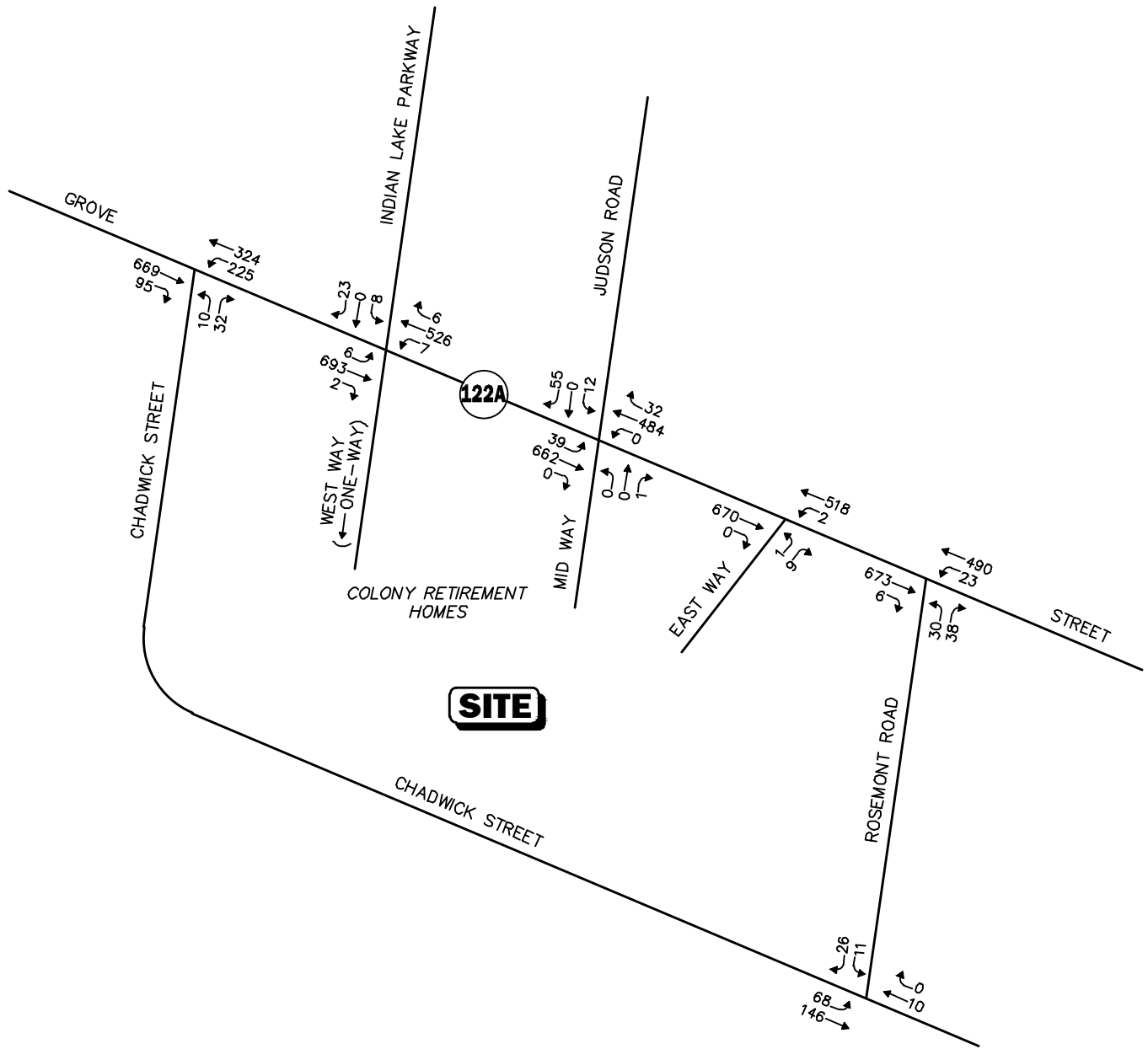
Table 5
PEAK-HOUR TRIP COMPARISON

<u>Time Period/ Directional Distribution</u>	<u>Observed Vehicle Trips^a</u>	<u>ITE Vehicle Trips^b</u>
<i>Weekday Morning Peak Hour:</i>		
Entering	11	9
<u>Exiting</u>	<u>11</u>	<u>18</u>
Total	22	27
<i>Weekday Evening Peak Hour:</i>		
Entering	18	20
<u>Exiting</u>	<u>16</u>	<u>15</u>
Total	34	35

^aBased on counts conducted by VAI, November 2023.

^bBased on ITE LUC 252, Senior Housing – Multifamily, 139 units.

⁴*Trip Generation*, 11th Edition; Institute of Transportation Engineers; Washington, DC; 2021.

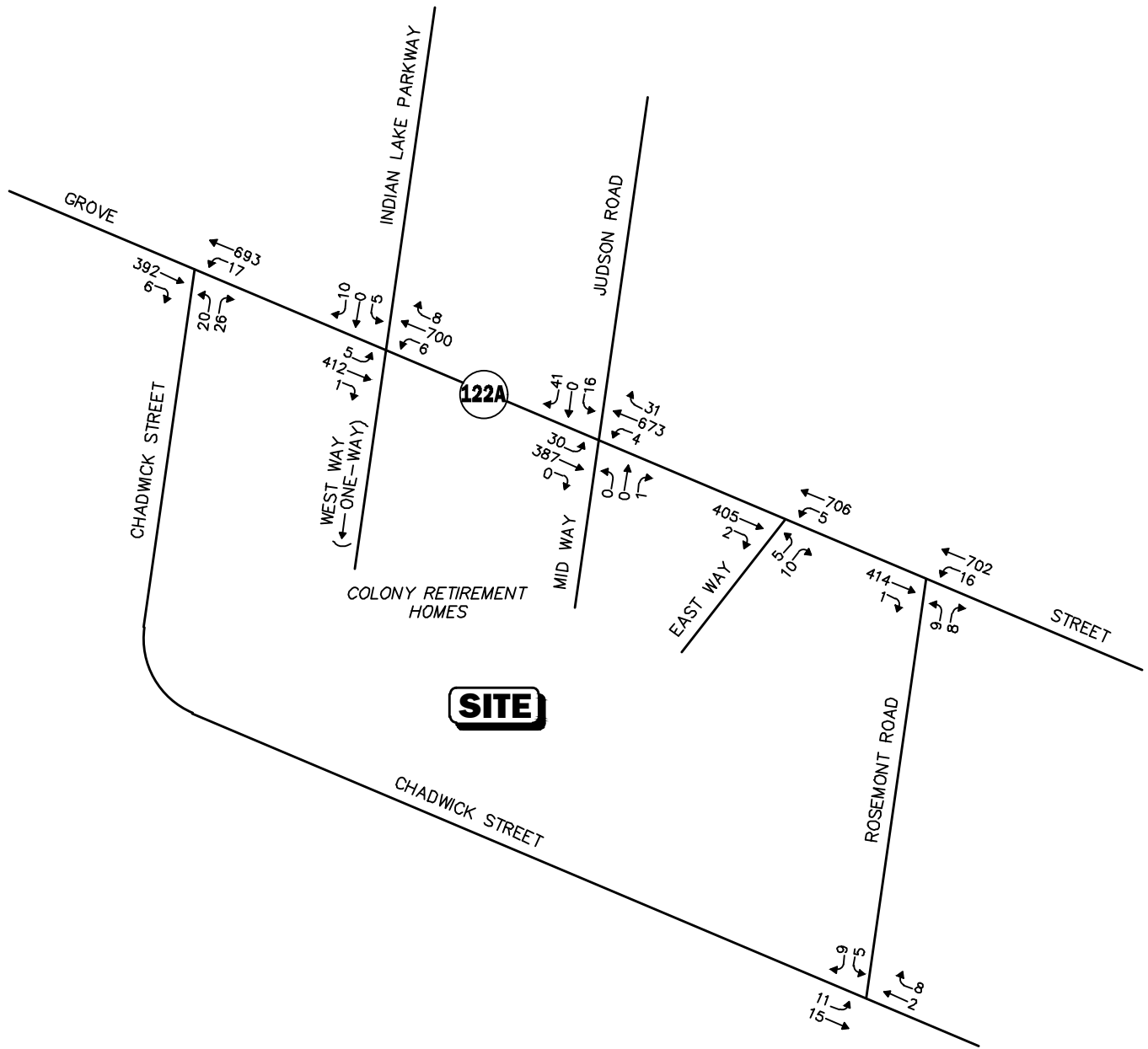


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale **Figure 5**



**2030 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**



**2030 No-Build
 Weekday Evening
 Peak-Hour Traffic Volumes**

As shown in Table 5, the site generates vehicle trips similar to those indicated by the ITE. Therefore, the ITE data was determined to be reasonable to use for the estimate of the trip increase due to the expansion. This is shown in Table 6.

**Table 6
PROPOSED SITE TRIP-GENERATION SUMMARY**

Time Period/ Directional Distribution	ITE Existing ^a Vehicle Trips (A)	ITE Proposed ^b Vehicle Trips (B)	Change in Trips (C=B-A)
Weekday Daily	428	662	234
<i>Weekday Morning Peak Hour:</i>			
Entering	9	15	6
<u>Exiting</u>	<u>18</u>	<u>28</u>	<u>10</u>
Total	27	43	16
<i>Weekday Evening Peak Hour:</i>			
Entering	20	31	11
<u>Exiting</u>	<u>15</u>	<u>24</u>	<u>9</u>
Total	35	55	20

^aBased on ITE LUC 252, *Senior Housing - Multifamily*; 139 units.

^bBased on ITE LUC 252, *Senior Housing - Multifamily*; 220 units.

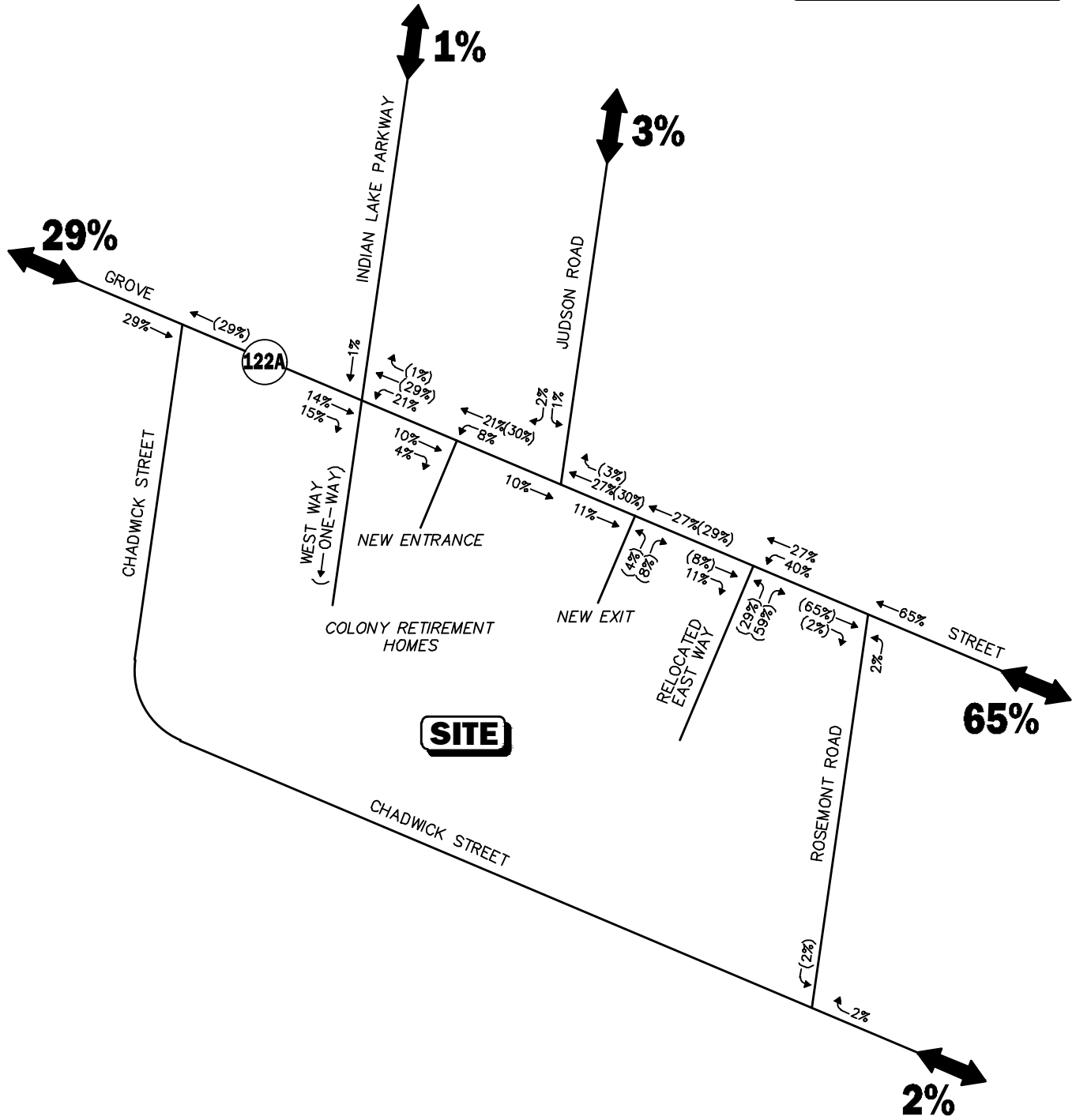
As can be seen in Table 6, the Project is expected to generate 234 new vehicle trips (approximately 117 entering and exiting) on an average weekday (two-way, 24-hour volume), with 16 new vehicle trips (6 entering and 10 exiting) expected during the weekday morning peak hour and 20 new vehicle trips (11 entering and 9 exiting) expected during the weekday evening peak hour.

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 existing travel patterns at the study area intersections and census data. The trip distribution for the Project is summarized in Table 7 and graphically depicted on Figure 7. The weekday morning and evening peak-hour traffic volumes expected to be generated by the Project were assigned on the study area roadway network as shown on Figure 8 and Figure 9, respectively.

Legend:

- XX Entering
- (XX) Exiting



Not To Scale

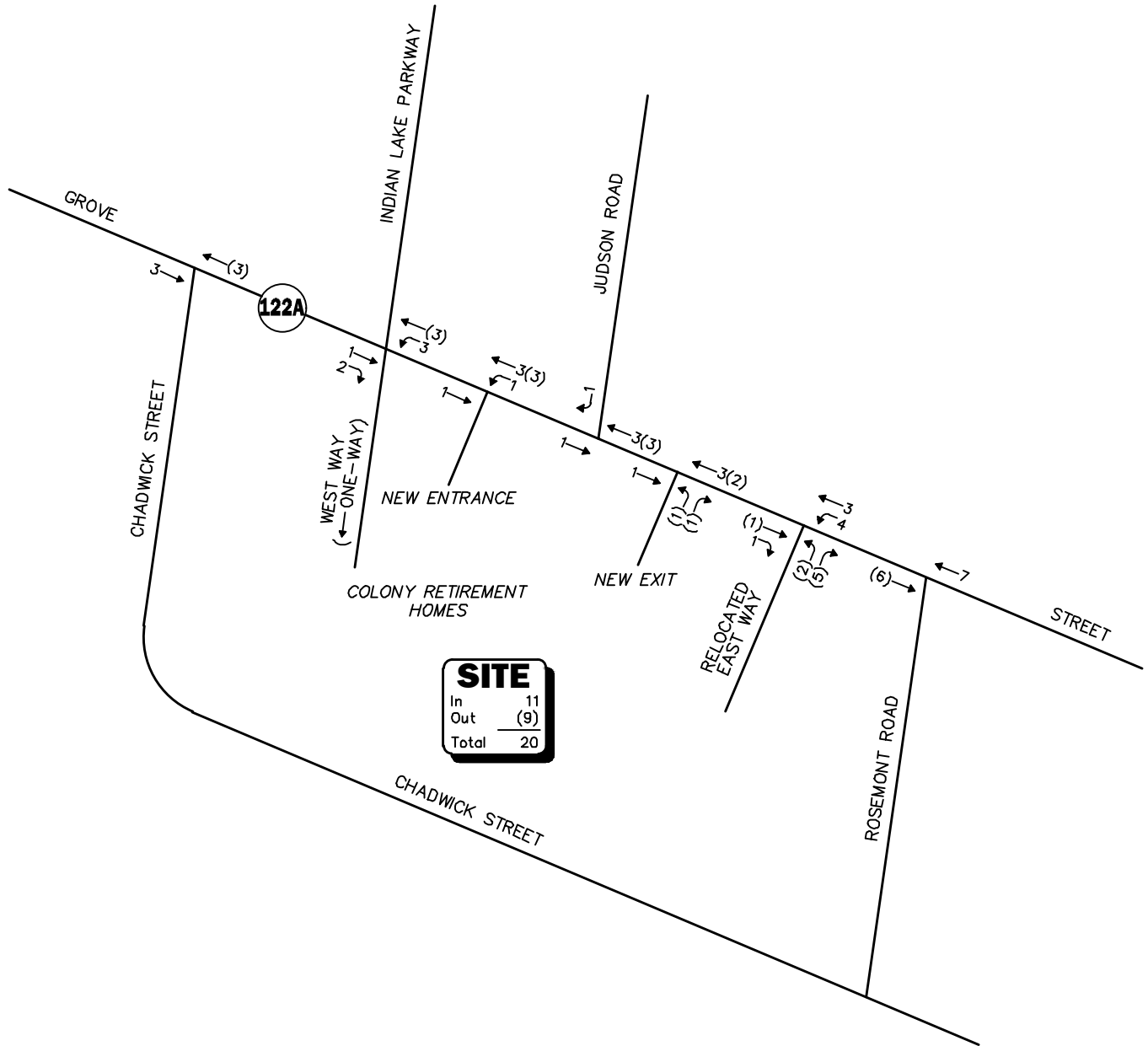
Figure 7

Trip Distribution Map



Legend:

- XX Entering Trips
- (XX) Exiting Trips



Not To Scale

Figure 9



Site-Generated
Weekday Evening
Peak-Hour Traffic Volumes

R:\9742\9742NT2.dwg, 12/8/2023 2:59:46 PM

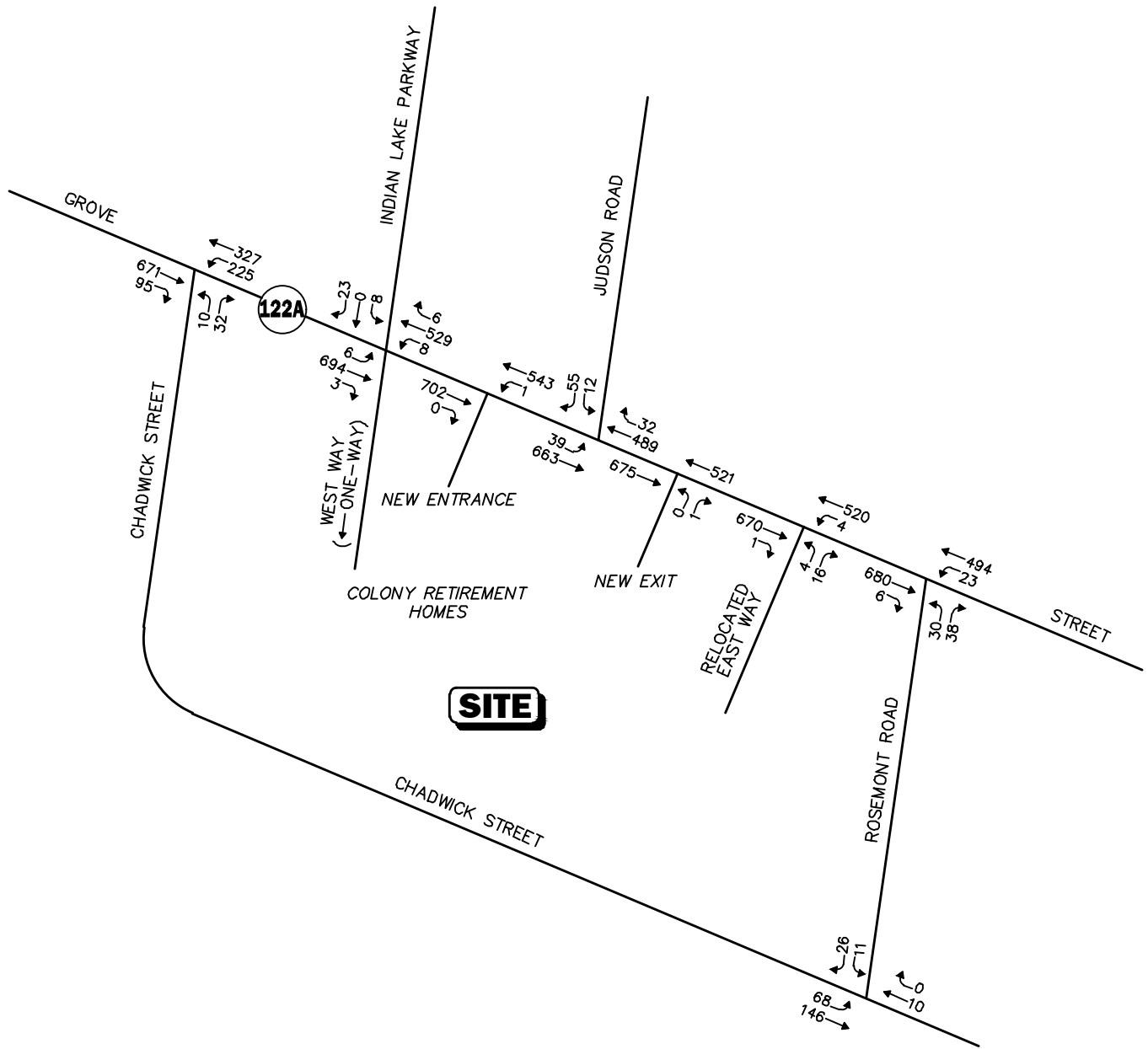
Table 7
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction (To/From)	Percent (To/From)
Indian Lake Parkway	North	1
Judson Road	North	3
Route 122A	East	65
Chadwick Street	East	2
Route 122A	West	<u>29</u>
TOTAL		100

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2030 Build condition networks consist of the 2030 No-Build traffic volumes with the anticipated Project-generated traffic added to them. The 2030 Build weekday morning and evening peak-hour traffic-volume networks are graphically depicted on Figure 10 and Figure 11, respectively.

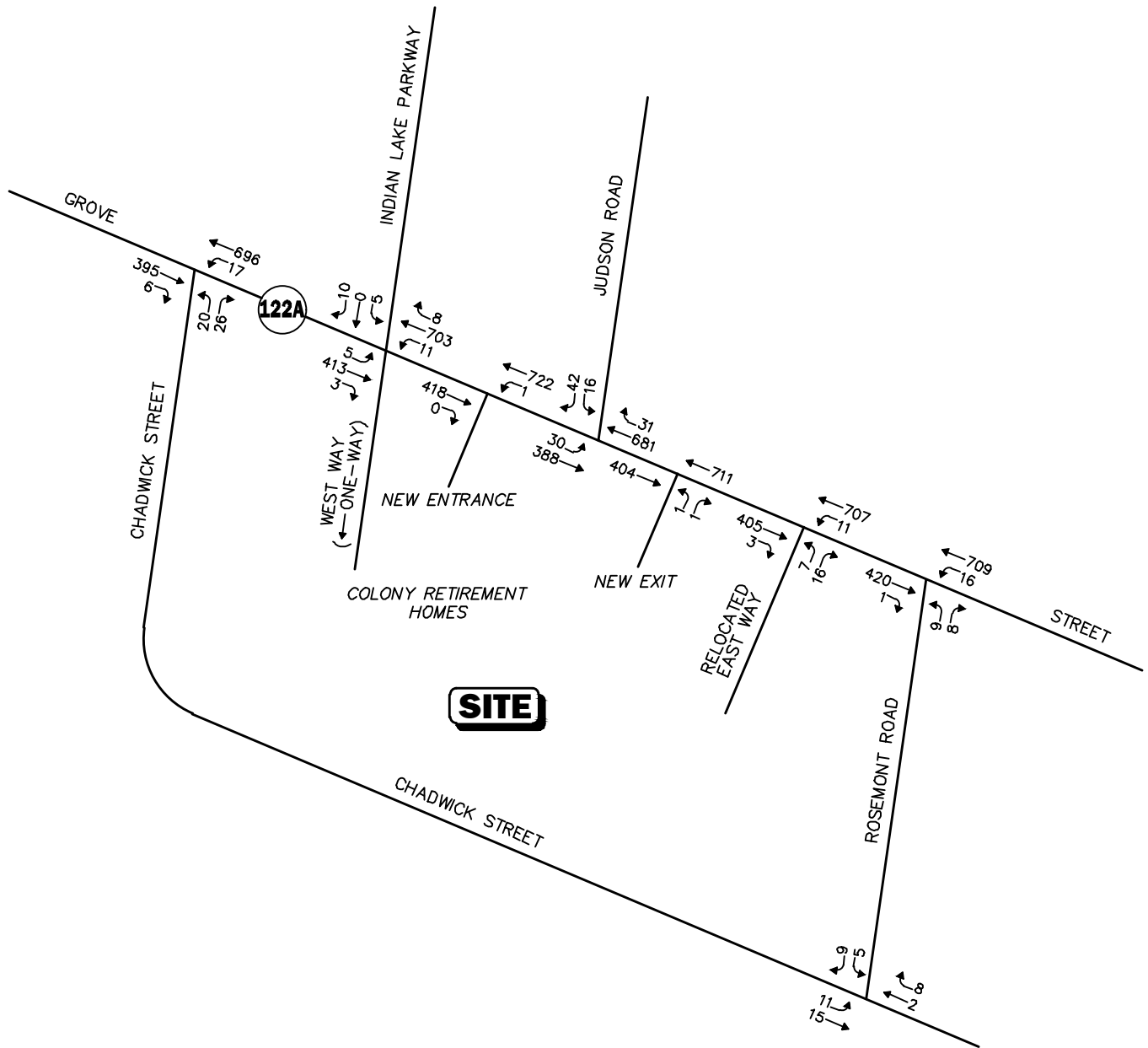
A summary of peak-hour projected traffic-volume increases external to the study area that is the subject of this assessment is shown in Table 8. These volumes are based on the expected increases from the Project.



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale **Figure 10**



**2030 Build
 Weekday Morning
 Peak-Hour Traffic Volumes**



Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.
 Not To Scale **Figure 11**



**2030 Build
 Weekday Evening
 Peak-Hour Traffic Volumes**

Table 8
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak Hour	2030 No-Build	2030 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
<i>Indian Lake Parkway, north of Route 122A:</i>				
Weekday Morning	43	43	0	0.0
Weekday Evening	28	28	0	0.0
<i>Judson Road, north of Route 122A:</i>				
Weekday Morning	138	138	0	0.0
Weekday Evening	118	119	1	0.8
<i>Route 122A, east of Rosemont Road:</i>				
Weekday Morning	1,224	1,235	11	0.9
Weekday Evening	1,140	1,153	13	1.1
<i>Chadwick Street, east of Rosemont Road:</i>				
Weekday Morning	167	167	0	0.0
Weekday Evening	30	30	0	0.0
<i>Route 122A, west of Chadwick Street:</i>				
Weekday Morning	1,098	1,103	5	0.5
Weekday Evening	1,111	1,117	6	0.5

As shown in Table 8, Project-related traffic-volume increases external to the study area relative to 2030 No-Build conditions are anticipated to range from 1 to 13 vehicles or 0.5 to 1.1 percent during the peak periods.

PARKING DEMAND

A review of potential parking demand for the Project was conducted using industry sources. The following analysis was conducted to provide an estimate of parking demand for this Project. Parking demand was determined by using the ITE *Parking Generation* publication⁵ using LUC 252, *Senior Adult Housing - Multifamily*. Estimates of parking demand for the Project were calculated and are summarized in Table 9.

Table 9
PROJECT PARKING DEMAND^a

Time Period	Parking Rates		Parking Spaces	
	Average	85 th Percentile	Average	85 th Percentile
Weekday	0.61 spaces/unit	0.67 spaces/unit	134	147

^aBased on LUC 252, Senior Adult Housing - Multifamily, 220 units.

⁵*Parking Generation*, 6th Edition; Institution of Transportation Engineers; Washington, DC; October 2023.

As can be seen in Table 9, the average rate indicates that the site would require 134 spaces to satisfy the expected demand while the 85th percentile rate indicated 147 spaces. The Project is proposing 165 parking spaces, which is 31 spaces more than the average rate indicates would be required and 18 spaces more than the 85th percentile rate indicates would be required.

In addition, the City of Worcester Zoning Ordinance⁶ indicates that the site requires 1 space per unit. However, a 25 percent reduction may be applied if the project is providing at least 5 percent of the units as affordable to income of 60 percent or less and is implementing a Transportation Demand Management Program (TDM). This is true for the Project and therefore the parking supply required by zoning is 165 spaces. The number of units 220 was multiplied by the 25 percent reduction which equals 55 spaces. That subtracted from 220 equals 165 spaces.

The Project meets the average and 85th percentile parking demand calculated using ITE rates. The Project also meets the spaces required by the Worcester Zoning Ordinance. As such the proposed parking supply will accommodate the Project's parking demand.

⁶ *City of Worcester Zoning Ordinance*; Worcester City Council; May 9, 2023.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the site driveway intersections with Route 122A in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)⁷ recommendations. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance recommended to be provided by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD is the sight distance recommended to be provided by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. ***In accordance with AASHTO standards, if the measured ISD is at least equal to the appropriate sight distance value for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions.*** Table 10 presents the measured SSD and ISD at the subject intersection.

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

Table 10
SIGHT DISTANCE ANALYSIS^a

Intersection/Sight Distance Measurement	Recommended Distances ^b (Feet)	Measured Distances (Feet)
<i>Route 122A at West Way</i>		
<i>Stopping Sight Distance:</i>		
Route 122A approaching from the east	240	500+
Route 122A approaching from the west	240	500+
<i>Intersection Sight Distance:^c</i>		
Left turn from West Way (looking east)	375	500+
Left turn from West Way (looking west)	375	500+
<i>Route 122A at Project New Exit Driveway</i>		
<i>Stopping Sight Distance:</i>		
Route 122A approaching from the east	240	500+
Route 122A approaching from the west	240	500+
<i>Intersection Sight Distance:</i>		
Left turn from site driveway (looking east)	375	500+
Left turn from site driveway (looking west)	375	500+
<i>Route 122A at East Way</i>		
<i>Stopping Sight Distance:</i>		
Route 122A approaching from the east	240	500+
Route 122A approaching from the west	240	500+
<i>Intersection Sight Distance:</i>		
Left turn from site driveway (looking east)	375	500+
Left turn from site driveway (looking west)	375	500+

^aRecommended values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018.

^bRecommended Based on observed 85th percentile speed of 34 mph.

^cValues shown are the intersection sight distance for a vehicle turning right or left exiting a roadway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.

As can be seen in Table 10, the sight distance at the intersections of the Project site driveways with Route 122A were found to exceed the recommended values for SSD and ISD.

TRAFFIC OPERATIONS ANALYSIS

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

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.⁸ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

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

⁸The 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 *Highway Capacity Manual 6th Edition*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 6th Edition*. Table 11 summarizes the relationship between level of service and average control delay.

Table 11
LEVEL-OF-SERVICE CRITERIA FOR
UNSIGNALIZED INTERSECTIONS^a

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

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2023 Existing, 2030 No-Build, and 2030 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 12.

Unsignalized Intersections

Route 122A at Chadwick Street

Under 2023 Existing conditions, the critical movement at this intersection operates at LOS E during the weekday morning peak hour and at LOS C during the weekday evening peak hour. Under 2030 No-Build conditions, the critical movement at this intersection operates at LOS F during the weekday morning peak hour and at LOS C during the weekday evening peak hour. There is no change in the level of service under 2030 Build conditions. The queue is not expected to increase under 2030 Build conditions compared to 2030 No-Build conditions.

Route 122A at Indian Lake Parkway and West Way

Under 2023 Existing and 2030 No-Build conditions, the critical movement at this intersection operates at LOS C during the weekday morning and evening peak hours. There is no change in the level of service under 2030 Build conditions. The queue is not expected to increase under 2030 Build conditions compared to 2030 No-Build conditions.

Route 122A at Judson Road and Mid Way

Under 2023 Existing and 2030 No-Build conditions, the critical movements at this intersection operate at LOS B and C, respectively, during the weekday morning and evening peak hours. Under the Build condition, the Mid Way approach is removed, but there is no change in the level of service for the remaining approach. The queue is not expected to increase under 2030 Build conditions compared to 2030 No-Build conditions.

Route 122A at East Way

Under 2023 Existing conditions, the critical movement at this intersection operates at LOS B during the weekday morning and evening peak hours. Under 2030 No-Build conditions, the critical movement at this intersection operates at LOS D during the weekday morning peak hour and at LOS F during the weekday evening peak hour. Under 2030 Build conditions, the critical movement at this intersection operates at LOS C during the weekday morning and evening peak hours. The vehicle queue lengths at intersection approaches are no more than 1 vehicle during the weekday morning and evening peak hours.

Route 122A at Rosemont Road

Under 2023 Existing conditions, the critical movement at this intersection operates at LOS D during the weekday morning peak hour and at LOS C during the weekday evening peak hour. Under 2030 No-Build conditions, the critical movement at this intersection operates at LOS E during the weekday morning peak hour and at LOS C during the weekday evening peak hour. There is no change in the level of service under 2030 Build conditions. The queue is not expected to increase under 2030 Build conditions compared to 2030 No-Build conditions.

Rosemont Road at Chadwick Street

Under 2023 Existing and 2030 No-Build conditions, the critical movement at this intersection operates at LOS A during the weekday morning and evening peak hours. There is no change in the level of service under 2030 Build conditions. The queue is not expected to increase under 2030 Build conditions compared to 2030 No-Build conditions.

Route 122A at the New Exit Project Driveway

Under 2030 Build conditions, the critical movement at this intersection operates at LOS B during the weekday morning peak hour and at LOS C during the weekday evening peak hour. There is no vehicle queue at the intersection approaches during the weekday morning and evening peak hours.

Table 12
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Route 122A at Chadwick Street												
<i>Weekday Morning:</i>												
Chadwick Street LT/RT	39	36.7	E	2	42	>50	F	3	42	>50	F	3
<i>Weekday Evening:</i>												
Chadwick Street LT/RT	43	19.7	C	1	46	22.1	C	2	46	22.3	C	2
Route 122A at Indian Lake Parkway and West Way												
<i>Weekday Morning:</i>												
Indian Lake Parkway LT/TH/RT	28	17.6	C	1	31	19.5	C	1	31	19.8	C	1
<i>Weekday Evening:</i>												
Indian Lake Parkway LT/TH/RT	14	17.1	C	1	15	18.1	C	1	15	18.4	C	1
Route 122A at Judson Road and Mid Way												
<i>Weekday Morning:</i>												
Mid Way LT/TH/RT	1	12.8	B	0	1	13.3	B	0	--	--	--	--
Judson Road LT/TH/RT	62	20.2	C	1	67	23.6	C	2	67	20.7	C	1
<i>Weekday Evening:</i>												
Mid Way LT/TH/RT	1	10.7	B	0	1	11.0	B	0	--	--	--	--
Judson Road LT/TH/RT	53	21.0	C	1	57	23.9	C	1	58	21.0	C	1
Route 122A at East Way												
<i>Weekday Morning:</i>												
East Way NB LT/RT	10	14.6	B	1	10	15.5	C	1	20	18.0	C	1
<i>Weekday Evening:</i>												
East Way NB LT/RT	15	14.9	B	1	15	15.9	C	1	23	16.0	C	1
Route 122A at Rosemont Road												
<i>Weekday Morning:</i>												
Rosemont Road LT/RT	63	32.8	D	3	68	43.9	E	4	68	45.1	E	4
<i>Weekday Evening:</i>												
Rosemont Road LT/RT	15	18.0	C	1	17	19.8	C	1	17	20.1	C	1
Rosemont Road at Chadwick Street												
<i>Weekday Morning:</i>												
Rosemont Road LT/RT	34	9.7	A	1	37	9.8	A	1	37	9.8	A	1
<i>Weekday Evening:</i>												
Rosemont Road LT/RT	13	8.6	A	1	14	8.6	A	1	14	8.6	A	1

See notes at end of table.

