

MEMORANDUM

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**Professional Engineer in CT, MA, ME, NH, RI and VA*

DATE: October 2, 2023

RE: 7463

SUBJECT: Transportation Impact Assessment
Proposed Multifamily Residential Development – Murphy's Farm (231 Wheeler Street)
Dracut, Massachusetts

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be known as Murphy's Farm and located at 231 Wheeler Street in Dracut, Massachusetts (hereafter referred to as the "Project"), and generally situated between Rinzee Road and Elizabeth Drive. This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Wheeler Street and Wheeler Road, and at major intersections along these roadways through which Project-related traffic will travel. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),¹ the Project is expected to generate approximately 2,236 vehicle trips on an average weekday (two-way, 24-hour volume), with 150 vehicle trips expected during the weekday morning peak-hour and 176 vehicle trips expected during the weekday evening peak-hour;
2. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build condition), with the majority of movements at the study area intersections shown to continue to operate at level of service (LOS) B or better with the addition of Project-related traffic, where an LOS of "D" or better is generally defined as "acceptable" traffic operations;
3. Independent of the Project, specific movements at the Route 113/Wheeler Street and Route 110/Wheeler Street intersections are currently or are predicted to operate at or over capacity (i.e., LOS "E" or "F", respectively), with Project-related impacts along these movements defined as a

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



predicted increase in average motorist delay that results in an increase in vehicle queuing of up to nine (9) vehicles;

4. All movements at the intersections that will convey traffic to/from the Project site are predicted to operate at LOS A with negligible vehicle queuing predicted;
5. Independent of the Project, the Wheeler Road/Wilshire Circle/Paddock Lane intersection was found to have a motor vehicle crash rate in excess of both the MassDOT statewide and District average crash rates for similar intersections. As such, specific sign and pavement marking enhancements will be advanced in conjunction with the Project; and
6. Lines of sight at the intersections through which Project related traffic will be conveyed were found to exceed, or can be made to exceed, the recommended minimum distance for the intersections to operate in a safe manner based on the appropriate approach speed.

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

The following details our assessment of the Project.

PROJECT DESCRIPTION

The Project will entail the construction of a 300-unit multifamily residential development to be located at 231 Wheeler Street in Dracut, Massachusetts, and generally situated between Rinzee Road and Elizabeth Drive. The residential buildings will consist of five (5) or seven (7) conjoined townhouse units that will be dispersed throughout the Project site. The Project site encompasses approximately 50.0± acres of land bound by residential properties and areas of open and wooded space to the north, east and west; and a materials yard and areas of open and wooden space to the south. The Project site currently contains areas of open and wooded space. Figure 1 depicts the Project site location in relation to the existing roadway network.

Access to the Project site will be provided by way of a new roadway network that will intersect the cul-de-sacs at the current termini of Poppy Lane and Elizabeth Drive, respectively, and a new roadway that will intersect the west side of Wheeler Street approximately 600 feet north of Rinzee Road. Off-street parking will be provided for 600 vehicles, or a parking ratio of 2.0 parking spaces per unit, which meets the parking requirements for multifamily dwellings as specified by Section 3.10.24 *Table of Off-Street Parking Requirements*, of the Town of Dracut Zoning By-Laws.²

²Two spaces per dwelling unit is required for multifamily residential dwellings.





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STUDY METHODOLOGY

This study was prepared in consultation with the Massachusetts Department of Transportation (MassDOT), the City of Methuen and the Town of Dracut; was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian and bicycle facilities; on-street parking; public transportation services; observations of traffic flow; and collection of pedestrian, bicycle, and vehicle counts.

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

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

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in March 2023. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information with the study area. The study area that was assessed for the Project consisted of Wheeler Street and Wheeler Road, as well as the following specific intersections through which Project-related traffic will travel:

- North Lowell Road (Route 113) at Wheeler Street
- Wheeler Street at Wheeler Road
- Wheeler Street at Rinzee Road
- Lowell Boulevard (Route 110) at Wheeler Street
- Wheeler Road at Wilshire Circle and Paddock Lane
- Wheeler Road at Wilshire Circle

Roadways

Wheeler Street

Wheeler Street is a two-lane collector roadway under local jurisdiction (City of Methuen or Town of Dracut) that traverses the study area in a general north-south direction between Route 110 and Route 113. In the vicinity of the Project site, Wheeler Street provides two 10- to 11-foot-wide lanes separated by a double-yellow centerline with no marked shoulders. The posted speed limit along the roadway is 30 miles per hour (mph). Sidewalks and illumination are not provided in the vicinity of the Project site. Land use along Wheeler Street consists of the Project site, residential properties, and areas of open and wooded space.



Wheeler Road

Wheeler Road is a two-lane collector roadway under local jurisdiction (City of Methuen or Town of Dracut) that traverses the study area in a general east-west direction between Route 113 and Wheeler Street. In the vicinity of the Project site, Wheeler Road provides two 12- to 13-foot-wide lanes separated by a double-yellow centerline with no marked shoulders. The posted speed limit along the roadway is 30 mph. Sidewalks and illumination are not provided in the vicinity of the Project site. Land use along Wheeler Road consists of the Project site, residential properties, and areas of open and wooded space.

Intersections

Table 1 summarizes the existing lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in March 2023.

Table 1
STUDY AREA INTERSECTION DESCRIPTION

Intersection	Traffic Control Type ^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Route 113/ Wheeler St.	S	1 general purpose travel lane on all approaches	Yes; 1 to 2-feet on Route 113	Yes; a sidewalk is provided along the north side of Route 113	Yes; shared-traveled-way ^b along Route 113
Wheeler St./ Wheeler Rd.	S	1 general purpose travel lane on all approaches	No	No	No
Wheeler St./ Rinzee Rd.	S	1 general purpose travel lane on all approaches	No	Yes; a sidewalk is provided along the south side of Rinzee Rd.	Yes; shared-traveled-way along Rinzee Rd.
Route 110/ Wheeler St.	S	1 general purpose travel lane on all approaches	Yes; 8 to 10-feet on Route 110	Yes; sidewalks are provided along both sides of Route 110	Yes; shared-traveled-way along Route 110
Wheeler Rd./ Wilshire Cir./ Paddock Ln.	S	1 general purpose travel lane on all approaches	No	Yes; sidewalks are provided along the east side of Wilshire Cir. and Paddock Ln.	Yes; shared-traveled-way along Wilshire Cir. and Paddock Ln.
Wheeler Rd./ Wilshire Cir.	S	1 general purpose travel lane on all approaches	No	Yes; a sidewalk is provided along the west side of Wilshire Cir.	Yes; shared-traveled way along Wilshire Cir.

^aS = STOP-sign control.

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

Existing Traffic Volumes

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, turning movement counts (TMCs), and vehicle classification counts were completed in March 2023. The ATR counts were conducted on Wheeler Street, south of Rinzee Road, and on Wheeler Road, between Wilshire Circle east and west, on March 7th through 8th, 2023 (Tuesday through



Wednesday, inclusive) in order to record weekday traffic conditions over an extended period, with weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak-period TMCs performed at the study area intersection on Tuesday, March 7, 2023. These time periods were selected for analysis purposes as they are representative of the peak-traffic-volume hours for both the Project and the adjacent roadway network.

Traffic Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, MassDOT weekday seasonal factors for Urban Groups 3 and 4-7 roadways (principal arterials (Group 3) and minor arterials, major collectors, minor collectors, and local roads and streets (Group 4-7), respectively) were reviewed.³ Based on a review of this data, it was determined that traffic volumes for the month of March are between 2.0 percent and 5.0 percent *above* average-month conditions. As such, a seasonal adjustment was not applied to the traffic volume data as the data is representative of traffic-volume conditions that are higher than those under average-month conditions.

Based on updated guidance from MassDOT,⁴ adjustments to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic for traffic counts taken on or after March 1, 2022 are *not recommended* in areas where the adjacent land uses are not predominantly office properties. As the study area roadways and intersections serve almost exclusively residential properties, adjustment of the traffic-volume data to account for the COVID-19 pandemic was not required.

The 2023 Existing traffic volumes are summarized in Table 2, with the weekday morning and evening peak-hour traffic volumes graphically depicted on Figures 2 and 3.

Table 2
2023 EXISTING TRAFFIC VOLUMES

Location/Peak-Hour	AWT ^a	VPH ^b	K Factor ^c	Directional Distribution ^d
<i>Wheeler Street, south of Rinzee Road:</i>	440	--	--	--
Weekday Morning (7:30 – 8:30 AM)	--	40	9.1	60.0% SB
Weekday Evening (4:00 – 5:00 PM)	--	54	12.3	59.3% NB
<i>Wheeler Road, between Wilshire Circle east and west:</i>	1,205	--	--	--
Weekday Morning (7:30 – 8:30 AM)	--	81	6.7	55.6% EB
Weekday Evening (4:00 – 5:00 PM)	--	132	11.0	51.5% WB

^aAverage weekday traffic in vehicles per day.

^bVehicles per hour.

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

^dPercent traveling in peak direction.

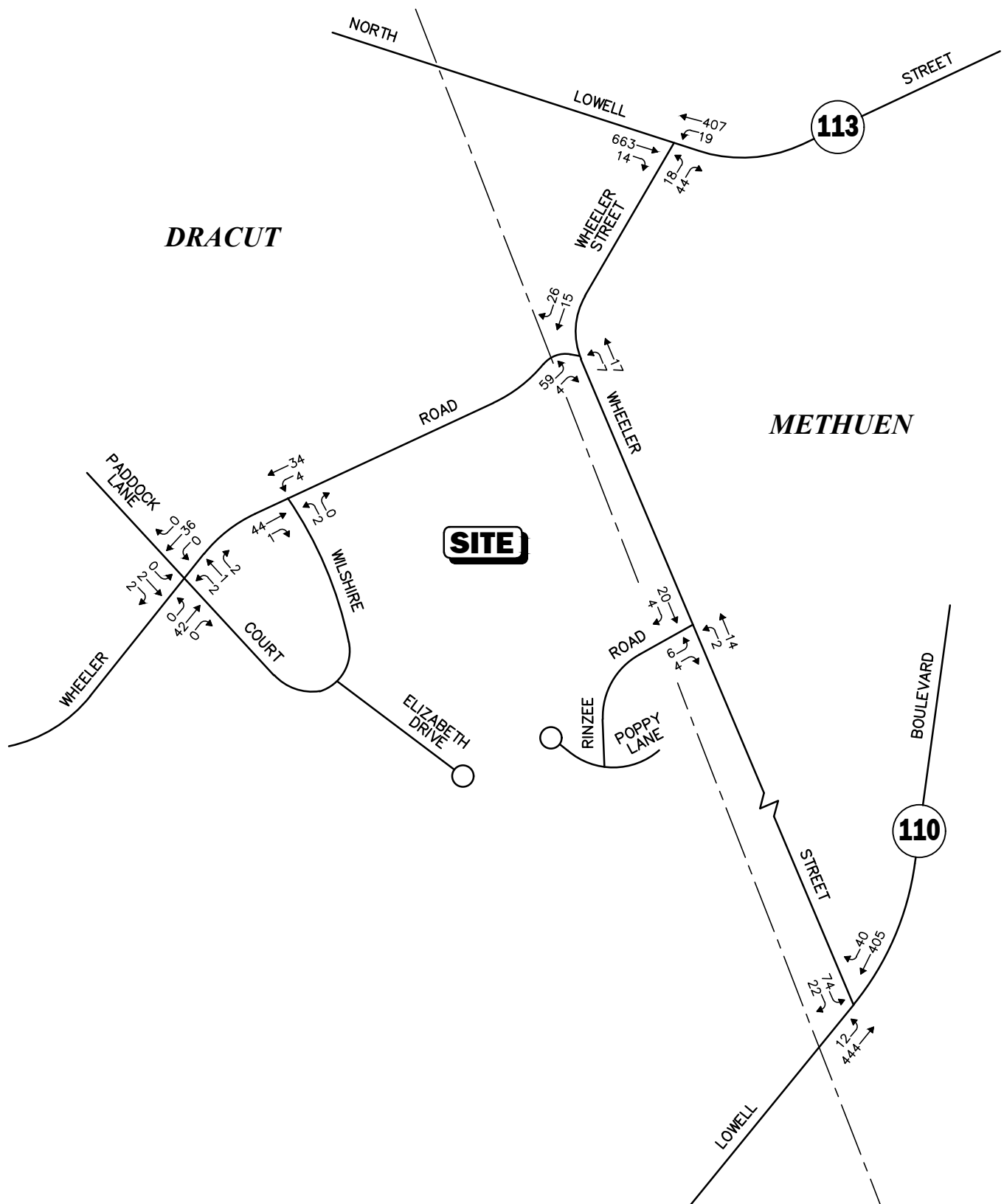
NB = northbound; SB = southbound; EB = eastbound; WB = westbound.

As can be seen in Table 2, Wheeler Street, south of Rinzee Road, was found to accommodate approximately 440 vehicles on an average weekday (two-way, 24-hour volume), with approximately 40 vehicles per hour (vph) during the weekday morning peak-hour and 54 vph during the weekday evening peak-hour.

³MassDOT statewide Traffic Data Collection; 2019 Weekday Seasonal Factors, Groups U3 and U4-7.

⁴*Traffic and Safety Engineering 25% Design Submission Guidelines*; MassDOT; Revised March 31, 2022.





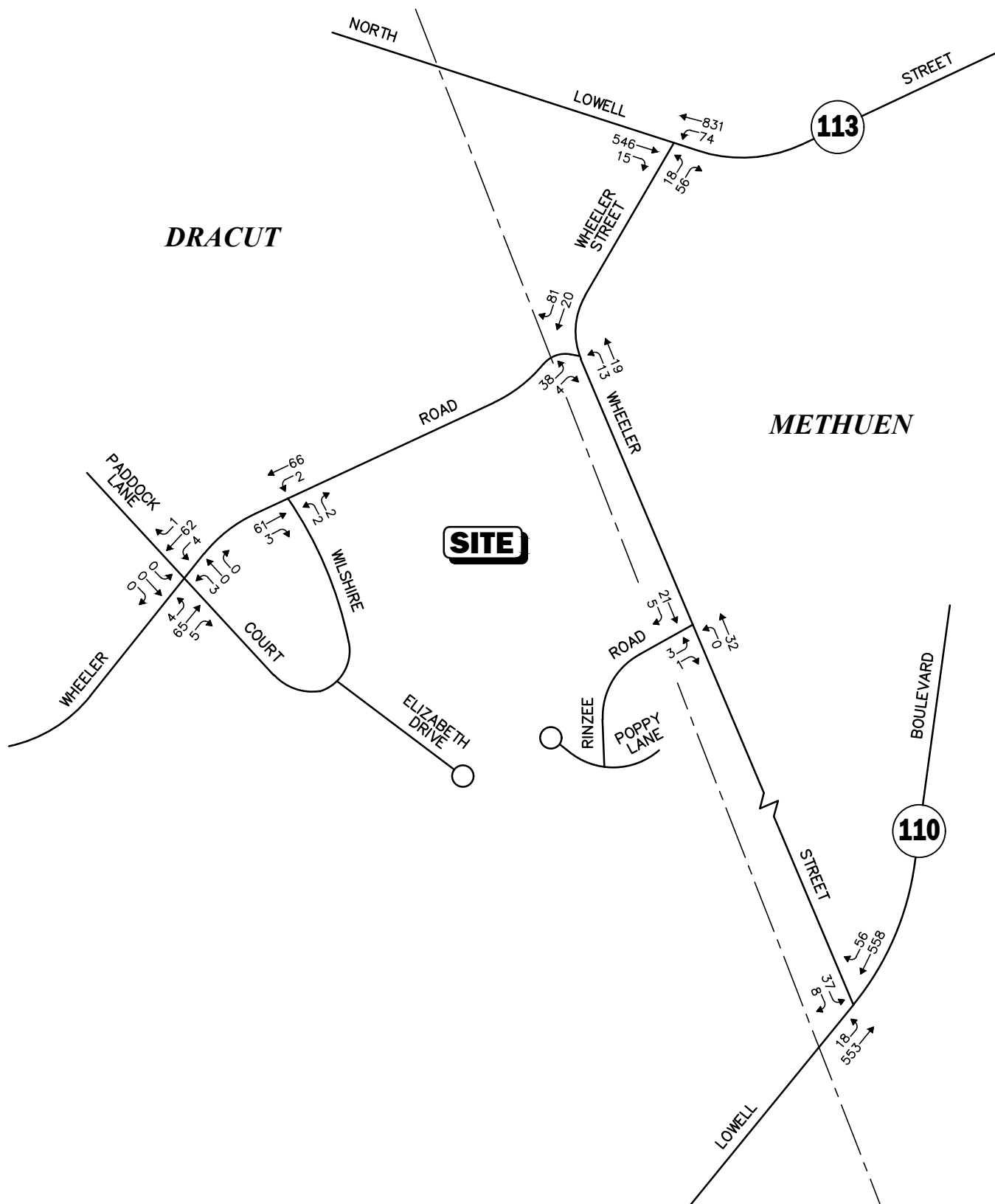
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 2



**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 3



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

Wheeler Road, between Wilshire Circle, was found to accommodate approximately 1,205 vehicles on an average weekday, with approximately 81 vph during the weekday morning peak-hour and 132 vph during the weekday evening peak-hour.

Pedestrian and Bicycle Facilities

Sidewalks are provided along one side of Route 113, Rinzee Road, Wilshire Circle and Paddock Lane, and along both sides of Route 110 within the study area. Formal bicycle facilities were not identified within the immediate study area; however, Route 110, Route 113, Rinzee Road, Wilshire Circle and Paddock Lane provide sufficient width to accommodate bicycle travel in a shared traveled-way configuration (i.e., bicyclists and motor vehicles sharing the traveled way).⁵

Public Transportation

Regularly scheduled public transportation services are provided to the Town of Dracut and the City of Methuen, but are not currently available at the Project site. The Merrimack Valley Regional Transit Authority (MVRTA) provides fixed-route bus services by way of bus Route 24, *Lawrence-Lowell*. The Route 24 bus travels along Route 110 to the south of the Project site, with service provided between the Buckley Transportation Center in Lawrence and the Robert B. Kennedy Transportation Center in Lowell, where connections can be made to other MVRTA bus routes (Buckley Transportation Center), fixed-route bus services operated by the Lowell Regional Transit Authority (LRTA) and Commuter Rail services operated by the Massachusetts Bay Transportation Authority (MBTA) (both services are available at the Robert B. Kennedy Transportation Center). The closest regular stop to the Project site for the Route 24 bus is located in front of the Casa Blanca restaurant, approximately 1.5 miles to the southeast from the Project site; however, the Route 24 bus also operates in a “flag stop” mode for the section of Route 110 at Wheeler Street, where a rider can request a stop (pick-up or drop-off) anywhere along the service route where it is safe for the bus to stop by signaling to the driver. In addition, the MVRTA Ring & Ride program also provides Dial-a-Ride paratransit services to eligible persons who are unable to access MVRTA fixed-route bus services due to a physical, cognitive, or mental disability in compliance with the ADA.

The public transportation schedules and fare information are attached.

Spot Speed Measurements

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

⁵A minimum combined travel lane and paved shoulder width of 14 feet is required to support bicycle travel in a shared traveled-way condition.



Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Wheeler Street		Wheeler Road	
	Northbound	Southbound	Eastbound	Westbound
Mean Travel Speed (mph)	27	24	27	26
85 th Percentile Speed (mph)	32	30	34	38
Posted Speed Limit (mph)	30	30	30	30

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Wheeler Street in the vicinity of the Project site was found to be 27 mph in the northbound direction and 24 mph southbound. The measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be 32 mph in the northbound direction and 30 mph southbound, which is generally consistent with the posted speed limit along Wheeler Street (30 mph). The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances and is often used in establishing posted speed limits.

The mean vehicle travel speed along Wheeler Road in the vicinity of the Project site was found to be 27 mph in the eastbound direction and 26 mph westbound, with the measured 85th percentile vehicle travel speed found to be 34 mph in the eastbound direction and 38 mph westbound, which is 4 to 8 mph above the posted speed limit in the vicinity of the Project site (30 mph).

Motor Vehicle Crash Data

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2016 through 2020, inclusive) to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and is presented in Table 4. Based on a review of the MassDOT crash data, no (0) motor vehicle crashes were reported to have occurred at the Wheeler Street/Wheeler Road, Wheeler Street/Rinzee Road or Wheeler Road/Wilshire Circle intersections over the five-year review period.

As can be seen in Table 4, with the exception of the Wheeler Road/Wilshire Circle/Paddock Lane intersection, the remaining study area intersections were shown to have experienced 13 or fewer reported motor vehicle crashes over the five-year review period, or an average of 2.6 or fewer motor vehicle crashes per year, and were found to have a motor vehicle crash rate *below* both the MassDOT statewide and District average crash rates for similar intersections for the MassDOT Highway Division District in which the intersections are located (District 4). The majority of crashes at these intersections occurred on a weekday; during daylight; under clear weather conditions; and involved rear-end collisions that resulted in property damage only.



Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Route 113/ Wheeler Street	Route 110/ Wheeler Street	Wheeler Road/ Wilshire Circle/ Paddock Lane
Traffic Control Type: ^b	S	S	S
<i>Year:</i>			
2016	4	8	0
2017	3	2	1
2018	4	1	1
2019	1	1	0
<u>2020</u>	<u>1</u>	<u>0</u>	<u>1</u>
Total	13	12	3
Average	2.60	2.40	0.60
Rate ^c	0.42	0.49	1.03
MassDOT Crash Rate: ^d	0.57/0.57	0.57/0.57	0.57/0.57
Significant? ^e	No	No	Yes
<i>Type:</i>			
Angle	3	1	2
Rear-End	7	6	0
Head-On	0	0	0
Sideswipe	1	3	0
Fixed Object	1	2	1
Pedestrian/Bicycle	0	0	0
<u>Unknown/Other</u>	<u>1</u>	<u>0</u>	<u>0</u>
Total	13	12	3
<i>Conditions:</i>			
Clear	9	8	2
Cloudy	1	1	1
Rain	3	2	0
<u>Snow/Ice</u>	<u>0</u>	<u>1</u>	<u>0</u>
Total	13	12	3
<i>Lighting:</i>			
Daylight	11	10	2
Dawn/Dusk	1	1	0
Dark (Road Lit)	1	1	1
<u>Dark (Road Unlit)</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	13	12	3
<i>Day of Week:</i>			
Monday through Friday	12	11	3
Saturday	1	0	0
<u>Sunday</u>	<u>0</u>	<u>1</u>	<u>0</u>
Total	13	12	3
<i>Severity:</i>			
Property Damage Only	10	9	2
Personal Injury	3	3	1
Fatality	0	0	0
<u>Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	13	12	3

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2016 through 2020.

^bTraffic Control Type: S = stop control.

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

^eThe intersection crash rate is significant if it is found to exceed the MassDOT crash rate for the MassDOT Highway Division District in which the Project is located (District 4).



The Wheeler Road/Wilshire Circle/Paddock Lane intersection experienced three (3) reported motor vehicle crashes over the five-year review period and was identified to have a motor vehicle crash rate *above* both the MassDOT Statewide and District average crash rates for similar intersections for the MassDOT Highway Division District in which the intersection is located (District 4). As such, specific recommendations have been provided to enhance safety at the intersection that will be advanced as a part of the Project subject to the receipt of all necessary rights, permit and approvals (discussed in the *Recommendations* section). The majority of crashes at the intersection occurred on a weekday; during daylight; under clear weather conditions; and involved angle-type collisions that resulted in property damage only.

A review of the MassDOT statewide High Crash Location List indicated that there are no locations within the study area that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as a high crash location.

The detailed MassDOT Crash Rate Worksheet is attached.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2030, which reflects a seven-year planning horizon consistent with MassDOT guidelines. Independent of the Project, traffic volumes on the roadway network in the year 2030 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2030 No-Build traffic volumes reflect 2030 Build traffic-volume conditions with the Project.

Future Traffic Growth

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

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

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

Specific Development by Others

The Town of Dracut and the City of Methuen Planning Departments were consulted in order to determine if there were any projects that would have an impact on future traffic volumes at the study intersections. Based on this consultation, the following project was identified for inclusion in this assessment:

- ***Proposed Residential Development, Genest Street, Dracut, Massachusetts.*** This project entails the construction of 22 single-family, attached, triplex homes to be located off Genest Street to the southwest of the Project site. Traffic volumes associated with this project within the study area of



this assessment are expected to be relatively minor and would be reflected in the general background traffic growth rate (discussion follows).

- ***Wheeler Village, Wheeler Road, Dracut, Massachusetts.*** This project entails the construction of 71 single-family homes to be located off Wheeler Road to the west of the Project site. At the time that the traffic counts that form the basis of this assessment were completed (March 2023), the homes associated with this project were substantially complete and most were occupied. Any additional traffic associated with this project is expected to be relatively minor and would be reflected in the general background traffic growth rate.
- ***Berube Farms, Wheeler Road, Dracut, Massachusetts.*** This project entails the construction of 34 single-family homes to be located off Wheeler Road, generally opposite Wheeler Village and west of the Project site. Traffic volumes associated with this project were estimated using data published by the Institute of Transportation Engineers (ITE)⁶ and were assigned onto the study area roadway network based on existing travel patterns.

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

General Background Traffic Growth

Traffic-volume data compiled by MassDOT from permanent count stations located proximate to the study area were reviewed in order to determine general traffic growth trends in the area. This data indicates that annual traffic volumes have fluctuated over the past several years, with the average growth rate found to be approximately 0.78 percent per year. In order to provide a prudent planning condition for the Project, a slightly higher 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Roadway Improvement Projects

The Town of Dracut, the City of Methuen and MassDOT were contacted in order to determine if there were any planned future roadway improvement projects expected to be complete by 2030 within the study area. Based on these discussions, the following roadway improvement project was identified:

- ***Lowell/Dracut/Methuen – Resurfacing and Related work on Route 110 (MassDOT Project No. 608816).*** This project is being undertaken by MassDOT and will entail improvements along the Route 110 corridor and at the Route 110/Wheeler Street intersection that will include the following: pavement rehabilitation, reconstruction and resurfacing from First Street in Lowell to Alexander Circle in Methuen to provide 11-foot-wide travel lanes with 2 foot wide shoulders; the reconstruction of the sidewalk along the north side of the roadway; and the construction of a 10-foot-wide, buffered, shared-use-path parallel to the roadway along the south side. These improvements are currently at the MassDOT 25 percent design stage and are being funded through the 2024 Transportation Improvement Program (TIP). The project is expected to be complete within the horizon year of this study (2030) and will improve mobility, but are not expected to result in an increase capacity at the Route 110/Wheeler Street intersection.

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

⁶Institute of Transportation Engineers, op. cit. 1.



No-Build Traffic Volumes

The 2030 No-Build condition peak-hour traffic volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2023 Existing peak-hour traffic volumes and then adding the traffic volumes associated with the identified specific development (Berube Farms). The resulting 2030 No-Build weekday morning and evening peak-hour traffic volumes are shown on Figures 4 and 5.

Project-Generated Traffic

Design year (2030 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the construction of a 300-unit multifamily residential development that will contain a mix of five (5) and seven (7) unit attached townhouse buildings. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁷ for a similar land use as that proposed were used. ITE Land Use Code (LUC) 215, *Single-Family Attached Housing*, was used to develop the traffic characteristics of the Project, the results of which are summarized in Table 5.

Table 5
TRIP GENERATION SUMMARY

Time Period	Vehicle Trips ^a		
	Entering	Exiting	Total
<i>Average Weekday:</i>	1,118	1,118	2,236
<i>Weekday Morning Peak-Hour:</i>	38	112	150
<i>Weekday Evening Peak-Hour:</i>	104	72	176

^aBased on ITE LUC 215, *Single-Family Attached Housing* (300 units).

Project-Generated Traffic-Volume Summary

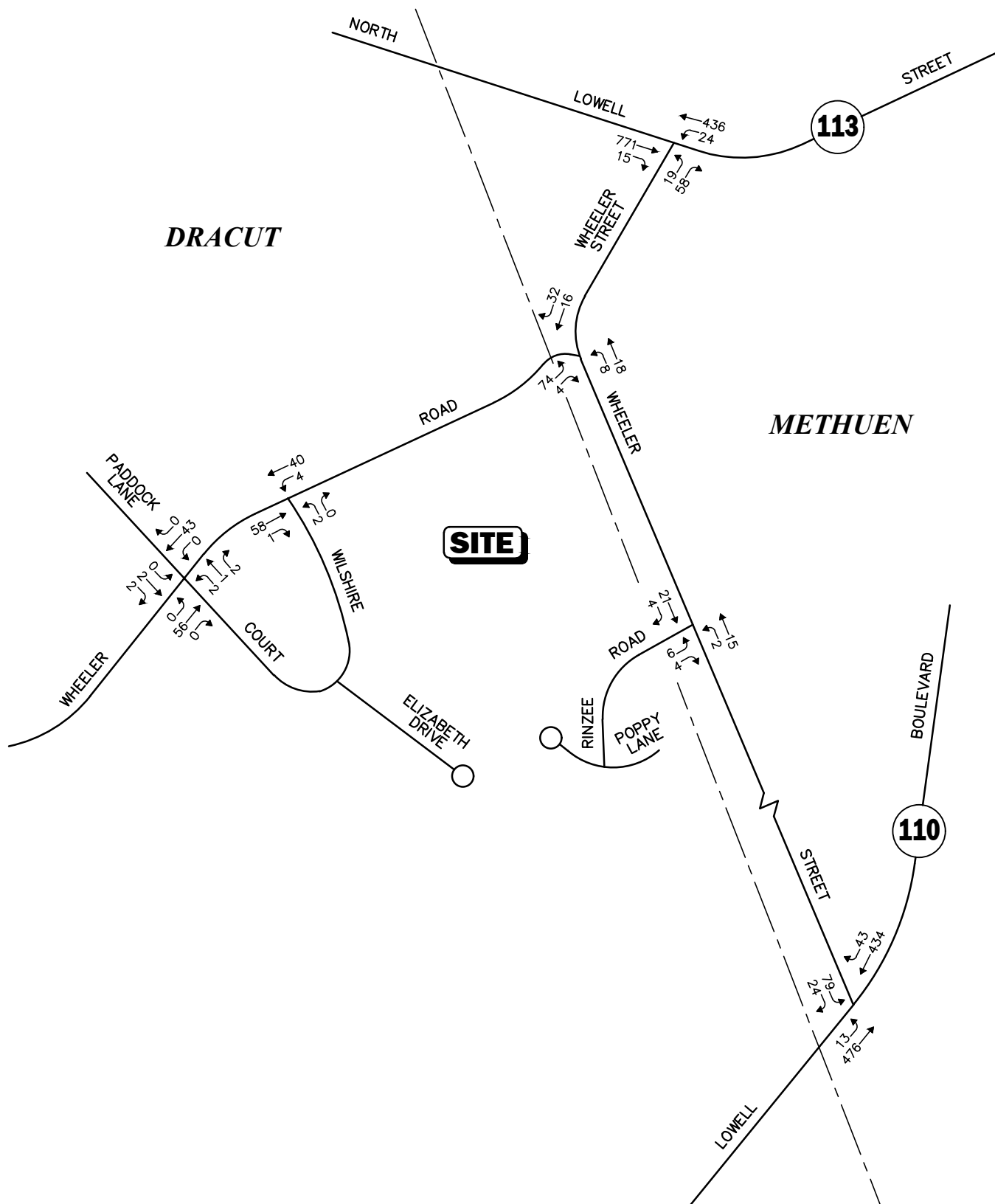
As can be seen in Table 5, the Project is expected to generate approximately 2,236 vehicle trips on an average weekday (two-way, 24-hour volume, or 1,118 vehicles entering and 1,118 exiting), with 150 vehicle trips (38 vehicles entering and 112 exiting) expected during the weekday morning peak-hour and 176 vehicle trips (104 vehicles entering and 72 exiting) expected during the weekday evening peak-hour.

Trip Distribution and Assignment

The directional distribution of generated trips to and from the Project site was determined based on a review of Journey-to-Work data from the U.S. Census for the Town of Dracut and then refined based on a review of existing traffic patterns within the study area. The general trip distribution for the Project is graphically depicted on Figure 6, with the additional traffic that is expected to be generated by the Project assigned on the study area roadway network as shown on Figures 7 and 8.

⁷Institute of Transportation Engineers, op. cit. 1.





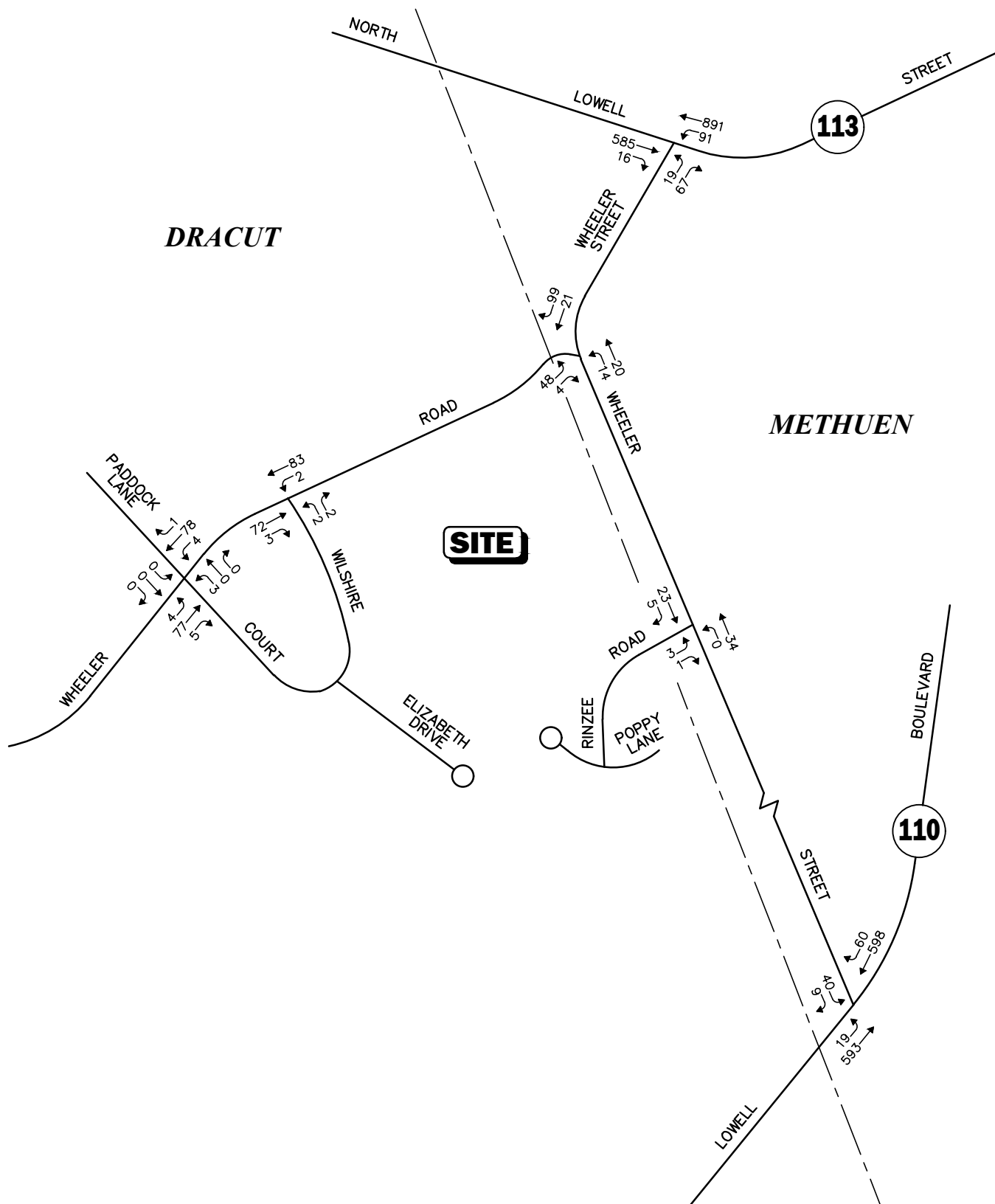
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 4



2030 No-Build
Weekday Morning
Peak-Hour Traffic Volumes



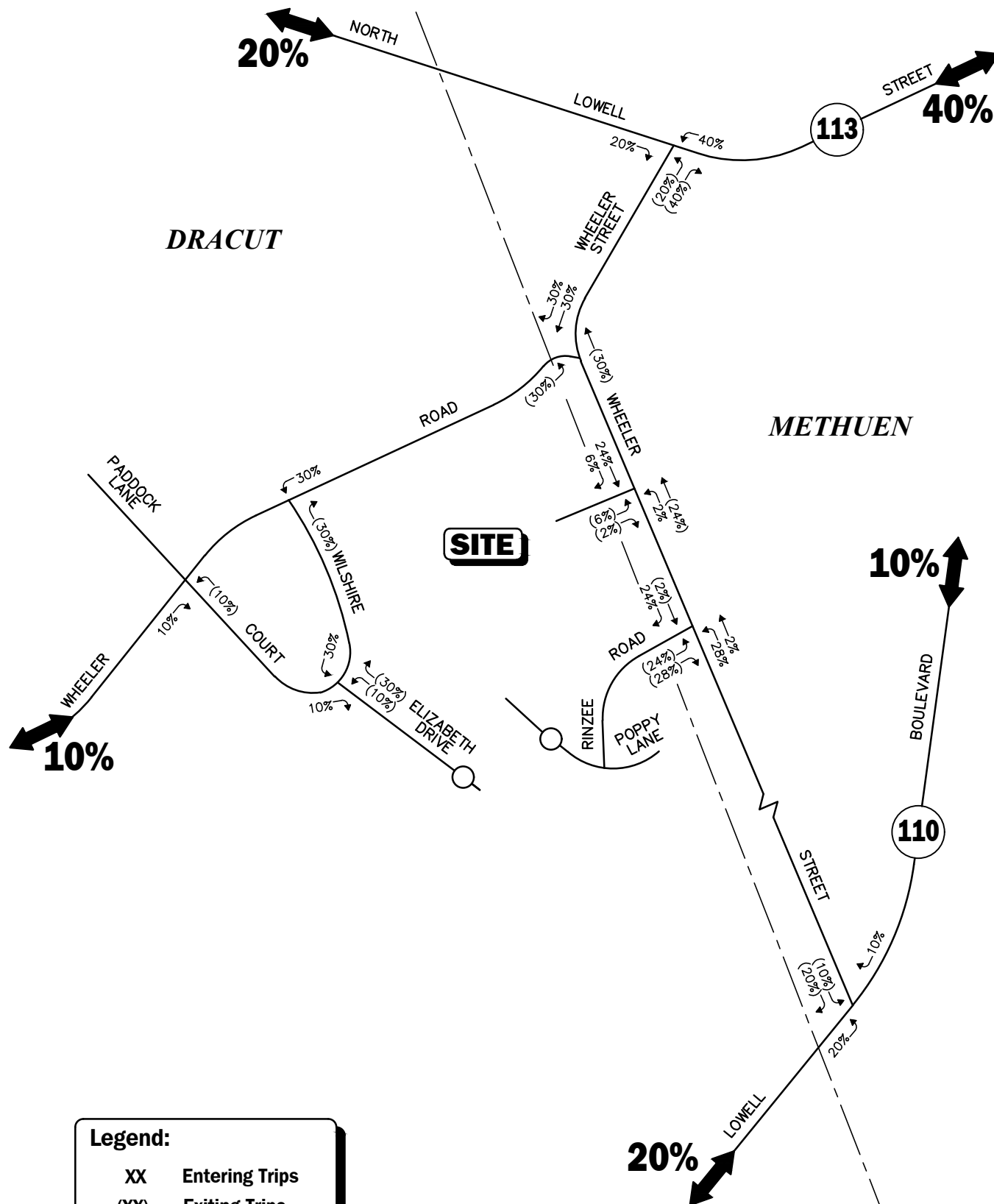
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 5



2030 No-Build
Weekday Evening
Peak-Hour Traffic Volumes



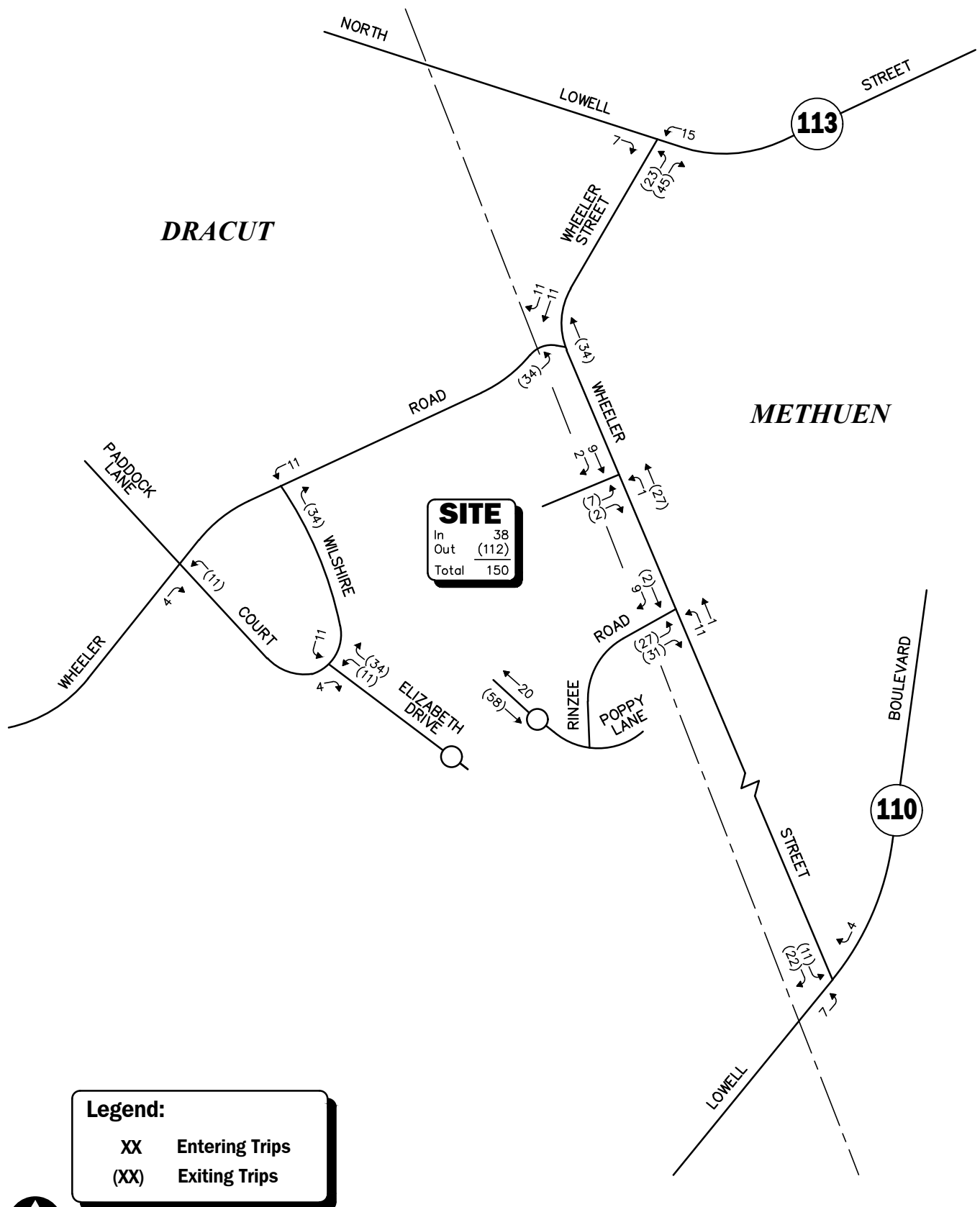


Figure 7

Project-Generated
Weekday Morning
Peak-Hour Traffic Volumes

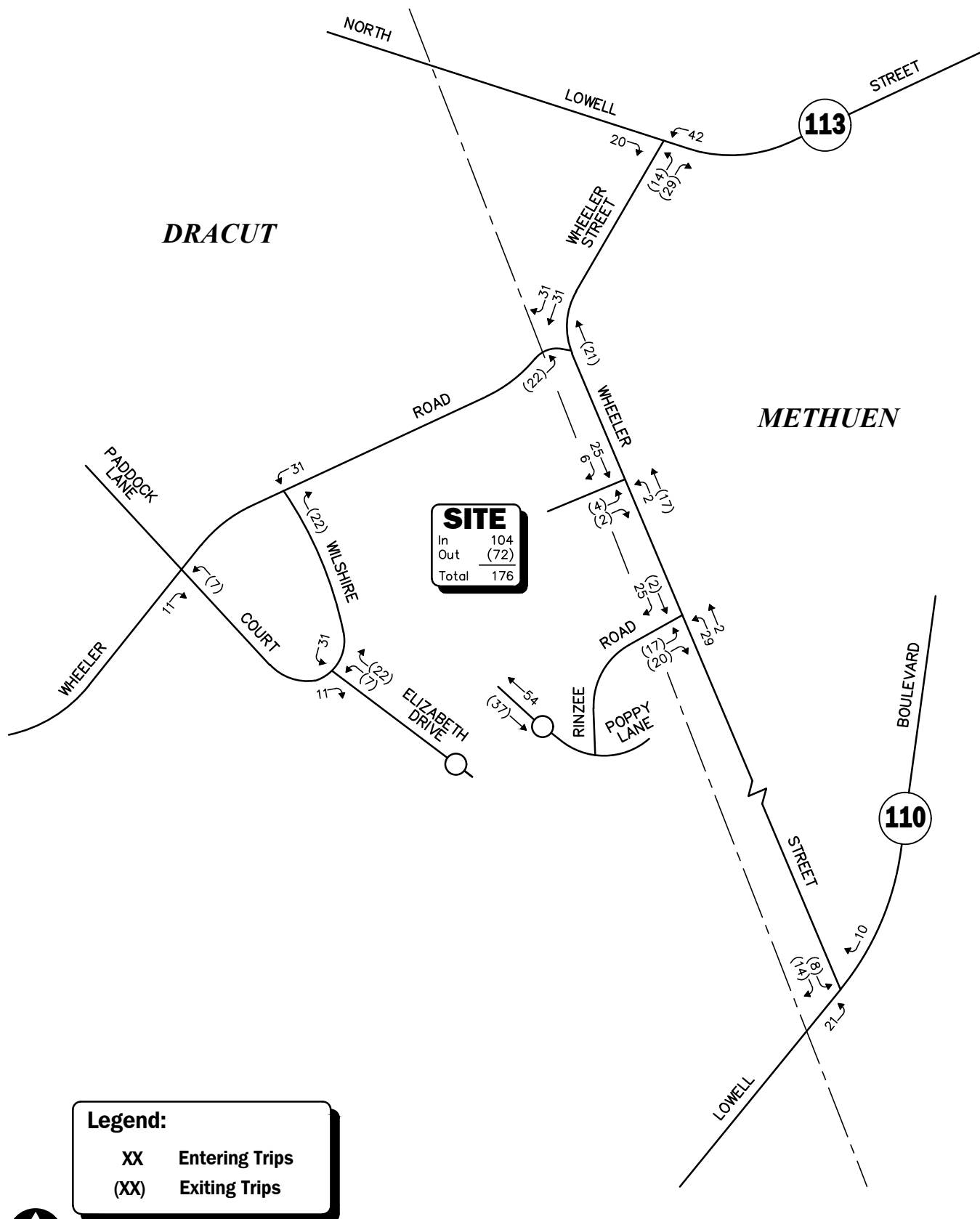


Figure 8

Project-Generated
Weekday Evening
Peak-Hour Traffic Volumes

Build Traffic Volumes

The 2030 Build condition traffic volumes consist of the 2030 No-Build traffic volumes with the addition of the traffic expected to be generated by the Project. The 2030 Build weekday morning and evening peak-hour traffic volumes are graphically depicted on Figures 9 and 10.

TRAFFIC OPERATIONS ANALYSIS

In order to assess the potential impact of the Project on the roadway network, a detailed traffic operations analysis (motorist delays, vehicle queuing, and level-of-service) was performed for the study intersection. Capacity analyses provide an indication of how well transportation 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.

In brief, six levels of service are defined for each type of facility. They are given letter designations ranging from A to F, with LOS “A” representing the best operating conditions and LOS “F” representing congested or constrained operations. An LOS of “E” is representative of a transportation facility that is operating at its design capacity with an LOS of “D” generally defined as the limit of “acceptable” traffic operations. Since the level-of-service of a traffic facility is a function of the 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 the year. The Synchro® intersection capacity analysis software, which is based on the analysis methodologies and procedures presented in the *Highway Capacity Manual 6th Edition* (HCM)⁸ for unsignalized intersections, was used to complete the level-of-service and vehicle queue analyses.

Analysis Results

Level-of-service and vehicle queue analysis were conducted for 2023 Existing, 2030 No-Build and 2030 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Table 6, with the detailed analysis results attached.

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

Route 113 at Wheeler Street

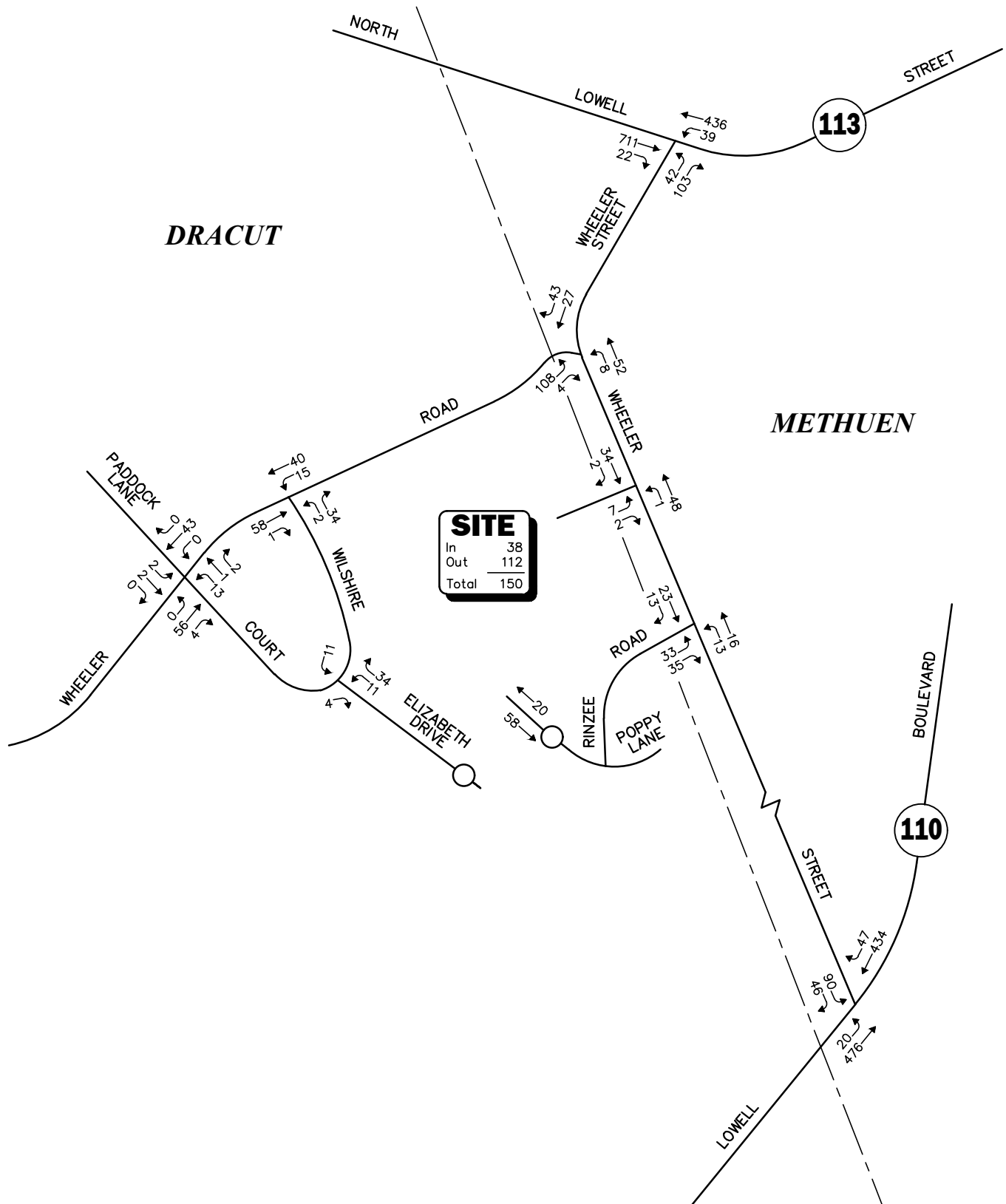
The addition of Project-related traffic was shown to result in an increase in average motorist delay of 15.0 seconds on the Wheeler Street approach during the weekday morning peak-hour that caused a change in level of service from LOS C to LOS E. Vehicle queuing at the intersection is predicted to increase by up to nine (9) vehicles as a result of the addition of Project-related traffic. Independent of the Project, the Wheeler Street northbound approach is currently operating at capacity (i.e., LOS “E”) during the weekday evening peak-hour.

Wheeler Street at Wheeler Road

The addition of Project-related traffic was shown to result in an increase in average motorist delay of 0.8 seconds on the Wheeler Road approach during both the weekday morning and evening peak hours that

⁸*Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2016.





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

Not To Scale

Figure 9



2030 Build
Weekday Morning
Peak-Hour Traffic Volumes

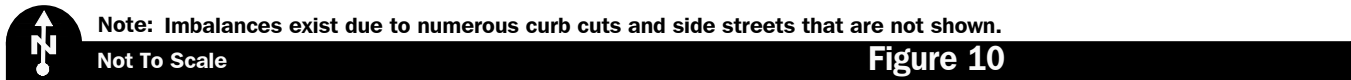


Figure 10
2030 Build
Weekday Evening
Peak-Hour Traffic Volumes

caused a change in level of service from LOS A to LOS B. Vehicle queuing at the intersection is predicted to increase by up to one (1) vehicle as a result of the addition of Project-related traffic.

Wheeler Street at Rinzee Road

All movements at the intersection were shown to operate at LOS A during both peak hours under all analysis conditions, with Project related impacts generally defined as an increase in average motorist delay of up to 3.3 seconds that caused an increase in vehicle queuing of up to one (1) vehicle.

Route 110 at Wheeler Street

The addition of Project-related traffic was shown to result in an increase in average motorist delay of 7.2 seconds on the Wheeler Street approach during the weekday morning peak-hour that caused a change in level of service from LOS D to LOS E, with vehicle queues predicted to increase by up to up to one (1) vehicle. Independent of the Project, the Wheeler Street approach is predicted to operate at capacity under 2030 No-Build conditions.

Wheeler Road at Wilshire Circle and Paddock Lane

No change in level of service or vehicle queuing is predicted to occur over No-Build conditions, with all movements at the intersection shown to operate at LOS B or better during both peak hours under all analysis conditions. Project-related impacts were generally defined as an increase in average motorist delay of less than 1.0 seconds with no material increase in vehicle queuing.

Wheeler Road at Wilshire Circle

All movements at the intersection were shown to operate at LOS A during both peak hours under all analysis conditions, with Project related impacts generally defined as an increase average motorist delay of up to 1.9 seconds.

Wheeler Street at the Project Site Roadway

All movements at the intersection of the Project site roadway with Wheeler Street are predicted to operate at LOS A with negligible vehicle queuing predicted.



Table 6

UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Route 113 at Wheeler Street												
<i>Weekday Morning:</i>												
Route 113 EB: TH/RT	677	0.0	A	0	726	0.0	A	0	733	0.0	A	0
Route 113 WB: LT/TH	426	0.4	A	0	460	0.4	A	0	475	0.8	A	0
Wheeler Street NB: LT/RT	62	20.0	C	1	77	22.4	C	1	145	37.4	E	4
<i>Weekday Evening:</i>												
Route 113 EB: TH/RT	561	0.0	A	0	601	0.0	A	0	621	0.0	A	0
Route 113 WB: LT/TH	905	0.8	A	1	982	0.7	A	1	1,024	1.3	A	1
Wheeler Street NB: LT/RT	74	41.7	E	3	79	>50.0	F	5	129	>50.0	F	14
Wheeler Street at Wheeler Road												
<i>Weekday Morning:</i>												
Wheeler Road EB: LT/RT	63	9.3	A	1	78	9.5	A	1	112	10.3	B	1
Wheeler Street NB: LT/TH	24	2.2	A	0	26	2.3	A	0	60	2.3	A	0
Wheeler Street SB: TH/RT	41	0.0	A	0	48	0.0	A	0	70	0.0	A	0
<i>Weekday Evening:</i>												
Wheeler Road EB: LT/RT	42	9.5	A	0	52	9.7	A	0	74	10.5	B	1
Wheeler Street NB: LT/TH	32	3.0	A	0	34	3.1	A	0	55	3.1	A	0
Wheeler Street SB: TH/RT	101	0.0	A	0	120	0.0	A	0	182	0.0	A	0
Wheeler Street at Rinzee Road												
<i>Weekday Morning:</i>												
Rinzee Road EB: LT/RT	10	8.8	A	0	10	8.8	A	0	68	9.3	A	1
Wheeler Street NB: LT/TH	16	0.9	A	0	17	0.9	A	0	29	3.3	A	0
Wheeler Street SB: TH/RT	24	0.0	A	0	25	0.0	A	0	36	0.0	A	0
<i>Weekday Evening:</i>												
Rinzee Road EB: LT/RT	4	8.7	A	0	4	8.8	A	0	41	9.3	A	1
Wheeler Street NB: LT/TH	32	0.0	A	0	34	0.0	A	0	65	3.3	A	0
Wheeler Street SB: TH/RT	26	0.0	A	0	28	0.0	A	0	55	0.0	A	0
Route 110 at Wheeler Street												
<i>Weekday Morning:</i>												
Route 110 EB: LT/TH	256	0.2	A	0	489	0.2	A	0	496	0.4	A	0
Route 113 WB: TH/RT	445	0.0	A	0	477	0.0	A	0	470	0.0	A	0
Wheeler Street SB: LT/RT	96	26.7	D	2	103	32.0	D	3	136	39.2	E	4
<i>Weekday Evening:</i>												
Route 110 EB: LT/TH	551	0.3	A	0	612	0.3	A	0	633	0.6	A	0
Route 113 WB: TH/RT	614	0.0	A	0	658	0.0	A	0	668	0.0	A	0
Wheeler Street SB: LT/RT	45	29.0	D	1	49	36.4	E	2	71	36.4	E	2

See notes at end of Table.



Table 6 (Continued)

UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
<i>Wheeler Road at Wilshire Cir. and Paddock Ln.</i>												
<i>Weekday Morning:</i>												
Wheeler Road EB: LT/TH/RT	42	0.0	A	0	56	0	A	0	60	0.0	A	0
Wheeler Road WB: LT/TH/RT	36	0.0	A	0	43	0	A	0	43	0.0	A	0
Wilshire Circle NB: LT/TH/RT	5	9.1	A	0	5	9.2	A	0	16	9.6	A	0
Wheeler Road SB: LT/TH/RT	4	9.1	A	0	4	9.2	A	0	4	9.2	A	0
<i>Weekday Evening:</i>												
Wheeler Road EB: LT/TH/RT	74	0.4	A	0	86	0.4	A	0	97	0.4	A	0
Wheeler Road WB: LT/TH/RT	67	0.4	A	0	83	0.4	A	0	83	0.4	A	0
Wilshire Circle NB: LT/TH/RT	3	10.0	B	0	3	10.3	B	0	10	10.5	B	0
Wheeler Road SB: LT/TH/RT	0	0.0	A	0	0	0.0	A	0	0	0.0	A	0
<i>Wheeler Road at Wilshire Circle</i>												
<i>Weekday Morning:</i>												
Wheeler Road EB: TH/RT	45	0.0	A	0	59	0.0	A	0	59	0.0	A	0
Wheeler Road WB: LT/TH	38	0.8	A	0	44	0.7	A	0	55	2.0	A	0
Wilshire Circle NB: LT/RT	2	9.1	A	0	2	9.3	A	0	36	9.3	A	0
<i>Weekday Evening:</i>												
Wheeler Road EB: TH/RT	64	0.0	A	0	75	0.0	A	0	75	0.0	A	0
Wheeler Road WB: LT/TH	68	0.2	A	0	85	0.2	A	0	116	2.1	A	0
Wilshire Circle NB: LT/RT	4	9.1	A	0	4	9.3	A	0	26	9.3	A	0
<i>Wheeler Street at the Project Site Roadway</i>												
<i>Weekday Morning:</i>												
Project Site Roadway EB: LT/RT	--	--	--	--	--	--	--	--	9	9.0	A	0
Wheeler Street NB: LT/TH	--	--	--	--	--	--	--	--	49	0.1	A	0
Wheeler Street SB: TH/RT	--	--	--	--	--	--	--	--	36	0.0	A	0
<i>Weekday Evening:</i>												
Project Site Roadway EB: LT/RT	--	--	--	--	--	--	--	--	6	9.1	A	0
Wheeler Street NB: LT/TH	--	--	--	--	--	--	--	--	56	0.3	A	0
Wheeler Street SB: TH/RT	--	--	--	--	--	--	--	--	59	0.0	A	0

^aDemand in vehicles per hour.

^bAverage control delay per vehicle (in seconds).

^cLevel of service.

^dQueue length in vehicles.

NB = northbound; EB = eastbound; SB = southbound; WB = westbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.



SIGHT DISTANCE ASSESSMENT

Sight distance measurements were performed at the Wheeler Street/Rinzee Road, Wheeler Road/Wilshire Circle/Paddock Lane, Wheeler Road/Wilshire Circle and Wheeler Street/Project site driveway intersections (the intersections that will provide access to the Project site) in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)⁹ requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an oncoming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 7 presents the measured SSD and ISD at the subject intersections.

⁹*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 7
SIGHT DISTANCE MEASUREMENTS^a

Intersection/Sight Distance Measurement	Feet		
	Required Minimum (SSD)	Desirable (ISD) ^b	Measured
<i>Wheeler Street at Rinzee Road</i>			
<i>Stopping Sight Distance:</i>			
Wheeler Street approaching from the north	250	--	372
Wheeler Street approaching from the south	250	--	419
<i>Intersection Sight Distance:</i>			
Looking to the north from Rinzee Road	250	335	407
Looking to the south from Rinzee Road	250	390	256
<i>Wheeler Road at Wilshire Circle and Paddock Lane</i>			
<i>Stopping Sight Distance:</i>			
Wheeler Road approaching from the east	305	--	459
Wheeler Road approaching from the west	305	--	392
<i>Intersection Sight Distance:</i>			
Looking to the east from Wilshire Circle	305	445	428
Looking to the west from Wilshire Circle	305	385	352
<i>Wheeler Road at Wilshire Circle</i>			
<i>Stopping Sight Distance:</i>			
Wheeler Road approaching from the east	305	--	383
Wheeler Road approaching from the west	305	--	500+
<i>Intersection Sight Distance:</i>			
Looking to the east from Wilshire Circle	305	445	427
Looking to the west from Wilshire Circle	305	385	363
<i>Wheeler Street at the Project Site Driveway</i>			
<i>Stopping Sight Distance:</i>			
Wheeler Street approaching from the north	250	--	500+
Wheeler Street approaching from the south	250	--	500+
<i>Intersection Sight Distance:</i>			
Looking to the north from the Project Driveway	250	335	250 ^c
Looking to the south from the Project Driveway	250	390	500 ^c

^aRecommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets*, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on a 35 mph approach speed on Wheeler Street and a 40 mph approach speed along Wheeler Road.

^bValues 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.

^cAvailable line of sight provided with the selective trimming/removal of trees and vegetation and the regrading of the embankment along the west side of Wheeler Street north of the Project site driveway.

As can be seen in Table 7, the available lines of sight to and from the Wheeler Street/Rinzee Road, Wheeler Road/Wilshire Circle/Paddock Lane, Wheeler Road/Wilshire Circle and Wheeler Street/Project site driveway intersections (the intersections that will provide access to the Project site) were found to exceed, or can be made to exceed, the recommended minimum sight distances to function in a safe (SSD) manner based on a 35 mph appropriate approach speed along Wheeler Street and a 40 mph approach speed along Wheeler Road, which are above both the 85th percentile vehicle travel speeds that were measured along these roadways as a part of this assessment and the posted speed limit (30 mph).



SUMMARY

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be known as Murphy's Farm and located at 231 Wheeler Street in Dracut, Massachusetts, and generally situated between Rinzee Road and Elizabeth Drive. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE,¹⁰ the Project is expected to generate approximately 2,236 vehicle trips on an average weekday (two-way, 24-hour volume), with 150 vehicle trips expected during the weekday morning peak-hour and 176 vehicle trips expected during the weekday evening peak-hour;
2. The Project will not result in a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build condition), with the majority of movements at the study area intersections shown to continue to operate at LOS B or better with the addition of Project-related traffic, where an LOS of "D" or better is generally defined as "acceptable" traffic operations;
3. Independent of the Project, specific movements at the Route 113/Wheeler Street and Route 110/Wheeler Street intersections are currently or are predicted to operate at or over capacity (i.e., LOS "E" or "F", respectively), with Project-related impacts along these movements defined as a predicted increase in average motorist delay that results in an increase in vehicle queuing of up to nine (9) vehicles;
4. All movements at the intersections that will convey traffic to/from the Project site are predicted to operate at LOS A with negligible vehicle queuing predicted;
5. Independent of the Project, the Wheeler Road/Wilshire Circle/Paddock Lane intersection was found to have a motor vehicle crash rate in excess of both the MassDOT statewide and District average crash rates for similar intersections. As such, specific sign and pavement marking enhancements will be advanced in conjunction with the Project; and
6. Lines of sight at the intersections through which Project related traffic will be conveyed were found to exceed, or can be made to exceed, the recommended minimum distance for the intersections to operate in a safe manner based on the appropriate approach speed.

