

Transportation Impact Assessment

Murphy's Farm
Multifamily Residential Development
231 Wheeler Street
Dracut, Massachusetts

Prepared for:

O'Brien Homes, Inc.
Andover, Massachusetts

October 2023
Revised July 2024

Prepared by:

 **Vanasse &
Associates inc**
Transportation Engineers & Planners

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Dear Reviewer:

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

Sincerely,

VANASSE & ASSOCIATES, INC.



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

CONTENTS

PREFACE

EXECUTIVE SUMMARY	1
-------------------------	---

INTRODUCTION	7
--------------------	---

Project Description	7
Study Methodology.....	8

EXISTING CONDITIONS.....	9
--------------------------	---

Roadways.....	9
Intersections	10
Existing Traffic Volumes.....	11
Pedestrian and Bicycle Facilities	13
Public Transportation.....	13
Spot Speed Measurements	13
Motor Vehicle Crash Data	14

FUTURE CONDITIONS.....	17
------------------------	----

Future Traffic Growth.....	17
Project-Generated Traffic	19
Trip Distribution and Assignment	20
Future Traffic Volumes – Build Condition.....	20

TRAFFIC OPERATIONS ANALYSIS.....	22
----------------------------------	----

Methodology	22
Analysis Results.....	25

CONTENTS (Continued)

TRAFFIC SIGNAL WARRANT ANALYSIS.....	30
Methodology.....	30
Warrants Evaluation Results.....	31
SIGHT DISTANCE EVALUATION	33
CONCLUSIONS AND RECOMMENDATIONS	36
Conclusions.....	36
Recommendations.....	37

FIGURES

No.	Title
1	Site Location Map
2	2024 Existing Weekday Morning Peak-Hour Traffic Volumes
3	2024 Existing Weekday Evening Peak-Hour Traffic Volumes
4	2031 No-Build Weekday Morning Peak-Hour Traffic Volumes
5	2031 No-Build Weekday Evening Peak-Hour Traffic Volumes
6	Trip-Distribution Map
7	Project-Generated Weekday Morning Peak-Hour Traffic Volumes
8	Project-Generated Weekday Evening Peak-Hour Traffic Volumes
9	2031 Build Weekday Morning Peak-Hour Traffic Volumes
10	2031 Build Weekday Evening Peak-Hour Traffic Volumes
11	Rinzee Road at Wheeler Street Sight Triangles
12	Wilshire Circle at Wheeler Road and Paddock Lane Sight Triangles
13	Wilshire Circle at Wheeler Road Sight Triangles
14	Wheeler Road at Wheeler Street Sight Triangles

TABLES

No.	Title
1	Study Area Intersection Description
2	2024 Existing Traffic Volumes
3	Vehicle Travel Speed Measurements
4	Motor Vehicle Crash Data Summary
5	Trip-Generation Comparison
6	Peak-Hour Traffic-Volume Increases
7	Level-of-Service Criteria for Signalized Intersections
8	Level-of-Service Criteria for Unsignalized Intersections
9	Signalized Intersection Level-of-Service and Vehicle Queue Summary
10	Unsignalized Intersection Level-of-Service and Vehicle Queue Summary
11	Traffic Signal Warrants
12	Traffic Signal Warrants Analysis – Route 113 at Wheeler Street
13	Sight Distance Measurements
14	Mitigated Unsignalized Intersection Level-of-Service and Vehicle Queue Summary

PREFACE

Vanasse & Associates, Inc. (VAI) has prepared this update to the October 2, 2023 Transportation Impact Assessment (TIA) that was prepared in support of the proposed construction of a multifamily residential development to be known as Murphy's Farm and located at 231 Wheeler Street in Dracut, Massachusetts. This updated TIA is responsive to the comments that were raised in the March 12, 2024 *Transportation Peer Review* memorandum prepared by VHB on behalf of the Town of Dracut and to reflect refinements to the development program and access configuration. Specifically, the updated TIA includes the following changes from the October 2, 2023 TIA:

- The study area has been expanded to include the intersections of Broadway Road (Route 113) at Wheeler Road and Jones Avenue, and Wheeler Road at Parker Road;
- The existing conditions base year has been updated to 2024 and the future horizon year has been adjusted to 2031;
- The motor vehicle crash analysis has been revised to include a review of crash data for the five-year review period 2015 through 2019, inclusive;
- The development program for the project has been reduced from 300 four-bedroom multifamily residential units to 268 multifamily residential units that will include a mix of one-, two- and three-bedroom units;
- The new driveway to Wheeler Street has been removed;
- The trip-distribution pattern has been refined and expanded to illustrate travel routes to/from Interstate 93 and Interstate 495, including the use of Wheeler Road for trips to/from the west; and
- The sight distance assessment has been updated and expanded to include sight line sketches for each of the access points to the project and for the Wheeler Street/Wheeler Road intersection.