Table 12 (Continued)
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue
Route 122A at the New Exit Project Driveway												
<i>Weekday Morning:</i>												
Project Site Driveway LT/RT	--	--	--	--	--	--	--	--	1	13.4	B	0
<i>Weekday Evening:</i>												
Project Site Driveway LT/RT	--	--	--	--	--	--	--	--	2	17.0	C	0

^aDemand in vehicles per hour.

^bDelay in seconds per vehicle.

^cLevel of service.

^d95th percentile queue length (veh).

NB = northbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

RECOMMENDATIONS AND CONCLUSIONS

VAI has prepared this TIA to identify traffic impacts associated with a proposed residential development to be located at 485 Grove Street in Worcester, Massachusetts. This study was prepared in accordance with MassDOT Guidelines for TIAs; and was conducted pursuant to the standards of the traffic engineering and transportation planning professions for the preparation of such reports. Based on the results of this study, the following can be concluded:

- The study area intersection crash rates were observed to be lower than the MassDOT District 3 crash rates for unsignalized and signalized intersections.
- The Project is expected to generate 234 new vehicle trips (approximately 117 entering and exiting) on an average weekday (two-way, 24-hour volume), with 16 new vehicle trips (6 entering and 10 exiting) expected during the weekday morning peak hour and 20 new vehicle trips (11 entering and 9 exiting) expected during the weekday evening peak hour.
- The sight distance at the intersection of the Project site driveways with Route 122A was found to exceed the recommended values for SSD and ISD.
- The analysis has indicated that the Project will generally result in minimal impact on motorist delays and vehicle queue lengths at the study intersection.
- The Project will have sufficient parking supply to accommodate demand, based on data from ITE and the City of Worcester zoning ordinance.

RECOMMENDATIONS

A transportation improvement program has been developed that is designed to provide safe and efficient access to the Project and address any deficiencies identified at the study area locations. The following improvements have been recommended as a part of this evaluation:

Project Access

Access to the Project site will be provided via four curb cuts onto Route 122A. As the site currently has three curb cuts, the Project will increase the number of curb cuts onto Route 122A by one. 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 (MUTCD R1-1) control, with a painted STOP-bar included.
- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- 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.

Transportation Demand Management (TDM) Plan

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

- A “welcome packet” should be provided to residents and employees detailing available public transportation services, bicycle, micro-mobility devices, walking alternatives, and available commuter options.
- In order to encourage the use of public transportation, the property management team will make available public transportation schedules which will be posted in a centralized location for the residents.
- The property management team will provide information on available pedestrian and bicycle facilities in the vicinity of the Project site. This information will be posted in a centralized location.

CONCLUSIONS

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

APPENDIX

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



TRAFFIC COUNT DATA



Accurate Counts
978-664-2565

Location : Grove Street
Location : West of East Way
City/State: Worcester, MA

Site Code: 97420001

11/8/2023 Time	WB		Hour Totals		EB		Hour Totals		Combined Totals	
	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	4	89			1	74				
12:15	0	95			0	58				
12:30	2	103			0	66				
12:45	2	96	8	383	3	79	4	277	12	660
1:00	2	91			1	64				
1:15	3	87			0	67				
1:30	1	117			2	56				
1:45	3	74	9	369	0	72	3	259	12	628
2:00	0	118			1	84				
2:15	2	136			0	74				
2:30	3	155			1	68				
2:45	1	159	6	568	1	81	3	307	9	875
3:00	2	132			2	80				
3:15	3	137			3	132				
3:30	1	117			3	127				
3:45	1	151	7	537	5	108	13	447	20	984
4:00	3	180			1	94				
4:15	2	135			9	105				
4:30	2	163			10	98				
4:45	2	169	9	647	12	81	32	378	41	1025
5:00	4	165			10	114				
5:15	2	164			12	84				
5:30	3	142			18	88				
5:45	10	122	19	593	30	66	70	352	89	945
6:00	15	126			41	49				
6:15	27	114			52	61				
6:30	30	92			64	49				
6:45	34	71	106	403	67	46	224	205	330	608
7:00	52	84			71	43				
7:15	52	69			99	30				
7:30	74	59			139	35				
7:45	82	76	260	288	170	24	479	132	739	420
8:00	119	43			152	15				
8:15	152	58			147	15				
8:30	130	36			156	22				
8:45	66	31	467	168	159	12	614	64	1081	232
9:00	77	34			127	28				
9:15	81	35			80	11				
9:30	70	23			83	18				
9:45	60	15	288	107	86	4	376	61	664	168
10:00	69	15			67	4				
10:15	77	6			76	8				
10:30	80	11			65	9				
10:45	61	10	287	42	60	8	268	29	555	71
11:00	85	7			75	7				
11:15	81	13			62	1				
11:30	83	6			59	4				
11:45	99	7	348	33	80	1	276	13	624	46
Total	1814	4138			2362	2524			4176	6662
Percent	30.5%	69.5%			48.3%	51.7%			38.5%	61.5%

Accurate Counts
978-664-2565

Location : Grove Street
Location : West of East Way
City/State: Worcester, MA

Site Code: 97420001

11/9/2023	WB		Hour Totals		EB		Hour Totals		Combined Totals		
	Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	81			2	81				
12:15		3	103			4	73				
12:30		3	90			3	61				
12:45		0	113	8	387	2	67	11	282	19	669
1:00		4	84			0	66				
1:15		3	72			0	84				
1:30		1	88			1	76				
1:45		0	97	8	341	1	75	2	301	10	642
2:00		2	114			1	97				
2:15		1	128			0	87				
2:30		0	169			0	80				
2:45		0	140	3	551	0	75	1	339	4	890
3:00		2	131			1	82				
3:15		0	118			3	144				
3:30		1	129			3	105				
3:45		4	111	7	489	5	105	12	436	19	925
4:00		3	130			7	74				
4:15		3	136			11	93				
4:30		4	149			9	75				
4:45		2	161	12	576	11	77	38	319	50	895
5:00		6	167			6	95				
5:15		4	139			17	81				
5:30		7	141			16	81				
5:45		11	121	28	568	20	65	59	322	87	890
6:00		15	111			29	58				
6:15		27	97			39	47				
6:30		28	63			68	42				
6:45		21	82	91	353	84	38	220	185	311	538
7:00		45	57			77	33				
7:15		55	72			110	32				
7:30		63	67			120	26				
7:45		73	66	236	262	166	32	473	123	709	385
8:00		111	79			132	15				
8:15		153	60			139	22				
8:30		116	40			146	19				
8:45		94	45	474	224	163	16	580	72	1054	296
9:00		78	44			115	19				
9:15		78	35			95	17				
9:30		72	34			81	15				
9:45		87	31	315	144	84	12	375	63	690	207
10:00		76	29			70	4				
10:15		80	17			91	9				
10:30		71	17			74	12				
10:45		79	10	306	73	67	10	302	35	608	108
11:00		78	16			74	3				
11:15		94	11			59	10				
11:30		81	8			62	9				
11:45		87	5	340	40	75	2	270	24	610	64
Total		1828	4008			2343	2501			4171	6509
Percent		31.3%	68.7%			48.4%	51.6%			39.1%	60.9%
Grand Total		3642	8146			4705	5025			8347	13171
Percent		30.9%	69.1%			48.4%	51.6%			38.8%	61.2%

ADT

ADT: 10,759

AADT: 10,759

Accurate Counts
978-664-2565

Location : Grove Street
Location : West of East Way
City/State: Worcester, MA

Site Code: 97420001

11/6/2023 Time	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	*	*	8	4	8	11	*	*	*	*	*	*	8	8
1:00	*	*	*	*	9	3	8	2	*	*	*	*	*	*	8	2
2:00	*	*	*	*	6	3	3	1	*	*	*	*	*	*	4	2
3:00	*	*	*	*	7	13	7	12	*	*	*	*	*	*	7	12
4:00	*	*	*	*	9	32	12	38	*	*	*	*	*	*	10	35
5:00	*	*	*	*	19	70	28	59	*	*	*	*	*	*	24	64
6:00	*	*	*	*	106	224	91	220	*	*	*	*	*	*	98	222
7:00	*	*	*	*	260	479	236	473	*	*	*	*	*	*	248	476
8:00	*	*	*	*	467	614	474	580	*	*	*	*	*	*	470	597
9:00	*	*	*	*	288	376	315	375	*	*	*	*	*	*	302	376
10:00	*	*	*	*	287	268	306	302	*	*	*	*	*	*	296	285
11:00	*	*	*	*	348	276	340	270	*	*	*	*	*	*	344	273
12:00 PM	*	*	*	*	383	277	387	282	*	*	*	*	*	*	385	280
1:00	*	*	*	*	369	259	341	301	*	*	*	*	*	*	355	280
2:00	*	*	*	*	568	307	551	339	*	*	*	*	*	*	560	323
3:00	*	*	*	*	537	447	489	436	*	*	*	*	*	*	513	442
4:00	*	*	*	*	647	378	576	319	*	*	*	*	*	*	612	348
5:00	*	*	*	*	593	352	568	322	*	*	*	*	*	*	580	337
6:00	*	*	*	*	403	205	353	185	*	*	*	*	*	*	378	195
7:00	*	*	*	*	288	132	262	123	*	*	*	*	*	*	275	128
8:00	*	*	*	*	168	64	224	72	*	*	*	*	*	*	196	68
9:00	*	*	*	*	107	61	144	63	*	*	*	*	*	*	126	62
10:00	*	*	*	*	42	29	73	35	*	*	*	*	*	*	58	32
11:00	*	*	*	*	33	13	16	3	*	*	*	*	*	*	24	8
Total	0	0	0	0	5952	4886	5812	4823	0	0	0	0	0	0	5881	4855
Day	0		0		10838		10635		0		0		0		10736	
AM Peak Volume					8:00 467	8:00 614	8:00 474	8:00 580							8:00 470	8:00 597
PM Peak Volume					4:00 647	3:00 447	4:00 576	3:00 436							4:00 612	3:00 442
Comb Total ADT	0 ADT: 10,759		0 AADT: 10,759		10838		10635		0		0		0		10736	

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
Start Time							
07:00 AM	4	46	1	0	69	3	123
07:15 AM	3	51	0	0	101	1	156
07:30 AM	11	65	0	0	143	11	230
07:45 AM	22	59	0	1	178	11	271
Total	40	221	1	1	491	26	780
08:00 AM	45	75	2	2	154	29	307
08:15 AM	86	80	2	13	140	31	352
08:30 AM	57	86	5	14	152	18	332
08:45 AM	20	56	2	23	151	17	269
Total	208	297	11	52	597	95	1260
Grand Total	248	518	12	53	1088	121	2040
Apprch %	32.4	67.6	18.5	81.5	90	10	
Total %	12.2	25.4	0.6	2.6	53.3	5.9	
Cars	246	504	12	53	1066	121	2002
% Cars	99.2	97.3	100	100	98	100	98.1
Trucks	2	14	0	0	22	0	38
% Trucks	0.8	2.7	0	0	2	0	1.9

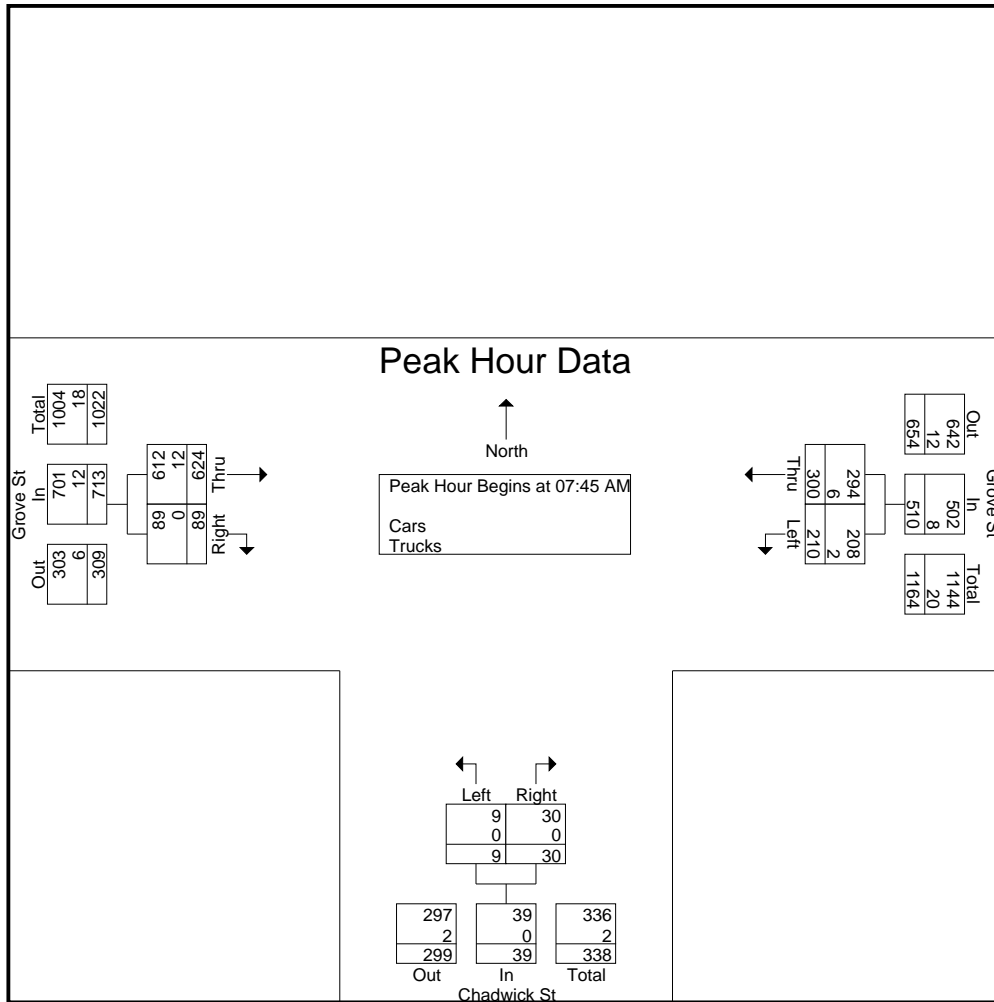
Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	22	59	81	0	1	1	178	11	189	271
08:00 AM	45	75	120	2	2	4	154	29	183	307
08:15 AM	86	80	166	2	13	15	140	31	171	352
08:30 AM	57	86	143	5	14	19	152	18	170	332
Total Volume	210	300	510	9	30	39	624	89	713	1262
% App. Total	41.2	58.8		23.1	76.9		87.5	12.5		
PHF	.610	.872	.768	.450	.536	.513	.876	.718	.943	.896
Cars	208	294	502	9	30	39	612	89	701	1242
% Cars	99.0	98.0	98.4	100	100	100	98.1	100	98.3	98.4
Trucks	2	6	8	0	0	0	12	0	12	20
% Trucks	1.0	2.0	1.6	0	0	0	1.9	0	1.7	1.6

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 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:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	22	59	81	2	2	4	178	11	189
+15 mins.	45	75	120	2	13	15	154	29	183
+30 mins.	86	80	166	5	14	19	140	31	171
+45 mins.	57	86	143	2	23	25	152	18	170
Total Volume	210	300	510	11	52	63	624	89	713
% App. Total	41.2	58.8		17.5	82.5		87.5	12.5	
PHF	.610	.872	.768	.550	.565	.630	.876	.718	.943
Cars	208	294	502	11	52	63	612	89	701
% Cars	99	98	98.4	100	100	100	98.1	100	98.3
Trucks	2	6	8	0	0	0	12	0	12
% Trucks	1	2	1.6	0	0	0	1.9	0	1.7

Accurate Counts

978-664-2565

File Name : 97420001

Site Code : 97420001

Start Date : 11/8/2023

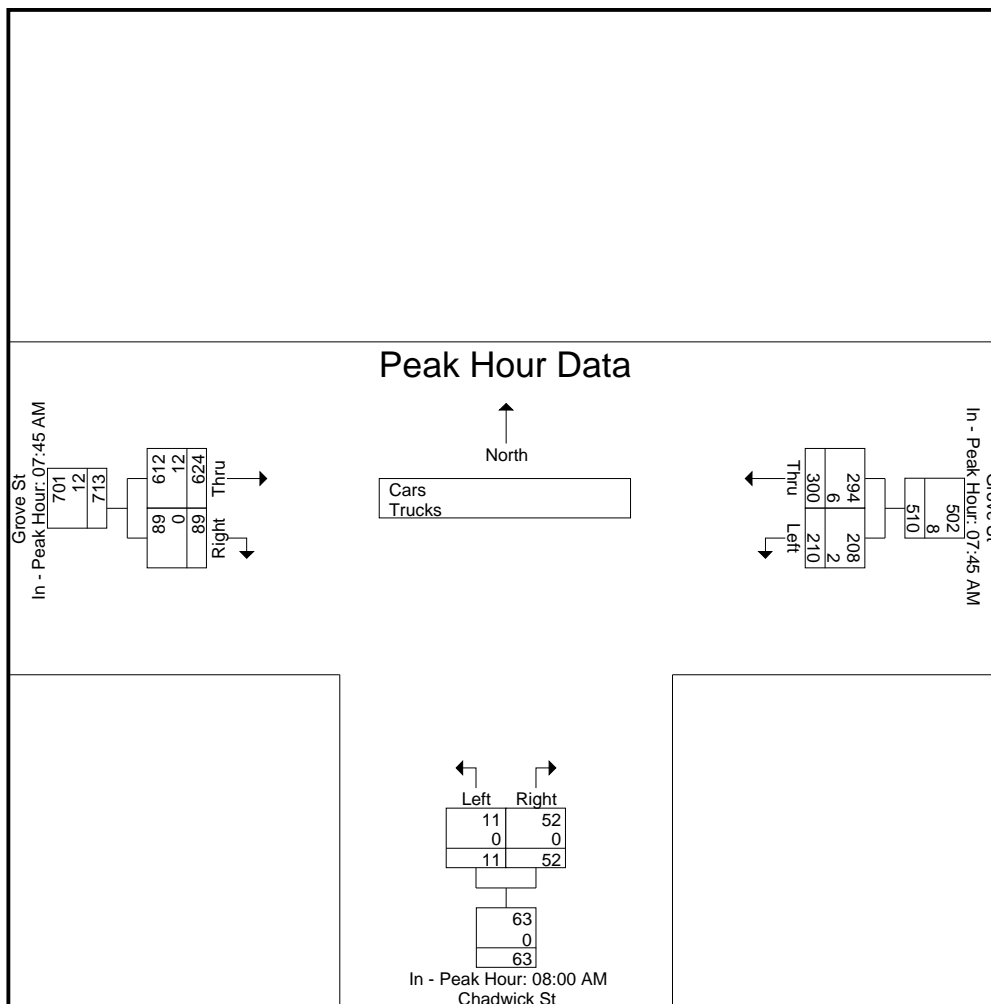
Page No : 3

N/S Street : Chadwick Street

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	4	42	1	0	69	3	119
07:15 AM	3	51	0	0	99	1	154
07:30 AM	11	63	0	0	143	11	228
07:45 AM	22	59	0	1	176	11	269
Total	40	215	1	1	487	26	770
08:00 AM	45	73	2	2	150	29	301
08:15 AM	84	79	2	13	139	31	348
08:30 AM	57	83	5	14	147	18	324
08:45 AM	20	54	2	23	143	17	259
Total	206	289	11	52	579	95	1232
Grand Total	246	504	12	53	1066	121	2002
Apprch %	32.8	67.2	18.5	81.5	89.8	10.2	
Total %	12.3	25.2	0.6	2.6	53.2	6	

Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	22	59	81	0	1	1	176	11	187	269
08:00 AM	45	73	118	2	2	4	150	29	179	301
08:15 AM	84	79	163	2	13	15	139	31	170	348
08:30 AM	57	83	140	5	14	19	147	18	165	324
Total Volume	208	294	502	9	30	39	612	89	701	1242
% App. Total	41.4	58.6		23.1	76.9		87.3	12.7		
PHF	.619	.886	.770	.450	.536	.513	.869	.718	.937	.892

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	4	0	0	0	0	4
07:15 AM	0	0	0	0	2	0	2
07:30 AM	0	2	0	0	0	0	2
07:45 AM	0	0	0	0	2	0	2
Total	0	6	0	0	4	0	10
08:00 AM	0	2	0	0	4	0	6
08:15 AM	2	1	0	0	1	0	4
08:30 AM	0	3	0	0	5	0	8
08:45 AM	0	2	0	0	8	0	10
Total	2	8	0	0	18	0	28
Grand Total	2	14	0	0	22	0	38
Apprch %	12.5	87.5	0	0	100	0	
Total %	5.3	36.8	0	0	57.9	0	

Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	2	2	0	0	0	4	0	4	6
08:15 AM	2	1	3	0	0	0	1	0	1	4
08:30 AM	0	3	3	0	0	0	5	0	5	8
08:45 AM	0	2	2	0	0	0	8	0	8	10
Total Volume	2	8	10	0	0	0	18	0	18	28
% App. Total	20	80		0	0		100	0		
PHF	.250	.667	.833	.000	.000	.000	.563	.000	.563	.700

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	175	4	0	99	0	278
04:15 PM	2	139	1	1	98	1	242
04:30 PM	3	158	4	8	94	3	270
04:45 PM	7	163	1	1	81	2	255
Total	12	635	10	10	372	6	1045
05:00 PM	4	150	13	13	103	0	283
05:15 PM	2	168	1	2	86	1	260
05:30 PM	2	142	0	1	89	3	237
05:45 PM	4	117	3	2	66	3	195
Total	12	577	17	18	344	7	975
Grand Total	24	1212	27	28	716	13	2020
Apprch %	1.9	98.1	49.1	50.9	98.2	1.8	
Total %	1.2	60	1.3	1.4	35.4	0.6	
Cars	24	1210	26	28	710	13	2011
% Cars	100	99.8	96.3	100	99.2	100	99.6
Trucks	0	2	1	0	6	0	9
% Trucks	0	0.2	3.7	0	0.8	0	0.4

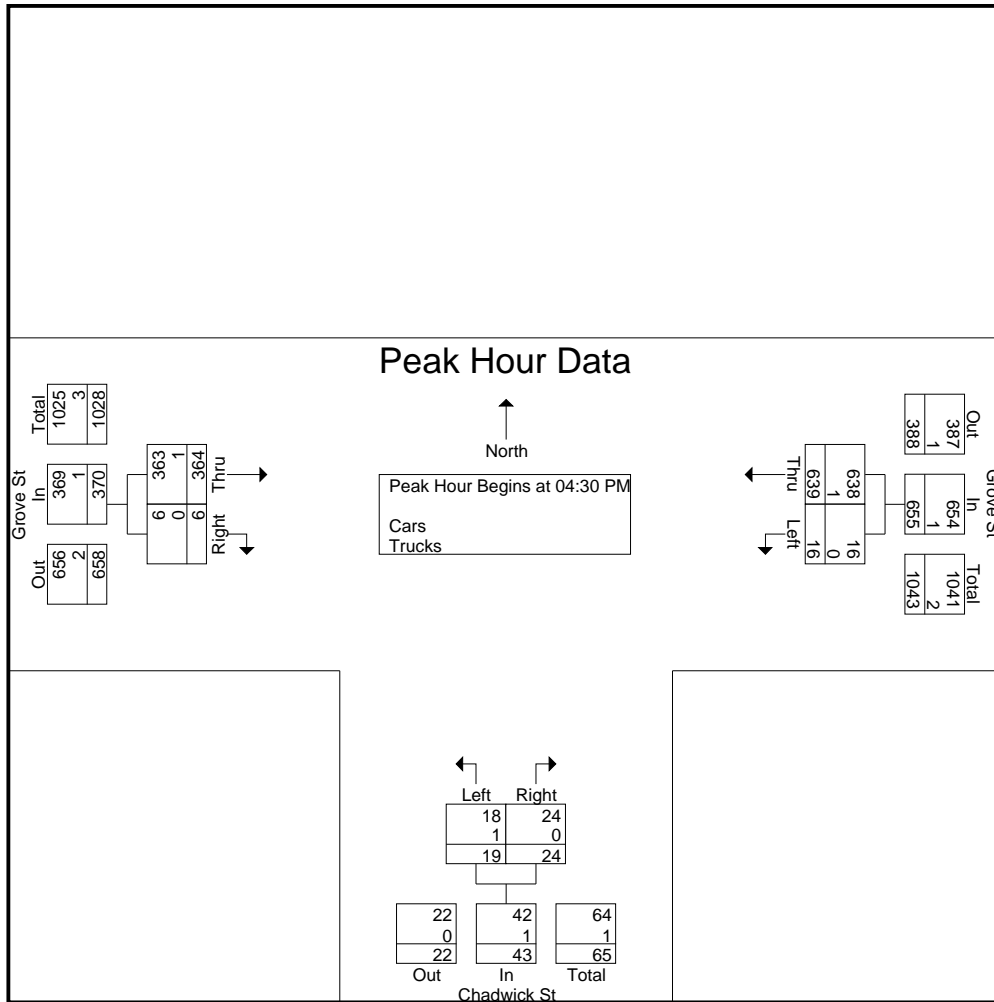
Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	158	161	4	8	12	94	3	97	270
04:45 PM	7	163	170	1	1	2	81	2	83	255
05:00 PM	4	150	154	13	13	26	103	0	103	283
05:15 PM	2	168	170	1	2	3	86	1	87	260
Total Volume	16	639	655	19	24	43	364	6	370	1068
% App. Total	2.4	97.6		44.2	55.8		98.4	1.6		
PHF	.571	.951	.963	.365	.462	.413	.883	.500	.898	.943
Cars	16	638	654	18	24	42	363	6	369	1065
% Cars	100	99.8	99.8	94.7	100	97.7	99.7	100	99.7	99.7
Trucks	0	1	1	1	0	1	1	0	1	3
% Trucks	0	0.2	0.2	5.3	0	2.3	0.3	0	0.3	0.3

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 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			04:30 PM			04:15 PM		
+0 mins.	3	158	161	4	8	12	98	1	99
+15 mins.	7	163	170	1	1	2	94	3	97
+30 mins.	4	150	154	13	13	26	81	2	83
+45 mins.	2	168	170	1	2	3	103	0	103
Total Volume	16	639	655	19	24	43	376	6	382
% App. Total	2.4	97.6		44.2	55.8		98.4	1.6	
PHF	.571	.951	.963	.365	.462	.413	.913	.500	.927
Cars	16	638	654	18	24	42	373	6	379
% Cars	100	99.8	99.8	94.7	100	97.7	99.2	100	99.2
Trucks	0	1	1	1	0	1	3	0	3
% Trucks	0	0.2	0.2	5.3	0	2.3	0.8	0	0.8

Accurate Counts

978-664-2565

File Name : 97420001

Site Code : 97420001

Start Date : 11/8/2023

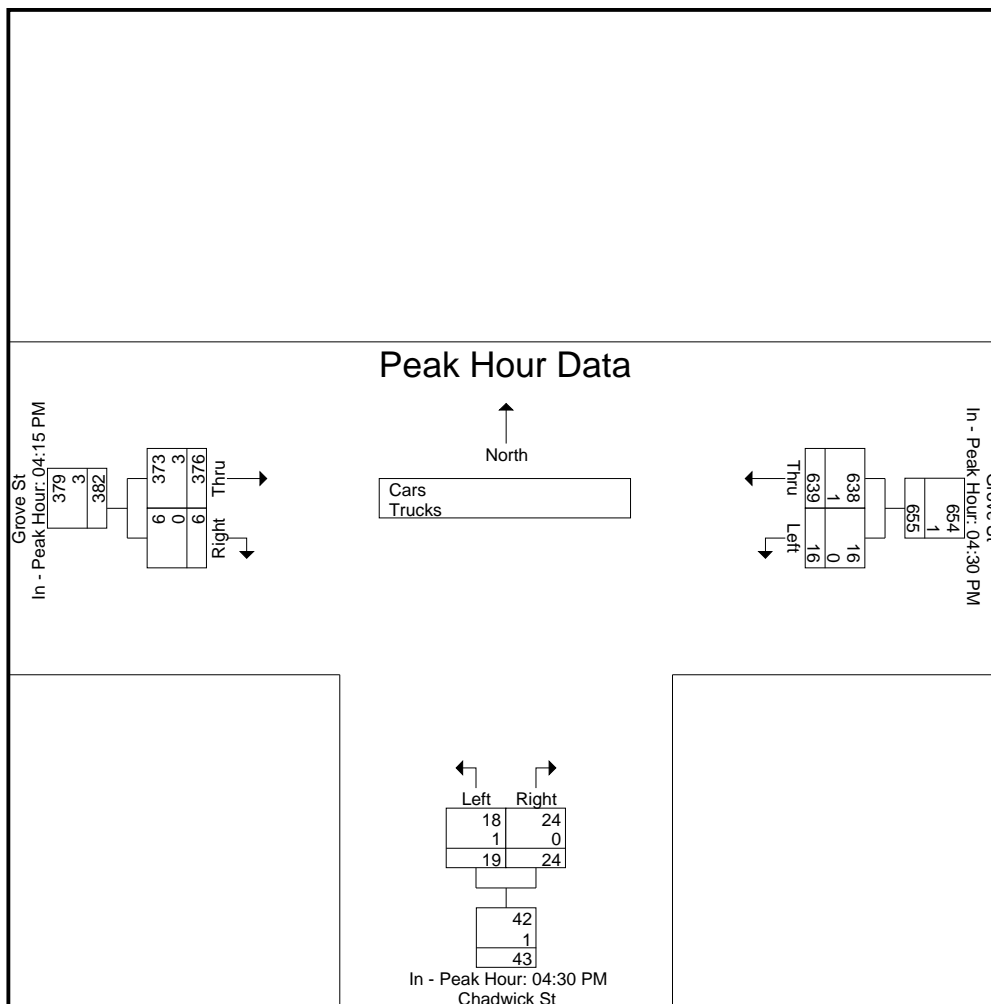
Page No : 3

N/S Street : Chadwick Street

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	174	4	0	97	0	275
04:15 PM	2	139	1	1	96	1	240
04:30 PM	3	158	4	8	94	3	270
04:45 PM	7	162	1	1	81	2	254
Total	12	633	10	10	368	6	1039
05:00 PM	4	150	12	13	102	0	281
05:15 PM	2	168	1	2	86	1	260
05:30 PM	2	142	0	1	89	3	237
05:45 PM	4	117	3	2	65	3	194
Total	12	577	16	18	342	7	972
Grand Total	24	1210	26	28	710	13	2011
Apprch %	1.9	98.1	48.1	51.9	98.2	1.8	
Total %	1.2	60.2	1.3	1.4	35.3	0.6	

Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	3	158	161	4	8	12	94	3	97	270
04:45 PM	7	162	169	1	1	2	81	2	83	254
05:00 PM	4	150	154	12	13	25	102	0	102	281
05:15 PM	2	168	170	1	2	3	86	1	87	260
Total Volume	16	638	654	18	24	42	363	6	369	1065
% App. Total	2.4	97.6		42.9	57.1		98.4	1.6		
PHF	.571	.949	.962	.375	.462	.420	.890	.500	.904	.948

Accurate Counts

978-664-2565

N/S Street : Chadwick Street
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420001
 Site Code : 97420001
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		Chadwick St From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	1	0	0	2	0	3
04:15 PM	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	1
Total	0	2	0	0	4	0	6
05:00 PM	0	0	1	0	1	0	2
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	1
Total	0	0	1	0	2	0	3
Grand Total	0	2	1	0	6	0	9
Apprch %	0	100	100	0	100	0	
Total %	0	22.2	11.1	0	66.7	0	

Start Time	Grove St From East			Chadwick St From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	1	1	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	2	2	0	0	0	4	0	4	6
% App. Total	0	100		0	0		100	0		
PHF	.000	.500	.500	.000	.000	.000	.500	.000	.500	.500

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	2	0	1	0	49	1	0	0	0	0	67	2	122
07:15 AM	1	0	2	0	52	0	0	0	0	1	99	1	156
07:30 AM	4	0	2	3	72	1	0	0	0	2	140	0	224
07:45 AM	3	0	0	3	79	1	0	0	0	2	171	1	260
Total	10	0	5	6	252	3	0	0	0	5	477	4	762
08:00 AM	2	0	7	1	112	2	0	0	0	0	155	1	280
08:15 AM	2	0	6	1	155	3	0	0	0	2	141	0	310
08:30 AM	0	0	8	2	136	0	0	0	0	2	164	0	312
08:45 AM	0	0	2	0	71	1	0	0	0	3	172	0	249
Total	4	0	23	4	474	6	0	0	0	7	632	1	1151
Grand Total	14	0	28	10	726	9	0	0	0	12	1109	5	1913
Apprch %	33.3	0	66.7	1.3	97.4	1.2	0	0	0	1.1	98.5	0.4	
Total %	0.7	0	1.5	0.5	38	0.5	0	0	0	0.6	58	0.3	
Cars	14	0	28	10	709	9	0	0	0	12	1087	5	1874
% Cars	100	0	100	100	97.7	100	0	0	0	100	98	100	98
Trucks	0	0	0	0	17	0	0	0	0	0	22	0	39
% Trucks	0	0	0	0	2.3	0	0	0	0	0	2	0	2

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	0	0	3	3	79	1	83	0	0	0	0	2	171	1	174	260
08:00 AM	2	0	7	9	1	112	2	115	0	0	0	0	0	155	1	156	280
08:15 AM	2	0	6	8	1	155	3	159	0	0	0	0	2	141	0	143	310
08:30 AM	0	0	8	8	2	136	0	138	0	0	0	0	2	164	0	166	312
Total Volume	7	0	21	28	7	482	6	495	0	0	0	0	6	631	2	639	1162
% App. Total	25	0	75		1.4	97.4	1.2		0	0	0		0.9	98.7	0.3		
PHF	.583	.000	.656	.778	.583	.777	.500	.778	.000	.000	.000	.000	.750	.923	.500	.918	.931
Cars	7	0	21	28	7	473	6	486	0	0	0	0	6	619	2	627	1141
% Cars	100	0	100	100	100	98.1	100	98.2	0	0	0	0	100	98.1	100	98.1	98.2
Trucks	0	0	0	0	0	9	0	9	0	0	0	0	0	12	0	12	21
% Trucks	0	0	0	0	0	1.9	0	1.8	0	0	0	0	0	1.9	0	1.9	1.8