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

¹⁰Institute of Transportation Engineer, op. cit. 1.



RECOMMENDATIONS

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

Project Access

Access to the Project site will be provided by way of a new roadway network that will intersect the cul-de-sacs at the current termini of Poppy Lane and Elizabeth Drive, respectively, and a new roadway that will intersect the west side of Wheeler Street approximately 600 feet north of Rinzee Road. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation, many of which are reflected on the Site Plans:

- The Project site roadways should be a minimum of 24 feet in width and designed to accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle.
- Where perpendicular parking is proposed, the drive aisle behind the parking should be a minimum of 23 feet in order to facilitate parking maneuvers.
- Vehicles exiting the Project site should be placed under STOP-sign control with a marked STOP-line provided.
- All signs and pavement markings to be installed within the Project site should conform to the applicable standards of the *Manual on Uniform Traffic Control Devices (MUTCD)*.¹¹
- A sidewalk is proposed along at least one side of the roadway network within the Project site that extends to Poppy Lane and Elizabeth Drive, and to Wheeler Street for the separate development area.
- Americans with Disabilities Act (ADA)-compliant wheelchair ramps will be provided at pedestrian crossings that are to be constructed or modified in conjunction with the Project.
- Signs and landscaping to be installed as a part of the Project within the intersection sight triangle areas of the Project site roadways and at intersections internal to the Project site should be designed and maintained so as not to restrict lines of sight.
- Snow accumulations (windrows) within sight triangle areas should be promptly removed where such accumulations would impede sight lines.
- Secure bicycle parking should be provided within the site.
- Consideration should be given to providing electric vehicle (EV) charging stations for use by residents and guests.
- The existing trees and vegetation located along the west side of Wheeler Street within the intersection triangle areas of the Project site driveway should be selectively trimmed or removed

¹¹*Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.



and maintained in order to provide the required line of sight and the existing embankment/rock wall north of the Project site driveway should be regraded.

Off-Site

Wheeler Road at Wilshire Circle and Paddock Lane

Independent of the Project, the Wheeler Road/Wilshire Circle/Paddock Lane intersection was found to have a motor vehicle crash rate that exceeded the MassDOT statewide and District average crash rates for similar intersections. The intersection experienced only three (3) crashes over the five-year review period; however, the volume of traffic that is processed by the intersection is relatively low. The majority of crashes reported at the intersection occurred on a weekday; during daylight; under clear weather conditions; and involved angle-type collisions that resulted in property damage only.

In an effort to enhance safety at the intersection, the following improvements will be undertaken as a part of the Project subject to receipt of all necessary rights, permits and approvals:

1. Install new, 12-inch wide, high-visibility STOP-lines (thermoplastic material) on the Wilshire Circle and Paddock Lane approaches;
2. Replace and relocate the STOP-sign on the Wilshire Circle approach adjacent to the STOP-line;
3. Install a STOP-sign on the Paddock Lane approach adjacent to the STOP-line; and
4. Install intersection ahead (W2-1 and W16-9P) signs on the Wheeler Road eastbound approach to the intersection in advance of the curve to the west of the intersection.

Route 110 at Wheeler Street

Independent of the Project, a marked STOP-line should be provided on the Wheeler Street approach to Route 110.

Wheeler Road at Wilshire Circle

Independent of the Project, a marked STOP-line should be provided on the Wilshire Circle approach to Wheeler Road.

Wheeler Street at Rinzee Road

Independent of the Project, a STOP-sign and marked STOP-line should be provided on the Rinzee Road approach to Wheeler Street.

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

cc: File



APPENDIX

PROJECT SITE PLAN

AUTOMATIC TRAFFIC RECORDER COUNT DATA

TURNING MOVEMENT COUNT DATA

SEASONAL ADJUSTMENT DATA

VEHICLE TRAVEL SPEED DATA

PUBLIC TRANSPORTATION SCHEDULE

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING

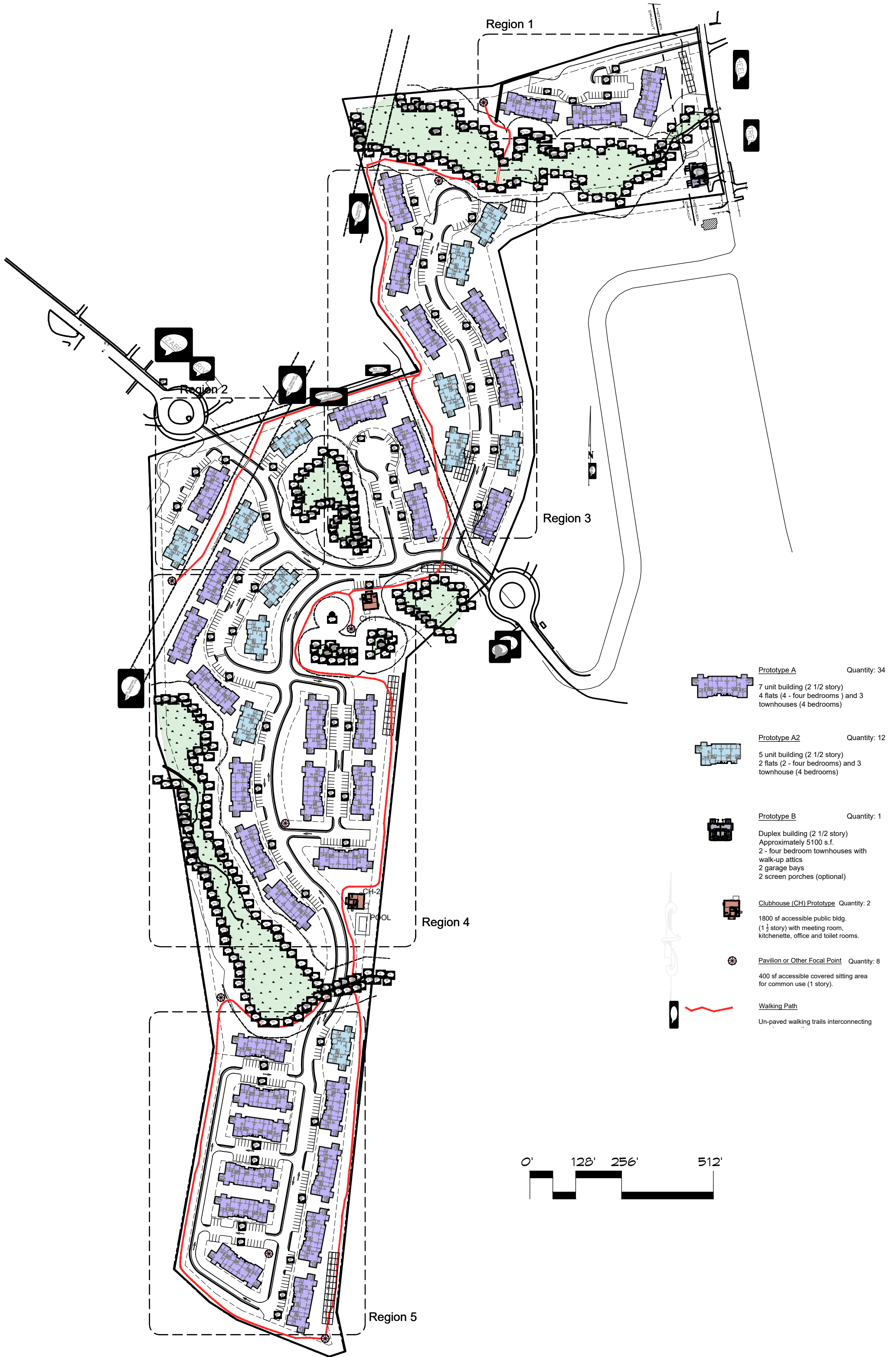
GENERAL BACKGROUND TRAFFIC GROWTH

TRIP-GENERATION CALCULATIONS

JOURNEY TO WORK TRIP DISTRIBUTION

CAPACITY ANALYSIS WORKSHEETS

PROJECT SITE PLAN



Site Plan

Murphy's Farm - Dracut
Project #696.1

Scale: NTS
June 3, 2022



AUTOMATIC TRAFFIC RECORDER COUNT DATA

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA

76430001

3/7/2023		SB		Hour Totals		NB		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	6			0	2				
12:15		0	5			1	5				
12:30		1	1			0	4				
12:45		0	7	1	19	1	3	2	14	3	33
1:00		0	1			0	6				
1:15		0	3			0	4				
1:30		0	3			0	3				
1:45		0	2	0	9	1	4	1	17	1	26
2:00		0	3			0	6				
2:15		0	4			0	8				
2:30		0	5			1	6				
2:45		0	2	0	14	0	9	1	29	1	43
3:00		0	7			0	6				
3:15		0	1			0	8				
3:30		0	4			0	5				
3:45		0	4	0	16	0	7	0	26	0	42
4:00		0	7			0	11				
4:15		0	3			0	4				
4:30		3	3			0	1				
4:45		1	3	4	16	1	10	1	26	5	42
5:00		0	4			0	8				
5:15		2	2			1	7				
5:30		0	6			0	8				
5:45		3	1	5	13	0	9	1	32	6	45
6:00		1	5			1	3				
6:15		1	4			0	4				
6:30		3	1			2	2				
6:45		8	0	13	10	4	1	7	10	20	20
7:00		2	2			2	3				
7:15		4	0			0	2				
7:30		4	0			4	1				
7:45		6	2	16	4	6	1	12	7	28	11
8:00		4	0			3	2				
8:15		4	0			6	0				
8:30		5	1			1	0				
8:45		1	2	14	3	3	3	13	5	27	8
9:00		5	0			3	3				
9:15		5	0			5	0				
9:30		3	1			4	2				
9:45		1	0	14	1	4	1	16	6	30	7
10:00		1	0			4	1				
10:15		3	0			3	1				
10:30		3	2			4	0				
10:45		2	0	9	2	0	0	11	2	20	4
11:00		1	0			3	1				
11:15		3	0			4	0				
11:30		4	0			4	1				
11:45		1	0	9	0	1	0	12	2	21	2
Total		85	107			77	176			162	283
Percent		44.3%	55.7%			30.4%	69.6%			36.4%	63.6%

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA

76430001

3/8/2023	SB		Hour Totals		NB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	2			0	3				
12:15	0	0			0	3				
12:30	0	5			1	5				
12:45	0	4	0	11	0	9	1	20	1	31
1:00	1	1			0	3				
1:15	0	1			0	4				
1:30	0	1			0	2				
1:45	0	0	1	3	0	4	0	13	1	16
2:00	0	3			0	5				
2:15	0	1			0	7				
2:30	0	6			0	4				
2:45	0	7	0	17	0	10	0	26	0	43
3:00	0	11			0	8				
3:15	1	0			1	7				
3:30	0	2			0	6				
3:45	0	4	1	17	0	6	1	27	2	44
4:00	0	3			0	3				
4:15	1	1			0	3				
4:30	1	4			0	5				
4:45	0	5	2	13	0	2	0	13	2	26
5:00	0	4			1	8				
5:15	2	3			0	7				
5:30	1	4			1	9				
5:45	1	4	4	15	1	9	3	33	7	48
6:00	1	1			2	4				
6:15	0	4			2	3				
6:30	4	7			0	5				
6:45	2	3	7	15	1	4	5	16	12	31
7:00	3	1			1	1				
7:15	8	2			1	1				
7:30	2	3			3	1				
7:45	4	2	17	8	2	0	7	3	24	11
8:00	7	6			2	2				
8:15	4	1			6	3				
8:30	4	3			2	1				
8:45	1	4	16	14	3	4	13	10	29	24
9:00	1	1			3	0				
9:15	3	1			4	2				
9:30	4	1			3	0				
9:45	2	0	10	3	0	2	10	4	20	7
10:00	2	0			5	0				
10:15	1	0			3	1				
10:30	2	1			6	1				
10:45	0	0	5	1	3	0	17	2	22	3
11:00	1	1			3	0				
11:15	2	1			2	1				
11:30	2	0			7	0				
11:45	1	0	6	2	2	0	14	1	20	3
Total	69	119			71	168			140	287
Percent	36.7%	63.3%			29.7%	70.3%			32.8%	67.2%
Grand Total	154	226			148	344			302	570
Percent	40.5%	59.5%			30.1%	69.9%			34.6%	65.4%

ADT

ADT: 436

AADT: 436

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA

76430001

3/6/2023	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB
12:00 AM	*	*	1	2	0	1	*	*	*	*	*	*	*	*	0	2
1:00	*	*	0	1	1	0	*	*	*	*	*	*	*	*	0	0
2:00	*	*	0	1	0	0	*	*	*	*	*	*	*	*	0	0
3:00	*	*	0	0	1	1	*	*	*	*	*	*	*	*	0	0
4:00	*	*	4	1	2	0	*	*	*	*	*	*	*	*	3	0
5:00	*	*	5	1	4	3	*	*	*	*	*	*	*	*	4	2
6:00	*	*	13	7	7	5	*	*	*	*	*	*	*	*	10	6
7:00	*	*	16	12	17	7	*	*	*	*	*	*	*	*	16	10
8:00	*	*	14	13	16	13	*	*	*	*	*	*	*	*	15	13
9:00	*	*	14	16	10	10	*	*	*	*	*	*	*	*	12	13
10:00	*	*	9	11	5	17	*	*	*	*	*	*	*	*	7	14
11:00	*	*	9	12	6	14	*	*	*	*	*	*	*	*	8	13
12:00 PM	*	*	19	14	11	20	*	*	*	*	*	*	*	*	15	17
1:00	*	*	9	17	3	13	*	*	*	*	*	*	*	*	6	15
2:00	*	*	14	29	17	26	*	*	*	*	*	*	*	*	16	28
3:00	*	*	16	26	17	27	*	*	*	*	*	*	*	*	16	26
4:00	*	*	16	26	13	13	*	*	*	*	*	*	*	*	14	20
5:00	*	*	13	32	15	33	*	*	*	*	*	*	*	*	14	32
6:00	*	*	10	10	15	16	*	*	*	*	*	*	*	*	12	13
7:00	*	*	4	7	8	3	*	*	*	*	*	*	*	*	6	5
8:00	*	*	3	5	14	10	*	*	*	*	*	*	*	*	8	8
9:00	*	*	1	6	3	4	*	*	*	*	*	*	*	*	2	5
10:00	*	*	2	2	1	2	*	*	*	*	*	*	*	*	2	2
11:00	*	*	0	2	1	0	*	*	*	*	*	*	*	*	0	1
Total	0	0	192	253	187	238	0	0	0	0	0	0	0	0	186	245
Day	0		445		425		0	0	0	0	0	0	0		431	
AM Peak			7:00	9:00	7:00	10:00									7:00	10:00
Volume			16	16	17	17									16	14
PM Peak			12:00 PM	5:00	2:00	5:00									2:00	5:00
Volume			19	32	17	33									16	32
Comb Total	0		445		425		0	0	0	0	0	0	0		431	
ADT	ADT: 436		AADT: 436													

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA

76430002

3/7/2023	WB		Hour Totals		EB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	6			0	8				
12:15	1	6			0	6				
12:30	0	10			1	11				
12:45	0	7	1	29	2	12	3	37	4	66
1:00	0	5			0	9				
1:15	0	7			0	7				
1:30	0	6			0	5				
1:45	1	7	1	25	0	5	0	26	1	51
2:00	0	13			0	14				
2:15	0	13			0	7				
2:30	0	14			0	15				
2:45	0	14	0	54	0	13	0	49	0	103
3:00	0	12			0	13				
3:15	0	17			0	8				
3:30	1	16			0	9				
3:45	0	17	1	62	0	19	0	49	1	111
4:00	0	14			1	22				
4:15	0	27			0	15				
4:30	1	15			5	10				
4:45	2	10	3	66	3	14	9	61	12	127
5:00	0	13			8	13				
5:15	1	19			5	5				
5:30	1	23			7	13				
5:45	3	17	5	72	7	8	27	39	32	111
6:00	5	11			9	11				
6:15	5	16			7	7				
6:30	7	8			20	7				
6:45	9	6	26	41	7	7	43	32	69	73
7:00	11	10			7	8				
7:15	3	12			9	5				
7:30	7	4			11	8				
7:45	8	3	29	29	8	6	35	27	64	56
8:00	14	8			10	7				
8:15	4	4			10	4				
8:30	7	6			10	9				
8:45	12	6	37	24	9	11	39	31	76	55
9:00	8	3			12	2				
9:15	8	1			7	2				
9:30	8	4			6	5				
9:45	10	3	34	11	8	1	33	10	67	21
10:00	5	2			5	3				
10:15	6	0			11	3				
10:30	7	1			12	2				
10:45	7	0	25	3	7	2	35	10	60	13
11:00	12	2			8	1				
11:15	6	2			7	0				
11:30	9	2			7	1				
11:45	5	1	32	7	5	1	27	3	59	10
Total	194	423			251	374			445	797
Percent	31.4%	68.6%			40.2%	59.8%			35.8%	64.2%

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA

76430002

3/8/2023		WB		Hour Totals		EB		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	3			1	13				
12:15		1	9			0	5				
12:30		1	5			1	3				
12:45		0	11	3	28	0	8	2	29	5	57
1:00		0	8			0	6				
1:15		0	7			0	13				
1:30		0	9			0	3				
1:45		0	8	0	32	0	8	0	30	0	62
2:00		2	9			0	12				
2:15		0	14			0	14				
2:30		0	10			0	12				
2:45		0	11	2	44	0	14	0	52	2	96
3:00		0	10			0	10				
3:15		1	14			0	12				
3:30		1	12			0	17				
3:45		0	14	2	50	0	13	0	52	2	102
4:00		0	9			2	13				
4:15		0	16			0	5				
4:30		0	16			5	9				
4:45		0	16	0	57	4	15	11	42	11	99
5:00		0	9			6	11				
5:15		1	25			4	11				
5:30		1	13			3	14				
5:45		4	11	6	58	5	4	18	40	24	98
6:00		5	4			7	10				
6:15		4	8			8	7				
6:30		8	15			13	12				
6:45		9	9	26	36	16	9	44	38	70	74
7:00		9	5			7	11				
7:15		10	6			6	8				
7:30		12	3			9	5				
7:45		11	4	42	18	7	8	29	32	71	50
8:00		14	4			12	6				
8:15		8	5			10	6				
8:30		7	8			12	3				
8:45		12	5	41	22	9	4	43	19	84	41
9:00		7	4			5	3				
9:15		6	5			5	3				
9:30		7	4			3	2				
9:45		10	5	30	18	4	0	17	8	47	26
10:00		9	2			9	1				
10:15		4	1			6	1				
10:30		10	1			12	1				
10:45		8	3	31	7	7	0	34	3	65	10
11:00		7	1			9	1				
11:15		3	2			7	1				
11:30		6	1			7	1				
11:45		8	1	24	5	13	0	36	3	60	8
Total	207	375				234	348			441	723
Percent	35.6%	64.4%				40.2%	59.8%			37.9%	62.1%
Grand Total	401	798				485	722			886	1520
Percent	33.4%	66.6%				40.2%	59.8%			36.8%	63.2%

ADT

ADT: 1,203

AADT: 1,203

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA

76430002

3/6/2023	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB	WB	EB
12:00 AM	*	*	1	3	3	2	*	*	*	*	*	*	*	*	2	2
1:00	*	*	1	0	0	0	*	*	*	*	*	*	*	*	0	0
2:00	*	*	0	0	2	0	*	*	*	*	*	*	*	*	1	0
3:00	*	*	1	0	2	0	*	*	*	*	*	*	*	*	2	0
4:00	*	*	3	9	0	11	*	*	*	*	*	*	*	*	2	10
5:00	*	*	5	27	6	18	*	*	*	*	*	*	*	*	6	22
6:00	*	*	26	43	26	44	*	*	*	*	*	*	*	*	26	44
7:00	*	*	29	35	42	29	*	*	*	*	*	*	*	*	36	32
8:00	*	*	37	39	41	43	*	*	*	*	*	*	*	*	39	41
9:00	*	*	34	33	30	17	*	*	*	*	*	*	*	*	32	25
10:00	*	*	25	35	31	34	*	*	*	*	*	*	*	*	28	34
11:00	*	*	32	27	24	36	*	*	*	*	*	*	*	*	28	32
12:00 PM	*	*	29	37	28	29	*	*	*	*	*	*	*	*	28	33
1:00	*	*	25	26	32	30	*	*	*	*	*	*	*	*	28	28
2:00	*	*	54	49	44	52	*	*	*	*	*	*	*	*	49	50
3:00	*	*	62	49	50	52	*	*	*	*	*	*	*	*	56	50
4:00	*	*	66	61	57	42	*	*	*	*	*	*	*	*	62	52
5:00	*	*	72	39	58	40	*	*	*	*	*	*	*	*	65	40
6:00	*	*	41	32	36	38	*	*	*	*	*	*	*	*	38	35
7:00	*	*	29	27	18	32	*	*	*	*	*	*	*	*	24	30
8:00	*	*	24	31	22	19	*	*	*	*	*	*	*	*	23	25
9:00	*	*	11	10	18	8	*	*	*	*	*	*	*	*	14	9
10:00	*	*	3	10	7	3	*	*	*	*	*	*	*	*	5	6
11:00	*	*	7	3	1	1	*	*	*	*	*	*	*	*	4	2
Total	0	0	617	625	578	580	0	0	0	0	0	0	0	0	598	602
Day	0		1242		1158		0	0	0	0	0	0	0		1200	
AM Peak			8:00	6:00	7:00	6:00									8:00	6:00
Volume			37	43	42	44									39	44
PM Peak			5:00	4:00	5:00	2:00									5:00	4:00
Volume			72	61	58	52									65	52
Comb Total	0		1242		1158		0	0	0	0	0	0	0		1200	
ADT	ADT: 1,203		AADT: 1,203													

TURNING MOVEMENT COUNT DATA

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 1

Groups Printed- Cars - Trucks

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	21	0	6	0	92	3	0	0	0	1	118	0	241
07:15 AM	18	0	7	0	75	7	0	0	0	0	121	0	228
07:30 AM	17	0	7	0	103	3	0	0	0	3	130	0	263
07:45 AM	17	0	3	0	100	13	0	0	0	5	124	0	262
Total	73	0	23	0	370	26	0	0	0	9	493	0	994
08:00 AM	15	0	6	0	108	14	0	0	0	3	86	0	232
08:15 AM	25	0	6	0	94	10	0	0	0	1	104	0	240
08:30 AM	24	0	5	0	97	4	0	0	0	1	99	0	230
08:45 AM	18	0	5	0	79	5	0	0	0	2	92	1	202
Total	82	0	22	0	378	33	0	0	0	7	381	1	904
Grand Total	155	0	45	0	748	59	0	0	0	16	874	1	1898
Apprch %	77.5	0	22.5	0	92.7	7.3	0	0	0	1.8	98.1	0.1	
Total %	8.2	0	2.4	0	39.4	3.1	0	0	0	0.8	46	0.1	
Cars	134	0	41	0	723	48	0	0	0	14	848	1	1809
% Cars	86.5	0	91.1	0	96.7	81.4	0	0	0	87.5	97	100	95.3
Trucks	21	0	4	0	25	11	0	0	0	2	26	0	89
% Trucks	13.5	0	8.9	0	3.3	18.6	0	0	0	12.5	3	0	4.7

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	17	0	7	24	0	103	3	106	0	0	0	0	3	130	0	133	263
07:45 AM	17	0	3	20	0	100	13	113	0	0	0	0	5	124	0	129	262
08:00 AM	15	0	6	21	0	108	14	122	0	0	0	0	3	86	0	89	232
08:15 AM	25	0	6	31	0	94	10	104	0	0	0	0	1	104	0	105	240
Total Volume	74	0	22	96	0	405	40	445	0	0	0	0	12	444	0	456	997
% App. Total	77.1	0	22.9		0	91	9		0	0	0		2.6	97.4	0		
PHF	.740	.000	.786	.774	.000	.938	.714	.912	.000	.000	.000	.000	.600	.854	.000	.857	.948
Cars	66	0	21	87	0	393	31	424	0	0	0	0	10	430	0	440	951
% Cars	89.2	0	95.5	90.6	0	97.0	77.5	95.3	0	0	0	0	83.3	96.8	0	96.5	95.4
Trucks	8	0	1	9	0	12	9	21	0	0	0	0	2	14	0	16	46
% Trucks	10.8	0	4.5	9.4	0	3.0	22.5	4.7	0	0	0	0	16.7	3.2	0	3.5	4.6

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

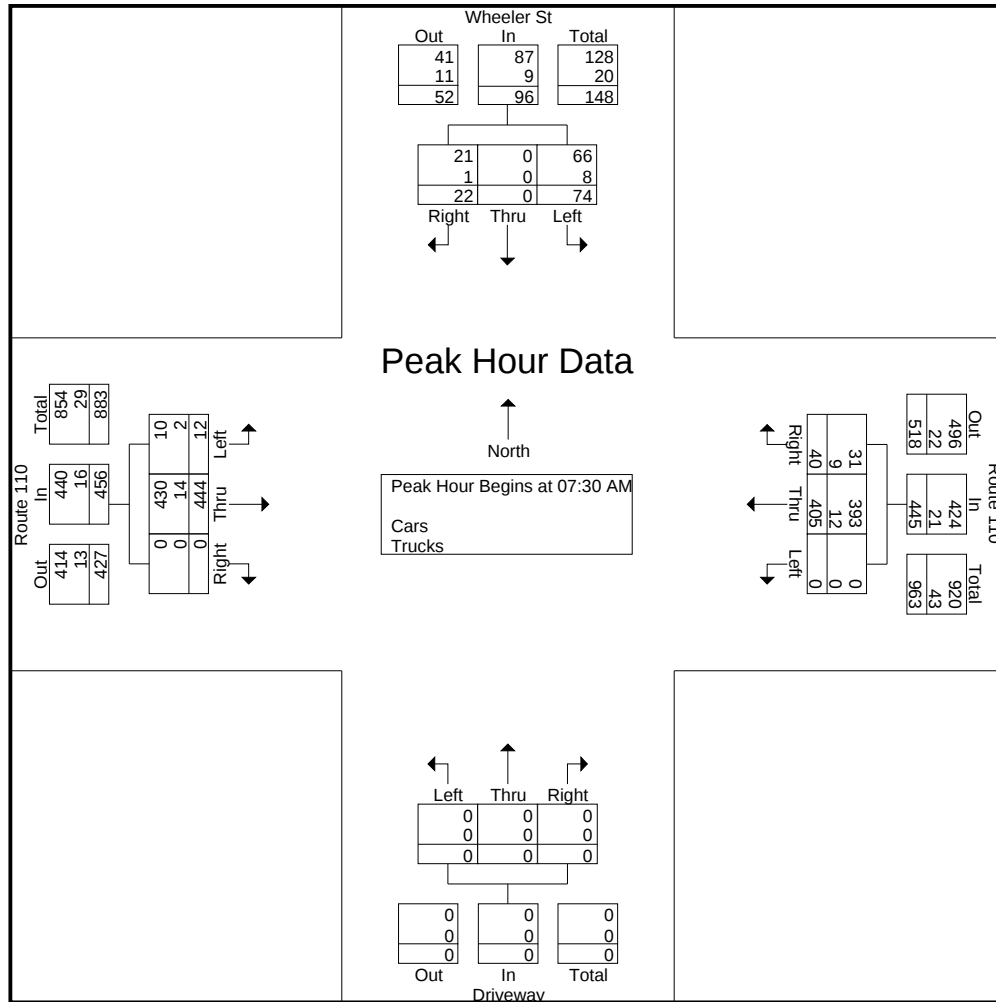
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 2



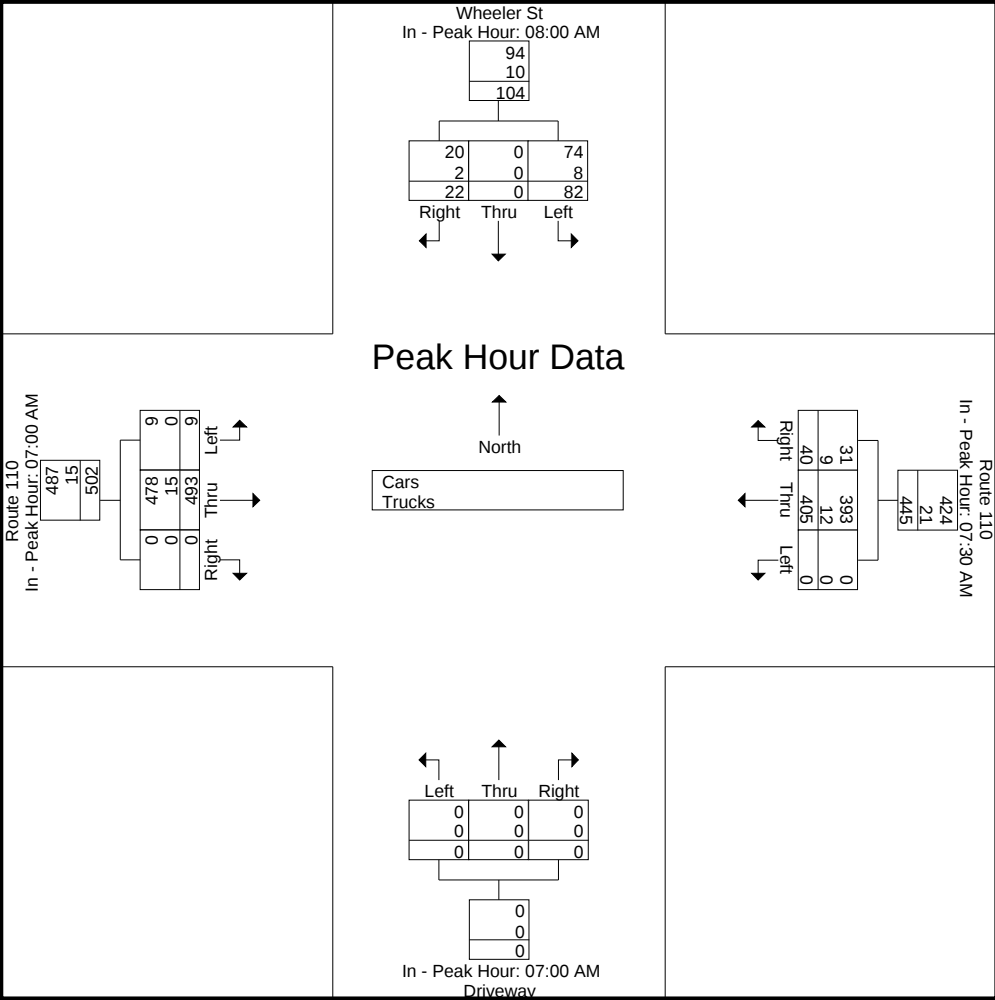
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				07:00 AM			
+0 mins.	15	0	6	21	0	103	3	106	0	0	0	0	1	118	0	119
+15 mins.	25	0	6	31	0	100	13	113	0	0	0	0	0	121	0	121
+30 mins.	24	0	5	29	0	108	14	122	0	0	0	0	3	130	0	133
+45 mins.	18	0	5	23	0	94	10	104	0	0	0	0	5	124	0	129
Total Volume	82	0	22	104	0	405	40	445	0	0	0	0	9	493	0	502
% App. Total	78.8	0	21.2		0	91	9		0	0	0		1.8	98.2	0	
PHF	.820	.000	.917	.839	.000	.938	.714	.912	.000	.000	.000	.000	.450	.948	.000	.944
Cars	74	0	20	94	0	393	31	424	0	0	0	0	9	478	0	487
% Cars	90.2	0	90.9	90.4	0	97	77.5	95.3	0	0	0	0	100	97	0	97
Trucks	8	0	2	10	0	12	9	21	0	0	0	0	0	15	0	15
% Trucks	9.8	0	9.1	9.6	0	3	22.5	4.7	0	0	0	0	0	3	0	3

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	14	0	6	0	88	3	0	0	0	1	115	0	227
07:15 AM	15	0	6	0	73	6	0	0	0	0	118	0	218
07:30 AM	16	0	6	0	99	2	0	0	0	3	124	0	250
07:45 AM	15	0	3	0	98	12	0	0	0	5	121	0	254
Total	60	0	21	0	358	23	0	0	0	9	478	0	949
08:00 AM	13	0	6	0	105	9	0	0	0	2	83	0	218
08:15 AM	22	0	6	0	91	8	0	0	0	0	102	0	229
08:30 AM	23	0	4	0	95	4	0	0	0	1	96	0	223
08:45 AM	16	0	4	0	74	4	0	0	0	2	89	1	190
Total	74	0	20	0	365	25	0	0	0	5	370	1	860
Grand Total	134	0	41	0	723	48	0	0	0	14	848	1	1809
Apprch %	76.6	0	23.4	0	93.8	6.2	0	0	0	1.6	98.3	0.1	
Total %	7.4	0	2.3	0	40	2.7	0	0	0	0.8	46.9	0.1	

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	16	0	6	22	0	99	2	101	0	0	0	0	3	124	0	127	250
07:45 AM	15	0	3	18	0	98	12	110	0	0	0	0	5	121	0	126	254
08:00 AM	13	0	6	19	0	105	9	114	0	0	0	0	2	83	0	85	218
08:15 AM	22	0	6	28	0	91	8	99	0	0	0	0	0	102	0	102	229
Total Volume	66	0	21	87	0	393	31	424	0	0	0	0	10	430	0	440	951
% App. Total	75.9	0	24.1		0	92.7	7.3		0	0	0		2.3	97.7	0		
PHF	.750	.000	.875	.777	.000	.936	.646	.930	.000	.000	.000	.000	.500	.867	.000	.866	.936

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

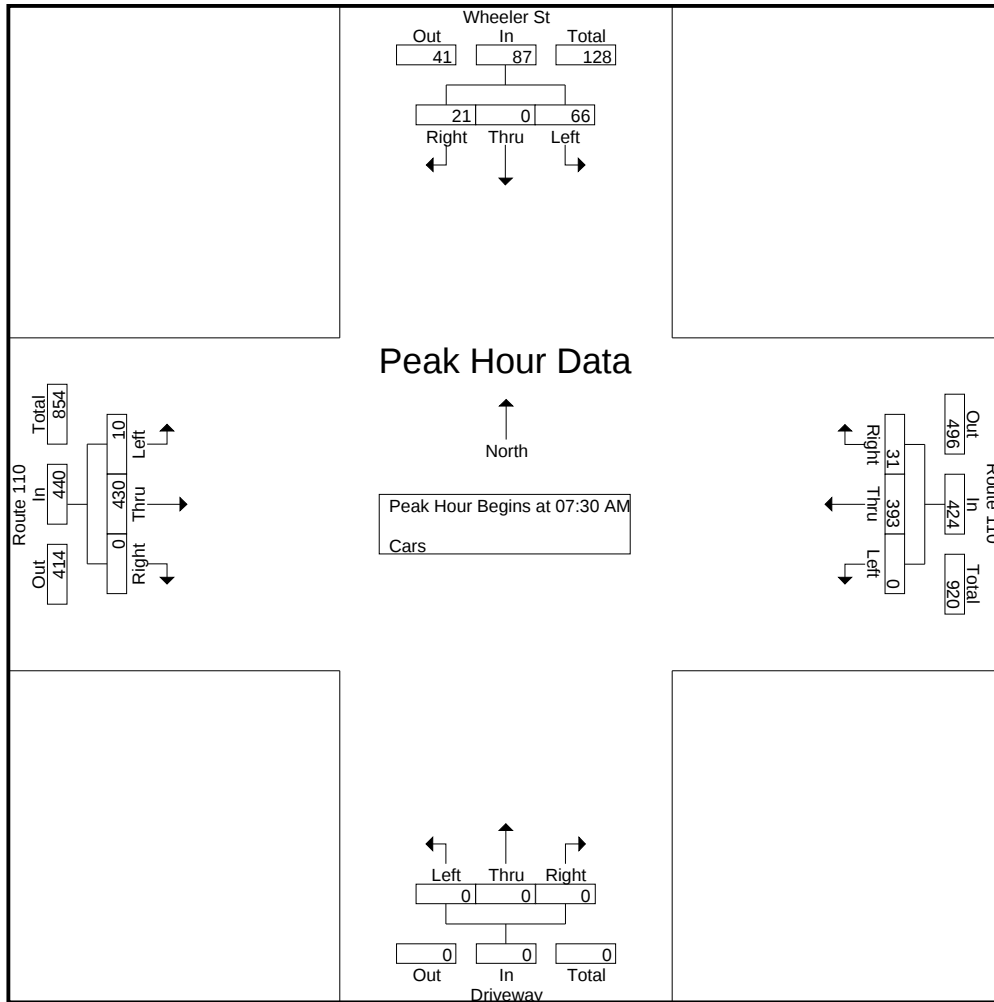
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

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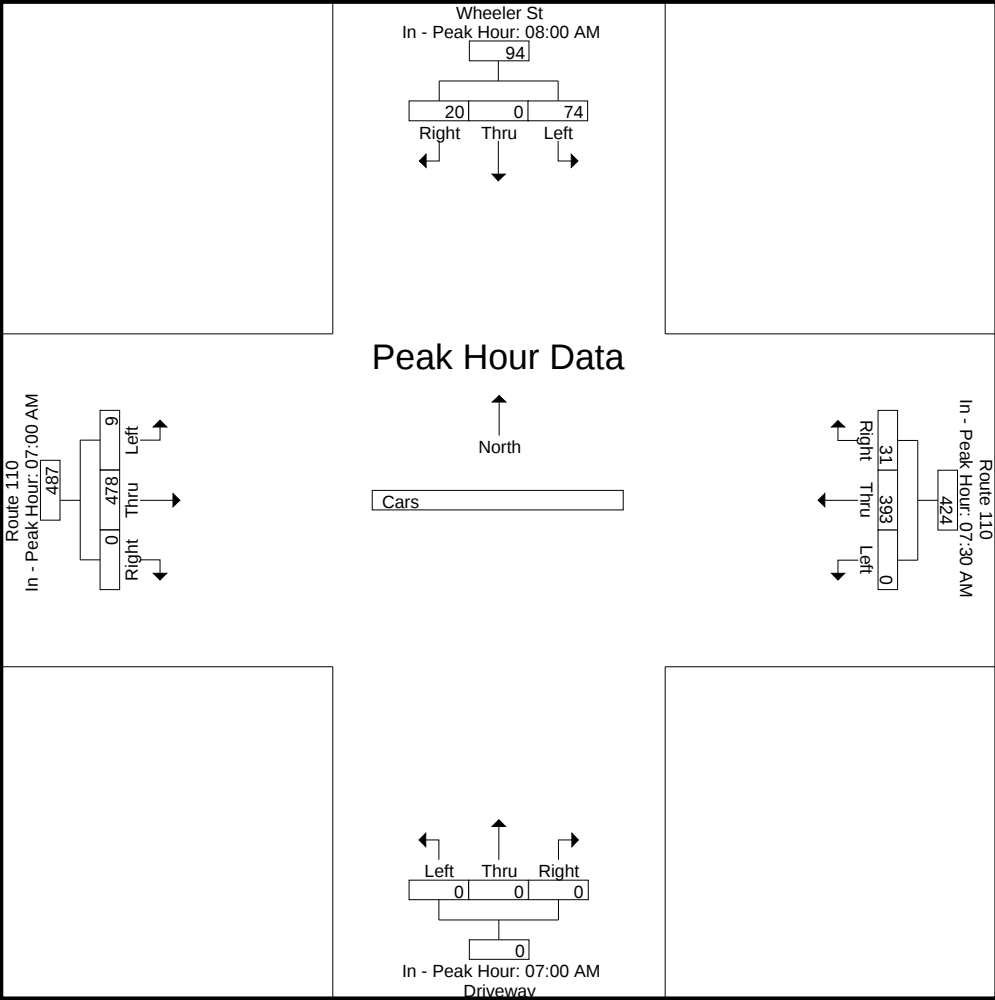
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				07:00 AM			
+0 mins.	13	0	6	19	0	99	2	101	0	0	0	0	1	115	0	116
+15 mins.	22	0	6	28	0	98	12	110	0	0	0	0	0	118	0	118
+30 mins.	23	0	4	27	0	105	9	114	0	0	0	0	3	124	0	127
+45 mins.	16	0	4	20	0	91	8	99	0	0	0	0	5	121	0	126
Total Volume	74	0	20	94	0	393	31	424	0	0	0	0	9	478	0	487
% App. Total	78.7	0	21.3		0	92.7	7.3		0	0	0		1.8	98.2	0	
PHF	.804	.000	.833	.839	.000	.936	.646	.930	.000	.000	.000	.000	.450	.964	.000	.959

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

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Groups Printed- Trucks

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	7	0	0	0	4	0	0	0	0	0	3	0	14
07:15 AM	3	0	1	0	2	1	0	0	0	0	3	0	10
07:30 AM	1	0	1	0	4	1	0	0	0	0	6	0	13
07:45 AM	2	0	0	0	2	1	0	0	0	0	3	0	8
Total	13	0	2	0	12	3	0	0	0	0	15	0	45
08:00 AM	2	0	0	0	3	5	0	0	0	1	3	0	14
08:15 AM	3	0	0	0	3	2	0	0	0	1	2	0	11
08:30 AM	1	0	1	0	2	0	0	0	0	0	3	0	7
08:45 AM	2	0	1	0	5	1	0	0	0	0	3	0	12
Total	8	0	2	0	13	8	0	0	0	2	11	0	44
Grand Total	21	0	4	0	25	11	0	0	0	2	26	0	89
Apprch %	84	0	16	0	69.4	30.6	0	0	0	7.1	92.9	0	
Total %	23.6	0	4.5	0	28.1	12.4	0	0	0	2.2	29.2	0	

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	1	0	1	2	0	4	1	5	0	0	0	0	0	6	0	6	13
07:45 AM	2	0	0	2	0	2	1	3	0	0	0	0	0	3	0	3	8
08:00 AM	2	0	0	2	0	3	5	8	0	0	0	0	1	3	0	4	14
08:15 AM	3	0	0	3	0	3	2	5	0	0	0	0	1	2	0	3	11
Total Volume	8	0	1	9	0	12	9	21	0	0	0	0	2	14	0	16	46
% App. Total	88.9	0	11.1		0	57.1	42.9		0	0	0		12.5	87.5	0		
PHF	.667	.000	.250	.750	.000	.750	.450	.656	.000	.000	.000	.000	.500	.583	.000	.667	.821

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

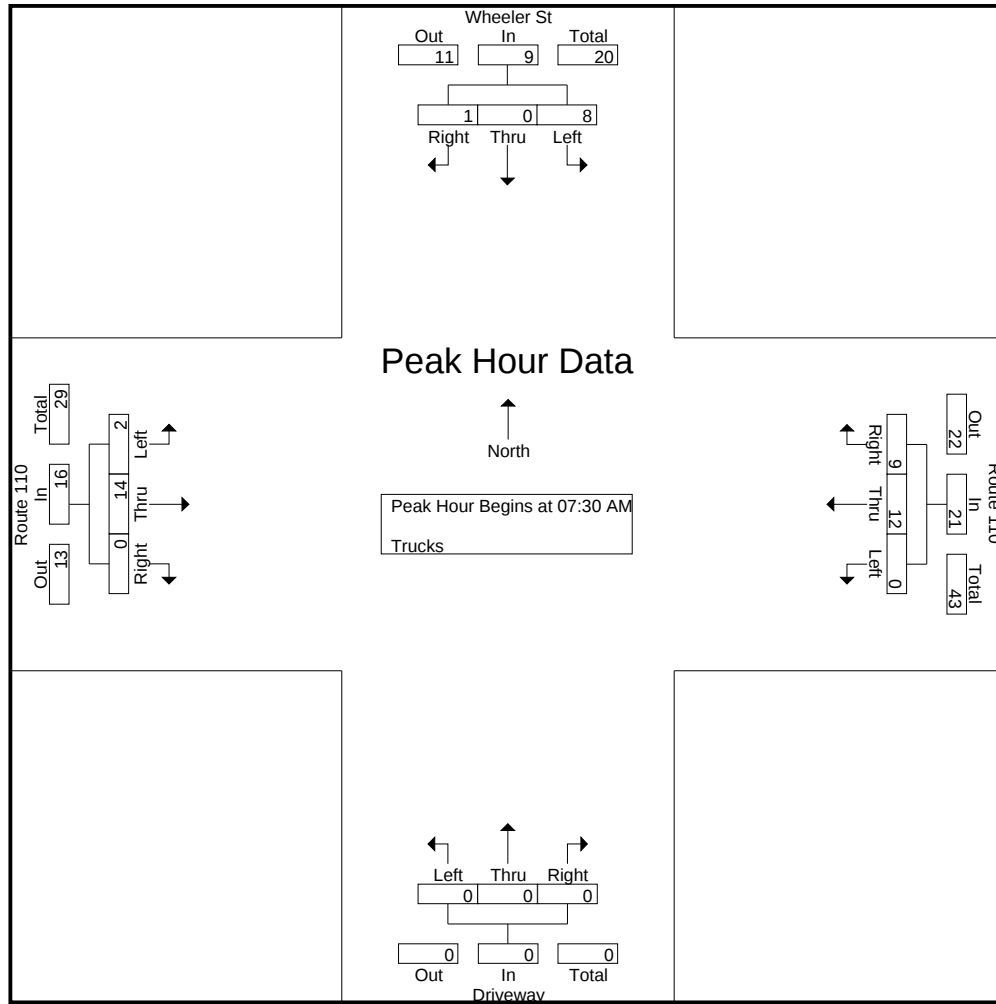
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 8



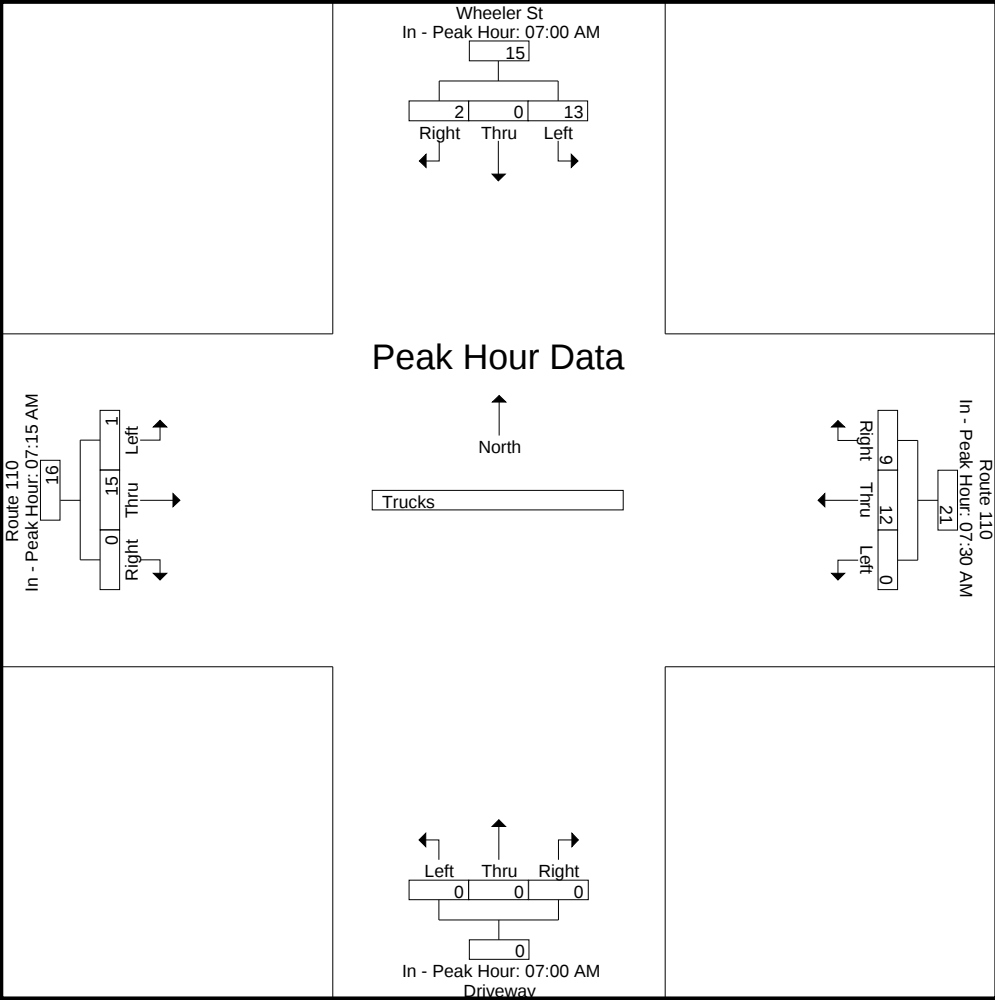
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				07:30 AM				07:00 AM				07:15 AM			
+0 mins.	7	0	0	7	0	4	1	5	0	0	0	0	0	3	0	3
+15 mins.	3	0	1	4	0	2	1	3	0	0	0	0	0	6	0	6
+30 mins.	1	0	1	2	0	3	5	8	0	0	0	0	0	3	0	3
+45 mins.	2	0	0	2	0	3	2	5	0	0	0	0	1	3	0	4
Total Volume	13	0	2	15	0	12	9	21	0	0	0	0	1	15	0	16
% App. Total	86.7	0	13.3		0	57.1	42.9		0	0	0		6.2	93.8	0	
PHF	.464	.000	.500	.536	.000	.750	.450	.656	.000	.000	.000	.000	.250	.625	.000	.667

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
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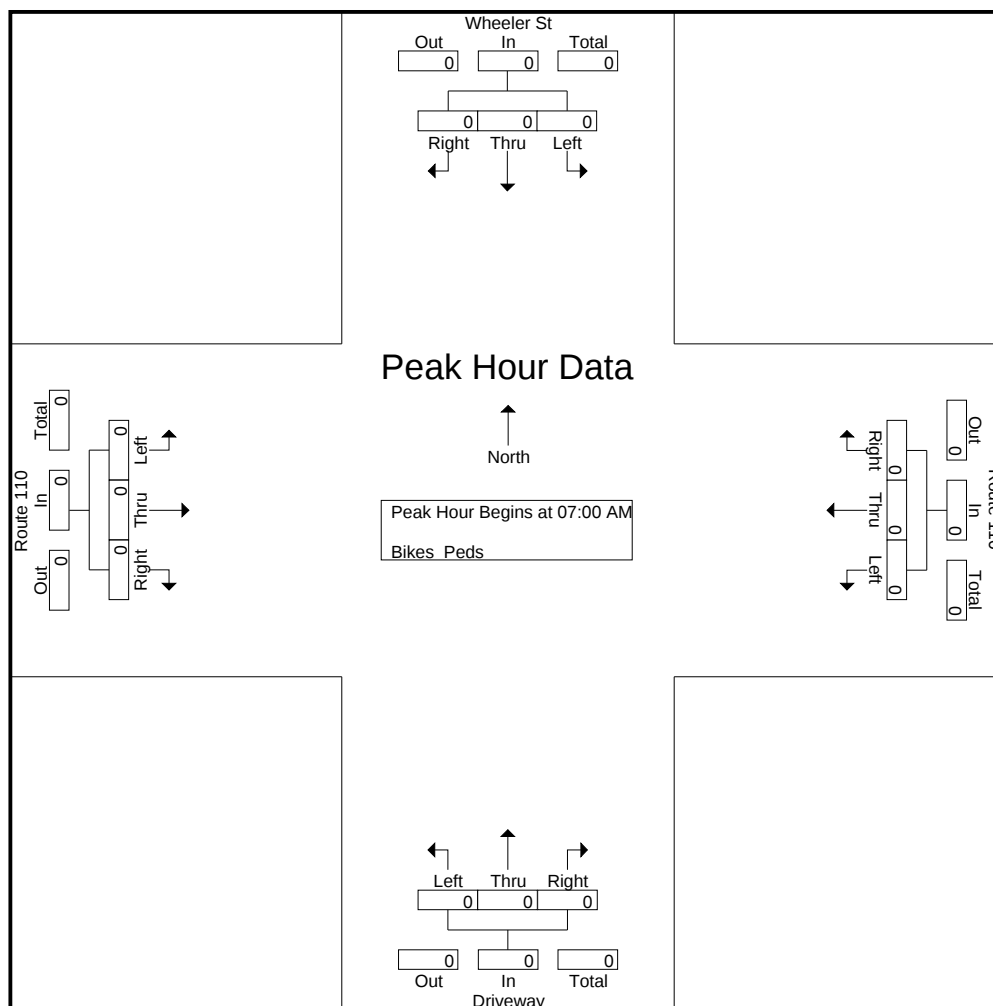
Page No : 10

[illegible][illegible]

978-664-2565

Weather : Clear

Page No : 11

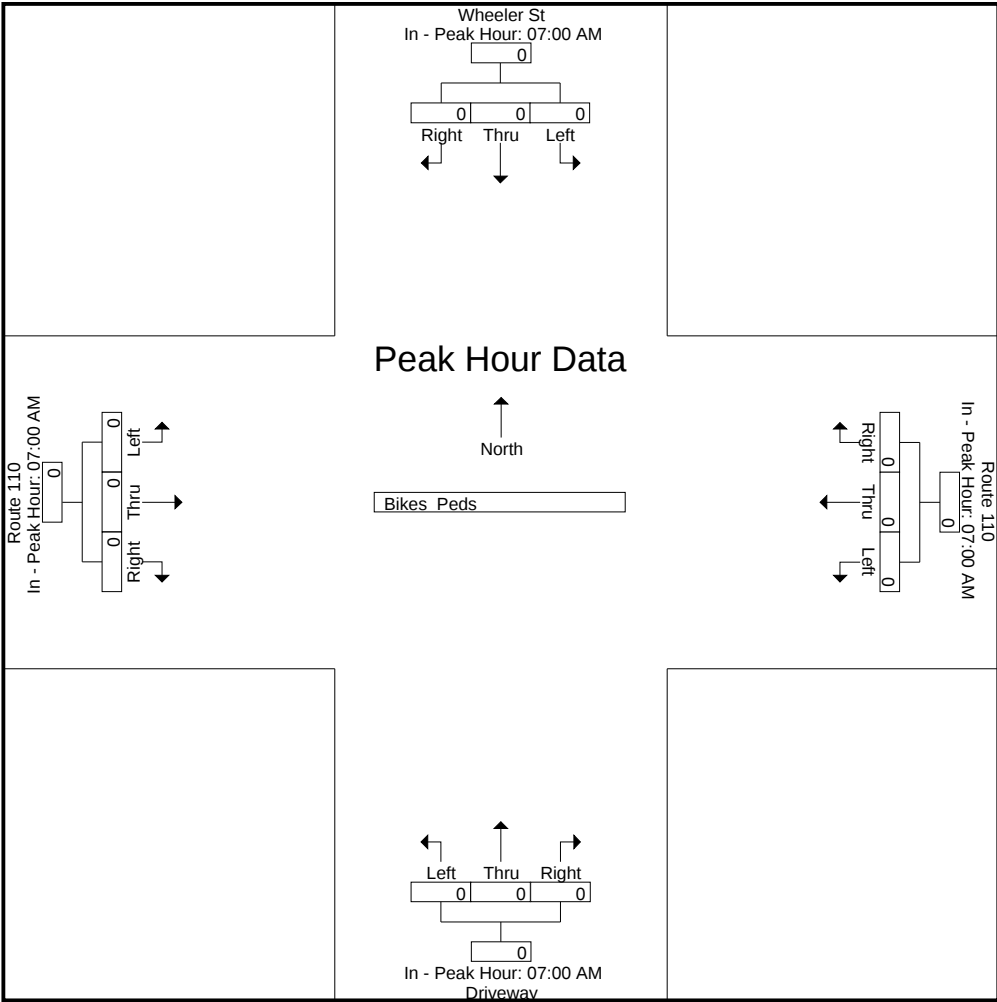


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 1

Groups Printed- Cars - Trucks

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	13	0	3	0	120	18	0	0	0	6	146	0	306
04:15 PM	9	0	3	0	117	16	0	0	0	2	132	0	279
04:30 PM	12	0	4	0	142	11	1	0	0	1	151	1	323
04:45 PM	11	0	0	0	135	17	0	0	0	7	125	0	295
Total	45	0	10	0	514	62	1	0	0	16	554	1	1203
05:00 PM	5	0	1	0	129	15	0	0	0	5	140	1	296
05:15 PM	9	0	3	1	152	13	1	0	1	5	137	0	322
05:30 PM	4	0	4	0	109	15	0	0	0	6	101	1	240
05:45 PM	6	0	0	1	111	11	0	0	1	5	111	0	246
Total	24	0	8	2	501	54	1	0	2	21	489	2	1104
Grand Total	69	0	18	2	1015	116	2	0	2	37	1043	3	2307
Apprch %	79.3	0	20.7	0.2	89.6	10.2	50	0	50	3.4	96.3	0.3	
Total %	3	0	0.8	0.1	44	5	0.1	0	0.1	1.6	45.2	0.1	
Cars	69	0	17	2	1009	116	2	0	2	37	1035	3	2292
% Cars	100	0	94.4	100	99.4	100	100	0	100	100	99.2	100	99.3
Trucks	0	0	1	0	6	0	0	0	0	0	8	0	15
% Trucks	0	0	5.6	0	0.6	0	0	0	0	0	0.8	0	0.7

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	12	0	4	16	0	142	11	153	1	0	0	1	1	151	1	153	323
04:45 PM	11	0	0	11	0	135	17	152	0	0	0	0	7	125	0	132	295
05:00 PM	5	0	1	6	0	129	15	144	0	0	0	0	5	140	1	146	296
05:15 PM	9	0	3	12	1	152	13	166	1	0	1	2	5	137	0	142	322
Total Volume	37	0	8	45	1	558	56	615	2	0	1	3	18	553	2	573	1236
% App. Total	82.2	0	17.8		0.2	90.7	9.1		66.7	0	33.3		3.1	96.5	0.3		
PHF	.771	.000	.500	.703	.250	.918	.824	.926	.500	.000	.250	.375	.643	.916	.500	.936	.957
Cars	37	0	7	44	1	554	56	611	2	0	1	3	18	549	2	569	1227
% Cars	100	0	87.5	97.8	100	99.3	100	99.3	100	0	100	100	100	99.3	100	99.3	99.3
Trucks	0	0	1	1	0	4	0	4	0	0	0	0	0	4	0	4	9
% Trucks	0	0	12.5	2.2	0	0.7	0	0.7	0	0	0	0	0	0.7	0	0.7	0.7

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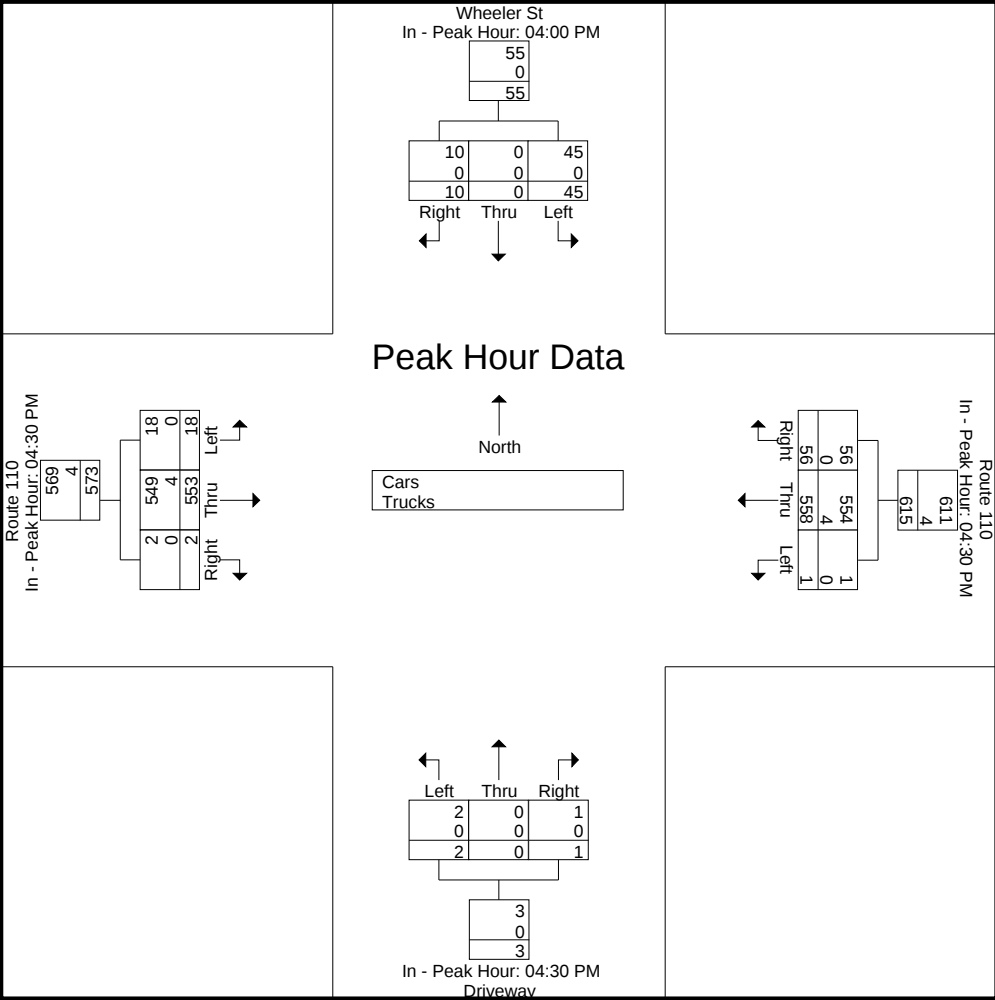
	Cars	Trucks
1990	100	100
2000	100	100
2010	100	100
2020	100	100
2030	100	100
2040	100	100
2050	100	100
2060	100	100
2070	100	100
2080	100	100
2090	100	100
2100	100	100

Driveway

	04:00 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	13	0	3	16	0	142	11	153	1	0	0	1	1	151	1	153
+15 mins.	9	0	3	12	0	135	17	152	0	0	0	0	7	125	0	132
+30 mins.	12	0	4	16	0	129	15	144	0	0	0	0	5	140	1	146
+45 mins.	11	0	0	11	1	152	13	166	1	0	1	2	5	137	0	142
Total Volume	45	0	10	55	1	558	56	615	2	0	1	3	18	553	2	573
% App. Total	81.8	0	18.2		0.2	90.7	9.1		66.7	0	33.3		3.1	96.5	0.3	
PHF	.865	.000	.625	.859	.250	.918	.824	.926	.500	.000	.250	.375	.643	.916	.500	.936
Cars	45	0	10	55	1	554	56	611	2	0	1	3	18	549	2	569
% Cars	100	0	100	100	100	99.3	100	99.3	100	0	100	100	100	99.3	100	99.3
Trucks	0	0	0	0	0	4	0	4	0	0	0	0	0	4	0	4
% Trucks	0	0	0	0	0	0.7	0	0.7	0	0	0	0	0	0.7	0	0.7

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	13	0	3	0	119	18	0	0	0	6	145	0	304
04:15 PM	9	0	3	0	117	16	0	0	0	2	130	0	277
04:30 PM	12	0	4	0	141	11	1	0	0	1	148	1	319
04:45 PM	11	0	0	0	133	17	0	0	0	7	125	0	293
Total	45	0	10	0	510	62	1	0	0	16	548	1	1193
05:00 PM	5	0	1	0	129	15	0	0	0	5	140	1	296
05:15 PM	9	0	2	1	151	13	1	0	1	5	136	0	319
05:30 PM	4	0	4	0	109	15	0	0	0	6	101	1	240
05:45 PM	6	0	0	1	110	11	0	0	1	5	110	0	244
Total	24	0	7	2	499	54	1	0	2	21	487	2	1099
Grand Total	69	0	17	2	1009	116	2	0	2	37	1035	3	2292
Apprch %	80.2	0	19.8	0.2	89.5	10.3	50	0	50	3.4	96.3	0.3	
Total %	3	0	0.7	0.1	44	5.1	0.1	0	0.1	1.6	45.2	0.1	

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				Int. Total
Start Time	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	12	0	4	16	0	141	11	152	1	0	0	1	1	148	1	150	319
04:45 PM	11	0	0	11	0	133	17	150	0	0	0	0	7	125	0	132	293
05:00 PM	5	0	1	6	0	129	15	144	0	0	0	0	5	140	1	146	296
05:15 PM	9	0	2	11	1	151	13	165	1	0	1	2	5	136	0	141	319
Total Volume	37	0	7	44	1	554	56	611	2	0	1	3	18	549	2	569	1227
% App. Total	84.1	0	15.9		0.2	90.7	9.2		66.7	0	33.3		3.2	96.5	0.4		
PHF	.771	.000	.438	.688	.250	.917	.824	.926	.500	.000	.250	.375	.643	.927	.500	.948	.962