In addition, the elements of the transportation improvement program have been refined and expanded to include the framework of a Transportation Demand Management (TDM) program and additional measures to off-set the predicted impact of the project, enhance safety and facilitate safe and efficient access to the project.

EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of 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"). This assessment was prepared in consultation with the Massachusetts Department of Transportation (MassDOT), the Town of Dracut and the City of Methuen, and was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports.

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

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE),¹ the Project is expected to generate approximately 1,992 vehicle trips on an average weekday (two-way, 24-hour volume), with 134 vehicle trips expected during the weekday morning peak-hour and 157 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 a 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 on the critical movements at these intersections defined as a predicted increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of between one (1) and five (5) vehicles;
4. All movements at the intersections that will convey traffic to/from the Project site are predicted to operate at LOS B or better with vehicle queuing limited to one (1) vehicle;

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

5. Independent of the Project, the Wheeler Road/Wilshire Circle/Paddock Lane intersection was found to have a motor vehicle crash rate that exceeds both the MassDOT statewide and District average crash rates for similar intersections based on a review of motor vehicle crash data for the period 2015 through 2019, inclusive. As such, safety-related enhancements have been recommended for this intersection will be advanced in conjunction with the Project (see *Recommendations*); and
6. Lines of sight at the intersections along Wheeler Street and Wheeler Road that will provide access to the Project site were found to exceed, or can be made to meet or exceed, the recommended minimum distances 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 implementation of the recommendations that follow.

RECOMMENDATIONS

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

Project Access

Access to the Project site will be provided by way of a new roadway network that will intersect the cul-de-sacs at the current termini of Poppy Lane and Elizabeth Drive, respectively. The following recommendations are offered with respect to the design and operation of the Project site access and internal circulation:

- 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.
- STOP-signs and marked STOP-lines should be provided on the side street approaches to the main roadway connecting Poppy Lane and Elizabeth Drive.
- 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).²
- A sidewalk is proposed along at least one side of the roadway network within the Project site that extends between Poppy Lane and Elizabeth Drive.

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

- 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 intersection sight triangle areas 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.

Off-Site

Route 113 at Wheeler Street

Independent of the Project, the Wheeler Street approach to Route 113 was identified to be operating over its design capacity during the weekday evening peak-hour, with the addition of Project-related shown to increase delays during both peak hours causing the Wheeler Street approach to operate over capacity during the weekday morning peak-hour and increasing vehicle queues during the weekday evening peak-hour (already operating over capacity) by five (5) vehicles. A review of the warrants defined the MUTCD³ for the installation of a traffic control signal at the intersection indicates that the intersection does not meet Warrant 1, *Eight-Hour Vehicle Volume*, (MassDOT requirement for the installation of a new traffic signal)⁴ under either 2024 Build or 2031 Build traffic volume conditions with consideration of “right-turn-on-red” movements of 20 percent of the approach volume on Wheeler Street (approximately 68 percent of the existing vehicles on the Wheeler Street approach turn right at the intersection).

In an effort to improve traffic operations at the intersection in-lieu of the installation of a traffic control signal, the Wheeler Street approach to Route 113 should be widened to provide separate left and right-turn lanes. With the implementation of these improvements, vehicle queuing on the Wheeler Street approach was found to be reduced over No-Build conditions. The Project Proponent will provide funding to the City of Methuen for the design and construction of the recommended improvements at this intersection, with the level of funding to be commensurate with the predicted increase in traffic that the Project represents at the intersection during the weekday peak hours (i.e., a “fair-share” cost contribution). The funding will be provided to the City prior to the issuance of a Certificate of Occupancy for the Project.

Independent of the Project, the existing STOP-sign on the Wheeler Street approach should be removed from the utility pole and installed on a break-away sign post and a marked STOP-line should be provided adjacent to the STOP-sign installation.