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

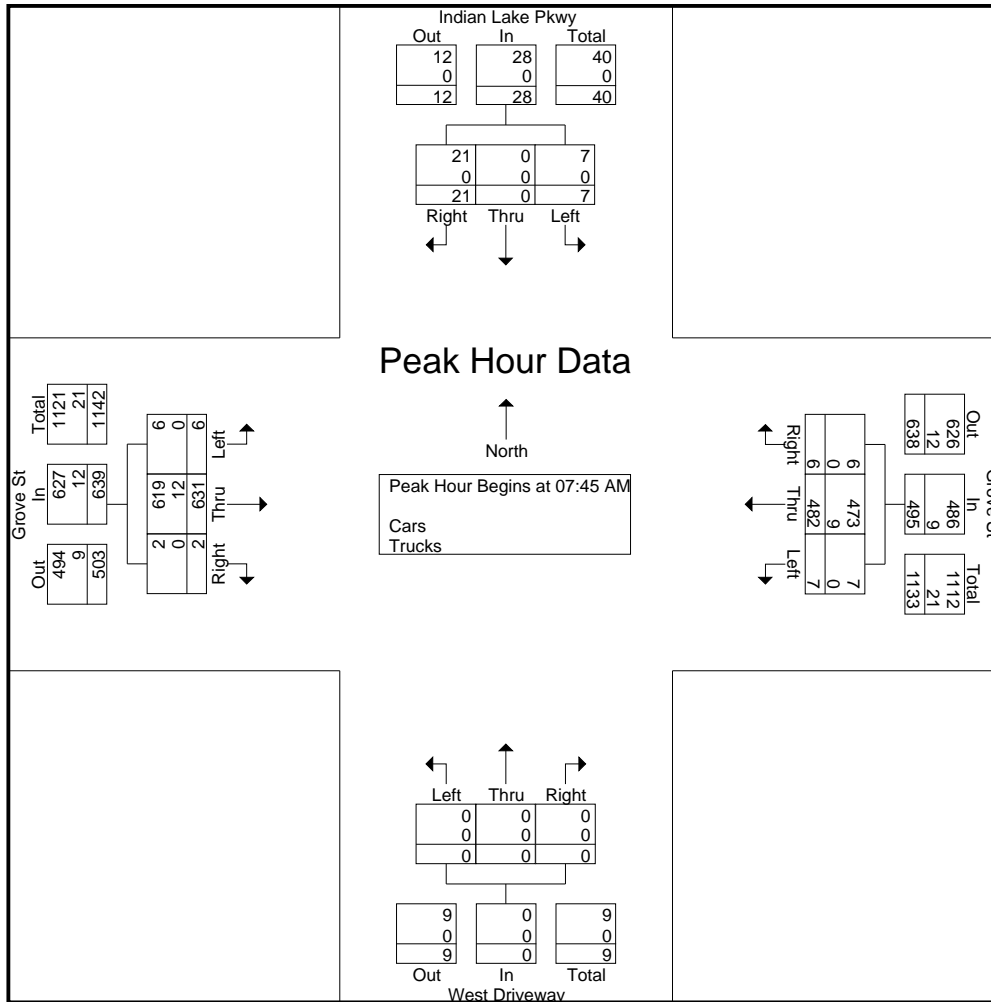
Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

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:

	07:45 AM				07:00 AM				08:00 AM							
+0 mins.	3	0	0	3	3	79	1	83	0	0	0	0	0	155	1	156
+15 mins.	2	0	7	9	1	112	2	115	0	0	0	0	2	141	0	143
+30 mins.	2	0	6	8	1	155	3	159	0	0	0	0	2	164	0	166
+45 mins.	0	0	8	8	2	136	0	138	0	0	0	0	3	172	0	175
Total Volume	7	0	21	28	7	482	6	495	0	0	0	0	7	632	1	640
% App. Total	25	0	75		1.4	97.4	1.2		0	0	0		1.1	98.8	0.2	
PHF	.583	.000	.656	.778	.583	.777	.500	.778	.000	.000	.000	.000	.583	.919	.250	.914
Cars	7	0	21	28	7	473	6	486	0	0	0	0	7	614	1	622
% Cars	100	0	100	100	100	98.1	100	98.2	0	0	0	0	100	97.2	100	97.2
Trucks	0	0	0	0	0	9	0	9	0	0	0	0	0	18	0	18
% Trucks	0	0	0	0	0	1.9	0	1.8	0	0	0	0	0	2.8	0	2.8

Accurate Counts

978-664-2565

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

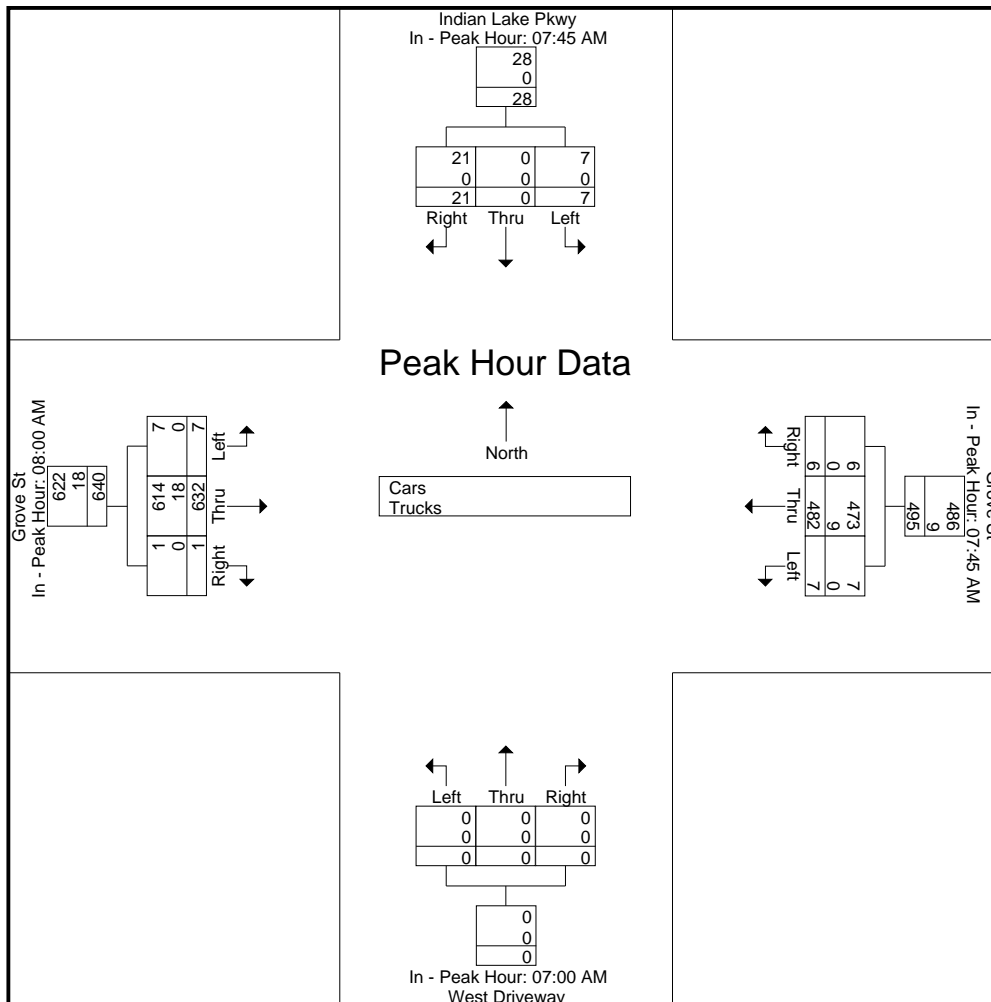
Page No : 3

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 4

Groups Printed- Cars

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	2	0	1	0	45	1	0	0	0	0	67	2	118
07:15 AM	1	0	2	0	52	0	0	0	0	1	97	1	154
07:30 AM	4	0	2	3	71	1	0	0	0	2	140	0	223
07:45 AM	3	0	0	3	78	1	0	0	0	2	169	1	257
Total	10	0	5	6	246	3	0	0	0	5	473	4	752
08:00 AM	2	0	7	1	110	2	0	0	0	0	151	1	274
08:15 AM	2	0	6	1	152	3	0	0	0	2	140	0	306
08:30 AM	0	0	8	2	133	0	0	0	0	2	159	0	304
08:45 AM	0	0	2	0	68	1	0	0	0	3	164	0	238
Total	4	0	23	4	463	6	0	0	0	7	614	1	1122
Grand Total	14	0	28	10	709	9	0	0	0	12	1087	5	1874
Apprch %	33.3	0	66.7	1.4	97.4	1.2	0	0	0	1.1	98.5	0.5	
Total %	0.7	0	1.5	0.5	37.8	0.5	0	0	0	0.6	58	0.3	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	3	0	0	3	3	78	1	82	0	0	0	0	2	169	1	172	257
08:00 AM	2	0	7	9	1	110	2	113	0	0	0	0	0	151	1	152	274
08:15 AM	2	0	6	8	1	152	3	156	0	0	0	0	2	140	0	142	306
08:30 AM	0	0	8	8	2	133	0	135	0	0	0	0	2	159	0	161	304
Total Volume	7	0	21	28	7	473	6	486	0	0	0	0	6	619	2	627	1141
% App. Total	25	0	75		1.4	97.3	1.2		0	0	0		1	98.7	0.3		
PHF	.583	.000	.656	.778	.583	.778	.500	.779	.000	.000	.000	.000	.750	.916	.500	.911	.932

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 7

Groups Printed- Trucks

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
Total	0	0	0	0	6	0	0	0	0	0	4	0	10
08:00 AM	0	0	0	0	2	0	0	0	0	0	4	0	6
08:15 AM	0	0	0	0	3	0	0	0	0	0	1	0	4
08:30 AM	0	0	0	0	3	0	0	0	0	0	5	0	8
08:45 AM	0	0	0	0	3	0	0	0	0	0	8	0	11
Total	0	0	0	0	11	0	0	0	0	0	18	0	29
Grand Total	0	0	0	0	17	0	0	0	0	0	22	0	39
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	43.6	0	0	0	0	0	56.4	0	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
08:15 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
08:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	5	0	5	8
08:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	8	0	8	11
Total Volume	0	0	0	0	0	11	0	11	0	0	0	0	0	18	0	18	29
% App. Total	0	0	0	0	0	100	0	100	0	0	0	0	0	100	0	100	
PHF	.000	.000	.000	.000	.000	.917	.000	.917	.000	.000	.000	.000	.000	.563	.000	.563	.659

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 10

Groups Printed- Bikes Peds

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
07:00 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1
07:45 AM	0	0	0	1	0	0	0	1	0	0	0	2	0	0	0	1	5	0	5
Total	0	0	0	4	0	0	0	1	0	0	0	3	0	0	0	2	10	0	10
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	3	0	0	0	0	0	0	0	2	0	0	0	2	7	0	7
08:30 AM	0	0	0	3	0	0	0	0	0	0	0	6	0	0	0	2	11	0	11
08:45 AM	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	2	7	0	7
Total	0	0	0	7	0	0	0	0	0	0	0	12	0	0	0	6	25	0	25
Grand Total	0	0	0	11	0	0	0	1	0	0	0	15	0	0	0	8	35	0	35
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:00 AM																		
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0			
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420002
 Site Code : 97420002
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	2	0	1	0	175	0	0	0	0	2	96	1	277
04:15 PM	4	0	2	4	139	1	0	0	0	1	98	0	249
04:30 PM	3	0	2	3	159	3	0	0	0	2	99	1	272
04:45 PM	1	0	5	1	162	2	0	0	0	0	82	0	253
Total	10	0	10	8	635	6	0	0	0	5	375	2	1051
05:00 PM	0	0	1	1	160	1	0	0	0	3	112	0	278
05:15 PM	1	0	1	1	171	1	0	0	0	0	88	0	263
05:30 PM	1	0	1	0	143	1	0	0	0	1	89	0	236
05:45 PM	1	0	0	0	120	0	0	0	0	0	68	0	189
Total	3	0	3	2	594	3	0	0	0	4	357	0	966
Grand Total	13	0	13	10	1229	9	0	0	0	9	732	2	2017
Apprch %	50	0	50	0.8	98.5	0.7	0	0	0	1.2	98.5	0.3	
Total %	0.6	0	0.6	0.5	60.9	0.4	0	0	0	0.4	36.3	0.1	
Cars	13	0	13	10	1227	9	0	0	0	9	724	2	2007
% Cars	100	0	100	100	99.8	100	0	0	0	100	98.9	100	99.5
Trucks	0	0	0	0	2	0	0	0	0	0	8	0	10
% Trucks	0	0	0	0	0.2	0	0	0	0	0	1.1	0	0.5

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	0	2	5	3	159	3	165	0	0	0	0	2	99	1	102	272
04:45 PM	1	0	5	6	1	162	2	165	0	0	0	0	0	82	0	82	253
05:00 PM	0	0	1	1	1	160	1	162	0	0	0	0	3	112	0	115	278
05:15 PM	1	0	1	2	1	171	1	173	0	0	0	0	0	88	0	88	263
Total Volume	5	0	9	14	6	652	7	665	0	0	0	0	5	381	1	387	1066
% App. Total	35.7	0	64.3		0.9	98	1.1		0	0	0		1.3	98.4	0.3		
PHF	.417	.000	.450	.583	.500	.953	.583	.961	.000	.000	.000	.000	.417	.850	.250	.841	.959
Cars	5	0	9	14	6	651	7	664	0	0	0	0	5	378	1	384	1062
% Cars	100	0	100	100	100	99.8	100	99.8	0	0	0	0	100	99.2	100	99.2	99.6
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3	4
% Trucks	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0.8	0	0.8	0.4

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

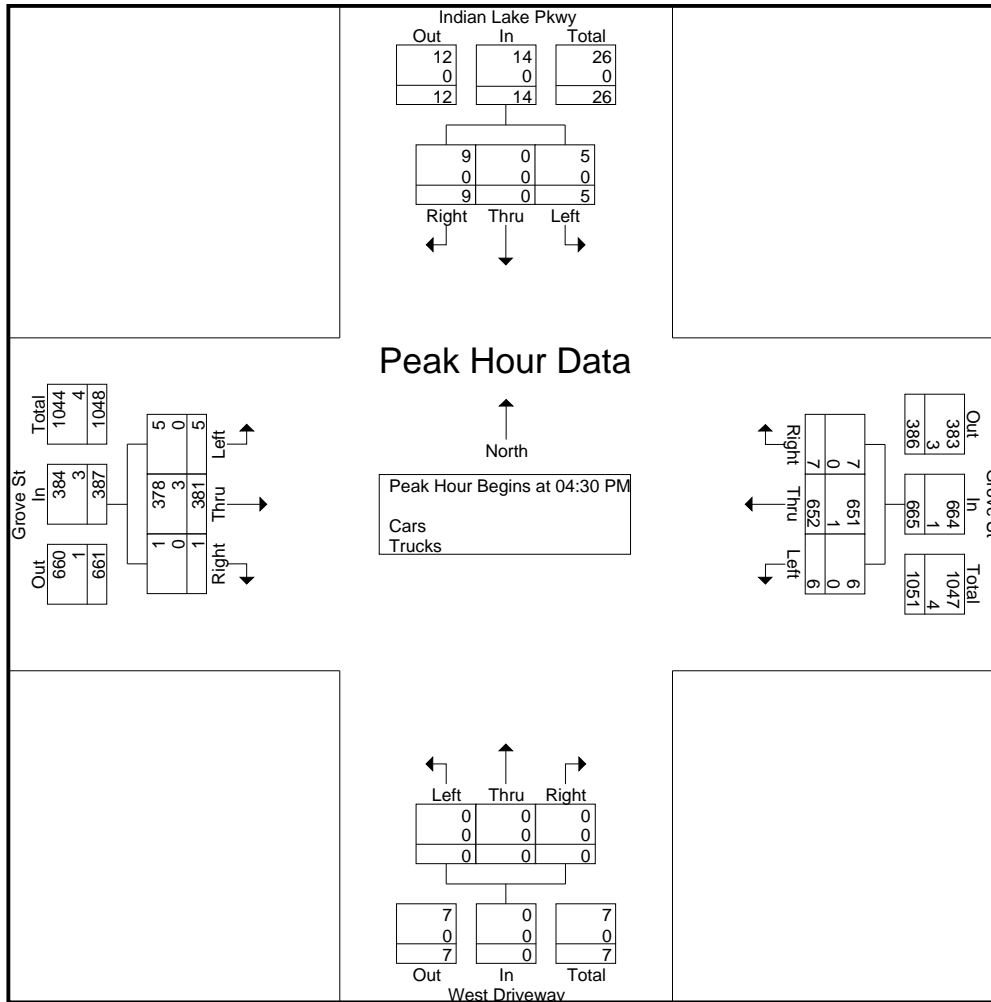
Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

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				04:30 PM				04:00 PM				04:15 PM			
+0 mins.	2	0	1	3	3	159	3	165	0	0	0	0	1	98	0	99
+15 mins.	4	0	2	6	1	162	2	165	0	0	0	0	2	99	1	102
+30 mins.	3	0	2	5	1	160	1	162	0	0	0	0	0	82	0	82
+45 mins.	1	0	5	6	1	171	1	173	0	0	0	0	3	112	0	115
Total Volume	10	0	10	20	6	652	7	665	0	0	0	0	6	391	1	398
% App. Total	50	0	50		0.9	98	1.1		0	0	0		1.5	98.2	0.3	
PHF	.625	.000	.500	.833	.500	.953	.583	.961	.000	.000	.000	.000	.500	.873	.250	.865
Cars	10	0	10	20	6	651	7	664	0	0	0	0	6	386	1	393
% Cars	100	0	100	100	100	99.8	100	99.8	0	0	0	0	100	98.7	100	98.7
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	5	0	5
% Trucks	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	1.3	0	1.3

Accurate Counts

978-664-2565

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

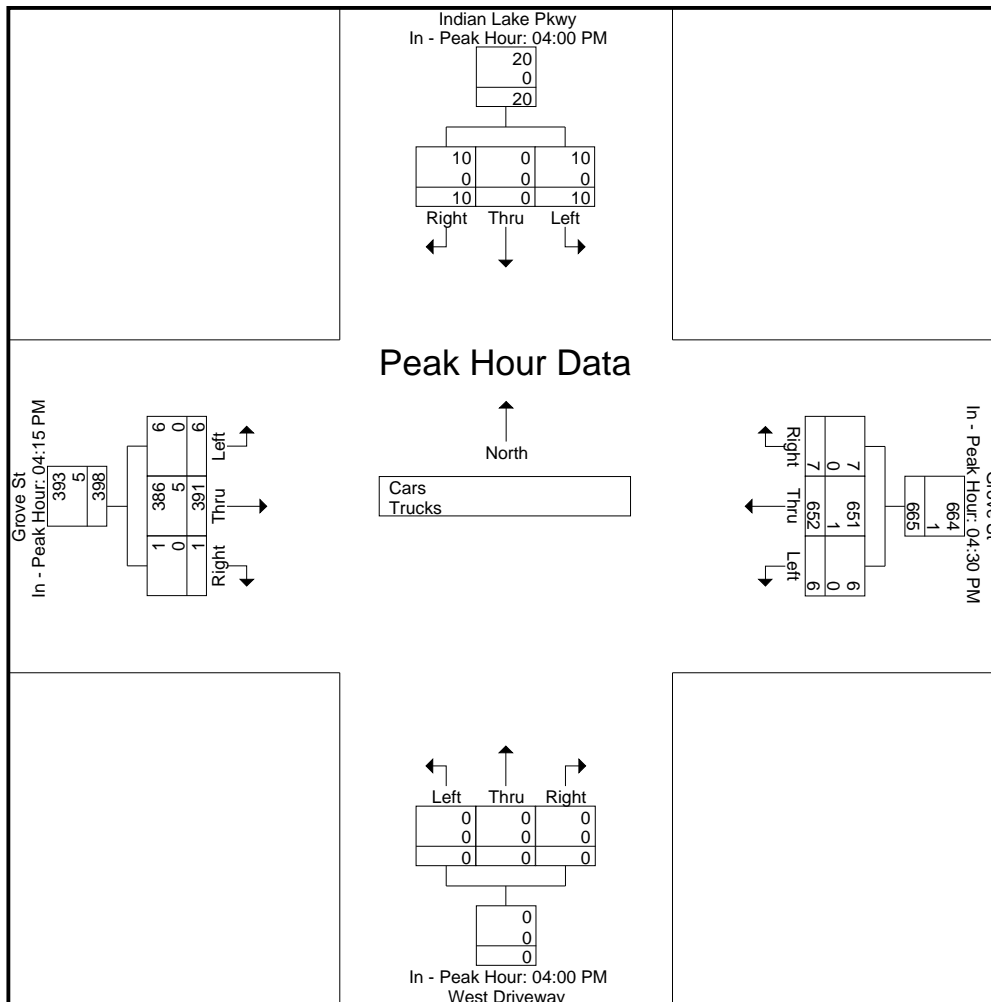
Page No : 3

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 4

Groups Printed- Cars

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	2	0	1	0	174	0	0	0	0	2	94	1	274
04:15 PM	4	0	2	4	139	1	0	0	0	1	96	0	247
04:30 PM	3	0	2	3	159	3	0	0	0	2	99	1	272
04:45 PM	1	0	5	1	161	2	0	0	0	0	82	0	252
Total	10	0	10	8	633	6	0	0	0	5	371	2	1045
05:00 PM	0	0	1	1	160	1	0	0	0	3	109	0	275
05:15 PM	1	0	1	1	171	1	0	0	0	0	88	0	263
05:30 PM	1	0	1	0	143	1	0	0	0	1	89	0	236
05:45 PM	1	0	0	0	120	0	0	0	0	0	67	0	188
Total	3	0	3	2	594	3	0	0	0	4	353	0	962
Grand Total	13	0	13	10	1227	9	0	0	0	9	724	2	2007
Apprch %	50	0	50	0.8	98.5	0.7	0	0	0	1.2	98.5	0.3	
Total %	0.6	0	0.6	0.5	61.1	0.4	0	0	0	0.4	36.1	0.1	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	0	2	5	3	159	3	165	0	0	0	0	2	99	1	102	272
04:45 PM	1	0	5	6	1	161	2	164	0	0	0	0	0	82	0	82	252
05:00 PM	0	0	1	1	1	160	1	162	0	0	0	0	3	109	0	112	275
05:15 PM	1	0	1	2	1	171	1	173	0	0	0	0	0	88	0	88	263
Total Volume	5	0	9	14	6	651	7	664	0	0	0	0	5	378	1	384	1062
% App. Total	35.7	0	64.3		0.9	98	1.1		0	0	0		1.3	98.4	0.3		
PHF	.417	.000	.450	.583	.500	.952	.583	.960	.000	.000	.000	.000	.417	.867	.250	.857	.965

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 7

Groups Printed- Trucks

Start Time	Indian Lake Pkwy From North			Grove St From East			West Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	4	0	6
05:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	4	0	4
Grand Total	0	0	0	0	2	0	0	0	0	0	8	0	10
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	20	0	0	0	0	0	80	0	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 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	1	0	1	0	0	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	4	0	4	6
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.500

Accurate Counts

978-664-2565

N/S Street : Indian Lake Pkwy / West Dwy

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420002

Site Code : 97420002

Start Date : 11/8/2023

Page No : 10

Groups Printed- Bikes Peds

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	2
04:15 PM	0	0	0	0	0	2	0	0	0	0	0	5	0	0	0	0	5	2	7
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	2	0	2	0	0	0	0	0	7	0	0	0	1	10	2	12
05:00 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Grand Total	0	0	0	4	0	2	0	0	0	0	0	7	0	0	0	1	12	2	14
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0				
Total %	0	0	0		0	100	0		0	0	0		0	0	0		85.7	14.3	

Start Time	Indian Lake Pkwy From North				Grove St From East				West Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	2	0	2	1	50	1	0	0	0	0	69	0	125
07:15 AM	5	0	2	1	49	2	0	0	0	5	94	0	158
07:30 AM	1	0	5	1	72	2	0	0	1	6	139	0	227
07:45 AM	6	0	6	0	79	0	0	0	0	9	164	0	264
Total	14	0	15	3	250	5	0	0	1	20	466	0	774
08:00 AM	3	0	8	0	110	11	0	0	0	8	149	0	289
08:15 AM	2	0	21	0	137	16	0	0	0	7	144	0	327
08:30 AM	0	0	16	0	124	3	0	0	1	12	153	0	309
08:45 AM	0	0	6	0	64	5	0	0	0	16	156	0	247
Total	5	0	51	0	435	35	0	0	1	43	602	0	1172
Grand Total	19	0	66	3	685	40	0	0	2	63	1068	0	1946
Apprch %	22.4	0	77.6	0.4	94.1	5.5	0	0	100	5.6	94.4	0	
Total %	1	0	3.4	0.2	35.2	2.1	0	0	0.1	3.2	54.9	0	
Cars	19	0	66	3	664	40	0	0	2	63	1046	0	1903
% Cars	100	0	100	100	96.9	100	0	0	100	100	97.9	0	97.8
Trucks	0	0	0	0	21	0	0	0	0	0	22	0	43
% Trucks	0	0	0	0	3.1	0	0	0	0	0	2.1	0	2.2

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	6	0	6	12	0	79	0	79	0	0	0	0	9	164	0	173	264
08:00 AM	3	0	8	11	0	110	11	121	0	0	0	0	8	149	0	157	289
08:15 AM	2	0	21	23	0	137	16	153	0	0	0	0	7	144	0	151	327
08:30 AM	0	0	16	16	0	124	3	127	0	0	1	1	12	153	0	165	309
Total Volume	11	0	51	62	0	450	30	480	0	0	1	1	36	610	0	646	1189
% App. Total	17.7	0	82.3		0	93.8	6.2		0	0	100		5.6	94.4	0		
PHF	.458	.000	.607	.674	.000	.821	.469	.784	.000	.000	.250	.250	.750	.930	.000	.934	.909
Cars	11	0	51	62	0	439	30	469	0	0	1	1	36	599	0	635	1167
% Cars	100	0	100	100	0	97.6	100	97.7	0	0	100	100	100	98.2	0	98.3	98.1
Trucks	0	0	0	0	0	11	0	11	0	0	0	0	0	11	0	11	22
% Trucks	0	0	0	0	0	2.4	0	2.3	0	0	0	0	0	1.8	0	1.7	1.9

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

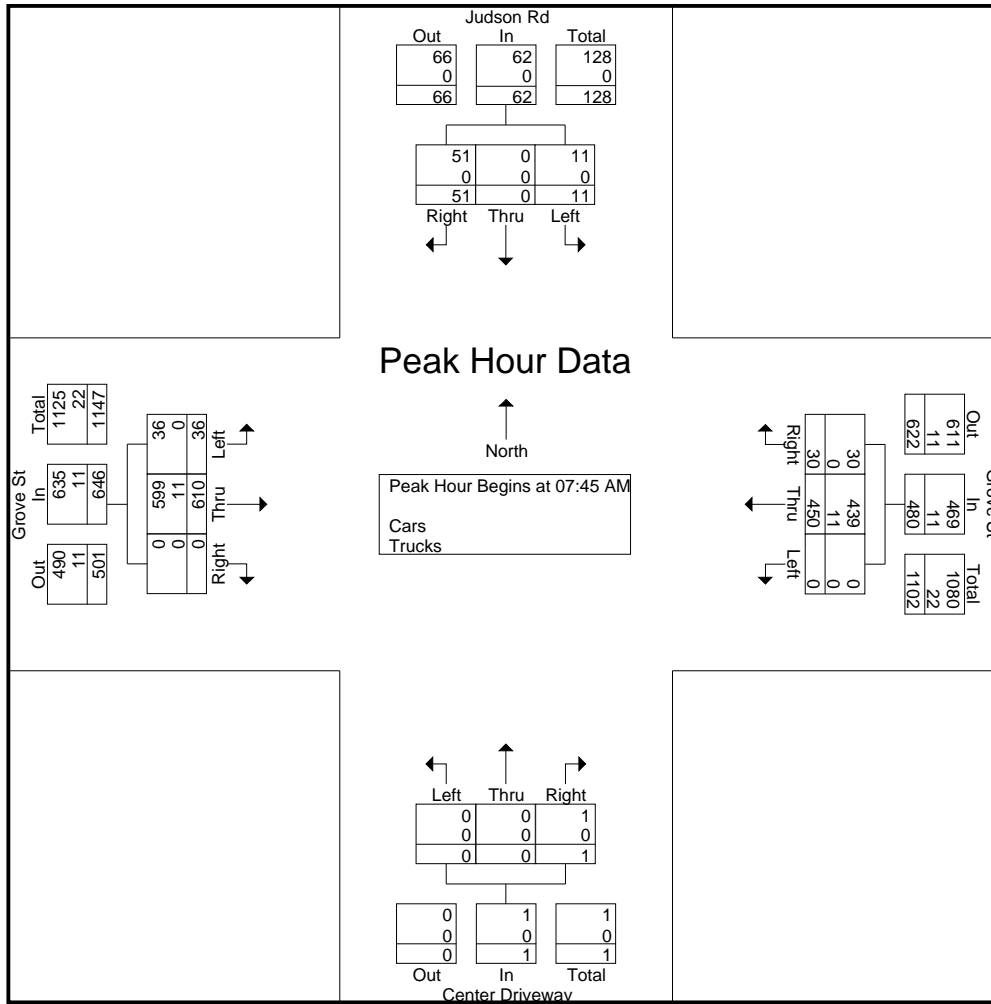
Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

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

Peak Hour for Each Approach Begins at:

	07:45 AM				07:45 AM				07:00 AM				07:45 AM			
+0 mins.	6	0	6	12	0	79	0	79	0	0	0	0	9	164	0	173
+15 mins.	3	0	8	11	0	110	11	121	0	0	0	0	8	149	0	157
+30 mins.	2	0	21	23	0	137	16	153	0	0	1	1	7	144	0	151
+45 mins.	0	0	16	16	0	124	3	127	0	0	0	0	12	153	0	165
Total Volume	11	0	51	62	0	450	30	480	0	0	1	1	36	610	0	646
% App. Total	17.7	0	82.3		0	93.8	6.2		0	0	100		5.6	94.4	0	
PHF	.458	.000	.607	.674	.000	.821	.469	.784	.000	.000	.250	.250	.750	.930	.000	.934
Cars	11	0	51	62	0	439	30	469	0	0	1	1	36	599	0	635
% Cars	100	0	100	100	0	97.6	100	97.7	0	0	100	100	100	98.2	0	98.3
Trucks	0	0	0	0	0	11	0	11	0	0	0	0	0	11	0	11
% Trucks	0	0	0	0	0	2.4	0	2.3	0	0	0	0	0	1.8	0	1.7

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

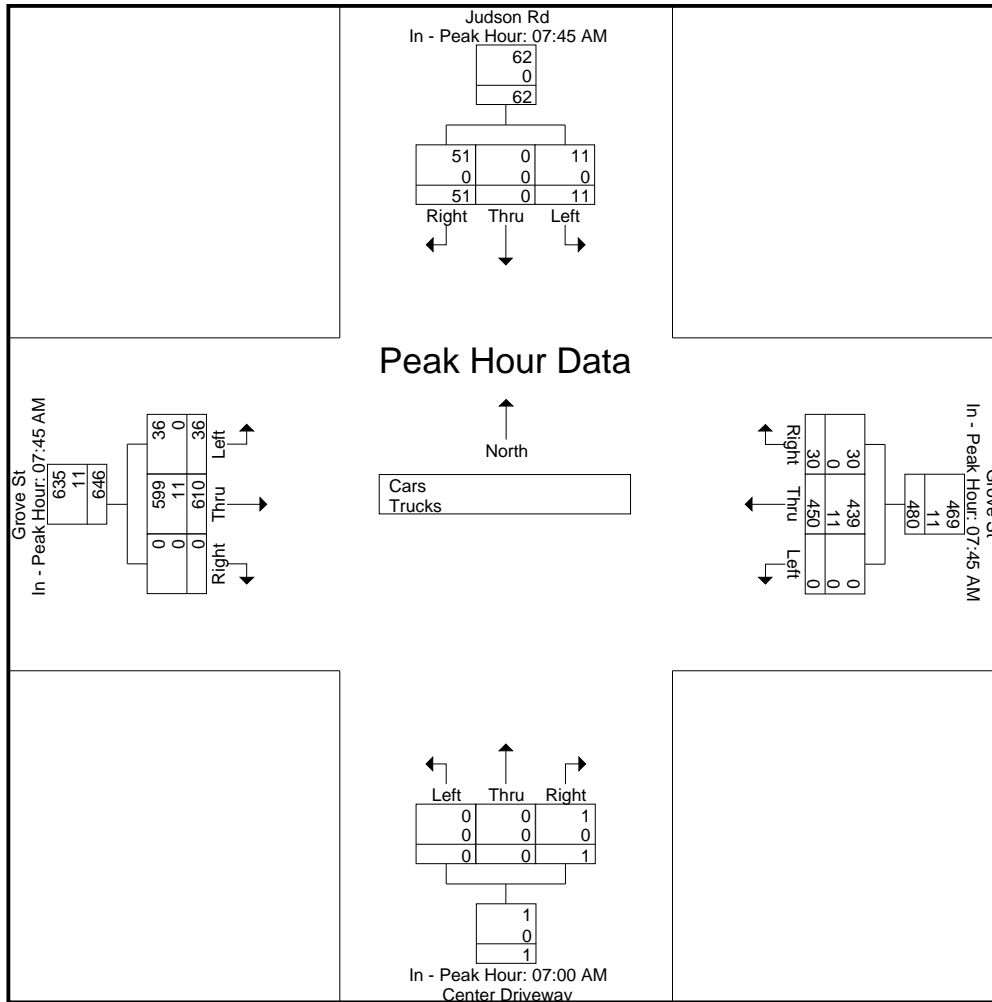
Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

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Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 4

Groups Printed- Cars

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	2	0	2	1	45	1	0	0	0	0	69	0	120
07:15 AM	5	0	2	1	49	2	0	0	0	5	92	0	156
07:30 AM	1	0	5	1	70	2	0	0	1	6	138	0	224
07:45 AM	6	0	6	0	77	0	0	0	0	9	163	0	261
Total	14	0	15	3	241	5	0	0	1	20	462	0	761
08:00 AM	3	0	8	0	108	11	0	0	0	8	146	0	284
08:15 AM	2	0	21	0	133	16	0	0	0	7	143	0	322
08:30 AM	0	0	16	0	121	3	0	0	1	12	147	0	300
08:45 AM	0	0	6	0	61	5	0	0	0	16	148	0	236
Total	5	0	51	0	423	35	0	0	1	43	584	0	1142
Grand Total	19	0	66	3	664	40	0	0	2	63	1046	0	1903
Apprch %	22.4	0	77.6	0.4	93.9	5.7	0	0	100	5.7	94.3	0	
Total %	1	0	3.5	0.2	34.9	2.1	0	0	0.1	3.3	55	0	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	6	0	6	12	0	77	0	77	0	0	0	0	9	163	0	172	261
08:00 AM	3	0	8	11	0	108	11	119	0	0	0	0	8	146	0	154	284
08:15 AM	2	0	21	23	0	133	16	149	0	0	0	0	7	143	0	150	322
08:30 AM	0	0	16	16	0	121	3	124	0	0	1	1	12	147	0	159	300
Total Volume	11	0	51	62	0	439	30	469	0	0	1	1	36	599	0	635	1167
% App. Total	17.7	0	82.3		0	93.6	6.4		0	0	100		5.7	94.3	0		
PHF	.458	.000	.607	.674	.000	.825	.469	.787	.000	.000	.250	.250	.750	.919	.000	.923	.906