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

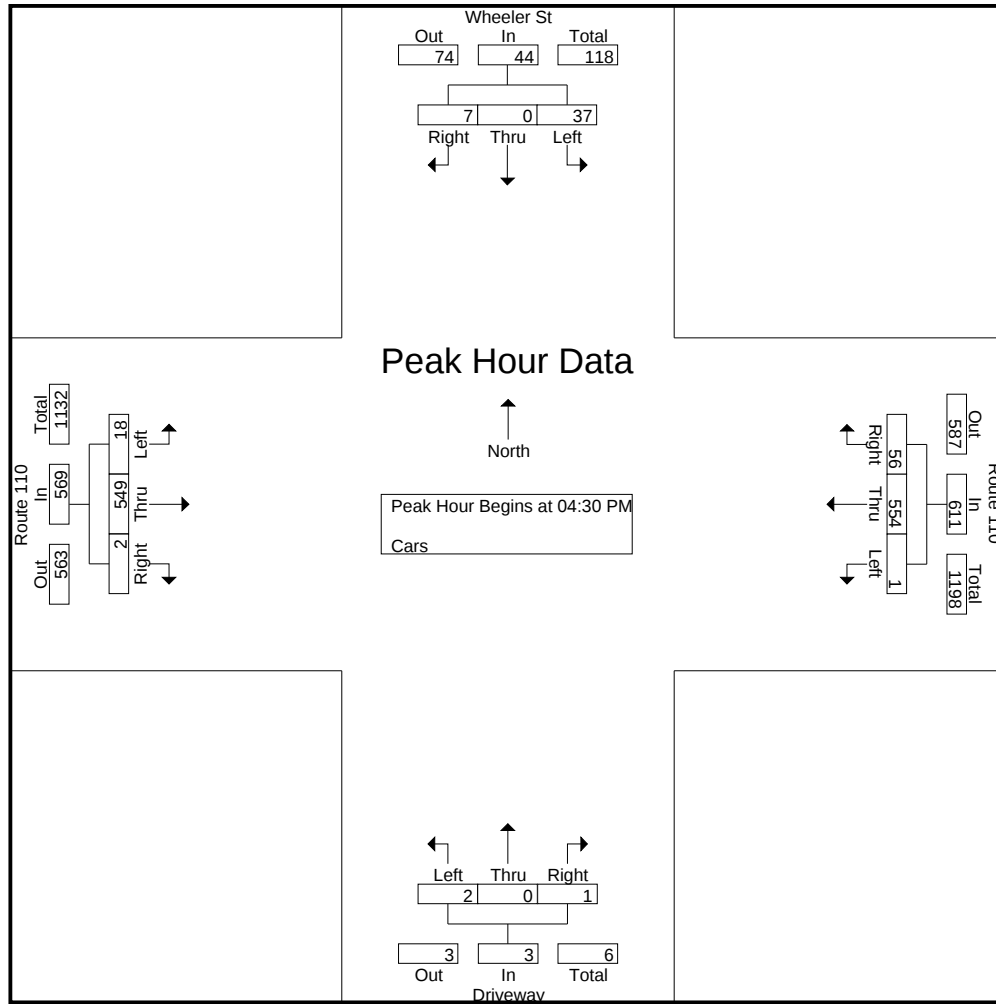
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

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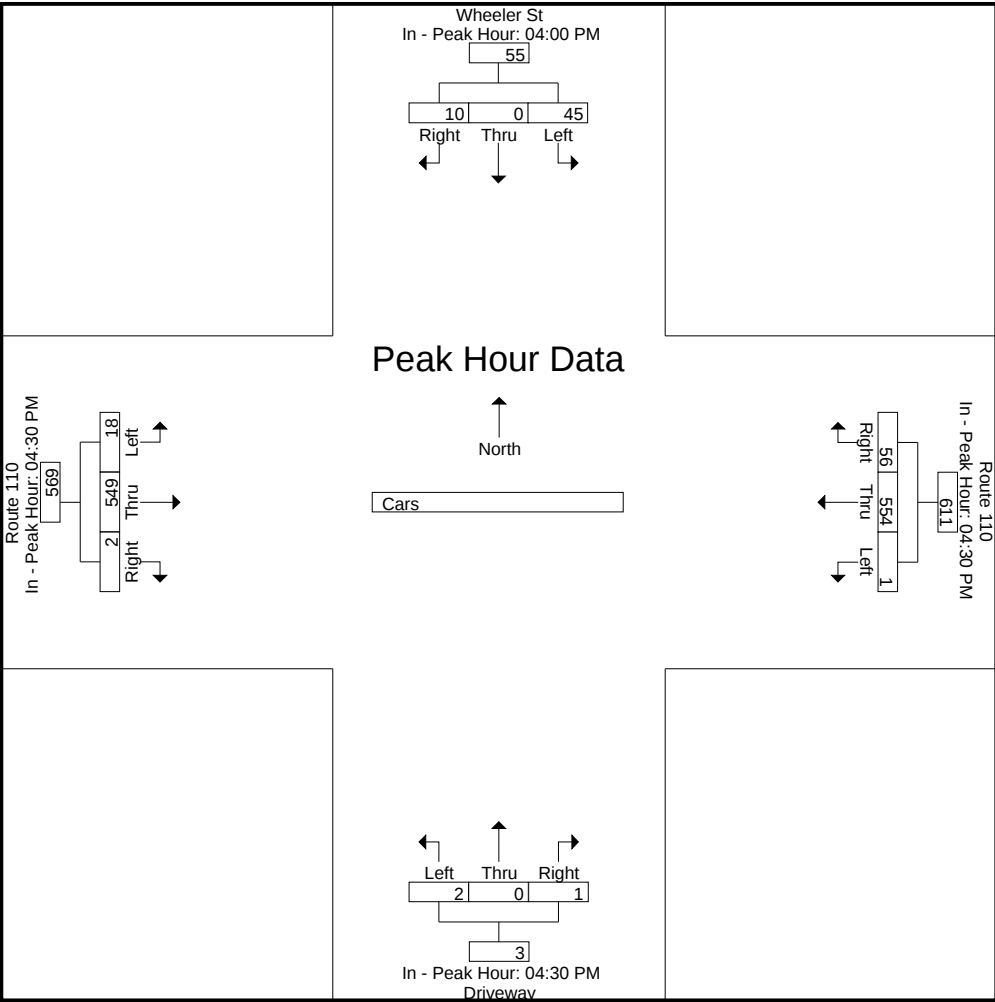
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:30 PM				04:30 PM			
+0 mins.	13	0	3	16	0	141	11	152	1	0	0	1	1	148	1	150
+15 mins.	9	0	3	12	0	133	17	150	0	0	0	0	7	125	0	132
+30 mins.	12	0	4	16	0	129	15	144	0	0	0	0	5	140	1	146
+45 mins.	11	0	0	11	1	151	13	165	1	0	1	2	5	136	0	141
Total Volume	45	0	10	55	1	554	56	611	2	0	1	3	18	549	2	569
% App. Total	81.8	0	18.2		0.2	90.7	9.2		66.7	0	33.3		3.2	96.5	0.4	
PHF	.865	.000	.625	.859	.250	.917	.824	.926	.500	.000	.250	.375	.643	.927	.500	.948

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 7

Groups Printed- Trucks

	Wheeler St From North			Route 110 From East			Driveway From South			Route 110 From West			Int. Total
Start Time	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	1	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2
04:30 PM	0	0	0	0	1	0	0	0	0	0	3	0	4
04:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	0	0	0	0	4	0	0	0	0	0	6	0	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	1	0	0	0	0	0	1	0	3
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	1	0	2	0	0	0	0	0	2	0	5
Grand Total	0	0	1	0	6	0	0	0	0	0	8	0	15
Apprch %	0	0	100	0	100	0	0	0	0	0	100	0	
Total %	0	0	6.7	0	40	0	0	0	0	0	53.3	0	

	Wheeler St From North				Route 110 From East				Driveway From South				Route 110 From West				Int. Total
Start Time	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	1	0	1	2
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	1	0	1	0	0	0	0	0	3	0	3	4
04:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	6	0	6	10
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.625

Accurate Counts

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

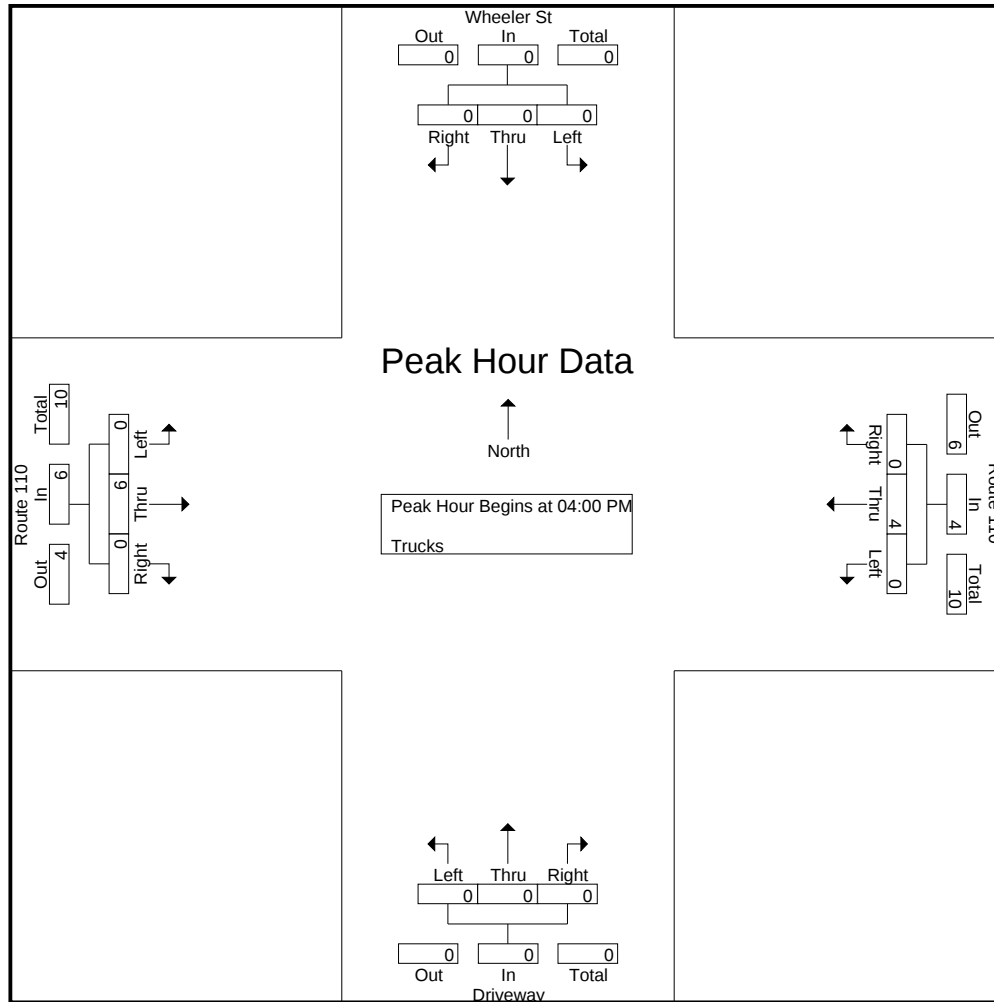
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

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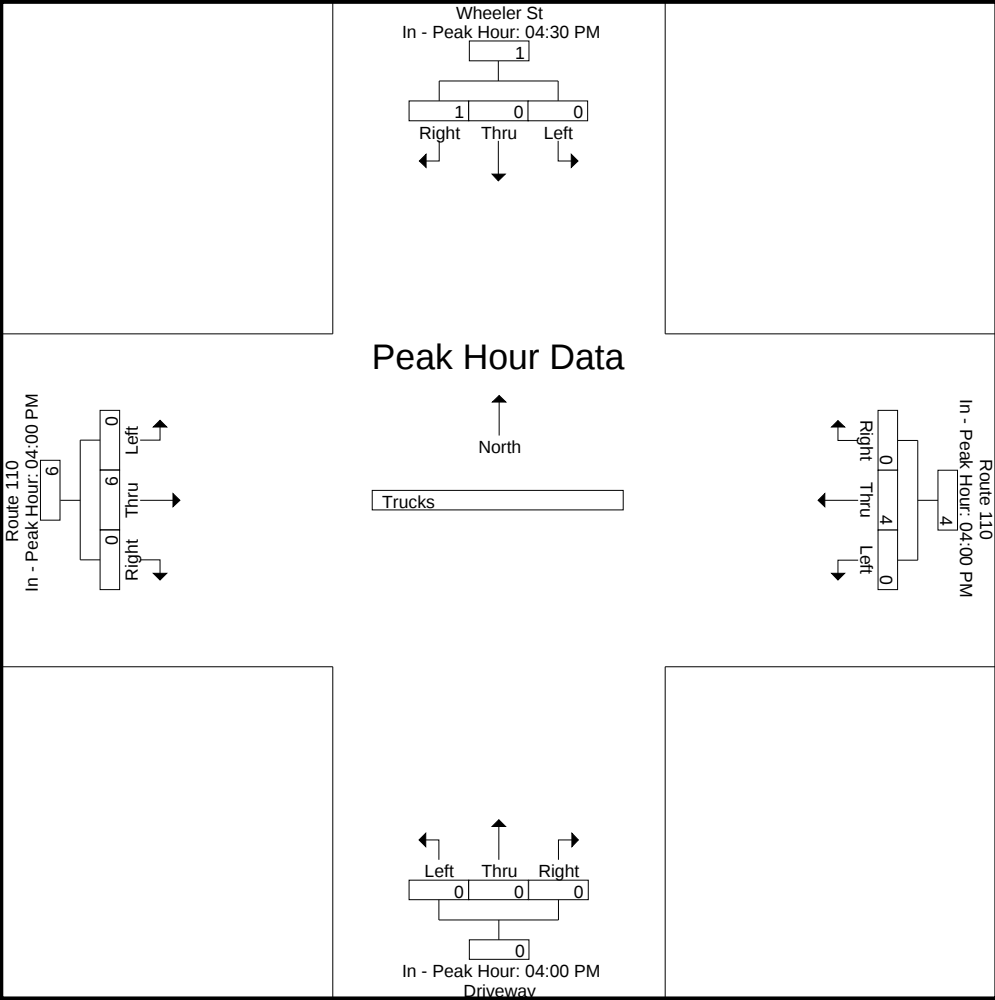
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	3	0	3
+45 mins.	0	0	1	1	0	2	0	2	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	4	0	4	0	0	0	0	0	6	0	6
% App. Total	0	0	100		0	100	0		0	0	0		0	100	0	
PHF	.000	.000	.250	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
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Start Date : 3/7/2023
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N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

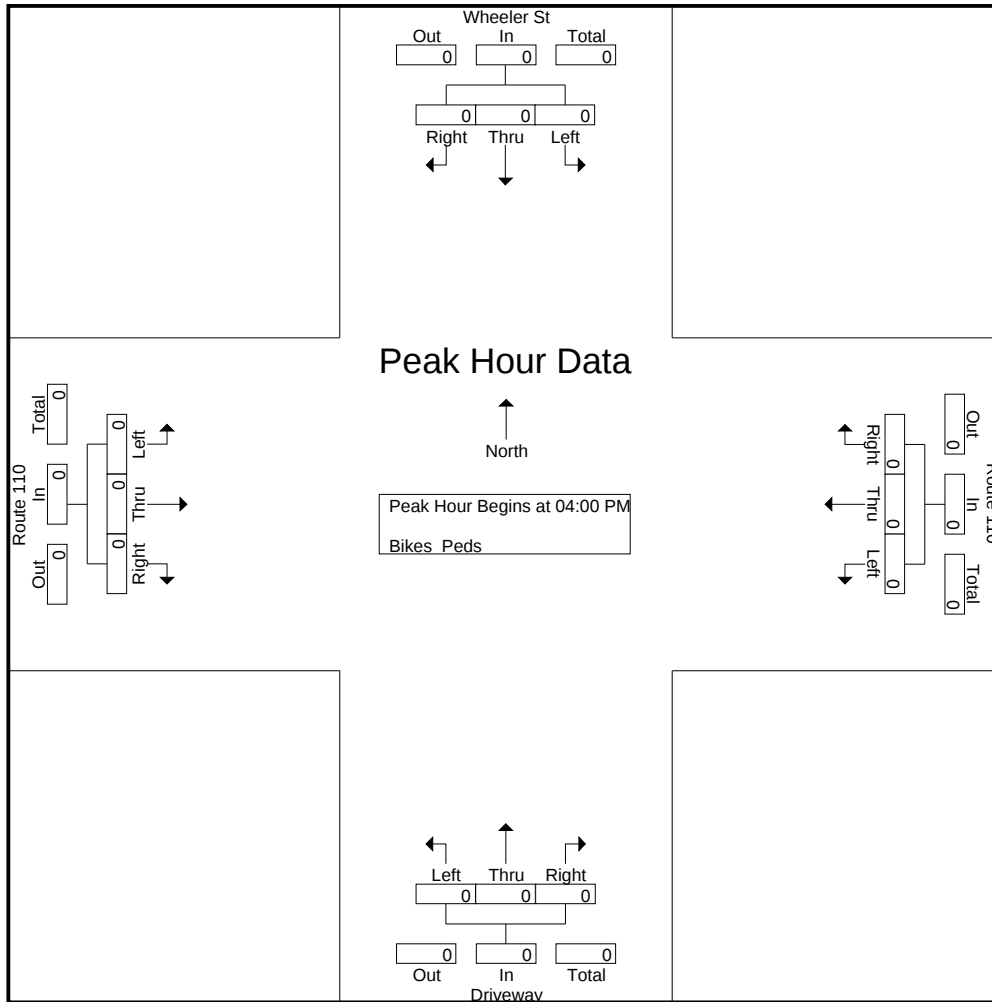
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

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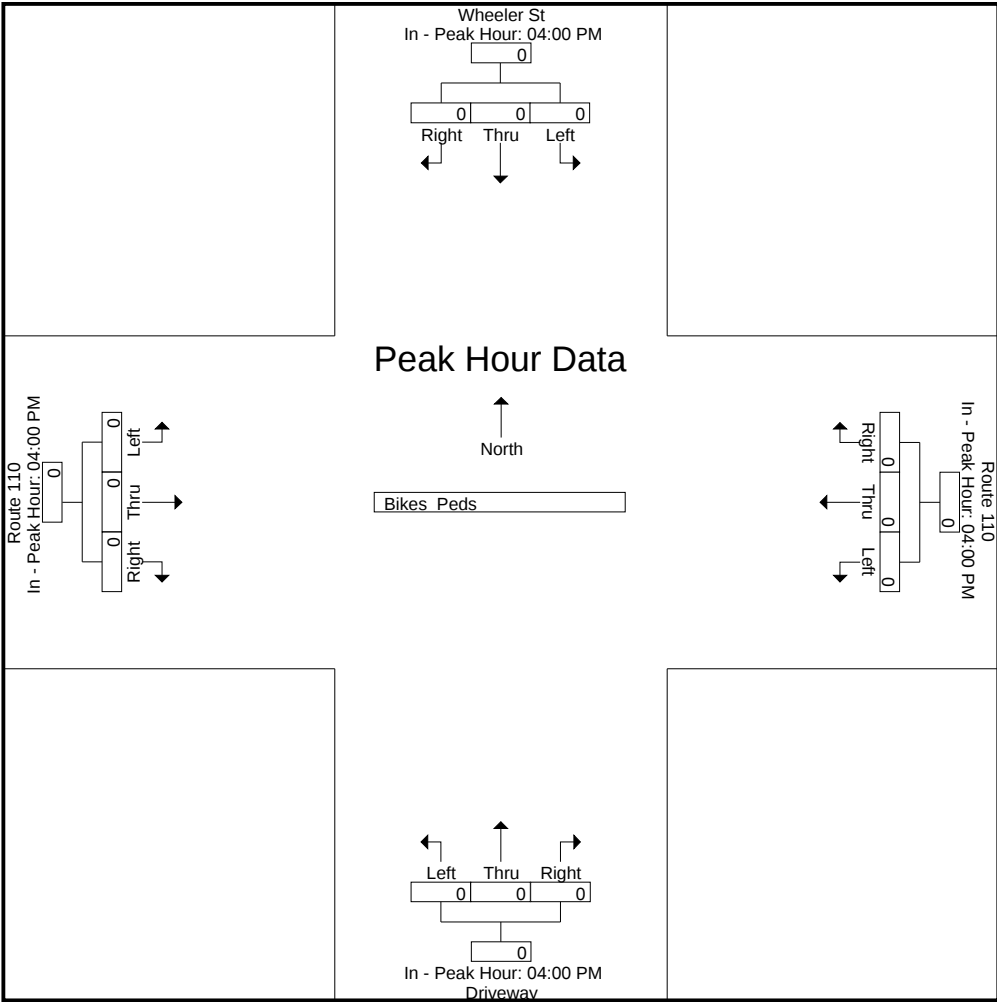
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

Can Not Be	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Wheeler Street / Driveway
E/W Street : Route 110
City/State : Methuen, MA
Weather : Clear

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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Groups Printed- Cars - Trucks

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	3	0	0	4	1	1	9
07:15 AM	4	0	0	1	0	1	6
07:30 AM	4	0	0	4	1	1	10
07:45 AM	6	2	1	3	2	2	16
Total	17	2	1	12	4	5	41
08:00 AM	3	0	0	5	0	1	9
08:15 AM	5	2	0	5	1	0	13
08:30 AM	6	0	1	1	3	1	12
08:45 AM	1	0	0	2	1	0	4
Total	15	2	1	13	5	2	38
Grand Total	32	4	2	25	9	7	79
Apprch %	88.9	11.1	7.4	92.6	56.2	43.8	
Total %	40.5	5.1	2.5	31.6	11.4	8.9	
Cars	29	3	2	25	8	7	74
% Cars	90.6	75	100	100	88.9	100	93.7
Trucks	3	1	0	0	1	0	5
% Trucks	9.4	25	0	0	11.1	0	6.3

	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	6	2	8	1	3	4	2	2	4	16
08:00 AM	3	0	3	0	5	5	0	1	1	9
08:15 AM	5	2	7	0	5	5	1	0	1	13
08:30 AM	6	0	6	1	1	2	3	1	4	12
Total Volume	20	4	24	2	14	16	6	4	10	50
% App. Total	83.3	16.7		12.5	87.5		60	40		
PHF	.833	.500	.750	.500	.700	.800	.500	.500	.625	.781
Cars	18	3	21	2	14	16	5	4	9	46
% Cars	90.0	75.0	87.5	100	100	100	83.3	100	90.0	92.0
Trucks	2	1	3	0	0	0	1	0	1	4
% Trucks	10.0	25.0	12.5	0	0	0	16.7	0	10.0	8.0

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

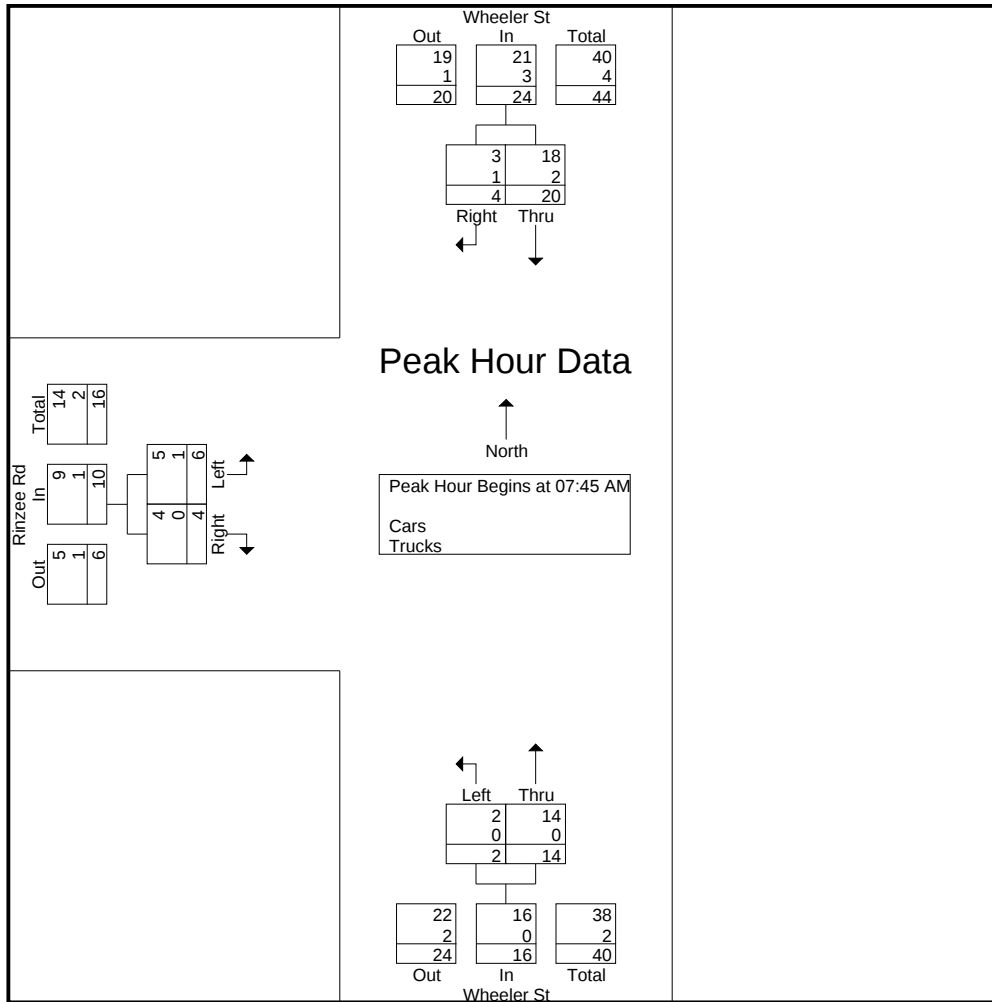
Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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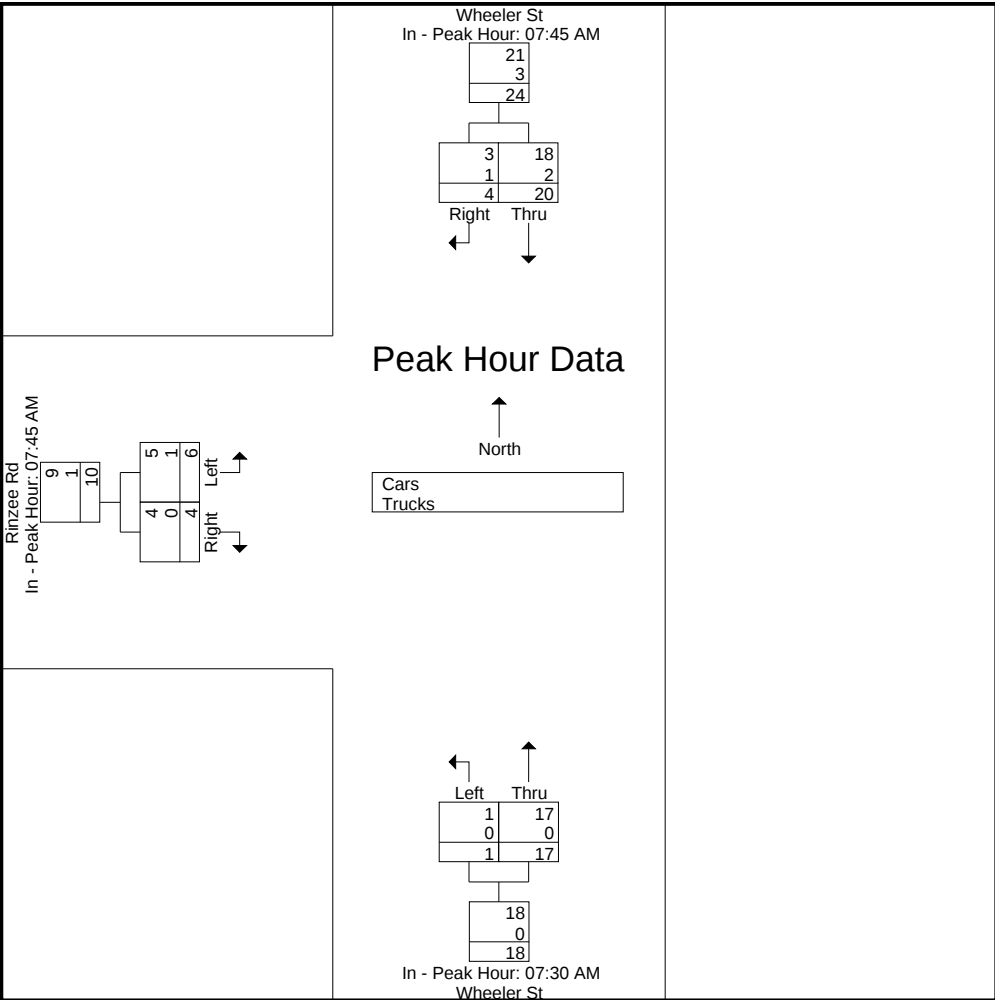
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 AM			07:45 AM		
+0 mins.	6	2	8	0	4	4	2	2	4
+15 mins.	3	0	3	1	3	4	0	1	1
+30 mins.	5	2	7	0	5	5	1	0	1
+45 mins.	6	0	6	0	5	5	3	1	4
Total Volume	20	4	24	1	17	18	6	4	10
% App. Total	83.3	16.7		5.6	94.4		60	40	
PHF	.833	.500	.750	.250	.850	.900	.500	.500	.625
Cars	18	3	21	1	17	18	5	4	9
% Cars	90	75	87.5	100	100	100	83.3	100	90
Trucks	2	1	3	0	0	0	1	0	1
% Trucks	10	25	12.5	0	0	0	16.7	0	10

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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Groups Printed- Cars

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	3	0	0	4	1	1	9
07:15 AM	3	0	0	1	0	1	5
07:30 AM	4	0	0	4	1	1	10
07:45 AM	4	1	1	3	1	2	12
Total	14	1	1	12	3	5	36
08:00 AM	3	0	0	5	0	1	9
08:15 AM	5	2	0	5	1	0	13
08:30 AM	6	0	1	1	3	1	12
08:45 AM	1	0	0	2	1	0	4
Total	15	2	1	13	5	2	38
Grand Total	29	3	2	25	8	7	74
Apprch %	90.6	9.4	7.4	92.6	53.3	46.7	
Total %	39.2	4.1	2.7	33.8	10.8	9.5	

	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	1	5	1	3	4	1	2	3	12
08:00 AM	3	0	3	0	5	5	0	1	1	9
08:15 AM	5	2	7	0	5	5	1	0	1	13
08:30 AM	6	0	6	1	1	2	3	1	4	12
Total Volume	18	3	21	2	14	16	5	4	9	46
% App. Total	85.7	14.3		12.5	87.5		55.6	44.4		
PHF	.750	.375	.750	.500	.700	.800	.417	.500	.563	.885

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

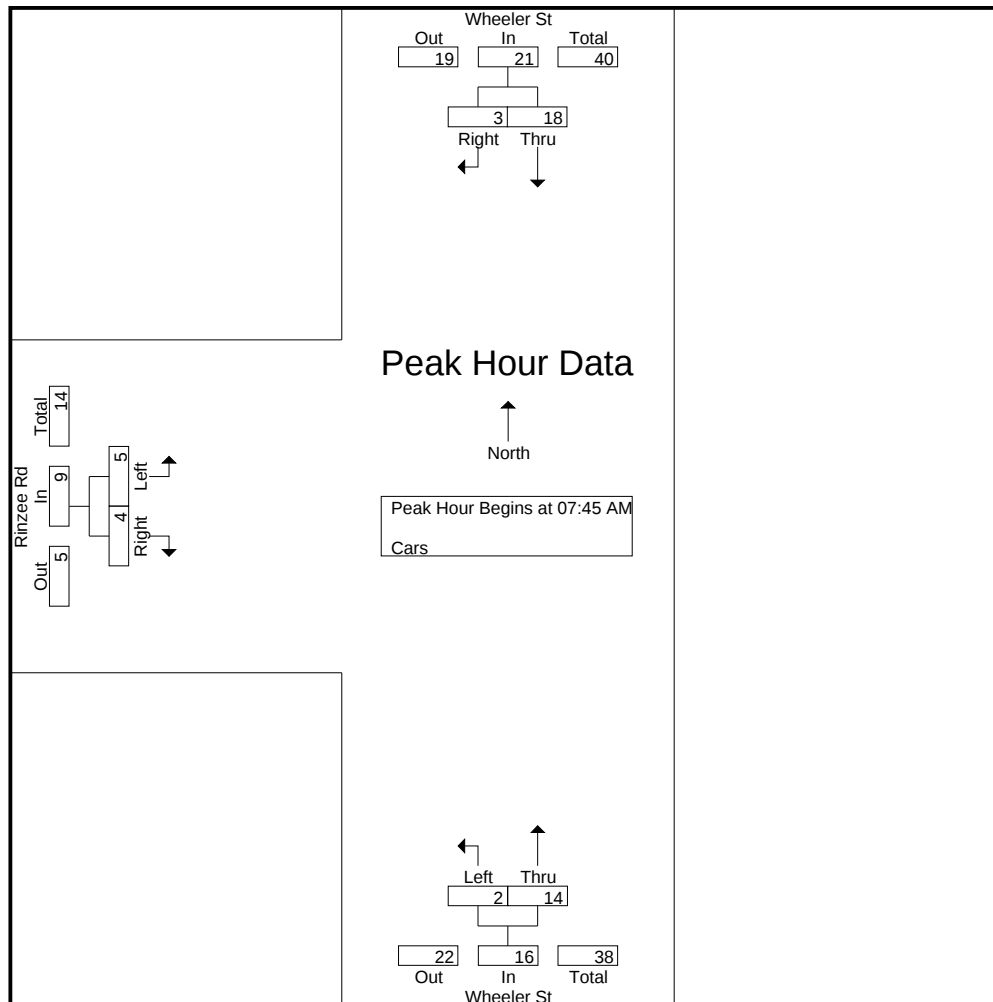
Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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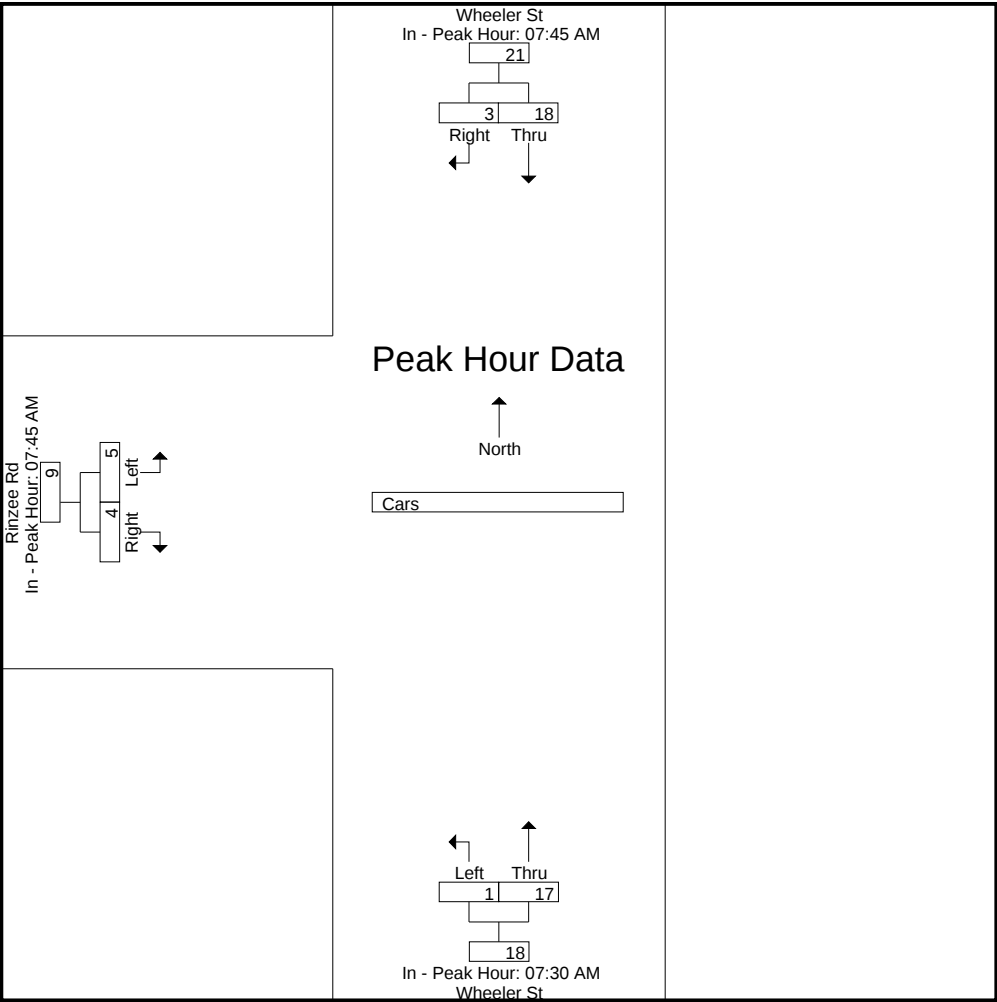
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 AM			07:45 AM		
+0 mins.	4	1	5	0	4	4	1	2	3
+15 mins.	3	0	3	1	3	4	0	1	1
+30 mins.	5	2	7	0	5	5	1	0	1
+45 mins.	6	0	6	0	5	5	3	1	4
Total Volume	18	3	21	1	17	18	5	4	9
% App. Total	85.7	14.3		5.6	94.4		55.6	44.4	
PHF	.750	.375	.750	.250	.850	.900	.417	.500	.563

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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Groups Printed- Trucks

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0
07:15 AM	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	2	1	0	0	1	0	4
Total	3	1	0	0	1	0	5
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
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	0	0	0
Grand Total	3	1	0	0	1	0	5
Apprch %	75	25	0	0	100	0	
Total %	60	20	0	0	20	0	

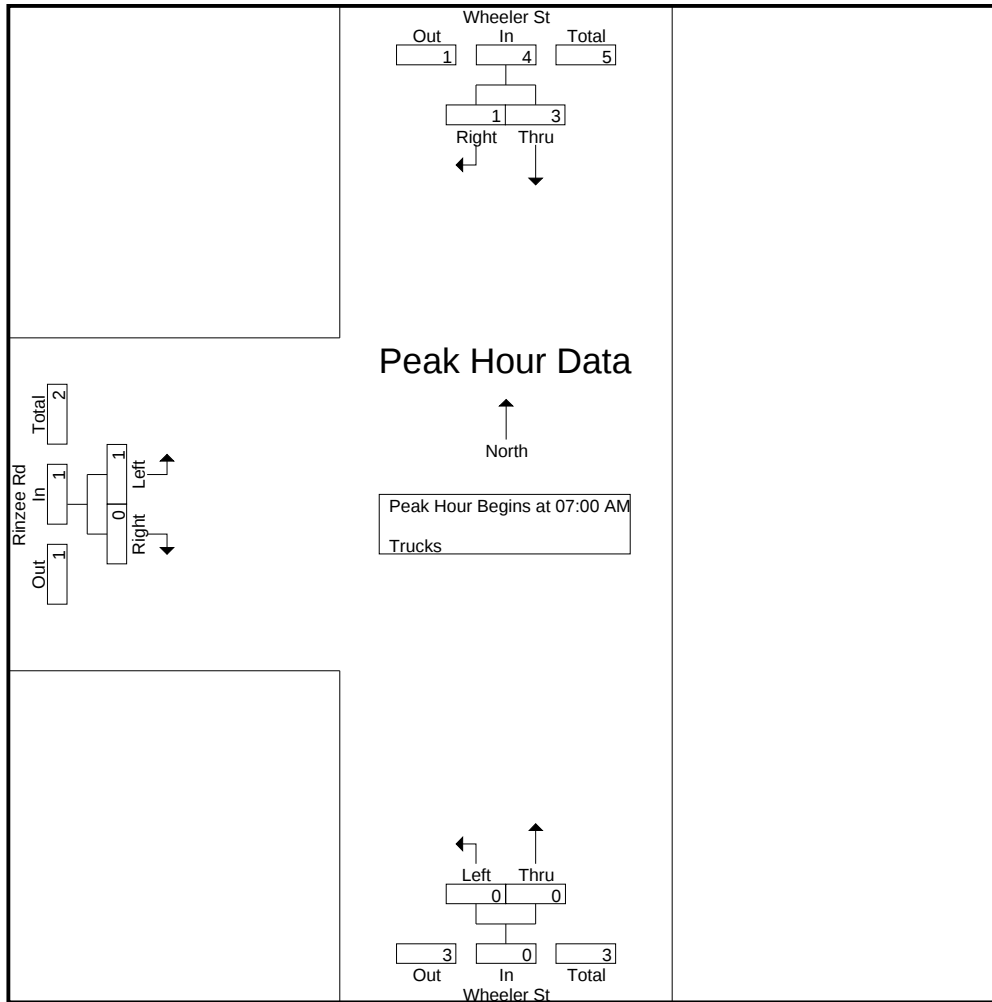
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	2	1	3	0	0	0	1	0	1	4
Total Volume	3	1	4	0	0	0	1	0	1	5
% App. Total	75	25		0	0		100	0		
PHF	.375	.250	.333	.000	.000	.000	.250	.000	.250	.313

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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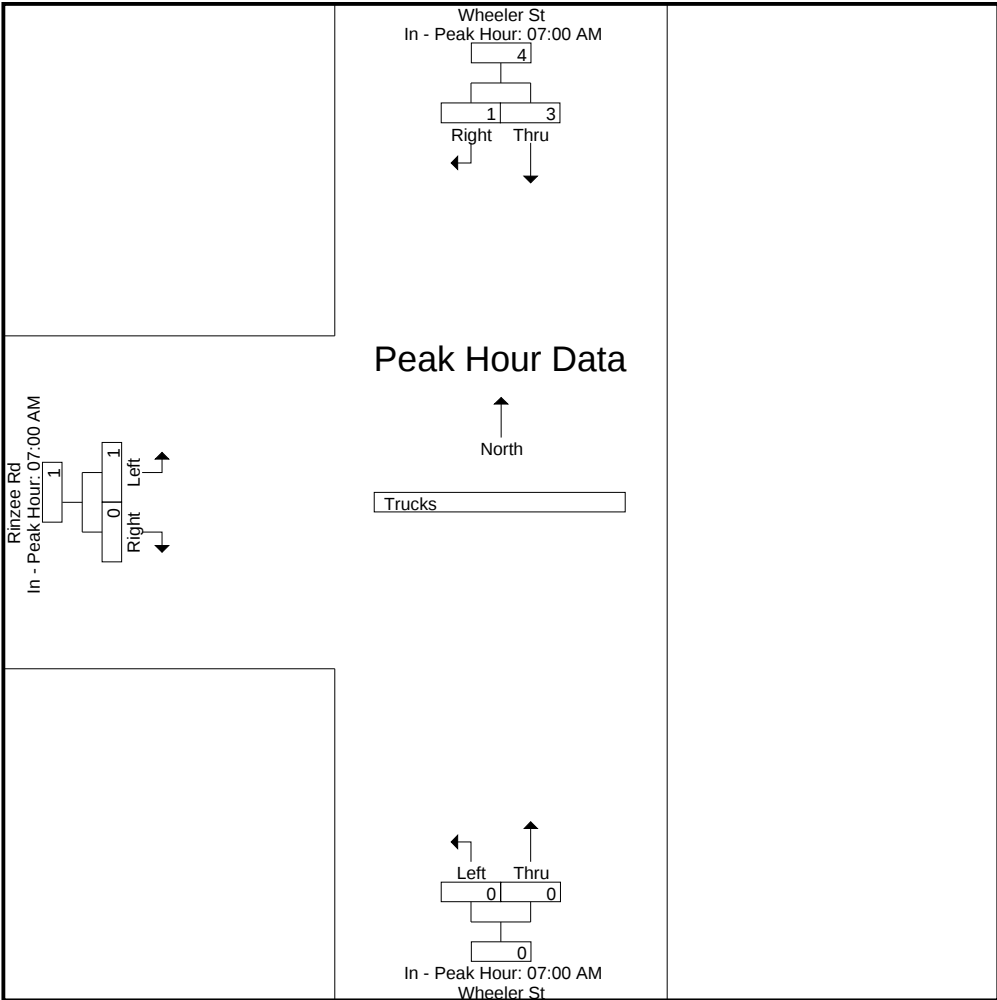
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	1	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	2	1	3	0	0	0	1	0	1
Total Volume	3	1	4	0	0	0	1	0	1
% App. Total	75	25		0	0		100	0	
PHF	.375	.250	.333	.000	.000	.000	.250	.000	.250

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
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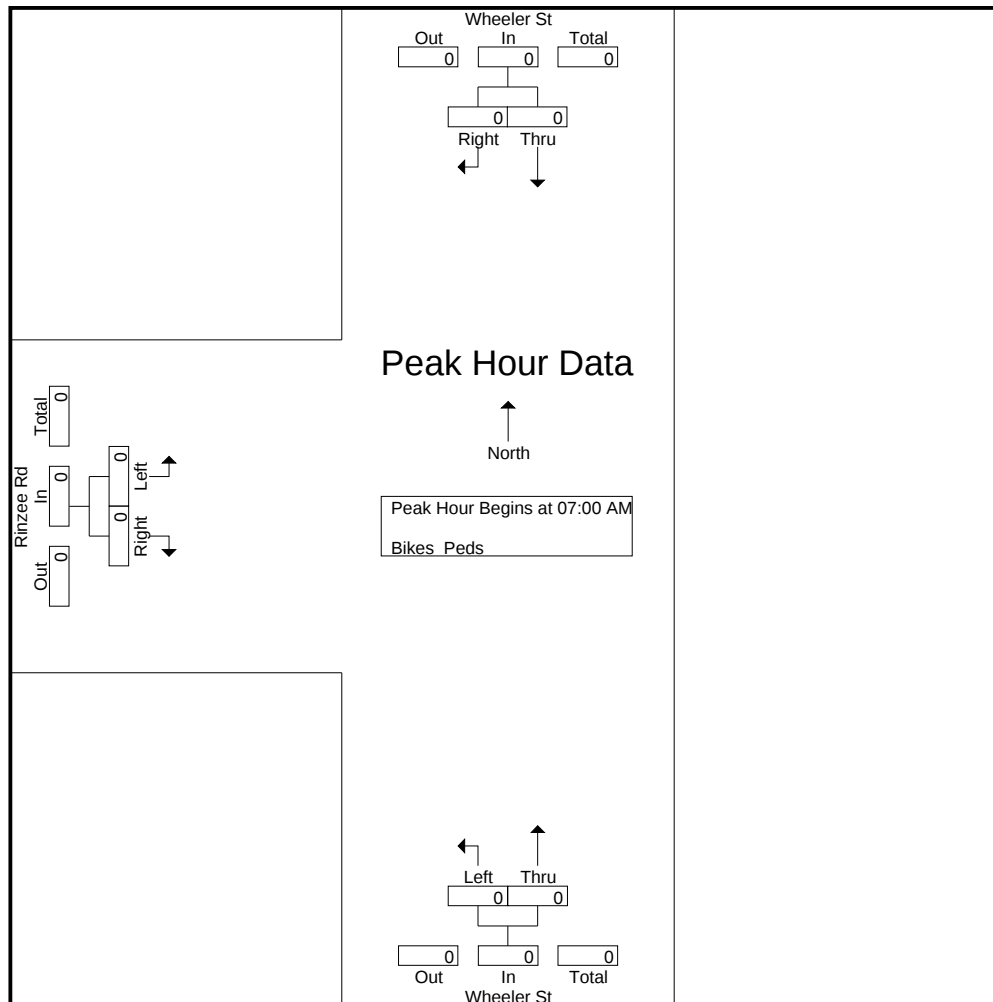
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N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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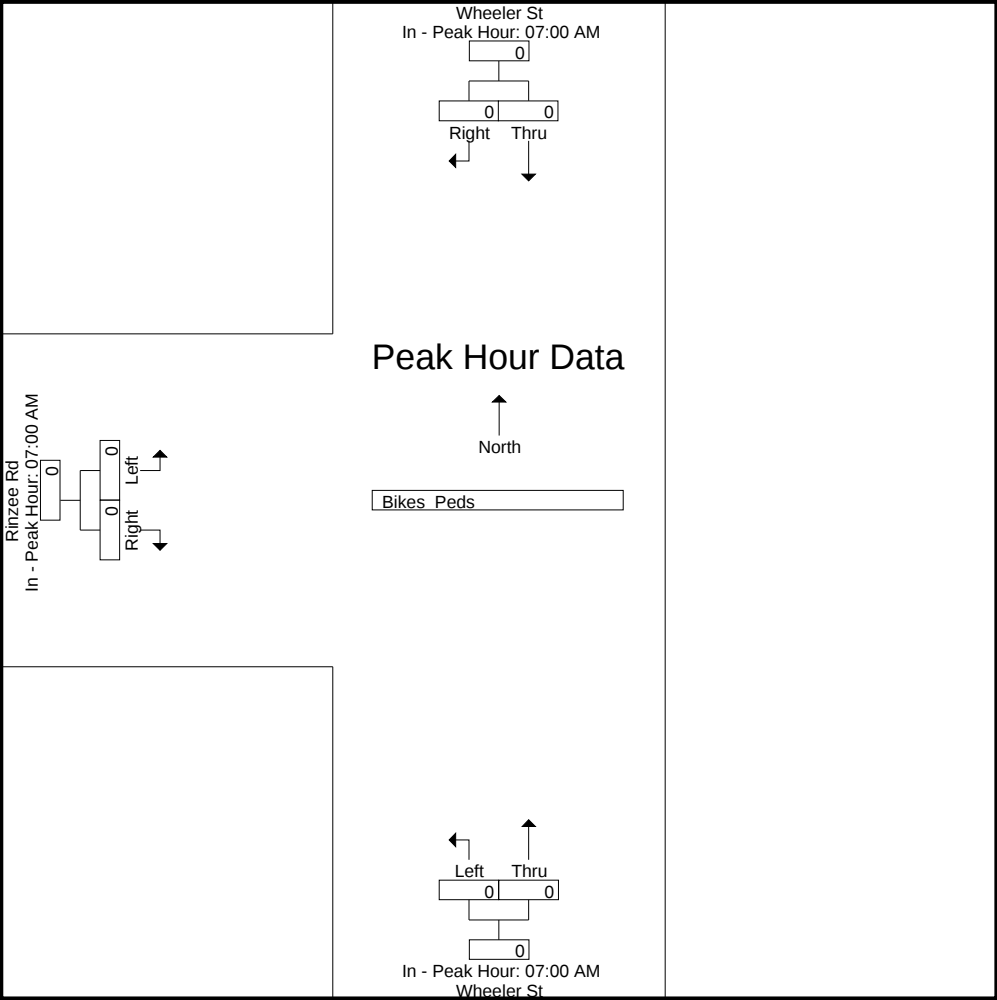
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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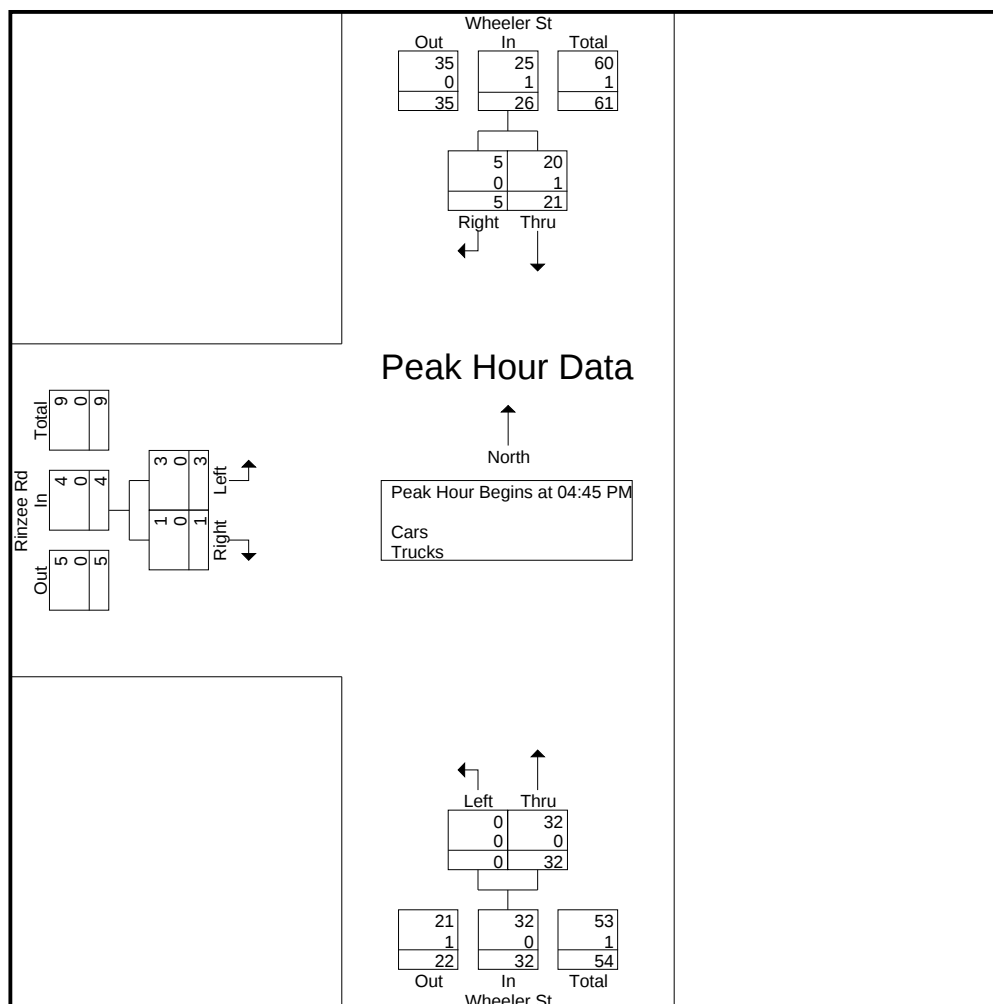
Groups Printed- Cars - Trucks

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	8	1	0	10	1	0	20
04:15 PM	4	3	0	3	1	0	11
04:30 PM	4	2	0	3	0	1	10
04:45 PM	5	2	0	10	0	0	17
Total	21	8	0	26	2	1	58
05:00 PM	5	0	0	8	1	0	14
05:15 PM	5	2	0	6	0	1	14
05:30 PM	6	1	0	8	2	0	17
05:45 PM	2	1	1	7	1	0	12
Total	18	4	1	29	4	1	57
Grand Total	39	12	1	55	6	2	115
Apprch %	76.5	23.5	1.8	98.2	75	25	
Total %	33.9	10.4	0.9	47.8	5.2	1.7	
Cars	38	12	1	55	6	2	114
% Cars	97.4	100	100	100	100	100	99.1
Trucks	1	0	0	0	0	0	1
% Trucks	2.6	0	0	0	0	0	0.9

	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	5	2	7	0	10	10	0	0	0	17
05:00 PM	5	0	5	0	8	8	1	0	1	14
05:15 PM	5	2	7	0	6	6	0	1	1	14
05:30 PM	6	1	7	0	8	8	2	0	2	17
Total Volume	21	5	26	0	32	32	3	1	4	62
% App. Total	80.8	19.2		0	100		75	25		
PHF	.875	.625	.929	.000	.800	.800	.375	.250	.500	.912
Cars	20	5	25	0	32	32	3	1	4	61
% Cars	95.2	100	96.2	0	100	100	100	100	100	98.4
Trucks	1	0	1	0	0	0	0	0	0	1
% Trucks	4.8	0	3.8	0	0	0	0	0	0	1.6

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File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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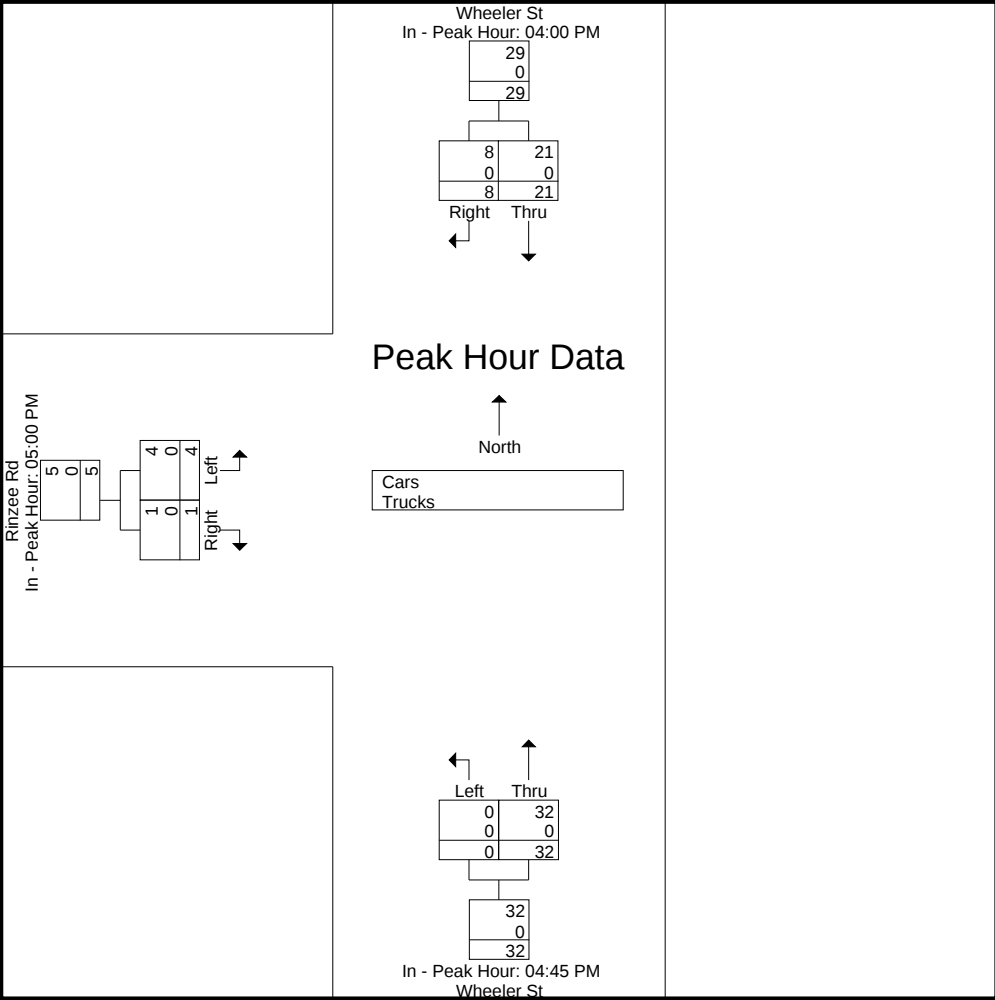


Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

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Groups Printed- Cars

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	8	1	0	10	1	0	20
04:15 PM	4	3	0	3	1	0	11
04:30 PM	4	2	0	3	0	1	10
04:45 PM	5	2	0	10	0	0	17
Total	21	8	0	26	2	1	58
05:00 PM	5	0	0	8	1	0	14
05:15 PM	4	2	0	6	0	1	13
05:30 PM	6	1	0	8	2	0	17
05:45 PM	2	1	1	7	1	0	12
Total	17	4	1	29	4	1	56
Grand Total	38	12	1	55	6	2	114
Apprch %	76	24	1.8	98.2	75	25	
Total %	33.3	10.5	0.9	48.2	5.3	1.8	

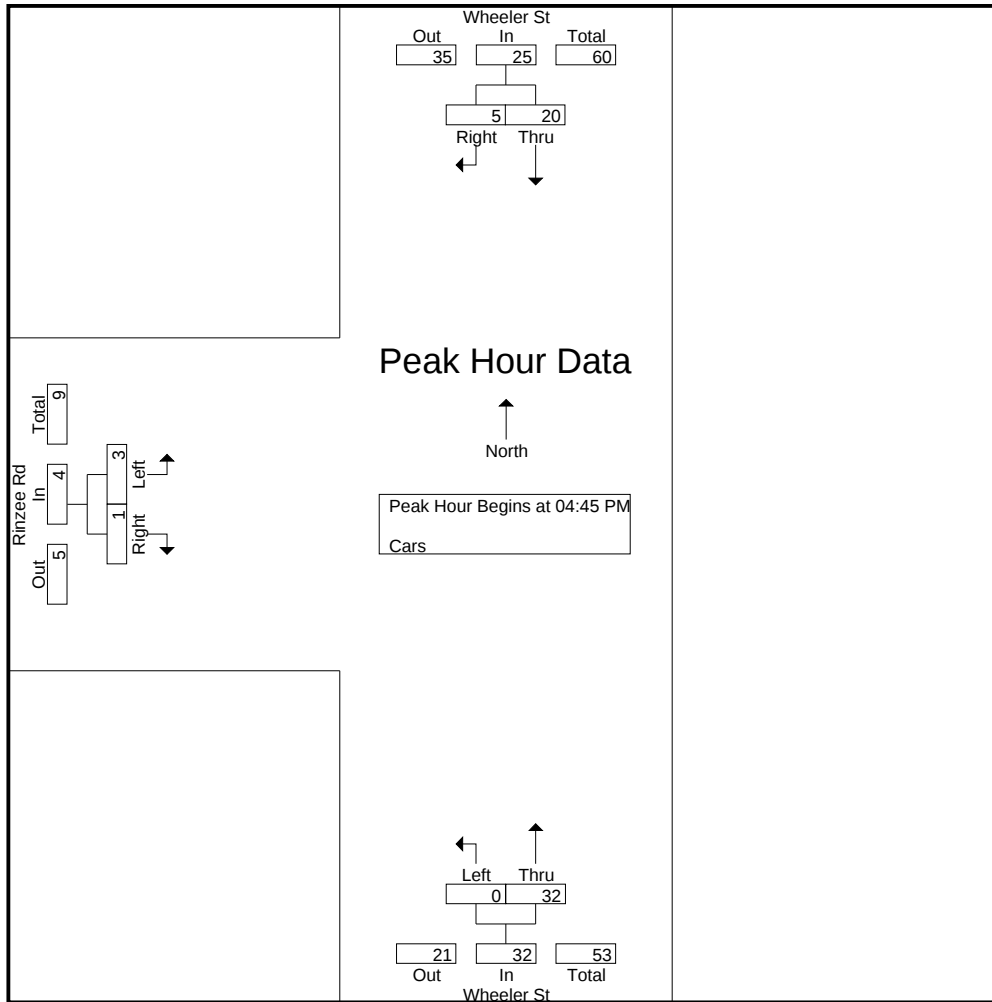
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	5	2	7	0	10	10	0	0	0	17
05:00 PM	5	0	5	0	8	8	1	0	1	14
05:15 PM	4	2	6	0	6	6	0	1	1	13
05:30 PM	6	1	7	0	8	8	2	0	2	17
Total Volume	20	5	25	0	32	32	3	1	4	61
% App. Total	80	20		0	100		75	25		
PHF	.833	.625	.893	.000	.800	.800	.375	.250	.500	.897

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
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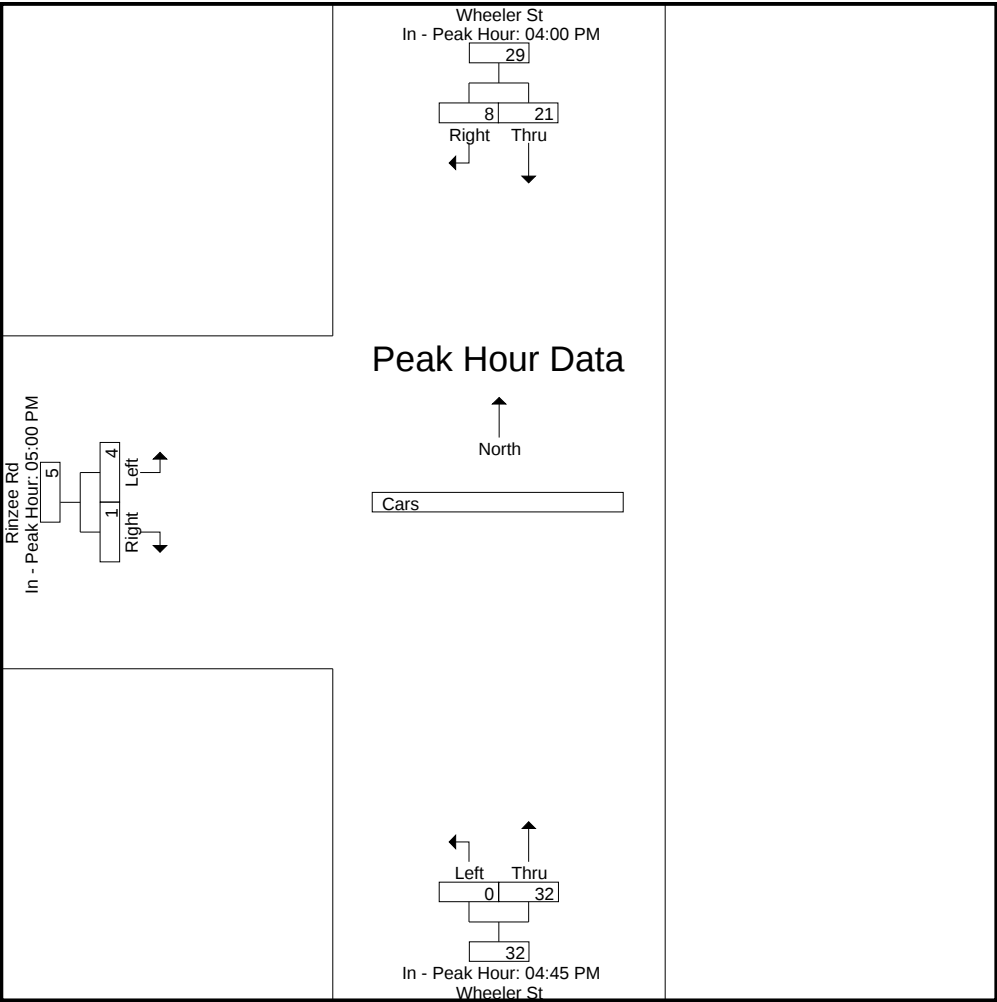
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:45 PM			05:00 PM		
+0 mins.	8	1	9	0	10	10	1	0	1
+15 mins.	4	3	7	0	8	8	0	1	1
+30 mins.	4	2	6	0	6	6	2	0	2
+45 mins.	5	2	7	0	8	8	1	0	1
Total Volume	21	8	29	0	32	32	4	1	5
% App. Total	72.4	27.6		0	100		80	20	
PHF	.656	.667	.806	.000	.800	.800	.500	.250	.625