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

³Federal Highway Administration, op. cit. 3.

⁴*The Massachusetts Amendments to the 2009 Manual on Uniform Traffic Control Devices for Streets and Highways*; MassDOT; November 2022.

crash rates for similar intersections based on a review of motor vehicle crash data for the period 2015 through 2019, inclusive. That being said, the intersection experienced a total of two (2) crashes between 2015 and 2019, inclusive, a level of crash frequency that would not be considered excessive; however, the volume of traffic that is processed by the intersection is relatively low, which results in the crash rate (the average number of motor vehicles occurring at the intersection per year per million vehicles travelling through the intersection) being higher than expected. A review of the crash data does not indicate any crash trends or patterns that would indicate a specific roadway or intersection defect.

In an effort to enhance safety at the intersection, the following improvements are recommended:

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 to include yellow reflective tape on the sign post.

The recommended improvements will be designed and constructed prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights, permits and approvals.

Route 110 at Wheeler Street

Independent of the Project, the pavement markings for the STOP-line on the Wheeler Street approach to Route 110 and the crosswalk across Wheeler Street should be reapplied, in addition to the centerline pavement markings along Wheeler Street approaching the intersection.

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.

Wilshire Circle at Elizabeth Drive

Independent of the Project, a STOP-sign and marked STOP-line should be provided on the Elizabeth Drive approach to Wilshire Circle.

Wheeler Street at Wheeler Road

Independent of the Project, trees and vegetation located within the sight triangle areas of the Wheeler Street/Wheeler Road intersection should be trimmed and maintained and the existing embankment located along the west side of Wheeler Street north of Wheeler Road should be regraded to provide the required sight distances for safe operation of the intersection.

Transportation Demand Management

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 along Route 110 to the south of the Project site by way of bus Route 24, *Lawrence-Lowell*. The Route 24 bus travels along Route 110 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.

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

- The Project proponent will become a member of the Merrimack Valley Transportation Management Association (MVTMA) who will manage and coordinate the TDM program for the Project;
- A transportation coordinator will be assigned for the Project to coordinate the TDM program and serve as a point of contact with the TMA;
- The transportation coordinator will facilitate a rideshare matching program for residents through the TMA to encourage carpooling;
- A “welcome packet” will be provided to new residents detailing available public transportation services, bicycle and walking alternatives, and other commuter options;
- Pedestrian accommodations will be incorporated within the Project site to encourage walking;
- Consideration should be given to providing electric vehicle (EV) charging stations for use by residents and guests;
- Short-term parking or a loading zone will be provided for use by carshare and delivery service providers; and
- Secure bicycle parking will be provided at an appropriate location within the Project site.

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.

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a multifamily residential development to be 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.

PROJECT DESCRIPTION

The Project will entail the construction of a 268-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 wooded 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. Off-street parking will be provided for a minimum of 536 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.⁵

⁵Two spaces per dwelling unit is required for multifamily residential dwellings.



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STUDY METHODOLOGY

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

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

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon was selected for analyses consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. The traffic analysis conducted in stage two identifies existing or projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in March 2023 and in April 2024. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that was assessed for the Project consisted of Wheeler Street and Wheeler Road, as well as the following specific intersections through which Project-related traffic will travel:

1. North Lowell Road (Route 113) at Wheeler Street
2. Wheeler Street at Wheeler Road
3. Wheeler Street at Rinzee Road
4. Lowell Boulevard (Route 110) at Wheeler Street
5. Wheeler Road at Wilshire Circle and Paddock Lane
6. Wheeler Road at Wilshire Circle
7. Wheeler Road at Parker Road
8. Broadway Road (Route 113) at Wheeler Road and Jones Avenue

The following describes the study area roadways and intersections.

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

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 and in April 2024.

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.

See notes at end of Table.