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 7

Groups Printed- Trucks

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	0	5	0	0	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
07:45 AM	0	0	0	0	2	0	0	0	0	0	1	0	3
Total	0	0	0	0	9	0	0	0	0	0	4	0	13
08:00 AM	0	0	0	0	2	0	0	0	0	0	3	0	5
08:15 AM	0	0	0	0	4	0	0	0	0	0	1	0	5
08:30 AM	0	0	0	0	3	0	0	0	0	0	6	0	9
08:45 AM	0	0	0	0	3	0	0	0	0	0	8	0	11
Total	0	0	0	0	12	0	0	0	0	0	18	0	30
Grand Total	0	0	0	0	21	0	0	0	0	0	22	0	43
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	48.8	0	0	0	0	0	51.2	0	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
08:15 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
08:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	6	0	6	9
08:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	8	0	8	11
Total Volume	0	0	0	0	0	12	0	12	0	0	0	0	0	18	0	18	30
% App. Total	0	0	0	0	0	100	0	100	0	0	0	0	0	100	0	100	
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.563	.000	.563	.682

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 10

Groups Printed- Bikes Peds

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
07:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	3	0	3
Total	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	0	5	0	5
08:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	0	2
08:15 AM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	0	3	0	3
08:30 AM	0	0	0	4	0	0	0	3	0	0	0	2	0	0	0	0	9	0	9
08:45 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3	0	3
Total	0	0	0	5	0	0	0	9	0	0	0	3	0	0	0	0	17	0	17
Grand Total	0	0	0	8	0	0	0	11	0	0	0	3	0	0	0	0	22	0	22
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0				
Total %																	100	0	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 1

Groups Printed- Cars - Trucks

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	0	9	1	167	10	0	0	0	6	93	0	287
04:15 PM	6	0	9	0	133	3	0	0	1	4	98	0	254
04:30 PM	4	0	9	0	156	5	0	0	0	10	93	0	277
04:45 PM	1	0	6	1	161	5	0	0	0	4	79	0	257
Total	12	0	33	2	617	23	0	0	1	24	363	0	1075
05:00 PM	7	0	6	3	157	12	0	0	0	7	108	0	300
05:15 PM	3	0	17	0	154	7	0	0	1	7	81	0	270
05:30 PM	5	0	8	1	136	6	0	0	0	8	84	0	248
05:45 PM	3	0	4	0	116	5	0	0	0	7	63	0	198
Total	18	0	35	4	563	30	0	0	1	29	336	0	1016
Grand Total	30	0	68	6	1180	53	0	0	2	53	699	0	2091
Apprch %	30.6	0	69.4	0.5	95.2	4.3	0	0	100	7	93	0	
Total %	1.4	0	3.3	0.3	56.4	2.5	0	0	0.1	2.5	33.4	0	
Cars	30	0	68	6	1177	53	0	0	2	53	692	0	2081
% Cars	100	0	100	100	99.7	100	0	0	100	100	99	0	99.5
Trucks	0	0	0	0	3	0	0	0	0	0	7	0	10
% Trucks	0	0	0	0	0.3	0	0	0	0	0	1	0	0.5

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	4	0	9	13	0	156	5	161	0	0	0	0	10	93	0	103	277
04:45 PM	1	0	6	7	1	161	5	167	0	0	0	0	4	79	0	83	257
05:00 PM	7	0	6	13	3	157	12	172	0	0	0	0	7	108	0	115	300
05:15 PM	3	0	17	20	0	154	7	161	0	0	1	1	7	81	0	88	270
Total Volume	15	0	38	53	4	628	29	661	0	0	1	1	28	361	0	389	1104
% App. Total	28.3	0	71.7		0.6	95	4.4		0	0	100		7.2	92.8	0		
PHF	.536	.000	.559	.663	.333	.975	.604	.961	.000	.000	.250	.250	.700	.836	.000	.846	.920
Cars	15	0	38	53	4	627	29	660	0	0	1	1	28	360	0	388	1102
% Cars	100	0	100	100	100	99.8	100	99.8	0	0	100	100	100	99.7	0	99.7	99.8
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
% Trucks	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0.3	0	0.3	0.2

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

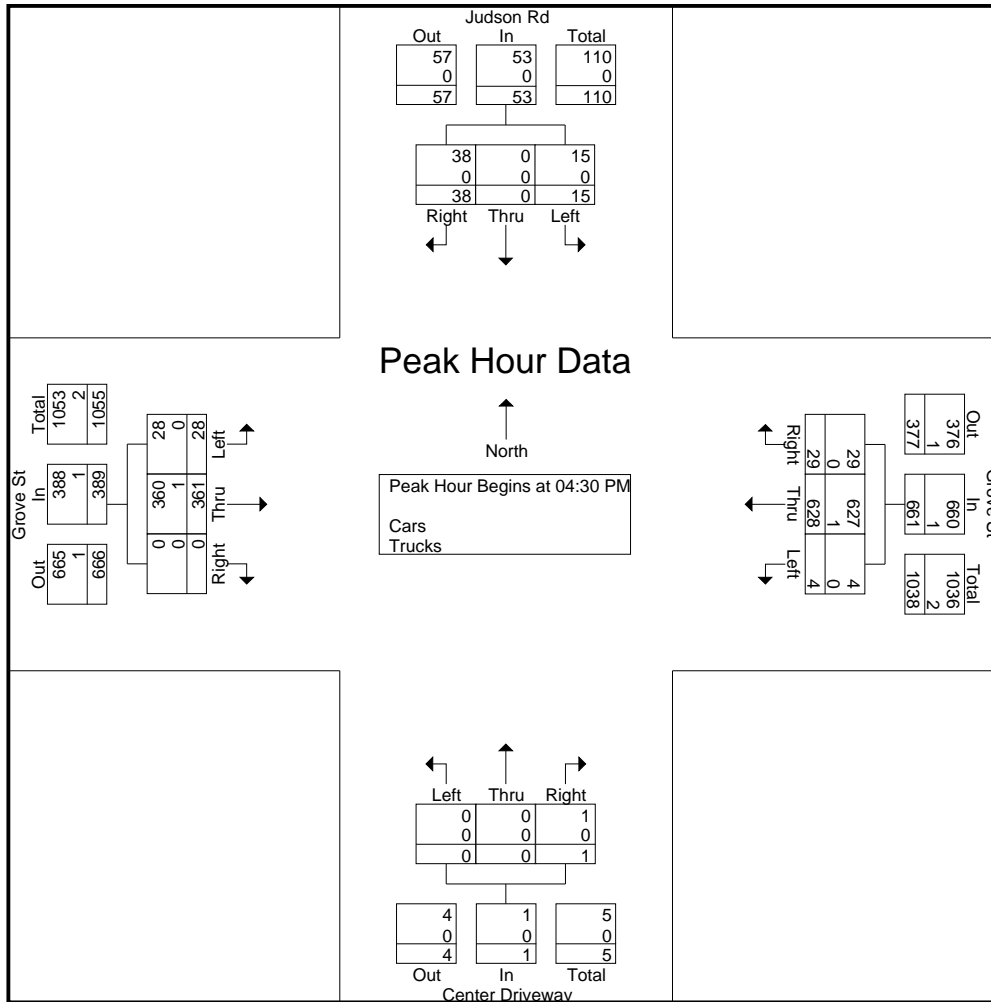
Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

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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				04:30 PM				04:00 PM				04:15 PM			
+0 mins.	4	0	9	13	0	156	5	161	0	0	0	0	4	98	0	102
+15 mins.	1	0	6	7	1	161	5	167	0	0	1	1	10	93	0	103
+30 mins.	7	0	6	13	3	157	12	172	0	0	0	0	4	79	0	83
+45 mins.	3	0	17	20	0	154	7	161	0	0	0	0	7	108	0	115
Total Volume	15	0	38	53	4	628	29	661	0	0	1	1	25	378	0	403
% App. Total	28.3	0	71.7		0.6	95	4.4		0	0	100		6.2	93.8	0	
PHF	.536	.000	.559	.663	.333	.975	.604	.961	.000	.000	.250	.250	.625	.875	.000	.876
Cars	15	0	38	53	4	627	29	660	0	0	1	1	25	375	0	400
% Cars	100	0	100	100	100	99.8	100	99.8	0	0	100	100	100	99.2	0	99.3
Trucks	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3
% Trucks	0	0	0	0	0	0.2	0	0.2	0	0	0	0	0	0.8	0	0.7

Accurate Counts

978-664-2565

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

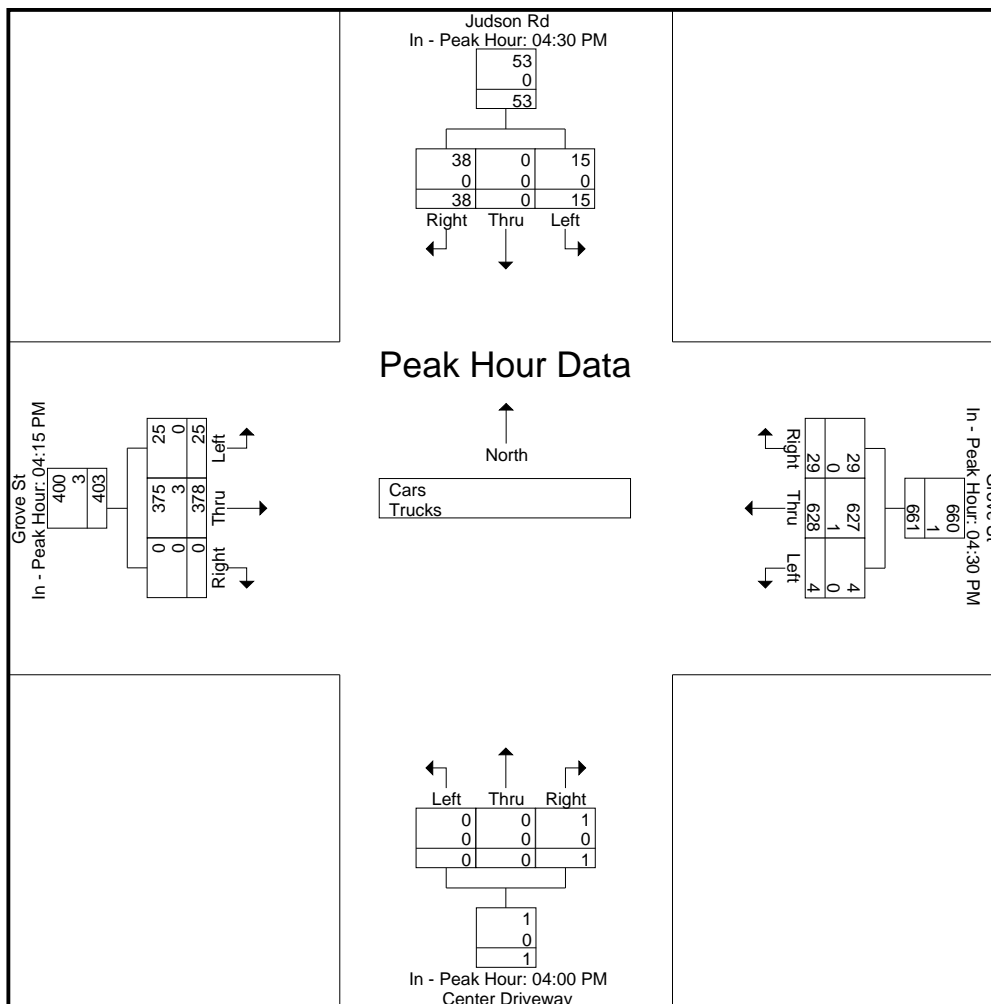
Page No : 3

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 4

Groups Printed- Cars

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	1	0	9	1	166	10	0	0	0	6	90	0	283
04:15 PM	6	0	9	0	133	3	0	0	1	4	96	0	252
04:30 PM	4	0	9	0	156	5	0	0	0	10	93	0	277
04:45 PM	1	0	6	1	160	5	0	0	0	4	79	0	256
Total	12	0	33	2	615	23	0	0	1	24	358	0	1068
05:00 PM	7	0	6	3	157	12	0	0	0	7	107	0	299
05:15 PM	3	0	17	0	154	7	0	0	1	7	81	0	270
05:30 PM	5	0	8	1	136	6	0	0	0	8	84	0	248
05:45 PM	3	0	4	0	115	5	0	0	0	7	62	0	196
Total	18	0	35	4	562	30	0	0	1	29	334	0	1013
Grand Total	30	0	68	6	1177	53	0	0	2	53	692	0	2081
Apprch %	30.6	0	69.4	0.5	95.2	4.3	0	0	100	7.1	92.9	0	
Total %	1.4	0	3.3	0.3	56.6	2.5	0	0	0.1	2.5	33.3	0	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	4	0	9	13	0	156	5	161	0	0	0	0	10	93	0	103	277
04:45 PM	1	0	6	7	1	160	5	166	0	0	0	0	4	79	0	83	256
05:00 PM	7	0	6	13	3	157	12	172	0	0	0	0	7	107	0	114	299
05:15 PM	3	0	17	20	0	154	7	161	0	0	1	1	7	81	0	88	270
Total Volume	15	0	38	53	4	627	29	660	0	0	1	1	28	360	0	388	1102
% App. Total	28.3	0	71.7		0.6	95	4.4		0	0	100		7.2	92.8	0		
PHF	.536	.000	.559	.663	.333	.980	.604	.959	.000	.000	.250	.250	.700	.841	.000	.851	.921

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

Page No : 7

Groups Printed- Trucks

Start Time	Judson Rd From North			Grove St From East			Center Driveway From South			Grove St From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	1	0	0	0	0	0	3	0	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	5	0	7
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	1	0	0	0	0	0	2	0	3
Grand Total	0	0	0	0	3	0	0	0	0	0	7	0	10
Apprch %	0	0	0	0	100	0	0	0	0	0	100	0	
Total %	0	0	0	0	30	0	0	0	0	0	70	0	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 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	1	0	1	0	0	0	0	0	0	3	0	3	4
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	5	0	5	7
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	0	100	0	0	0
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.417	.000	.417	.438	

Accurate Counts

978-664-2565

N/S Street : Judson Road / Center Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear

File Name : 97420003

Site Code : 97420003

Start Date : 11/8/2023

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Groups Printed- Bikes Peds

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	2	0	1	0	0	0	3	0	0	0	0	4	2	6
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	2
04:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	1	0	2	0	1	0	0	0	5	0	0	0	0	7	2	9
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	1	0	2	0	1	0	0	0	5	0	0	0	0	7	2	9
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0				
Total %	0	0	0		0	100	0		0	0	0		0	0	0		77.8	22.2	

Start Time	Judson Rd From North				Grove St From East				Center Driveway From South				Grove St From West				Int. Total
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	52	0	1	71	0	124
07:15 AM	0	51	1	0	99	0	151
07:30 AM	1	73	1	3	140	1	219
07:45 AM	0	81	0	1	170	0	252
Total	1	257	2	5	480	1	746
08:00 AM	0	120	0	0	153	0	273
08:15 AM	0	154	1	3	146	0	304
08:30 AM	2	128	0	5	153	0	288
08:45 AM	3	67	0	2	155	0	227
Total	5	469	1	10	607	0	1092
Grand Total	6	726	3	15	1087	1	1838
Apprch %	0.8	99.2	16.7	83.3	99.9	0.1	
Total %	0.3	39.5	0.2	0.8	59.1	0.1	
Cars	6	709	3	15	1066	1	1800
% Cars	100	97.7	100	100	98.1	100	97.9
Trucks	0	17	0	0	21	0	38
% Trucks	0	2.3	0	0	1.9	0	2.1

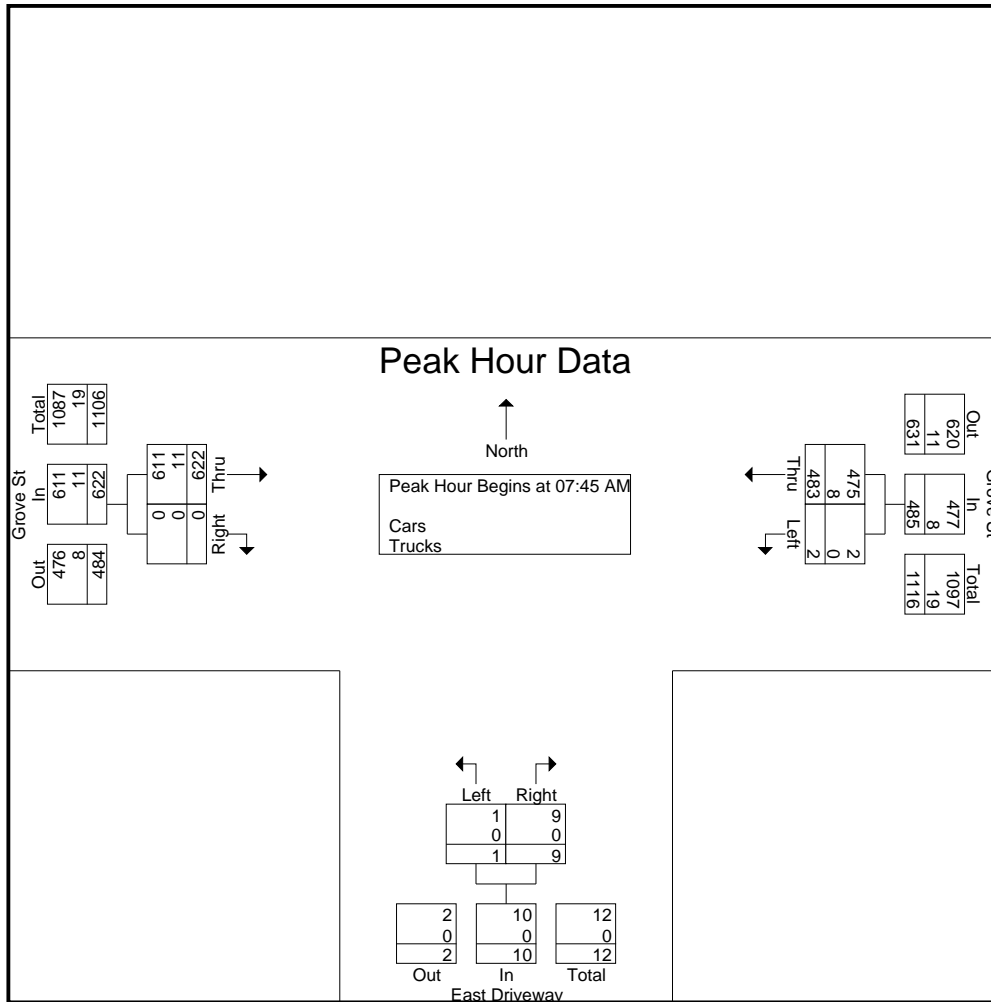
Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	81	81	0	1	1	170	0	170	252
08:00 AM	0	120	120	0	0	0	153	0	153	273
08:15 AM	0	154	154	1	3	4	146	0	146	304
08:30 AM	2	128	130	0	5	5	153	0	153	288
Total Volume	2	483	485	1	9	10	622	0	622	1117
% App. Total	0.4	99.6		10	90		100	0		
PHF	.250	.784	.787	.250	.450	.500	.915	.000	.915	.919
Cars	2	475	477	1	9	10	611	0	611	1098
% Cars	100	98.3	98.4	100	100	100	98.2	0	98.2	98.3
Trucks	0	8	8	0	0	0	11	0	11	19
% Trucks	0	1.7	1.6	0	0	0	1.8	0	1.8	1.7

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 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:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	0	81	81	0	0	0	170	0	170
+15 mins.	0	120	120	1	3	4	153	0	153
+30 mins.	0	154	154	0	5	5	146	0	146
+45 mins.	2	128	130	0	2	2	153	0	153
Total Volume	2	483	485	1	10	11	622	0	622
% App. Total	0.4	99.6		9.1	90.9		100	0	
PHF	.250	.784	.787	.250	.500	.550	.915	.000	.915
Cars	2	475	477	1	10	11	611	0	611
% Cars	100	98.3	98.4	100	100	100	98.2	0	98.2
Trucks	0	8	8	0	0	0	11	0	11
% Trucks	0	1.7	1.6	0	0	0	1.8	0	1.8

Accurate Counts

978-664-2565

File Name : 97420004

Site Code : 97420004

Start Date : 11/8/2023

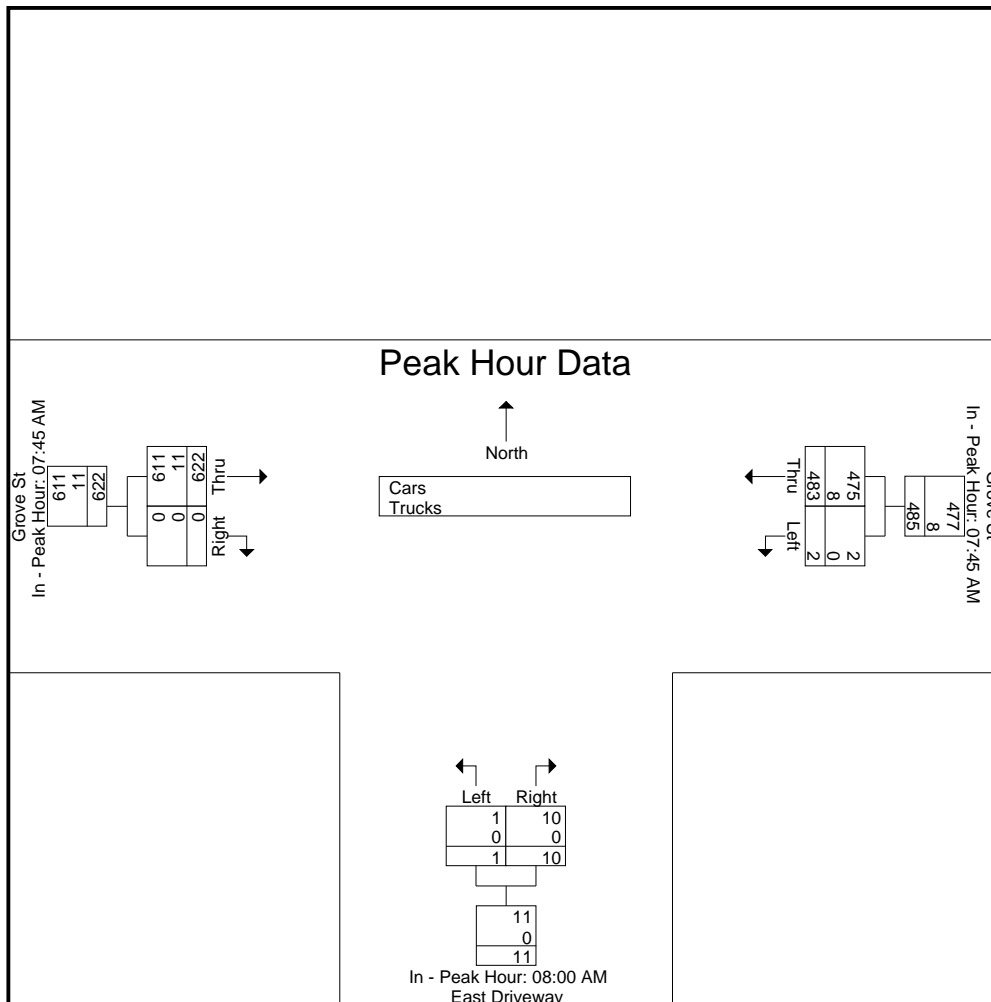
Page No : 3

N/S Street : East Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	48	0	1	71	0	120
07:15 AM	0	51	1	0	97	0	149
07:30 AM	1	71	1	3	140	1	217
07:45 AM	0	81	0	1	169	0	251
Total	1	251	2	5	477	1	737
08:00 AM	0	118	0	0	149	0	267
08:15 AM	0	151	1	3	145	0	300
08:30 AM	2	125	0	5	148	0	280
08:45 AM	3	64	0	2	147	0	216
Total	5	458	1	10	589	0	1063
Grand Total	6	709	3	15	1066	1	1800
Apprch %	0.8	99.2	16.7	83.3	99.9	0.1	
Total %	0.3	39.4	0.2	0.8	59.2	0.1	

Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	0	81	81	0	1	1	169	0	169	251
08:00 AM	0	118	118	0	0	0	149	0	149	267
08:15 AM	0	151	151	1	3	4	145	0	145	300
08:30 AM	2	125	127	0	5	5	148	0	148	280
Total Volume	2	475	477	1	9	10	611	0	611	1098
% App. Total	0.4	99.6		10	90		100	0		
PHF	.250	.786	.790	.250	.450	.500	.904	.000	.904	.915

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	4	0	0	0	0	4
07:15 AM	0	0	0	0	2	0	2
07:30 AM	0	2	0	0	0	0	2
07:45 AM	0	0	0	0	1	0	1
Total	0	6	0	0	3	0	9
08:00 AM	0	2	0	0	4	0	6
08:15 AM	0	3	0	0	1	0	4
08:30 AM	0	3	0	0	5	0	8
08:45 AM	0	3	0	0	8	0	11
Total	0	11	0	0	18	0	29
Grand Total	0	17	0	0	21	0	38
Apprch %	0	100	0	0	100	0	
Total %	0	44.7	0	0	55.3	0	

Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	2	2	0	0	0	4	0	4	6
08:15 AM	0	3	3	0	0	0	1	0	1	4
08:30 AM	0	3	3	0	0	0	5	0	5	8
08:45 AM	0	3	3	0	0	0	8	0	8	11
Total Volume	0	11	11	0	0	0	18	0	18	29
% App. Total	0	100		0	0		100	0		
PHF	.000	.917	.917	.000	.000	.000	.563	.000	.563	.659

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	2	177	1	2	95	0	277
04:15 PM	0	136	2	4	104	1	247
04:30 PM	2	160	1	3	96	1	263
04:45 PM	0	169	0	2	81	1	253
Total	4	642	4	11	376	3	1040
05:00 PM	1	165	3	3	114	0	286
05:15 PM	2	163	1	2	86	0	254
05:30 PM	1	142	0	2	88	0	233
05:45 PM	0	120	0	0	67	0	187
Total	4	590	4	7	355	0	960
Grand Total	8	1232	8	18	731	3	2000
Apprch %	0.6	99.4	30.8	69.2	99.6	0.4	
Total %	0.4	61.6	0.4	0.9	36.5	0.2	
Cars	8	1230	8	18	726	3	1993
% Cars	100	99.8	100	100	99.3	100	99.7
Trucks	0	2	0	0	5	0	7
% Trucks	0	0.2	0	0	0.7	0	0.3

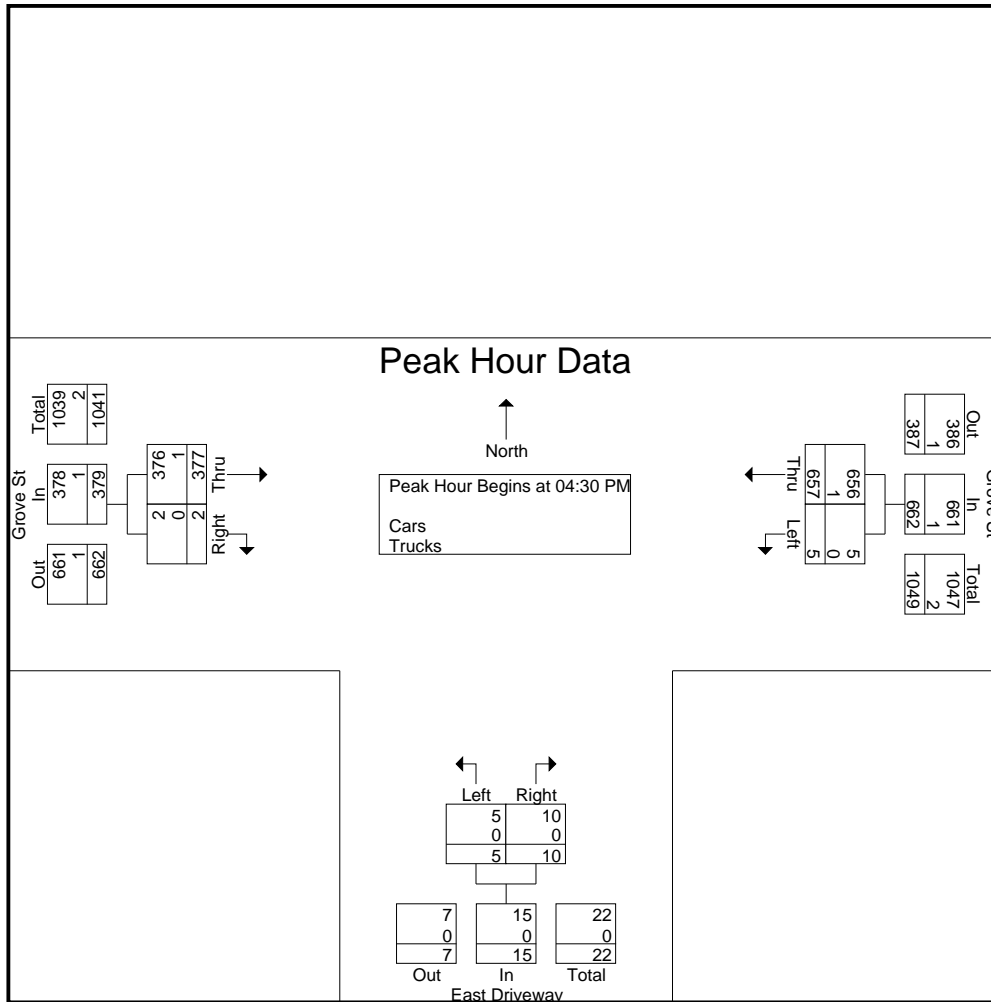
Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	2	160	162	1	3	4	96	1	97	263
04:45 PM	0	169	169	0	2	2	81	1	82	253
05:00 PM	1	165	166	3	3	6	114	0	114	286
05:15 PM	2	163	165	1	2	3	86	0	86	254
Total Volume	5	657	662	5	10	15	377	2	379	1056
% App. Total	0.8	99.2		33.3	66.7		99.5	0.5		
PHF	.625	.972	.979	.417	.833	.625	.827	.500	.831	.923
Cars	5	656	661	5	10	15	376	2	378	1054
% Cars	100	99.8	99.8	100	100	100	99.7	100	99.7	99.8
Trucks	0	1	1	0	0	0	1	0	1	2
% Trucks	0	0.2	0.2	0	0	0	0.3	0	0.3	0.2

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
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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			04:15 PM			04:15 PM		
+0 mins.	2	160	162	2	4	6	104	1	105
+15 mins.	0	169	169	1	3	4	96	1	97
+30 mins.	1	165	166	0	2	2	81	1	82
+45 mins.	2	163	165	3	3	6	114	0	114
Total Volume	5	657	662	6	12	18	395	3	398
% App. Total	0.8	99.2		33.3	66.7		99.2	0.8	
PHF	.625	.972	.979	.500	.750	.750	.866	.750	.873
Cars	5	656	661	6	12	18	392	3	395
% Cars	100	99.8	99.8	100	100	100	99.2	100	99.2
Trucks	0	1	1	0	0	0	3	0	3
% Trucks	0	0.2	0.2	0	0	0	0.8	0	0.8

Accurate Counts

978-664-2565

File Name : 97420004

Site Code : 97420004

Start Date : 11/8/2023

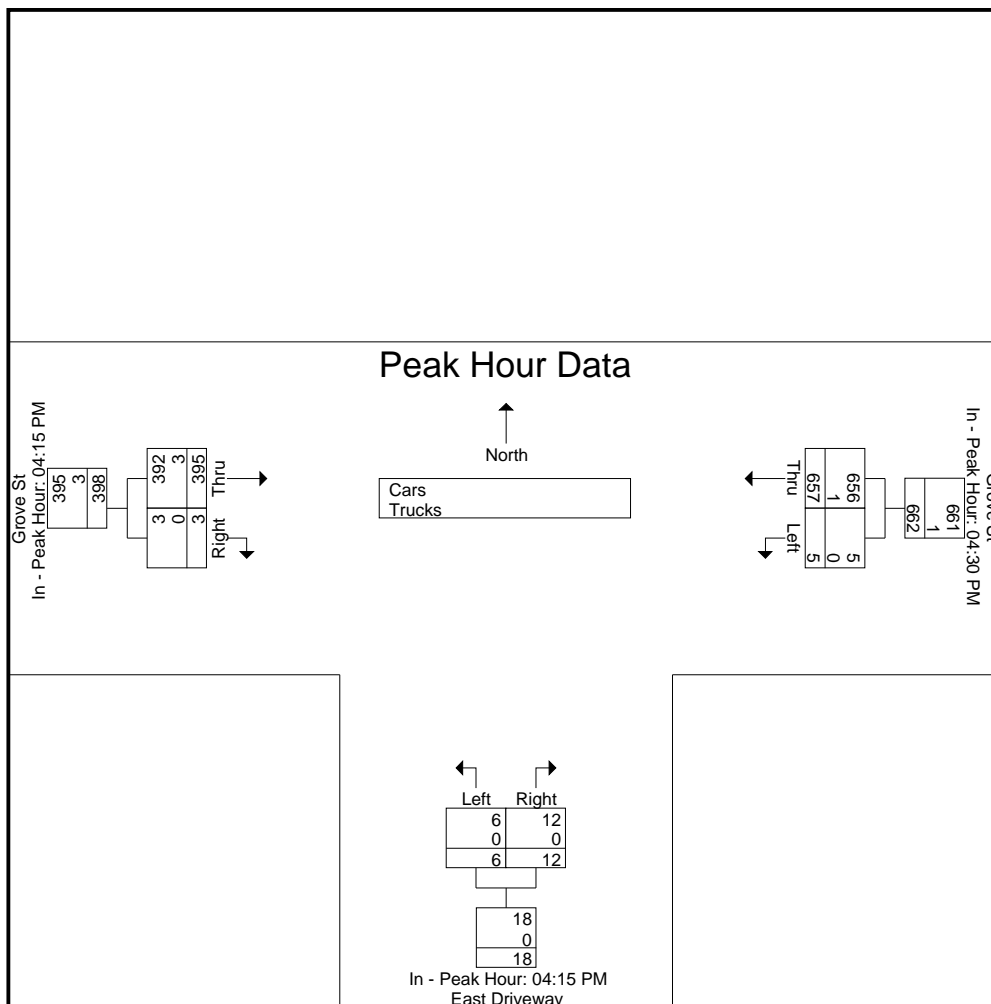
Page No : 3

N/S Street : East Driveway

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	2	176	1	2	94	0	275
04:15 PM	0	136	2	4	102	1	245
04:30 PM	2	160	1	3	96	1	263
04:45 PM	0	168	0	2	81	1	252
Total	4	640	4	11	373	3	1035
05:00 PM	1	165	3	3	113	0	285
05:15 PM	2	163	1	2	86	0	254
05:30 PM	1	142	0	2	88	0	233
05:45 PM	0	120	0	0	66	0	186
Total	4	590	4	7	353	0	958
Grand Total	8	1230	8	18	726	3	1993
Apprch %	0.6	99.4	30.8	69.2	99.6	0.4	
Total %	0.4	61.7	0.4	0.9	36.4	0.2	

Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	2	160	162	1	3	4	96	1	97	263
04:45 PM	0	168	168	0	2	2	81	1	82	252
05:00 PM	1	165	166	3	3	6	113	0	113	285
05:15 PM	2	163	165	1	2	3	86	0	86	254
Total Volume	5	656	661	5	10	15	376	2	378	1054
% App. Total	0.8	99.2		33.3	66.7		99.5	0.5		
PHF	.625	.976	.984	.417	.833	.625	.832	.500	.836	.925

Accurate Counts

978-664-2565

N/S Street : East Driveway
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420004
 Site Code : 97420004
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		East Driveway From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	1	0	0	1	0	2
04:15 PM	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	1
Total	0	2	0	0	3	0	5
05:00 PM	0	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	1
Total	0	0	0	0	2	0	2
Grand Total	0	2	0	0	5	0	7
Apprch %	0	100	0	0	100	0	
Total %	0	28.6	0	0	71.4	0	