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 6



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N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 7

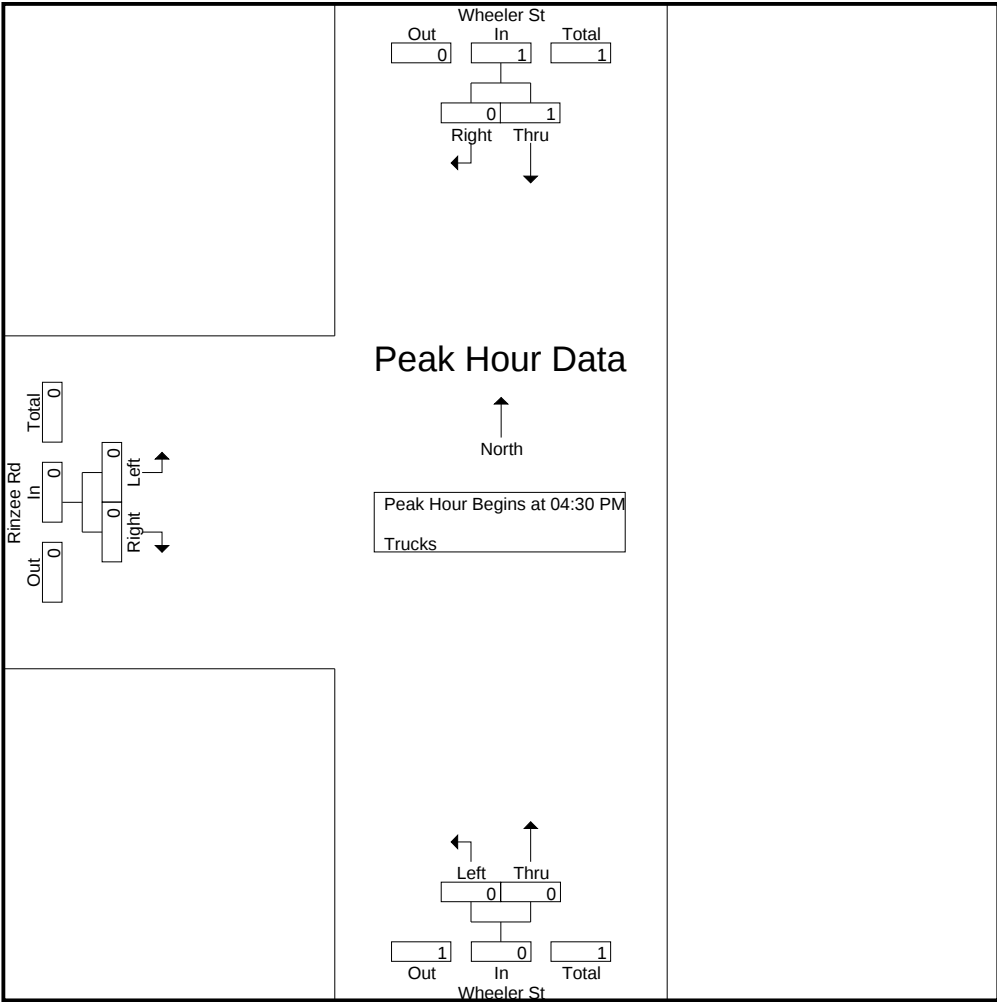
Groups Printed- Trucks

	Wheeler St From North		Wheeler St From South		Rinzee Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0
05:15 PM	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1
Grand Total	1	0	0	0	0	0	1
Apprch %	100	0	0	0	0	0	
Total %	100	0	0	0	0	0	

[illegible]

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 8

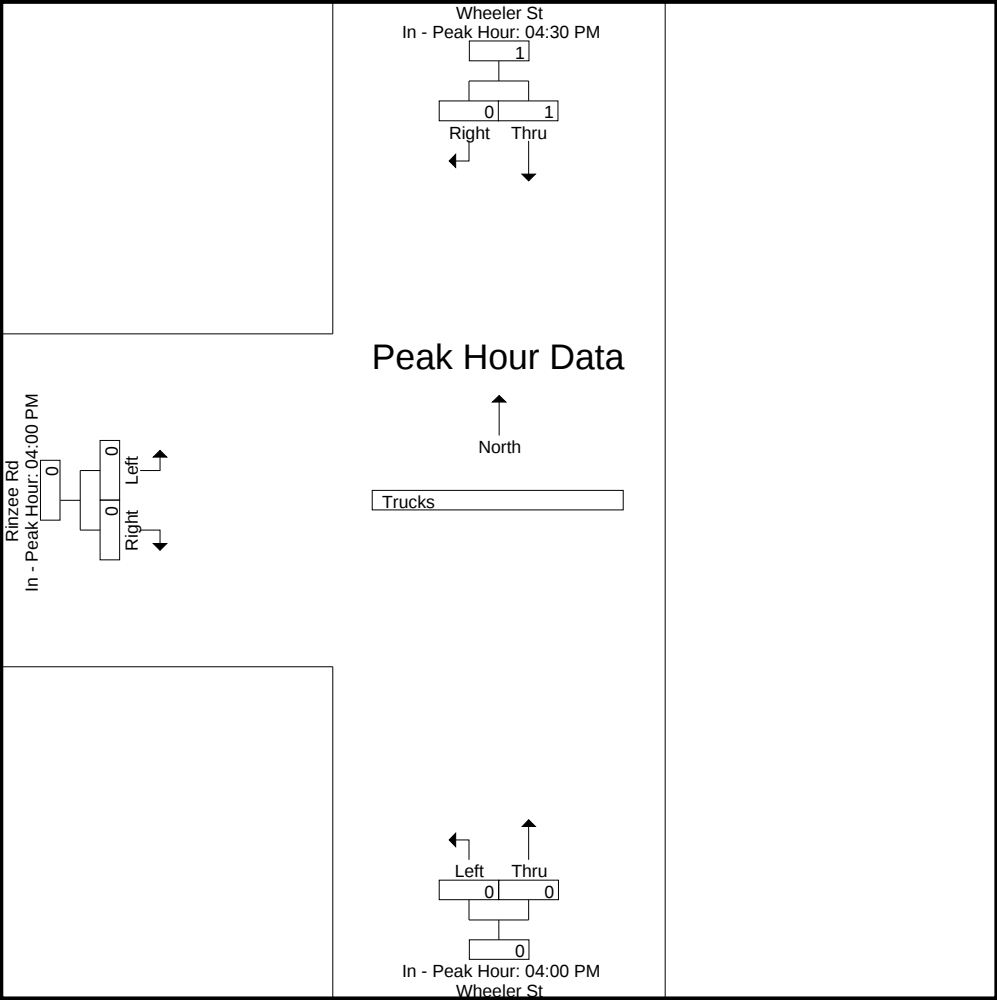


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

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

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 9



978-664-2565

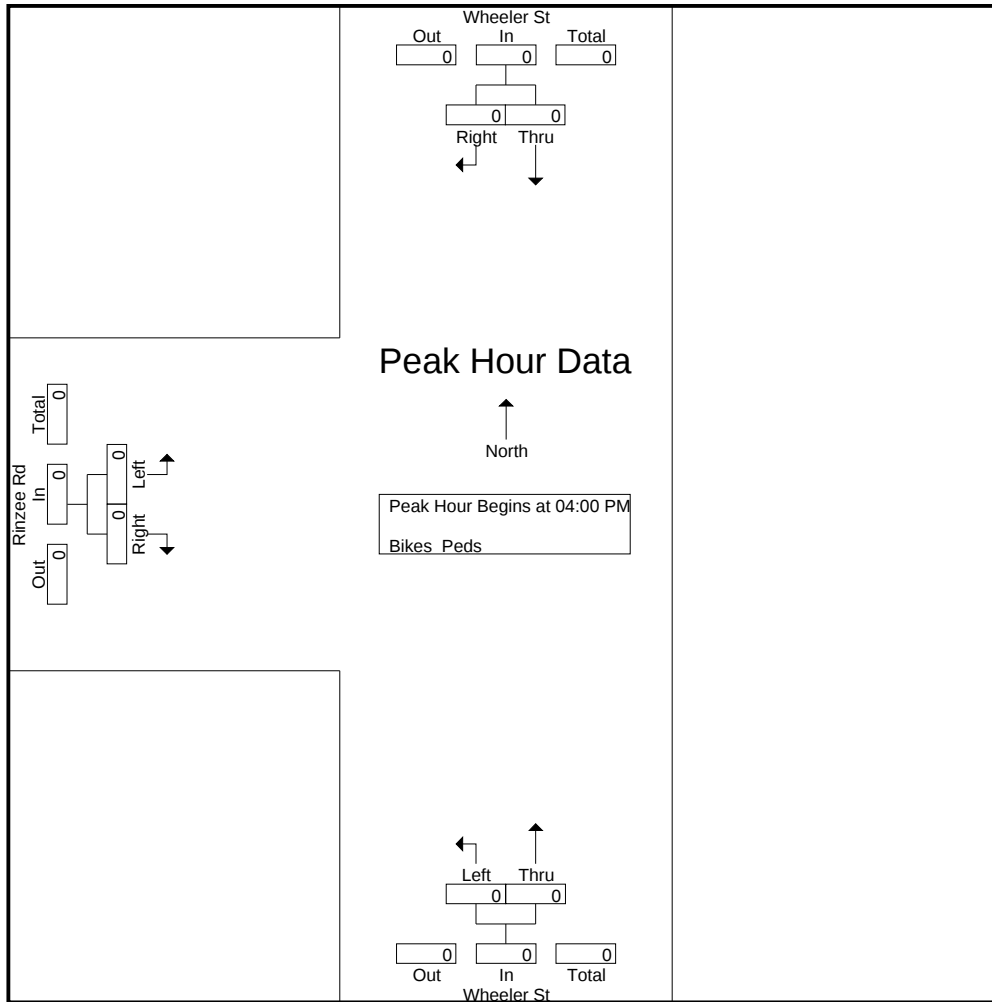
Page No : 10

[illegible][illegible]

978-664-2565

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 11



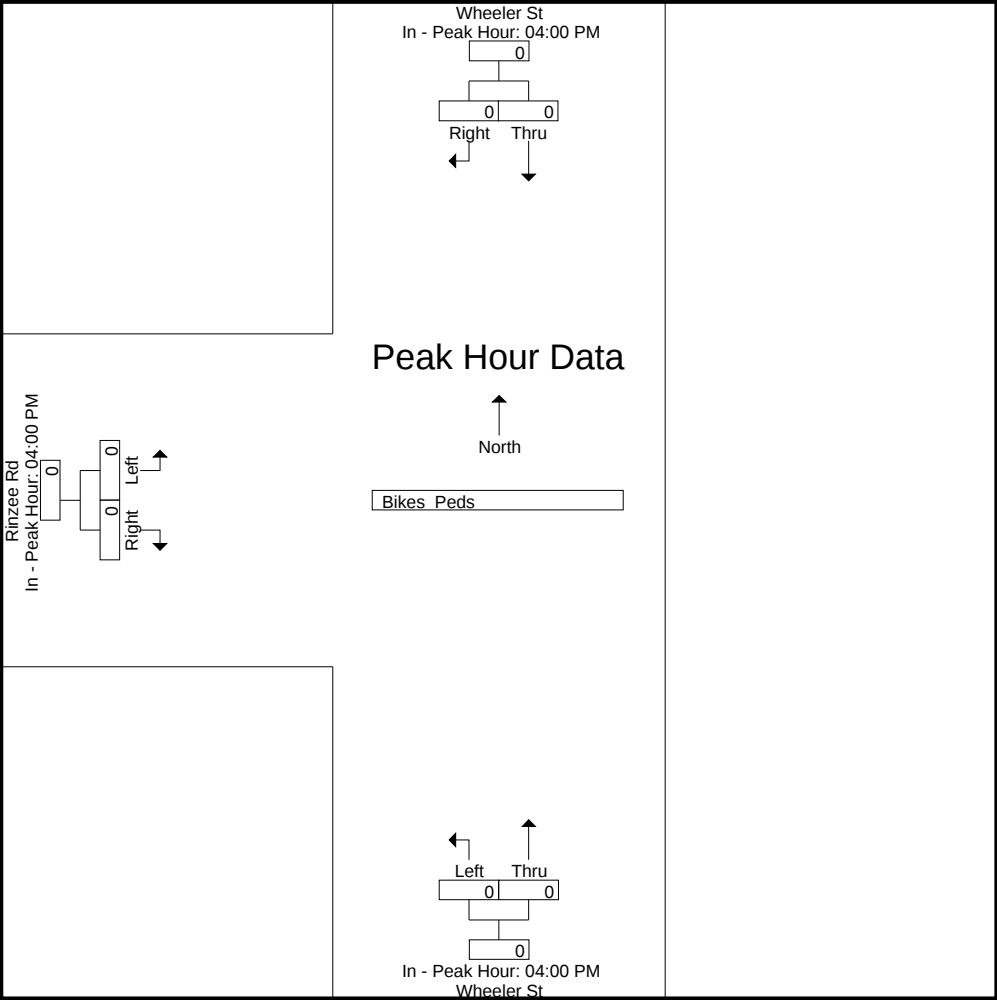
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Rinzee Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430002
Site Code : 76430002
Start Date : 3/7/2023
Page No : 12



978-664-2565

Page No : 1

[illegible]

Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

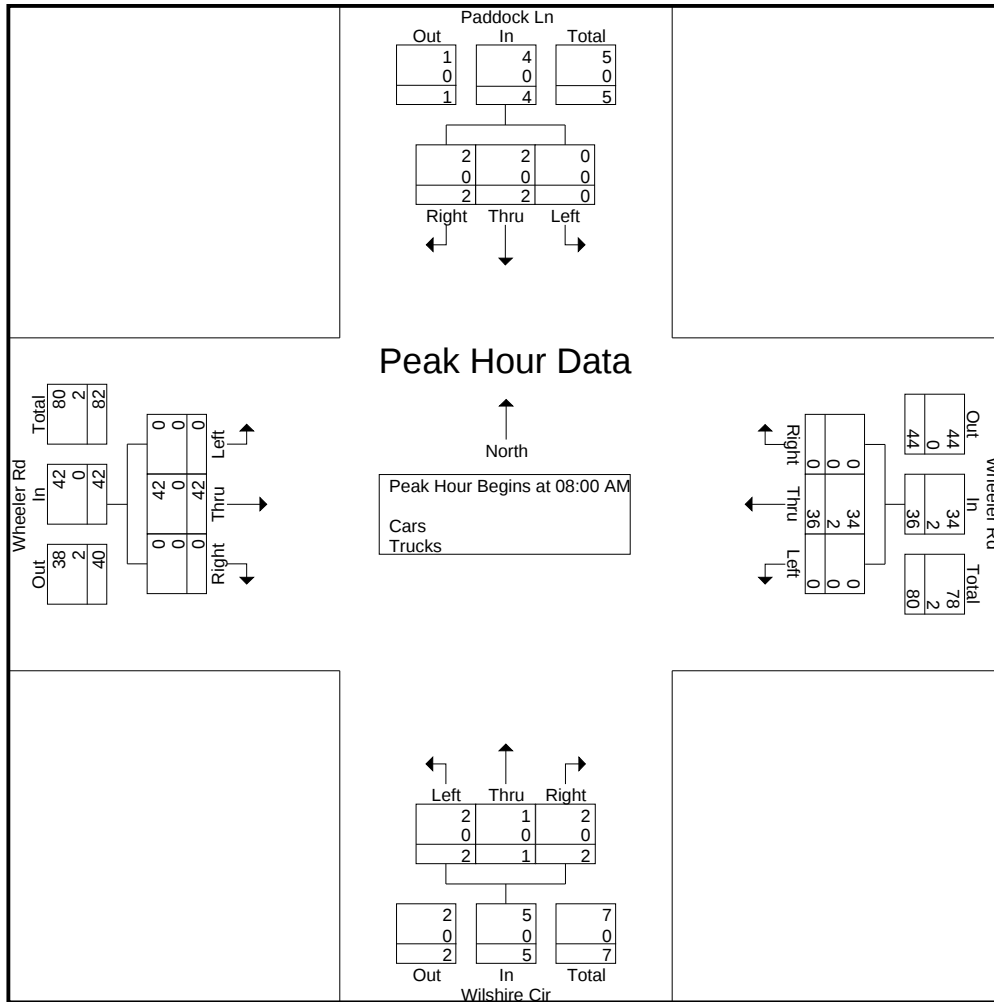
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 2



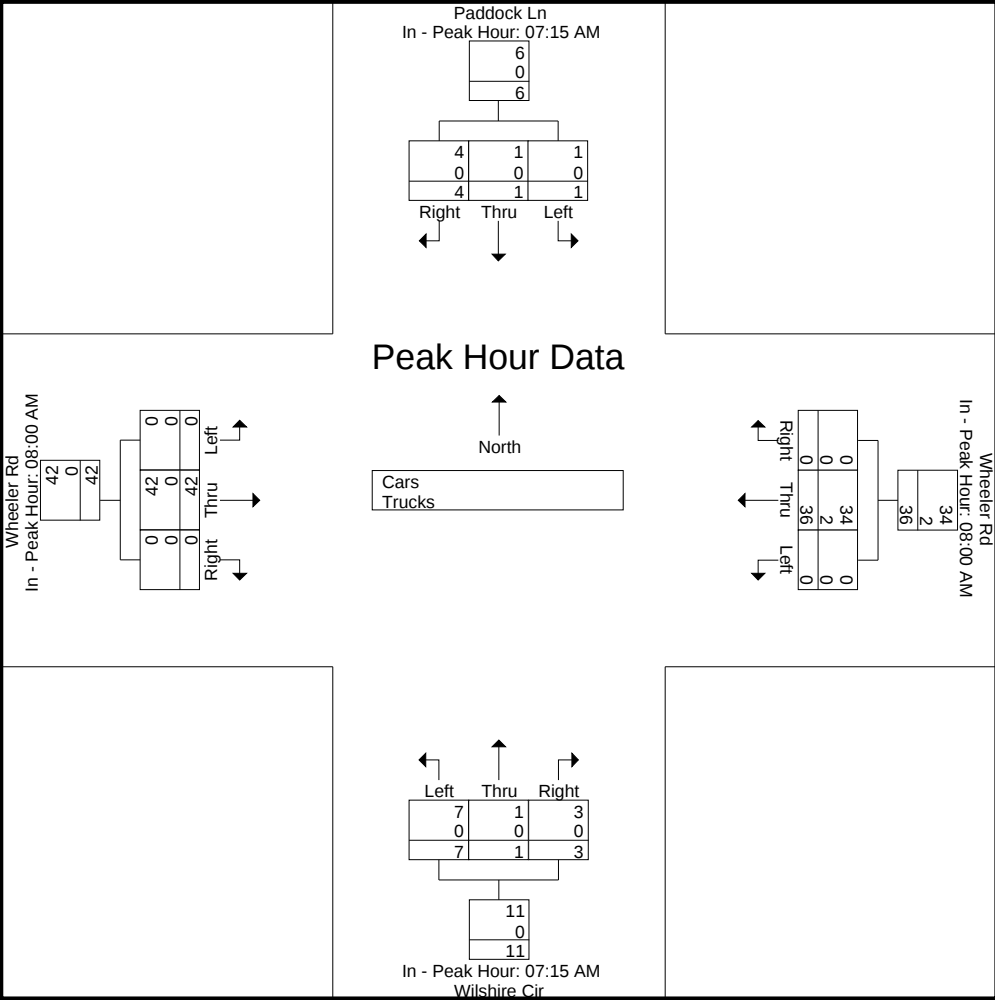
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				07:15 AM				08:00 AM			
+0 mins.	1	0	1	2	0	14	0	14	2	0	1	3	0	12	0	12
+15 mins.	0	0	1	1	0	5	0	5	0	0	1	1	0	11	0	11
+30 mins.	0	0	0	0	0	6	0	6	3	0	0	3	0	8	0	8
+45 mins.	0	1	2	3	0	11	0	11	2	1	1	4	0	11	0	11
Total Volume	1	1	4	6	0	36	0	36	7	1	3	11	0	42	0	42
% App. Total	16.7	16.7	66.7		0	100	0		63.6	9.1	27.3		0	100	0	
PHF	.250	.250	.500	.500	.000	.643	.000	.643	.583	.250	.750	.688	.000	.875	.000	.875
Cars	1	1	4	6	0	34	0	34	7	1	3	11	0	42	0	42
% Cars	100	100	100	100	0	94.4	0	94.4	100	100	100	100	0	100	0	100
Trucks	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	5.6	0	5.6	0	0	0	0	0	0	0	0

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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Groups Printed- Cars

	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	0	10	0	0	0	1	0	7	0	18
07:15 AM	1	0	1	0	4	0	2	0	1	0	7	1	17
07:30 AM	0	0	1	0	7	0	0	0	1	0	9	0	18
07:45 AM	0	0	0	0	7	0	3	0	0	0	6	0	16
Total	1	0	2	0	28	0	5	0	3	0	29	1	69
08:00 AM	0	1	2	0	13	0	2	1	1	0	12	0	32
08:15 AM	0	0	0	0	5	0	0	0	0	0	11	0	16
08:30 AM	0	1	0	0	6	0	0	0	1	0	8	0	16
08:45 AM	0	0	0	0	10	0	0	0	0	0	11	0	21
Total	0	2	2	0	34	0	2	1	2	0	42	0	85
Grand Total	1	2	4	0	62	0	7	1	5	0	71	1	154
Apprch %	14.3	28.6	57.1	0	100	0	53.8	7.7	38.5	0	98.6	1.4	
Total %	0.6	1.3	2.6	0	40.3	0	4.5	0.6	3.2	0	46.1	0.6	

	Paddock Ln From North				Wheeler Rd From East				Wilshire Cir From South				Wheeler Rd From West				Int. Total
Start Time	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	1	2	3	0	13	0	13	2	1	1	4	0	12	0	12	32
08:15 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	11	0	11	16
08:30 AM	0	1	0	1	0	6	0	6	0	0	1	1	0	8	0	8	16
08:45 AM	0	0	0	0	0	10	0	10	0	0	0	0	0	11	0	11	21
Total Volume	0	2	2	4	0	34	0	34	2	1	2	5	0	42	0	42	85
% App. Total	0	50	50		0	100	0		40	20	40		0	100	0		
PHF	.000	.500	.250	.333	.000	.654	.000	.654	.250	.250	.500	.313	.000	.875	.000	.875	.664

Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

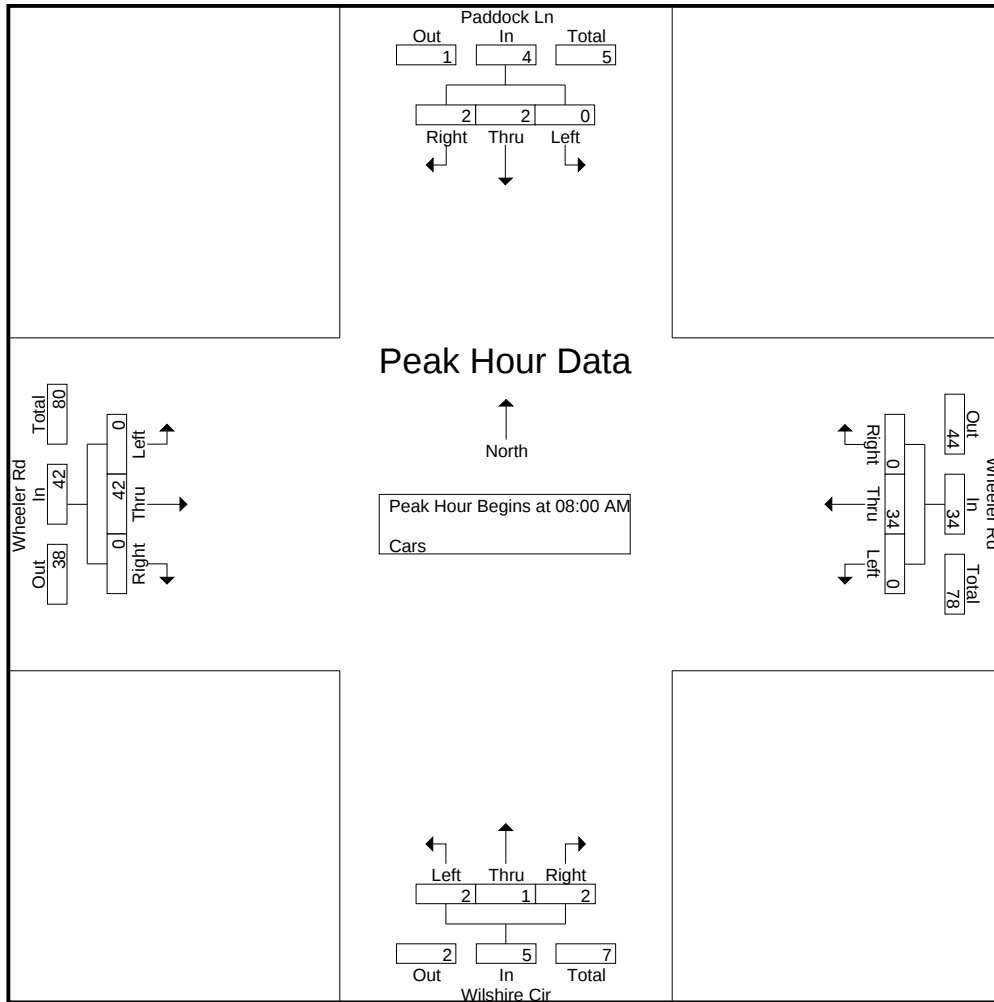
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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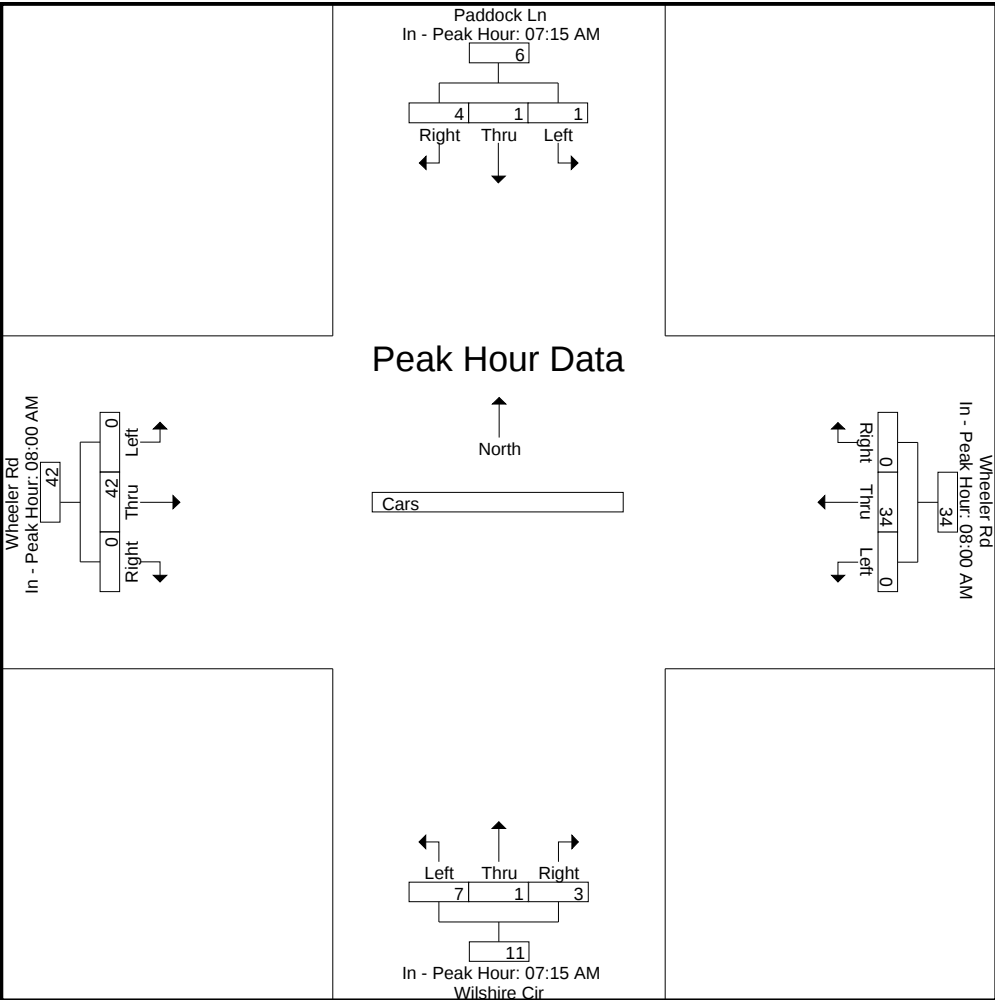
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				07:15 AM				08:00 AM			
+0 mins.	1	0	1	2	0	13	0	13	2	0	1	3	0	12	0	12
+15 mins.	0	0	1	1	0	5	0	5	0	0	1	1	0	11	0	11
+30 mins.	0	0	0	0	0	6	0	6	3	0	0	3	0	8	0	8
+45 mins.	0	1	2	3	0	10	0	10	2	1	1	4	0	11	0	11
Total Volume	1	1	4	6	0	34	0	34	7	1	3	11	0	42	0	42
% App. Total	16.7	16.7	66.7		0	100	0		63.6	9.1	27.3		0	100	0	
PHF	.250	.250	.500	.500	.000	.654	.000	.654	.583	.250	.750	.688	.000	.875	.000	.875

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
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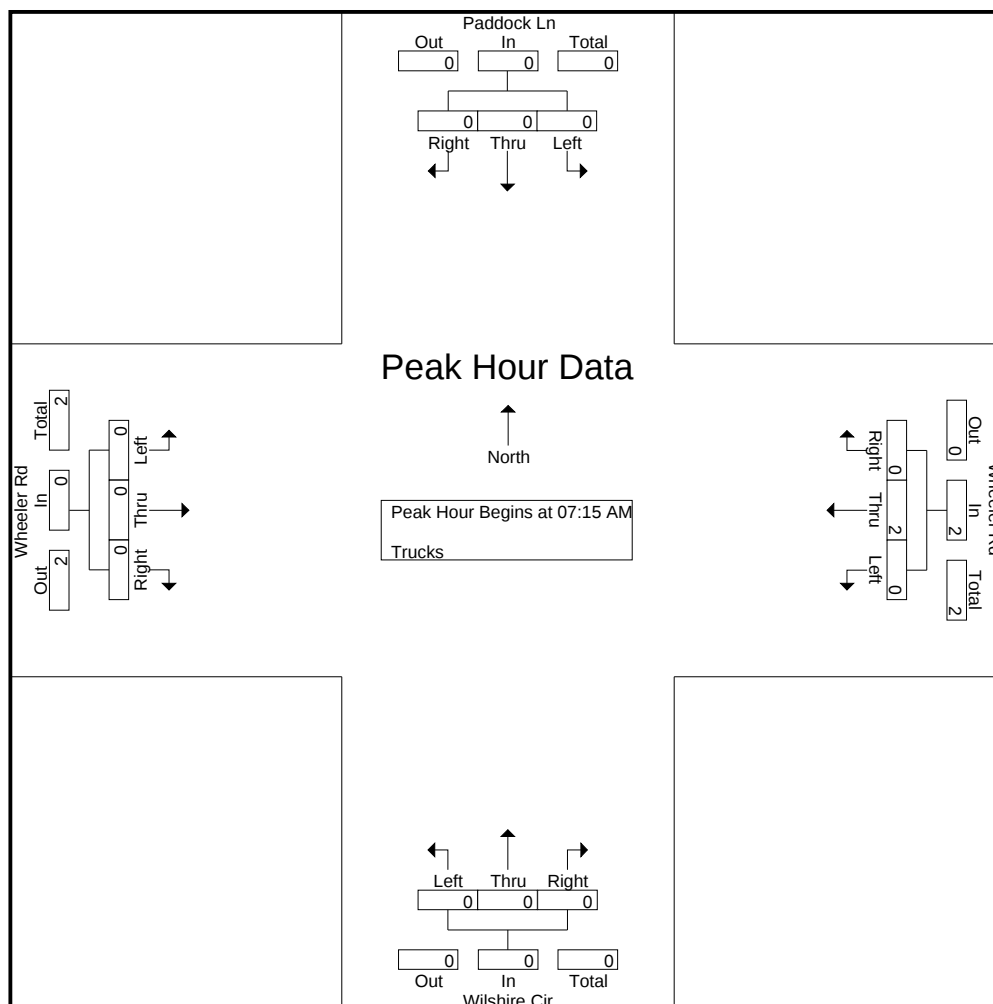
	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	3	0	0	0	0	0	0	0	3
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	

[illegible]

978-664-2565

Weather : Clear

Page No : 8

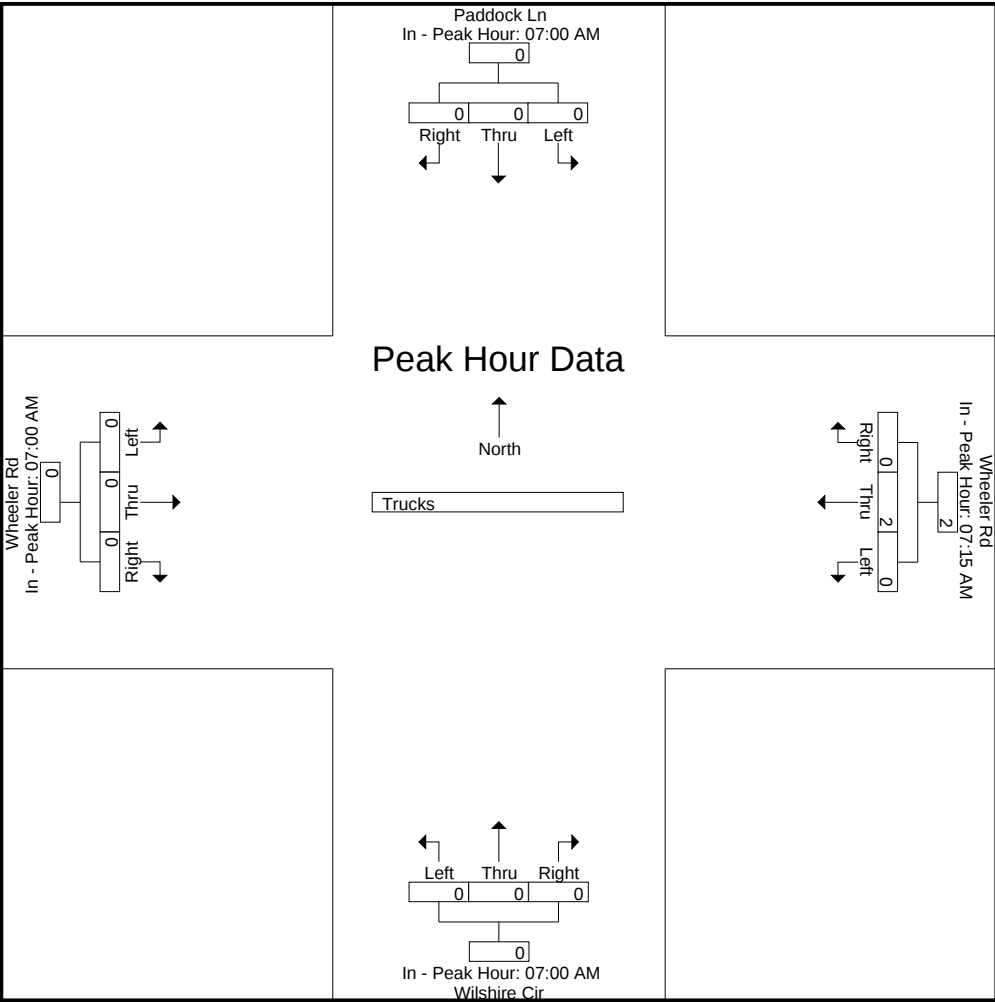


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	07:00 AM				07:15 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
+45 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
Page No : 9



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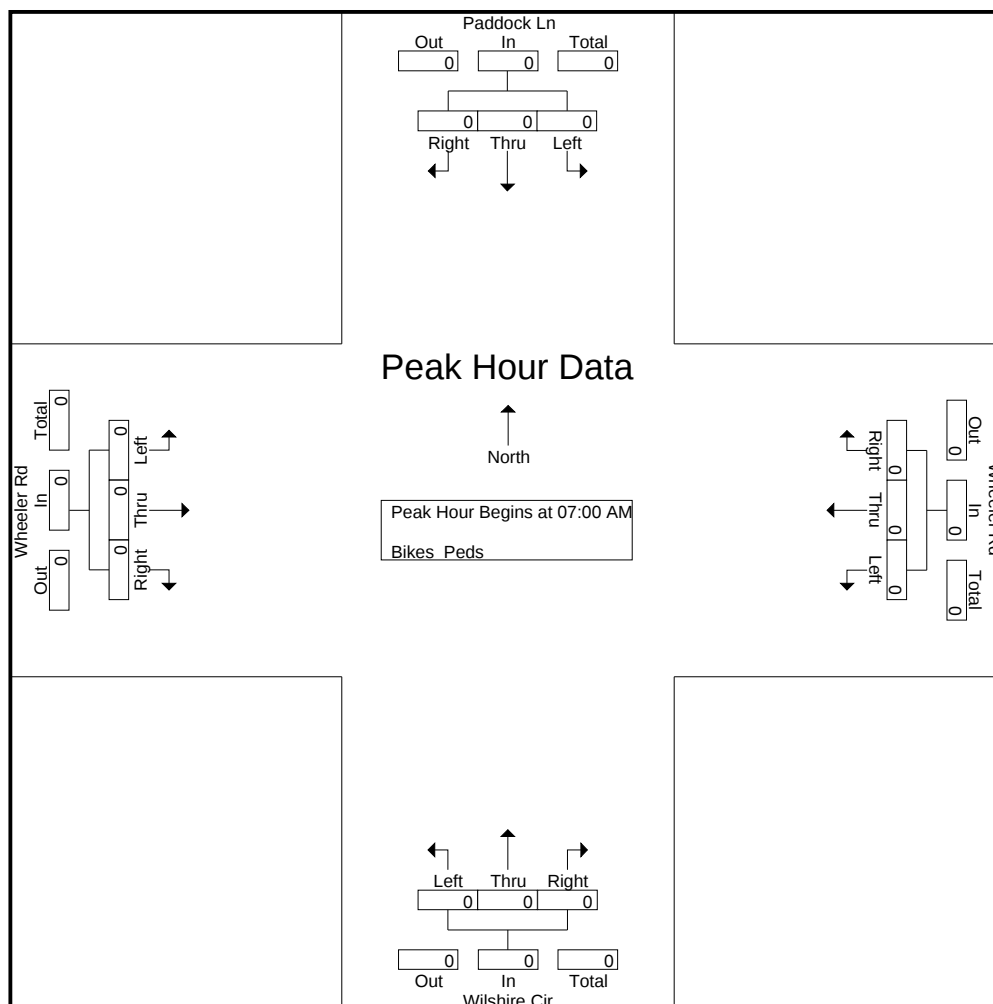
Page No : 10

[illegible][illegible]

978-664-2565

Weather : Clear

Page No : 11

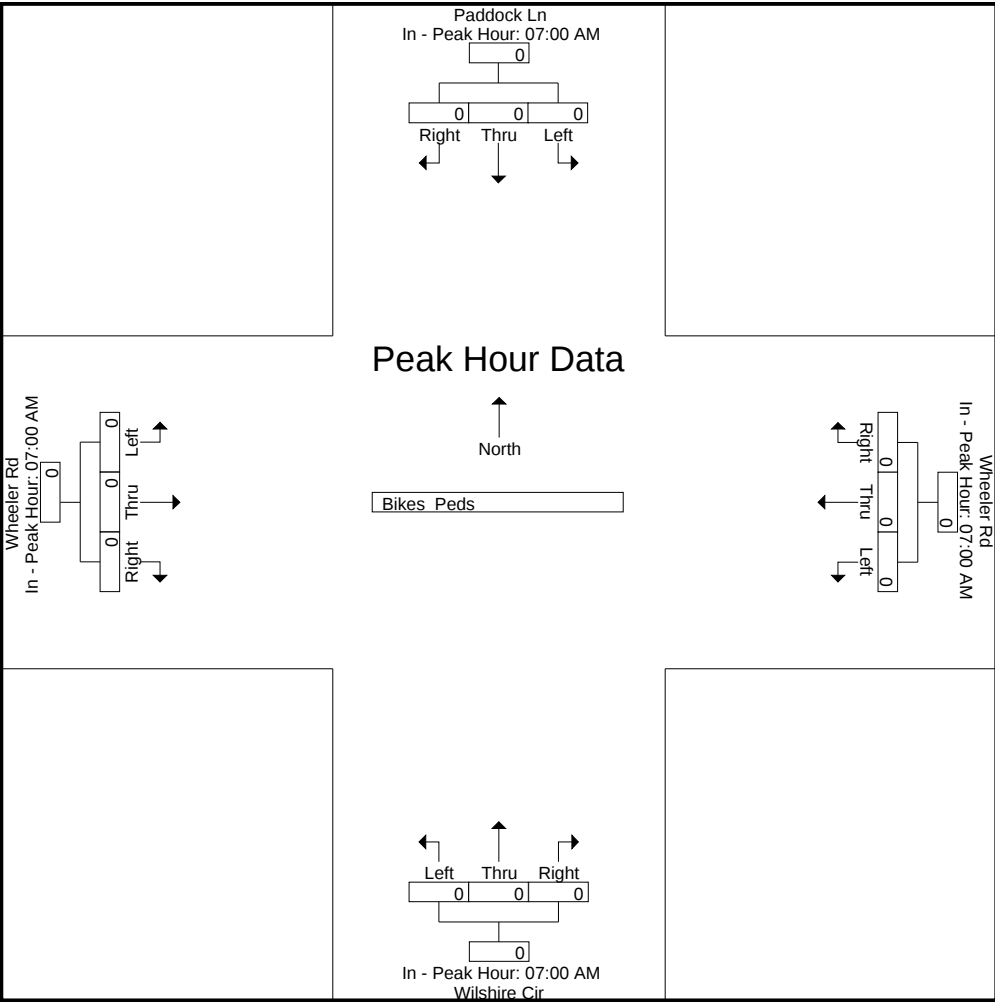


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 1

Groups Printed- Cars - Trucks

	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	0	0	0	0	13	0	0	0	0	2	22	1	38
04:15 PM	0	0	0	1	26	1	0	0	0	1	19	0	48
04:30 PM	0	0	0	2	14	0	2	0	0	1	6	1	26
04:45 PM	0	0	0	1	9	0	1	0	0	0	18	3	32
Total	0	0	0	4	62	1	3	0	0	4	65	5	144
05:00 PM	0	0	0	1	14	0	1	0	0	0	10	2	28
05:15 PM	0	0	0	1	20	0	0	0	0	1	8	3	33
05:30 PM	0	0	0	0	19	0	1	0	0	0	10	1	31
05:45 PM	0	0	0	0	20	1	0	0	1	2	9	3	36
Total	0	0	0	2	73	1	2	0	1	3	37	9	128
Grand Total	0	0	0	6	135	2	5	0	1	7	102	14	272
Apprch %	0	0	0	4.2	94.4	1.4	83.3	0	16.7	5.7	82.9	11.4	
Total %	0	0	0	2.2	49.6	0.7	1.8	0	0.4	2.6	37.5	5.1	
Cars	0	0	0	6	135	2	5	0	1	6	102	14	271
% Cars	0	0	0	100	100	100	100	0	100	85.7	100	100	99.6
Trucks	0	0	0	0	0	0	0	0	0	1	0	0	1
% Trucks	0	0	0	0	0	0	0	0	0	14.3	0	0	0.4

	Paddock Ln From North				Wheeler Rd From East				Wilshire Cir From South				Wheeler Rd From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	13	0	13	0	0	0	0	2	22	1	25	38
04:15 PM	0	0	0	0	1	26	1	28	0	0	0	0	1	19	0	20	48
04:30 PM	0	0	0	0	2	14	0	16	2	0	0	2	1	6	1	8	26
04:45 PM	0	0	0	0	1	9	0	10	1	0	0	1	0	18	3	21	32
Total Volume	0	0	0	0	4	62	1	67	3	0	0	3	4	65	5	74	144
% App. Total	0	0	0		6	92.5	1.5		100	0	0		5.4	87.8	6.8		
PHF	.000	.000	.000	.000	.500	.596	.250	.598	.375	.000	.000	.375	.500	.739	.417	.740	.750
Cars	0	0	0	0	4	62	1	67	3	0	0	3	3	65	5	73	143
% Cars	0	0	0	0	100	100	100	100	100	0	0	100	75.0	100	100	98.6	99.3
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	25.0	0	0	1.4	0.7

Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

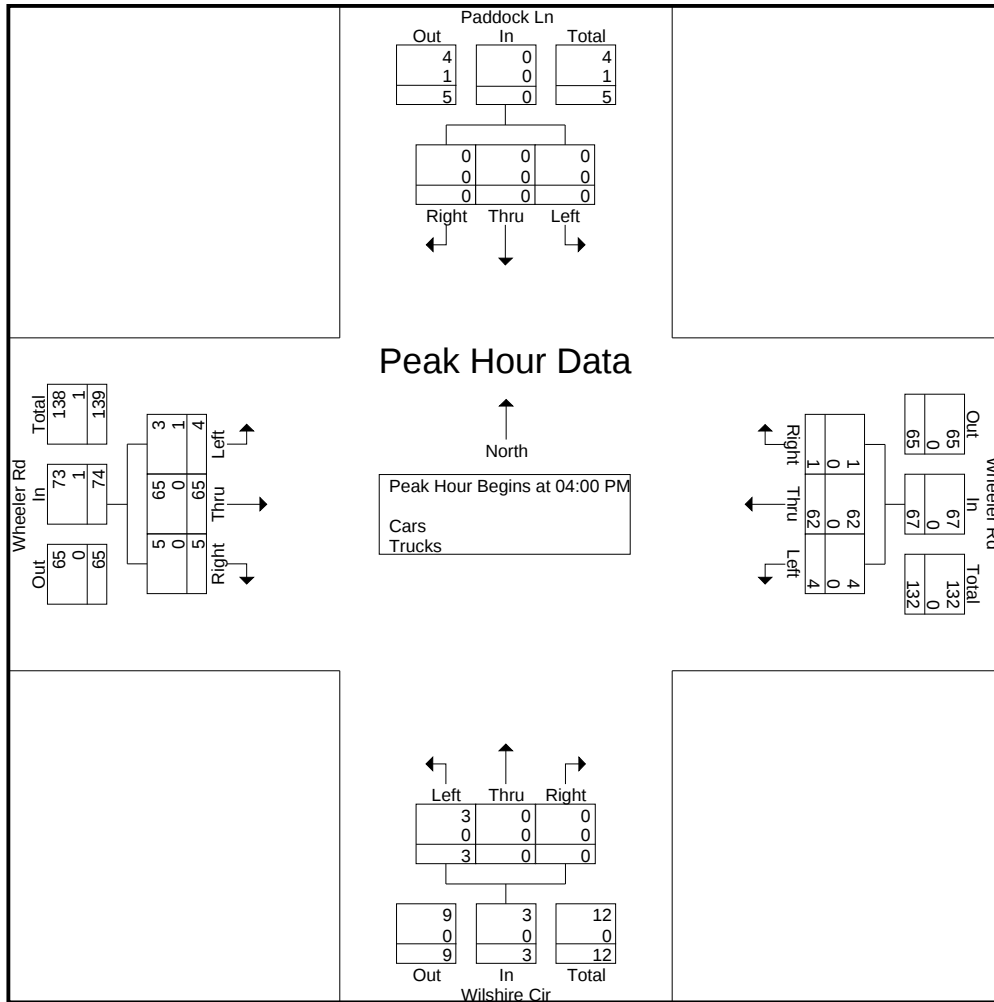
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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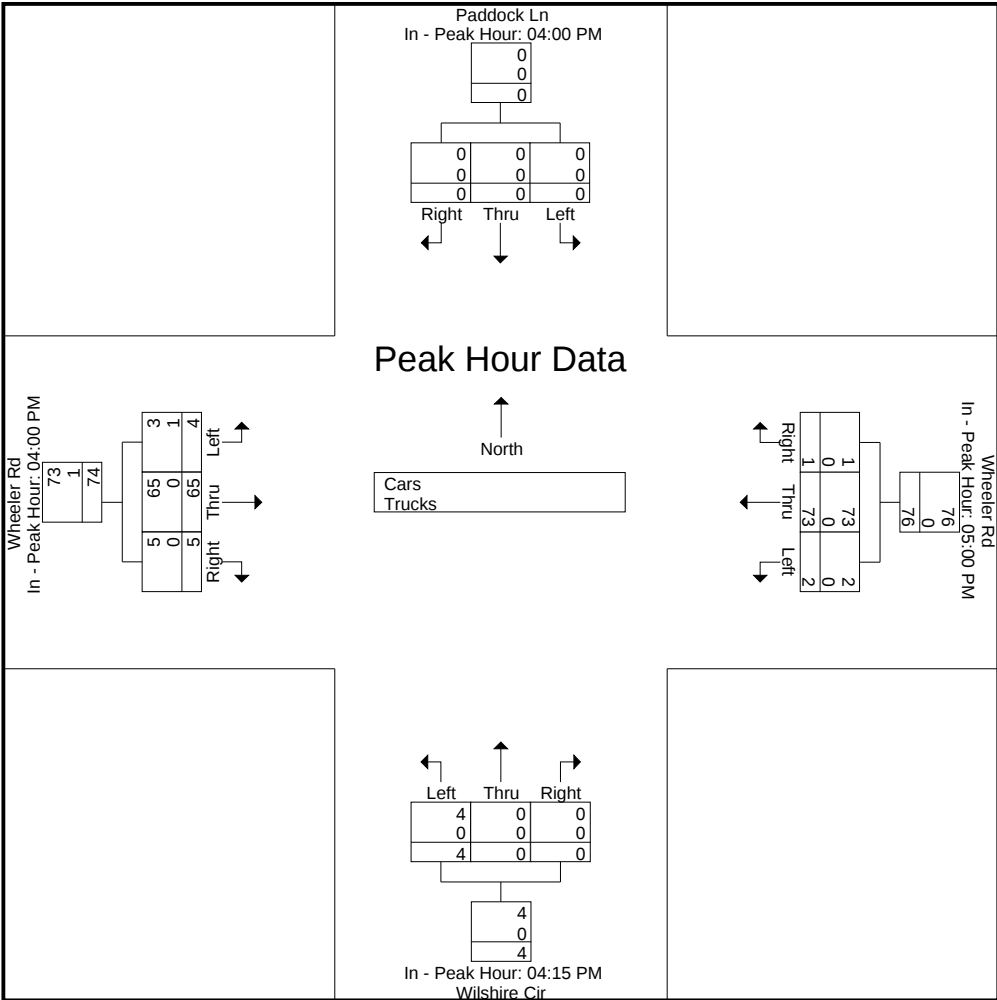
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:15 PM				04:00 PM			
+0 mins.	0	0	0	0	1	14	0	15	0	0	0	0	2	22	1	25
+15 mins.	0	0	0	0	1	20	0	21	2	0	0	2	1	19	0	20
+30 mins.	0	0	0	0	0	19	0	19	1	0	0	1	1	6	1	8
+45 mins.	0	0	0	0	0	20	1	21	1	0	0	1	0	18	3	21
Total Volume	0	0	0	0	2	73	1	76	4	0	0	4	4	65	5	74
% App. Total	0	0	0	0	2.6	96.1	1.3		100	0	0		5.4	87.8	6.8	
PHF	.000	.000	.000	.000	.500	.913	.250	.905	.500	.000	.000	.500	.500	.739	.417	.740
Cars	0	0	0	0	2	73	1	76	4	0	0	4	3	65	5	73
% Cars	0	0	0	0	100	100	100	100	100	0	0	100	75	100	100	98.6
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	1.4

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	13	0	0	0	0	2	22	1	38
04:15 PM	0	0	0	1	26	1	0	0	0	0	19	0	47
04:30 PM	0	0	0	2	14	0	2	0	0	1	6	1	26
04:45 PM	0	0	0	1	9	0	1	0	0	0	18	3	32
Total	0	0	0	4	62	1	3	0	0	3	65	5	143
05:00 PM	0	0	0	1	14	0	1	0	0	0	10	2	28
05:15 PM	0	0	0	1	20	0	0	0	0	1	8	3	33
05:30 PM	0	0	0	0	19	0	1	0	0	0	10	1	31
05:45 PM	0	0	0	0	20	1	0	0	1	2	9	3	36
Total	0	0	0	2	73	1	2	0	1	3	37	9	128
Grand Total	0	0	0	6	135	2	5	0	1	6	102	14	271
Apprch %	0	0	0	4.2	94.4	1.4	83.3	0	16.7	4.9	83.6	11.5	
Total %	0	0	0	2.2	49.8	0.7	1.8	0	0.4	2.2	37.6	5.2	

	Paddock Ln From North				Wheeler Rd From East				Wilshire Cir From South				Wheeler Rd From West				Int. Total
Start Time	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	13	0	13	0	0	0	0	2	22	1	25	38
04:15 PM	0	0	0	0	1	26	1	28	0	0	0	0	0	19	0	19	47
04:30 PM	0	0	0	0	2	14	0	16	2	0	0	2	1	6	1	8	26
04:45 PM	0	0	0	0	1	9	0	10	1	0	0	1	0	18	3	21	32
Total Volume	0	0	0	0	4	62	1	67	3	0	0	3	3	65	5	73	143
% App. Total	0	0	0		6	92.5	1.5		100	0	0		4.1	89	6.8		
PHF	.000	.000	.000	.000	.500	.596	.250	.598	.375	.000	.000	.375	.375	.739	.417	.730	.761

Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

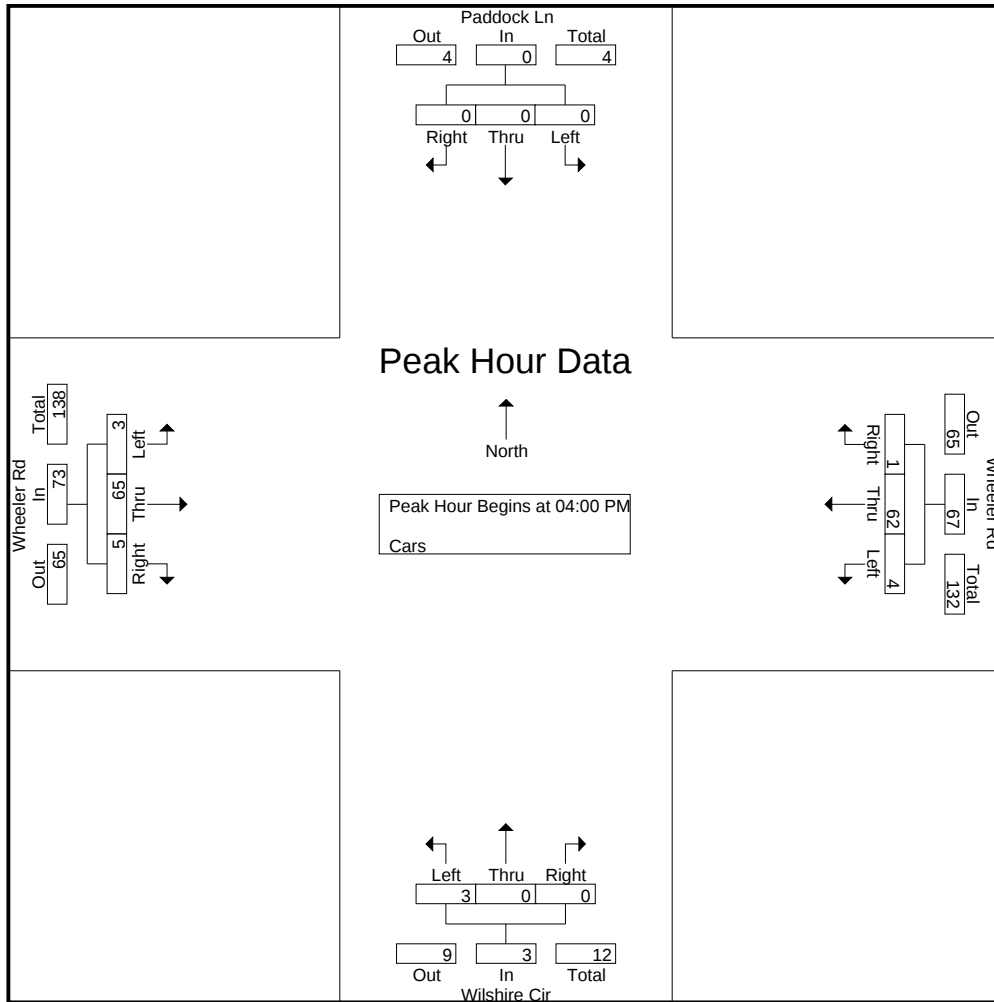
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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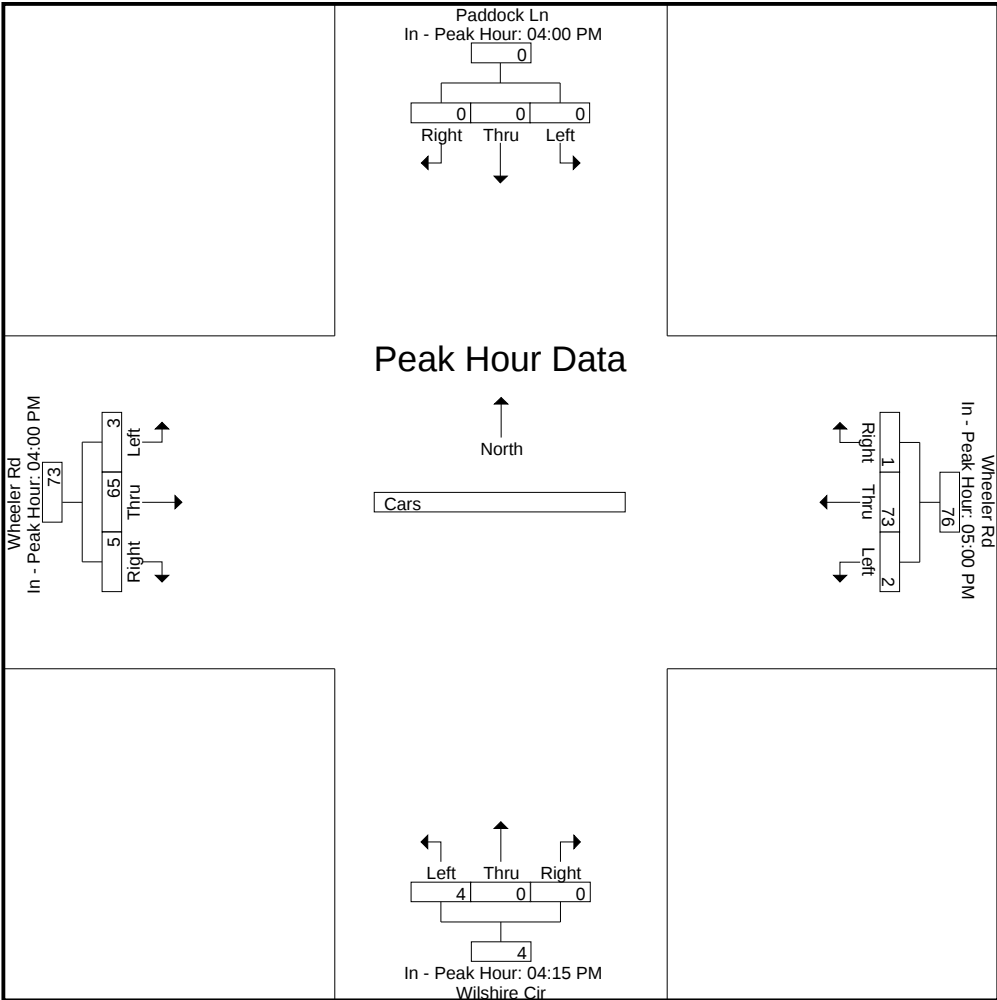
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				05:00 PM				04:15 PM				04:00 PM			
+0 mins.	0	0	0	0	1	14	0	15	0	0	0	0	2	22	1	25
+15 mins.	0	0	0	0	1	20	0	21	2	0	0	2	0	19	0	19
+30 mins.	0	0	0	0	0	19	0	19	1	0	0	1	1	6	1	8
+45 mins.	0	0	0	0	0	20	1	21	1	0	0	1	0	18	3	21
Total Volume	0	0	0	0	2	73	1	76	4	0	0	4	3	65	5	73
% App. Total	0	0	0	0	2.6	96.1	1.3		100	0	0		4.1	89	6.8	
PHF	.000	.000	.000	.000	.500	.913	.250	.905	.500	.000	.000	.500	.375	.739	.417	.730

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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Groups Printed- Trucks

	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	0	1
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	1	0	0	1
Apprch %	0	0	0	0	0	0	0	0	0	100	0	0	
Total %	0	0	0	0	0	0	0	0	0	100	0	0	

	Paddock Ln From North				Wheeler Rd From East				Wilshire Cir From South				Wheeler Rd From West				Int. Total
Start Time	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	0	0	0	0	0	0	0	1	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
% App. Total	0	0	0		0	0	0		0	0	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Accurate Counts