Start Time	Grove St From East			East Driveway From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	1	1	0	0	0	1	0	1	2
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	2	2	0	0	0	3	0	3	5
% App. Total	0	100		0	0		100	0		
PHF	.000	.500	.500	.000	.000	.000	.375	.000	.375	.625

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420005
 Site Code : 97420005
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Rosemont Rd From North		Chadwick St From East		Chadwick St From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:00 AM	1	3	1	0	0	1	6
07:15 AM	2	3	0	0	0	2	7
07:30 AM	3	2	0	0	1	2	8
07:45 AM	2	5	2	0	1	2	12
Total	8	13	3	0	2	7	33
08:00 AM	2	5	2	0	14	26	49
08:15 AM	0	7	6	0	35	44	92
08:30 AM	3	4	1	0	7	46	61
08:45 AM	5	8	0	0	7	20	40
Total	10	24	9	0	63	136	242
Grand Total	18	37	12	0	65	143	275
Apprch %	32.7	67.3	100	0	31.2	68.8	
Total %	6.5	13.5	4.4	0	23.6	52	
Cars	18	37	12	0	64	142	273
% Cars	100	100	100	0	98.5	99.3	99.3
Trucks	0	0	0	0	1	1	2
% Trucks	0	0	0	0	1.5	0.7	0.7

Start Time	Rosemont Rd From North			Chadwick St From East			Chadwick St From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	5	7	2	0	2	14	26	40	49
08:15 AM	0	7	7	6	0	6	35	44	79	92
08:30 AM	3	4	7	1	0	1	7	46	53	61
08:45 AM	5	8	13	0	0	0	7	20	27	40
Total Volume	10	24	34	9	0	9	63	136	199	242
% App. Total	29.4	70.6		100	0		31.7	68.3		
PHF	.500	.750	.654	.375	.000	.375	.450	.739	.630	.658
Cars	10	24	34	9	0	9	62	135	197	240
% Cars	100	100	100	100	0	100	98.4	99.3	99.0	99.2
Trucks	0	0	0	0	0	0	1	1	2	2
% Trucks	0	0	0	0	0	0	1.6	0.7	1.0	0.8

Accurate Counts

978-664-2565

File Name : 97420005

Site Code : 97420005

Start Date : 11/8/2023

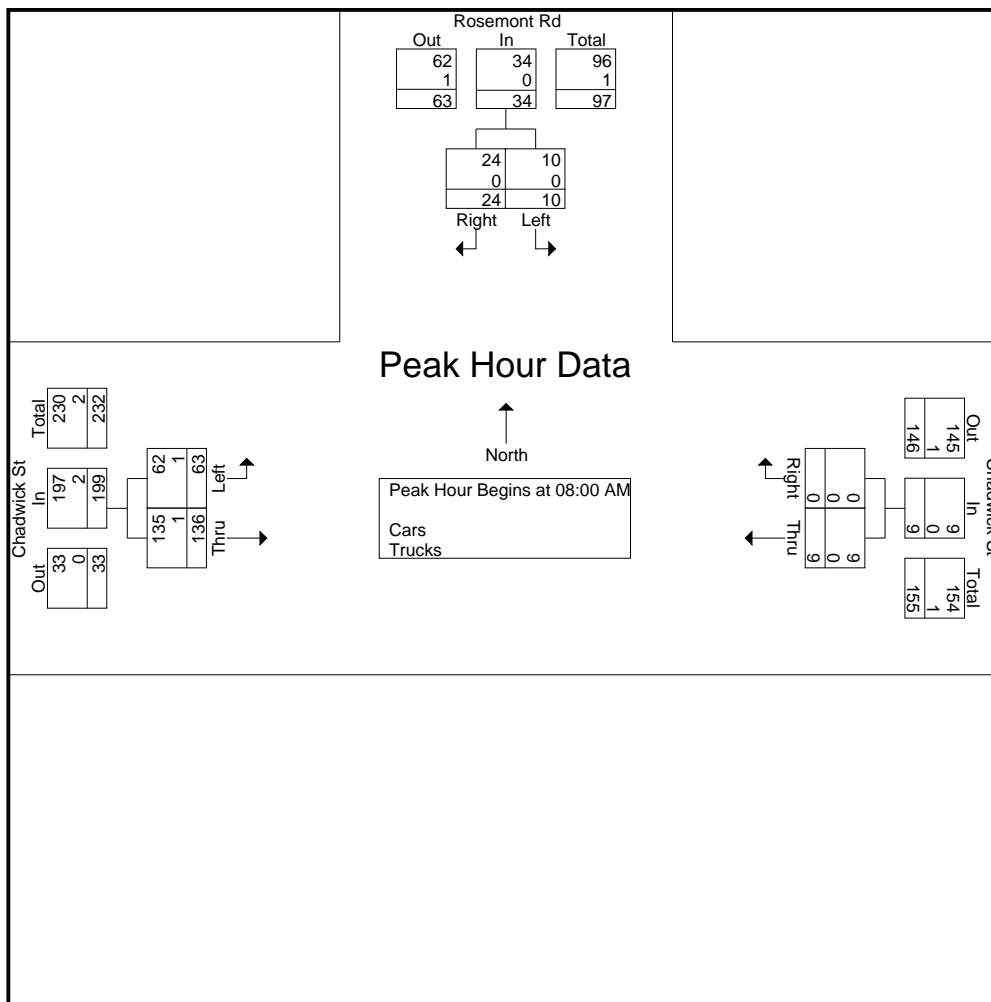
Page No : 2

N/S Street : Rosemont Road

E/W Street : Chadwick Street

City/State : Worcester, MA

Weather : Clear



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

Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			08:00 AM		
+0 mins.	2	5	7	2	0	2	14	26	40
+15 mins.	0	7	7	2	0	2	35	44	79
+30 mins.	3	4	7	6	0	6	7	46	53
+45 mins.	5	8	13	1	0	1	7	20	27
Total Volume	10	24	34	11	0	11	63	136	199
% App. Total	29.4	70.6		100	0		31.7	68.3	
PHF	.500	.750	.654	.458	.000	.458	.450	.739	.630
Cars	10	24	34	11	0	11	62	135	197
% Cars	100	100	100	100	0	100	98.4	99.3	99
Trucks	0	0	0	0	0	0	1	1	2
% Trucks	0	0	0	0	0	0	1.6	0.7	1

Accurate Counts

978-664-2565

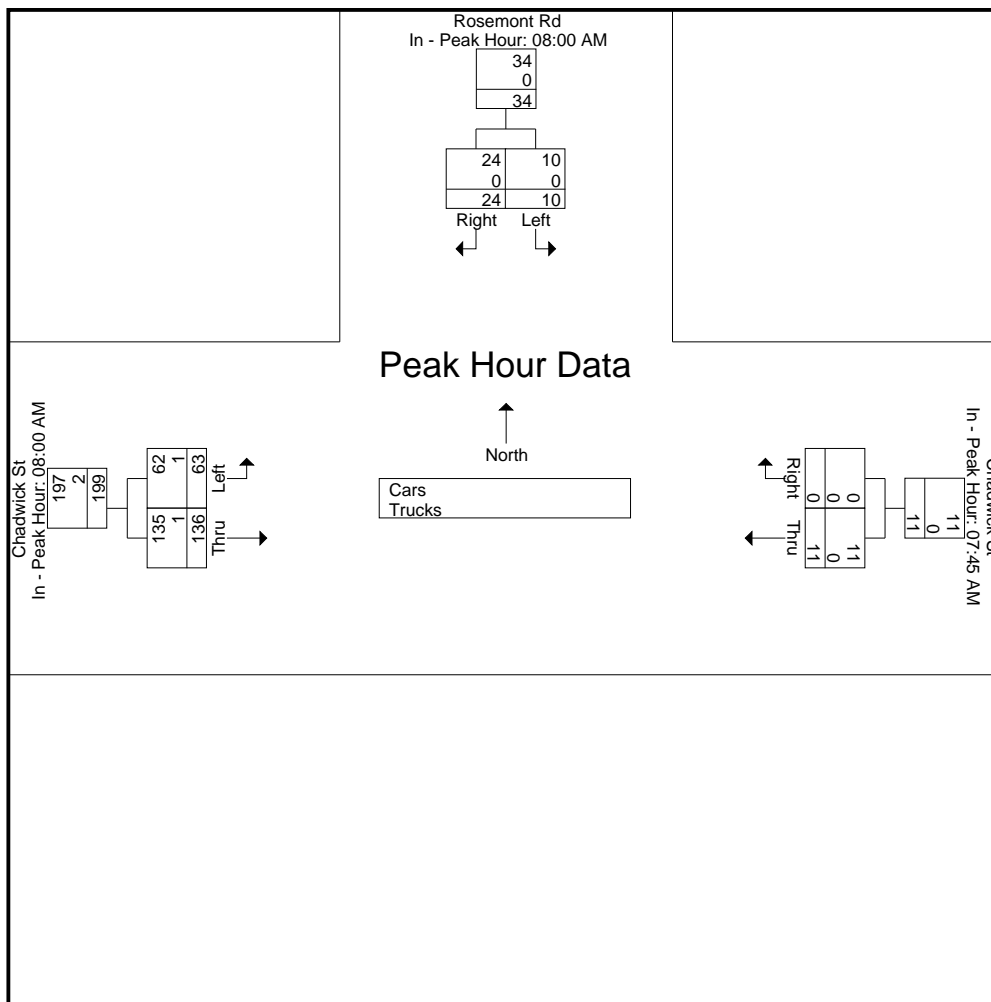
File Name : 97420005

Site Code : 97420005

Start Date : 11/8/2023

Page No : 3

N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420005
 Site Code : 97420005
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Rosemont Rd From North		Chadwick St From East		Chadwick St From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:00 AM	1	3	1	0	0	1	6
07:15 AM	2	3	0	0	0	2	7
07:30 AM	3	2	0	0	1	2	8
07:45 AM	2	5	2	0	1	2	12
Total	8	13	3	0	2	7	33
08:00 AM	2	5	2	0	14	26	49
08:15 AM	0	7	6	0	34	43	90
08:30 AM	3	4	1	0	7	46	61
08:45 AM	5	8	0	0	7	20	40
Total	10	24	9	0	62	135	240
Grand Total	18	37	12	0	64	142	273
Apprch %	32.7	67.3	100	0	31.1	68.9	
Total %	6.6	13.6	4.4	0	23.4	52	

Start Time	Rosemont Rd From North			Chadwick St From East			Chadwick St From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	5	7	2	0	2	14	26	40	49
08:15 AM	0	7	7	6	0	6	34	43	77	90
08:30 AM	3	4	7	1	0	1	7	46	53	61
08:45 AM	5	8	13	0	0	0	7	20	27	40
Total Volume	10	24	34	9	0	9	62	135	197	240
% App. Total	29.4	70.6		100	0		31.5	68.5		
PHF	.500	.750	.654	.375	.000	.375	.456	.734	.640	.667

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420005
 Site Code : 97420005
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Rosemont Rd From North		Chadwick St From East		Chadwick St From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	2
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	1	1	2
Grand Total	0	0	0	0	1	1	2
Apprch %	0	0	0	0	50	50	
Total %	0	0	0	0	50	50	

Start Time	Rosemont Rd From North			Chadwick St From East			Chadwick St From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	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	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	1	1	2	2
Total Volume	0	0	0	0	0	0	1	1	2	2
% App. Total	0	0	0	0	0	0	50	50		
PHF	.000	.000	.000	.000	.000	.000	.250	.250	.250	.250

Accurate Counts

978-664-2565

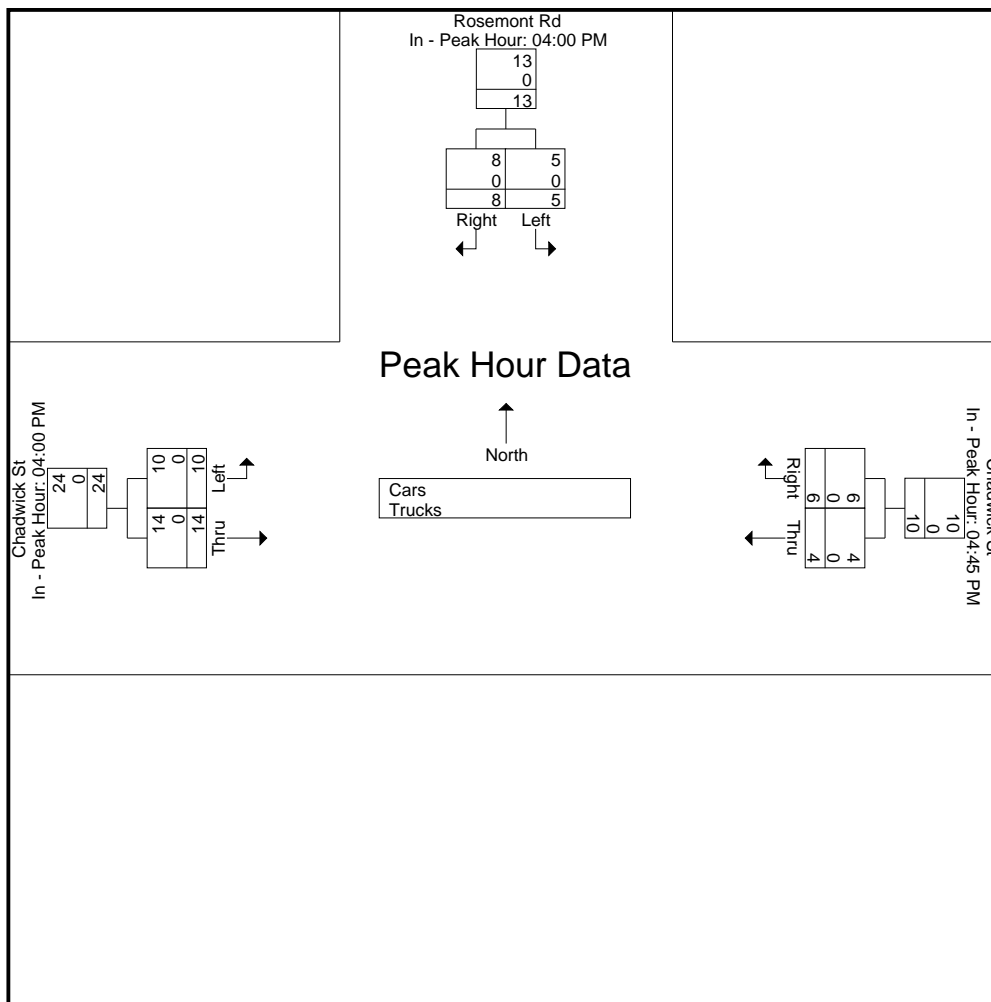
File Name : 97420005

Site Code : 97420005

Start Date : 11/8/2023

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N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Chadwick Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420005
 Site Code : 97420005
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Rosemont Rd From North		Chadwick St From East		Chadwick St From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:00 PM	4	1	1	4	1	3	14
04:15 PM	1	2	1	0	2	5	11
04:30 PM	0	2	0	0	3	3	8
04:45 PM	0	3	0	3	4	3	13
Total	5	8	2	7	10	14	46
05:00 PM	1	1	4	0	1	2	9
05:15 PM	1	2	0	2	0	2	7
05:30 PM	1	2	0	1	2	0	6
05:45 PM	0	1	0	1	0	2	4
Total	3	6	4	4	3	6	26
Grand Total	8	14	6	11	13	20	72
Apprch %	36.4	63.6	35.3	64.7	39.4	60.6	
Total %	11.1	19.4	8.3	15.3	18.1	27.8	

Start Time	Rosemont Rd From North			Chadwick St From East			Chadwick St From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. 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	4	1	5	1	4	5	1	3	4	14
04:15 PM	1	2	3	1	0	1	2	5	7	11
04:30 PM	0	2	2	0	0	0	3	3	6	8
04:45 PM	0	3	3	0	3	3	4	3	7	13
Total Volume	5	8	13	2	7	9	10	14	24	46
% App. Total	38.5	61.5		22.2	77.8		41.7	58.3		
PHF	.313	.667	.650	.500	.438	.450	.625	.700	.857	.821

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
Start Time							
07:00 AM	3	51	1	1	71	1	128
07:15 AM	3	50	0	0	97	1	151
07:30 AM	1	74	2	1	143	3	224
07:45 AM	4	83	0	5	169	3	264
Total	11	258	3	7	480	8	767
08:00 AM	5	108	11	3	151	1	279
08:15 AM	7	137	13	22	150	0	329
08:30 AM	5	127	4	5	158	2	301
08:45 AM	9	66	3	4	151	6	239
Total	26	438	31	34	610	9	1148
Grand Total	37	696	34	41	1090	17	1915
Apprch %	5	95	45.3	54.7	98.5	1.5	
Total %	1.9	36.3	1.8	2.1	56.9	0.9	
Cars	37	683	34	40	1069	17	1880
% Cars	100	98.1	100	97.6	98.1	100	98.2
Trucks	0	13	0	1	21	0	35
% Trucks	0	1.9	0	2.4	1.9	0	1.8

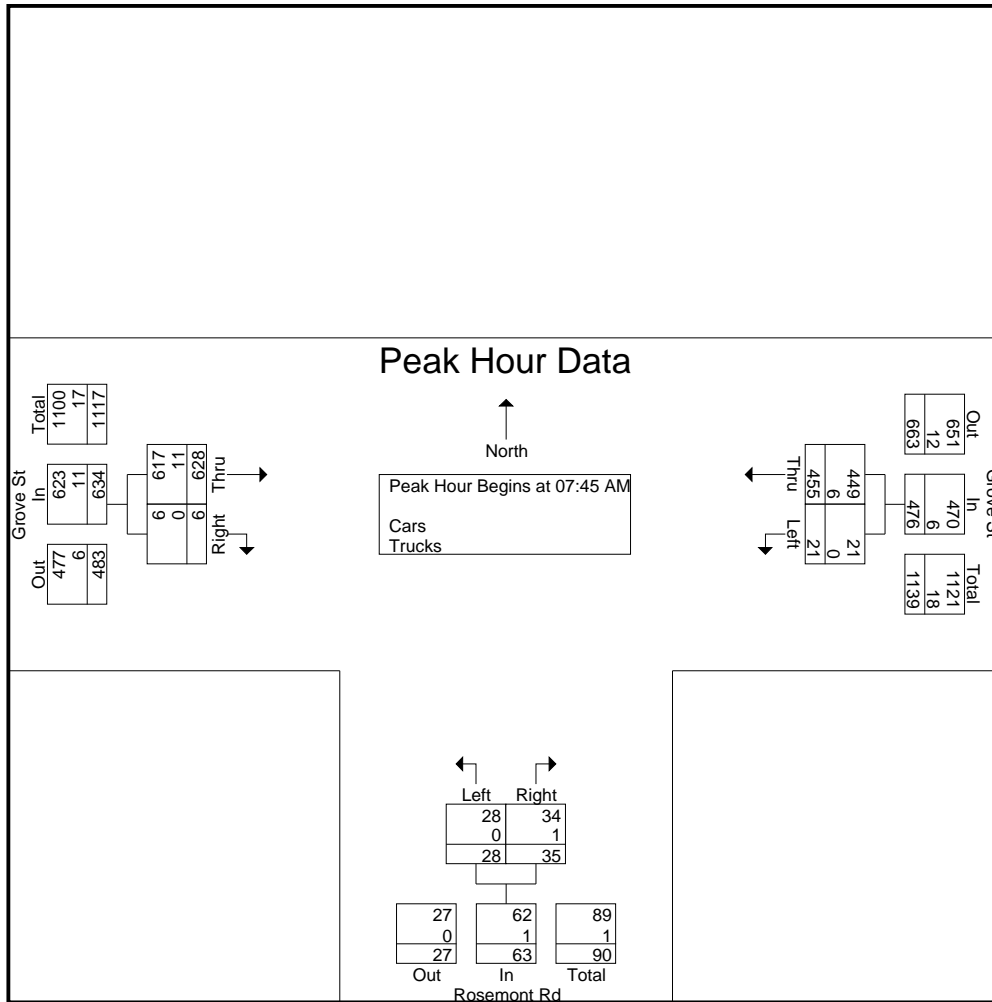
	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Start Time										
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	83	87	0	5	5	169	3	172	264
08:00 AM	5	108	113	11	3	14	151	1	152	279
08:15 AM	7	137	144	13	22	35	150	0	150	329
08:30 AM	5	127	132	4	5	9	158	2	160	301
Total Volume	21	455	476	28	35	63	628	6	634	1173
% App. Total	4.4	95.6		44.4	55.6		99.1	0.9		
PHF	.750	.830	.826	.538	.398	.450	.929	.500	.922	.891
Cars	21	449	470	28	34	62	617	6	623	1155
% Cars	100	98.7	98.7	100	97.1	98.4	98.2	100	98.3	98.5
Trucks	0	6	6	0	1	1	11	0	11	18
% Trucks	0	1.3	1.3	0	2.9	1.6	1.8	0	1.7	1.5

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 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:

	07:45 AM			08:00 AM			07:45 AM		
+0 mins.	4	83	87	11	3	14	169	3	172
+15 mins.	5	108	113	13	22	35	151	1	152
+30 mins.	7	137	144	4	5	9	150	0	150
+45 mins.	5	127	132	3	4	7	158	2	160
Total Volume	21	455	476	31	34	65	628	6	634
% App. Total	4.4	95.6		47.7	52.3		99.1	0.9	
PHF	.750	.830	.826	.596	.386	.464	.929	.500	.922
Cars	21	449	470	31	33	64	617	6	623
% Cars	100	98.7	98.7	100	97.1	98.5	98.2	100	98.3
Trucks	0	6	6	0	1	1	11	0	11
% Trucks	0	1.3	1.3	0	2.9	1.5	1.8	0	1.7

Accurate Counts

978-664-2565

File Name : 97420006

Site Code : 97420006

Start Date : 11/8/2023

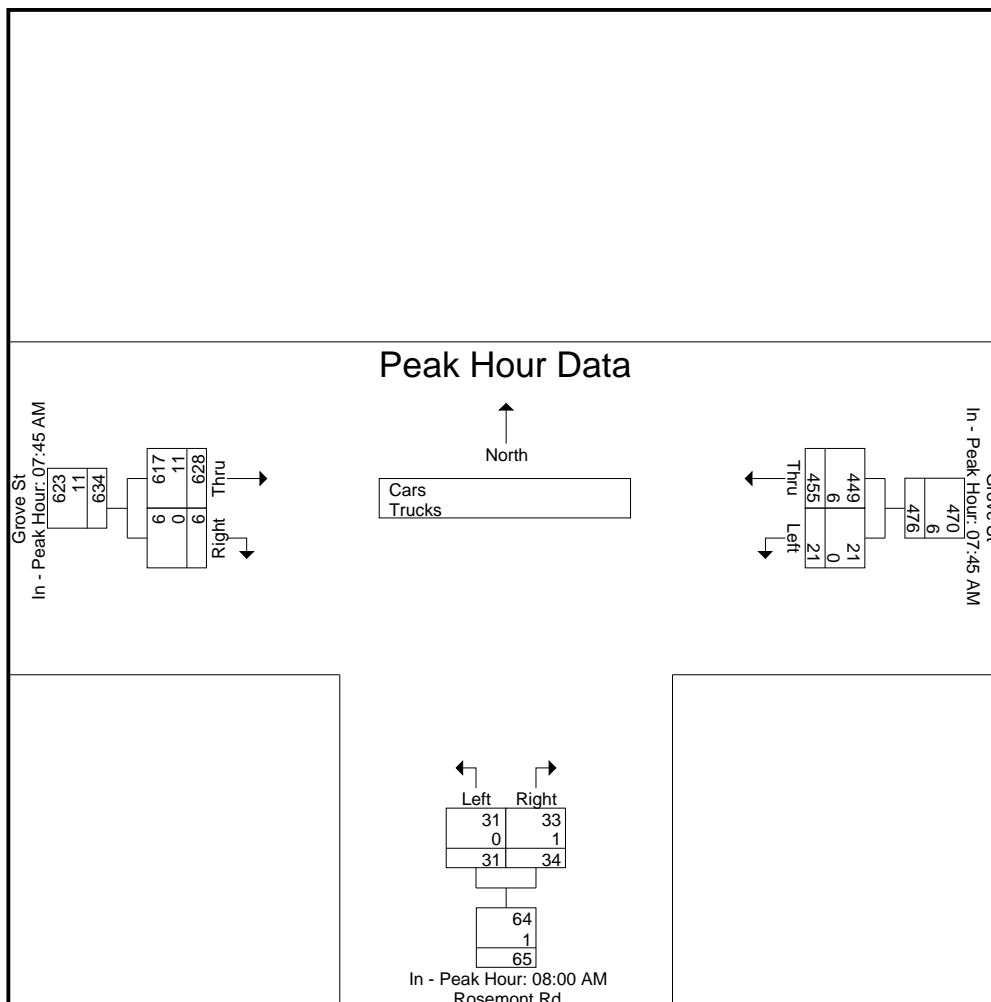
Page No : 3

N/S Street : Rosemont Road

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	3	48	1	1	71	1	125
07:15 AM	3	50	0	0	95	1	149
07:30 AM	1	73	2	1	143	3	223
07:45 AM	4	83	0	5	168	3	263
Total	11	254	3	7	477	8	760
08:00 AM	5	107	11	3	147	1	274
08:15 AM	7	135	13	21	149	0	325
08:30 AM	5	124	4	5	153	2	293
08:45 AM	9	63	3	4	143	6	228
Total	26	429	31	33	592	9	1120
Grand Total	37	683	34	40	1069	17	1880
Apprch %	5.1	94.9	45.9	54.1	98.4	1.6	
Total %	2	36.3	1.8	2.1	56.9	0.9	

Start Time	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	83	87	0	5	5	168	3	171	263
08:00 AM	5	107	112	11	3	14	147	1	148	274
08:15 AM	7	135	142	13	21	34	149	0	149	325
08:30 AM	5	124	129	4	5	9	153	2	155	293
Total Volume	21	449	470	28	34	62	617	6	623	1155
% App. Total	4.5	95.5		45.2	54.8		99	1		
PHF	.750	.831	.827	.538	.405	.456	.918	.500	.911	.888

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
07:00 AM	0	3	0	0	0	0	3
07:15 AM	0	0	0	0	2	0	2
07:30 AM	0	1	0	0	0	0	1
07:45 AM	0	0	0	0	1	0	1
Total	0	4	0	0	3	0	7
08:00 AM	0	1	0	0	4	0	5
08:15 AM	0	2	0	1	1	0	4
08:30 AM	0	3	0	0	5	0	8
08:45 AM	0	3	0	0	8	0	11
Total	0	9	0	1	18	0	28
Grand Total	0	13	0	1	21	0	35
Apprch %	0	100	0	100	100	0	
Total %	0	37.1	0	2.9	60	0	

Start Time	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	1	1	0	0	0	4	0	4	5
08:15 AM	0	2	2	0	1	1	1	0	1	4
08:30 AM	0	3	3	0	0	0	5	0	5	8
08:45 AM	0	3	3	0	0	0	8	0	8	11
Total Volume	0	9	9	0	1	1	18	0	18	28
% App. Total	0	100		0	100		100	0		
PHF	.000	.750	.750	.000	.250	.250	.563	.000	.563	.636

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	2	176	4	2	93	4	281
04:15 PM	8	135	1	2	107	1	254
04:30 PM	3	162	2	2	98	0	267
04:45 PM	6	164	5	2	84	0	261
Total	19	637	12	8	382	5	1063
05:00 PM	1	163	1	1	116	1	283
05:15 PM	5	166	0	2	88	0	261
05:30 PM	5	137	4	0	91	0	237
05:45 PM	3	120	1	0	66	0	190
Total	14	586	6	3	361	1	971
Grand Total	33	1223	18	11	743	6	2034
Apprch %	2.6	97.4	62.1	37.9	99.2	0.8	
Total %	1.6	60.1	0.9	0.5	36.5	0.3	
Cars	33	1221	18	11	736	6	2025
% Cars	100	99.8	100	100	99.1	100	99.6
Trucks	0	2	0	0	7	0	9
% Trucks	0	0.2	0	0	0.9	0	0.4

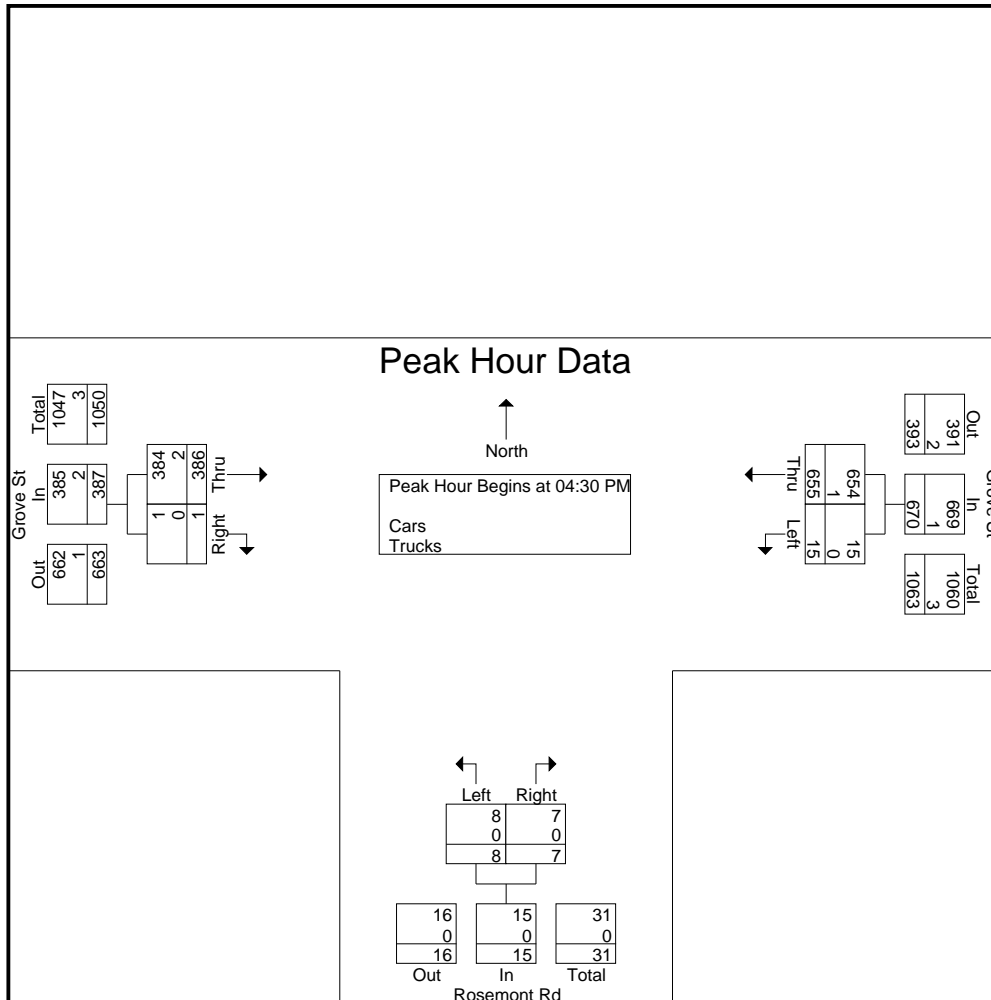
Start Time	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	162	165	2	2	4	98	0	98	267
04:45 PM	6	164	170	5	2	7	84	0	84	261
05:00 PM	1	163	164	1	1	2	116	1	117	283
05:15 PM	5	166	171	0	2	2	88	0	88	261
Total Volume	15	655	670	8	7	15	386	1	387	1072
% App. Total	2.2	97.8		53.3	46.7		99.7	0.3		
PHF	.625	.986	.980	.400	.875	.536	.832	.250	.827	.947
Cars	15	654	669	8	7	15	384	1	385	1069
% Cars	100	99.8	99.9	100	100	100	99.5	100	99.5	99.7
Trucks	0	1	1	0	0	0	2	0	2	3
% Trucks	0	0.2	0.1	0	0	0	0.5	0	0.5	0.3

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 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			04:15 PM		
+0 mins.	3	162	165	4	2	6	107	1	108
+15 mins.	6	164	170	1	2	3	98	0	98
+30 mins.	1	163	164	2	2	4	84	0	84
+45 mins.	5	166	171	5	2	7	116	1	117
Total Volume	15	655	670	12	8	20	405	2	407
% App. Total	2.2	97.8		60	40		99.5	0.5	
PHF	.625	.986	.980	.600	1.000	.714	.873	.500	.870
Cars	15	654	669	12	8	20	401	2	403
% Cars	100	99.8	99.9	100	100	100	99	100	99
Trucks	0	1	1	0	0	0	4	0	4
% Trucks	0	0.2	0.1	0	0	0	1	0	1

Accurate Counts

978-664-2565

File Name : 97420006

Site Code : 97420006

Start Date : 11/8/2023

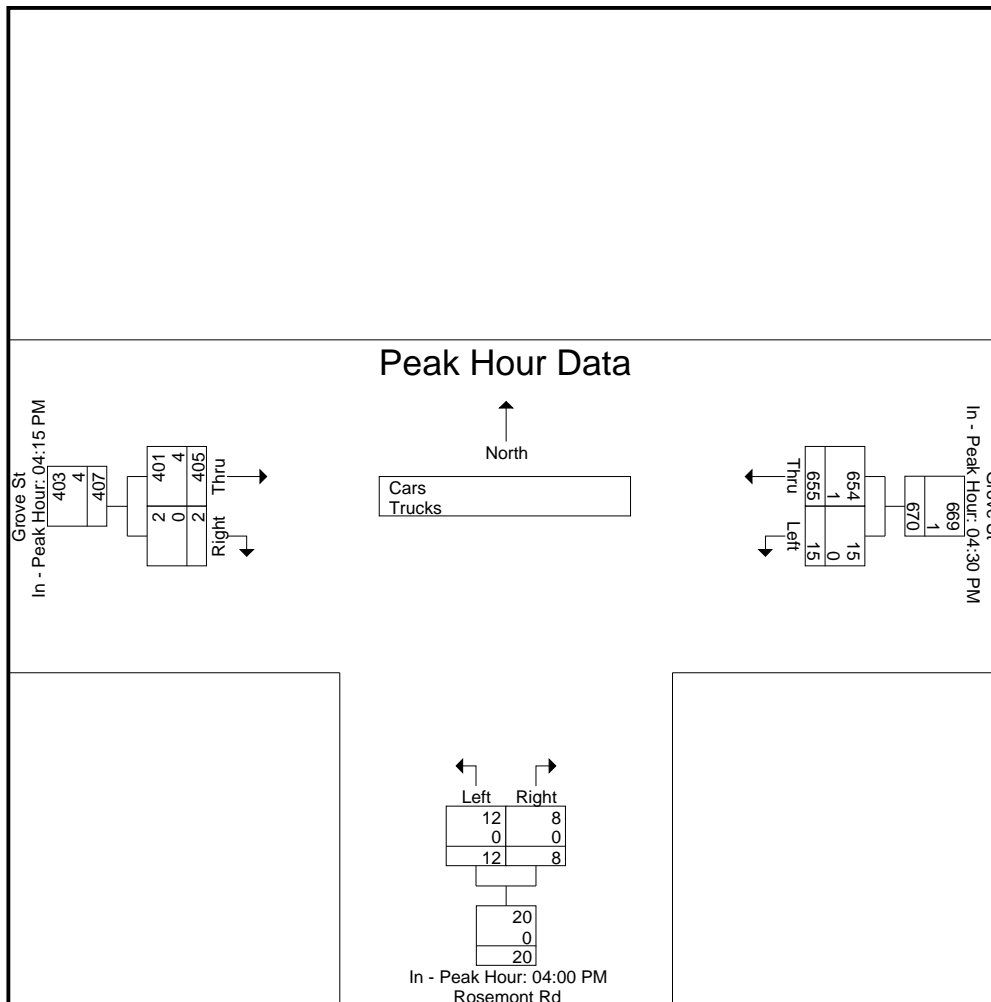
Page No : 3

N/S Street : Rosemont Road

E/W Street : Grove Street

City/State : Worcester, MA

Weather : Clear



Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 4

Groups Printed- Cars

Start Time	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	2	175	4	2	91	4	278
04:15 PM	8	135	1	2	105	1	252
04:30 PM	3	162	2	2	98	0	267
04:45 PM	6	163	5	2	84	0	260
Total	19	635	12	8	378	5	1057
05:00 PM	1	163	1	1	114	1	281
05:15 PM	5	166	0	2	88	0	261
05:30 PM	5	137	4	0	91	0	237
05:45 PM	3	120	1	0	65	0	189
Total	14	586	6	3	358	1	968
Grand Total	33	1221	18	11	736	6	2025
Apprch %	2.6	97.4	62.1	37.9	99.2	0.8	
Total %	1.6	60.3	0.9	0.5	36.3	0.3	

Start Time	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	3	162	165	2	2	4	98	0	98	267
04:45 PM	6	163	169	5	2	7	84	0	84	260
05:00 PM	1	163	164	1	1	2	114	1	115	281
05:15 PM	5	166	171	0	2	2	88	0	88	261
Total Volume	15	654	669	8	7	15	384	1	385	1069
% App. Total	2.2	97.8		53.3	46.7		99.7	0.3		
PHF	.625	.985	.978	.400	.875	.536	.842	.250	.837	.951

Accurate Counts

978-664-2565

N/S Street : Rosemont Road
 E/W Street : Grove Street
 City/State : Worcester, MA
 Weather : Clear

File Name : 97420006
 Site Code : 97420006
 Start Date : 11/8/2023
 Page No : 7

Groups Printed- Trucks

Start Time	Grove St From East		Rosemont Rd From South		Grove St From West		Int. Total
	Left	Thru	Left	Right	Thru	Right	
04:00 PM	0	1	0	0	2	0	3
04:15 PM	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	0	0	1
Total	0	2	0	0	4	0	6
05:00 PM	0	0	0	0	2	0	2
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	1	0	1
Total	0	0	0	0	3	0	3
Grand Total	0	2	0	0	7	0	9
Apprch %	0	100	0	0	100	0	
Total %	0	22.2	0	0	77.8	0	

Start Time	Grove St From East			Rosemont Rd From South			Grove St From West			Int. Total
	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. 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	1	1	0	0	0	2	0	2	3
04:15 PM	0	0	0	0	0	0	2	0	2	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	1	0	0	0	0	0	0	1
Total Volume	0	2	2	0	0	0	4	0	4	6
% App. Total	0	100		0	0		100	0		
PHF	.000	.500	.500	.000	.000	.000	.500	.000	.500	.500

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.