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

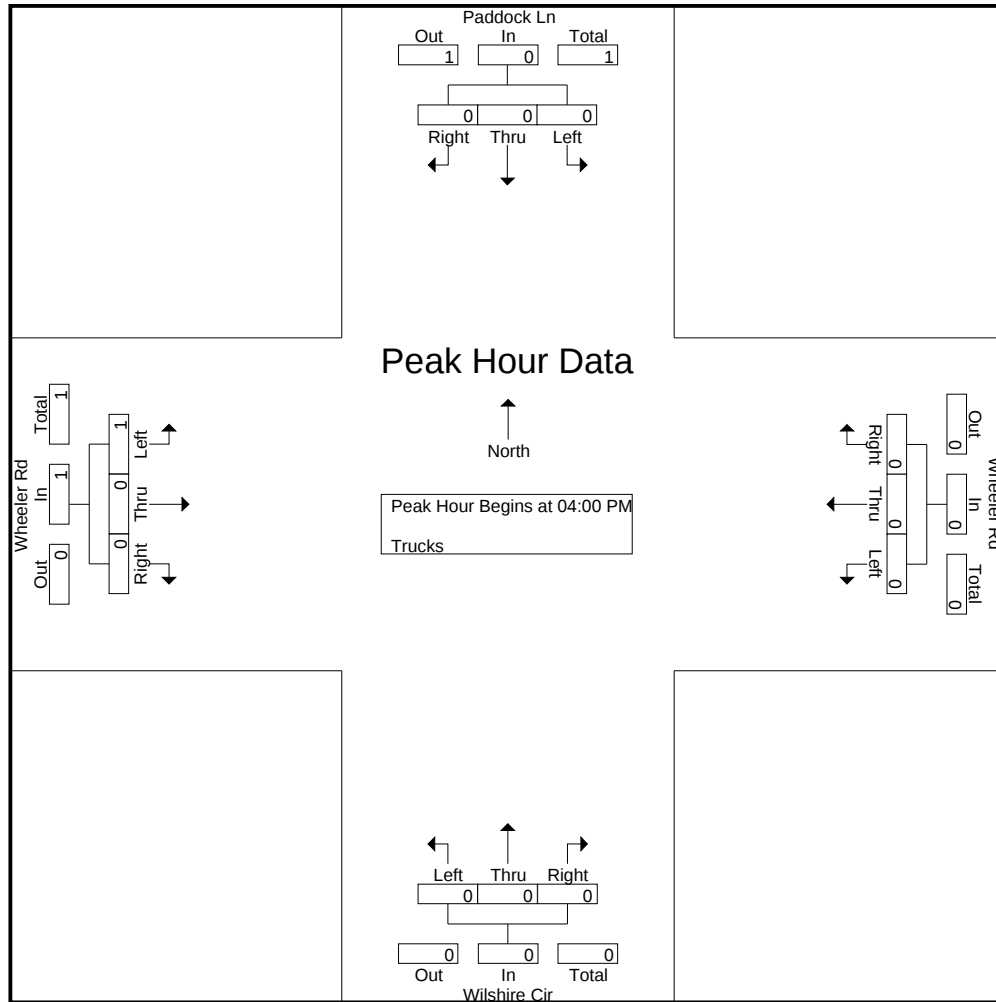
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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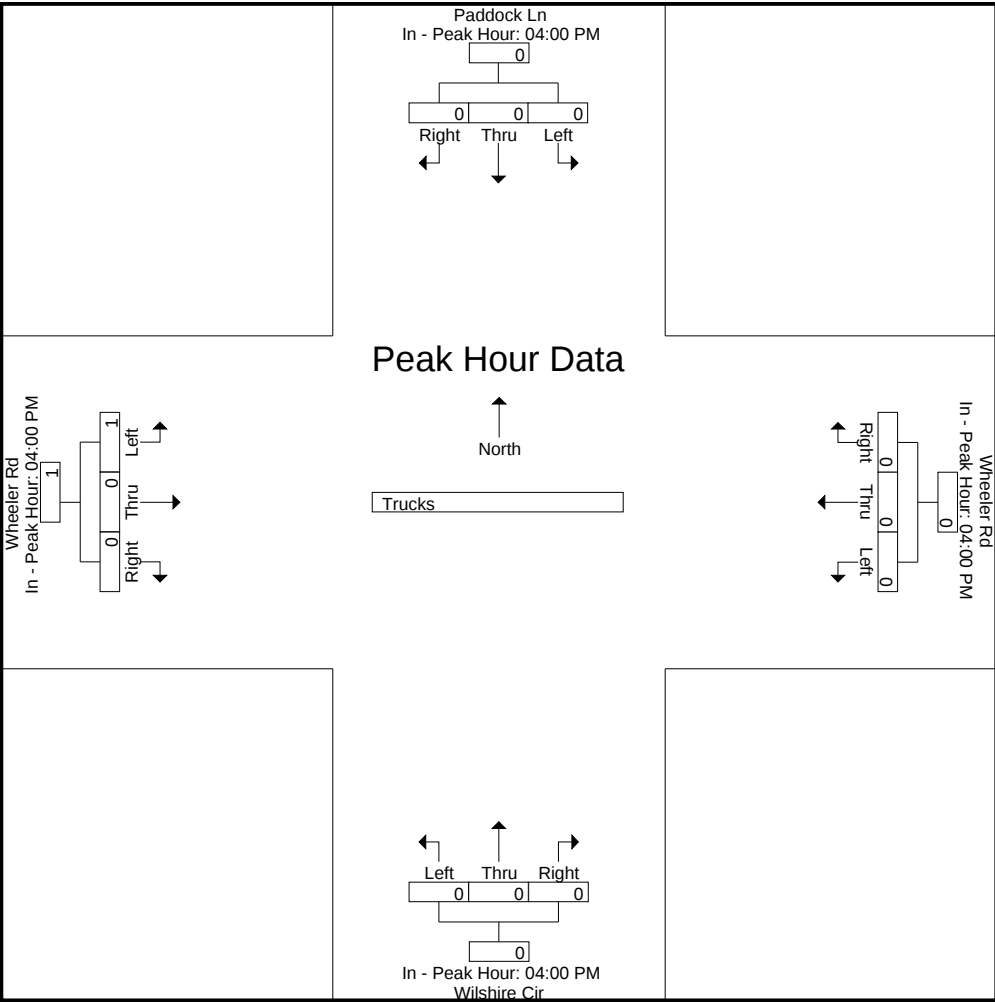
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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

N/S Street : Paddock Ln / Wilshire Cir
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
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[illegible][illegible]

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

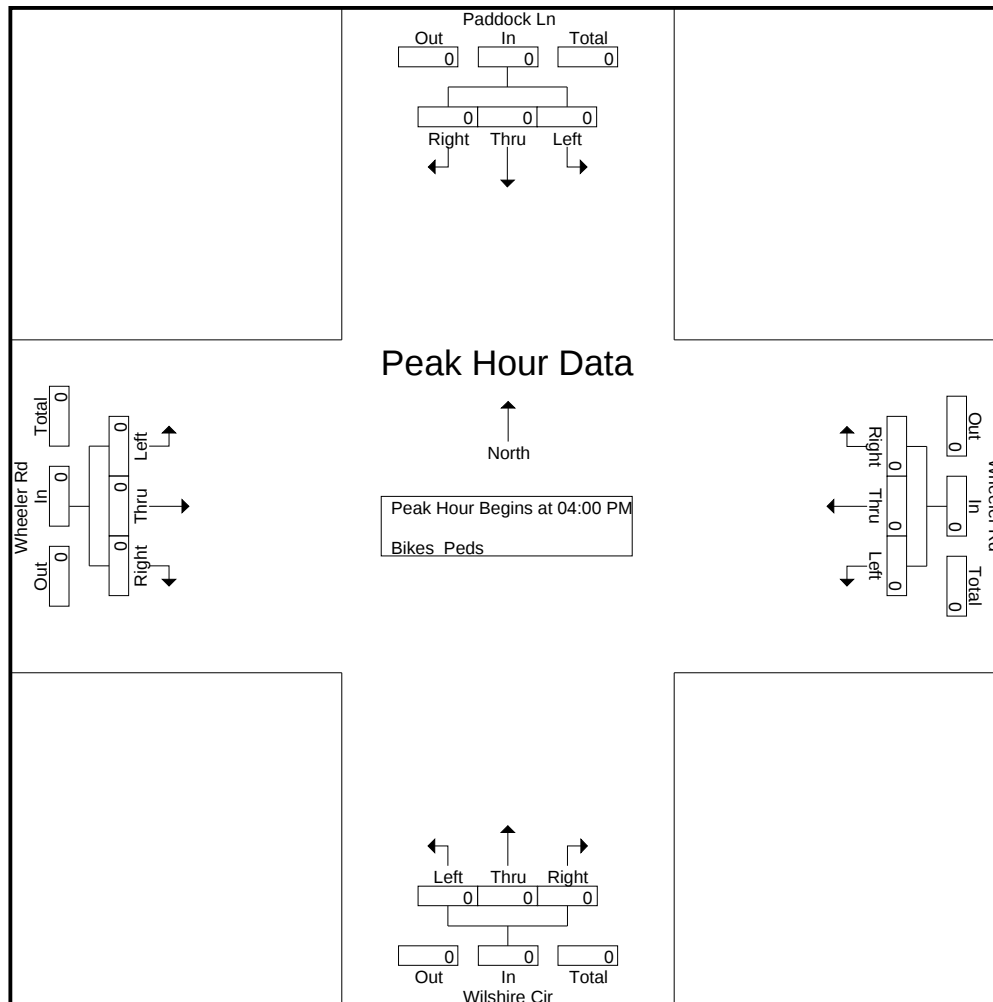
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

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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:

[illegible]

Accurate Counts

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N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

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Groups Printed- Cars - Trucks

	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	10	1	1	8	0	20
07:15 AM	0	2	1	2	8	0	13
07:30 AM	0	6	0	0	11	0	17
07:45 AM	0	7	0	1	6	0	14
Total	0	25	2	4	33	0	64
08:00 AM	2	13	1	0	14	0	30
08:15 AM	1	5	0	0	11	0	17
08:30 AM	1	5	1	0	9	0	16
08:45 AM	0	11	0	0	10	1	22
Total	4	34	2	0	44	1	85
Grand Total	4	59	4	4	77	1	149
Apprch %	6.3	93.7	50	50	98.7	1.3	
Total %	2.7	39.6	2.7	2.7	51.7	0.7	
Cars	4	56	4	4	77	1	146
% Cars	100	94.9	100	100	100	100	98
Trucks	0	3	0	0	0	0	3
% Trucks	0	5.1	0	0	0	0	2

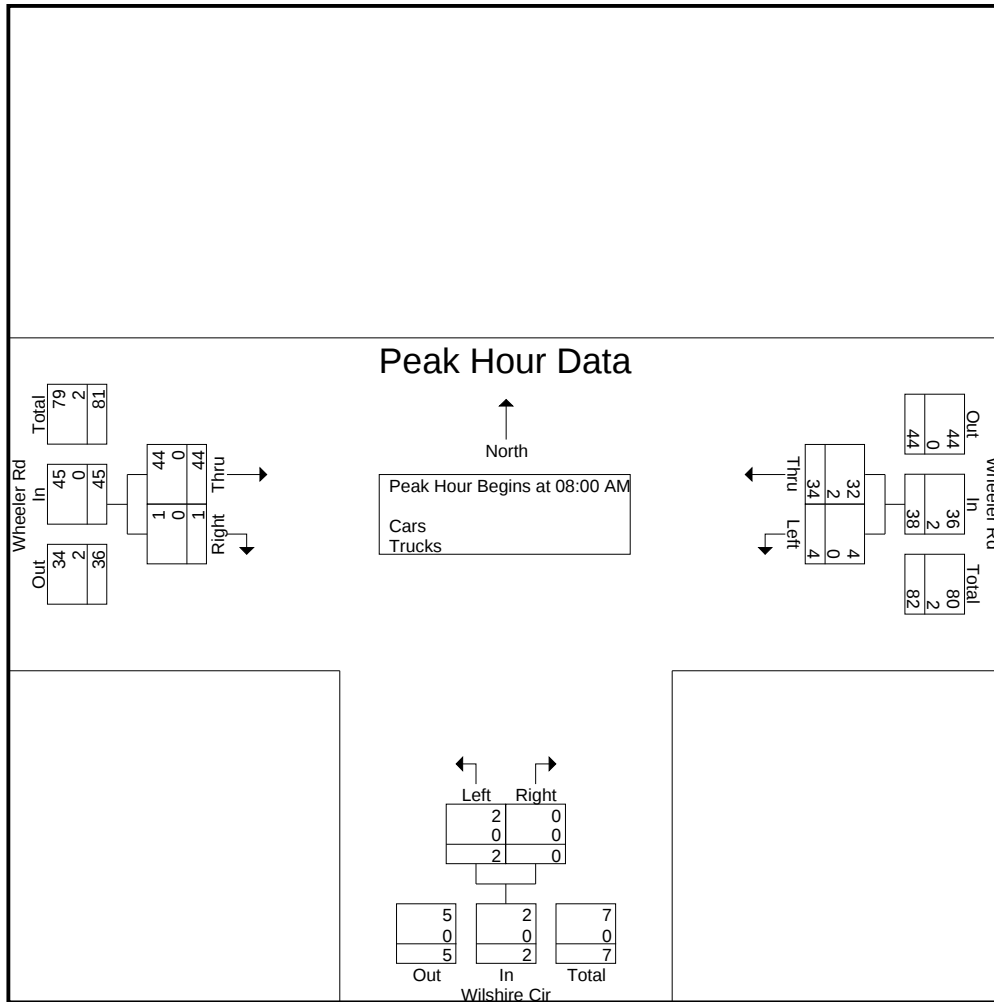
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	13	15	1	0	1	14	0	14	30
08:15 AM	1	5	6	0	0	0	11	0	11	17
08:30 AM	1	5	6	1	0	1	9	0	9	16
08:45 AM	0	11	11	0	0	0	10	1	11	22
Total Volume	4	34	38	2	0	2	44	1	45	85
% App. Total	10.5	89.5		100	0		97.8	2.2		
PHF	.500	.654	.633	.500	.000	.500	.786	.250	.804	.708
Cars	4	32	36	2	0	2	44	1	45	83
% Cars	100	94.1	94.7	100	0	100	100	100	100	97.6
Trucks	0	2	2	0	0	0	0	0	0	2
% Trucks	0	5.9	5.3	0	0	0	0	0	0	2.4

Accurate Counts

978-664-2565

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

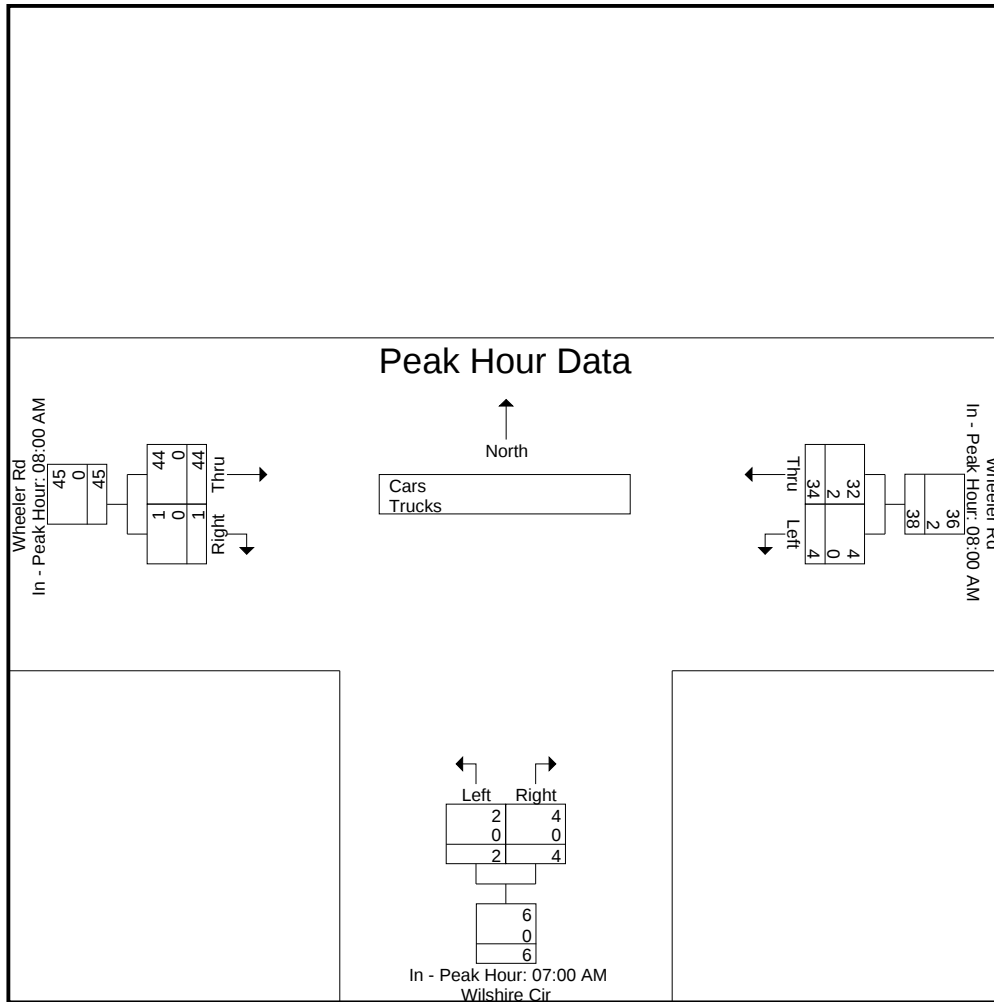
Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 AM			08:00 AM		
+0 mins.	2	13	15	1	1	2	14	0	14
+15 mins.	1	5	6	1	2	3	11	0	11
+30 mins.	1	5	6	0	0	0	9	0	9
+45 mins.	0	11	11	0	1	1	10	1	11
Total Volume	4	34	38	2	4	6	44	1	45
% App. Total	10.5	89.5		33.3	66.7		97.8	2.2	
PHF	.500	.654	.633	.500	.500	.500	.786	.250	.804
Cars	4	32	36	2	4	6	44	1	45
% Cars	100	94.1	94.7	100	100	100	100	100	100
Trucks	0	2	2	0	0	0	0	0	0
% Trucks	0	5.9	5.3	0	0	0	0	0	0

978-664-2565

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	9	1	1	8	0	19
07:15 AM	0	2	1	2	8	0	13
07:30 AM	0	6	0	0	11	0	17
07:45 AM	0	7	0	1	6	0	14
Total	0	24	2	4	33	0	63
08:00 AM	2	12	1	0	14	0	29
08:15 AM	1	5	0	0	11	0	17
08:30 AM	1	5	1	0	9	0	16
08:45 AM	0	10	0	0	10	1	21
Total	4	32	2	0	44	1	83
Grand Total	4	56	4	4	77	1	146
Apprch %	6.7	93.3	50	50	98.7	1.3	
Total %	2.7	38.4	2.7	2.7	52.7	0.7	

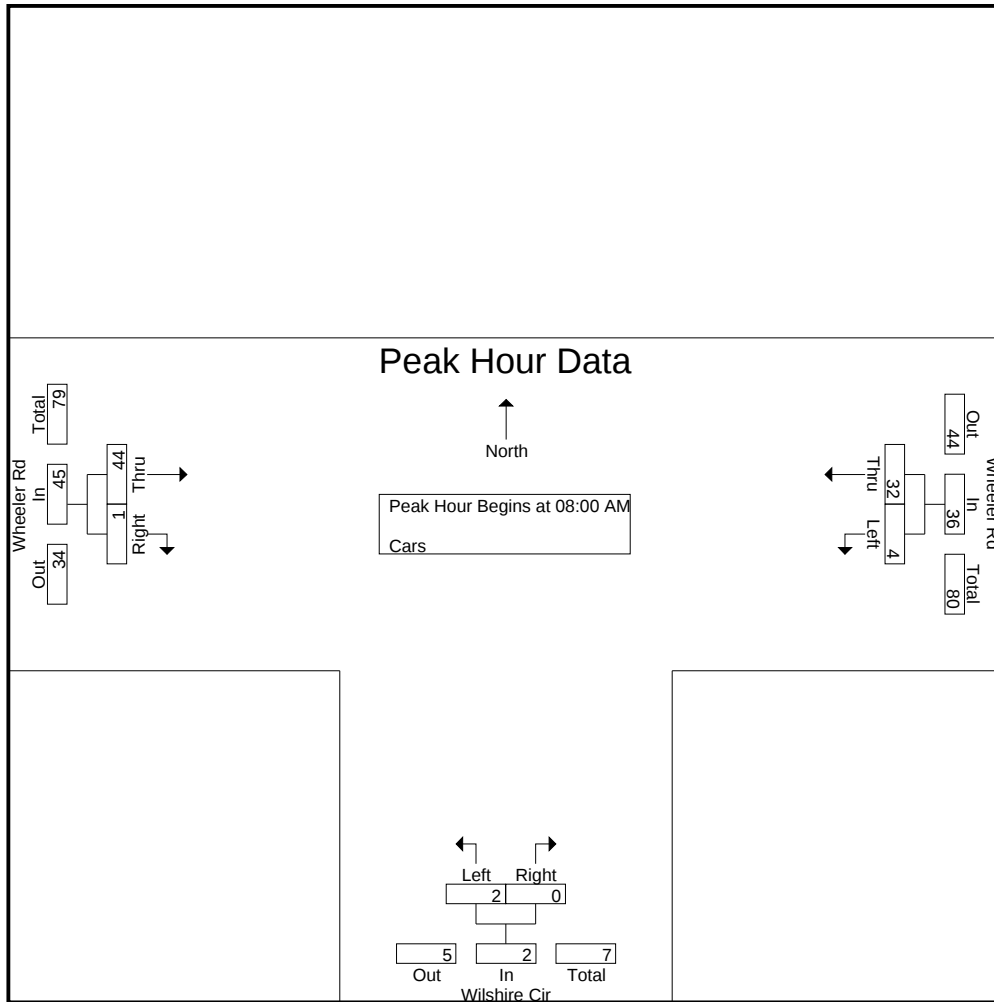
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	12	14	1	0	1	14	0	14	29
08:15 AM	1	5	6	0	0	0	11	0	11	17
08:30 AM	1	5	6	1	0	1	9	0	9	16
08:45 AM	0	10	10	0	0	0	10	1	11	21
Total Volume	4	32	36	2	0	2	44	1	45	83
% App. Total	11.1	88.9		100	0		97.8	2.2		
PHF	.500	.667	.643	.500	.000	.500	.786	.250	.804	.716

Accurate Counts

978-664-2565

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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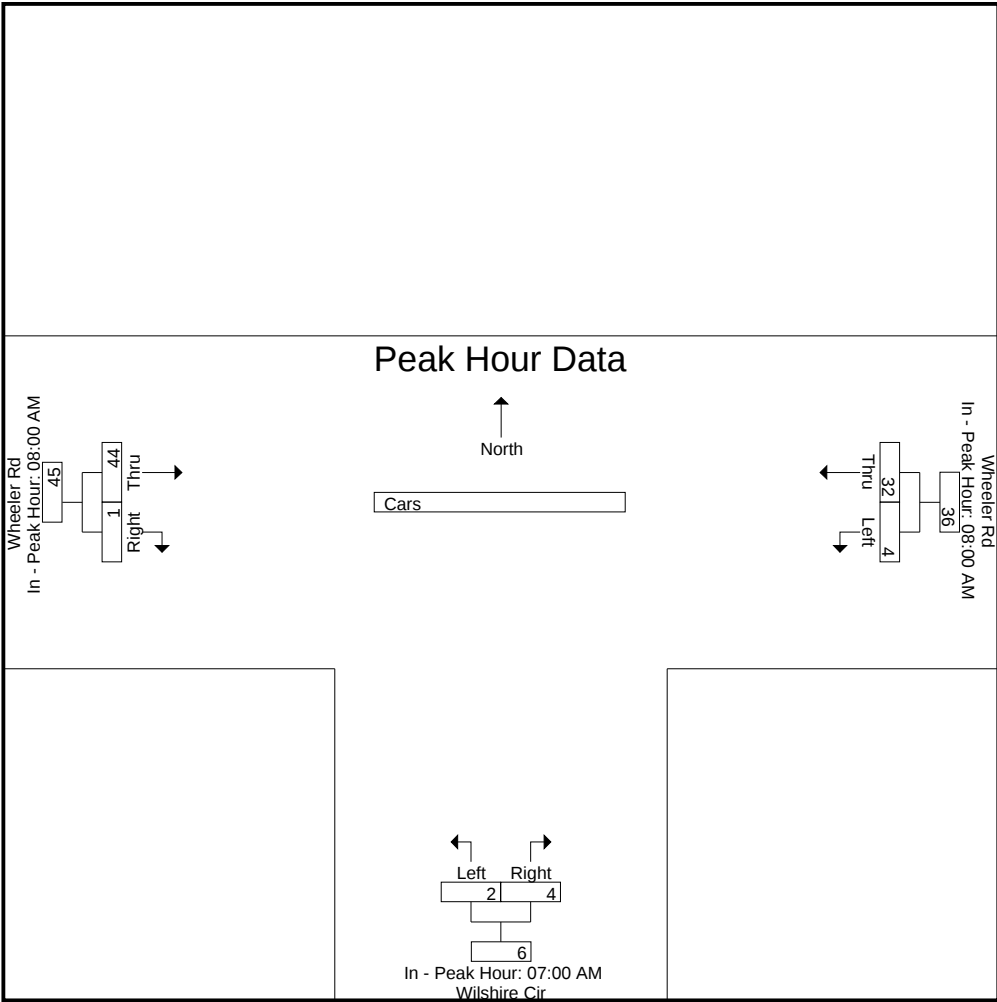
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 AM			08:00 AM		
+0 mins.	2	12	14	1	1	2	14	0	14
+15 mins.	1	5	6	1	2	3	11	0	11
+30 mins.	1	5	6	0	0	0	9	0	9
+45 mins.	0	10	10	0	1	1	10	1	11
Total Volume	4	32	36	2	4	6	44	1	45
% App. Total	11.1	88.9		33.3	66.7		97.8	2.2	
PHF	.500	.667	.643	.500	.500	.500	.786	.250	.804

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 6



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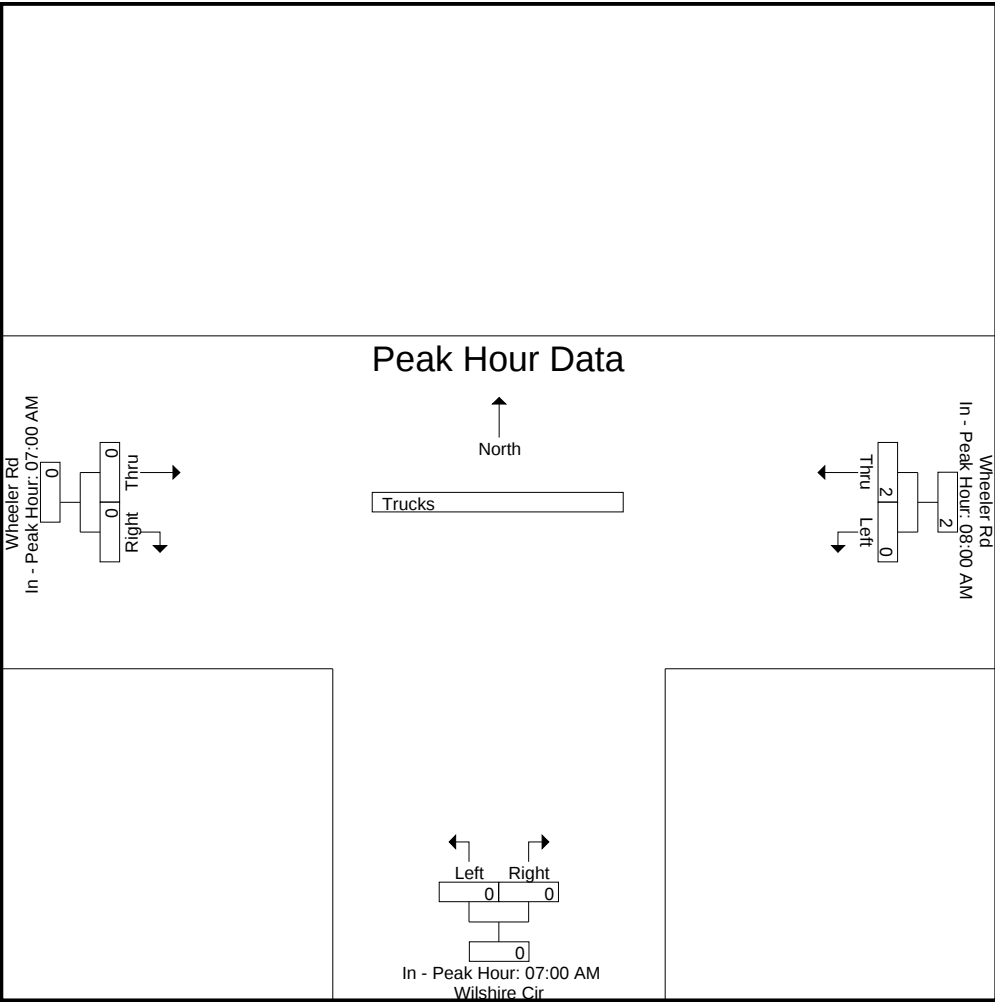
Page No : 7

	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	1	0	0	0	0	1
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	1	0	0	0	0	1
08:00 AM	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	1	0	0	0	0	1
Total	0	2	0	0	0	0	2
Grand Total	0	3	0	0	0	0	3
Apprch %	0	100	0	0	0	0	
Total %	0	100	0	0	0	0	

[illegible]

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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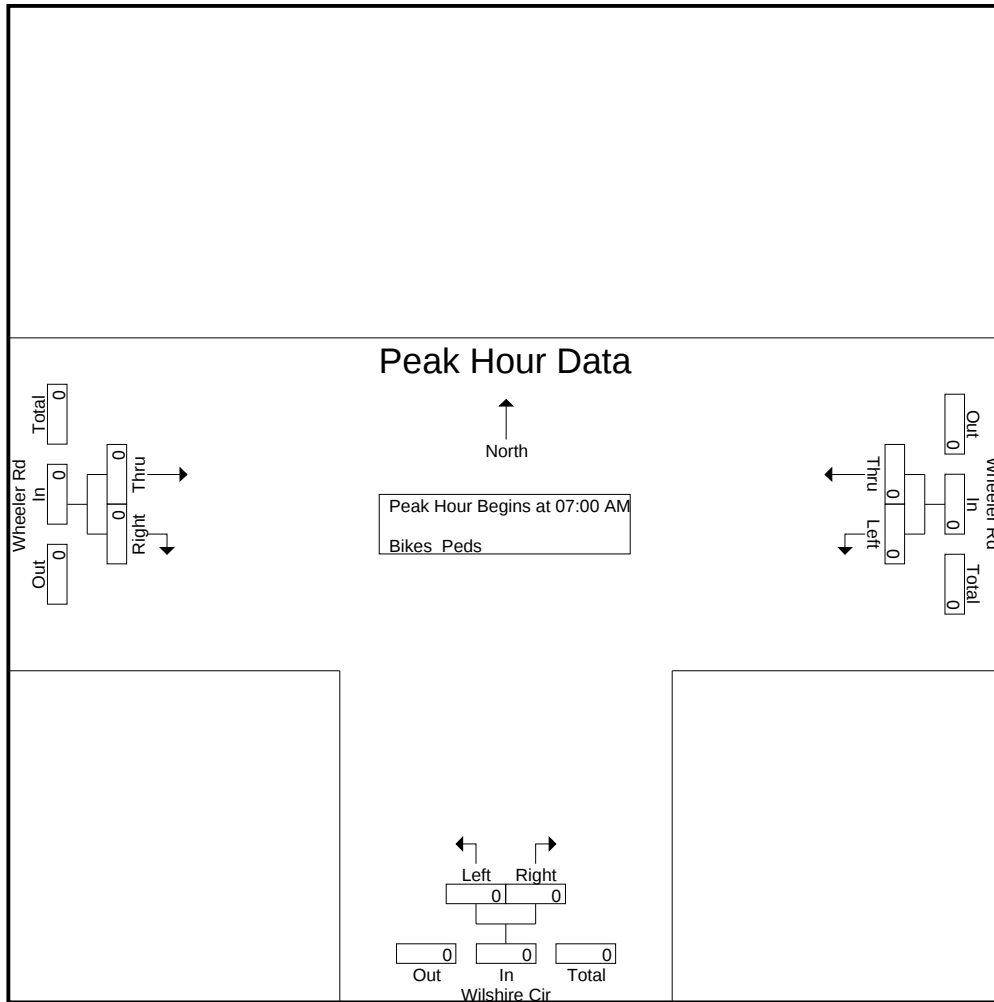
Page No : 10

[illegible][illegible]

978-664-2565

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 11



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

Peak Hour for Each Approach Begins at:

[illegible]

Accurate Counts

978-664-2565

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

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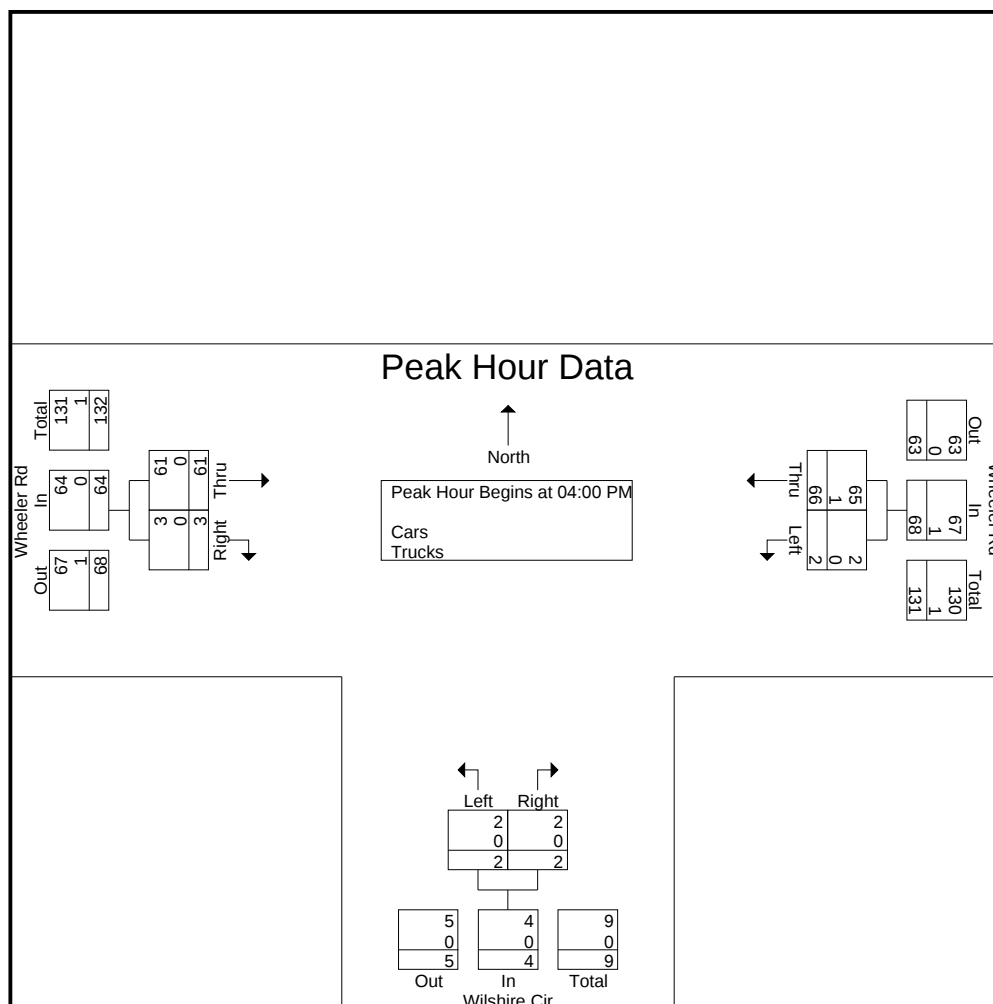
Groups Printed- Cars - Trucks

	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	13	0	0	19	1	33
04:15 PM	2	27	1	1	20	0	51
04:30 PM	0	16	1	0	7	0	24
04:45 PM	0	10	0	1	15	2	28
Total	2	66	2	2	61	3	136
05:00 PM	1	13	1	0	10	0	25
05:15 PM	2	20	1	2	7	1	33
05:30 PM	1	20	0	1	10	0	32
05:45 PM	0	20	0	0	9	0	29
Total	4	73	2	3	36	1	119
Grand Total	6	139	4	5	97	4	255
Apprch %	4.1	95.9	44.4	55.6	96	4	
Total %	2.4	54.5	1.6	2	38	1.6	
Cars	6	138	4	5	97	4	254
% Cars	100	99.3	100	100	100	100	99.6
Trucks	0	1	0	0	0	0	1
% Trucks	0	0.7	0	0	0	0	0.4

	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	13	13	0	0	0	19	1	20	33
04:15 PM	2	27	29	1	1	2	20	0	20	51
04:30 PM	0	16	16	1	0	1	7	0	7	24
04:45 PM	0	10	10	0	1	1	15	2	17	28
Total Volume	2	66	68	2	2	4	61	3	64	136
% App. Total	2.9	97.1		50	50		95.3	4.7		
PHF	.250	.611	.586	.500	.500	.500	.763	.375	.800	.667
Cars	2	65	67	2	2	4	61	3	64	135
% Cars	100	98.5	98.5	100	100	100	100	100	100	99.3
Trucks	0	1	1	0	0	0	0	0	0	1
% Trucks	0	1.5	1.5	0	0	0	0	0	0	0.7

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File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 2

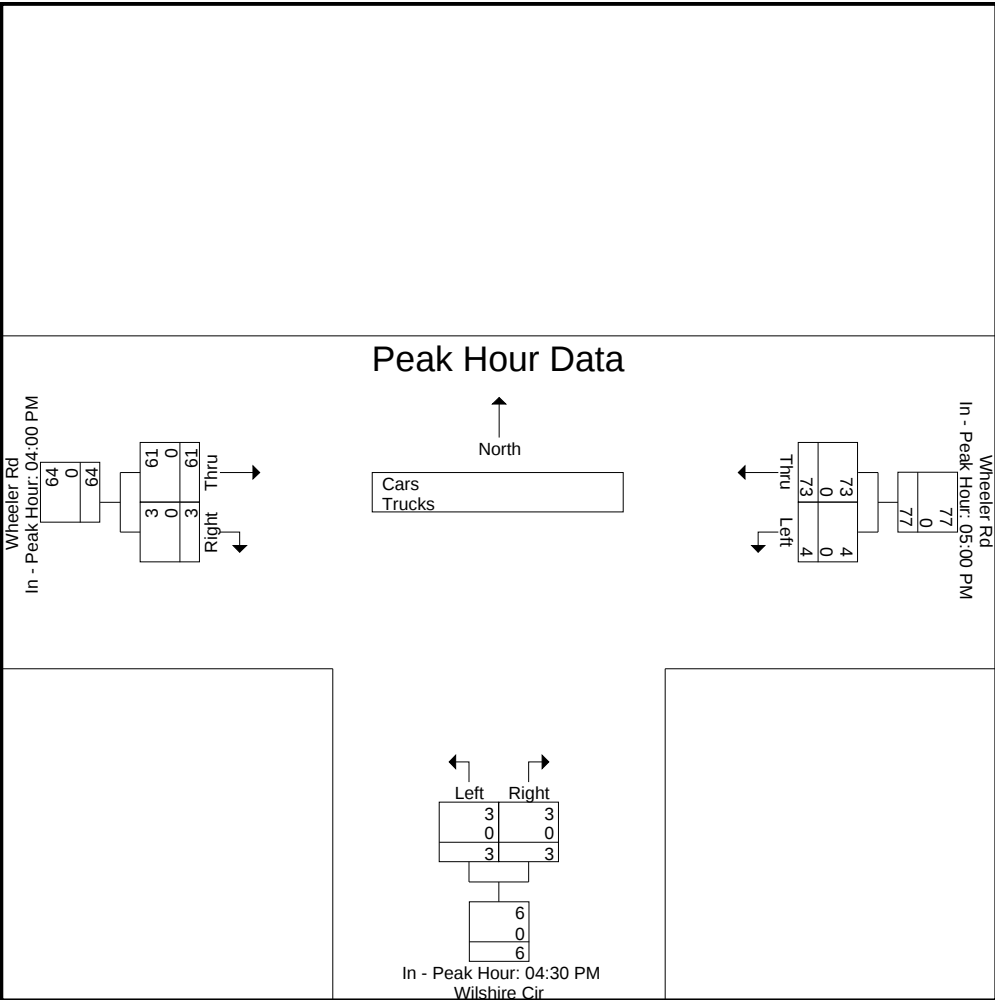


Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

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Groups Printed- Cars

	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	13	0	0	19	1	33
04:15 PM	2	26	1	1	20	0	50
04:30 PM	0	16	1	0	7	0	24
04:45 PM	0	10	0	1	15	2	28
Total	2	65	2	2	61	3	135
05:00 PM	1	13	1	0	10	0	25
05:15 PM	2	20	1	2	7	1	33
05:30 PM	1	20	0	1	10	0	32
05:45 PM	0	20	0	0	9	0	29
Total	4	73	2	3	36	1	119
Grand Total	6	138	4	5	97	4	254
Apprch %	4.2	95.8	44.4	55.6	96	4	
Total %	2.4	54.3	1.6	2	38.2	1.6	

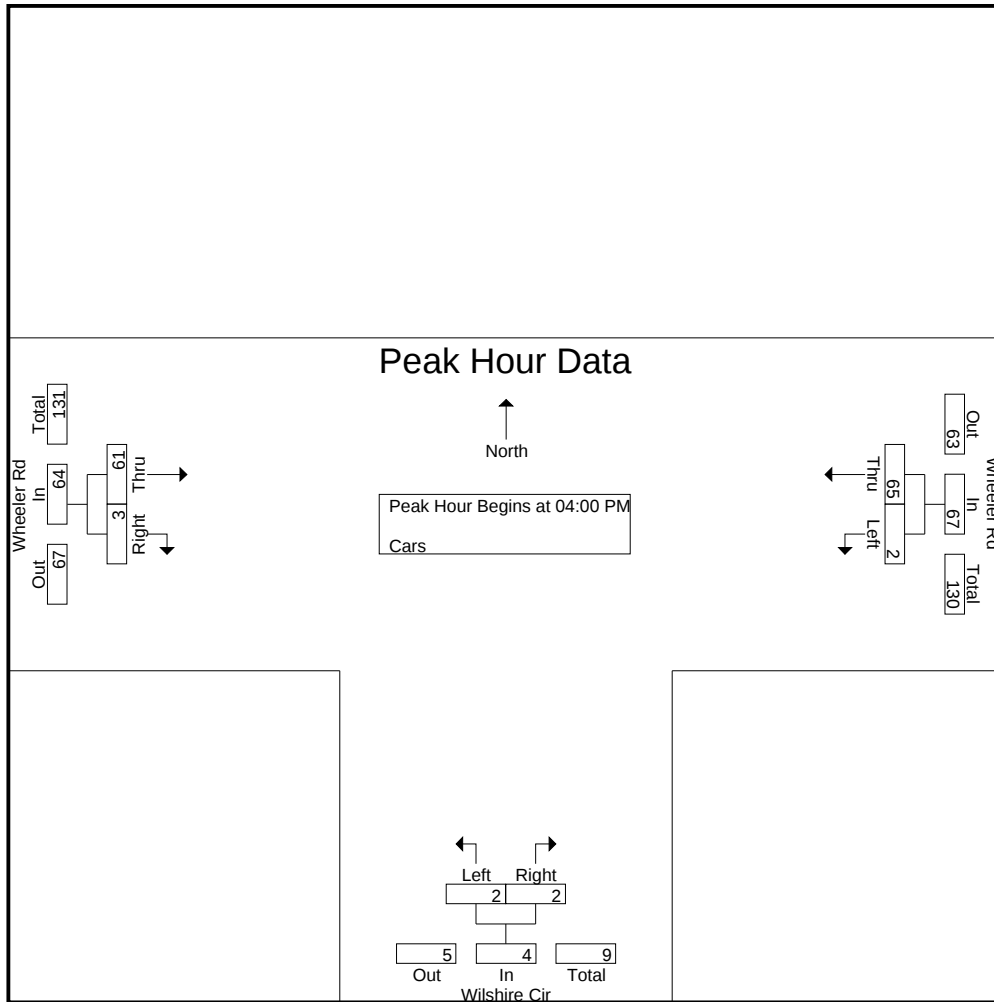
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	13	13	0	0	0	19	1	20	33
04:15 PM	2	26	28	1	1	2	20	0	20	50
04:30 PM	0	16	16	1	0	1	7	0	7	24
04:45 PM	0	10	10	0	1	1	15	2	17	28
Total Volume	2	65	67	2	2	4	61	3	64	135
% App. Total	3	97		50	50		95.3	4.7		
PHF	.250	.625	.598	.500	.500	.500	.763	.375	.800	.675

Accurate Counts

978-664-2565

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 5



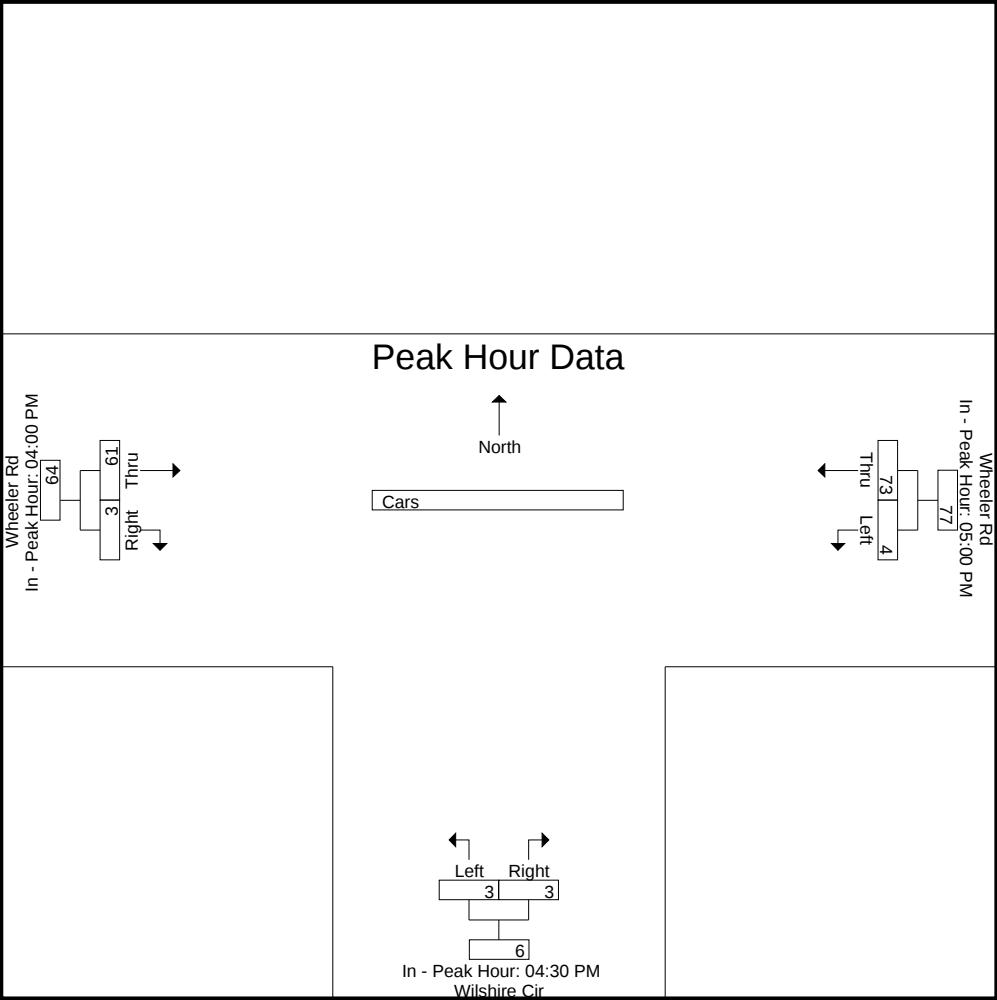
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:30 PM			04:00 PM		
+0 mins.	1	13	14	1	0	1	19	1	20
+15 mins.	2	20	22	0	1	1	20	0	20
+30 mins.	1	20	21	1	0	1	7	0	7
+45 mins.	0	20	20	1	2	3	15	2	17
Total Volume	4	73	77	3	3	6	61	3	64
% App. Total	5.2	94.8		50	50		95.3	4.7	
PHF	.500	.913	.875	.750	.375	.500	.763	.375	.800

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 6



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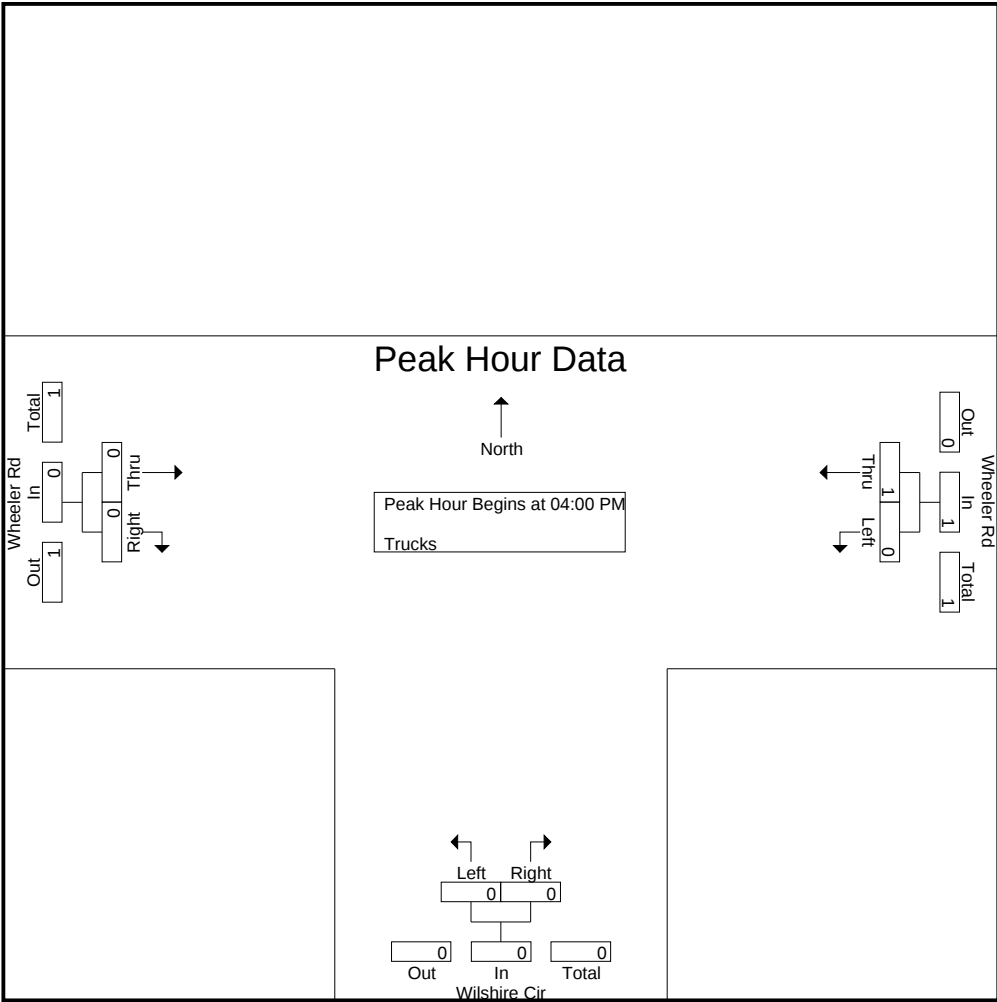
File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 7

	Groups Plotted- Trucks						
	Wheeler Rd From East		Wilshire Cir From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	1	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
Grand Total	0	1	0	0	0	0	1
Apprch %	0	100	0	0	0	0	
Total %	0	100	0	0	0	0	

[illegible]

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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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:

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

978-664-2565

978-664-2565

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

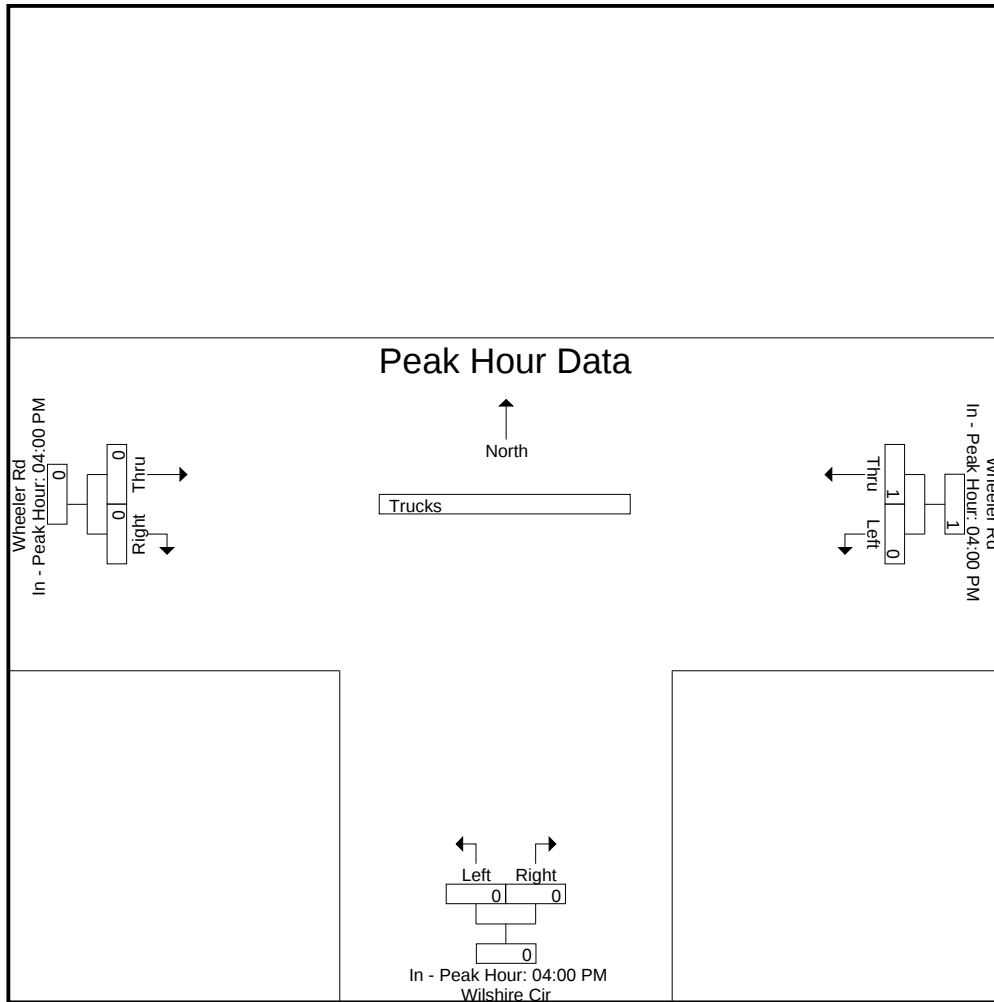
Page No : 9

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

Weather : Clear



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[illegible][illegible]

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978-664-2565

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

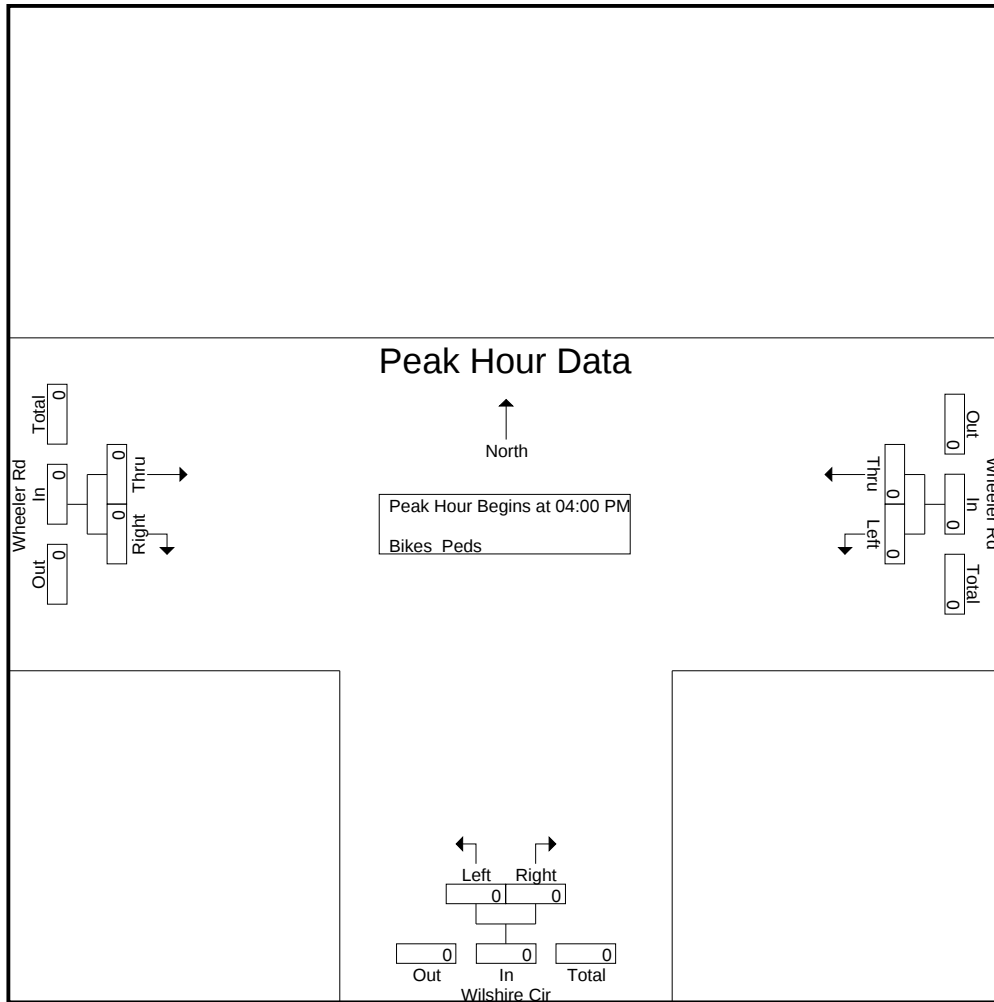
Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

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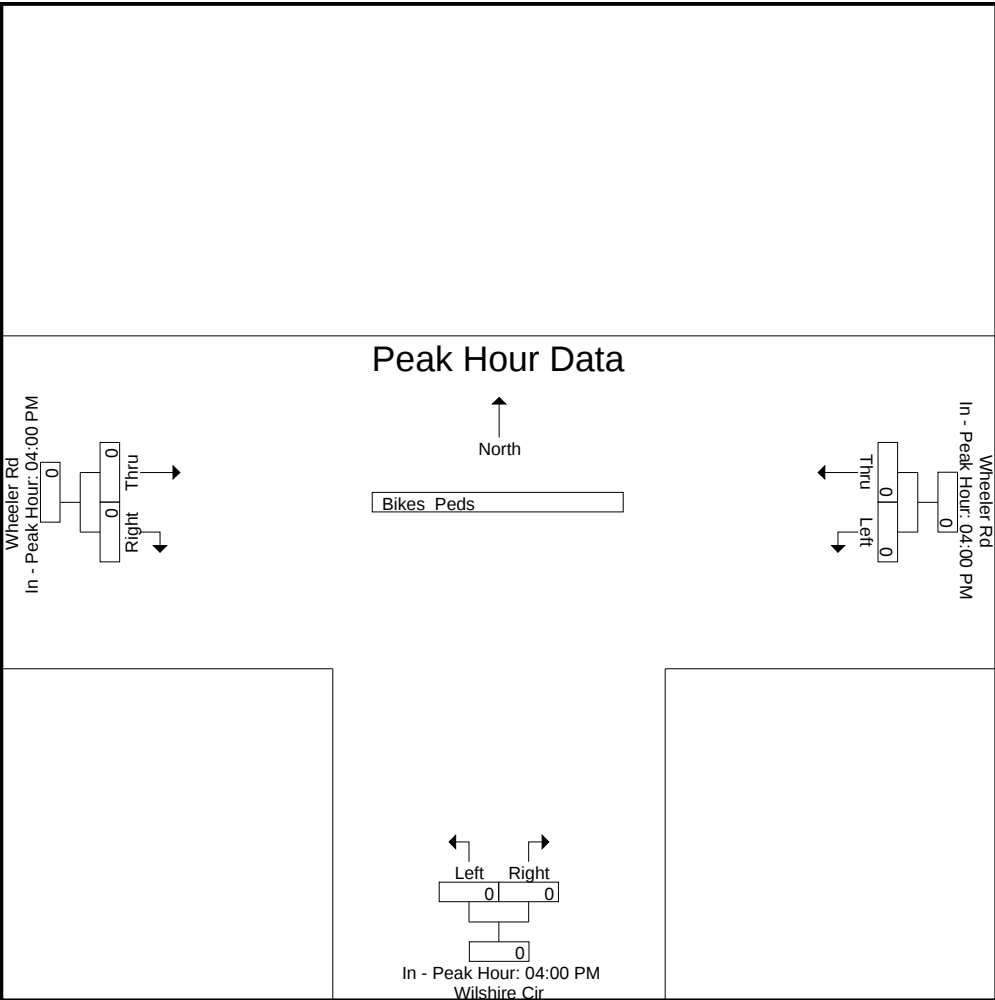
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wilshire Circle
E/W Street : Wheeler Road
City/State : Dracut, MA
Weather : Clear

File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

Page No : 1

Groups Printed- Cars - Trucks

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	2	5	1	5	8	2	23
07:15 AM	2	3	0	3	11	2	21
07:30 AM	1	6	1	5	10	1	24
07:45 AM	6	6	2	4	11	1	30
Total	11	20	4	17	40	6	98
08:00 AM	3	11	2	5	23	1	45
08:15 AM	5	3	2	3	15	1	29
08:30 AM	1	5	0	6	4	3	19
08:45 AM	0	12	0	4	10	0	26
Total	9	31	4	18	52	5	119
Grand Total	20	51	8	35	92	11	217
Apprch %	28.2	71.8	18.6	81.4	89.3	10.7	
Total %	9.2	23.5	3.7	16.1	42.4	5.1	
Cars	16	45	7	34	91	11	204
% Cars	80	88.2	87.5	97.1	98.9	100	94
Trucks	4	6	1	1	1	0	13
% Trucks	20	11.8	12.5	2.9	1.1	0	6

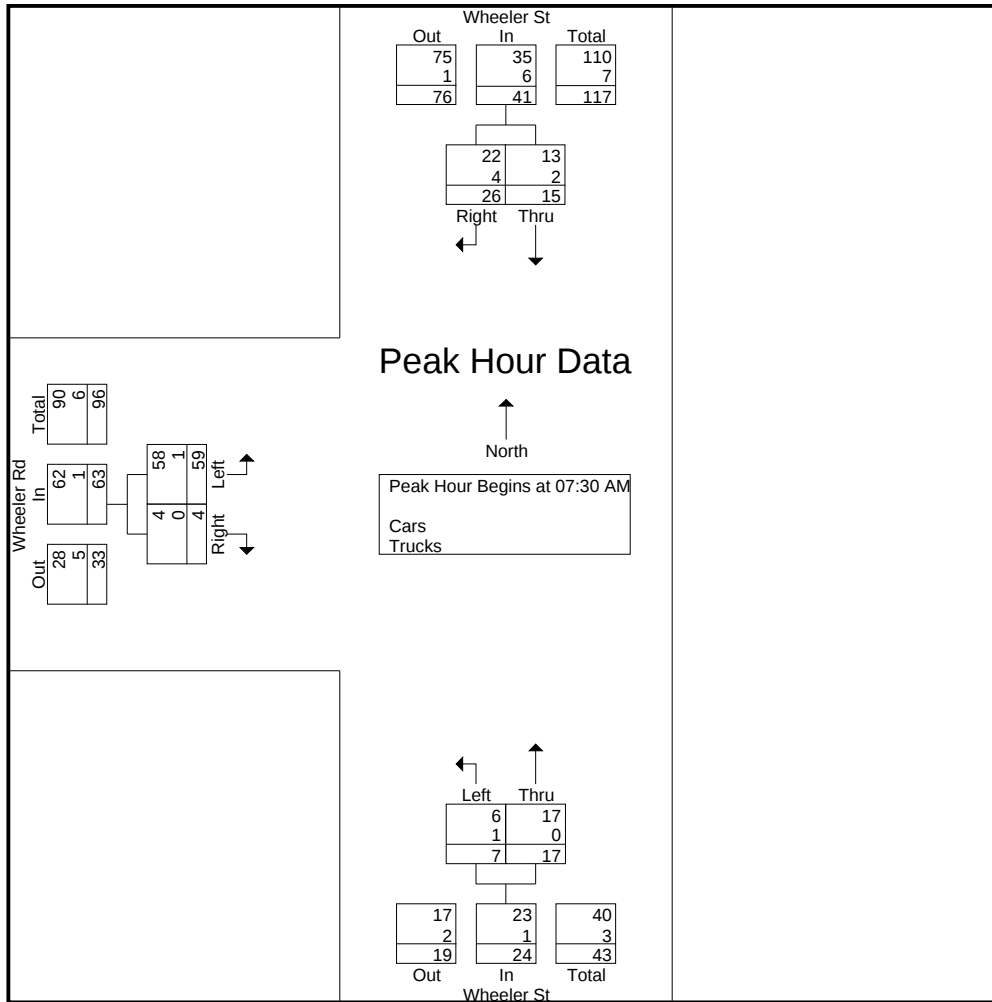
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	1	6	7	1	5	6	10	1	11	24
07:45 AM	6	6	12	2	4	6	11	1	12	30
08:00 AM	3	11	14	2	5	7	23	1	24	45
08:15 AM	5	3	8	2	3	5	15	1	16	29
Total Volume	15	26	41	7	17	24	59	4	63	128
% App. Total	36.6	63.4		29.2	70.8		93.7	6.3		
PHF	.625	.591	.732	.875	.850	.857	.641	1.00	.656	.711
Cars	13	22	35	6	17	23	58	4	62	120
% Cars	86.7	84.6	85.4	85.7	100	95.8	98.3	100	98.4	93.8
Trucks	2	4	6	1	0	1	1	0	1	8
% Trucks	13.3	15.4	14.6	14.3	0	4.2	1.7	0	1.6	6.3