PUBLIC TRANSPORTATION SCHEDULES



OUTBOUND



WEEKDAYS

See the map for matching timepoint locations

1	2	3	4
BUS STARTS Union Station Hub	BUS Leaves Grove and Sagamore	BUS Leaves Quinsigamond Community College	BUS Leaves Wachusett (W. Boylston)
530a	540a	550a	558a
615a	625a	635a	643a
630a	640a	650a	658a
715a	725a	735a	743a
730a	740a	750a	758a
815a	825a	835a	843a
830a	840a	850a	858a
845a	855a	905a	913a
915a	925a	935a	943a
930a	940a	950a	958a
945a	955a	1005a	1013a
1015a	1025a	1035a	1043a
1030a	1040a	1050a	1058a
1045a	1055a	1105a	1113a
1115a	1125a	1135a	1143a
1130a	1140a	1150a	1158a
1145a	1155a	1205p	1213p
1215p	1225p	1235p	1243p
1230p	1240p	1250p	1258p
1245p	1255p	105p	113p
115p	125p	135p	143p
130p	140p	150p	158p
145p	155p	205p	213p
230p	240p	250p	258p
245p	255p	305p	313p
315p	325p	335p	343p
330p	340p	350p	358p
345p	355p	405p	413p
415p	425p	435p	443p
430p	440p	450p	458p
515p	525p	535p	543p
530p	540p	550p	558p
615p	625p	635p	643p
630p	640p	650p	658p
715p	725p	735p	743p
730p	740p	750p	758p
815p	825p	835p	843p
830p	840p	850p	858p
915p	925p	935p	943p
1015p	1025p	1035p	1043p

SATURDAYS

See the map for matching timepoint locations

1	2	3	4
BUS STARTS Union Station Hub	BUS Leaves Grove and Sagamore	BUS Leaves Quinsigamond Community College	BUS ENDS Wal-Mart W. Boylston
550a	559a	609a	616a
655a	704a	714a	721a
755a	804a	814a	821a
850a	900a	910a	921a
950a	1000a	1010a	1021a
1050a	1100a	1110a	1121a
1150a	1200p	1210p	1221p
1250p	100p	110p	121p
150p	200p	210p	225p
250p	300p	310p	325p
350p	400p	410p	425p
450p	500p	510p	525p
550p	601p	611p	621p
650p	701p	711p	721p
750p	801p	811p	821p
840p	851p	901p	911p
835p	844p	854p	901p

SUNDAYS

1	2	3	4
1100a	1110a	1120a	1126a
1200p	1210p	1220p	1226p
100p	110p	120p	126p
200p	210p	220p	226p
300p	310p	320p	326p
400p	410p	420p	426p
500p	510p	520p	526p
600p	610p	620p	626p

INBOUND



WEEKDAYS

See the map for matching timepoint locations

4	3	2	1
BUS STARTS Wal-Mart W. Boylston	BUS Leaves Quinsigamond Community College	BUS Leaves Grove and Sagamore	BUS ENDS Union Station Hub
602a	610a	620a	630a
647a	655a	705a	715a
702a	710a	720a	730a
747a	755a	805a	815a
802a	810a	820a	830a
847a	855a	905a	915a
902a	910a	920a	930a
917a	925a	935a	945a
947a	955a	1005a	1015a
1002a	1010a	1020a	1030a
1017a	1025a	1035a	1045a
1047a	1055a	1105a	1115a
1102a	1110a	1120a	1130a
1117a	1125a	1135a	1145a
1147a	1155a	1205p	1215p
1202p	1210p	1220p	1230p
1217p	1225p	1235p	1245p
1247p	1255p	105p	115p
102p	110p	120p	130p
117p	125p	135p	145p
147p	155p	205p	215p
202p	210p	220p	230p
217p	225p	235p	245p
302p	310p	320p	330p
317p	325p	335p	345p
347p	355p	405p	415p
402p	410p	420p	430p
417p	425p	435p	445p
447p	455p	505p	515p
502p	510p	520p	530p
547p	555p	605p	615p
602p	610p	620p	630p
647p	655p	705p	715p
702p	710p	720p	730p
747p	755p	805p	815p
802p	810p	820p	830p
847p	855p	905p	915p
902p	910p	920p	930p
947p	955p	1005p	1015p
1047p	1055p	1105p	1115p

SATURDAYS

See the map for matching timepoint locations

4	3	2	1
BUS STARTS Wal-Mart W. Boylston	BUS Leaves Quinsigamond Community College	BUS Leaves Grove and Sagamore	BUS ENDS Union Station Hub
620a	630a	640a	650a
725a	740a	750a	800a
825a	840a	850a	900a
925a	940a	950a	1000a
1025a	1040a	1050a	1100a
1125a	1140a	1150a	1200p
1225p	1240p	1250p	100p
125p	140p	150p	200p
230p	240p	250p	300p
330p	340p	350p	400p
430p	440p	450p	500p
530p	540p	550p	600p
625p	635p	645p	655p
725p	735p	745p	755p
825p	835p	845p	855p
915p	925p	935p	945p
905p	915p	925p	935p

SUNDAYS

4	3	2	1
1130a	1140a	1148a	1200p
1230p	1240p	1248p	100p
130p	140p	148p	200p
230p	240p	248p	300p
330p	340p	348p	400p
430p	440p	448p	500p
530p	540p	548p	600p

- PLEASE NOTE -

On Saturdays, most inbound Route 30 buses continue as Route 19 outbound.

Route 30

UNION STATION HUB
W. BOYLSTON WALMART
via GROVE & WEST BOYLSTON ST.

Revised Date: August 26, 2023

Worcester Regional Transit Authority



Serving:
Lincoln Square
Rural Cemetery
Reliant Medical Group
Quinsigamond Community College
Wal-Mart

Translation

English: If this information is needed in another language, please visit www.therta.com and use the Google Translate feature.

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French: Si vous désirez ces renseignements dans une autre langue, prière de vous servir de Google Translate qui se trouve à l'adresse suivante: www.therta.com.

Polish: Jeśli ta informacja jest potrzebna w innym języku, proszę odwiedzić www.therta.com i korzystać z Google Translate funkcji.

Vietnamese: Nếu thông tin này là cần thiết trong một ngôn ngữ khác, vui lòng truy cập www.therta.com và sử dụng các tính năng của Google Translate.

Chinese (Traditional): 如果此信息需要以另一種語言，請訪問www.therta.com並使用谷歌翻譯功能。

Swahili: Kama unahitaji habari hii katika nyingine lugha, unaweza kubonyeza mahali panaandikwa "Google Translate" hapo juu.

Note: French, Spanish, Polish and Portuguese translations were created by human translation from the English version. Vietnamese, Chinese and Swahili translations were created from the English version using Google Translate. There are likely grammatical errors in these translations, however time constraints required use of Google Translate for bus schedule printing within necessary timeframe (June 2017).

For Transit Information Call
508-791-9782 or visit
www.therta.com



Welcome aboard the WRTA!

This route timetable shows the times of departure at major stops along the route and contains route maps and other important information. Additional information can be obtained by calling the WRTA Information Line at (508) 791-WRTA (9782), or visit our website at www.TheRTA.com.

WRTA FARE INFORMATION Effective July 1, 2017

Full Cash Fare (Adults age 14 and up)	\$1.75
Senior/Disabled Cash Fare	\$0.85
Children 5-13 years of age accompanied by an adult	\$0.85
Children 9 years of age not accompanied by an adult	\$1.75
Children under 5 accompanied by an adult	FREE
One Day 8 Ride Pass (Adults age 14 & up)	\$4.50
Senior/Disabled/Child One Day 8 Ride Pass	\$2.25
31 Day Pass	\$57.00
Senior/Disabled/31 Day Pass	\$28.50

*Valid ID Required for Senior/Disabled Fare

Please have exact fare ready when boarding the bus. The farebox does not accept pennies or half dollars.

The Charlie Card is available to either purchase a monthly pass or add stored value (cash). The stored value gives you discounted fare with the WRTA. They can be used on the WRTA, MBTA and other participating RTAs in Massachusetts. You can obtain a Charlie Card at the Customer Service Center located at 60 Foster Street, Worcester, MA.

Route schedules and the purchase of passes are available at the Customer Service Center at 60 Foster Street, Worcester.

ACCESSIBILITY: All WRTA buses are wheelchair accessible and feature bicycle racks for two bicycles. For TTY service call Massachusetts Relay TTY (800) 439-2370. For information, accommodations and or to provide feedback call 508-791-9782 option 2.

PROPER IDENTIFICATION: One of the following valid identification cards must be shown to the driver each time you board:

SENIOR WRTA Senior I.D. card
DISABLED Statewide Access Pass / WRTA ADA Photo I.D. MCB ID and PCA-ride free

MEDICARE Medicare card with Photo I.D.

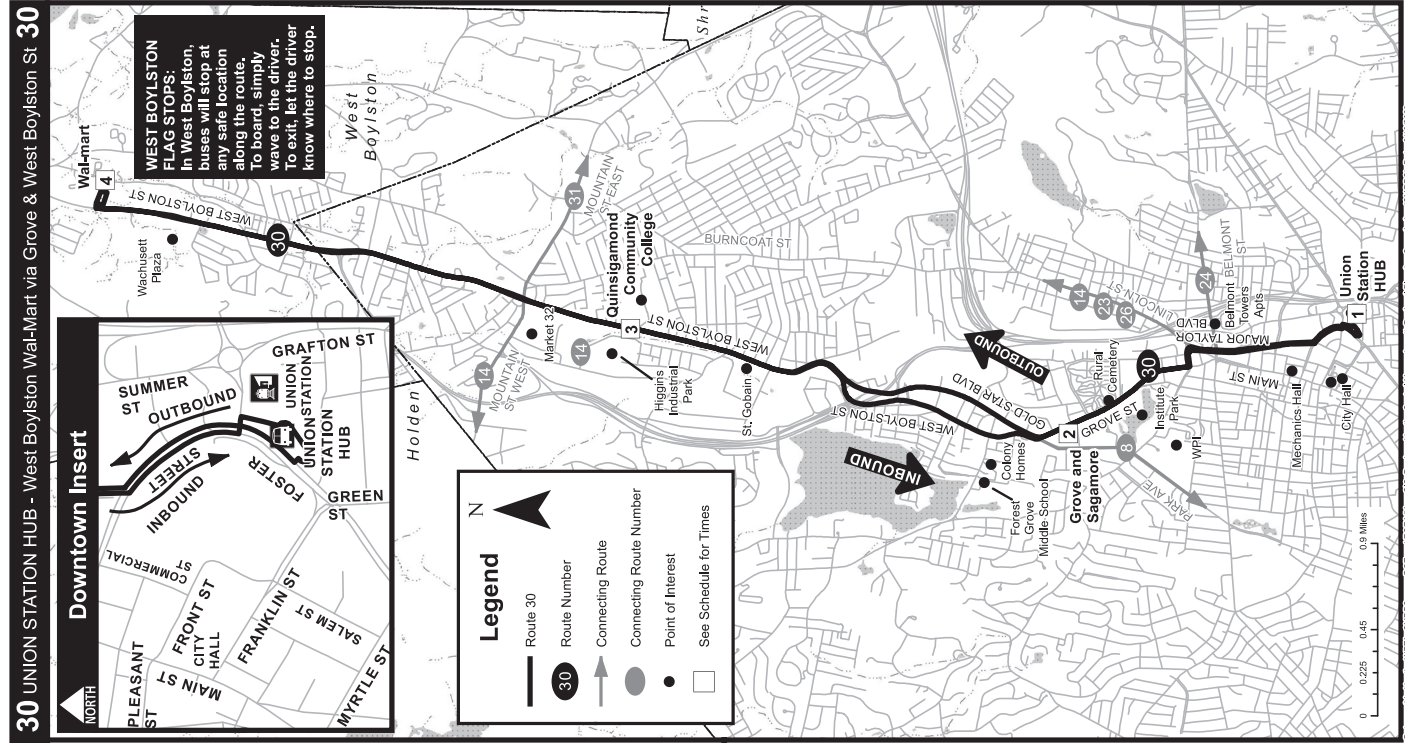
HOLIDAY SERVICE: Saturday Service is provided on Martin Luther King, Jr. Day, Presidents' Day, Patriots Day, Columbus Day, and the day after Thanksgiving.

Weekday Service is provided on Veterans' Day. Routes 29, 33, 42 and community shuttles operate on a weekday schedule on these holidays. Routes 19 and 30 operate on a modified Saturday schedule on these holidays.

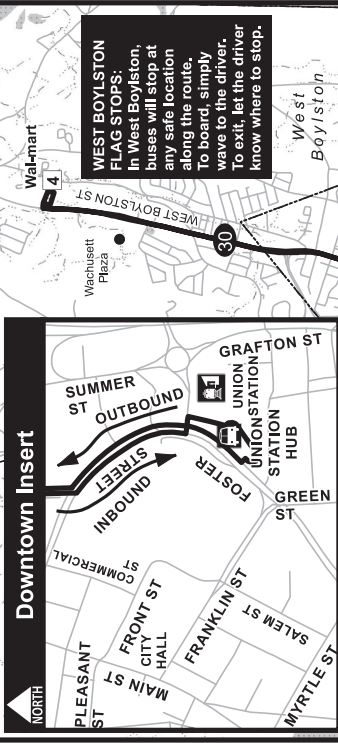
NO SERVICE ON: New Years Day; Memorial Day; Independence Day; Labor Day; Thanksgiving Day; Christmas Day

Please...NO Smoking, Eating, Drinking or Music

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30 UNION STATION HUB - West Boylston Wal-Mart via Grove & West Boylston St 30



Downtown Insert

Legend

- Route 30
- Route Number
- Connecting Route
- Connecting Route Number
- Point of Interest
- See Schedule for Times

- Most Routes Serve:**
- ~ WRTA Customer Service Center/Hub
 - ~ Union Station
- Route 30 Serving:**
- ~ Saint Vincent Hospital
 - ~ Veterans Inc.
 - ~ Galesway Park
 - ~ The Trolley Yard
 - ~ Reliant Medical Group
 - ~ Quinsigamond Community College
 - ~ Wal-Mart
 - ~ West Boylston
- Connecting Routes:**
- Route 8
 - Route 14
 - Route 23
 - Route 24/24A
 - Route 26
 - Route 31

Data provided by the WRTA, CMRPC, msaDOT and EG&A/MS&GS. Produced by the Central Massachusetts Regional Planning Commission (CMRPC). Date: 01/10/2023

Thank You for riding the WRTA

Welcome aboard the **WRTA!**

This route timetable shows the times of departure at major stops along the route and contains route maps and other important information. Additional information can be obtained by calling the WRTA Information Line at (508) 791-WRTA (9782), or visit our website at www.TheRTA.com.

WRTA FARE INFORMATION Effective July 1, 2017

Full Cash Fare (Adults age 14 and up)	\$1.75
Senior/Disabled Cash Fare	\$0.85
Children 5-13 years of age accompanied by an adult	\$0.85
Children 9 years of age not accompanied by an adult**	\$1.75
Children under 5 accompanied by an adult	FREE
One Day 8 Ride Pass (Adults age 14 & up)	\$4.50
Senior/Disabled*/Child One Day 8 Ride Pass	\$2.25
31 Day Pass	\$57.00
Senior/Disabled*31 Day Pass	\$28.50

*Valid ID Required for Senior/Disabled Fare

Please have exact fare ready when boarding the bus. The farebox does not accept pennies or half dollars.

The Charlie Card is available to either purchase a monthly pass or add stored value (cash). The stored value gives you discounted fare with the WRTA. They can be used on the WRTA, MBTA and other participating RTA's in Massachusetts. You can obtain a Charlie Card at the Customer Service Center located at 60 Foster Street, Worcester, MA

Route schedules and the purchase of passes are available at the Customer Service Center at 60 Foster Street, Worcester.

ACCESSIBILITY: All WRTA buses are wheelchair accessible and feature bicycle racks for two bicycles. For TTY service call Massachusetts Relay TTY (800) 439-2370. For information, accommodations and/or to provide feedback call 508-791-9782 option 2.

PROPER IDENTIFICATION: One of the following valid identification cards must be shown to the driver each time you board:

- SENIOR WRTA Senior I.D. card
- DISABLED Statewide Access Pass / WRTA ADA Photo I.D. MCB ID and PCA-ride free
- MEDICARE Medicare card with Photo I.D.

HOLIDAY SERVICE: Saturday* Service is provided on Martin Luther King, Jr. Day, Presidents' Day, Patriots' Day, Columbus Day, and the day after Thanksgiving.

Weekday Service is provided on Veterans' Day.

Routes 29, 33, 42 and community shuttles operate on a weekday schedule on these holidays. Routes 19 and 30 operate on a modified Saturday schedule on these holidays.

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OUTBOUND

WEEKDAYS

See the map for matching timepoint locations

1	2	3	4	5
BUS STARTS Union Station Hub	BUS Leaves Elm Street & Park Ave	BUS Leaves Quinsigamond Comm. College	BUS Leaves Great Brook Valley	BUS ENDS Lincoln Plaza
615a	622a	636a	646a	651a
655a	702a	716a	726a	731a
735a	742a	756a	806a	811a
815a	822a	836a	846a	851a
855a	902a	916a	926a	931a
935a	942a	956a	1006a	1011a
1015a	1022a	1036a	1046a	1051a
1055a	1102a	1116a	1126a	1131a
1135a	1142a	1156a	1206p	1211p
1215p	1222p	1236p	1246p	1251p
1255p	102p	1116p	126p	131p
135p	142p	156p	206p	211p
215p	222p	236p	246p	251p
255p	302p	316p	326p	331p
335p	342p	356p	406p	411p
415p	422p	434p	444p	451p
455p	502p	516p	526p	531p
535p	542p	556p	606p	611p
615p	622p	636p	646p	651p
655p	702p	716p	726p	731p
735p	742p	756p	806p	811p
815p	822p	836p	846p	851p
855p	902p	916p	926p	931p
935p	942p	956p	1006p	1011p

SATURDAYS

1	2	3	4	5
825a	832a	842a	856a	901a
945a	952a	1002a	1016a	1021a
1105a	1112a	1122a	1137a	1141a
1225p	1232p	1242p	1256p	101p
145p	152p	202p	216p	221p
305p	312p	322p	336p	341p

NOTE: On all days this route operates in conjunction with Route 16 as the Outer loop, Outbound Route 31 trips continue inbound as Route 16 and vice

NO SUNDAY SERVICE

INBOUND

WEEKDAYS

See the map for matching timepoint locations

5	4	3	2	1
BUS STARTS Lincoln Plaza	BUS Leaves Great Brook Valley	BUS Leaves Quinsigamond Comm. College	BUS Leaves Elm Street & Park Ave	BUS ENDS Union Station Hub
655a	700a	710a	725a	735a
815a	820a	830a	845a	855a
855a	900a	910a	925a	935a
940a	945a	955a	1010a	1020a
1015a	1020a	1030a	1045a	1055a
1055a	1100a	1110a	1125a	1135a
1135a	1140a	1150a	1205p	1215p
1215p	1220p	1230p	1245p	1255p
1255p	100p	110p	125p	135p
135p	140p	150p	205p	215p
215p	220p	230p	245p	255p
255p	300p	310p	325p	335p
335p	340p	350p	405p	415p
415p	420p	430p	445p	455p
535p	540p	550p	605p	615p
655p	700p	710p	725p	735p
815p	820p	830p	845p	855p

SATURDAYS

5	4	3	2	1
905a	910a	920a	935a	945a
945a	950a	1000a	1015a	1025a
1025a	1030a	1040a	1055a	1105a
1105a	1110a	1120a	1135a	1145a
1145a	1150a	1200p	1215p	1225p
1225p	1230p	1240p	1255p	105p
105p	110p	120p	135p	145p
145p	150p	200p	215p	225p
225p	230p	240p	255p	305p
305p	310p	320p	335p	345p
345p	350p	400p	415p	425p
425p	430p	440p	455p	505p

NO SUNDAY SERVICE

Route 31

UNION STATION HUB - LINCOLN PLAZA OUTER LOOP

Effective Date: January 25, 2020

Worcester Regional Transit Authority



Serving:
Reliant Medical Group
Greendale Mall
Quinsigamond Community College
Clark Street School
Great Brook Valley
Lincoln Plaza

Translation

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For Transit Information Call
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www.therta.com



31 UNION STATION HUB - Lincoln Plaza-Outer Loop via Park Ave & W Boylston St. 31

Most Routes Serve:

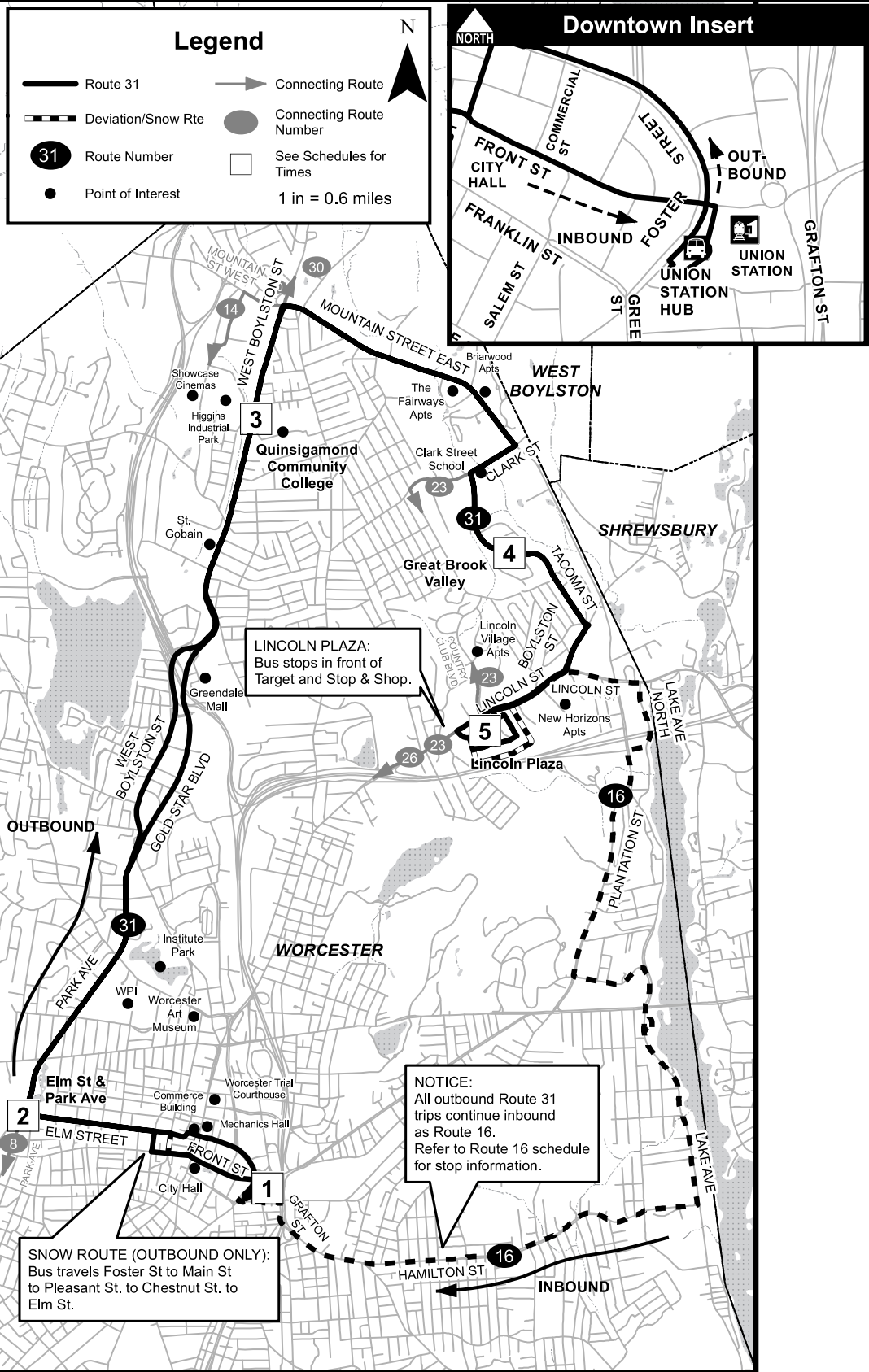
- WRTA Customer Service Center/Hub
- Union Station

Route 31 Serving:

- Elm Park
- WPI
- The Trolley Yard
- Reliant Medical Group
- Greendale Mall
- Quinsigamond Community College
- Clark Street School
- Great Brook Valley
- Great Brook Valley Health Center
- Lincoln Plaza

Connecting Routes:

- Route 2
- Route 8
- Route 16
- Route 23
- Route 24/24A
- Route 26
- Route 30



Data provided by the WRTA, CMRPC, massDOT and EOE/MassGIS, Produced by the Central Massachusetts Regional Planning Commission (CMRPC) Date: 6/5/2019

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OUTBOUND WEEKDAYS

See the map for matching timepoint locations

1 BUS STARTS HUB	2 BUS Leaves Canterbury & S. Crystal	3 BUS Leaves Cambridge St & Main St	4 BUS Leaves Webster Sq Plaza	5 BUS Leaves Lakeside Dr	6 BUS Leaves Park Ave & Grove St	7 BUS Leaves Greendale Reliant MG	8 BUS ENDS YMCA Shore Drive
6:15 AM	6:23 AM	6:27 AM	6:32 AM	6:36 AM	6:42 AM	6:45 AM	6:49 AM
7:30 AM	7:40 AM	7:45 AM	7:51 AM	7:55 AM	8:02 AM	8:05 AM	8:09 AM
8:55 AM	9:03 AM	9:07 AM	9:12 AM	9:16 AM	9:22 AM	9:25 AM	9:29 AM
10:10 AM	10:18 AM	10:22 AM	10:27 AM	10:31 AM	10:37 AM	10:40 AM	10:44 AM
11:25 AM	11:33 AM	11:37 AM	11:42 AM	11:46 AM	11:52 AM	11:55 AM	11:59 AM
12:40 PM	12:48 PM	12:52 PM	12:57 PM	1:01 PM	1:07 PM	1:10 PM	1:14 PM
1:55 PM	2:05 PM	2:10 PM	2:16 PM	2:20 PM	2:27 PM	2:30 PM	2:34 PM
3:20 PM	3:30 PM	3:35 PM	3:41 PM	3:45 PM	3:52 PM	3:55 PM	3:59 PM
4:45 PM	4:55 PM	5:00 PM	5:06 PM	5:10 PM	5:17 PM	5:20 PM	5:24 PM
6:10 PM	6:20 PM	6:25 PM	6:31 PM	6:35 PM	6:42 PM	6:45 PM	6:49 PM
7:30 PM	7:38 PM	7:42 PM	7:47 PM	7:51 PM	7:57 PM	8:00 PM	8:04 PM

INBOUND WEEKDAYS

See the map for matching timepoint locations

8 BUS STARTS YMCA Shore Drive	7 BUS Leaves Greendale Reliant MG	6 BUS Leaves Park Ave & Grove St	5 BUS Leaves Lakeside Dr	4 BUS Leaves Webster Sq Plaza	3 BUS Leaves Cambridge St & Main St	2 BUS Leaves Canterbury & S. Crystal	1 BUS ENDS HUB
6:53 AM	6:57 AM	7:03 AM	7:09 AM	7:13 AM	7:17 AM	7:21 AM	7:30 AM
8:13 AM	8:17 AM	8:24 AM	8:31 AM	8:36 AM	8:40 AM	8:45 AM	8:55 AM
9:33 AM	9:37 AM	9:43 AM	9:49 AM	9:53 AM	9:57 AM	10:01 AM	10:10 AM
10:48 AM	10:52 AM	10:58 AM	11:04 AM	11:08 AM	11:12 AM	11:16 AM	11:25 AM
12:03 PM	12:07 PM	12:13 PM	12:19 PM	12:23 PM	12:27 PM	12:31 PM	12:40 PM
1:18 PM	1:22 PM	1:28 PM	1:34 PM	1:38 PM	1:42 PM	1:46 PM	1:55 PM
2:38 PM	2:42 PM	2:49 PM	2:56 PM	3:01 PM	3:05 PM	3:10 PM	3:20 PM
4:03 PM	4:07 PM	4:14 PM	4:21 PM	4:26 PM	4:30 PM	4:35 PM	4:45 PM
5:28 PM	5:32 PM	5:39 PM	5:46 PM	5:51 PM	5:55 PM	6:00 PM	6:10 PM
6:53 PM	6:57 PM	7:03 PM	7:09 PM	7:13 PM	7:17 PM	7:21 PM	7:30 PM
8:08 PM	8:12 PM	8:18 PM	8:24 PM	8:28 PM	8:32 PM	8:36 PM	8:45 PM

NO SATURDAY OR SUNDAY SERVICE

Route 825 Canterbury St./ Webster Sq. Plaza/ Park Ave Connector/Greendale/ Shore Drive

Effective Date August 27, 2022

Worcester Regional Transit Authority



Serving
Canterbury Street
Lakeside Ave
YMCA Shore Dr.
Main Street
Cambridge St
Chandler St
Gold Star Blvd
Main Street
Highland St
Park Ave
Webster Sq Plaza

Translation

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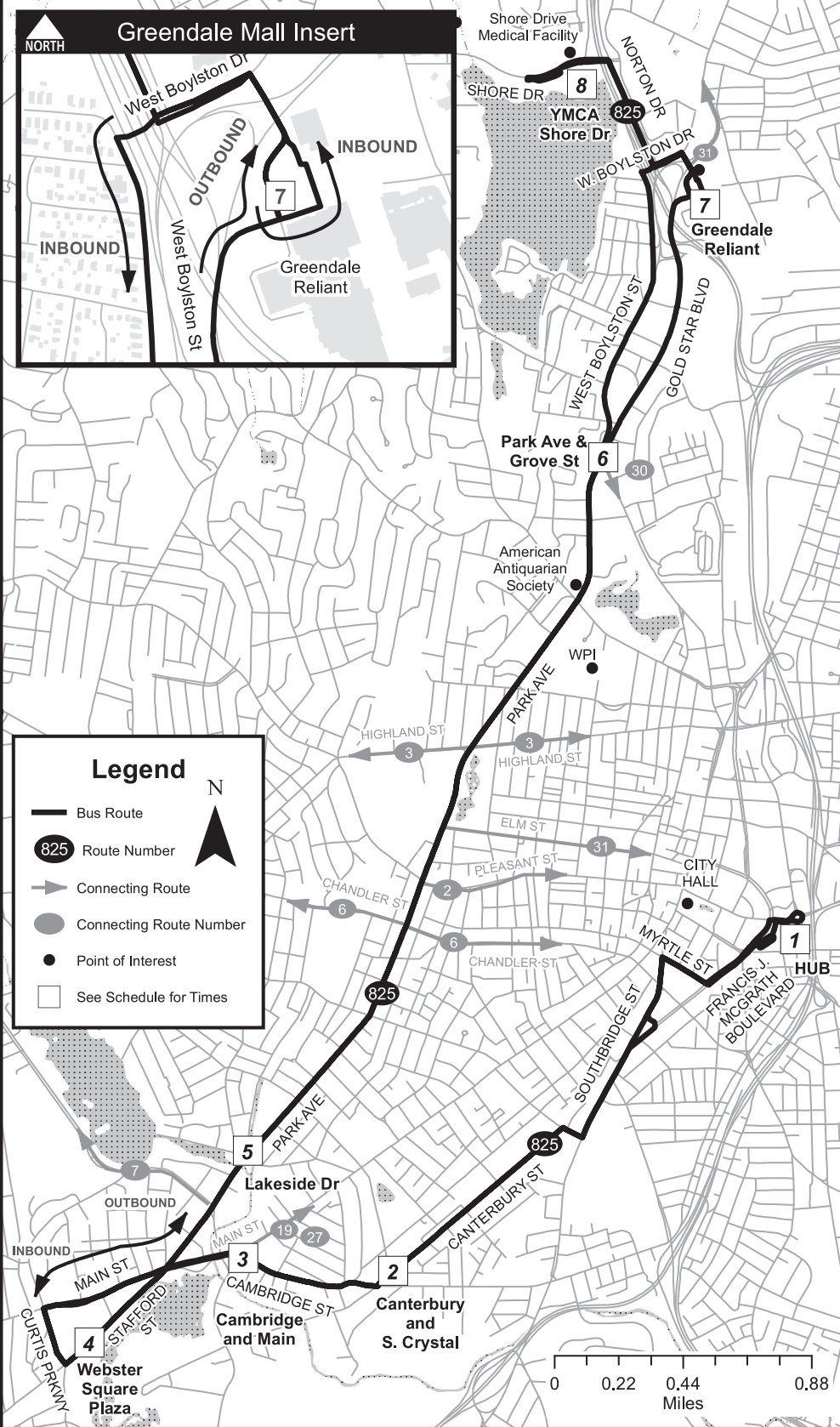
For Transit Information Call
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Route 825 Serving:

- ~ Canterbury St
- ~ Cambridge St
- ~ Main St
- ~ Webster Square Plaza
- ~ Park Ave
- ~ Lakeside Ave
- ~ Chandler St
- ~ Highland St
- ~ Gold Star Blvd
- ~ YMCA Shore Dr
- ~ Mill Street Plaza
- ~ Lakeside Apartments
- ~ Clark University (Rear Campus)
- ~ Elm Park
- ~ WPI
- ~ The Trolley Yard
- ~ Chick-fil-A
- ~ Greendale Mall
- ~ Reliant Medical Group
- ~ The Lottery
- ~ DCF Worcester

825 Canterbury St/Webster Sq Plaza/Park Ave Connector/Greendale/Shore Dr



Connecting Routes:

- Route 2
- Route 3
- Route 6
- Route 7
- Route 19
- Route 27
- Route 30
- Route 31
- Route 33

Data provided by the WRTA, CMRPC, massDOT and MassGIS. Produced by the Central Massachusetts Regional Planning Commission (CMRPC) - Date: 8/12/2022

MASSDOT CRASH RATE WORKSHEETS



VEHICLE SPEED DATA



Accurate Counts
978-664-2565

Location : Grove Street
Location : West of East Way
City/State: Worcester, MA
Direction: WB

Site Code: 97420001

11/9/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	0	0	0	0	4	1	1	1	0	0	0	8
1:00	0	0	0	0	0	0	1	3	3	0	1	0	0	0	8
2:00	0	0	1	0	0	0	0	0	0	0	0	1	1	0	3
3:00	0	0	1	0	0	1	1	1	1	2	0	0	0	0	7
4:00	0	0	0	2	0	0	1	1	6	1	0	1	0	0	12
5:00	0	0	0	0	0	0	4	3	10	4	4	2	1	0	28
6:00	0	0	0	0	2	0	4	11	28	21	14	7	3	1	91
7:00	0	0	0	2	1	1	11	33	65	70	43	7	3	0	236
8:00	0	0	4	2	10	24	51	104	143	90	41	4	0	1	474
9:00	0	0	0	3	0	3	21	43	84	98	46	13	4	0	315
10:00	0	0	1	1	3	10	10	40	107	86	33	11	4	0	306
11:00	0	0	0	1	6	3	26	57	98	81	50	12	5	1	340
12:00 PM	0	0	0	3	2	7	12	45	113	109	78	12	3	3	387
1:00	0	0	2	1	2	4	21	40	100	95	58	15	3	0	341
2:00	0	0	3	2	18	20	64	100	171	120	41	8	4	0	551
3:00	0	0	44	23	20	16	43	76	131	92	30	11	3	0	489
4:00	0	0	0	2	5	12	30	94	174	159	69	22	8	1	576
5:00	0	0	0	3	2	16	35	99	162	153	84	12	2	0	568
6:00	0	0	0	1	1	0	23	38	75	135	54	16	7	3	353
7:00	0	0	0	0	1	0	22	38	72	64	43	16	6	0	262
8:00	0	0	1	1	0	1	15	39	55	58	34	12	8	0	224
9:00	0	0	0	0	0	2	17	19	33	37	24	8	2	2	144
10:00	0	0	0	0	0	1	2	16	24	15	6	5	1	3	73
11:00	0	0	0	0	0	0	5	1	3	4	1	2	0	0	16
Total	0	0	58	47	73	121	419	905	1659	1495	755	197	68	15	5812
			Percentile	15th	50th	85th	95th								
			Speed	22	26	30	33								
			Mean Speed (Average)	26.3											
			10 MPH Pace Speed	21-30											
			Number in Pace	4299											
			Percent in Pace	74.0%											
			Number > 27 MPH	2530											
			Percent > 27 MPH	43.5%											
Grand Total	0	0	86	90	138	267	894	1883	3275	3005	1544	419	139	24	11764
			Percentile	15th	50th	85th	95th								
			Speed	22	26	30	33								
			Mean Speed (Average)	26.3											
			10 MPH Pace Speed	21-30											
			Number in Pace	8656											
			Percent in Pace	73.6%											
			Number > 27 MPH	5131											
			Percent > 27 MPH	43.6%											

Accurate Counts
978-664-2565

Location : Grove Street
Location : West of East Way
City/State: Worcester, MA
Direction: EB

Site Code: 97420001

11/9/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	1	5	3	2	0	0	11
1:00	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2
2:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3:00	0	0	0	0	0	0	0	0	0	1	6	2	2	1	12
4:00	0	0	0	0	1	0	0	0	1	3	16	9	7	1	38
5:00	0	0	0	0	0	0	0	0	2	13	23	8	9	4	59
6:00	0	0	0	0	0	0	0	7	16	56	71	40	26	4	220
7:00	0	0	0	0	0	1	7	22	68	171	148	45	5	6	473
8:00	0	0	1	1	4	11	37	88	164	161	81	21	9	2	580
9:00	0	0	0	1	2	0	2	17	77	114	106	37	14	5	375
10:00	0	0	4	4	3	5	5	21	35	103	77	31	11	3	302
11:00	0	0	1	0	1	0	2	2	31	85	101	32	12	3	270
12:00 PM	0	0	0	1	0	0	6	10	36	107	83	33	5	1	282
1:00	0	0	0	1	0	6	2	22	41	88	89	32	17	3	301
2:00	0	0	1	2	4	5	19	32	53	90	82	33	12	6	339
3:00	0	0	23	14	17	29	38	33	112	89	55	13	10	3	436
4:00	0	0	0	2	1	0	7	14	46	102	94	38	12	3	319
5:00	0	0	0	0	1	1	13	30	78	81	81	23	8	6	322
6:00	0	0	1	0	0	0	6	28	59	55	24	11	1	1	185
7:00	0	0	0	1	0	0	1	1	6	42	39	20	11	2	123
8:00	0	0	0	0	0	0	2	3	9	20	15	12	9	2	72
9:00	0	0	0	0	0	0	1	1	13	12	20	8	3	5	63
10:00	0	0	0	1	0	0	0	0	2	9	9	9	3	2	35
11:00	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3
Total	0	0	31	28	34	58	142	309	819	1412	1256	474	197	63	4823
Percentile		15th		50th		85th		95th							
Speed		24		29		34		36							
Mean Speed (Average)		30.2													
10 MPH Pace Speed		24-33													
Number in Pace		3639													
Percent in Pace		75.5%													
Number > 27 MPH		3402													
Percent > 27 MPH		70.5%													
Grand Total	0	0	80	71	74	106	303	611	1695	2816	2459	943	399	152	9709
Stats		Percentile		15th		50th		85th		95th					
Speed		24		29		34		36							
Mean Speed (Average)		30.4													
10 MPH Pace Speed		24-33													
Number in Pace		7273													
Percent in Pace		74.9%													
Number > 27 MPH		6769													
Percent > 27 MPH		69.7%													

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	Average Annual
Worcester	Forest Street	North of Salisbury Street				6,612	6,637	6,843	7,253	7,703	7,834	6,824	6,797	0.93%
Worcester	Grove Street	East of Forest Street				13,112	13,085	13,805	10,567	10,704	10,822	13,982	14,038	0.75%
Worcester	Grove Street	South of Park Avenue				10,004	10,032	10,584	12,799	12,965	13,108	12,673	12,724	4.25%
Worcester	Grove Street	North of Forest Street	10,900	10,938	11,289	11,856	11,822	12,472	10,981	11,124	11,246	11,880	11,928	0.65%
Worcester	West Boylston Street	South of Millbrook Street	19,051	19,403			18,862	19,899	20,118	16,915	17,101	17,340	11,757	-4.04%
Worcester	Millbrook Street	Btw West Boylston Street and Gold Star Boulevard							7,302	7,755	7,887	7,911	7,879	1.78%
Worcester	Ruthven Avenue	Btw West Boylston Street and Gold Star Boulevard				3,593	3,588	3,699	3,700	3,929	3,996	4,008	3,992	1.84%
Worcester	West Boylston Terrace	Btw West Boylston Street and Gold Star Boulevard				3,081	3,075	3,170	2,356	2,502	2,545	2,553	2,543	-3.03%
														0.39%

TRIP GENERATION DATA



Senior Adult Housing - Multifamily (252)

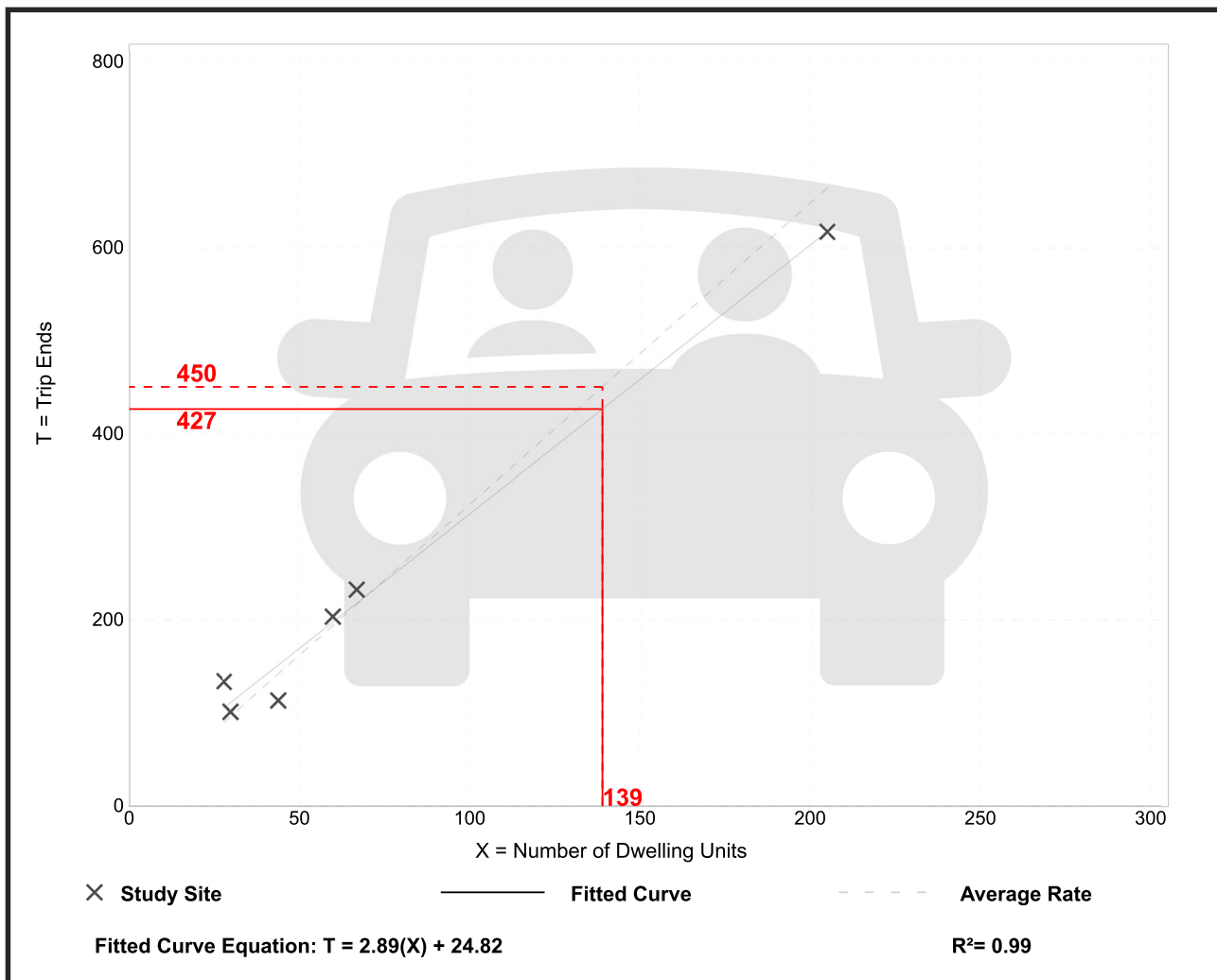
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 72
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
3.24	2.59 - 4.79	0.53

Data Plot and Equation



Senior Adult Housing - Multifamily (252)

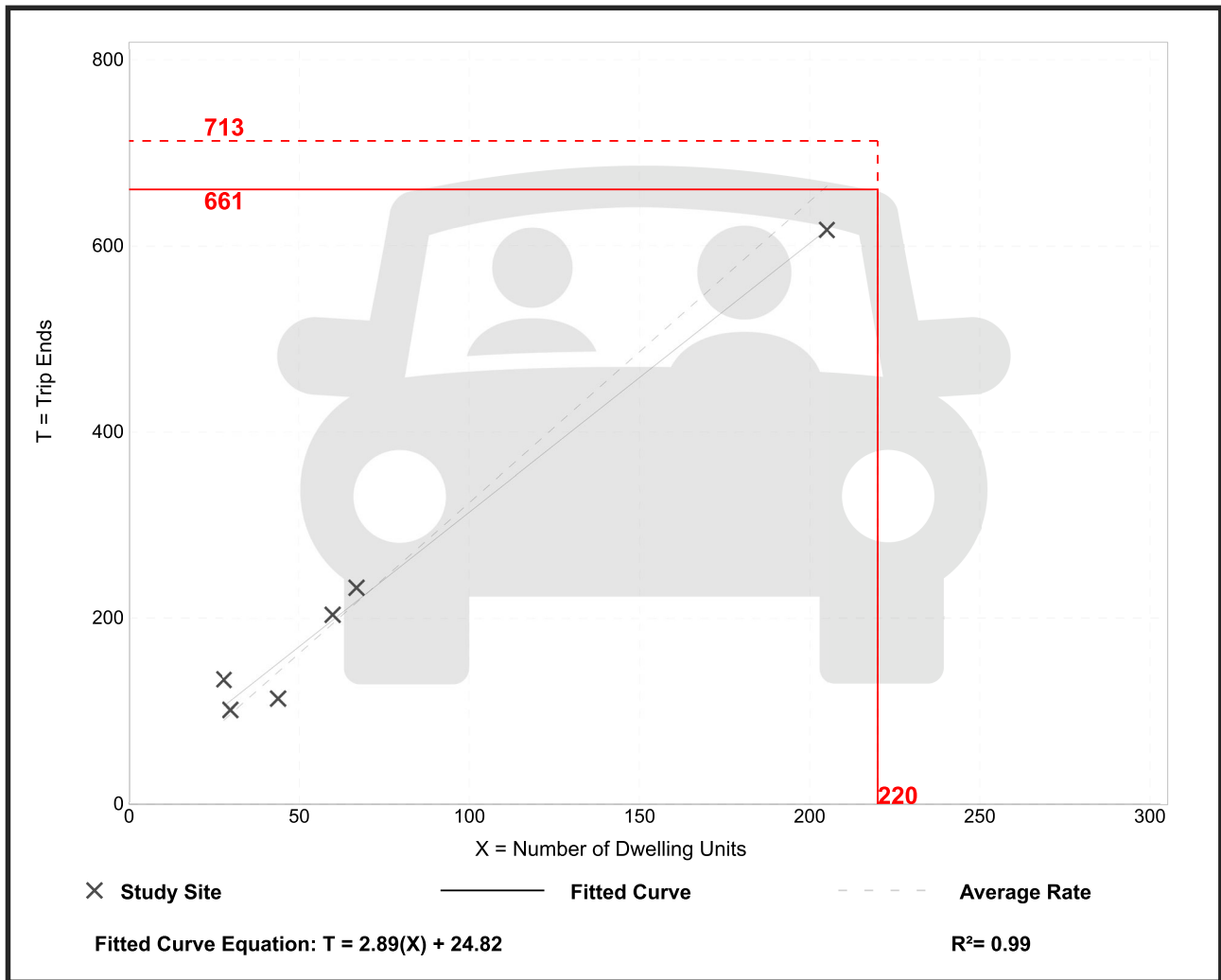
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 6
Avg. Num. of Dwelling Units: 72
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Vehicle Trip Generation per Dwelling Unit

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3.24	2.59 - 4.79	0.53

Data Plot and Equation



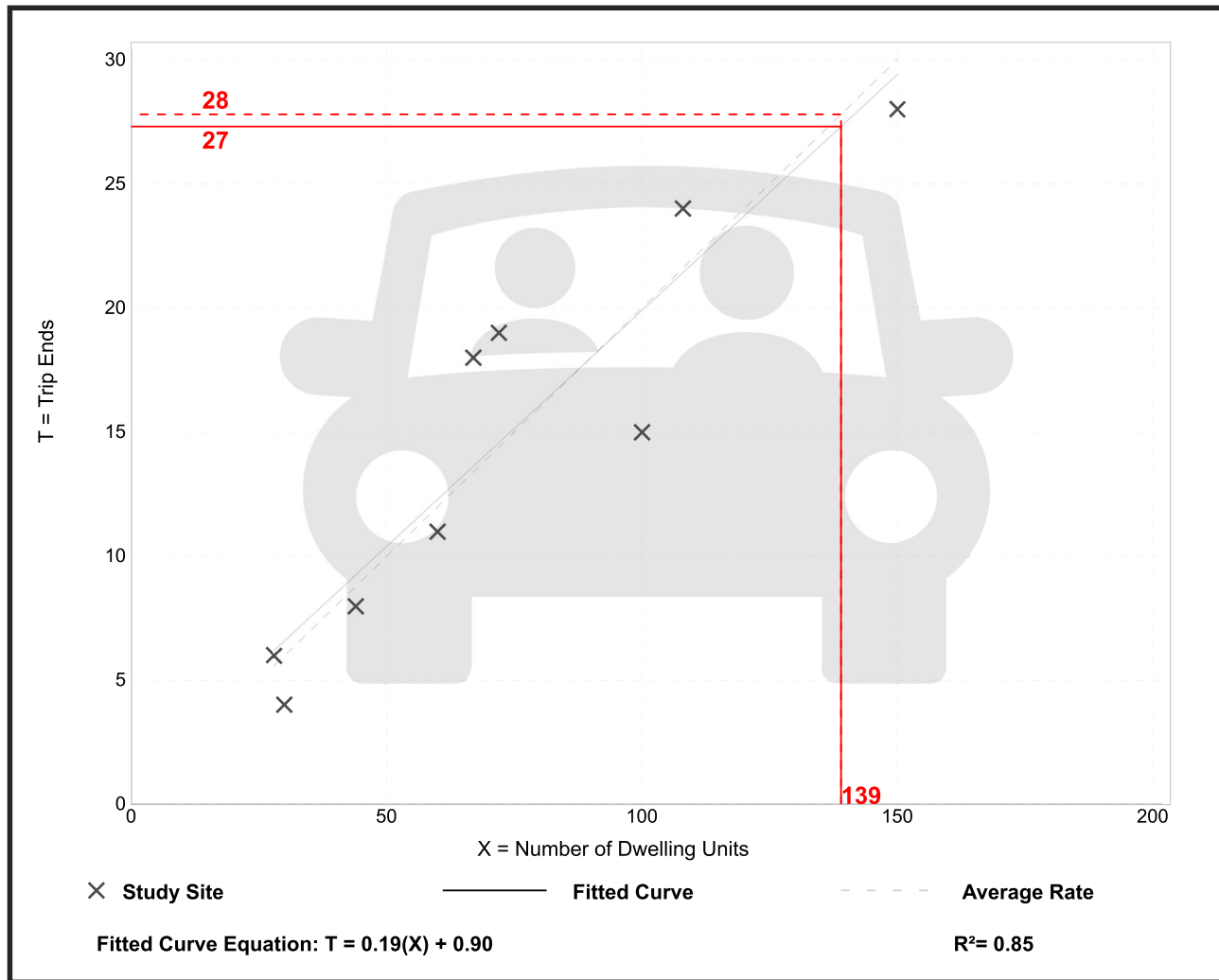
Senior Adult Housing - Multifamily (252)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.13 - 0.27	0.04

Data Plot and Equation



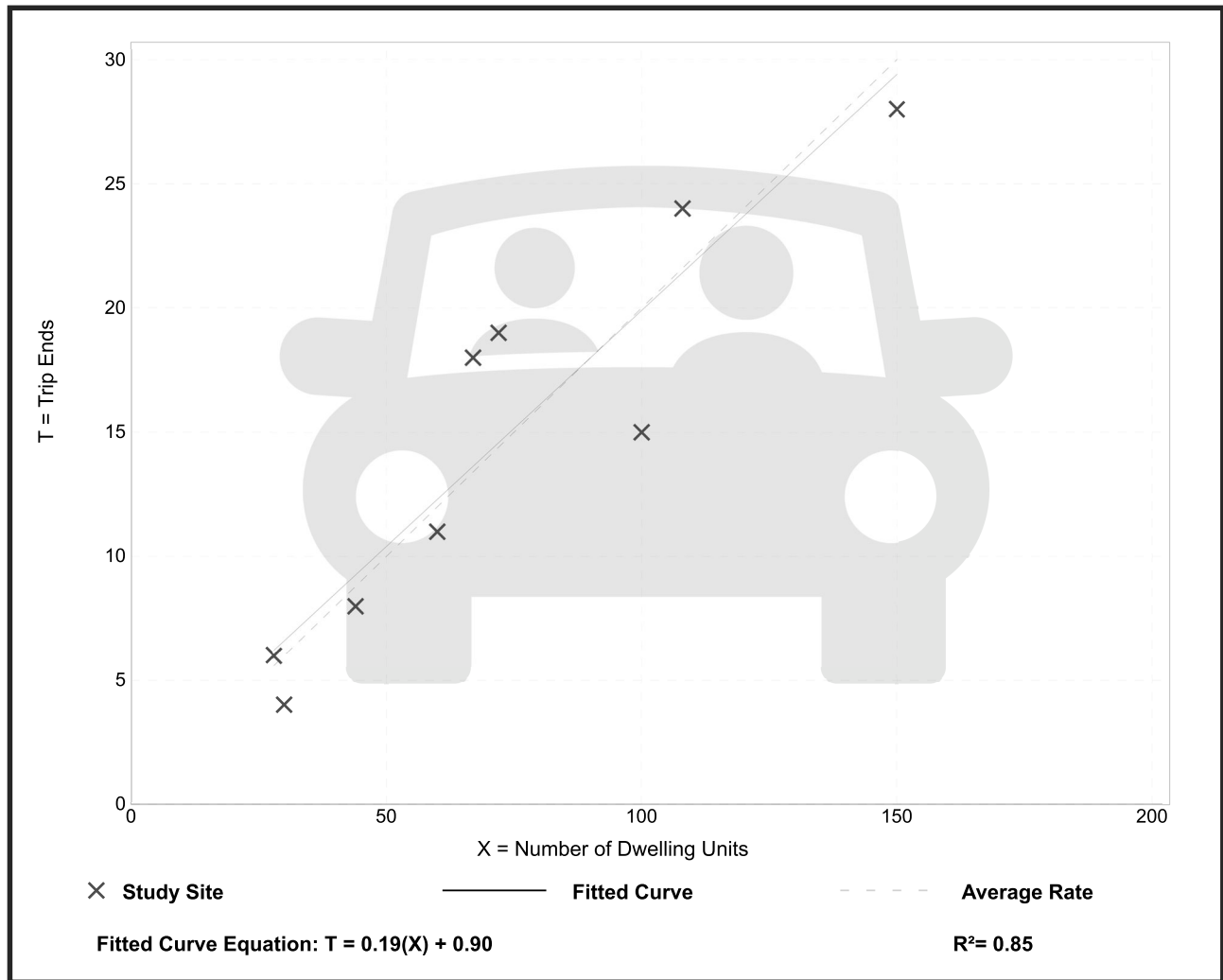
Senior Adult Housing - Multifamily (252)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.20	0.13 - 0.27	0.04

Data Plot and Equation



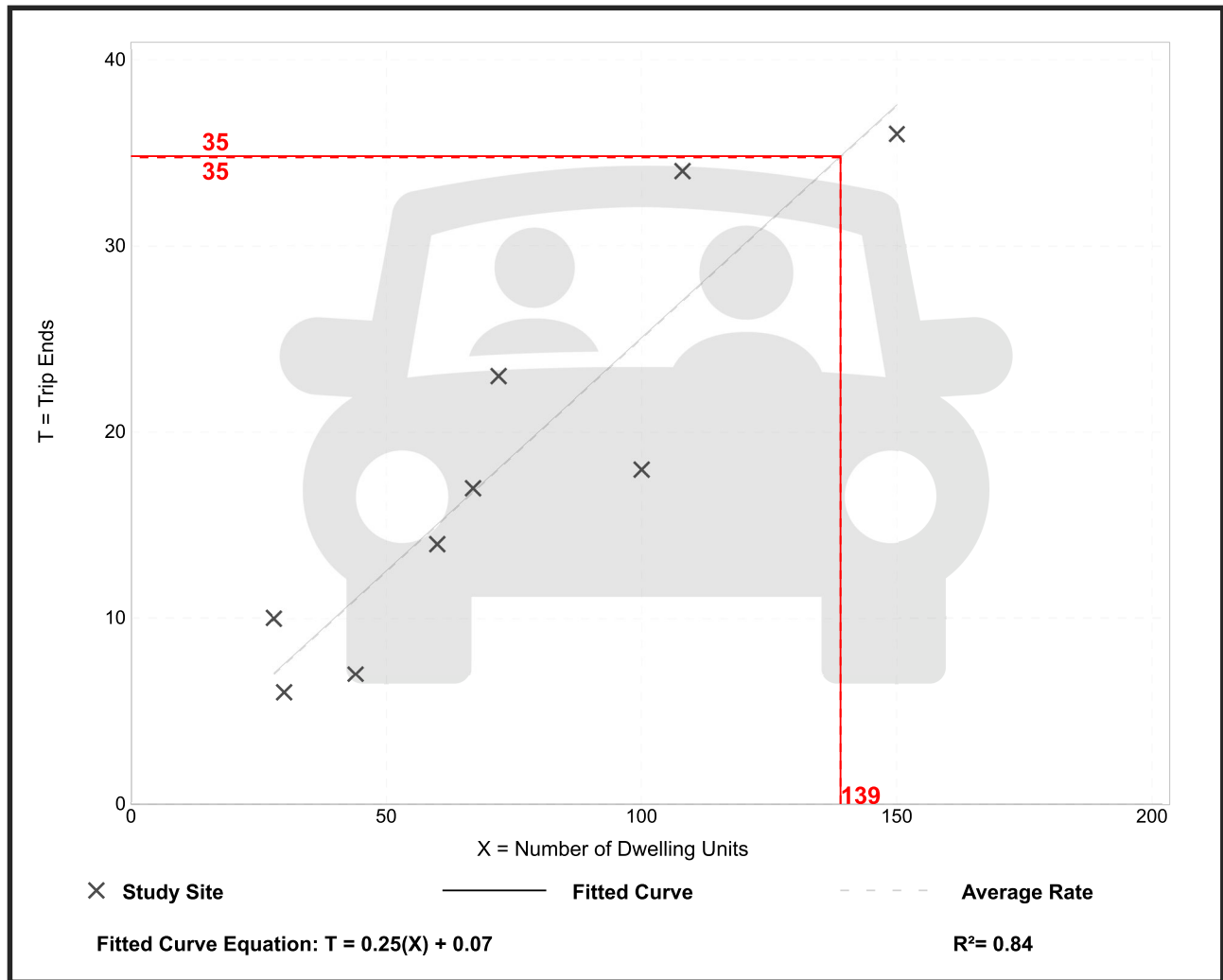
Senior Adult Housing - Multifamily (252)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.25	0.16 - 0.36	0.06

Data Plot and Equation



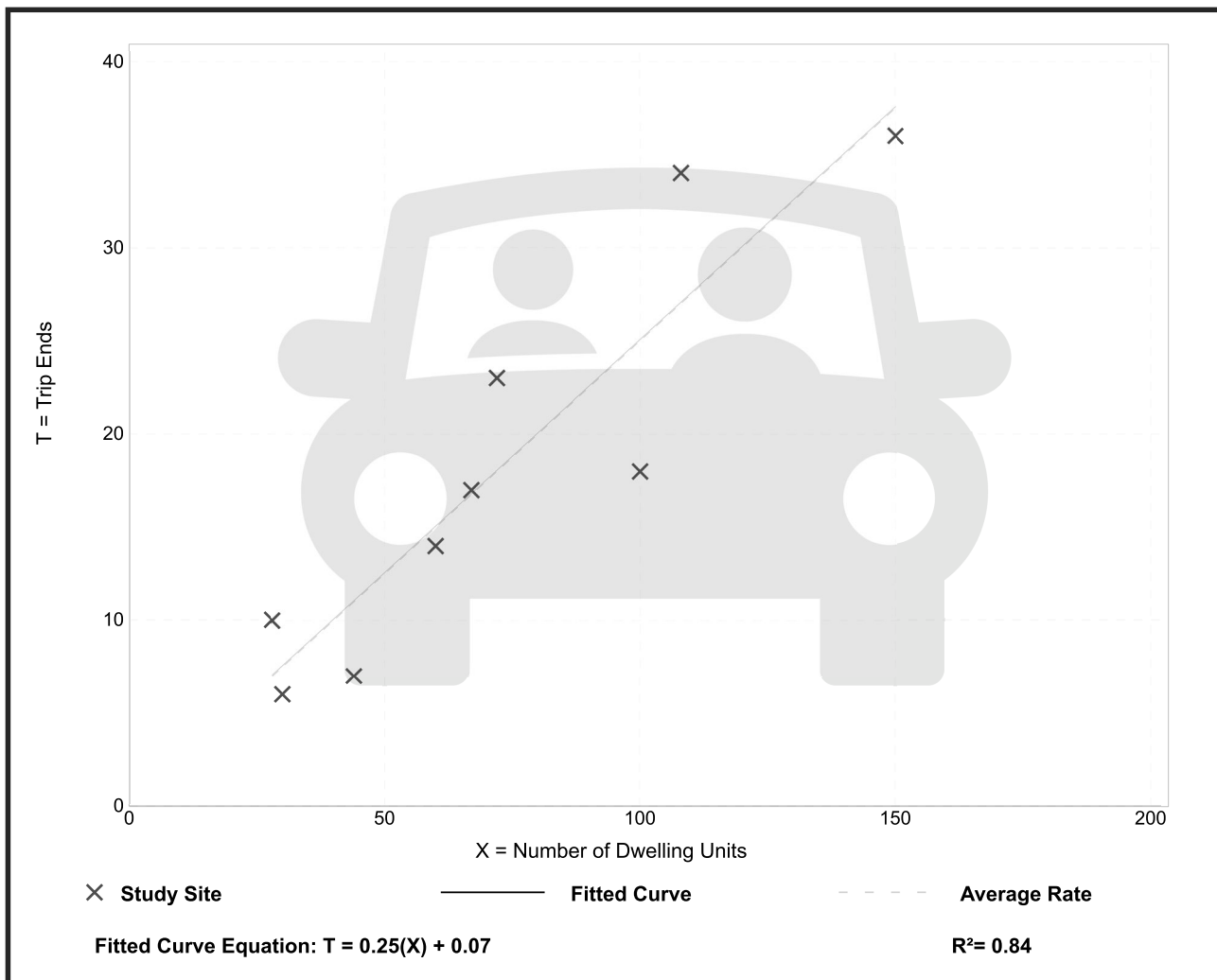
Senior Adult Housing - Multifamily (252)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 9
 Avg. Num. of Dwelling Units: 73
 Directional Distribution: 56% entering, 44% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.25	0.16 - 0.36	0.06

Data Plot and Equation



TRIP DISTRIBUTION DATA



Proposed Grove Street Re-Development
Worcester, Massachusetts

Residence	Workplace	Number	Route 122A (West)		Route 122A (East)		Indian Lake Parkway (North)		Judson Road (North)		Chadwick Street (East)	
Worcester city	Worcester city	45,088	43%	19388	47%	21191	1%	451	5%	2254	4%	1804
Worcester city	Shrewsbury town	2,707		0	100%	2707		0		0		0
Worcester city	Auburn town	2,215		0	100%	2215		0		0		0
Worcester city	Westborough town	2,185		0	100%	2185		0		0		0
Worcester city	Marlborough city	2,175		0	100%	2175		0		0		0
Worcester city	Framingham town	1,311		0	100%	1311		0		0		0
Worcester city	Northborough town	1,309		0	100%	1309		0		0		0
Worcester city	Boston city	1,299		0	100%	1299		0		0		0
Worcester city	Paxton town	1,081	66%	713	34%	368		0		0		0
Worcester city	Leominster city	1,063		0	100%	1063		0		0		0
Worcester city	Millbury town	1,029		0	100%	1029		0		0		0
Worcester city	West Boylston town	918	34%	312	66%	606		0		0		0
Worcester city	Fitchburg city	719		0	100%	719		0		0		0
Worcester city	Oxford town	687		0	100%	687		0		0		0
Worcester city	Holden town	685	100%	685		0		0		0		0
Worcester city	Grafton town	666		0	100%	666		0		0		0
Worcester city	Hudson town	654		0	100%	654		0		0		0
Worcester city	Southborough town	591		0	100%	591		0		0		0
Worcester city	Milford town	582		0	100%	582		0		0		0
Worcester city	Charlton town	515		0	100%	515		0		0		0
Worcester city	Waltham city	502		0	100%	502		0		0		0
Worcester city	Hopkinton town	501		0	100%	501		0		0		0
Worcester city	Clinton town	477		0	100%	477		0		0		0
Worcester city	Webster town	452		0	100%	452		0		0		0
Worcester city	Cambridge city	424		0	100%	424		0		0		0
Worcester city	Natick town	410		0	100%	410		0		0		0
Worcester city	Uxbridge town	390		0	100%	390		0		0		0
Worcester city	Gardner city	331	66%	218	34%	113		0		0		0
Worcester city	Franklin Town city	301		0	100%	301		0		0		0
Worcester city	Southbridge Town ci	289		0	100%	289		0		0		0
Worcester city	Ashland town	275		0	100%	275		0		0		0
Worcester city	Sturbridge town	260		0	100%	260		0		0		0
Worcester city	Sutton town	260		0	100%	260		0		0		0
Worcester city	Boylston town	256		0	100%	256		0		0		0
Worcester city	Woburn city	247		0	100%	247		0		0		0
Worcester city	Leicester town	247	34%	84	66%	163		0		0		0
Worcester city	Sterling town	234		0	100%	234		0		0		0
Worcester city	Newton city	212		0	100%	212		0		0		0
Worcester city	Northbridge town	200		0	100%	200		0		0		0
Worcester city	Spencer town	181	34%	62	66%	119		0		0		0
				0		0		0		0		0
		73,928		21,462		47,957		451		2,254		1,804
				29.0%		64.9%		0.6%		3.0%		2.4%

SAY

PARKING DEMAND CALCULATIONS



Institute of Transportation Engineers (ITE)
Parking Generation, 6th Edition
Land Use Code (LUC) 252 - Senior Adult Housing - Multifamily

Average Parked Vehicles vs: Dwelling Units
Independent Variable (X): 220

AVERAGE WEEKDAY DAILY

$$T = 0.61 * (X)$$
$$T = 0.61 * 220$$
$$T = 134.20$$
$$T = 134 \quad \text{parked vehicles}$$

85th Percentile WEEKDAY DAILY

$$T = 0.67 * (X)$$
$$T = 0.67 * 220$$
$$T = 147.40$$
$$T = 147 \quad \text{parked vehicles}$$