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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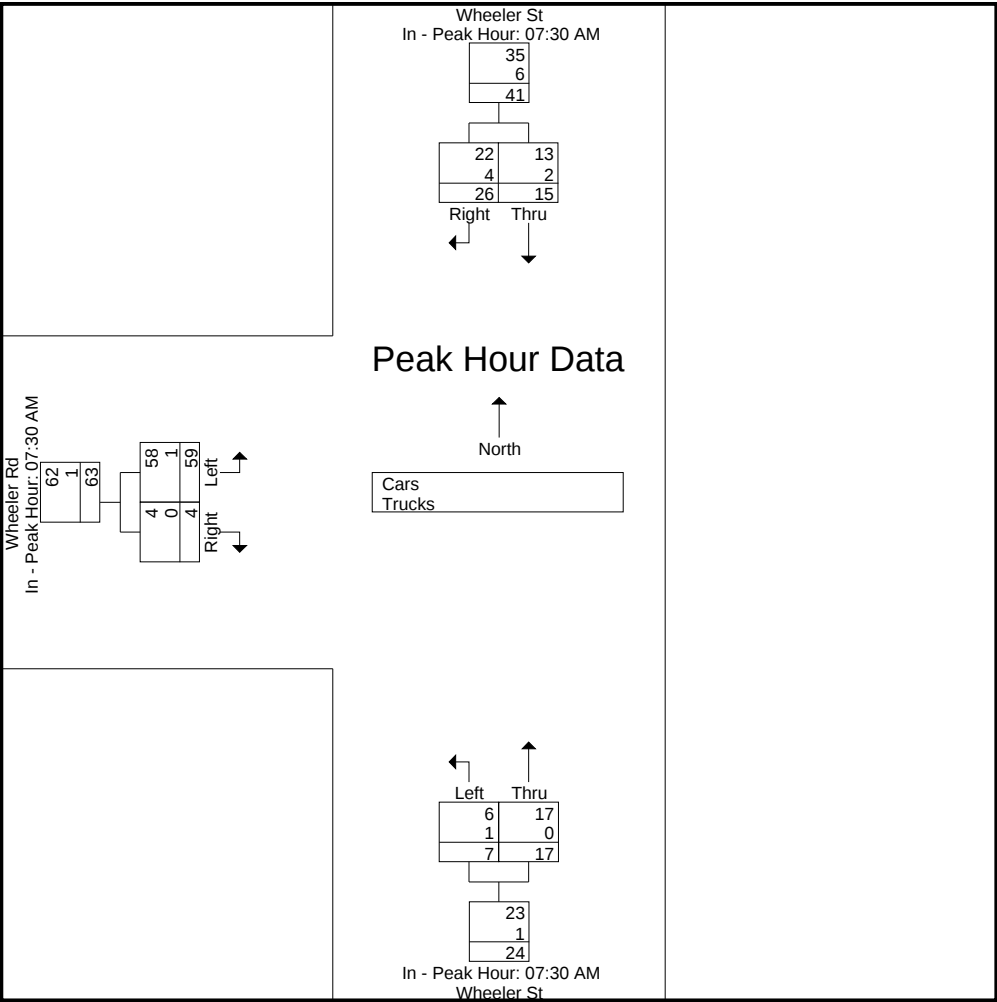
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM		
+0 mins.	1	6	7	1	5	6	10	1	11
+15 mins.	6	6	12	2	4	6	11	1	12
+30 mins.	3	11	14	2	5	7	23	1	24
+45 mins.	5	3	8	2	3	5	15	1	16
Total Volume	15	26	41	7	17	24	59	4	63
% App. Total	36.6	63.4		29.2	70.8		93.7	6.3	
PHF	.625	.591	.732	.875	.850	.857	.641	1.000	.656
Cars	13	22	35	6	17	23	58	4	62
% Cars	86.7	84.6	85.4	85.7	100	95.8	98.3	100	98.4
Trucks	2	4	6	1	0	1	1	0	1
% Trucks	13.3	15.4	14.6	14.3	0	4.2	1.7	0	1.6

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	1	4	1	4	8	2	20
07:15 AM	1	3	0	3	11	2	20
07:30 AM	1	6	1	5	10	1	24
07:45 AM	4	5	1	4	11	1	26
Total	7	18	3	16	40	6	90
08:00 AM	3	8	2	5	23	1	42
08:15 AM	5	3	2	3	14	1	28
08:30 AM	1	5	0	6	4	3	19
08:45 AM	0	11	0	4	10	0	25
Total	9	27	4	18	51	5	114
Grand Total	16	45	7	34	91	11	204
Apprch %	26.2	73.8	17.1	82.9	89.2	10.8	
Total %	7.8	22.1	3.4	16.7	44.6	5.4	

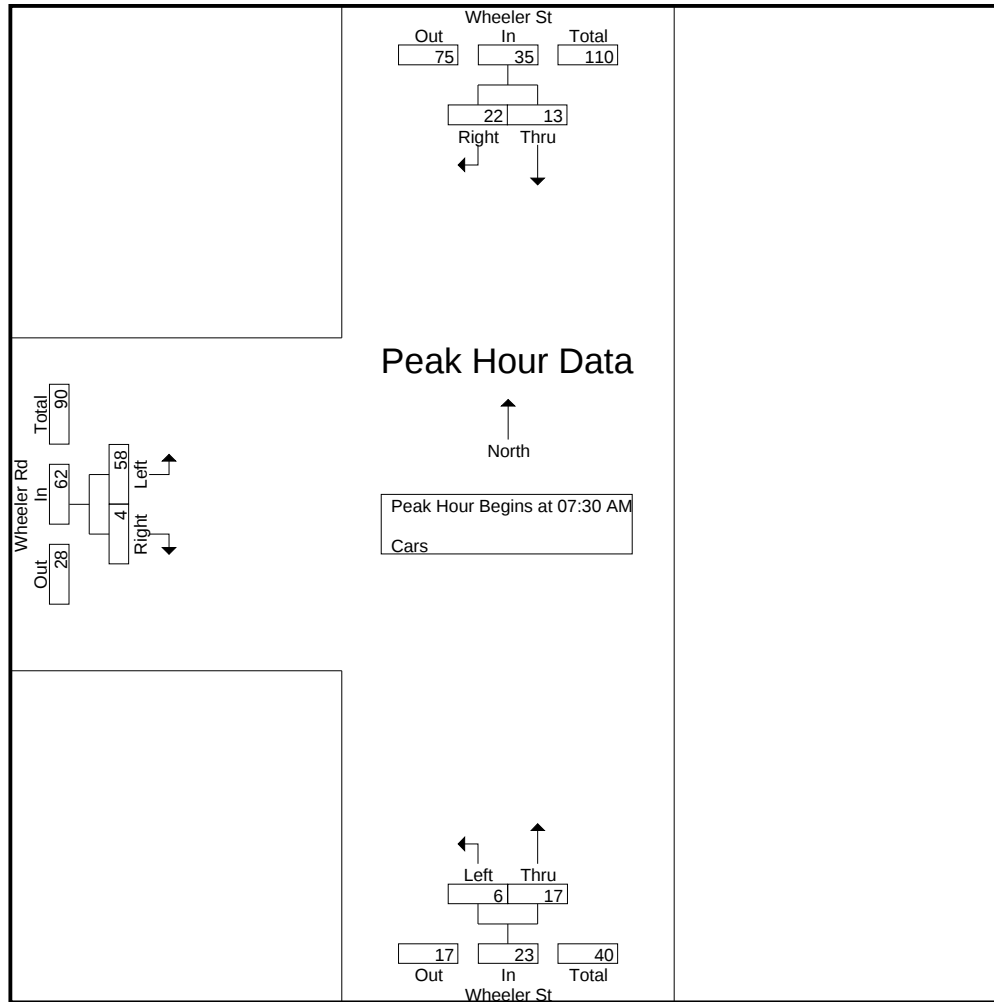
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	1	6	7	1	5	6	10	1	11	24
07:45 AM	4	5	9	1	4	5	11	1	12	26
08:00 AM	3	8	11	2	5	7	23	1	24	42
08:15 AM	5	3	8	2	3	5	14	1	15	28
Total Volume	13	22	35	6	17	23	58	4	62	120
% App. Total	37.1	62.9		26.1	73.9		93.5	6.5		
PHF	.650	.688	.795	.750	.850	.821	.630	1.00	.646	.714

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
Page No : 5



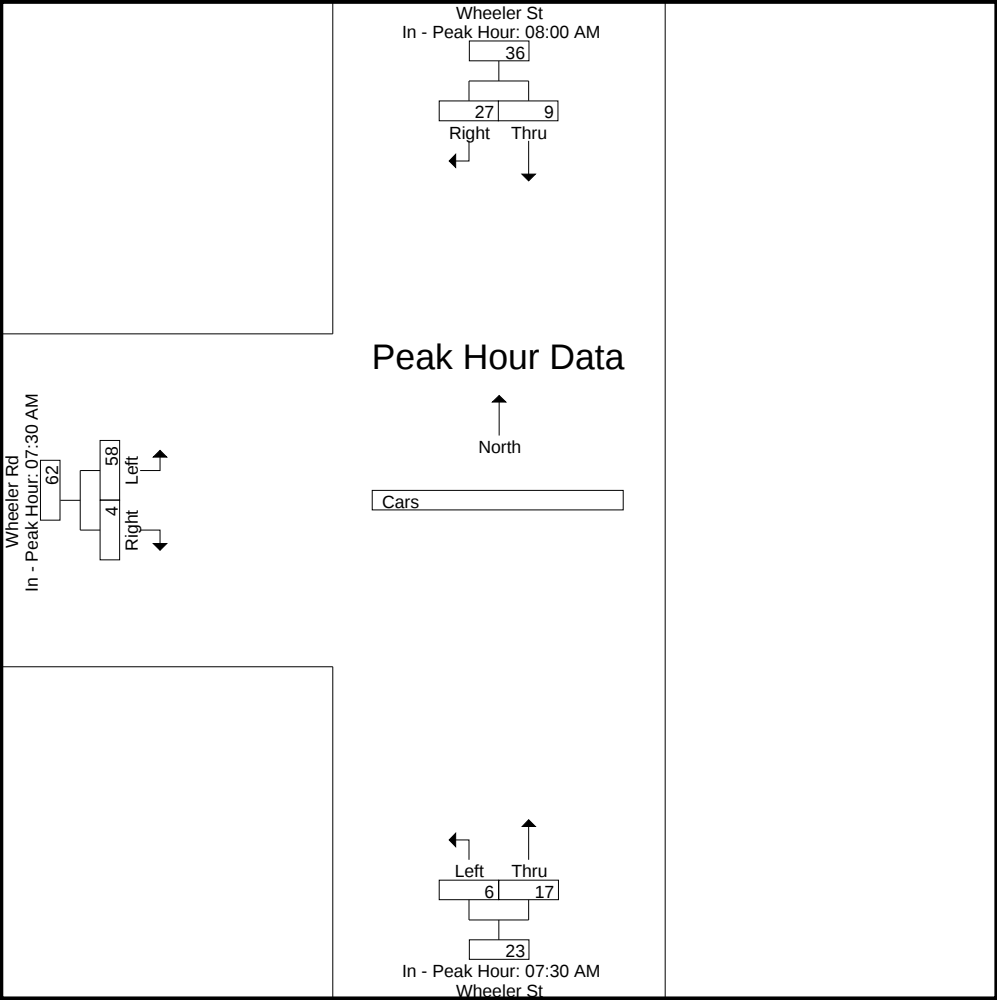
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:30 AM			07:30 AM		
+0 mins.	3	8	11	1	5	6	10	1	11
+15 mins.	5	3	8	1	4	5	11	1	12
+30 mins.	1	5	6	2	5	7	23	1	24
+45 mins.	0	11	11	2	3	5	14	1	15
Total Volume	9	27	36	6	17	23	58	4	62
% App. Total	25	75		26.1	73.9		93.5	6.5	
PHF	.450	.614	.818	.750	.850	.821	.630	1.000	.646

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

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Groups Printed- Trucks

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
07:00 AM	1	1	0	1	0	0	3
07:15 AM	1	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	2	1	1	0	0	0	4
Total	4	2	1	1	0	0	8
08:00 AM	0	3	0	0	0	0	3
08:15 AM	0	0	0	0	1	0	1
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	1	0	0	0	0	1
Total	0	4	0	0	1	0	5
Grand Total	4	6	1	1	1	0	13
Apprch %	40	60	50	50	100	0	
Total %	30.8	46.2	7.7	7.7	7.7	0	

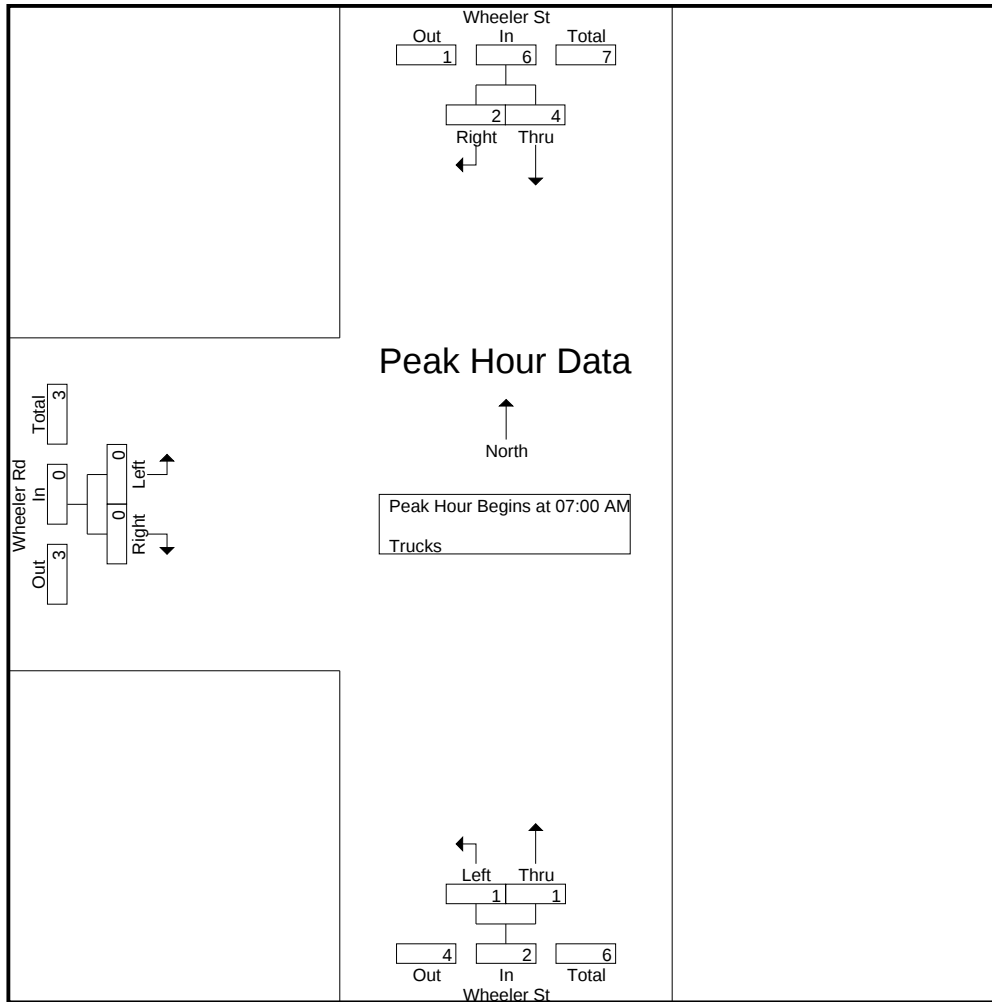
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	1	1	2	0	1	1	0	0	0	3
07:15 AM	1	0	1	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	2	1	3	1	0	1	0	0	0	4
Total Volume	4	2	6	1	1	2	0	0	0	8
% App. Total	66.7	33.3		50	50		0	0		
PHF	.500	.500	.500	.250	.250	.500	.000	.000	.000	.500

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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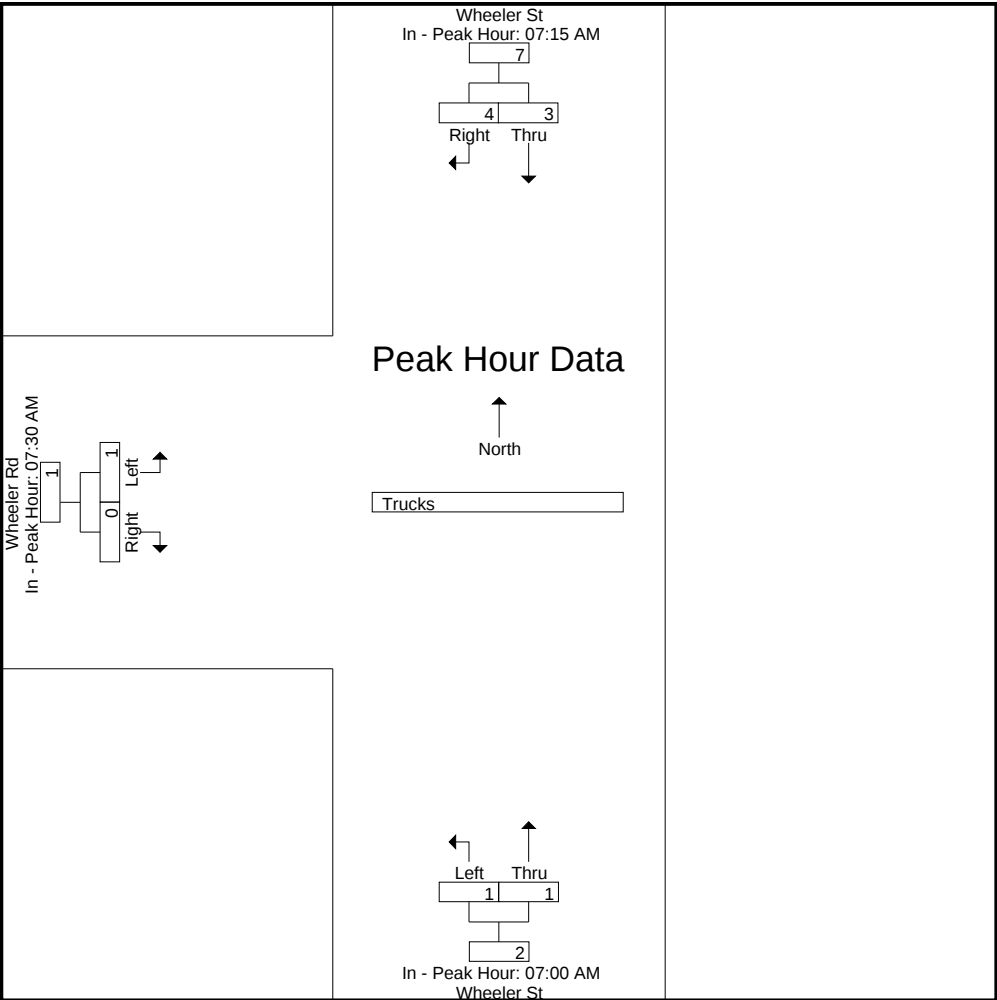
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:30 AM		
+0 mins.	1	0	1	0	1	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	2	1	3	0	0	0	0	0	0
+45 mins.	0	3	3	1	0	1	1	0	1
Total Volume	3	4	7	1	1	2	1	0	1
% App. Total	42.9	57.1		50	50		100	0	
PHF	.375	.333	.583	.250	.250	.500	.250	.000	.250

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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File Name : 76430005
Site Code : 76430005
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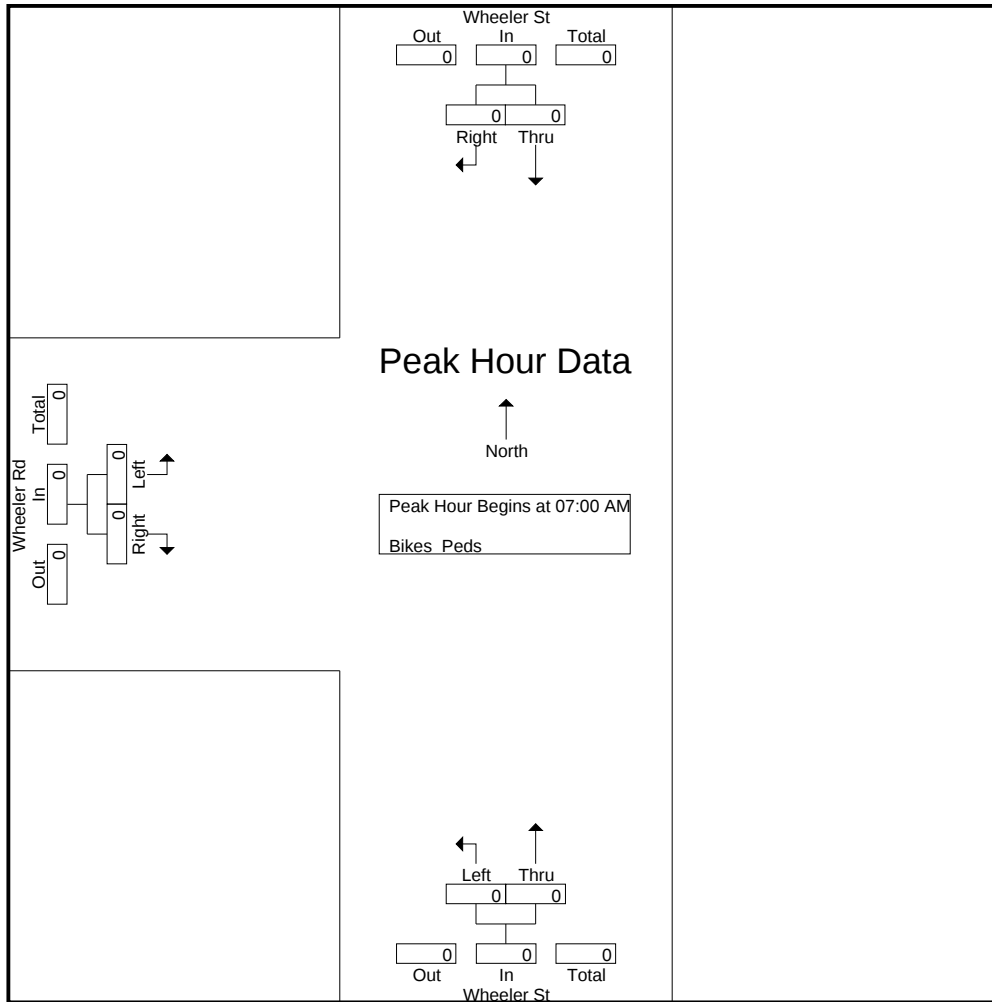
	Groups Printed- Bikes Peds											
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West					
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0
Apprch % Total %	0	0		0	0		0	0		0	0	

[illegible]

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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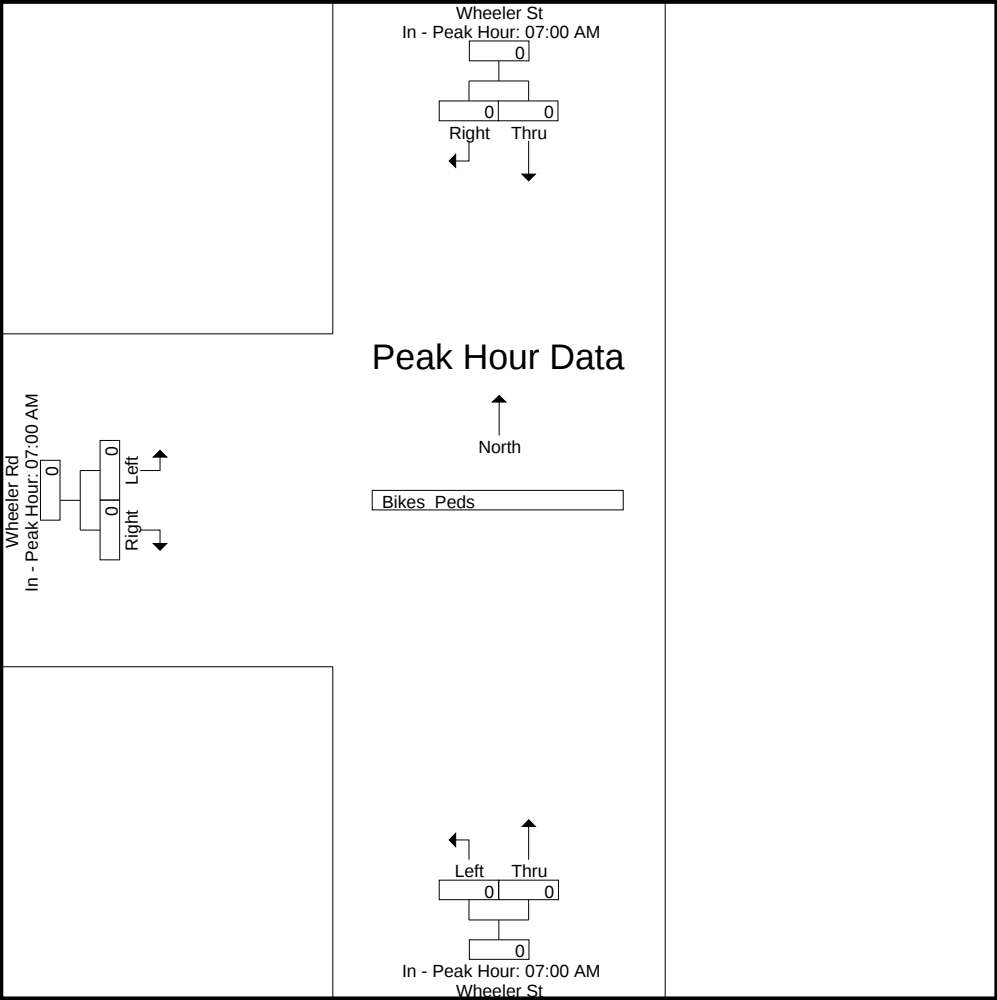
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

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Groups Printed- Cars - Trucks

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	5	13	3	7	8	3	39
04:15 PM	5	26	1	5	20	2	59
04:30 PM	4	15	2	1	11	1	34
04:45 PM	4	9	1	8	10	3	35
Total	18	63	7	21	49	9	167
05:00 PM	5	16	4	7	7	1	40
05:15 PM	5	21	2	2	10	2	42
05:30 PM	8	25	6	6	11	1	57
05:45 PM	2	19	1	4	10	0	36
Total	20	81	13	19	38	4	175
Grand Total	38	144	20	40	87	13	342
Apprch %	20.9	79.1	33.3	66.7	87	13	
Total %	11.1	42.1	5.8	11.7	25.4	3.8	
Cars	37	144	20	40	86	13	340
% Cars	97.4	100	100	100	98.9	100	99.4
Trucks	1	0	0	0	1	0	2
% Trucks	2.6	0	0	0	1.1	0	0.6

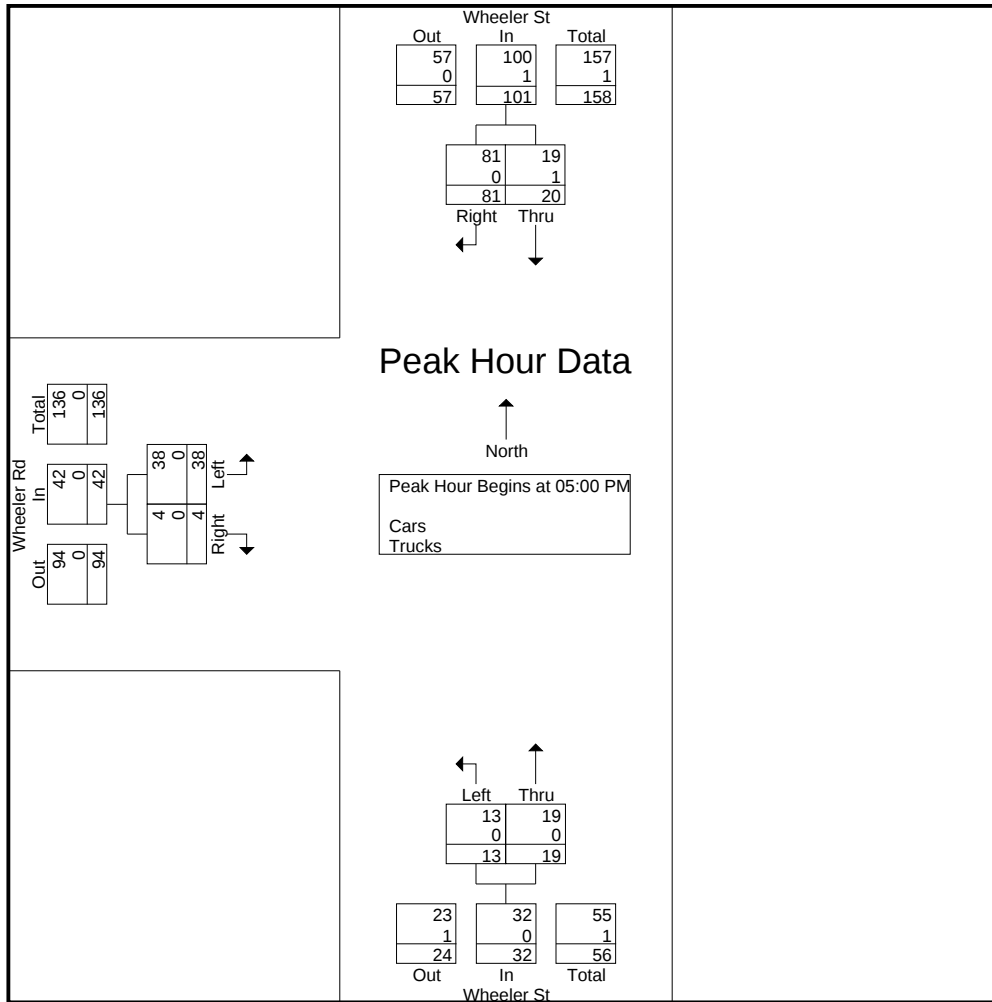
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	5	16	21	4	7	11	7	1	8	40
05:15 PM	5	21	26	2	2	4	10	2	12	42
05:30 PM	8	25	33	6	6	12	11	1	12	57
05:45 PM	2	19	21	1	4	5	10	0	10	36
Total Volume	20	81	101	13	19	32	38	4	42	175
% App. Total	19.8	80.2		40.6	59.4		90.5	9.5		
PHF	.625	.810	.765	.542	.679	.667	.864	.500	.875	.768
Cars	19	81	100	13	19	32	38	4	42	174
% Cars	95.0	100	99.0	100	100	100	100	100	100	99.4
Trucks	1	0	1	0	0	0	0	0	0	1
% Trucks	5.0	0	1.0	0	0	0	0	0	0	0.6

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
Page No : 2



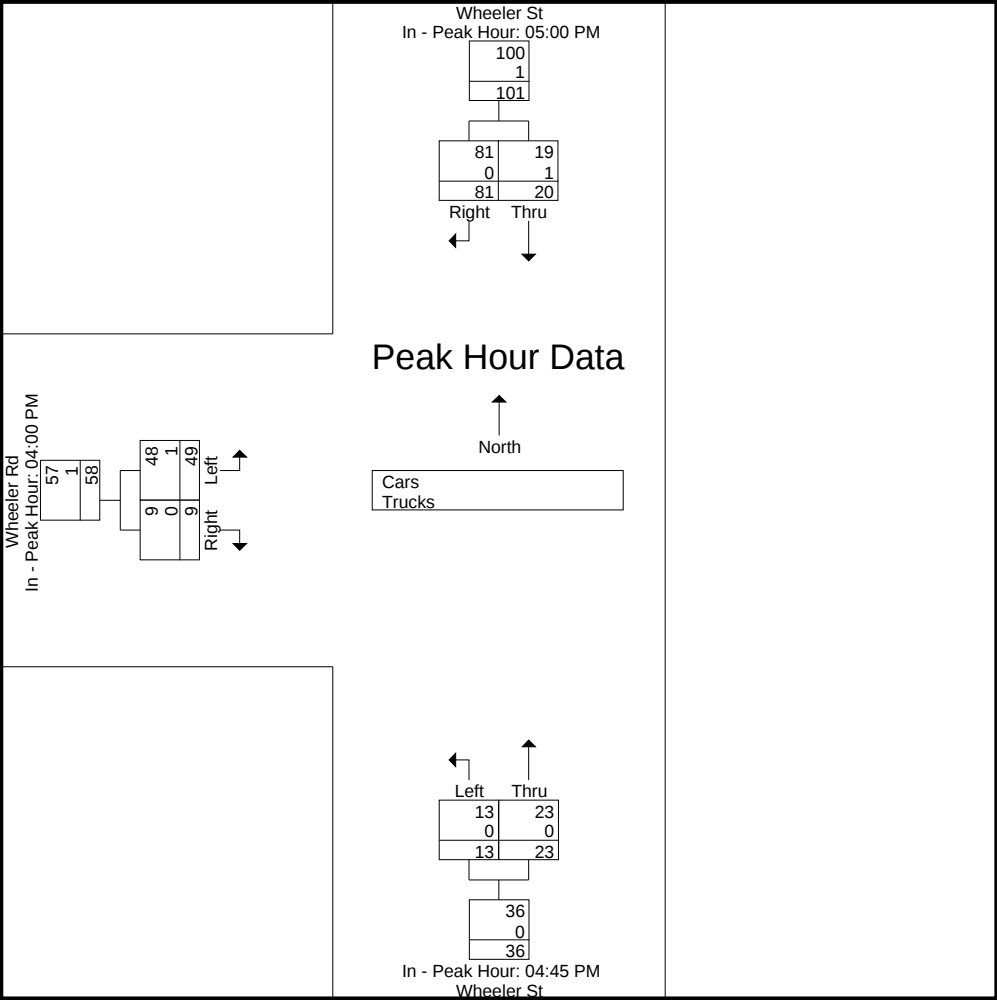
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			04:00 PM		
+0 mins.	5	16	21	1	8	9	8	3	11
+15 mins.	5	21	26	4	7	11	20	2	22
+30 mins.	8	25	33	2	2	4	11	1	12
+45 mins.	2	19	21	6	6	12	10	3	13
Total Volume	20	81	101	13	23	36	49	9	58
% App. Total	19.8	80.2		36.1	63.9		84.5	15.5	
PHF	.625	.810	.765	.542	.719	.750	.613	.750	.659
Cars	19	81	100	13	23	36	48	9	57
% Cars	95	100	99	100	100	100	98	100	98.3
Trucks	1	0	1	0	0	0	1	0	1
% Trucks	5	0	1	0	0	0	2	0	1.7

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

Page No : 4

Groups Printed- Cars

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	5	13	3	7	8	3	39
04:15 PM	5	26	1	5	20	2	59
04:30 PM	4	15	2	1	10	1	33
04:45 PM	4	9	1	8	10	3	35
Total	18	63	7	21	48	9	166
05:00 PM	5	16	4	7	7	1	40
05:15 PM	4	21	2	2	10	2	41
05:30 PM	8	25	6	6	11	1	57
05:45 PM	2	19	1	4	10	0	36
Total	19	81	13	19	38	4	174
Grand Total	37	144	20	40	86	13	340
Apprch %	20.4	79.6	33.3	66.7	86.9	13.1	
Total %	10.9	42.4	5.9	11.8	25.3	3.8	

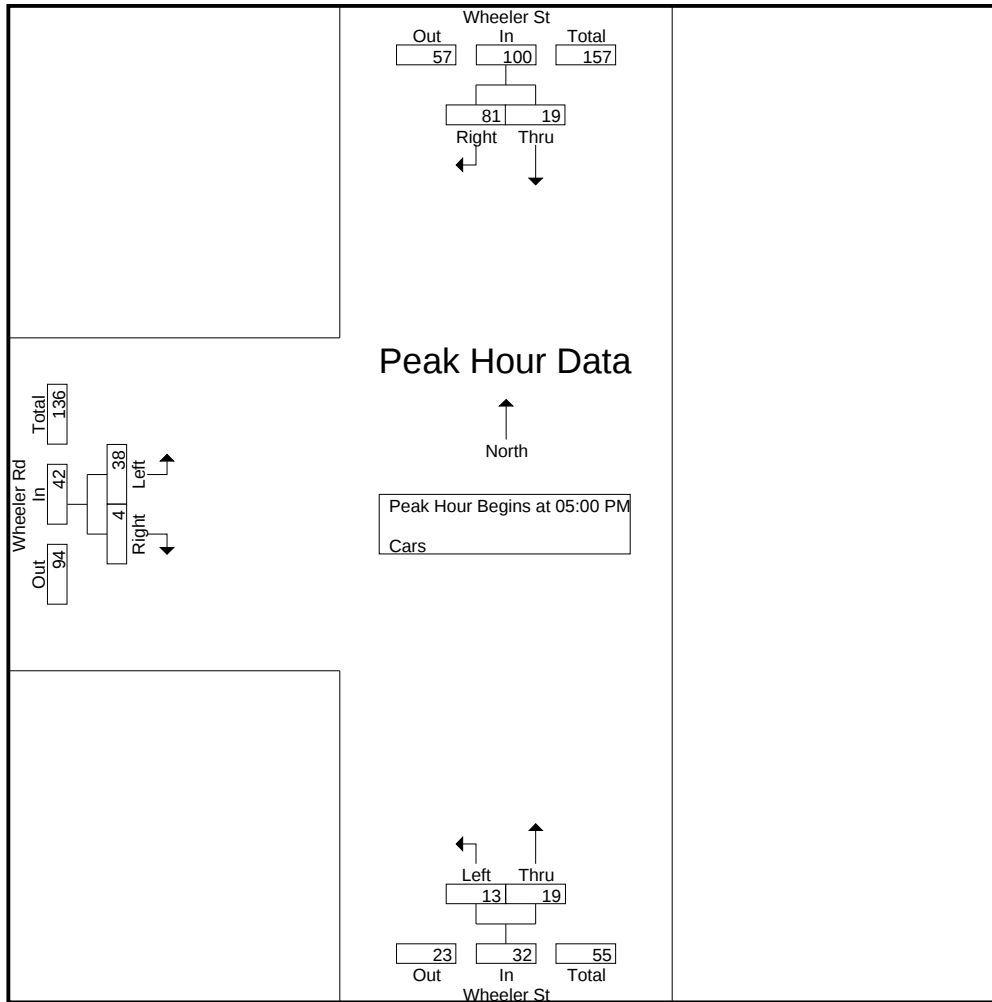
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	5	16	21	4	7	11	7	1	8	40
05:15 PM	4	21	25	2	2	4	10	2	12	41
05:30 PM	8	25	33	6	6	12	11	1	12	57
05:45 PM	2	19	21	1	4	5	10	0	10	36
Total Volume	19	81	100	13	19	32	38	4	42	174
% App. Total	19	81		40.6	59.4		90.5	9.5		
PHF	.594	.810	.758	.542	.679	.667	.864	.500	.875	.763

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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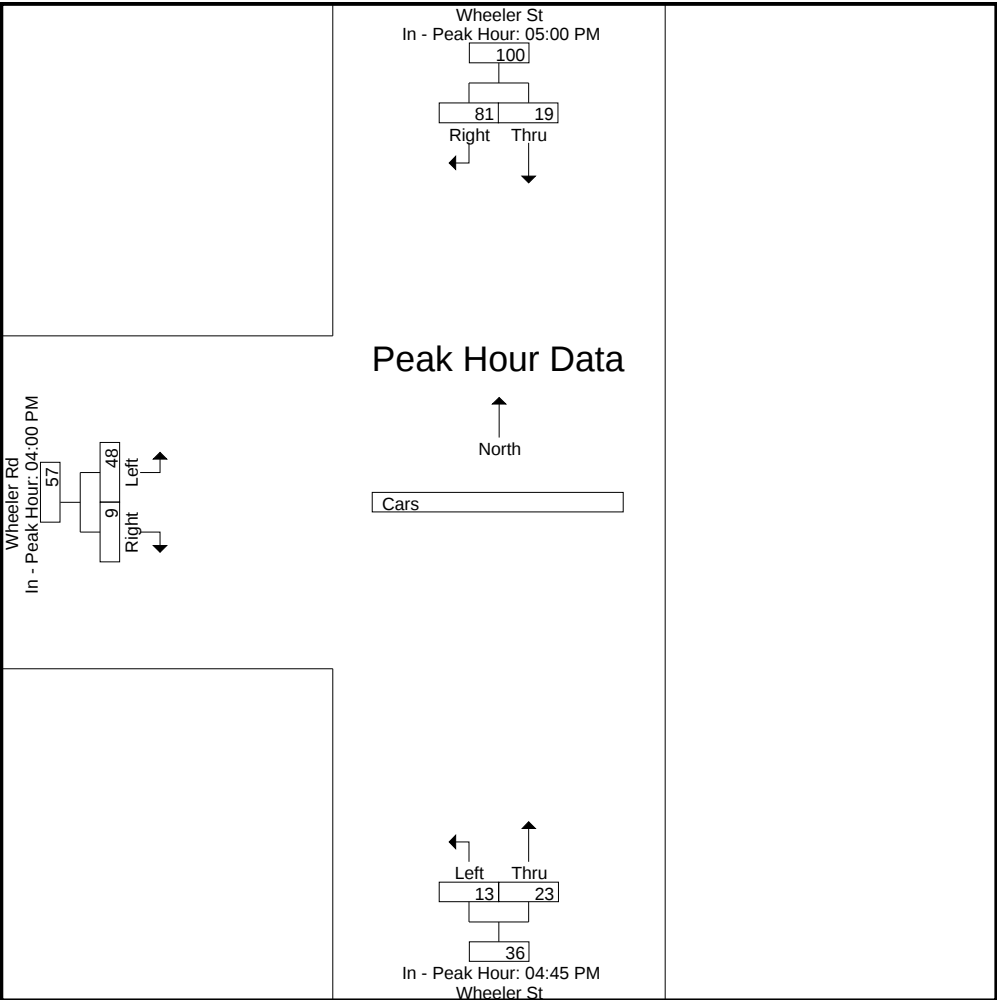
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 PM			04:00 PM		
+0 mins.	5	16	21	1	8	9	8	3	11
+15 mins.	4	21	25	4	7	11	20	2	22
+30 mins.	8	25	33	2	2	4	10	1	11
+45 mins.	2	19	21	6	6	12	10	3	13
Total Volume	19	81	100	13	23	36	48	9	57
% App. Total	19	81		36.1	63.9		84.2	15.8	
PHF	.594	.810	.758	.542	.719	.750	.600	.750	.648

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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Accurate Counts

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N/S Street : Wheeler Street

E/W Street : Wheeler Road

City/State : Methuen, MA

Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

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Groups Printed- Trucks

	Wheeler St From North		Wheeler St From South		Wheeler Rd From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Total
04:00 PM	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	1	0	1
04:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1
05:00 PM	0	0	0	0	0	0	0
05:15 PM	1	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1
Grand Total	1	0	0	0	1	0	2
Apprch %	100	0	0	0	100	0	
Total %	50	0	0	0	50	0	

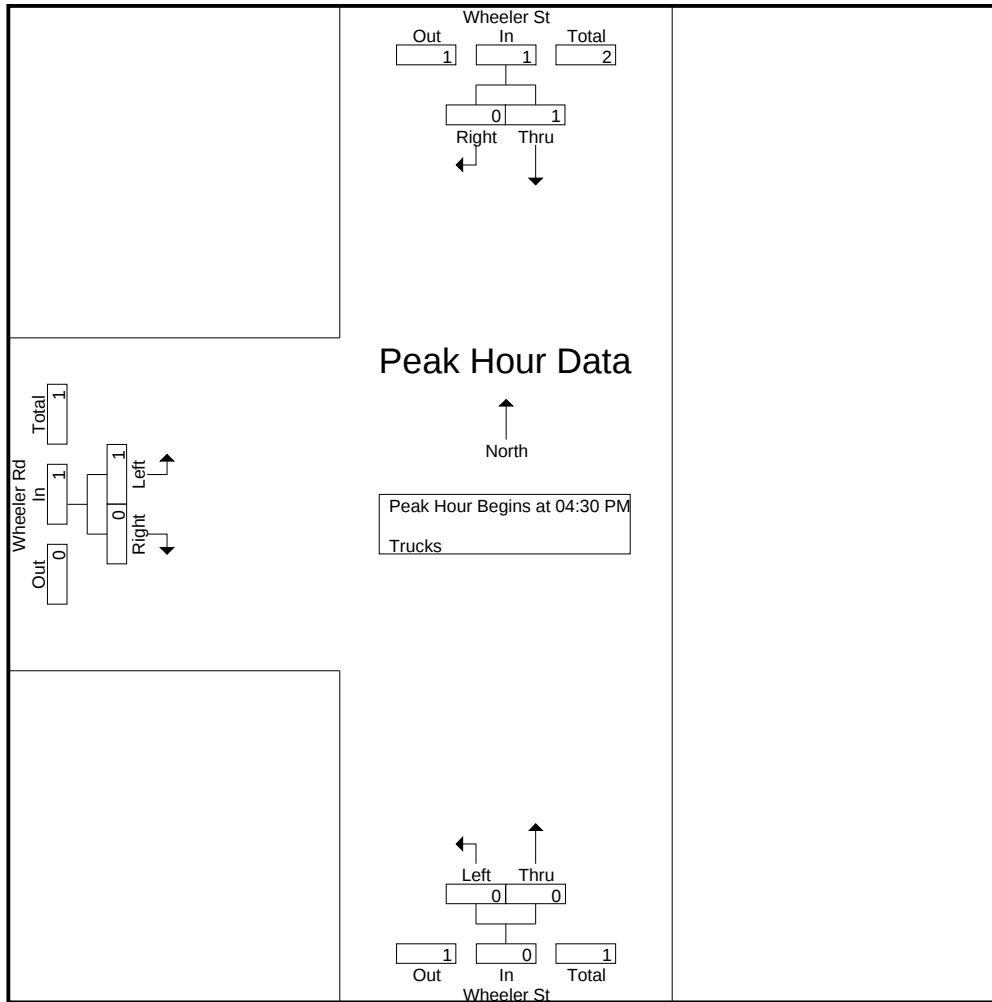
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	0	0	0	0	0	1	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0
05:00 PM	0	0	0	0	0	0	0	0	0	0
05:15 PM	1	0	1	0	0	0	0	0	0	1
Total Volume	1	0	1	0	0	0	1	0	1	2
% App. Total	100	0		0	0		100	0		
PHF	.250	.000	.250	.000	.000	.000	.250	.000	.250	.500

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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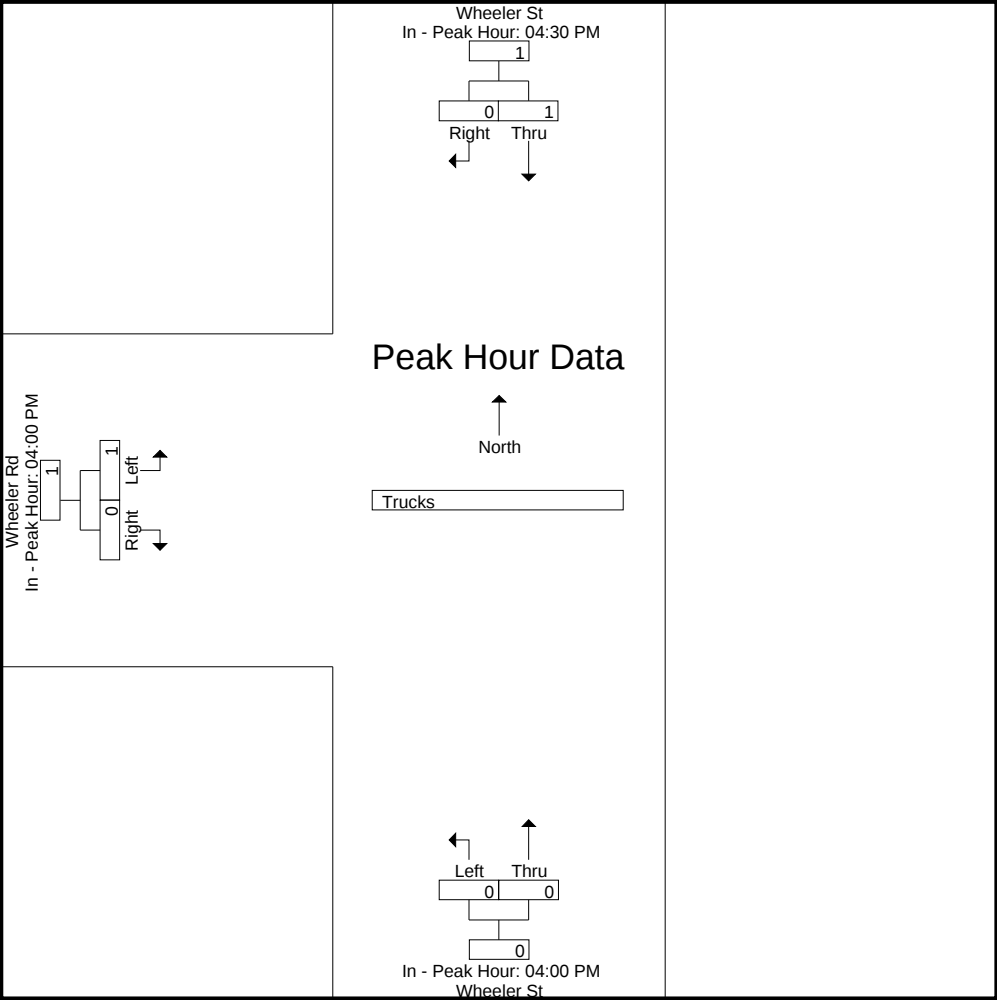
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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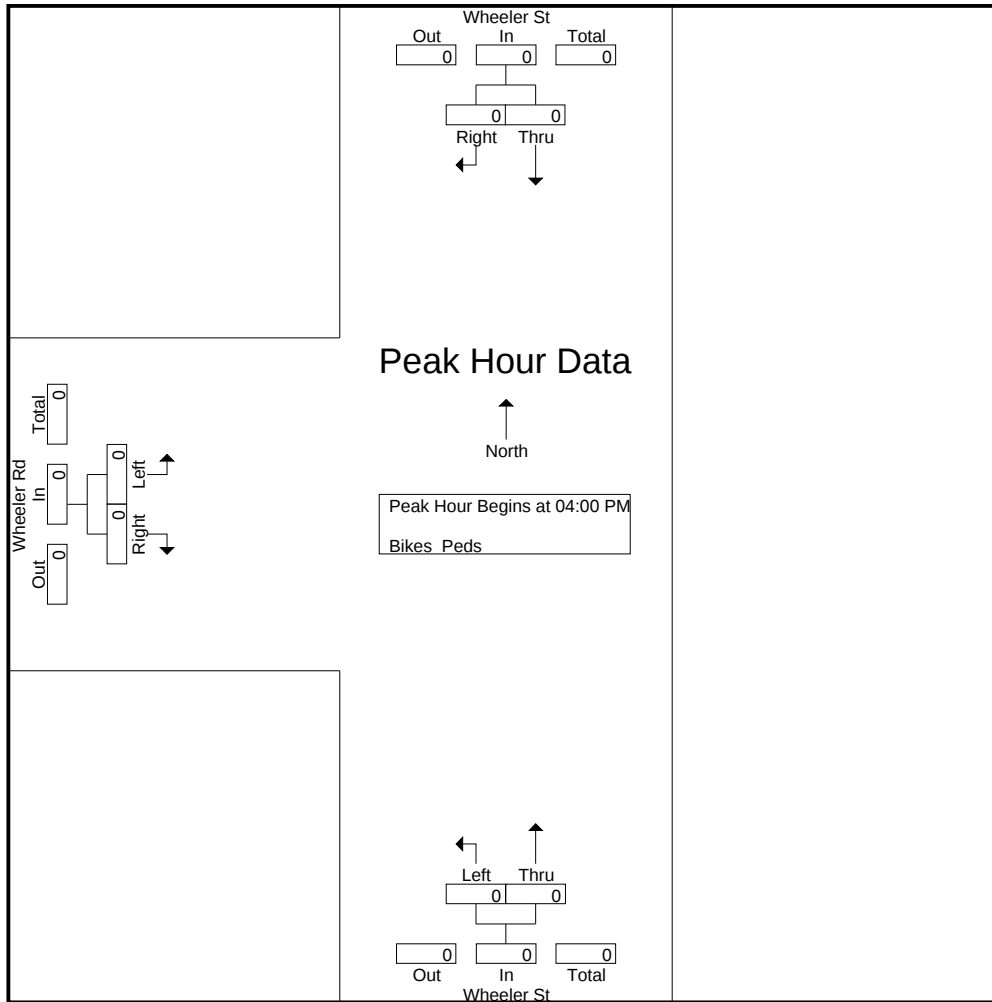
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978-664-2565

N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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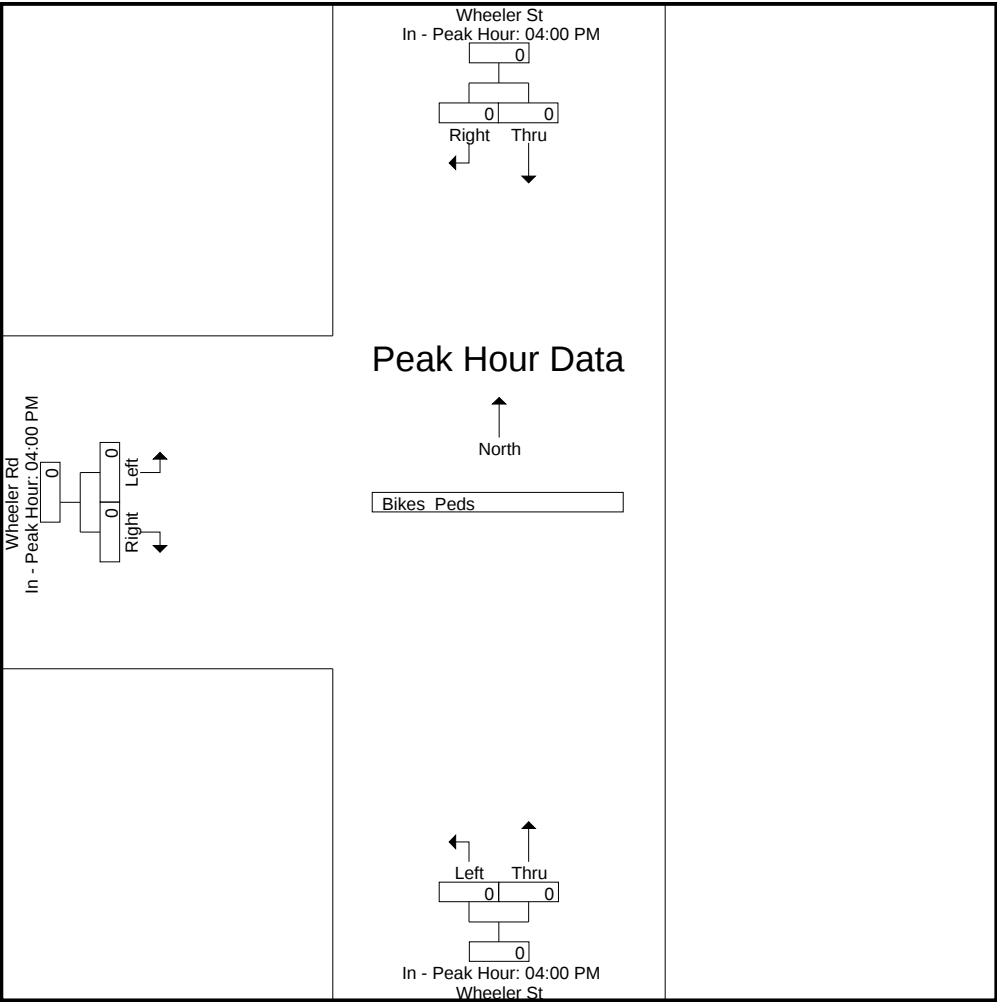
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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N/S Street : Wheeler Street
E/W Street : Wheeler Road
City/State : Methuen, MA
Weather : Clear

File Name : 76430005
Site Code : 76430005
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

Page No : 1

Groups Printed- Cars - Trucks

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	4	85	5	10	181	4	289
07:15 AM	3	101	3	11	172	2	292
07:30 AM	5	102	3	14	164	3	291
07:45 AM	7	119	7	9	146	5	293
Total	19	407	18	44	663	14	1165
08:00 AM	11	84	6	21	157	6	285
08:15 AM	4	88	3	15	148	3	261
08:30 AM	4	108	2	10	147	1	272
08:45 AM	12	111	5	9	152	3	292
Total	31	391	16	55	604	13	1110
Grand Total	50	798	34	99	1267	27	2275
Apprch %	5.9	94.1	25.6	74.4	97.9	2.1	
Total %	2.2	35.1	1.5	4.4	55.7	1.2	
Cars	46	706	33	97	1168	22	2072
% Cars	92	88.5	97.1	98	92.2	81.5	91.1
Trucks	4	92	1	2	99	5	203
% Trucks	8	11.5	2.9	2	7.8	18.5	8.9

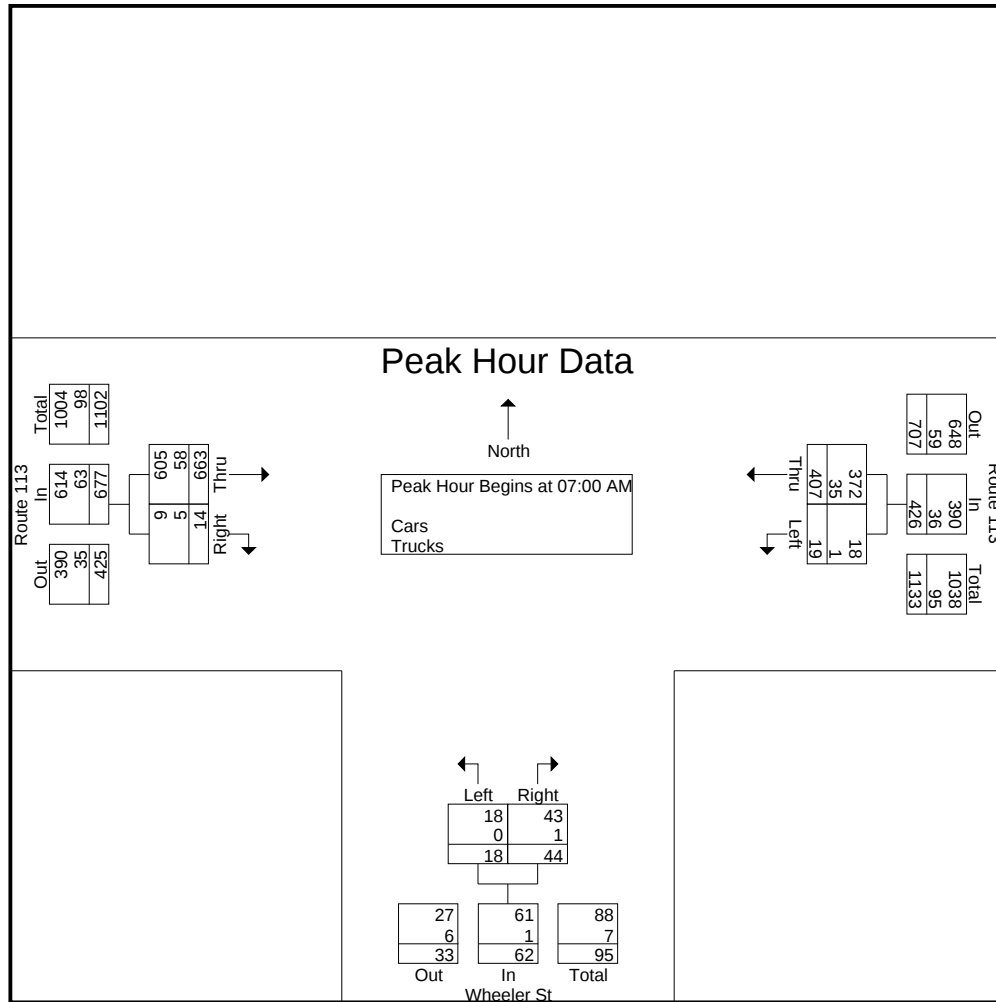
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	4	85	89	5	10	15	181	4	185	289
07:15 AM	3	101	104	3	11	14	172	2	174	292
07:30 AM	5	102	107	3	14	17	164	3	167	291
07:45 AM	7	119	126	7	9	16	146	5	151	293
Total Volume	19	407	426	18	44	62	663	14	677	1165
% App. Total	4.5	95.5		29	71		97.9	2.1		
PHF	.679	.855	.845	.643	.786	.912	.916	.700	.915	.994
Cars	18	372	390	18	43	61	605	9	614	1065
% Cars	94.7	91.4	91.5	100	97.7	98.4	91.3	64.3	90.7	91.4
Trucks	1	35	36	0	1	1	58	5	63	100
% Trucks	5.3	8.6	8.5	0	2.3	1.6	8.7	35.7	9.3	8.6

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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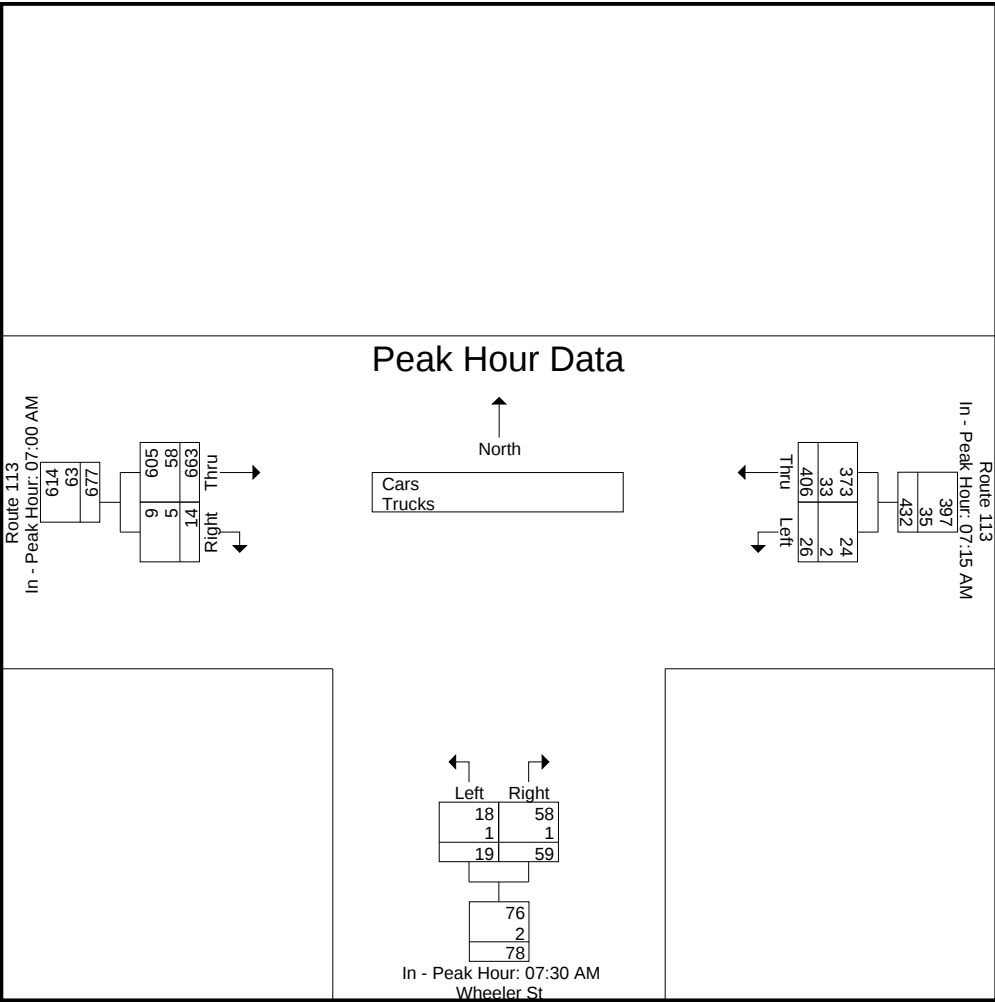
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:30 AM			07:00 AM		
+0 mins.	3	101	104	3	14	17	181	4	185
+15 mins.	5	102	107	7	9	16	172	2	174
+30 mins.	7	119	126	6	21	27	164	3	167
+45 mins.	11	84	95	3	15	18	146	5	151
Total Volume	26	406	432	19	59	78	663	14	677
% App. Total	6	94		24.4	75.6		97.9	2.1	
PHF	.591	.853	.857	.679	.702	.722	.916	.700	.915
Cars	24	373	397	18	58	76	605	9	614
% Cars	92.3	91.9	91.9	94.7	98.3	97.4	91.3	64.3	90.7
Trucks	2	33	35	1	1	2	58	5	63
% Trucks	7.7	8.1	8.1	5.3	1.7	2.6	8.7	35.7	9.3

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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Groups Printed- Cars

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	3	75	5	9	160	3	255
07:15 AM	3	94	3	11	163	1	275
07:30 AM	5	95	3	14	149	3	269
07:45 AM	7	108	7	9	133	2	266
Total	18	372	18	43	605	9	1065
08:00 AM	9	76	6	20	148	6	265
08:15 AM	4	72	2	15	139	3	235
08:30 AM	4	95	2	10	138	1	250
08:45 AM	11	91	5	9	138	3	257
Total	28	334	15	54	563	13	1007
Grand Total	46	706	33	97	1168	22	2072
Apprch %	6.1	93.9	25.4	74.6	98.2	1.8	
Total %	2.2	34.1	1.6	4.7	56.4	1.1	

	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	3	94	97	3	11	14	163	1	164	275
07:30 AM	5	95	100	3	14	17	149	3	152	269
07:45 AM	7	108	115	7	9	16	133	2	135	266
08:00 AM	9	76	85	6	20	26	148	6	154	265
Total Volume	24	373	397	19	54	73	593	12	605	1075
% App. Total	6	94		26	74		98	2		
PHF	.667	.863	.863	.679	.675	.702	.910	.500	.922	.977

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

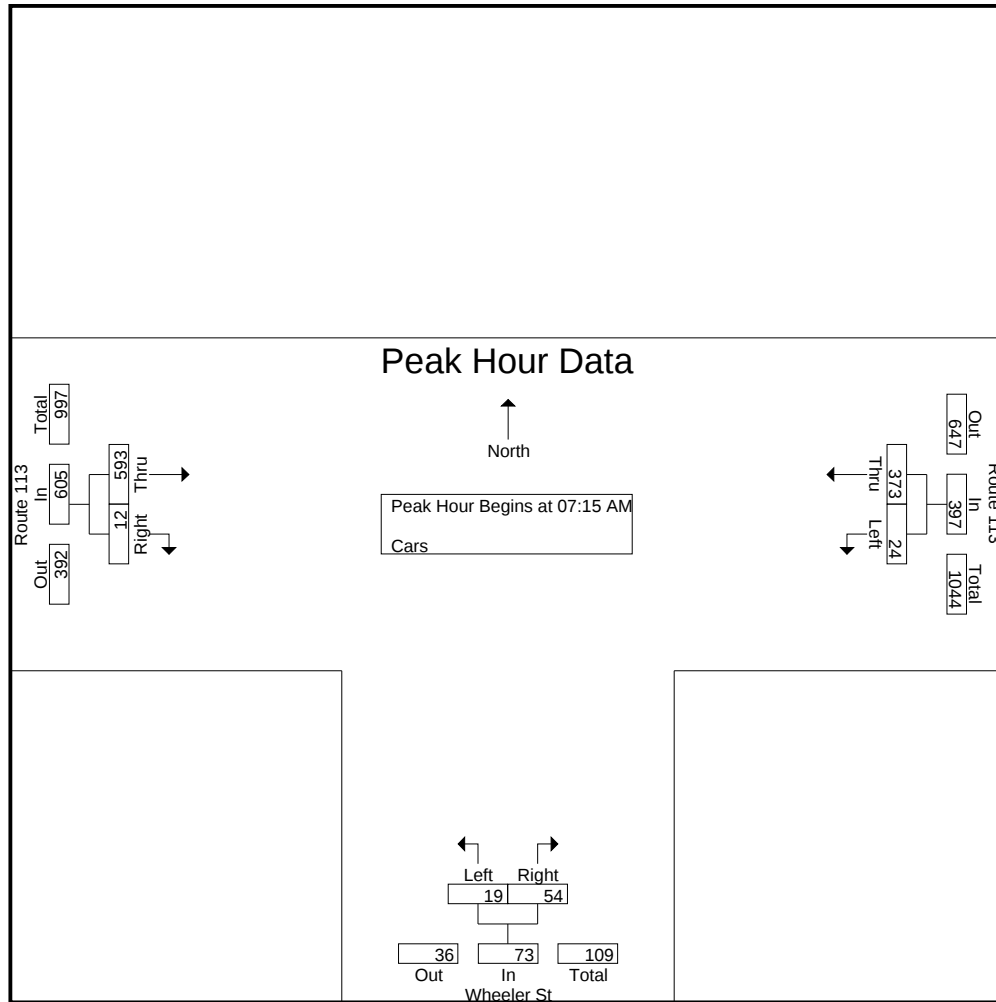
Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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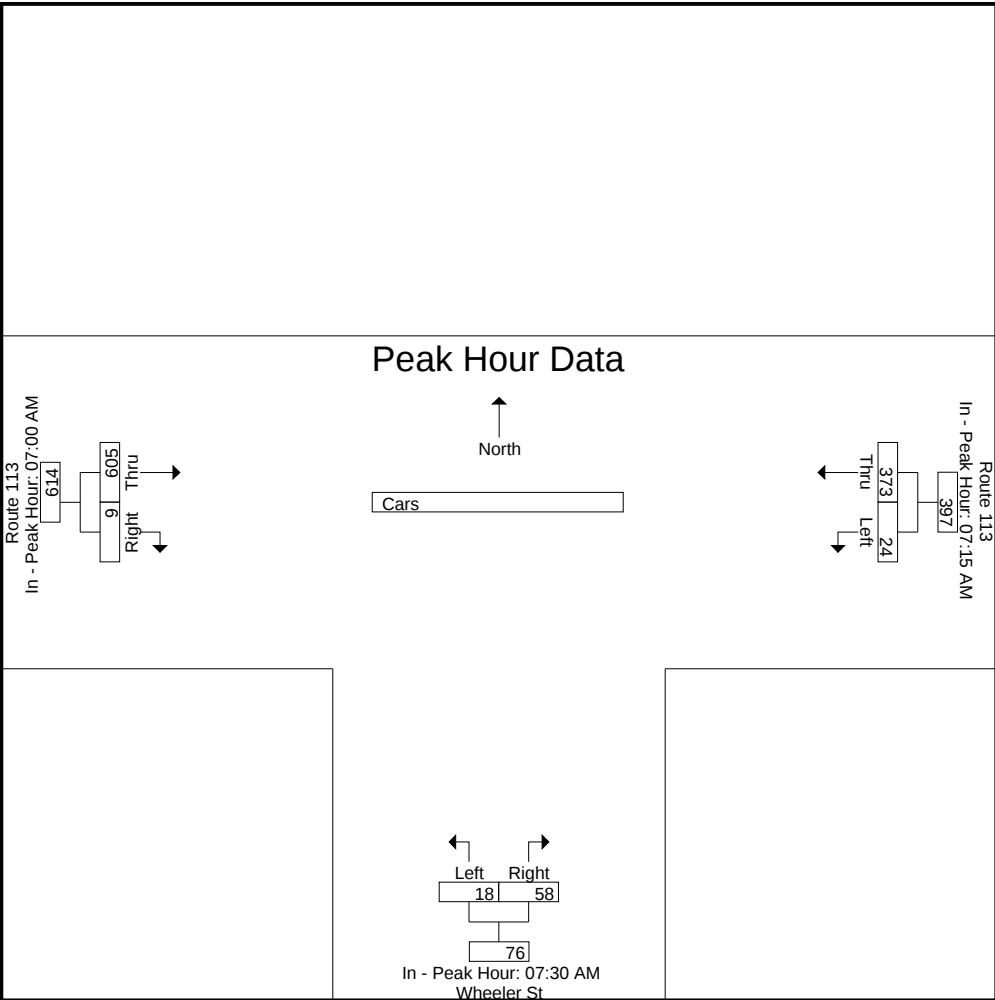
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			07:30 AM			07:00 AM		
+0 mins.	3	94	97	3	14	17	160	3	163
+15 mins.	5	95	100	7	9	16	163	1	164
+30 mins.	7	108	115	6	20	26	149	3	152
+45 mins.	9	76	85	2	15	17	133	2	135
Total Volume	24	373	397	18	58	76	605	9	614
% App. Total	6	94		23.7	76.3		98.5	1.5	
PHF	.667	.863	.863	.643	.725	.731	.928	.750	.936

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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Groups Printed- Trucks

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	1	10	0	1	21	1	34
07:15 AM	0	7	0	0	9	1	17
07:30 AM	0	7	0	0	15	0	22
07:45 AM	0	11	0	0	13	3	27
Total	1	35	0	1	58	5	100
08:00 AM	2	8	0	1	9	0	20
08:15 AM	0	16	1	0	9	0	26
08:30 AM	0	13	0	0	9	0	22
08:45 AM	1	20	0	0	14	0	35
Total	3	57	1	1	41	0	103
Grand Total	4	92	1	2	99	5	203
Apprch %	4.2	95.8	33.3	66.7	95.2	4.8	
Total %	2	45.3	0.5	1	48.8	2.5	

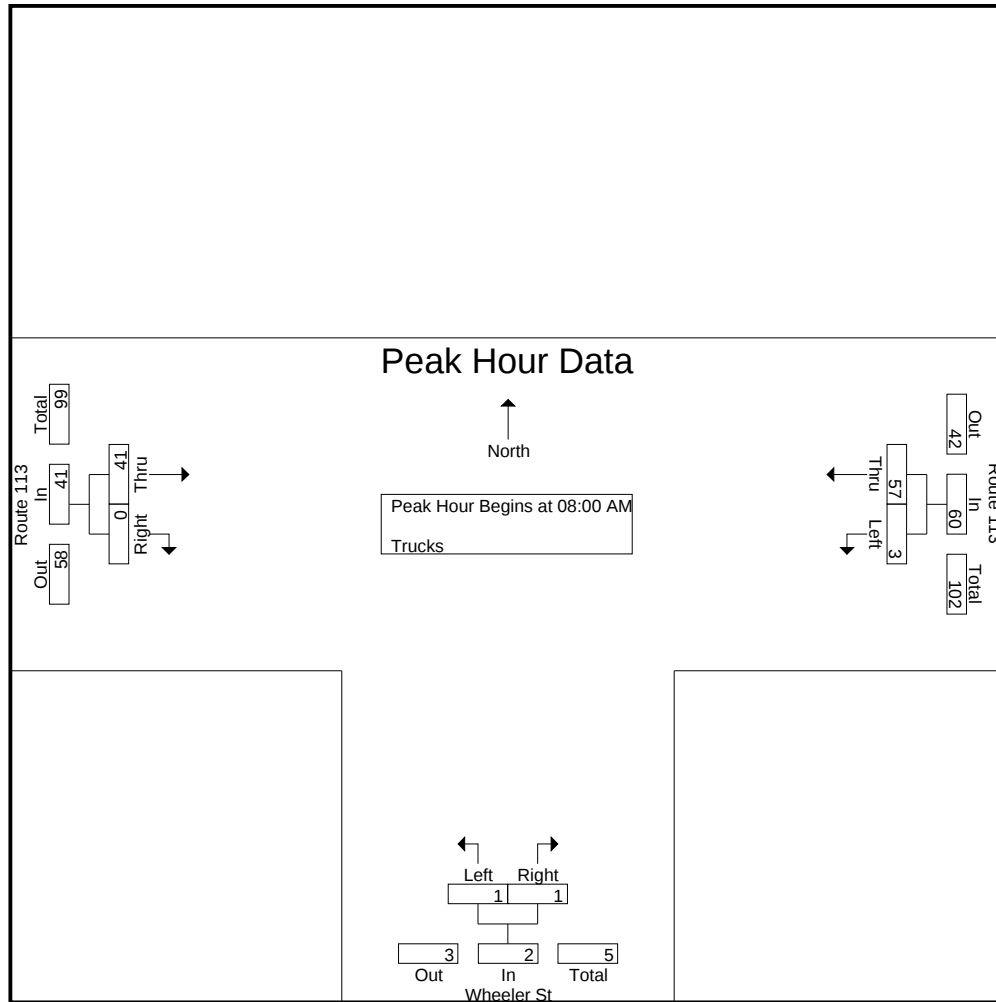
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	8	10	0	1	1	9	0	9	20
08:15 AM	0	16	16	1	0	1	9	0	9	26
08:30 AM	0	13	13	0	0	0	9	0	9	22
08:45 AM	1	20	21	0	0	0	14	0	14	35
Total Volume	3	57	60	1	1	2	41	0	41	103
% App. Total	5	95		50	50		100	0		
PHF	.375	.713	.714	.250	.250	.500	.732	.000	.732	.736

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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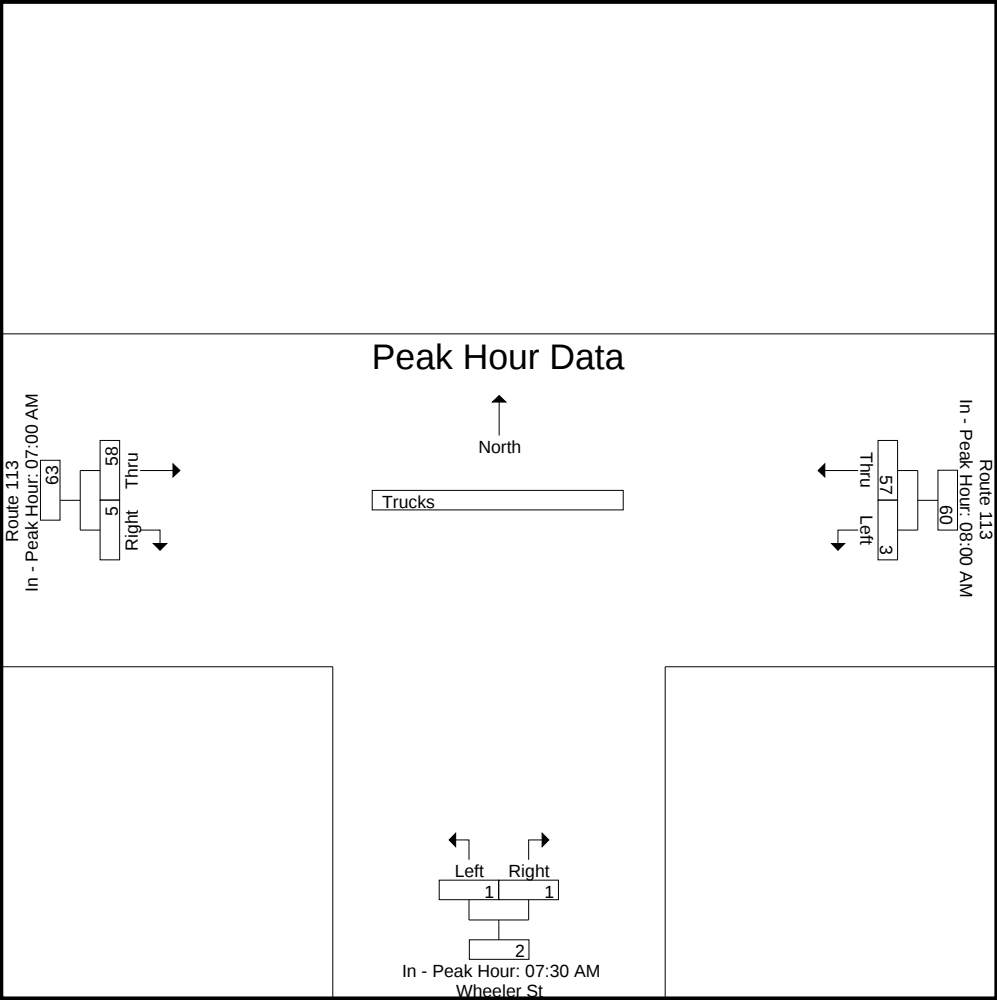
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:30 AM			07:00 AM		
+0 mins.	2	8	10	0	0	0	21	1	22
+15 mins.	0	16	16	0	0	0	9	1	10
+30 mins.	0	13	13	0	1	1	15	0	15
+45 mins.	1	20	21	1	0	1	13	3	16
Total Volume	3	57	60	1	1	2	58	5	63
% App. Total	5	95		50	50		92.1	7.9	
PHF	.375	.713	.714	.250	.250	.500	.690	.417	.716

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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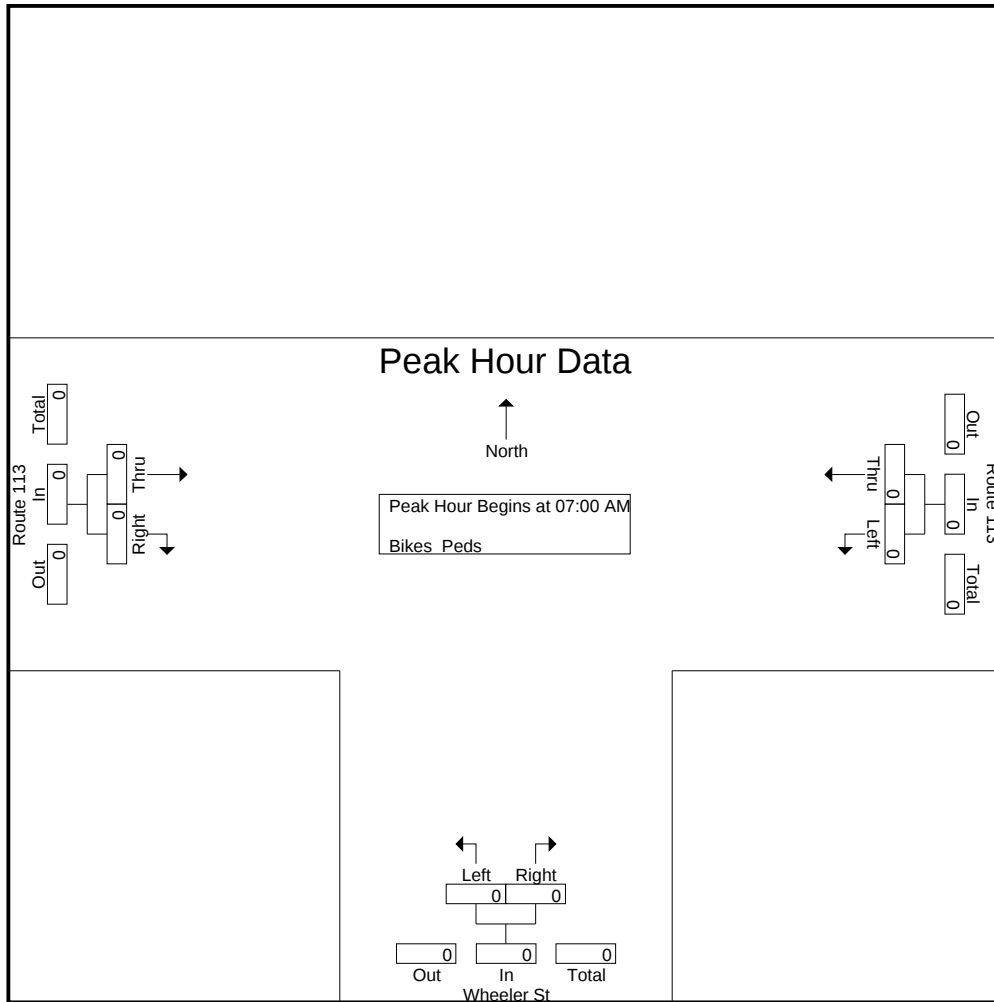
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978-664-2565

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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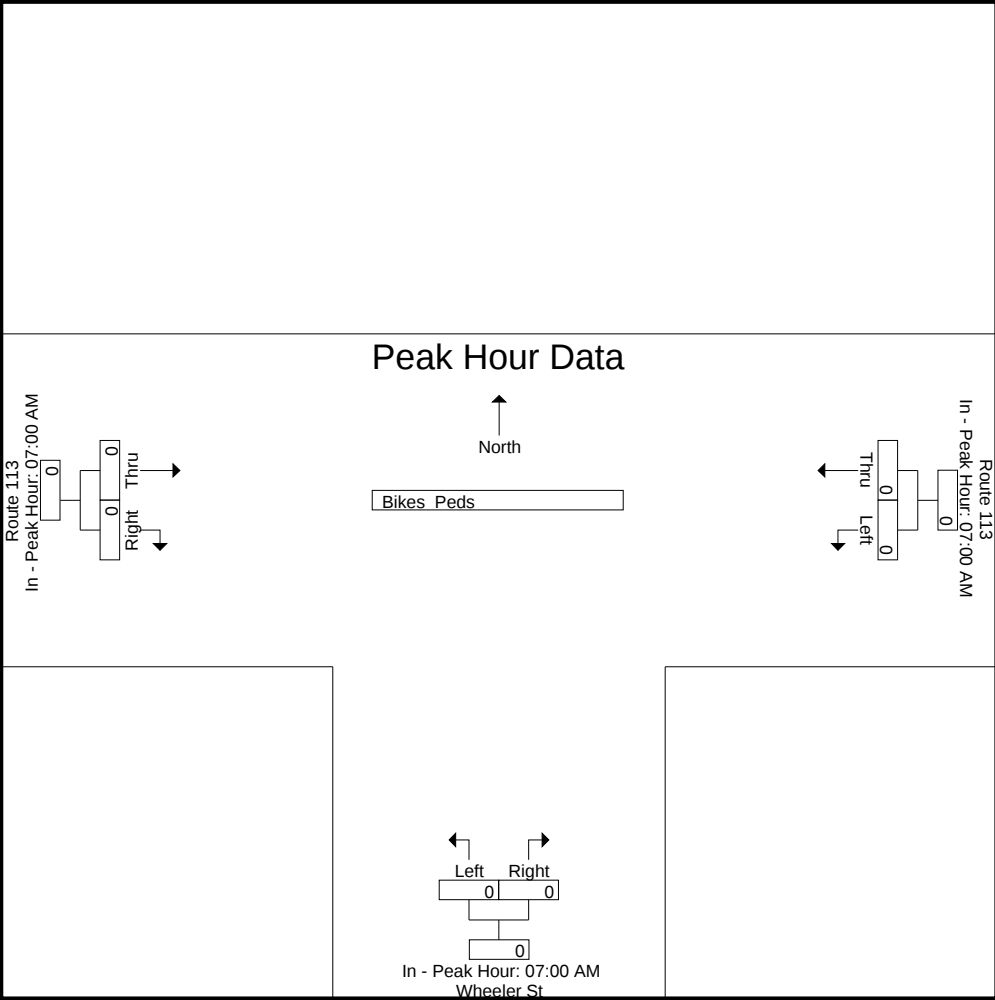
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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Groups Printed- Cars - Trucks

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	14	235	6	12	171	6	444
04:15 PM	31	194	3	24	112	4	368
04:30 PM	17	209	1	12	145	2	386
04:45 PM	12	193	8	8	118	3	342
Total	74	831	18	56	546	15	1540
05:00 PM	18	215	5	10	141	2	391
05:15 PM	23	227	3	8	96	4	361
05:30 PM	27	161	7	12	112	8	327
05:45 PM	20	154	1	12	73	3	263
Total	88	757	16	42	422	17	1342
Grand Total	162	1588	34	98	968	32	2882
Apprch %	9.3	90.7	25.8	74.2	96.8	3.2	
Total %	5.6	55.1	1.2	3.4	33.6	1.1	
Cars	162	1471	34	97	950	31	2745
% Cars	100	92.6	100	99	98.1	96.9	95.2
Trucks	0	117	0	1	18	1	137
% Trucks	0	7.4	0	1	1.9	3.1	4.8

	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	14	235	249	6	12	18	171	6	177	444
04:15 PM	31	194	225	3	24	27	112	4	116	368
04:30 PM	17	209	226	1	12	13	145	2	147	386
04:45 PM	12	193	205	8	8	16	118	3	121	342
Total Volume	74	831	905	18	56	74	546	15	561	1540
% App. Total	8.2	91.8		24.3	75.7		97.3	2.7		
PHF	.597	.884	.909	.563	.583	.685	.798	.625	.792	.867
Cars	74	767	841	18	55	73	535	15	550	1464
% Cars	100	92.3	92.9	100	98.2	98.6	98.0	100	98.0	95.1
Trucks	0	64	64	0	1	1	11	0	11	76
% Trucks	0	7.7	7.1	0	1.8	1.4	2.0	0	2.0	4.9

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

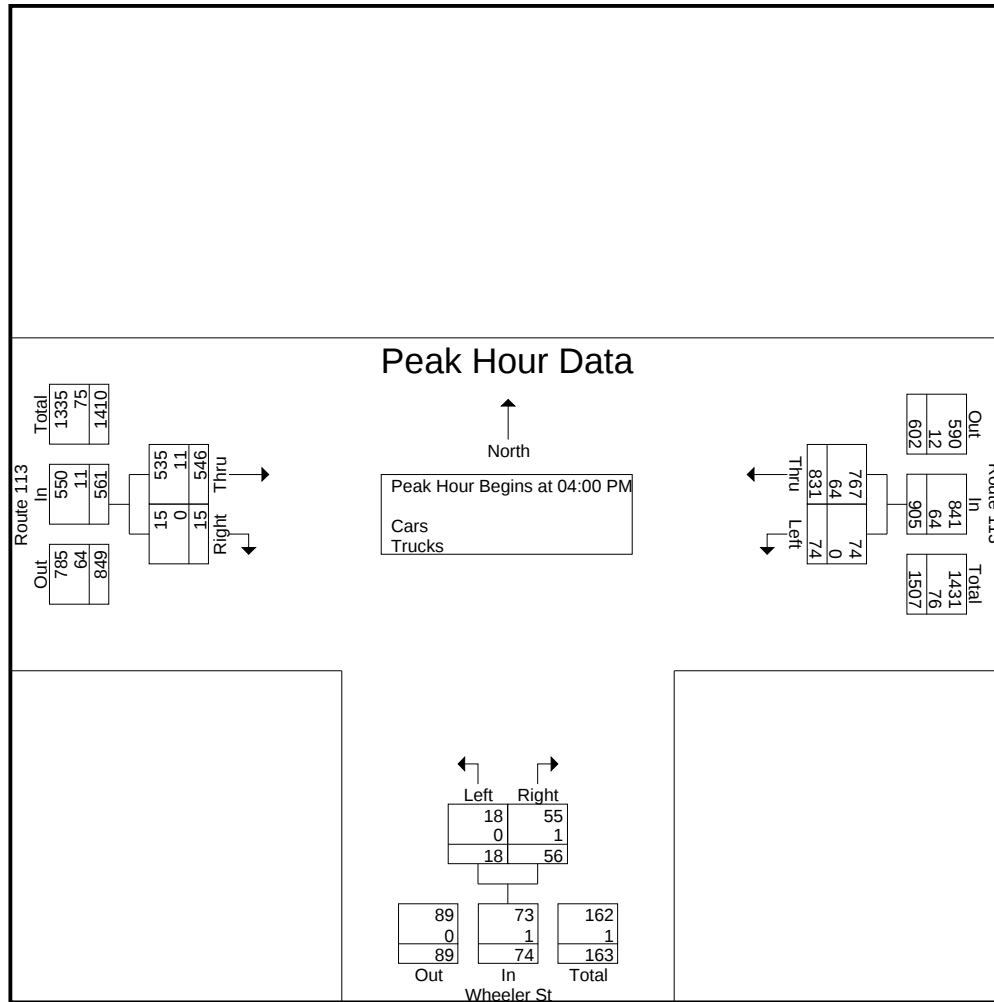
Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

Page No : 2



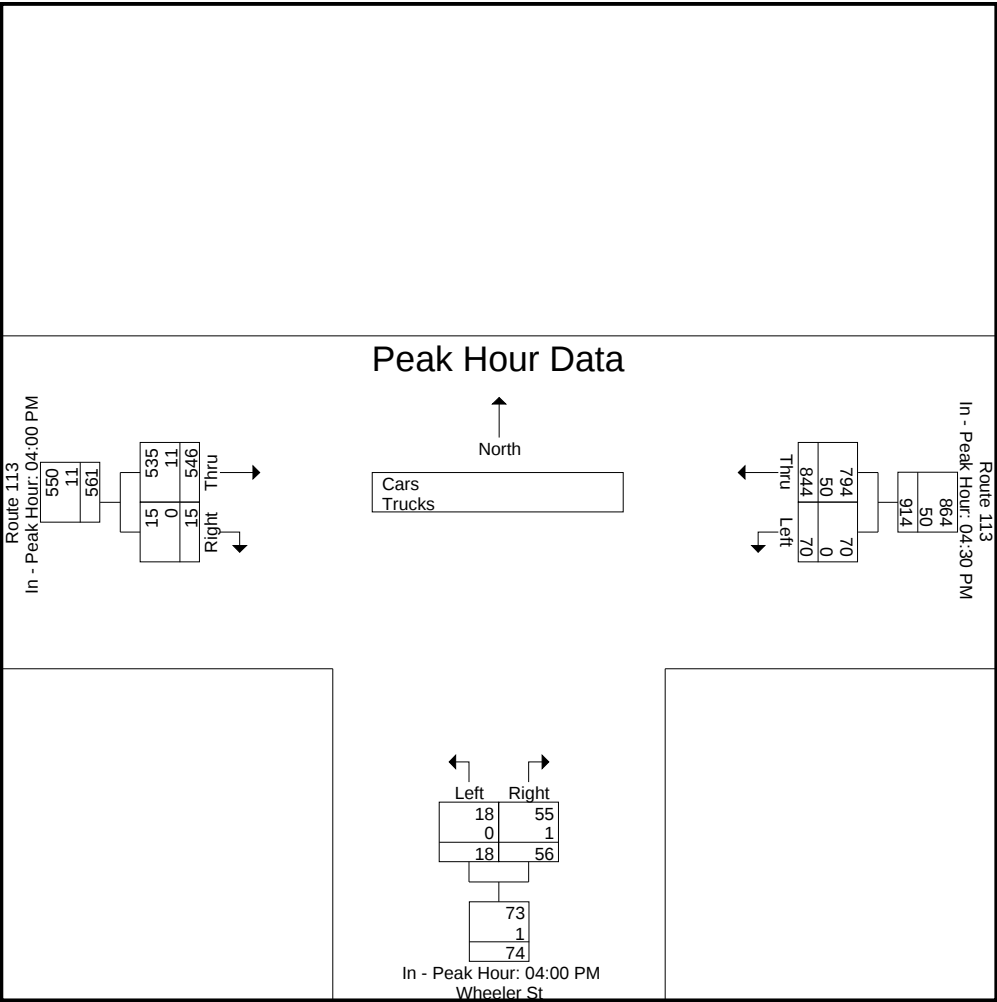
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:00 PM			04:00 PM		
+0 mins.	17	209	226	6	12	18	171	6	177
+15 mins.	12	193	205	3	24	27	112	4	116
+30 mins.	18	215	233	1	12	13	145	2	147
+45 mins.	23	227	250	8	8	16	118	3	121
Total Volume	70	844	914	18	56	74	546	15	561
% App. Total	7.7	92.3		24.3	75.7		97.3	2.7	
PHF	.761	.930	.914	.563	.583	.685	.798	.625	.792
Cars	70	794	864	18	55	73	535	15	550
% Cars	100	94.1	94.5	100	98.2	98.6	98	100	98
Trucks	0	50	50	0	1	1	11	0	11
% Trucks	0	5.9	5.5	0	1.8	1.4	2	0	2

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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Groups Printed- Cars

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	14	211	6	12	166	6	415
04:15 PM	31	173	3	24	110	4	345
04:30 PM	17	199	1	11	144	2	374
04:45 PM	12	184	8	8	115	3	330
Total	74	767	18	55	535	15	1464
05:00 PM	18	203	5	10	138	2	376
05:15 PM	23	208	3	8	95	3	340
05:30 PM	27	151	7	12	110	8	315
05:45 PM	20	142	1	12	72	3	250
Total	88	704	16	42	415	16	1281
Grand Total	162	1471	34	97	950	31	2745
Apprch %	9.9	90.1	26	74	96.8	3.2	
Total %	5.9	53.6	1.2	3.5	34.6	1.1	

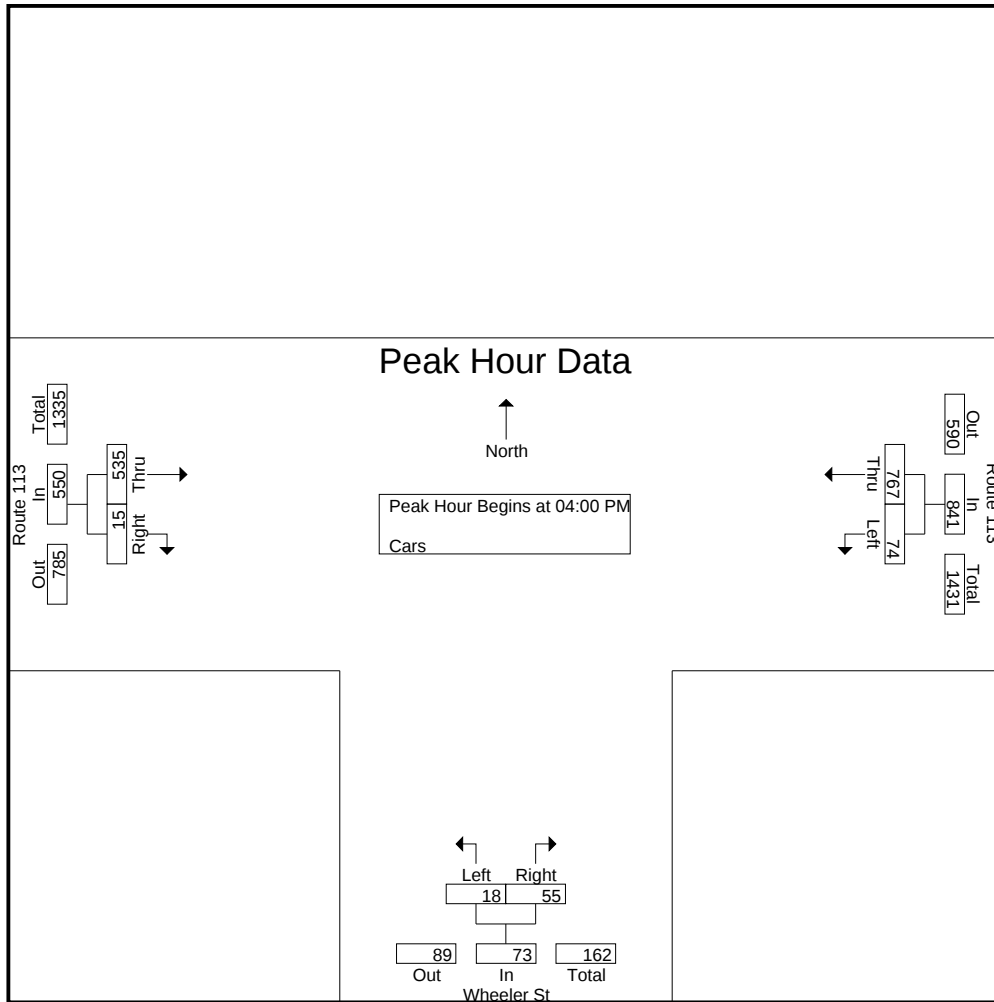
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	14	211	225	6	12	18	166	6	172	415
04:15 PM	31	173	204	3	24	27	110	4	114	345
04:30 PM	17	199	216	1	11	12	144	2	146	374
04:45 PM	12	184	196	8	8	16	115	3	118	330
Total Volume	74	767	841	18	55	73	535	15	550	1464
% App. Total	8.8	91.2		24.7	75.3		97.3	2.7		
PHF	.597	.909	.934	.563	.573	.676	.806	.625	.799	.882

Accurate Counts

978-664-2565

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 5



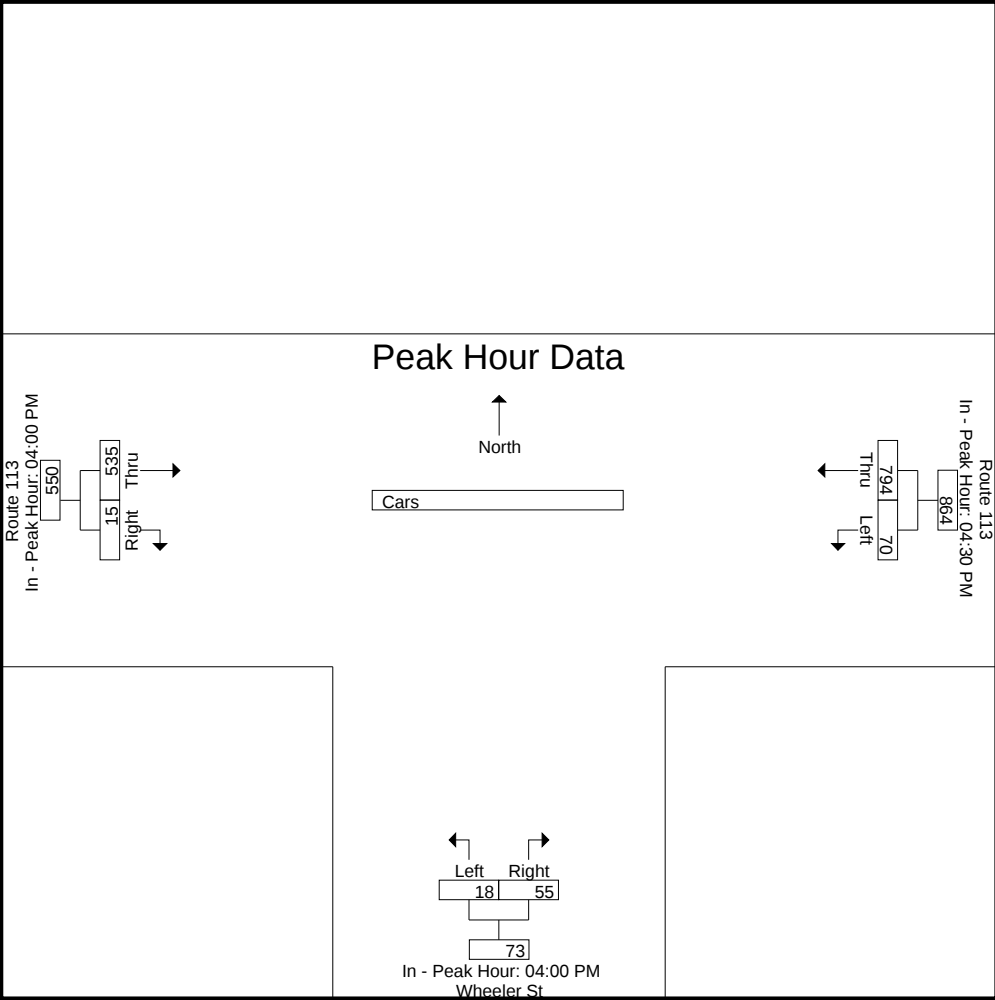
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			04:00 PM			04:00 PM		
+0 mins.	17	199	216	6	12	18	166	6	172
+15 mins.	12	184	196	3	24	27	110	4	114
+30 mins.	18	203	221	1	11	12	144	2	146
+45 mins.	23	208	231	8	8	16	115	3	118
Total Volume	70	794	864	18	55	73	535	15	550
% App. Total	8.1	91.9		24.7	75.3		97.3	2.7	
PHF	.761	.954	.935	.563	.573	.676	.806	.625	.799

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

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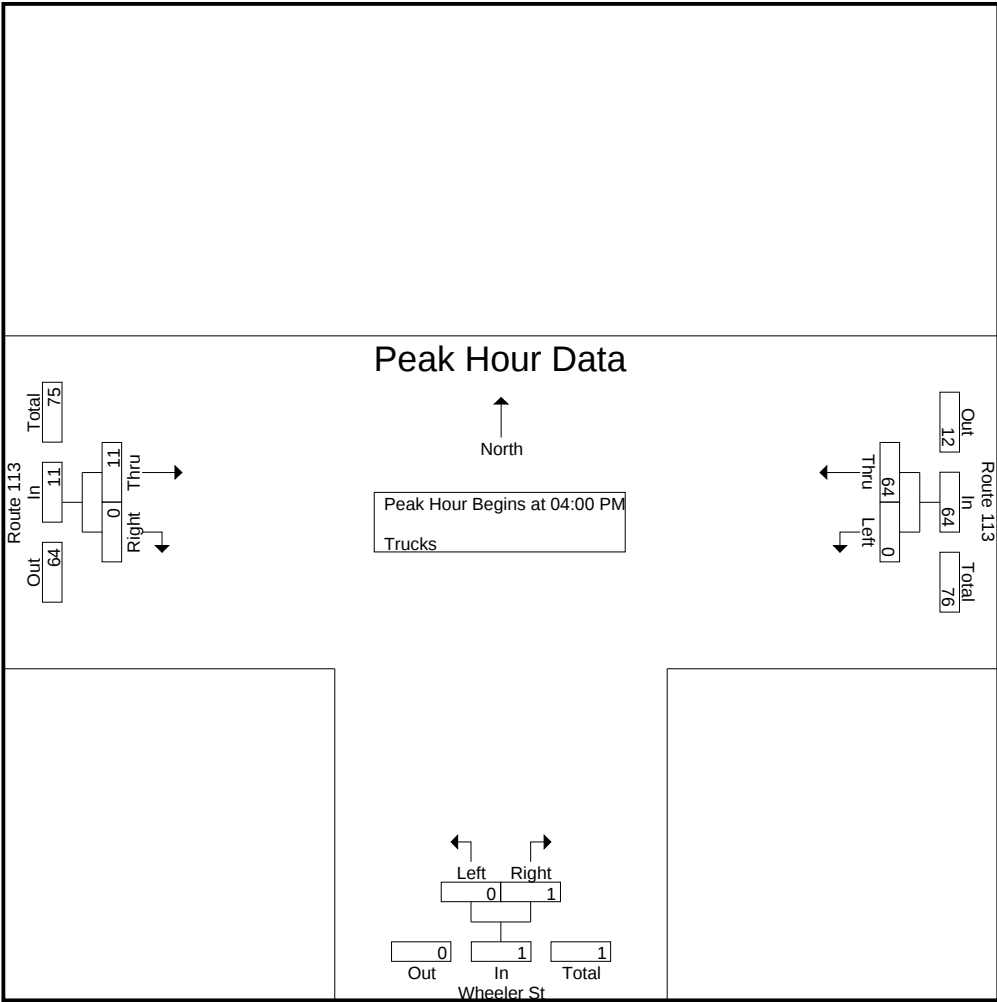
Groups Printed- Trucks

	Route 113 From East		Wheeler St From South		Route 113 From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	24	0	0	5	0	29
04:15 PM	0	21	0	0	2	0	23
04:30 PM	0	10	0	1	1	0	12
04:45 PM	0	9	0	0	3	0	12
Total	0	64	0	1	11	0	76
05:00 PM	0	12	0	0	3	0	15
05:15 PM	0	19	0	0	1	1	21
05:30 PM	0	10	0	0	2	0	12
05:45 PM	0	12	0	0	1	0	13
Total	0	53	0	0	7	1	61
Grand Total	0	117	0	1	18	1	137
Apprch %	0	100	0	100	94.7	5.3	
Total %	0	85.4	0	0.7	13.1	0.7	

	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	0	24	24	0	0	0	5	0	5	29
04:15 PM	0	21	21	0	0	0	2	0	2	23
04:30 PM	0	10	10	0	1	1	1	0	1	12
04:45 PM	0	9	9	0	0	0	3	0	3	12
Total Volume	0	64	64	0	1	1	11	0	11	76
% App. Total	0	100		0	100		100	0		
PHF	.000	.667	.667	.000	.250	.250	.550	.000	.550	.655

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 8

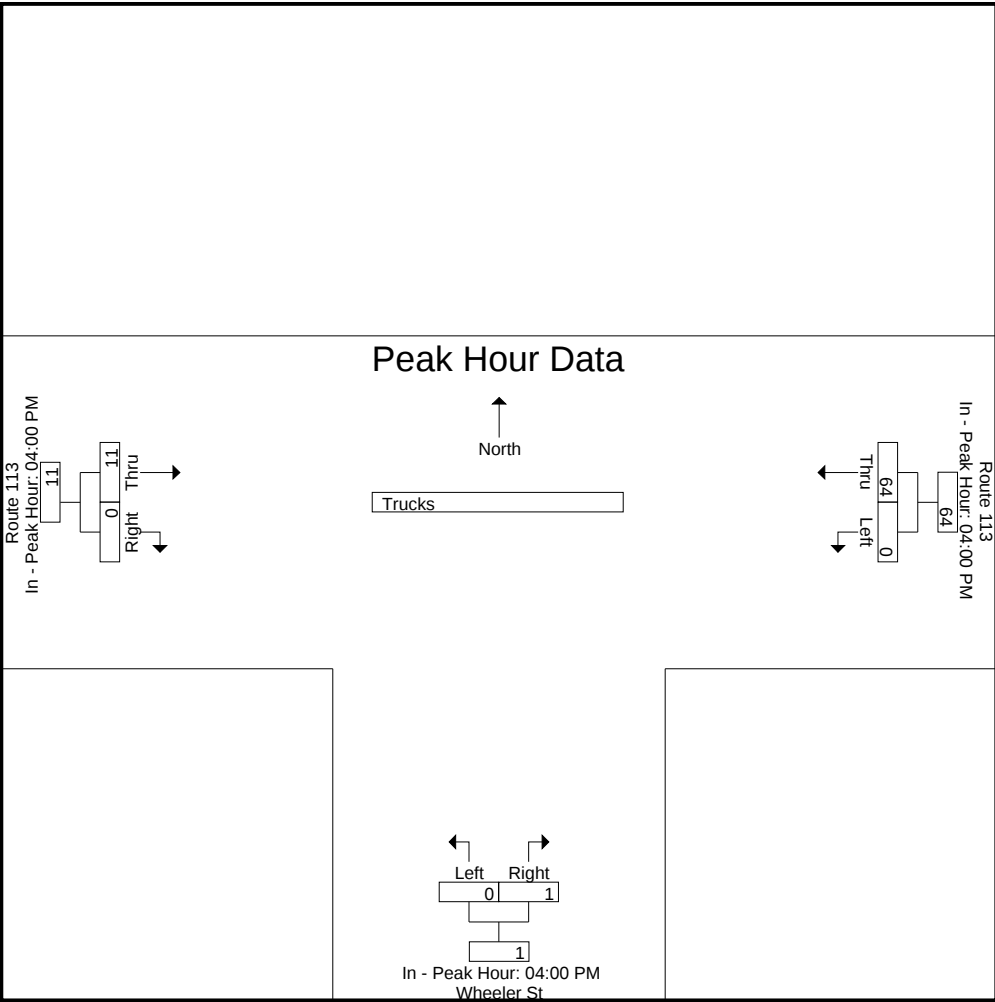


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	24	24	0	0	0	5	0	5
+15 mins.	0	21	21	0	0	0	2	0	2
+30 mins.	0	10	10	0	1	1	1	0	1
+45 mins.	0	9	9	0	0	0	3	0	3
Total Volume	0	64	64	0	1	1	11	0	11
% App. Total	0	100		0	100		100	0	
PHF	.000	.667	.667	.000	.250	.250	.550	.000	.550

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
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[illegible][illegible]

978-664-2565

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

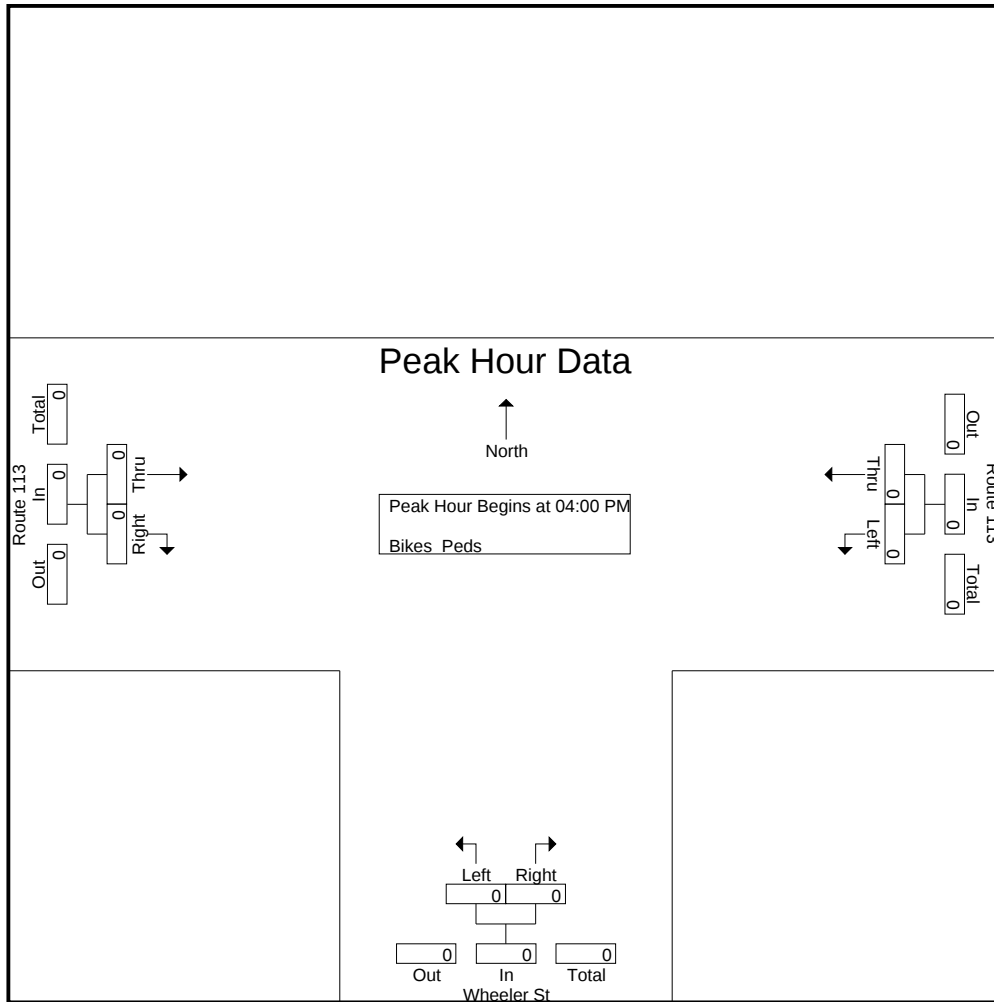
Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

Page No : 11



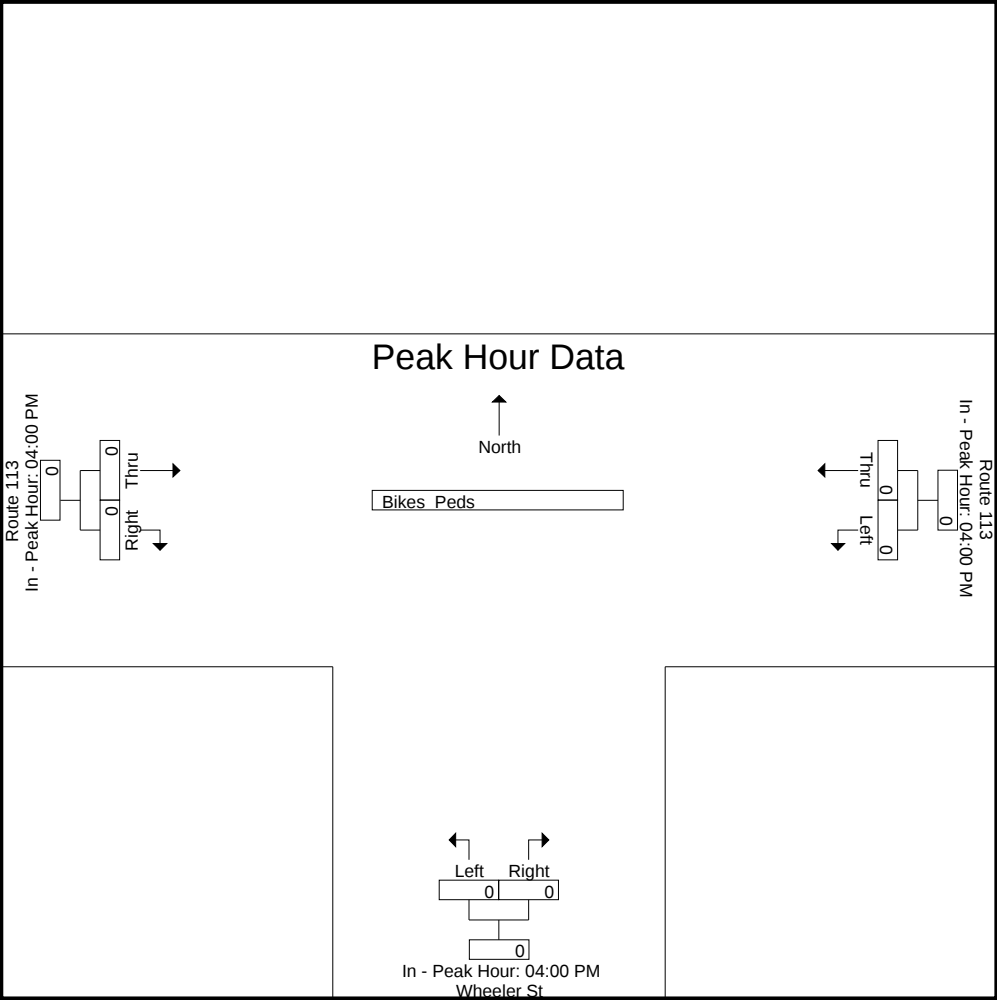
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 76430006
Site Code : 76430006
Start Date : 3/7/2023
Page No : 12



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.

VEHICLE TRAVEL SPEED DATA

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: SB

76430001

3/7/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	1	1	0	1	1	0	0	0	0	0	0	0	0	4
5:00	1	2	2	0	0	0	0	0	0	0	0	0	0	5
6:00	2	4	4	2	1	0	0	0	0	0	0	0	0	13
7:00	1	4	6	2	1	1	1	0	0	0	0	0	0	16
8:00	2	1	6	5	0	0	0	0	0	0	0	0	0	14
9:00	0	4	6	4	0	0	0	0	0	0	0	0	0	14
10:00	1	2	1	0	1	3	1	0	0	0	0	0	0	9
11:00	0	3	4	2	0	0	0	0	0	0	0	0	0	9
12:00 PM	0	5	5	6	3	0	0	0	0	0	0	0	0	19
1:00	0	1	1	5	2	0	0	0	0	0	0	0	0	9
2:00	0	3	5	6	0	0	0	0	0	0	0	0	0	14
3:00	1	3	3	4	4	0	1	0	0	0	0	0	0	16
4:00	1	1	5	7	2	0	0	0	0	0	0	0	0	16
5:00	0	4	3	4	2	0	0	0	0	0	0	0	0	13
6:00	0	5	1	3	1	0	0	0	0	0	0	0	0	10
7:00	0	1	2	1	0	0	0	0	0	0	0	0	0	4
8:00	0	2	1	0	0	0	0	0	0	0	0	0	0	3
9:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
10:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	11	49	55	52	18	4	3	0	0	0	0	0	0	192

Percentile	15th	50th	85th	95th
Speed	17	24	30	34
Mean Speed (Average)	23.3			
10 MPH Pace Speed	20-29			
Number in Pace	107			
Percent in Pace	55.7%			
Number > 25 MPH	77			
Percent > 25 MPH	40.1%			

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: SB

76430001

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:00	0	3	1	0	0	0	0	0	0	0	0	0	0	4
6:00	1	2	1	0	3	0	0	0	0	0	0	0	0	7
7:00	2	3	9	2	1	0	0	0	0	0	0	0	0	17
8:00	0	4	6	2	3	1	0	0	0	0	0	0	0	16
9:00	0	0	3	5	2	0	0	0	0	0	0	0	0	10
10:00	0	0	2	3	0	0	0	0	0	0	0	0	0	5
11:00	1	1	3	0	0	1	0	0	0	0	0	0	0	6
12:00 PM	0	0	5	4	2	0	0	0	0	0	0	0	0	11
1:00	0	1	0	0	1	1	0	0	0	0	0	0	0	3
2:00	0	3	3	4	6	1	0	0	0	0	0	0	0	17
3:00	2	4	4	3	2	2	0	0	0	0	0	0	0	17
4:00	0	4	6	1	2	0	0	0	0	0	0	0	0	13
5:00	2	1	4	5	3	0	0	0	0	0	0	0	0	15
6:00	1	3	3	6	2	0	0	0	0	0	0	0	0	15
7:00	0	3	3	2	0	0	0	0	0	0	0	0	0	8
8:00	0	4	7	2	1	0	0	0	0	0	0	0	0	14
9:00	0	0	1	0	2	0	0	0	0	0	0	0	0	3
10:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	9	38	63	39	31	7	0	0	0	0	0	0	0	187

Percentile	15th	50th	85th	95th
Speed	19	24	31	34
Mean Speed (Average)	24.1			
10 MPH Pace Speed	18-27			
Number in Pace	102			
Percent in Pace	54.5%			
Number > 25 MPH	77			
Percent > 25 MPH	41.2%			

Grand Total	20	87	118	91	49	11	3	0	0	0	0	0	0	379
Percentile	15th	50th	85th	95th										
Speed	18	24	30	34										
Mean Speed (Average)	23.7													
10 MPH Pace Speed	20-29													
Number in Pace	209													
Percent in Pace	55.1%													
Number > 25 MPH	154													
Percent > 25 MPH	40.6%													

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: NB

76430001

3/7/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
6:00	0	0	1	5	1	0	0	0	0	0	0	0	0	7
7:00	0	0	2	7	2	1	0	0	0	0	0	0	0	12
8:00	0	0	3	3	6	0	1	0	0	0	0	0	0	13
9:00	0	0	5	8	3	0	0	0	0	0	0	0	0	16
10:00	0	0	5	3	1	1	0	1	0	0	0	0	0	11
11:00	0	2	4	5	1	0	0	0	0	0	0	0	0	12
12:00 PM	0	0	1	7	4	2	0	0	0	0	0	0	0	14
1:00	0	1	3	9	3	1	0	0	0	0	0	0	0	17
2:00	0	2	5	9	9	3	1	0	0	0	0	0	0	29
3:00	0	2	10	7	7	0	0	0	0	0	0	0	0	26
4:00	0	1	1	16	5	3	0	0	0	0	0	0	0	26
5:00	1	1	4	15	10	1	0	0	0	0	0	0	0	32
6:00	0	3	2	5	0	0	0	0	0	0	0	0	0	10
7:00	1	0	2	3	1	0	0	0	0	0	0	0	0	7
8:00	0	1	1	2	0	1	0	0	0	0	0	0	0	5
9:00	0	1	2	3	0	0	0	0	0	0	0	0	0	6
10:00	0	0	2	0	0	0	0	0	0	0	0	0	0	2
11:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total	2	14	55	110	56	13	2	1	0	0	0	0	0	253

Percentile	15th	50th	85th	95th
Speed	24	27	32	36
Mean Speed (Average)	27.6			
10 MPH Pace Speed	23-32			
Number in Pace	166			
Percent in Pace	65.6%			
Number > 25 MPH	182			
Percent > 25 MPH	71.9%			

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: NB

76430001

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	1	0	2	0	0	0	0	0	0	0	0	3
6:00	0	1	0	2	2	0	0	0	0	0	0	0	0	5
7:00	0	0	2	2	1	2	0	0	0	0	0	0	0	7
8:00	0	0	1	6	3	2	1	0	0	0	0	0	0	13
9:00	0	1	4	3	2	0	0	0	0	0	0	0	0	10
10:00	0	3	4	8	1	1	0	0	0	0	0	0	0	17
11:00	0	0	2	6	5	1	0	0	0	0	0	0	0	14
12:00 PM	1	2	1	9	6	1	0	0	0	0	0	0	0	20
1:00	0	0	1	6	6	0	0	0	0	0	0	0	0	13
2:00	1	1	10	8	4	2	0	0	0	0	0	0	0	26
3:00	0	2	7	13	4	1	0	0	0	0	0	0	0	27
4:00	0	0	1	8	4	0	0	0	0	0	0	0	0	13
5:00	1	4	5	12	9	2	0	0	0	0	0	0	0	33
6:00	0	2	3	10	1	0	0	0	0	0	0	0	0	16
7:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
8:00	1	1	3	2	3	0	0	0	0	0	0	0	0	10
9:00	0	0	1	0	2	1	0	0	0	0	0	0	0	4
10:00	0	0	0	1	1	0	0	0	0	0	0	0	0	2
11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	17	47	99	57	13	1	0	0	0	0	0	0	238

Percentile	15th	50th	85th	95th
Speed	23	27	32	35
Mean Speed (Average)	27.3			
10 MPH Pace Speed	25-34			
Number in Pace	156			
Percent in Pace	65.5%			
Number > 25 MPH	170			
Percent > 25 MPH	71.4%			

Grand Total	6	31	102	209	113	26	3	1	0	0	0	0	0	491
Percentile	15th	50th	85th	95th										
Speed	24	27	32	35										
Mean Speed (Average)	27.4													
10 MPH Pace Speed	25-34													
Number in Pace	322													
Percent in Pace	65.6%													
Number > 25 MPH	352													
Percent > 25 MPH	71.7%													

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: Combined

76430001

3/7/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	1	0	1	1	0	0	0	0	0	0	0	0	3
1:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	1	1	0	2	1	0	0	0	0	0	0	0	0	5
5:00	1	2	2	0	1	0	0	0	0	0	0	0	0	6
6:00	2	4	5	7	2	0	0	0	0	0	0	0	0	20
7:00	1	4	8	9	3	2	1	0	0	0	0	0	0	28
8:00	2	1	9	8	6	0	1	0	0	0	0	0	0	27
9:00	0	4	11	12	3	0	0	0	0	0	0	0	0	30
10:00	1	2	6	3	2	4	1	1	0	0	0	0	0	20
11:00	0	5	8	7	1	0	0	0	0	0	0	0	0	21
12:00 PM	0	5	6	13	7	2	0	0	0	0	0	0	0	33
1:00	0	2	4	14	5	1	0	0	0	0	0	0	0	26
2:00	0	5	10	15	9	3	1	0	0	0	0	0	0	43
3:00	1	5	13	11	11	0	1	0	0	0	0	0	0	42
4:00	1	2	6	23	7	3	0	0	0	0	0	0	0	42
5:00	1	5	7	19	12	1	0	0	0	0	0	0	0	45
6:00	0	8	3	8	1	0	0	0	0	0	0	0	0	20
7:00	1	1	4	4	1	0	0	0	0	0	0	0	0	11
8:00	0	3	2	2	0	1	0	0	0	0	0	0	0	8
9:00	0	2	2	3	0	0	0	0	0	0	0	0	0	7
10:00	1	1	2	0	0	0	0	0	0	0	0	0	0	4
11:00	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total	13	63	110	162	74	17	5	1	0	0	0	0	0	445

Percentile	15th	50th	85th	95th
Speed	20	26	32	35
Mean Speed (Average)	25.7			
10 MPH Pace Speed	20-29			
Number in Pace	270			
Percent in Pace	60.7%			
Number > 25 MPH	259			
Percent > 25 MPH	58.2%			

Accurate Counts
978-664-2565

Location : Wheeler Street
Location : South of Rinzee Road
City/State: Methuen, MA
Direction: Combined

76430001

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1
1:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	1	0	0	0	0	0	0	0	0	2
4:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
5:00	0	3	2	0	2	0	0	0	0	0	0	0	0	7
6:00	1	3	1	2	5	0	0	0	0	0	0	0	0	12
7:00	2	3	11	4	2	2	0	0	0	0	0	0	0	24
8:00	0	4	7	8	6	3	1	0	0	0	0	0	0	29
9:00	0	1	7	8	4	0	0	0	0	0	0	0	0	20
10:00	0	3	6	11	1	1	0	0	0	0	0	0	0	22
11:00	1	1	5	6	5	2	0	0	0	0	0	0	0	20
12:00 PM	1	2	6	13	8	1	0	0	0	0	0	0	0	31
1:00	0	1	1	6	7	1	0	0	0	0	0	0	0	16
2:00	1	4	13	12	10	3	0	0	0	0	0	0	0	43
3:00	2	6	11	16	6	3	0	0	0	0	0	0	0	44
4:00	0	4	7	9	6	0	0	0	0	0	0	0	0	26
5:00	3	5	9	17	12	2	0	0	0	0	0	0	0	48
6:00	1	5	6	16	3	0	0	0	0	0	0	0	0	31
7:00	0	3	4	4	0	0	0	0	0	0	0	0	0	11
8:00	1	5	10	4	4	0	0	0	0	0	0	0	0	24
9:00	0	0	2	0	4	1	0	0	0	0	0	0	0	7
10:00	0	1	0	1	1	0	0	0	0	0	0	0	0	3
11:00	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	13	55	110	138	88	20	1	0	0	0	0	0	0	425

Percentile	15th	50th	85th	95th
Speed	20	26	32	35
Mean Speed (Average)	25.9			
10 MPH Pace Speed	20-29			
Number in Pace	246			
Percent in Pace	57.9%			
Number > 25 MPH	247			
Percent > 25 MPH	58.1%			

Grand Total	26	118	220	300	162	37	6	1	0	0	0	0	0	870
Percentile	15th	50th	85th	95th										
Speed	20	26	32	35										
Mean Speed (Average)	25.8													
10 MPH Pace Speed	20-29													
Number in Pace	516													
Percent in Pace	59.3%													
Number > 25 MPH	506													
Percent > 25 MPH	58.2%													

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: WB

76430002

3/7/2023 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00	0	1	0	0	1	0	1	0	0	0	0	0	0	3
5:00	0	3	1	1	0	0	0	0	0	0	0	0	0	5
6:00	0	9	10	2	2	1	0	2	0	0	0	0	0	26
7:00	0	14	6	6	2	1	0	0	0	0	0	0	0	29
8:00	4	9	10	3	1	6	3	1	0	0	0	0	0	37
9:00	4	15	3	7	2	3	0	0	0	0	0	0	0	34
10:00	1	7	3	3	2	4	5	0	0	0	0	0	0	25
11:00	1	2	8	6	6	6	1	2	0	0	0	0	0	32
12:00 PM	1	6	9	7	1	4	0	1	0	0	0	0	0	29
1:00	4	6	9	3	2	1	0	0	0	0	0	0	0	25
2:00	3	11	18	12	3	2	2	2	0	1	0	0	0	54
3:00	2	9	16	6	8	10	9	1	1	0	0	0	0	62
4:00	1	8	16	17	6	8	8	2	0	0	0	0	0	66
5:00	4	19	14	14	4	11	5	1	0	0	0	0	0	72
6:00	2	12	8	9	2	3	5	0	0	0	0	0	0	41
7:00	1	3	10	8	0	4	3	0	0	0	0	0	0	29
8:00	0	10	9	3	1	1	0	0	0	0	0	0	0	24
9:00	0	6	3	2	0	0	0	0	0	0	0	0	0	11
10:00	0	1	1	1	0	0	0	0	0	0	0	0	0	3
11:00	1	2	3	0	1	0	0	0	0	0	0	0	0	7
Total	29	153	159	111	44	65	42	12	1	1	0	0	0	617

Percentile	15th	50th	85th	95th
Speed	18	24	37	43
Mean Speed (Average)	25.7			
10 MPH Pace Speed	15-24			
Number in Pace	309			
Percent in Pace	50.1%			
Number > 25 MPH	276			
Percent > 25 MPH	44.7%			