CAPACITY ANALYSIS

2023 Existing Weekday Morning Peak Hour
2023 Existing Weekday Evening Peak Hour
2030 No-Build Weekday Morning Peak Hour
2030 No-Build Weekday Evening Peak Hour
2030 Build Weekday Morning Peak Hour
2030 Build Weekday Evening Peak Hour



2023 Existing Weekday Morning Peak Hour



2023 Existing Weekday Morning
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	3.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	624	89	210	300	9	30
Future Vol, veh/h	624	89	210	300	9	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	77	77	51	51
Heavy Vehicles, %	2	0	1	2	0	0
Mvmt Flow	664	95	273	390	18	59

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	759	0	1648
Stage 1	-	-	-	-	712
Stage 2	-	-	-	-	936
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	857	-	110
Stage 1	-	-	-	-	490
Stage 2	-	-	-	-	385
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	857	-	65
Mov Cap-2 Maneuver	-	-	-	-	65
Stage 1	-	-	-	-	490
Stage 2	-	-	-	-	228

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	36.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	188	-	-	857	-
HCM Lane V/C Ratio	0.407	-	-	0.318	-
HCM Control Delay (s)	36.7	-	-	11.1	0
HCM Lane LOS	E	-	-	B	A
HCM 95th %tile Q(veh)	1.8	-	-	1.4	-

2023 Existing Weekday Morning
2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	6	646	2	7	489	6	0	0	0	7	0	21
Future Vol, veh/h	6	646	2	7	489	6	0	0	0	7	0	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	78	78	92	92	92	78	78	78
Heavy Vehicles, %	0	2	0	0	2	0	2	2	2	0	0	0
Mvmt Flow	7	702	2	9	627	8	0	0	0	9	0	27

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	635	0	0	704	0	0	1366	1367	631
Stage 1	-	-	-	-	-	-	649	649	-
Stage 2	-	-	-	-	-	-	717	718	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	958	-	-	903	-	-	164	148	485
Stage 1	-	-	-	-	-	-	524	469	-
Stage 2	-	-	-	-	-	-	487	436	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	958	-	-	903	-	-	160	0	485
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	0	-
Stage 1	-	-	-	-	-	-	518	0	-
Stage 2	-	-	-	-	-	-	480	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	17.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	958	-	-	903	-	-	322
HCM Lane V/C Ratio	0.007	-	-	0.01	-	-	0.111
HCM Control Delay (s)	8.8	0	-	9	0	-	17.6
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.4

2023 Existing Weekday Morning
3: Mid Way/Judson Road & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	617	0	0	451	30	0	0	1	11	0	51
Future Vol, veh/h	36	617	0	0	451	30	0	0	1	11	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	78	78	78	25	25	25	67	67	67
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	39	663	0	0	578	38	0	0	4	16	0	76

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	616	0	0	663	0	0	1376	1357	663	1340	1338	597
Stage 1	-	-	-	-	-	-	741	741	-	597	597	-
Stage 2	-	-	-	-	-	-	635	616	-	743	741	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	974	-	-	935	-	-	124	150	465	131	154	507
Stage 1	-	-	-	-	-	-	411	426	-	493	495	-
Stage 2	-	-	-	-	-	-	470	485	-	410	426	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	974	-	-	935	-	-	100	141	465	124	144	507
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	141	-	124	144	-
Stage 1	-	-	-	-	-	-	385	399	-	462	495	-
Stage 2	-	-	-	-	-	-	399	485	-	381	399	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	12.8	20.2
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	465	974	-	-	935	-	-	328
HCM Lane V/C Ratio	0.009	0.04	-	-	-	-	-	0.282
HCM Control Delay (s)	12.8	8.8	0	-	0	-	-	20.2
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.1

2023 Existing Weekday Morning
4: East Way & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	625	0	2	483	1	9
Future Vol, veh/h	625	0	2	483	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	79	79	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	679	0	3	611	2	18

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	679	0	1296 679
Stage 1	-	-	-	-	679 -
Stage 2	-	-	-	-	617 -
Critical Hdwy	-	-	4.1	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.2	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	923	-	181 455
Stage 1	-	-	-	-	507 -
Stage 2	-	-	-	-	542 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	923	-	180 455
Mov Cap-2 Maneuver	-	-	-	-	180 -
Stage 1	-	-	-	-	507 -
Stage 2	-	-	-	-	539 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	395	-	-	923	-
HCM Lane V/C Ratio	0.051	-	-	0.003	-
HCM Control Delay (s)	14.6	-	-	8.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

2023 Existing Weekday Morning
5: Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	628	6	21	457	28	35
Future Vol, veh/h	628	6	21	457	28	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	83	45	45
Heavy Vehicles, %	2	0	0	1	0	3
Mvmt Flow	683	7	25	551	62	78

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	690	0	1288
Stage 1	-	-	-	-	687
Stage 2	-	-	-	-	601
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	914	-	183
Stage 1	-	-	-	-	503
Stage 2	-	-	-	-	551
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	914	-	176
Mov Cap-2 Maneuver	-	-	-	-	176
Stage 1	-	-	-	-	503
Stage 2	-	-	-	-	530

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	32.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	265	-	-	914	-
HCM Lane V/C Ratio	0.528	-	-	0.028	-
HCM Control Delay (s)	32.8	-	-	9.1	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	2.8	-	-	0.1	-

2023 Existing Weekday Morning
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	63	136	9	0	10	24
Future Vol, veh/h	63	136	9	0	10	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	38	38	65	65
Heavy Vehicles, %	2	1	0	0	0	0
Mvmt Flow	100	216	24	0	15	37

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	24	0	-	0	440 24
Stage 1	-	-	-	-	24 -
Stage 2	-	-	-	-	416 -
Critical Hdwy	4.12	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.218	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1591	-	-	-	578 1058
Stage 1	-	-	-	-	1004 -
Stage 2	-	-	-	-	670 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1591	-	-	-	537 1058
Mov Cap-2 Maneuver	-	-	-	-	537 -
Stage 1	-	-	-	-	933 -
Stage 2	-	-	-	-	670 -

Approach	EB	WB	SB
HCM Control Delay, s	2.3	0	9.7
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1591	-	-	-	823
HCM Lane V/C Ratio	0.063	-	-	-	0.064
HCM Control Delay (s)	7.4	0	-	-	9.7
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

2023 Existing Weekday Evening Peak Hour



2023 Existing Weekday Evening
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	1.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	366	6	16	646	19	24
Future Vol, veh/h	366	6	16	646	19	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	96	96	41	41
Heavy Vehicles, %	1	0	0	1	5	0
Mvmt Flow	407	7	17	673	46	59

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	414	0	1118
Stage 1	-	-	-	-	411
Stage 2	-	-	-	-	707
Critical Hdwy	-	-	4.1	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	-	-	2.2	-	3.545
Pot Cap-1 Maneuver	-	-	1156	-	226
Stage 1	-	-	-	-	663
Stage 2	-	-	-	-	483
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1156	-	221
Mov Cap-2 Maneuver	-	-	-	-	221
Stage 1	-	-	-	-	663
Stage 2	-	-	-	-	472

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	349	-	-	1156	-
HCM Lane V/C Ratio	0.301	-	-	0.014	-
HCM Control Delay (s)	19.7	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0	-

2023 Existing Weekday Evening
2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	5	384	1	6	653	7	0	0	0	5	0	9
Future Vol, veh/h	5	384	1	6	653	7	0	0	0	5	0	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	96	96	96	92	92	92	58	58	58
Heavy Vehicles, %	0	1	0	0	1	0	2	2	2	0	0	0
Mvmt Flow	6	457	1	6	680	7	0	0	0	9	0	16

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	687	0	0	458	0	0	1166	1166	684
Stage 1	-	-	-	-	-	-	696	696	-
Stage 2	-	-	-	-	-	-	470	470	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	916	-	-	1114	-	-	216	196	452
Stage 1	-	-	-	-	-	-	498	446	-
Stage 2	-	-	-	-	-	-	633	563	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	916	-	-	1114	-	-	212	0	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	212	0	-
Stage 1	-	-	-	-	-	-	494	0	-
Stage 2	-	-	-	-	-	-	627	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	17.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	916	-	-	1114	-	-	322
HCM Lane V/C Ratio	0.006	-	-	0.006	-	-	0.075
HCM Control Delay (s)	9	0	-	8.2	0	-	17.1
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

2023 Existing Weekday Evening
3: Mid Way/Judson Road & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	361	0	4	628	29	0	0	1	15	0	38
Future Vol, veh/h	28	361	0	4	628	29	0	0	1	15	0	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	96	96	96	25	25	25	66	66	66
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	33	425	0	4	654	30	0	0	4	23	0	58

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	684	0	0	425	0	0	1197	1183	425	1170	1168	669
Stage 1	-	-	-	-	-	-	491	491	-	677	677	-
Stage 2	-	-	-	-	-	-	706	692	-	493	491	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	919	-	-	1145	-	-	164	191	634	171	195	461
Stage 1	-	-	-	-	-	-	563	552	-	446	455	-
Stage 2	-	-	-	-	-	-	430	448	-	562	552	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	919	-	-	1145	-	-	138	181	634	163	185	461
Mov Cap-2 Maneuver	-	-	-	-	-	-	138	181	-	163	185	-
Stage 1	-	-	-	-	-	-	537	526	-	425	452	-
Stage 2	-	-	-	-	-	-	374	445	-	532	526	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	10.7	21
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	634	919	-	-	1145	-	-	304
HCM Lane V/C Ratio	0.006	0.036	-	-	0.004	-	-	0.264
HCM Control Delay (s)	10.7	9.1	0	-	8.2	0	-	21
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1

2023 Existing Weekday Evening
4: East Way & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	377	2	5	658	5	10
Future Vol, veh/h	377	2	5	658	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	63	63
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	454	2	5	671	8	16

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	456	0	1136
Stage 1	-	-	-	-	455
Stage 2	-	-	-	-	681
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1115	-	225
Stage 1	-	-	-	-	643
Stage 2	-	-	-	-	506
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1115	-	223
Mov Cap-2 Maneuver	-	-	-	-	223
Stage 1	-	-	-	-	643
Stage 2	-	-	-	-	502

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	386	-	-	1115	-
HCM Lane V/C Ratio	0.062	-	-	0.005	-
HCM Control Delay (s)	14.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

2023 Existing Weekday Evening
5: Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	386	1	15	655	8	7
Future Vol, veh/h	386	1	15	655	8	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	54	54
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	465	1	15	668	15	13

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	466	0	1164
Stage 1	-	-	-	-	466
Stage 2	-	-	-	-	698
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1106	-	217
Stage 1	-	-	-	-	636
Stage 2	-	-	-	-	497
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1106	-	212
Mov Cap-2 Maneuver	-	-	-	-	212
Stage 1	-	-	-	-	636
Stage 2	-	-	-	-	486

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	304	-	-	1106	-
HCM Lane V/C Ratio	0.091	-	-	0.014	-
HCM Control Delay (s)	18	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

2023 Existing Weekday Evening
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	10	14	2	7	5	8
Future Vol, veh/h	10	14	2	7	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	45	45	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	16	4	16	8	12

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	20	0	-	0	52 12
Stage 1	-	-	-	-	12 -
Stage 2	-	-	-	-	40 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1609	-	-	-	962 1074
Stage 1	-	-	-	-	1016 -
Stage 2	-	-	-	-	988 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1609	-	-	-	954 1074
Mov Cap-2 Maneuver	-	-	-	-	954 -
Stage 1	-	-	-	-	1008 -
Stage 2	-	-	-	-	988 -

Approach	EB	WB	SB
HCM Control Delay, s	3	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1609	-	-	-	1024
HCM Lane V/C Ratio	0.007	-	-	-	0.02
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

2030 No-Build Weekday Morning Peak Hour



2030 No-Build Weekday Morning
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	669	95	225	324	10	32
Future Vol, veh/h	669	95	225	324	10	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	77	77	51	51
Heavy Vehicles, %	2	0	1	2	0	0
Mvmt Flow	712	101	292	421	20	63

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	813	0	1768
Stage 1	-	-	-	-	763
Stage 2	-	-	-	-	1005
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	818	-	93
Stage 1	-	-	-	-	464
Stage 2	-	-	-	-	357
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	818	-	50
Mov Cap-2 Maneuver	-	-	-	-	50
Stage 1	-	-	-	-	464
Stage 2	-	-	-	-	191

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	54.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	151	-	-	818	-
HCM Lane V/C Ratio	0.545	-	-	0.357	-
HCM Control Delay (s)	54.3	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.7	-	-	1.6	-

2030 No-Build Weekday Morning
2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	6	693	2	7	526	6	0	0	0	8	0	23
Future Vol, veh/h	6	693	2	7	526	6	0	0	0	8	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	78	78	92	92	92	78	78	78
Heavy Vehicles, %	0	2	0	0	2	0	2	2	2	0	0	0
Mvmt Flow	7	753	2	9	674	8	0	0	0	10	0	29

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	682	0	0	755	0	0	1464	1465	678
Stage 1	-	-	-	-	-	-	696	696	-
Stage 2	-	-	-	-	-	-	768	769	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	920	-	-	865	-	-	143	129	456
Stage 1	-	-	-	-	-	-	498	446	-
Stage 2	-	-	-	-	-	-	461	413	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	920	-	-	865	-	-	139	0	456
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	0	-
Stage 1	-	-	-	-	-	-	492	0	-
Stage 2	-	-	-	-	-	-	453	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	920	-	-	865	-	-	287
HCM Lane V/C Ratio	0.007	-	-	0.01	-	-	0.138
HCM Control Delay (s)	8.9	0	-	9.2	0	-	19.5
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.5

2030 No-Build Weekday Morning
3: Mid Way/Judson Road & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	662	0	0	484	32	0	0	1	12	0	55
Future Vol, veh/h	39	662	0	0	484	32	0	0	1	12	0	55
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	78	78	78	25	25	25	67	67	67
Heavy Vehicles, %	0	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	42	712	0	0	621	41	0	0	4	18	0	82

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	662	0	0	712	0	0	1479	1458	712	1440	1438	642
Stage 1	-	-	-	-	-	-	796	796	-	642	642	-
Stage 2	-	-	-	-	-	-	683	662	-	798	796	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	936	-	-	897	-	-	105	131	436	112	134	478
Stage 1	-	-	-	-	-	-	383	402	-	466	472	-
Stage 2	-	-	-	-	-	-	442	462	-	382	402	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	936	-	-	897	-	-	82	121	436	105	124	478
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	121	-	105	124	-
Stage 1	-	-	-	-	-	-	355	372	-	432	472	-
Stage 2	-	-	-	-	-	-	366	462	-	350	372	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0			13.3			23.6		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	436	936	-	-	897	-	-	292
HCM Lane V/C Ratio	0.009	0.045	-	-	-	-	-	0.342
HCM Control Delay (s)	13.3	9	0	-	0	-	-	23.6
HCM Lane LOS	B	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.5

2030 No-Build Weekday Morning
4: East Way & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	670	0	2	518	1	9
Future Vol, veh/h	670	0	2	518	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	79	79	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	728	0	3	656	2	18

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	728	0	1390
Stage 1	-	-	-	-	728
Stage 2	-	-	-	-	662
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	885	-	158
Stage 1	-	-	-	-	482
Stage 2	-	-	-	-	517
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	885	-	157
Mov Cap-2 Maneuver	-	-	-	-	157
Stage 1	-	-	-	-	482
Stage 2	-	-	-	-	514

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	364	-	-	885	-
HCM Lane V/C Ratio	0.055	-	-	0.003	-
HCM Control Delay (s)	15.5	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	673	6	23	490	30	38
Future Vol, veh/h	673	6	23	490	30	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	83	45	45
Heavy Vehicles, %	2	0	0	1	0	3
Mvmt Flow	732	7	28	590	67	84

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	739	0	1382	736
Stage 1	-	-	-	-	736	-
Stage 2	-	-	-	-	646	-
Critical Hdwy	-	-	4.1	-	6.4	6.23
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.327
Pot Cap-1 Maneuver	-	-	876	-	160	417
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	526	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	876	-	152	417
Mov Cap-2 Maneuver	-	-	-	-	152	-
Stage 1	-	-	-	-	477	-
Stage 2	-	-	-	-	501	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	43.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	236	-	-	876	-
HCM Lane V/C Ratio	0.64	-	-	0.032	-
HCM Control Delay (s)	43.9	-	-	9.2	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	3.9	-	-	0.1	-

2030 No-Build Weekday Morning
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	68	146	10	0	11	26
Future Vol, veh/h	68	146	10	0	11	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	38	38	65	65
Heavy Vehicles, %	2	1	0	0	0	0
Mvmt Flow	108	232	26	0	17	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	26	0	-	0	474 26
Stage 1	-	-	-	-	26 -
Stage 2	-	-	-	-	448 -
Critical Hdwy	4.12	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.218	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1588	-	-	-	553 1056
Stage 1	-	-	-	-	1002 -
Stage 2	-	-	-	-	648 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1588	-	-	-	510 1056
Mov Cap-2 Maneuver	-	-	-	-	510 -
Stage 1	-	-	-	-	924 -
Stage 2	-	-	-	-	648 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1588	-	-	-	801
HCM Lane V/C Ratio	0.068	-	-	-	0.071
HCM Control Delay (s)	7.4	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

2030 No-Build Weekday Evening Peak Hour



2030 No-Build Weekday Evening
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	392	6	17	693	20	26
Future Vol, veh/h	392	6	17	693	20	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	96	96	41	41
Heavy Vehicles, %	1	0	0	1	5	0
Mvmt Flow	436	7	18	722	49	63

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	443	0	1198
Stage 1	-	-	-	-	440
Stage 2	-	-	-	-	758
Critical Hdwy	-	-	4.1	-	6.45
Critical Hdwy Stg 1	-	-	-	-	5.45
Critical Hdwy Stg 2	-	-	-	-	5.45
Follow-up Hdwy	-	-	2.2	-	3.545
Pot Cap-1 Maneuver	-	-	1128	-	202
Stage 1	-	-	-	-	643
Stage 2	-	-	-	-	457
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1128	-	197
Mov Cap-2 Maneuver	-	-	-	-	197
Stage 1	-	-	-	-	643
Stage 2	-	-	-	-	445

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	22.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	321	-	-	1128	-
HCM Lane V/C Ratio	0.35	-	-	0.016	-
HCM Control Delay (s)	22.1	-	-	8.2	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

2030 No-Build Weekday Evening
 2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	5	412	1	6	700	8	0	0	0	5	0	10
Future Vol, veh/h	5	412	1	6	700	8	0	0	0	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	96	96	96	92	92	92	58	58	58
Heavy Vehicles, %	0	1	0	0	1	0	2	2	2	0	0	0
Mvmt Flow	6	490	1	6	729	8	0	0	0	9	0	17

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	737	0	0	491	0	0	1248	1248	733
Stage 1	-	-	-	-	-	-	745	745	-
Stage 2	-	-	-	-	-	-	503	503	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	878	-	-	1083	-	-	193	175	424
Stage 1	-	-	-	-	-	-	473	424	-
Stage 2	-	-	-	-	-	-	612	545	-
Platoon blocked, %		-	-	-	-	-			
Mov Cap-1 Maneuver	878	-	-	1083	-	-	190	0	424
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	0	-
Stage 1	-	-	-	-	-	-	469	0	-
Stage 2	-	-	-	-	-	-	606	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	878	-	-	1083	-	-	301
HCM Lane V/C Ratio	0.007	-	-	0.006	-	-	0.086
HCM Control Delay (s)	9.1	0	-	8.3	0	-	18.1
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.3

2030 No-Build Weekday Evening
3: Mid Way/Judson Road & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	387	0	4	673	31	0	0	1	16	0	41
Future Vol, veh/h	30	387	0	4	673	31	0	0	1	16	0	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	96	96	96	25	25	25	66	66	66
Heavy Vehicles, %	0	1	0	0	1	0	0	0	0	0	0	0
Mvmt Flow	35	455	0	4	701	32	0	0	4	24	0	62

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	733	0	0	455	0	0	1281	1266	455	1252	1250	717
Stage 1	-	-	-	-	-	-	525	525	-	725	725	-
Stage 2	-	-	-	-	-	-	756	741	-	527	525	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	881	-	-	1116	-	-	144	171	609	151	174	433
Stage 1	-	-	-	-	-	-	540	533	-	420	433	-
Stage 2	-	-	-	-	-	-	403	426	-	538	533	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	881	-	-	1116	-	-	118	161	609	143	164	433
Mov Cap-2 Maneuver	-	-	-	-	-	-	118	161	-	143	164	-
Stage 1	-	-	-	-	-	-	511	505	-	398	430	-
Stage 2	-	-	-	-	-	-	343	423	-	506	505	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0	11	23.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	609	881	-	-	1116	-	-	276
HCM Lane V/C Ratio	0.007	0.04	-	-	0.004	-	-	0.313
HCM Control Delay (s)	11	9.3	0	-	8.2	0	-	23.9
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.3

2030 No-Build Weekday Evening
4: East Way & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	2	5	706	5	10
Future Vol, veh/h	405	2	5	706	5	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	63	63
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	488	2	5	720	8	16

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	490	0	1219
Stage 1	-	-	-	-	489
Stage 2	-	-	-	-	730
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1084	-	201
Stage 1	-	-	-	-	621
Stage 2	-	-	-	-	481
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1084	-	199
Mov Cap-2 Maneuver	-	-	-	-	199
Stage 1	-	-	-	-	621
Stage 2	-	-	-	-	477

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	355	-	-	1084	-
HCM Lane V/C Ratio	0.067	-	-	0.005	-
HCM Control Delay (s)	15.9	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	414	1	16	702	9	8
Future Vol, veh/h	414	1	16	702	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	54	54
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	499	1	16	716	17	15

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	0	0	500	0
Stage 1	-	-	-	500
Stage 2	-	-	-	748
Critical Hdwy	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-
Pot Cap-1 Maneuver	-	-	1075	-
Stage 1	-	-	-	613
Stage 2	-	-	-	471
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	-	1075	-
Mov Cap-2 Maneuver	-	-	-	188
Stage 1	-	-	-	613
Stage 2	-	-	-	459

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	19.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	275	-	-	1075	-
HCM Lane V/C Ratio	0.114	-	-	0.015	-
HCM Control Delay (s)	19.8	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

2030 No-Build Weekday Evening
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	11	15	2	8	5	9
Future Vol, veh/h	11	15	2	8	5	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	45	45	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	17	4	18	8	14

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	22	0	-	0	56 13
Stage 1	-	-	-	-	13 -
Stage 2	-	-	-	-	43 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1607	-	-	-	957 1073
Stage 1	-	-	-	-	1015 -
Stage 2	-	-	-	-	985 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1607	-	-	-	949 1073
Mov Cap-2 Maneuver	-	-	-	-	949 -
Stage 1	-	-	-	-	1007 -
Stage 2	-	-	-	-	985 -

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1607	-	-	-	1025
HCM Lane V/C Ratio	0.008	-	-	-	0.021
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

2030 Build Weekday Morning Peak Hour



2030 Build Weekday Morning
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	671	95	225	327	10	32
Future Vol, veh/h	671	95	225	327	10	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	77	77	51	51
Heavy Vehicles, %	2	0	1	2	0	0
Mvmt Flow	714	101	292	425	20	63

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	815	0	1774
Stage 1	-	-	-	-	765
Stage 2	-	-	-	-	1009
Critical Hdwy	-	-	4.11	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.209	-	3.5
Pot Cap-1 Maneuver	-	-	817	-	92
Stage 1	-	-	-	-	463
Stage 2	-	-	-	-	355
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	817	-	49
Mov Cap-2 Maneuver	-	-	-	-	49
Stage 1	-	-	-	-	463
Stage 2	-	-	-	-	189

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	56.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	148	-	-	817	-
HCM Lane V/C Ratio	0.556	-	-	0.358	-
HCM Control Delay (s)	56.2	-	-	11.8	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	2.8	-	-	1.6	-

2030 Build Weekday Morning
 2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	6	694	3	8	529	6	0	0	0	8	0	23
Future Vol, veh/h	6	694	3	8	529	6	0	0	0	8	0	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	78	78	78	92	92	92	78	78	78
Heavy Vehicles, %	0	2	0	0	2	0	2	2	2	0	0	0
Mvmt Flow	7	754	3	10	678	8	0	0	0	10	0	29

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	686	0	0	757	0	0	1472	1473	682
Stage 1	-	-	-	-	-	-	702	702	-
Stage 2	-	-	-	-	-	-	770	771	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	917	-	-	863	-	-	141	128	453
Stage 1	-	-	-	-	-	-	495	443	-
Stage 2	-	-	-	-	-	-	460	413	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	917	-	-	863	-	-	136	0	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	136	0	-
Stage 1	-	-	-	-	-	-	489	0	-
Stage 2	-	-	-	-	-	-	451	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	19.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	917	-	-	863	-	-	283
HCM Lane V/C Ratio	0.007	-	-	0.012	-	-	0.14
HCM Control Delay (s)	9	0	-	9.2	0	-	19.8
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.5

2030 Build Weekday Morning
3: Route 122A & Judson Road

11/15/2023

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	39	663	489	32	12	55
Future Vol, veh/h	39	663	489	32	12	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	78	78	67	67
Heavy Vehicles, %	0	2	2	0	0	0
Mvmt Flow	42	713	627	41	18	82

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	668	0	-	0	1445 648
Stage 1	-	-	-	-	648 -
Stage 2	-	-	-	-	797 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	931	-	-	-	147 474
Stage 1	-	-	-	-	524 -
Stage 2	-	-	-	-	447 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	931	-	-	-	136 474
Mov Cap-2 Maneuver	-	-	-	-	136 -
Stage 1	-	-	-	-	485 -
Stage 2	-	-	-	-	447 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	931	-	-	-	328
HCM Lane V/C Ratio	0.045	-	-	-	0.305
HCM Control Delay (s)	9	0	-	-	20.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3

2030 Build Weekday Morning
4: Driveway east of Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	670	1	4	520	4	16
Future Vol, veh/h	670	1	4	520	4	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	79	79	50	50
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	728	1	5	658	8	32

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	729	0	1397
Stage 1	-	-	-	-	729
Stage 2	-	-	-	-	668
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	884	-	157
Stage 1	-	-	-	-	481
Stage 2	-	-	-	-	513
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	884	-	156
Mov Cap-2 Maneuver	-	-	-	-	156
Stage 1	-	-	-	-	481
Stage 2	-	-	-	-	508

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	316	-	-	884	-
HCM Lane V/C Ratio	0.127	-	-	0.006	-
HCM Control Delay (s)	18	-	-	9.1	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

2030 Build Weekday Morning
5: Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	4.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	680	6	23	494	30	38
Future Vol, veh/h	680	6	23	494	30	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	83	83	45	45
Heavy Vehicles, %	2	0	0	1	0	3
Mvmt Flow	739	7	28	595	67	84

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	746	0	1394
Stage 1	-	-	-	-	743
Stage 2	-	-	-	-	651
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	871	-	158
Stage 1	-	-	-	-	474
Stage 2	-	-	-	-	523
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	871	-	150
Mov Cap-2 Maneuver	-	-	-	-	150
Stage 1	-	-	-	-	474
Stage 2	-	-	-	-	498

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	45.1
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	233	-	-	871	-
HCM Lane V/C Ratio	0.649	-	-	0.032	-
HCM Control Delay (s)	45.1	-	-	9.3	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	4	-	-	0.1	-

2030 Build Weekday Morning
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	68	146	10	0	11	26
Future Vol, veh/h	68	146	10	0	11	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	63	63	38	38	65	65
Heavy Vehicles, %	2	1	0	0	0	0
Mvmt Flow	108	232	26	0	17	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	26	0	-	0	474 26
Stage 1	-	-	-	-	26 -
Stage 2	-	-	-	-	448 -
Critical Hdwy	4.12	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.218	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1588	-	-	-	553 1056
Stage 1	-	-	-	-	1002 -
Stage 2	-	-	-	-	648 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1588	-	-	-	510 1056
Mov Cap-2 Maneuver	-	-	-	-	510 -
Stage 1	-	-	-	-	924 -
Stage 2	-	-	-	-	648 -

Approach	EB	WB	SB
HCM Control Delay, s	2.4	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1588	-	-	-	801
HCM Lane V/C Ratio	0.068	-	-	-	0.071
HCM Control Delay (s)	7.4	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2

2030 Build Weekday Morning
8: Driveway east of Judson Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	675	0	0	521	0	1
Future Vol, veh/h	675	0	0	521	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	78	78	92	92
Heavy Vehicles, %	2	0	0	2	0	0
Mvmt Flow	726	0	0	668	0	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	1394 726
Stage 1	-	-	-	-	726 -
Stage 2	-	-	-	-	668 -
Critical Hdwy	-	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	-	0	0	-	158 428
Stage 1	-	0	0	-	483 -
Stage 2	-	0	0	-	513 -
Platoon blocked, %	-				-
Mov Cap-1 Maneuver	-	-	-	-	158 428
Mov Cap-2 Maneuver	-	-	-	-	158 -
Stage 1	-	-	-	-	483 -
Stage 2	-	-	-	-	513 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	428	-	-
HCM Lane V/C Ratio	0.003	-	-
HCM Control Delay (s)	13.4	-	-
HCM Lane LOS	B	-	-
HCM 95th %tile Q(veh)	0	-	-

2030 Build Weekday Evening Peak Hour



2030 Build Weekday Evening
1: Chadwick Street & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	395	6	17	696	20	26
Future Vol, veh/h	395	6	17	696	20	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	96	96	41	41
Heavy Vehicles, %	1	0	0	1	5	0
Mvmt Flow	439	7	18	725	49	63

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	446	0	1204 443
Stage 1	-	-	-	-	443 -
Stage 2	-	-	-	-	761 -
Critical Hdwy	-	-	4.1	-	6.45 6.2
Critical Hdwy Stg 1	-	-	-	-	5.45 -
Critical Hdwy Stg 2	-	-	-	-	5.45 -
Follow-up Hdwy	-	-	2.2	-	3.545 3.3
Pot Cap-1 Maneuver	-	-	1125	-	201 619
Stage 1	-	-	-	-	641 -
Stage 2	-	-	-	-	456 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1125	-	196 619
Mov Cap-2 Maneuver	-	-	-	-	196 -
Stage 1	-	-	-	-	641 -
Stage 2	-	-	-	-	444 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	22.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	319	-	-	1125	-
HCM Lane V/C Ratio	0.352	-	-	0.016	-
HCM Control Delay (s)	22.3	-	-	8.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	-	-	0	-

2030 Build Weekday Evening
2: West Way/Indian Lake Parkway & Route 122A

11/15/2023

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕						↕	
Traffic Vol, veh/h	5	413	3	11	703	8	0	0	0	5	0	10
Future Vol, veh/h	5	413	3	11	703	8	0	0	0	5	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	96	96	96	92	92	92	58	58	58
Heavy Vehicles, %	0	1	0	0	1	0	2	2	2	0	0	0
Mvmt Flow	6	492	4	11	732	8	0	0	0	9	0	17

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	740	0	0	496	0	0	1264	1266	736
Stage 1	-	-	-	-	-	-	758	758	-
Stage 2	-	-	-	-	-	-	506	508	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3
Pot Cap-1 Maneuver	876	-	-	1078	-	-	189	171	422
Stage 1	-	-	-	-	-	-	466	418	-
Stage 2	-	-	-	-	-	-	610	542	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	876	-	-	1078	-	-	184	0	422
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	0	-
Stage 1	-	-	-	-	-	-	462	0	-
Stage 2	-	-	-	-	-	-	600	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.1	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	876	-	-	1078	-	-	295
HCM Lane V/C Ratio	0.007	-	-	0.011	-	-	0.088
HCM Control Delay (s)	9.1	0	-	8.4	0	-	18.4
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.3

2030 Build Weekday Evening
3: Route 122A & Judson Road

11/15/2023

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	30	388	681	31	16	42
Future Vol, veh/h	30	388	681	31	16	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	96	96	66	66
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	35	456	709	32	24	64

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	741	0	-	0	1251 725
Stage 1	-	-	-	-	725 -
Stage 2	-	-	-	-	526 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	875	-	-	-	192 428
Stage 1	-	-	-	-	483 -
Stage 2	-	-	-	-	597 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	875	-	-	-	182 428
Mov Cap-2 Maneuver	-	-	-	-	182 -
Stage 1	-	-	-	-	457 -
Stage 2	-	-	-	-	597 -

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	21
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	875	-	-	-	312
HCM Lane V/C Ratio	0.04	-	-	-	0.282
HCM Control Delay (s)	9.3	0	-	-	21
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.1

2030 Build Weekday Evening
4: Driveway east of Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	405	3	11	707	7	16
Future Vol, veh/h	405	3	11	707	7	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	63	63
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	488	4	11	721	11	25

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	492	0	1233
Stage 1	-	-	-	-	490
Stage 2	-	-	-	-	743
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1082	-	197
Stage 1	-	-	-	-	620
Stage 2	-	-	-	-	474
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1082	-	194
Mov Cap-2 Maneuver	-	-	-	-	194
Stage 1	-	-	-	-	620
Stage 2	-	-	-	-	466

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	16.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	1082	-
HCM Lane V/C Ratio	0.101	-	-	0.01	-
HCM Control Delay (s)	16.1	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

2030 Build Weekday Evening
5: Rosemont Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	420	1	16	709	9	8
Future Vol, veh/h	420	1	16	709	9	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	98	98	54	54
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	506	1	16	723	17	15

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	507	0	1262
Stage 1	-	-	-	-	507
Stage 2	-	-	-	-	755
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1068	-	189
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	468
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1068	-	184
Mov Cap-2 Maneuver	-	-	-	-	184
Stage 1	-	-	-	-	609
Stage 2	-	-	-	-	456

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	20.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	270	-	-	1068	-
HCM Lane V/C Ratio	0.117	-	-	0.015	-
HCM Control Delay (s)	20.1	-	-	8.4	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0	-

2030 Build Weekday Evening
6: Chadwick Street & Rosemont Road

11/15/2023

Intersection						
Int Delay, s/veh	3.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	11	15	2	8	5	9
Future Vol, veh/h	11	15	2	8	5	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	45	45	65	65
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	13	17	4	18	8	14

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	22	0	-	0	56 13
Stage 1	-	-	-	-	13 -
Stage 2	-	-	-	-	43 -
Critical Hdwy	4.1	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	1607	-	-	-	957 1073
Stage 1	-	-	-	-	1015 -
Stage 2	-	-	-	-	985 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1607	-	-	-	949 1073
Mov Cap-2 Maneuver	-	-	-	-	949 -
Stage 1	-	-	-	-	1007 -
Stage 2	-	-	-	-	985 -

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	8.6
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1607	-	-	-	1025
HCM Lane V/C Ratio	0.008	-	-	-	0.021
HCM Control Delay (s)	7.3	0	-	-	8.6
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

2030 Build Weekday Evening
8: Driveway east of Judson Road & Route 122A

11/15/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	404	0	0	711	1	1
Future Vol, veh/h	404	0	0	711	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	96	96	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	475	0	0	741	1	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	-	-	-	1216 475
Stage 1	-	-	-	-	475 -
Stage 2	-	-	-	-	741 -
Critical Hdwy	-	-	-	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	-	0	0	-	202 594
Stage 1	-	0	0	-	630 -
Stage 2	-	0	0	-	475 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	202 594
Mov Cap-2 Maneuver	-	-	-	-	202 -
Stage 1	-	-	-	-	630 -
Stage 2	-	-	-	-	475 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	WBT
Capacity (veh/h)	301	-	-
HCM Lane V/C Ratio	0.007	-	-
HCM Control Delay (s)	17	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0	-	-