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: WB

76430002

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	1	0	1	1	0	0	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	0	0	1	0	0	0	0	0	0	2
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	1	3	1	0	1	0	0	0	0	0	0	0	0	6
6:00	1	9	7	6	1	1	0	1	0	0	0	0	0	26
7:00	0	17	11	4	2	3	1	3	1	0	0	0	0	42
8:00	1	16	9	4	3	3	3	2	0	0	0	0	0	41
9:00	7	10	9	2	0	1	0	1	0	0	0	0	0	30
10:00	2	11	7	5	1	3	1	1	0	0	0	0	0	31
11:00	0	8	8	3	2	0	3	0	0	0	0	0	0	24
12:00 PM	0	6	8	5	2	3	2	2	0	0	0	0	0	28
1:00	0	3	13	7	2	3	2	2	0	0	0	0	0	32
2:00	2	5	8	6	5	10	6	1	1	0	0	0	0	44
3:00	1	5	11	8	7	6	12	0	0	0	0	0	0	50
4:00	2	9	16	9	6	8	6	1	0	0	0	0	0	57
5:00	2	13	15	10	2	8	8	0	0	0	0	0	0	58
6:00	2	12	12	7	2	0	1	0	0	0	0	0	0	36
7:00	4	7	6	0	0	1	0	0	0	0	0	0	0	18
8:00	1	8	6	1	3	3	0	0	0	0	0	0	0	22
9:00	1	7	4	3	1	2	0	0	0	0	0	0	0	18
10:00	0	2	3	2	0	0	0	0	0	0	0	0	0	7
11:00	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	27	155	154	83	41	56	46	14	2	0	0	0	0	578

Percentile	15th	50th	85th	95th
Speed	18	24	38	42
Mean Speed (Average)	25.7			
10 MPH Pace Speed	15-24			
Number in Pace	306			
Percent in Pace	52.9%			
Number > 25 MPH	242			
Percent > 25 MPH	41.9%			

Grand Total	56	308	313	194	85	121	88	26	3	1	0	0	0	1195
Percentile	15th	50th	85th	95th										
Speed	18	24	38	42										
Mean Speed (Average)	25.7													
10 MPH Pace Speed	15-24													
Number in Pace	615													
Percent in Pace	51.5%													
Number > 25 MPH	518													
Percent > 25 MPH	43.3%													

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: EB

76430002

3/7/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	2	3	3	0	0	1	0	0	0	0	0	0	9
5:00	0	0	6	10	4	7	0	0	0	0	0	0	0	27
6:00	1	4	9	12	12	4	1	0	0	0	0	0	0	43
7:00	0	0	12	12	11	0	0	0	0	0	0	0	0	35
8:00	0	0	15	12	10	1	1	0	0	0	0	0	0	39
9:00	0	3	6	17	6	0	1	0	0	0	0	0	0	33
10:00	0	2	8	13	10	1	0	1	0	0	0	0	0	35
11:00	0	1	5	10	6	2	2	1	0	0	0	0	0	27
12:00 PM	1	8	8	11	9	0	0	0	0	0	0	0	0	37
1:00	1	4	8	8	4	1	0	0	0	0	0	0	0	26
2:00	0	2	8	27	10	1	1	0	0	0	0	0	0	49
3:00	2	6	7	22	6	5	1	0	0	0	0	0	0	49
4:00	0	1	11	25	16	6	2	0	0	0	0	0	0	61
5:00	0	1	9	17	9	3	0	0	0	0	0	0	0	39
6:00	0	3	8	9	8	4	0	0	0	0	0	0	0	32
7:00	0	0	7	14	4	2	0	0	0	0	0	0	0	27
8:00	0	5	10	7	6	3	0	0	0	0	0	0	0	31
9:00	0	1	4	2	1	2	0	0	0	0	0	0	0	10
10:00	0	0	3	2	3	2	0	0	0	0	0	0	0	10
11:00	0	0	0	2	1	0	0	0	0	0	0	0	0	3
Total	5	43	147	237	137	44	10	2	0	0	0	0	0	625

Percentile	15th	50th	85th	95th
Speed	22	28	33	37
Mean Speed (Average)	27.6			
10 MPH Pace Speed	21-30			
Number in Pace	382			
Percent in Pace	61.1%			
Number > 25 MPH	430			
Percent > 25 MPH	68.8%			

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: EB

76430002

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	4	5	2	0	0	0	0	0	0	0	0	11
5:00	1	1	4	7	1	4	0	0	0	0	0	0	0	18
6:00	0	1	13	15	10	4	1	0	0	0	0	0	0	44
7:00	0	1	5	8	9	6	0	0	0	0	0	0	0	29
8:00	0	5	11	17	5	4	1	0	0	0	0	0	0	43
9:00	1	1	6	6	1	2	0	0	0	0	0	0	0	17
10:00	0	5	8	8	10	2	1	0	0	0	0	0	0	34
11:00	0	3	7	16	6	4	0	0	0	0	0	0	0	36
12:00 PM	1	2	11	13	2	0	0	0	0	0	0	0	0	29
1:00	0	1	5	13	5	5	1	0	0	0	0	0	0	30
2:00	2	4	18	15	8	3	2	0	0	0	0	0	0	52
3:00	4	3	14	19	9	1	2	0	0	0	0	0	0	52
4:00	0	4	11	12	11	3	1	0	0	0	0	0	0	42
5:00	0	2	8	19	7	4	0	0	0	0	0	0	0	40
6:00	0	1	12	17	2	6	0	0	0	0	0	0	0	38
7:00	0	3	10	15	1	2	1	0	0	0	0	0	0	32
8:00	0	1	6	10	1	0	1	0	0	0	0	0	0	19
9:00	0	0	3	3	2	0	0	0	0	0	0	0	0	8
10:00	0	0	1	2	0	0	0	0	0	0	0	0	0	3
11:00	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	9	38	157	222	93	50	11	0	0	0	0	0	0	580

Percentile	15th	50th	85th	95th
Speed	22	27	34	37
Mean Speed (Average)	27.2			
10 MPH Pace Speed	20-29			
Number in Pace	375			
Percent in Pace	64.7%			
Number > 25 MPH	376			
Percent > 25 MPH	64.8%			

Grand Total	14	81	304	459	230	94	21	2	0	0	0	0	0	1205
Percentile				15th	50th	85th	95th							
Speed				22	27	34	37							
Mean Speed (Average)				27.4										
10 MPH Pace Speed				20-29										
Number in Pace				755										
Percent in Pace				62.7%										
Number > 25 MPH				806										
Percent > 25 MPH				66.9%										

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: Combined

76430002

3/7/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	0	0	3	1	0	0	0	0	0	0	0	0	4
1:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00	0	3	3	3	1	0	2	0	0	0	0	0	0	12
5:00	0	3	7	11	4	7	0	0	0	0	0	0	0	32
6:00	1	13	19	14	14	5	1	2	0	0	0	0	0	69
7:00	0	14	18	18	13	1	0	0	0	0	0	0	0	64
8:00	4	9	25	15	11	7	4	1	0	0	0	0	0	76
9:00	4	18	9	24	8	3	1	0	0	0	0	0	0	67
10:00	1	9	11	16	12	5	5	1	0	0	0	0	0	60
11:00	1	3	13	16	12	8	3	3	0	0	0	0	0	59
12:00 PM	2	14	17	18	10	4	0	1	0	0	0	0	0	66
1:00	5	10	17	11	6	2	0	0	0	0	0	0	0	51
2:00	3	13	26	39	13	3	3	2	0	1	0	0	0	103
3:00	4	15	23	28	14	15	10	1	1	0	0	0	0	111
4:00	1	9	27	42	22	14	10	2	0	0	0	0	0	127
5:00	4	20	23	31	13	14	5	1	0	0	0	0	0	111
6:00	2	15	16	18	10	7	5	0	0	0	0	0	0	73
7:00	1	3	17	22	4	6	3	0	0	0	0	0	0	56
8:00	0	15	19	10	7	4	0	0	0	0	0	0	0	55
9:00	0	7	7	4	1	2	0	0	0	0	0	0	0	21
10:00	0	1	4	3	3	2	0	0	0	0	0	0	0	13
11:00	1	2	3	2	2	0	0	0	0	0	0	0	0	10
Total	34	196	306	348	181	109	52	14	1	1	0	0	0	1242

Percentile	15th	50th	85th	95th
Speed	19	26	35	40
Mean Speed (Average)	26.7			
10 MPH Pace Speed	20-29			
Number in Pace	651			
Percent in Pace	52.4%			
Number > 25 MPH	706			
Percent > 25 MPH	56.8%			

Accurate Counts
978-664-2565

Location : Wheeler Road
Location : Between Wilshire Circle
City/State: Dracut, MA
Direction: Combined

76430002

3/8/2023	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	Total
12:00 AM	0	1	0	2	2	0	0	0	0	0	0	0	0	5
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
3:00	0	1	0	0	0	0	1	0	0	0	0	0	0	2
4:00	0	0	4	5	2	0	0	0	0	0	0	0	0	11
5:00	2	4	5	7	2	4	0	0	0	0	0	0	0	24
6:00	1	10	20	21	11	5	1	1	0	0	0	0	0	70
7:00	0	18	16	12	11	9	1	3	1	0	0	0	0	71
8:00	1	21	20	21	8	7	4	2	0	0	0	0	0	84
9:00	8	11	15	8	1	3	0	1	0	0	0	0	0	47
10:00	2	16	15	13	11	5	2	1	0	0	0	0	0	65
11:00	0	11	15	19	8	4	3	0	0	0	0	0	0	60
12:00 PM	1	8	19	18	4	3	2	2	0	0	0	0	0	57
1:00	0	4	18	20	7	8	3	2	0	0	0	0	0	62
2:00	4	9	26	21	13	13	8	1	1	0	0	0	0	96
3:00	5	8	25	27	16	7	14	0	0	0	0	0	0	102
4:00	2	13	27	21	17	11	7	1	0	0	0	0	0	99
5:00	2	15	23	29	9	12	8	0	0	0	0	0	0	98
6:00	2	13	24	24	4	6	1	0	0	0	0	0	0	74
7:00	4	10	16	15	1	3	1	0	0	0	0	0	0	50
8:00	1	9	12	11	4	3	1	0	0	0	0	0	0	41
9:00	1	7	7	6	3	2	0	0	0	0	0	0	0	26
10:00	0	2	4	4	0	0	0	0	0	0	0	0	0	10
11:00	0	0	0	1	0	1	0	0	0	0	0	0	0	2
Total	36	193	311	305	134	106	57	14	2	0	0	0	0	1158

Percentile	15th	50th	85th	95th
Speed	19	25	35	41
Mean Speed (Average)	26.4			
10 MPH Pace Speed	20-29			
Number in Pace	614			
Percent in Pace	53.0%			
Number > 25 MPH	618			
Percent > 25 MPH	53.4%			

Grand Total	70	389	617	653	315	215	109	28	3	1	0	0	0	2400
Percentile				15th	50th	85th	95th							
Speed				19	26	35	40							
Mean Speed (Average)				26.6										
10 MPH Pace Speed				20-29										
Number in Pace				1265										
Percent in Pace				52.7%										
Number > 25 MPH				1324										
Percent > 25 MPH				55.2%										

PUBLIC TRANSPORTATION SCHEDULE

ROUTE 24 OUTBOUND				
Lawrence-Lowell				
WEEKDAYS				
1	2	3	4	5
Bus starts at Buckley Transportation Center	Bus Leaves from Merrimac Plaza	Bus Leaves from Merrimack St & Draycotte St (Lenzi's)	Bus Leaves from UMASS-LOWELL Inn & Conference Center	Bus ends at Robert B. Kennedy Transfer Center
5:00	5:15	5:23	5:28	5:40
5:30	5:45	5:53	5:58	6:10
6:00	6:15	6:23	6:28	6:40
6:30	6:45	6:53	6:58	7:10
7:00	7:15	7:23	7:28	7:40
7:30	7:45	7:53	7:58	8:10
8:00	8:15	8:23	8:28	8:40
8:30	8:45	8:53	8:58	9:10
9:00	9:15	9:23	9:28	9:40
9:30	9:45	9:53	9:58	10:10
10:00	10:15	10:23	10:28	10:40
10:30	10:45	10:53	10:58	11:10
11:00	11:15	11:23	11:28	11:40
11:30	11:45	11:53	11:58	12:10
12:00	12:15	12:23	12:28	12:40
12:30	12:45	12:53	12:58	1:10
1:00	1:15	1:23	1:28	1:40
1:30	1:45	1:53	1:58	2:10
2:00	2:15	2:23	2:28	2:40
2:30	2:45	2:53	2:58	3:10
3:00	3:15	3:23	3:28	3:40
3:30	3:45	3:53	3:58	4:10
4:00	4:15	4:23	4:28	4:40
4:30	4:45	4:53	4:58	5:10
5:00	5:15	5:23	5:28	5:40
5:30	5:45	5:53	5:58	6:10
6:00	6:15	6:23	6:28	6:40
6:30	6:45	6:53	6:58	7:10
7:00	7:15	7:23	7:28	7:40
8:00	8:15	8:23	8:28	8:40
9:00	9:15	9:23	9:28	9:40
SATURDAYS				
7:00	7:15	7:23	7:28	7:40
8:00	8:15	8:23	8:28	8:40
9:00	9:15	9:23	9:28	9:40
10:00	10:15	10:23	10:28	10:40
11:00	11:15	11:23	11:28	11:40
12:00	12:15	12:23	12:28	12:40
1:00	1:15	1:23	1:28	1:40
2:00	2:15	2:23	2:28	2:40
3:00	3:15	3:23	3:28	3:40
4:00	4:15	4:23	4:28	4:40
5:00	5:15	5:23	5:28	5:40
6:00	6:15	6:23	6:28	6:40

ROUTE 24 INBOUND				
Lawrence-Lowell				
WEEKDAYS				
5	6	7	8	
Bus Starts at Robert B. Kennedy Transfer Center	Bus Leaves from Merrimack St & Draycotte St (Lenzi's)	Bus Leaves from Merrimac Plaza	Bus ends at Buckley Transportation Center	Bus continues on as Route
6:00	6:12	6:27	6:40	1
6:30	6:42	6:57	7:10	1
7:00	7:12	7:27	7:40	1
7:30	7:42	7:57	8:10	1
8:00	8:12	8:27	8:40	1
8:30	8:42	8:57	9:10	1
9:00	9:12	9:27	9:40	1
9:30	9:42	9:57	10:10	1
10:00	10:12	10:27	10:40	1
10:30	10:42	10:57	11:10	1
11:00	11:12	11:27	11:40	1
11:30	11:42	11:57	12:10	1
12:00	12:12	12:27	12:40	1
12:30	12:42	12:57	1:10	1
1:00	1:12	1:27	1:40	1
1:30	1:42	1:57	2:10	1
2:00	2:12	2:27	2:40	1
2:30	2:42	2:57	3:10	1
3:00	3:12	3:27	3:40	1
3:30	3:42	3:57	4:10	1
4:00	4:12	4:27	4:40	1
4:30	4:42	4:57	5:10	1
5:00	5:12	5:27	5:40	1
5:30	5:42	5:57	6:10	1
6:00	6:12	6:27	6:40	1
6:30	6:42	6:57	7:10	1
7:00	7:12	7:27	7:40	1
8:00	8:12	8:27	8:40	1
9:00	9:12	9:27	9:40	-
SATURDAYS				
8:00	8:12	8:27	8:40	1
9:00	9:12	9:27	9:40	1
10:00	10:12	10:27	10:40	1
11:00	11:12	11:27	11:40	1
12:00	12:12	12:27	12:40	1
1:00	1:12	1:27	1:40	1
2:00	2:12	2:27	2:40	1
3:00	3:12	3:27	3:40	1
4:00	4:12	4:27	4:40	1
5:00	5:12	5:27	5:40	1
6:00	6:12	6:27	6:40	-

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Methuen COUNT DATE : Mar-23

DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 113

MINOR STREET(S) : Wheeler Street

INTERSECTION
DIAGRAM
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	74		561	905		1,540

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

17,111

TOTAL # OF CRASHES :

13

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

2.60

CRASH RATE CALCULATION :

0.42

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

Comments : Below MassDOT District and Statewide Average Crash Rates

Project Title & Date : 7463 - Dracut/Methuen

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Methuen COUNT DATE : Mar-23

DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Wheeler Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	551	614	45			1,210

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,444

TOTAL # OF CRASHES :

12

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

2.40

CRASH RATE CALCULATION :

0.49

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

Comments : Below MassDOT District and Statewide Average Crash Rates

Project Title & Date : 7463 - Dracut/Methuen

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Dracut COUNT DATE : Mar-23

DISTRICT : 4 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Wheeler Road

MINOR STREET(S) : Wilshire Circle

Paddock Lane

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	3	0	74	67		144

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

1,600

TOTAL # OF CRASHES :

3

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.60

CRASH RATE CALCULATION :

1.03

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

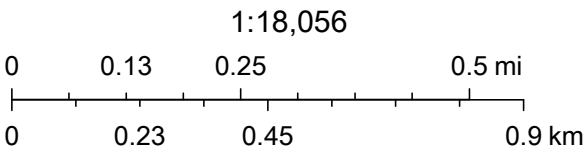
Comments : Above MassDOT District and Statewide Average Crash Rates

Project Title & Date: 7463 - Dracut/Methuen

MassDOT Top Crash Locations



9/25/2023, 2:28:40 PM

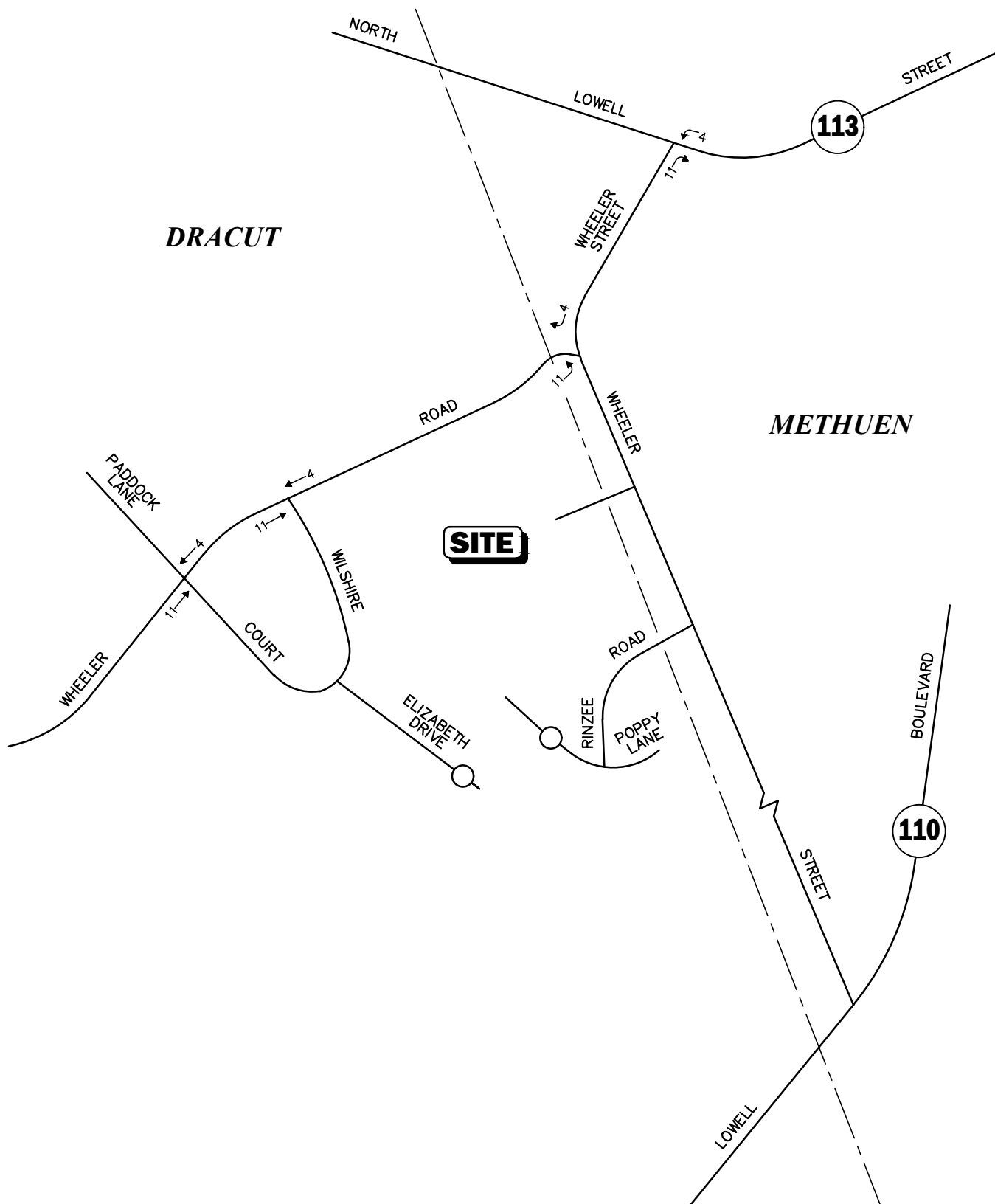


GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual
Dracut	Phineas Street	north of Donahue Road						1,945	1,990			2,121	2,113	0.97%
Lowell	Lakeview Avenue	south of Farmloand Road						9,441	9,658	10,257	10,431	10,462	10,420	2.02%
Dracut	Arlington Street	east of Willard Street							5,164	5,484	5,577	5,594	5,572	1.95%
Dracut	Methuen Street	at Lowell town line							2,319	2,463	2,505	2,513	2,503	1.96%
Dracut	Lakeview Avenue	at Lowell town line					7,854	8,097	8,283	8,797	8,947	8,974	8,938	2.20%
Dracut	Book Street	at Dracut town line					8357	8,616	8,530			9,092	9,056	0.57%
Dracut	Broadway Street	north of Arlington Street							11,960			12,748	12,697	-0.40%
Dracut	Fox Avenue	north of Broadway Street							2,471	2,624	2,669	2,677	2,666	1.95%
Dracut	Loon Hill Road	east of Broadway Street							2,121	2,253	2,291	2,298	2,289	1.96%
Dracut	Willard Street	south of Arlington Street							5,350			5,702	5,679	-0.40%
Dracut	Arlington Street	west of Willard Street							12,547	13,325	13,552	13,592	13,539	1.95%
Dracut	Broadway Road	north of Fox Avenue										12,956	12,904	-0.40%
Dracut	Broadway Road	west of Fox Avenue								12,746	12,963	13,002	12,950	0.53%
Lowell	Veterans of Foreign Wars	east of University Avenue	17,761	16,700	18,327	19,266	16,028	16,910	17,096	13,281	13,427	13,615	12,728	-2.76%
Dracut	Bridge Street	at Lowell town line	13,647	11,100	12,453	13,111	13,364	13,242	13,388	12,925	14,223	14,422	12,584	-0.38%
0.78%														

BACKGROUND DEVELOPMENT NETWORKS



Not To Scale



Vanasse &
Associates inc

Figure A-1

**Berube Farms
Weekday Morning
Peak-Hour Traffic Volumes**



Vanasse &
Associates inc

Berube Farms Weekday Evening Peak-Hour Traffic Volumes

TRIP-GENERATION CALCULATIONS



Graph Look Up



ITETripGen Web-based App

Graph Look Up

How to Use ITETripGen

TGM Desk Reference

TGM Appendices

Support Documents

Add Users

Comments

Add-ons to do more

Try OTISS Pro

Query Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

215



LAND USE GROUP:

(200-299) Residential

LAND USE :

215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

Dwelling Units

TIME PERIOD:

Weekday

TRIP TYPE:

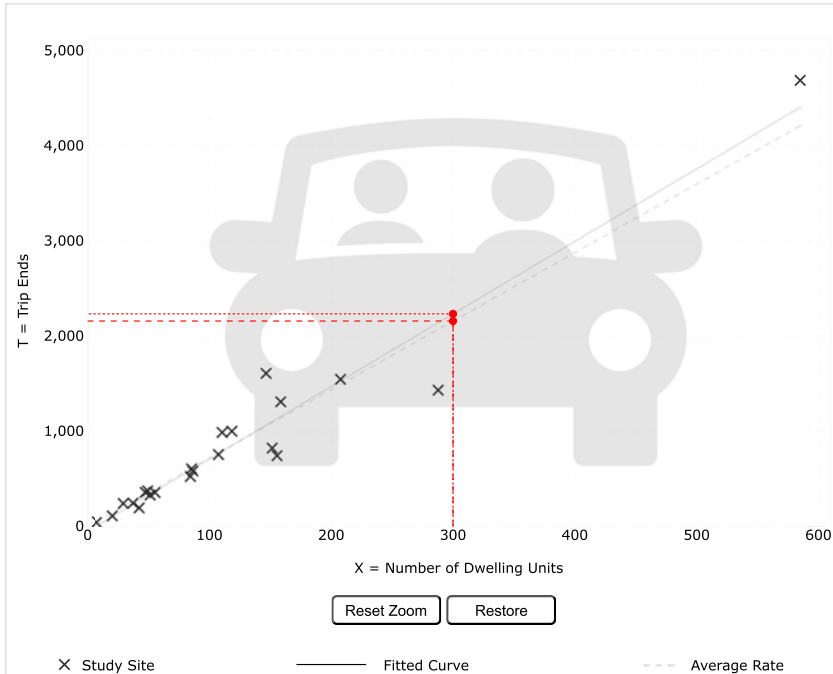
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

300

Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:

Single-Family Attached Housing (215) [Click for Description and Data Plots](#)

Independent Variable:

Dwelling Units

Time Period:

Weekday

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

22

Avg. Num. of Dwelling Units:

120

Average Rate:

7.20

Range of Rates:

4.70 - 10.97

Standard Deviation:

1.61

Fitted Curve Equation:

 $T = 7.62(X) - 50.48$ R^2 :

0.94

Directional Distribution:

50% entering, 50% exiting

Calculated Trip Ends:

Average Rate: 2160 (Total), 1080 (Entry), 1080 (Exit)

Fitted Curve: 2236 (Total), 1118 (Entry), 1118 (Exit)



Graph Look Up



ITETripGen Web-based App

Graph Look Up

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Comments

Add-ons to do more

Try OTISS Pro

Query Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

215



LAND USE GROUP:

(200-299) Residential

LAND USE :

215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

Dwelling Units

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:

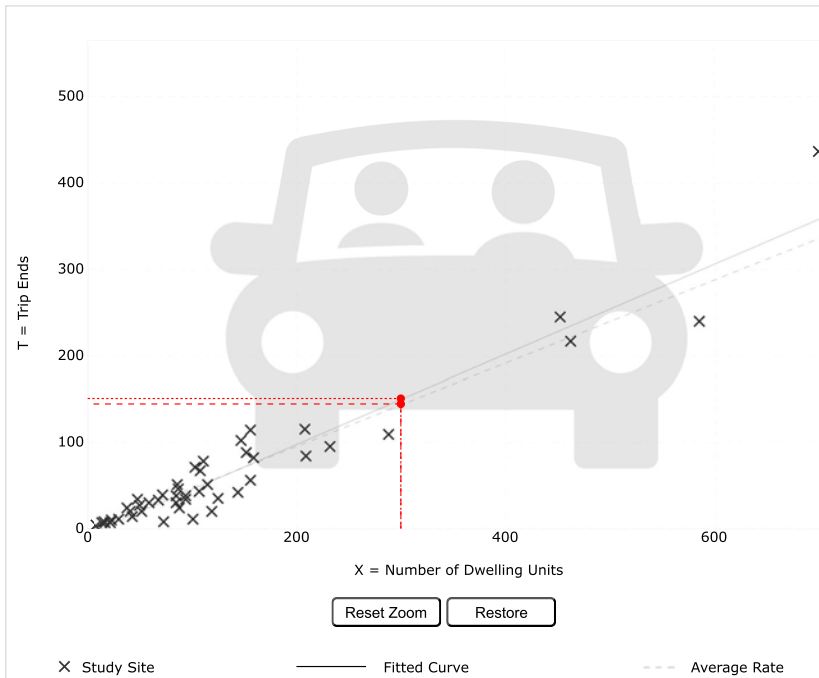
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

300

Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:

Single-Family Attached Housing (215) [Click for Description and Data Plots](#)

Independent Variable:

Dwelling Units

Time Period:

Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 7 and 9 a.m.

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

46

Avg. Num. of Dwelling Units:

135

Average Rate:

0.48

Range of Rates:

0.12 - 0.74

Standard Deviation:

0.14

Fitted Curve Equation:

 $T = 0.52(X) - 5.70$ R^2 :

0.92

Directional Distribution:

25% entering, 75% exiting

Calculated Trip Ends:

Average Rate: 144 (Total), 36 (Entry), 108 (Exit)

Fitted Curve: 150 (Total), 38 (Entry), 112 (Exit)



Graph Look Up



ITETripGen Web-based App

Graph Look Up

How to Use ITETripGen

TGM Desk Reference

TGM Appendices

Support Documents

Add Users

Comments

Add-ons to do more

Try OTISS Pro

Query Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

215



LAND USE GROUP:

(200-299) Residential

LAND USE:

215 - Single-Family Attached Housing

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

Dwelling Units

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic

TRIP TYPE:

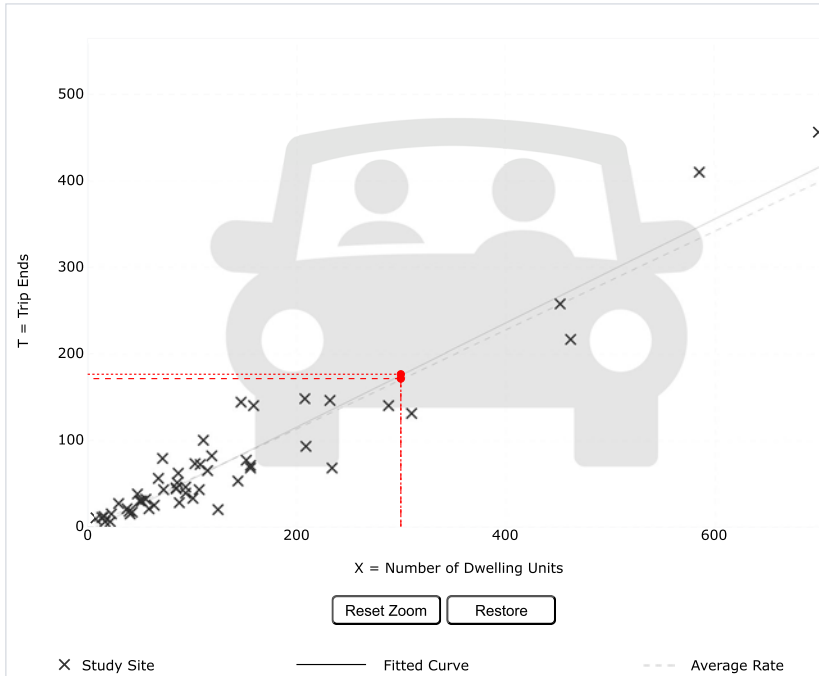
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

300

Calculate

Data Plot and Equation



DATA STATISTICS

Land Use:

Single-Family Attached Housing (215) [Click for Description and Data Plots](#)

Independent Variable:

Dwelling Units

Time Period:

Weekday
Peak Hour of Adjacent Street Traffic
One Hour Between 4 and 6 p.m.

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

51

Avg. Num. of Dwelling Units:

136

Average Rate:

0.57

Range of Rates:

0.17 - 1.25

Standard Deviation:

0.18

Fitted Curve Equation:

 $T = 0.60(X) - 3.93$ R^2 :

0.91

Directional Distribution:

59% entering, 41% exiting

Calculated Trip Ends:

Average Rate: 171 (Total), 101 (Entry), 70 (Exit)

Fitted Curve: 176 (Total), 104 (Entry), 72 (Exit)

JOURNEY TO WORK TRIP DISTRIBUTION

Proposed Residential Development
Murphy's Farm
Dracut, Massachusetts

Residence	Workplace	Number	Route 113 (East)		Route 113 (West)		Route 110 (East)		Route 110 (West)		Wheeler Road (West)	
Dracut town	Lowell city	2,734		0	40%	1094		0	40%	1094	20%	547
Dracut town	Dracut town	2,323		0	40%	929		0	40%	929	20%	465
Dracut town	Boston city	774	90%	697		0	10%	77		0		0
Dracut town	Andover town	763	90%	687		0	10%	76		0		0
Dracut town	Chelmsford town	755	70%	529		0	10%	76	20%	151		0
Dracut town	Burlington town	512	70%	358		0	10%	51	20%	102		0
Dracut town	Billerica town	474	70%	332		0	10%	47	20%	95		0
Dracut town	Tewksbury town	446	70%	312		0	10%	45	20%	89		0
Dracut town	Nashua city	439		0	100%	439		0		0		0
Dracut town	Waltham city	415	90%	374		0	10%	42		0		0
Dracut town	Tyngsborough town	374		0	30%	112		0	50%	187	20%	75
Dracut town	Bedford town	313	50%	157		0		0	50%	157		0
Dracut town	Lawrence city	310		0		0	100%	310		0		0
Dracut town	Woburn city	303	90%	273		0	10%	30		0		0
Dracut town	Cambridge city	288	90%	259		0	10%	29		0		0
Dracut town	Wilmington town	248	90%	223		0	10%	25		0		0
Dracut town	Newton city	195	90%	176		0	10%	20		0		0
Dracut town	Westford town	178	90%	160		0	10%	18		0		0
Dracut town	Salem town	157	90%	141		0	10%	16		0		0
Dracut town	North Andover town	154	80%	123		0	20%	31		0		0
Dracut town	Marlborough city	153	90%	138		0	10%	15		0		0
Dracut town	Methuen Town city	150		0		0	100%	150		0		0
Dracut town	Somerville city	150	90%	135		0	10%	15		0		0
Dracut town	Hudson town	147		0	100%	147		0		0		0
Dracut town	Haverhill city	139		0		0	100%	139		0		0
Dracut town	Lexington town	138	90%	124		0	10%	14		0		0
Dracut town	Manchester city	134	90%	121		0	10%	13		0		0
Dracut town	Concord town	128	90%	115		0	10%	13		0		0
Dracut town	Watertown Town city	115	90%	104		0	10%	12		0		0
Dracut town	North Reading town	108	90%	97		0	10%	11		0		0
Dracut town	Framingham town	106	90%	95		0	10%	11		0		0
Dracut town	Boxborough town	103	90%	93		0	10%	10		0		0
Dracut town	Winchester town	101	90%	91		0		0		0		0
Dracut town	Pelham town	100		0	100%	100		0		0		0
13,927			5,912		2,821		1,294		2,804		1,086	
			42.4%		20.3%		9.3%		20.1%		7.8%	
<u>SAY</u>			40%		20%		10%		20%		10%	

CAPACITY ANALYSIS WORKSHEETS

Route 113 at Wheeler Street
Wheeler Street at Wheeler Road
Wheeler Street at Rinzee Road
Route 110 at Wheeler Street
Wheeler Road at Wilshire Circle and Paddock Lane
Wheeler Road at Wilshire Circle
Wheeler Street at the Project Site Roadway

Route 113 at Wheeler Street

2023 Existing Weekday Morning
1: Wheeler Street & Route 113

09/21/2023

Intersection

Int Delay, s/veh 1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	663	14	19	407	18	44
Future Vol, veh/h	663	14	19	407	18	44
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	85	85	91	91
Heavy Vehicles, %	9	36	5	9	0	2
Mvmt Flow	721	15	22	479	20	48

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	736
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.15
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.245
Pot Cap-1 Maneuver	-	-	856
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	856
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	20
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	308	-	-	856	-
HCM Lane V/C Ratio	0.221	-	-	0.026	-
HCM Control Delay (s)	20	-	-	9.3	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

2023 Existing Weekday Evening
1: Wheeler Street & Route 113

09/21/2023

Intersection

Int Delay, s/veh 2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	546	15	74	831	18	56
Future Vol, veh/h	546	15	74	831	18	56
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	79	79	91	91	69	69
Heavy Vehicles, %	2	0	0	8	0	2
Mvmt Flow	691	19	81	913	26	81

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	710
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	899
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	899
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	41.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	201	-	-	899	-
HCM Lane V/C Ratio	0.534	-	-	0.09	-
HCM Control Delay (s)	41.7	-	-	9.4	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	2.8	-	-	0.3	-

2030 No-Build Weekday Morning
1: Wheeler Street & Route 113

09/26/2023

Intersection						
Int Delay, s/veh	1.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	711	15	24	436	19	58
Future Vol, veh/h	711	15	24	436	19	58
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	85	85	91	91
Heavy Vehicles, %	9	36	5	9	0	2
Mvmt Flow	773	16	28	513	21	64
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	789	0	1350	781
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	569	-
Critical Hdwy	-	-	4.15	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.245	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	818	-	168	395
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	570	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	818	-	160	395
Mov Cap-2 Maneuver	-	-	-	-	160	-
Stage 1	-	-	-	-	455	-
Stage 2	-	-	-	-	543	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	0.5		22.4		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	290	-	-	818	-	
HCM Lane V/C Ratio	0.292	-	-	0.035	-	
HCM Control Delay (s)	22.4	-	-	9.6	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-	

2030 No-Build Weekday Evening
1: Wheeler Street & Route 113

09/26/2023

Intersection

Int Delay, s/veh 4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	585	16	91	891	19	67
Future Vol, veh/h	585	16	91	891	19	67
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	79	79	91	91	69	69
Heavy Vehicles, %	2	0	0	8	0	2
Mvmt Flow	741	20	100	979	28	97

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	761
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	860
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	860
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	70
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	169	-	-	860	-
HCM Lane V/C Ratio	0.738	-	-	0.116	-
HCM Control Delay (s)	70	-	-	9.7	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	4.6	-	-	0.4	-

Intersection

Int Delay, s/veh 4.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	711	22	39	436	42	103
Future Vol, veh/h	711	22	39	436	42	103
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	85	85	91	91
Heavy Vehicles, %	9	36	5	9	0	2
Mvmt Flow	773	24	46	513	46	113

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	797
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.15
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.245
Pot Cap-1 Maneuver	-	-	812
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	812
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	37.4
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	264	-	-	812	-
HCM Lane V/C Ratio	0.604	-	-	0.057	-
HCM Control Delay (s)	37.4	-	-	9.7	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	3.6	-	-	0.2	-

2030 Build Weekday Evening
1: Wheeler Street & Route 113

09/26/2023

Intersection						
Int Delay, s/veh	32.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	585	36	133	891	33	96
Future Vol, veh/h	585	36	133	891	33	96
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	79	79	91	91	69	69
Heavy Vehicles, %	2	0	0	8	0	2
Mvmt Flow	741	46	146	979	48	139
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	787	0	2035	764
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	1271	-
Critical Hdwy	-	-	4.1	-	6.4	6.22
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.318
Pot Cap-1 Maneuver	-	-	841	-	63	404
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	266	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	841	-	~ 39	404
Mov Cap-2 Maneuver	-	-	-	-	~ 39	-
Stage 1	-	-	-	-	463	-
Stage 2	-	-	-	-	165	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.3		\$ 358.4	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	119	-	-	841	-	
HCM Lane V/C Ratio	1.571	-	-	0.174	-	
HCM Control Delay (s)	\$ 358.4	-	-	10.2	0	
HCM Lane LOS	F	-	-	B	A	
HCM 95th %tile Q(veh)	13.6	-	-	0.6	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

Wheeler Street at Wheeler Road

2023 Existing Weekday Morning
2: Wheeler Street & Wheeler Road

09/21/2023

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	59	4	7	17	15	26
Future Vol, veh/h	59	4	7	17	15	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	86	86	73	73
Heavy Vehicles, %	2	0	14	0	13	15
Mvmt Flow	89	6	8	20	21	36

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	75	39	57	0	-	0
Stage 1	39	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.42	6.2	4.24	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.3	2.326	-	-	-
Pot Cap-1 Maneuver	928	1038	1474	-	-	-
Stage 1	983	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1038	1474	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1474	-	930	-	-
HCM Lane V/C Ratio	0.006	-	0.103	-	-
HCM Control Delay (s)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

2023 Existing Weekday Evening
2: Wheeler Street & Wheeler Road

09/21/2023

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	4	13	19	20	81
Future Vol, veh/h	38	4	13	19	20	81
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	67	67	77	77
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	43	5	19	28	26	105
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	145	79	131	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	852	987	1467	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	841	987	1467	-	-	-
Mov Cap-2 Maneuver	841	-	-	-	-	-
Stage 1	937	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1467	-	853	-	-	
HCM Lane V/C Ratio	0.013	-	0.056	-	-	
HCM Control Delay (s)	7.5	0	9.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

2030 No-Build Weekday Morning
2: Wheeler Street & Wheeler Road

09/26/2023

Intersection

Int Delay, s/veh 5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	74	4	8	18	16	32
Future Vol, veh/h	74	4	8	18	16	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	86	86	73	73
Heavy Vehicles, %	2	0	14	0	13	15
Mvmt Flow	112	6	9	21	22	44

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	83	44	66
Stage 1	44	-	-
Stage 2	39	-	-
Critical Hdwy	6.42	6.2	4.24
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.3	2.326
Pot Cap-1 Maneuver	919	1032	1463
Stage 1	978	-	-
Stage 2	983	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	913	1032	1463
Mov Cap-2 Maneuver	913	-	-
Stage 1	972	-	-
Stage 2	983	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	918	-	-
HCM Lane V/C Ratio	0.006	-	0.129	-	-
HCM Control Delay (s)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

2030 No-Build Weekday Evening
2: Wheeler Street & Wheeler Road

09/26/2023

Intersection

Int Delay, s/veh 2.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	48	4	14	20	21	99
Future Vol, veh/h	48	4	14	20	21	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	67	67	77	77
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	55	5	21	30	27	129

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	164	92	156
Stage 1	92	-	-
Stage 2	72	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	831	971	1436
Stage 1	937	-	-
Stage 2	956	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	819	971	1436
Mov Cap-2 Maneuver	819	-	-
Stage 1	923	-	-
Stage 2	956	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1436	-	829	-	-
HCM Lane V/C Ratio	0.015	-	0.071	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

2030 Build Weekday Morning
2: Wheeler Street & Wheeler Road

09/26/2023

Intersection

Int Delay, s/veh 5.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	108	4	8	52	27	43
Future Vol, veh/h	108	4	8	52	27	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	66	66	86	86	73	73
Heavy Vehicles, %	2	0	14	0	13	15
Mvmt Flow	164	6	9	60	37	59

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	145	67	96
Stage 1	67	-	-
Stage 2	78	-	-
Critical Hdwy	6.42	6.2	4.24
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.3	2.326
Pot Cap-1 Maneuver	847	1002	1426
Stage 1	956	-	-
Stage 2	945	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	841	1002	1426
Mov Cap-2 Maneuver	841	-	-
Stage 1	949	-	-
Stage 2	945	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1426	-	846	-	-
HCM Lane V/C Ratio	0.007	-	0.201	-	-
HCM Control Delay (s)	7.5	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

2030 Build Weekday Evening
2: Wheeler Street & Wheeler Road

09/26/2023

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	4	14	41	52	130
Future Vol, veh/h	70	4	14	41	52	130
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	67	67	77	77
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	80	5	21	61	68	169
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	256	153	237	0	-	0
Stage 1	153	-	-	-	-	-
Stage 2	103	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	737	898	1342	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	725	898	1342	-	-	-
Mov Cap-2 Maneuver	725	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	926	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.5	2		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1342	-	733	-	-	
HCM Lane V/C Ratio	0.016	-	0.115	-	-	
HCM Control Delay (s)	7.7	0	10.5	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.4	-	-	

Wheeler Street at Rinzee Road

2023 Existing Weekday Morning
3: Wheeler Street & Rinzee Road

09/21/2023

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	4	2	14	20	4
Future Vol, veh/h	6	4	2	14	20	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	80	80	75	75
Heavy Vehicles, %	17	0	0	0	10	25
Mvmt Flow	10	6	3	18	27	5

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	54	30	32	0	-	0
Stage 1	30	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.57	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	918	1050	1593	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	916	1050	1593	-	-	-
Mov Cap-2 Maneuver	916	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1593	-	965	-	-
HCM Lane V/C Ratio	0.002	-	0.016	-	-
HCM Control Delay (s)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2023 Existing Weekday Evening
3: Wheeler Street & Rinzee Road

09/21/2023

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	0	32	21	5
Future Vol, veh/h	3	1	0	32	21	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	80	80	93	93
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	6	2	0	40	23	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	66	26	28	0	-	0
Stage 1	26	-	-	-	-	-
Stage 2	40	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	944	1056	1599	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	944	1056	1599	-	-	-
Mov Cap-2 Maneuver	944	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1599	-	970	-	-	
HCM Lane V/C Ratio	-	-	0.008	-	-	
HCM Control Delay (s)	0	-	8.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

2030 No-Build Weekday Morning
3: Wheeler Street & Rinzee Road

09/26/2023

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	4	2	15	21	4
Future Vol, veh/h	6	4	2	15	21	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	80	80	75	75
Heavy Vehicles, %	17	0	0	0	10	25
Mvmt Flow	10	6	3	19	28	5
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	56	31	33	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.57	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	915	1049	1592	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	913	1049	1592	-	-	-
Mov Cap-2 Maneuver	913	-	-	-	-	-
Stage 1	952	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0.9		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1592	-	963	-	-	
HCM Lane V/C Ratio	0.002	-	0.016	-	-	
HCM Control Delay (s)	7.3	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

2030 No-Build Weekday Evening
3: Wheeler Street & Rinzee Road

09/26/2023

Intersection

Int Delay, s/veh 0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1	0	34	23	5
Future Vol, veh/h	3	1	0	34	23	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	80	80	93	93
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	6	2	0	43	25	5

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	71	28	30
Stage 1	28	-	-
Stage 2	43	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	938	1053	1596
Stage 1	1000	-	-
Stage 2	985	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	938	1053	1596
Mov Cap-2 Maneuver	938	-	-
Stage 1	1000	-	-
Stage 2	985	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	964	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	5.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	35	13	16	23	13
Future Vol, veh/h	33	35	13	16	23	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	63	63	80	80	75	75
Heavy Vehicles, %	17	0	0	0	10	25
Mvmt Flow	52	56	16	20	31	17
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	92	40	48	0	-	0
Stage 1	40	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.57	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.57	-	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-	-
Follow-up Hdwy	3.653	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	873	1037	1572	-	-	-
Stage 1	945	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	864	1037	1572	-	-	-
Mov Cap-2 Maneuver	864	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.3	3.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1572	-	945	-	-	
HCM Lane V/C Ratio	0.01	-	0.114	-	-	
HCM Control Delay (s)	7.3	0	9.3	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.4	-	-	

2030 Build Weekday Evening
3: Wheeler Street & Rinzee Road

09/26/2023

Intersection

Int Delay, s/veh 4.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	21	29	36	25	30
Future Vol, veh/h	20	21	29	36	25	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	80	80	93	93
Heavy Vehicles, %	0	0	0	0	5	0
Mvmt Flow	40	42	36	45	27	32

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	160	43	59
Stage 1	43	-	-
Stage 2	117	-	-
Critical Hdwy	6.4	6.2	4.1
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	2.2
Pot Cap-1 Maneuver	836	1033	1558
Stage 1	985	-	-
Stage 2	913	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	816	1033	1558
Mov Cap-2 Maneuver	816	-	-
Stage 1	961	-	-
Stage 2	913	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	3.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1558	-	914	-	-
HCM Lane V/C Ratio	0.023	-	0.09	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Route 110 at Wheeler Street

2023 Existing Weekday Morning
4: Route 110 & Wheeler Street

09/21/2023

Intersection

Int Delay, s/veh 3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	444	405	40	74	22
Future Vol, veh/h	12	444	405	40	74	22
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	91	91	77	77
Heavy Vehicles, %	17	3	3	23	11	5
Mvmt Flow	14	516	445	44	96	29

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	489	0	0 1011 467
Stage 1	-	-	- 467 -
Stage 2	-	-	- 544 -
Critical Hdwy	4.27	-	- 6.51 6.25
Critical Hdwy Stg 1	-	-	- 5.51 -
Critical Hdwy Stg 2	-	-	- 5.51 -
Follow-up Hdwy	2.353	-	- 3.599 3.345
Pot Cap-1 Maneuver	1001	-	- 255 590
Stage 1	-	-	- 613 -
Stage 2	-	-	- 564 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1001	-	- 250 590
Mov Cap-2 Maneuver	-	-	- 250 -
Stage 1	-	-	- 601 -
Stage 2	-	-	- 564 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	26.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1001	-	-	-	288
HCM Lane V/C Ratio	0.014	-	-	-	0.433
HCM Control Delay (s)	8.6	0	-	-	26.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	2.1

2023 Existing Weekday Evening
4: Route 110 & Wheeler Street

09/21/2023

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	533	558	56	37	8
Future Vol, veh/h	18	533	558	56	37	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	94	94	93	93	70	70
Heavy Vehicles, %	0	1	1	0	0	13
Mvmt Flow	19	567	600	60	53	11

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	660	0	0 1235 630
Stage 1	-	-	- 630 -
Stage 2	-	-	- 605 -
Critical Hdwy	4.1	-	- 6.4 6.33
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.417
Pot Cap-1 Maneuver	938	-	- 197 462
Stage 1	-	-	- 535 -
Stage 2	-	-	- 549 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	938	-	- 191 462
Mov Cap-2 Maneuver	-	-	- 191 -
Stage 1	-	-	- 519 -
Stage 2	-	-	- 549 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	29
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	938	-	-	-	213
HCM Lane V/C Ratio	0.02	-	-	-	0.302
HCM Control Delay (s)	8.9	0	-	-	29
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

2030 No-Build Weekday Morning
4: Route 110 & Wheeler Street

09/26/2023

Intersection

Int Delay, s/veh 3.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	476	434	43	79	24
Future Vol, veh/h	13	476	434	43	79	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	86	86	91	91	77	77
Heavy Vehicles, %	17	3	3	23	11	5
Mvmt Flow	15	553	477	47	103	31

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	524	0	0 1084 501
Stage 1	-	-	- 501 -
Stage 2	-	-	- 583 -
Critical Hdwy	4.27	-	- 6.51 6.25
Critical Hdwy Stg 1	-	-	- 5.51 -
Critical Hdwy Stg 2	-	-	- 5.51 -
Follow-up Hdwy	2.353	-	- 3.599 3.345
Pot Cap-1 Maneuver	971	-	- 231 564
Stage 1	-	-	- 591 -
Stage 2	-	-	- 541 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	971	-	- 226 564
Mov Cap-2 Maneuver	-	-	- 226 -
Stage 1	-	-	- 578 -
Stage 2	-	-	- 541 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	32
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	263
HCM Lane V/C Ratio	0.016	-	-	-	0.509
HCM Control Delay (s)	8.8	0	-	-	32
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	2.7

2030 No-Build Weekday Evening
4: Route 110 & Wheeler Street

09/26/2023

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	593	598	60	40	9
Future Vol, veh/h	19	593	598	60	40	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	94	94	93	93	70	70
Heavy Vehicles, %	0	1	1	0	0	13
Mvmt Flow	20	631	643	65	57	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	708	0	0 1347 676
Stage 1	-	-	- - 676 -
Stage 2	-	-	- - 671 -
Critical Hdwy	4.1	-	- - 6.4 6.33
Critical Hdwy Stg 1	-	-	- - 5.4 -
Critical Hdwy Stg 2	-	-	- - 5.4 -
Follow-up Hdwy	2.2	-	- - 3.5 3.417
Pot Cap-1 Maneuver	900	-	- - 168 435
Stage 1	-	-	- - 509 -
Stage 2	-	-	- - 512 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	900	-	- - 162 435
Mov Cap-2 Maneuver	-	-	- - 162 -
Stage 1	-	-	- - 492 -
Stage 2	-	-	- - 512 -

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	36.4
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	900	-	-	-	183
HCM Lane V/C Ratio	0.022	-	-	-	0.383
HCM Control Delay (s)	9.1	0	-	-	36.4
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

2030 Build Weekday Morning
4: Route 110 & Wheeler Street

09/26/2023

Intersection

Int Delay, s/veh 5.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	476	434	47	90	46
Future Vol, veh/h	20	476	434	47	90	46
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	91	91	77	77
Heavy Vehicles, %	17	3	3	23	11	5
Mvmt Flow	23	553	477	52	117	60

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	529	0	0 1102 503
Stage 1	-	-	- 503 -
Stage 2	-	-	- 599 -
Critical Hdwy	4.27	-	- 6.51 6.25
Critical Hdwy Stg 1	-	-	- 5.51 -
Critical Hdwy Stg 2	-	-	- 5.51 -
Follow-up Hdwy	2.353	-	- 3.599 3.345
Pot Cap-1 Maneuver	966	-	- 225 563
Stage 1	-	-	- 589 -
Stage 2	-	-	- 532 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	966	-	- 217 563
Mov Cap-2 Maneuver	-	-	- 217 -
Stage 1	-	-	- 569 -
Stage 2	-	-	- 532 -

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	39.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	966	-	-	-	274
HCM Lane V/C Ratio	0.024	-	-	-	0.645
HCM Control Delay (s)	8.8	0	-	-	39.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	4.1

2030 Build Weekday Evening
4: Route 110 & Wheeler Street

09/26/2023

Intersection

Int Delay, s/veh 2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	593	598	70	23	48
Future Vol, veh/h	40	593	598	70	23	48
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	93	93	70	70
Heavy Vehicles, %	0	1	1	0	0	13
Mvmt Flow	43	631	643	75	33	69

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	718	0	0 1398 681
Stage 1	-	-	- 681 -
Stage 2	-	-	- 717 -
Critical Hdwy	4.1	-	- 6.4 6.33
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.2	-	- 3.5 3.417
Pot Cap-1 Maneuver	892	-	- 157 432
Stage 1	-	-	- 506 -
Stage 2	-	-	- 487 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	892	-	- 145 432
Mov Cap-2 Maneuver	-	-	- 145 -
Stage 1	-	-	- 469 -
Stage 2	-	-	- 487 -

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	27
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	892	-	-	-	263
HCM Lane V/C Ratio	0.048	-	-	-	0.386
HCM Control Delay (s)	9.2	0	-	-	27
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

Wheeler Road at Wilshire Circle and Paddock Lane

2023 Existing Weekday Morning
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/21/2023

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	0	42	0	0	36	0	2	1	2	0	2	2
Future Vol, veh/h	0	42	0	0	36	0	2	1	2	0	2	2
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	88	88	88	64	64	64	31	31	31	33	33	33
Heavy Vehicles, %	0	0	0	0	6	0	0	0	0	0	0	0
Mvmt Flow	0	48	0	0	56	0	6	3	6	0	6	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	56	0	0	48	0	0	110	104	48	109	104	56
Stage 1	-	-	-	-	-	-	48	48	-	56	56	-
Stage 2	-	-	-	-	-	-	62	56	-	53	48	-
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	1562	-	-	1572	-	-	873	790	1027	874	790	1016
Stage 1	-	-	-	-	-	-	971	859	-	961	852	-
Stage 2	-	-	-	-	-	-	954	852	-	965	859	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1562	-	-	1572	-	-	863	790	1027	866	790	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	863	790	-	866	790	-
Stage 1	-	-	-	-	-	-	971	859	-	961	852	-
Stage 2	-	-	-	-	-	-	942	852	-	955	859	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.1			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	904	1562	-	-	1572	-	-	889				
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-	0.014				
HCM Control Delay (s)	9.1	0	-	-	0	-	-	9.1				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0				

2023 Existing Weekday Evening
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/21/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	65	5	4	62	1	3	0	0	0	0	0
Future Vol, veh/h	4	65	5	4	62	1	3	0	0	0	0	0
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	74	74	74	60	60	60	38	38	38	25	25	25
Heavy Vehicles, %	25	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	88	7	7	103	2	8	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	105	0	0	95	0	0	220	221	92	220	223	104
Stage 1	-	-	-	-	-	-	102	102	-	118	118	-
Stage 2	-	-	-	-	-	-	118	119	-	102	105	-
Critical Hdwy	4.35	-	-	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	2.425	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1354	-	-	1512	-	-	740	681	971	740	679	956
Stage 1	-	-	-	-	-	-	909	815	-	891	802	-
Stage 2	-	-	-	-	-	-	891	801	-	909	812	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1354	-	-	1512	-	-	735	675	971	735	673	956
Mov Cap-2 Maneuver	-	-	-	-	-	-	735	675	-	735	673	-
Stage 1	-	-	-	-	-	-	905	812	-	887	798	-
Stage 2	-	-	-	-	-	-	887	797	-	905	809	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.4			10			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	735	1354	-	-	1512	-	-	-				
HCM Lane V/C Ratio	0.011	0.004	-	-	0.004	-	-	-				
HCM Control Delay (s)	10	7.7	0	-	7.4	0	-	0				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	-				

2030 No-Build Weekday Morning
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/26/2023

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	0	56	0	0	43	0	2	1	2	0	2	2
Future Vol, veh/h	0	56	0	0	43	0	2	1	2	0	2	2
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	88	88	88	64	64	64	31	31	31	33	33	33
Heavy Vehicles, %	0	0	0	0	6	0	0	0	0	0	0	0
Mvmt Flow	0	64	0	0	67	0	6	3	6	0	6	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	64	0	0	137	131	64	136	131	67
Stage 1	-	-	-	-	-	-	64	64	-	67	67	-
Stage 2	-	-	-	-	-	-	73	67	-	69	64	-
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	1547	-	-	1551	-	-	838	763	1006	840	763	1002
Stage 1	-	-	-	-	-	-	952	846	-	948	843	-
Stage 2	-	-	-	-	-	-	942	843	-	946	846	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1551	-	-	828	763	1006	832	763	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	828	763	-	832	763	-
Stage 1	-	-	-	-	-	-	952	846	-	948	843	-
Stage 2	-	-	-	-	-	-	930	843	-	936	846	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.2			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	875	1547	-	-	1551	-	-	866				
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-	0.014				
HCM Control Delay (s)	9.2	0	-	-	0	-	-	9.2				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0				

2030 No-Build Weekday Evening
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/26/2023

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	77	5	4	78	1	3	0	0	0	0	0
Future Vol, veh/h	4	77	5	4	78	1	3	0	0	0	0	0
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	74	74	74	60	60	60	38	38	38	25	25	25
Heavy Vehicles, %	25	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	104	7	7	130	2	8	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	111	0	0	263	264	108	263	266	131
Stage 1	-	-	-	-	-	-	118	118	-	145	145	-
Stage 2	-	-	-	-	-	-	145	146	-	118	121	-
Critical Hdwy	4.35	-	-	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	2.425	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1323	-	-	1492	-	-	694	645	951	694	643	924
Stage 1	-	-	-	-	-	-	891	802	-	863	781	-
Stage 2	-	-	-	-	-	-	863	780	-	891	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1323	-	-	1492	-	-	689	639	951	689	637	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	689	639	-	689	637	-
Stage 1	-	-	-	-	-	-	887	799	-	860	777	-
Stage 2	-	-	-	-	-	-	859	776	-	887	797	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.4			10.3			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	689	1323	-	-	1492	-	-	-				
HCM Lane V/C Ratio	0.011	0.004	-	-	0.004	-	-	-				
HCM Control Delay (s)	10.3	7.7	0	-	7.4	0	-	0				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	-				

2030 Build Weekday Morning
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/26/2023

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	56	4	0	43	0	13	1	2	0	2	2
Future Vol, veh/h	0	56	4	0	43	0	13	1	2	0	2	2
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	88	88	88	64	64	64	31	31	31	33	33	33
Heavy Vehicles, %	0	0	0	0	6	0	0	0	0	0	0	0
Mvmt Flow	0	64	5	0	67	0	42	3	6	0	6	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	69	0	0	140	134	67	138	136	67
Stage 1	-	-	-	-	-	-	67	67	-	67	67	-
Stage 2	-	-	-	-	-	-	73	67	-	71	69	-
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	1547	-	-	1545	-	-	835	760	1002	837	759	1002
Stage 1	-	-	-	-	-	-	948	843	-	948	843	-
Stage 2	-	-	-	-	-	-	942	843	-	944	841	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1545	-	-	825	760	1002	829	759	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	825	760	-	829	759	-
Stage 1	-	-	-	-	-	-	948	843	-	948	843	-
Stage 2	-	-	-	-	-	-	930	843	-	934	841	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			9.6			9.2		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	839	1547	-	-	1545	-	-	864				
HCM Lane V/C Ratio	0.062	-	-	-	-	-	-	0.014				
HCM Control Delay (s)	9.6	0	-	-	0	-	-	9.2				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	0.2	0	-	-	0	-	-	0				

2030 Build Weekday Evening
5: Wilshire Circle/Paddock Lane & Wheeler Road

09/26/2023

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	77	16	4	78	1	10	0	0	0	0	0
Future Vol, veh/h	4	77	16	4	78	1	10	0	0	0	0	0
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	74	74	74	60	60	60	38	38	38	25	25	25
Heavy Vehicles, %	25	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	5	104	22	7	130	2	26	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	132	0	0	126	0	0	270	271	115	270	281	131
Stage 1	-	-	-	-	-	-	125	125	-	145	145	-
Stage 2	-	-	-	-	-	-	145	146	-	125	136	-
Critical Hdwy	4.35	-	-	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	2.425	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1323	-	-	1473	-	-	687	639	943	687	631	924
Stage 1	-	-	-	-	-	-	884	796	-	863	781	-
Stage 2	-	-	-	-	-	-	863	780	-	884	788	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1323	-	-	1473	-	-	682	633	943	682	625	924
Mov Cap-2 Maneuver	-	-	-	-	-	-	682	633	-	682	625	-
Stage 1	-	-	-	-	-	-	880	793	-	860	777	-
Stage 2	-	-	-	-	-	-	859	776	-	880	785	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.4			10.5			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	682	1323	-	-	1473	-	-	-				
HCM Lane V/C Ratio	0.039	0.004	-	-	0.005	-	-	-				
HCM Control Delay (s)	10.5	7.7	0	-	7.5	0	-	0				
HCM Lane LOS	B	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-				

Wheeler Road at Wilshire Circle

2023 Existing Weekday Morning
6: Wilshire Circle & Wheeler Road

09/21/2023

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	1	4	34	2	0
Future Vol, veh/h	44	1	4	34	2	0
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	80	80	63	63	50	50
Heavy Vehicles, %	0	0	0	6	0	0
Mvmt Flow	55	1	6	54	4	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	56
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1562
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1562
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	874	-	-	1562	-
HCM Lane V/C Ratio	0.005	-	-	0.004	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

2023 Existing Weekday Evening
6: Wilshire Circle & Wheeler Road

09/21/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	61	3	2	66	2	2
Future Vol, veh/h	61	3	2	66	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	59	59	50	50
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	76	4	3	112	4	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	80	0	196	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	118	-
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	-	-	1531	-	797	988
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1531	-	795	988
Mov Cap-2 Maneuver	-	-	-	-	795	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	910	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.1	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	881	-	-	1531	-	
HCM Lane V/C Ratio	0.009	-	-	0.002	-	
HCM Control Delay (s)	9.1	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile O(veh)	0	-	-	0	-	

2030 No-Build Weekday Morning
6: Wilshire Circle & Wheeler Road

09/26/2023

Intersection

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	1	4	40	2	0
Future Vol, veh/h	58	1	4	40	2	0
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	80	80	63	63	50	50
Heavy Vehicles, %	0	0	0	6	0	0
Mvmt Flow	73	1	6	63	4	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	74
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1538
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1538
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	845	-	-	1538	-
HCM Lane V/C Ratio	0.005	-	-	0.004	-
HCM Control Delay (s)	9.3	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

2030 No-Build Weekday Evening
6: Wilshire Circle & Wheeler Road

09/26/2023

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	3	2	83	2	2
Future Vol, veh/h	72	3	2	83	2	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	80	80	59	59	50	50
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	90	4	3	141	4	4

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	94
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1513
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1513
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	9.3
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	848	-	-	1513	-
HCM Lane V/C Ratio	0.009	-	-	0.002	-
HCM Control Delay (s)	9.3	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection

Int Delay, s/veh 3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	1	15	40	2	34
Future Vol, veh/h	58	1	15	40	2	34
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	80	80	63	63	50	50
Heavy Vehicles, %	0	0	0	6	0	0
Mvmt Flow	73	1	24	63	4	68

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	74
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1538
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1538
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	980	-	-	1538	-
HCM Lane V/C Ratio	0.073	-	-	0.015	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection

Int Delay, s/veh 2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	72	3	33	83	2	24
Future Vol, veh/h	72	3	33	83	2	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	80	80	59	59	50	50
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	90	4	56	141	4	48

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	94
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1513
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1513
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	932	-	-	1513	-
HCM Lane V/C Ratio	0.056	-	-	0.037	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Wheeler Street at the Project Site Roadway

2030 Build Weekday Morning
7: Wheeler Street & Project Site Roadway

09/26/2023

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	1	48	34	2
Future Vol, veh/h	7	2	1	48	34	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	86	86	73	73
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	2	1	56	47	3
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	107	49	50	0	-	0
Stage 1	49	-	-	-	-	-
Stage 2	58	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	891	1020	1557	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	890	1020	1557	-	-	-
Mov Cap-2 Maneuver	890	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	0.1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1557	-	916	-	-	
HCM Lane V/C Ratio	0.001	-	0.011	-	-	
HCM Control Delay (s)	7.3	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

2030 Build Weekday Evening
7: Wheeler Street & Project Site Roadway

09/26/2023

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	2	2	54	53	6
Future Vol, veh/h	4	2	2	54	53	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	67	67	78	77
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	2	3	81	68	8
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	159	72	76	0	-	0
Stage 1	72	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	832	990	1523	-	-	-
Stage 1	951	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	830	990	1523	-	-	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	936	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1523	-	877	-	-	
HCM Lane V/C Ratio	0.002	-	0.007	-	-	
HCM Control Delay (s)	7.4	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	