Table 1 (Continued)
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)
Wheeler Rd./ Parker Rd.	S	1 general purpose travel lane on all approaches	No	No	No
Route 113/ Wheeler Rd./ Jones Ave.	TS	1 general purpose travel lane on all approaches with right-turns on the Route 113 approaches exiting prior to the intersection by way of channelized right-turn lanes	Yes; 2 to 5-feet on Route 113	No	Yes; shared-traveled way on Route 113

^aS = STOP-sign control; TS = traffic signal 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 and in April 2024. 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 Wheeler Road/Parker Road and Route 113/Wheeler Road/Jones Avenue intersection on Tuesday, April 9, 2024 and at the remaining study area intersections 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 (Groups 4-7), respectively) were reviewed.⁶ Based on a review of this data, it was determined that traffic volumes for the month of March and April are between 2.0 percent and 8.7 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.

⁶MassDOT statewide Traffic Data Collection; 2019 Weekday Seasonal Factors, Groups U3 and U4-7.

Based on updated guidance from MassDOT,⁷ 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 March 2023 traffic counts were adjusted to 2024 conditions by applying a 1.0 percent growth rate consistent with the identified background traffic growth rate (see *General Background Traffic Growth* section of this assessment).

The 2024 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, respectively. Note that the peak-hour traffic volumes that are presented in Table 2 were obtained from the aforementioned figures.

Table 2
2024 EXISTING TRAFFIC VOLUMES

Location/Peak-Hour	AWT ^a	VPH ^b	K Factor ^c	Directional Distribution ^d
<i>Wheeler Street, south of Rinzee Road:</i>	445	--	--	--
Weekday Morning (7:30 – 8:30 AM)	--	40	9.0	60.0% SB
Weekday Evening (4:00 – 5:00 PM)	--	54	12.1	59.3% NB
<i>Wheeler Road, between Wilshire Circle east and west:</i>	1,215	--	--	--
Weekday Morning (7:30 – 8:30 AM)	--	81	6.7	55.6% EB
Weekday Evening (4:00 – 5:00 PM)	--	136	11.2	50.7% WB

^aAverage weekday traffic in vehicles per day.

^bVehicles per hour.

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

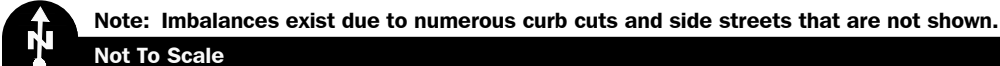
^dPercent traveling in peak direction.

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

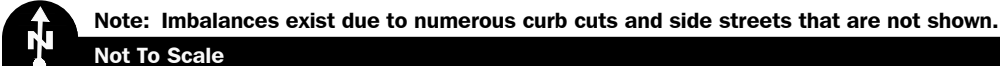
As can be seen in Table 2, Wheeler Street, south of Rinzee Road, was found to accommodate approximately 445 vehicles on an average weekday (two-way, 24-hour volume), with approximately 40 vehicles per hour (vph) during the weekday morning peak-hour and 54 vph during the weekday evening peak-hour.

Wheeler Road, between Wilshire Circle, was found to accommodate approximately 1,215 vehicles on an average weekday, with approximately 81 vph during the weekday morning peak-hour and 136 vph during the weekday evening peak-hour.

⁷*Traffic and Safety Engineering 25% Design Submission Guidelines*; MassDOT; Revised March 31, 2022.



2024 Existing Weekday Morning Peak-Hour Traffic Volumes



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Associates inc

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Figure 3
2024 Existing
Weekday Evening
Peak-Hour Traffic Volumes

PEDESTRIAN AND BICYCLE FACILITIES

Sidewalks are provided along the north side of Route 113 in the vicinity of Wheeler Street, along the south/east side of Rinzee Road, along the east/west side of both 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).⁸

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 along Route 110 to the south of the Project site by way of bus Route 24, *Lawrence-Lowell*. The Route 24 bus travels between the Buckley Transportation Center in Lawrence and the Robert B. Kennedy Transportation Center in Lowell, where connections can be made to other MVTA 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 and on Wheeler Street in the vicinity of Wheeler Road in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

⁸ A 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 (south of Rinzee Road)		Wheeler Road (between Wilshire Circle)		Wheeler Street (north of Wheeler Road)	
	Northbound	Southbound	Eastbound	Westbound	Northbound	Southbound
Mean Travel Speed (mph)	27	24	27	26	14	13
85 th Percentile Speed (mph)	32	30	34	38	16	16
Posted Speed Limit (mph)	30	30	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).

The mean vehicle travel speed along Wheeler Street, north of Wheeler Road, was found to be 14 mph in the northbound direction and 13 mph southbound, with the measured 85th percentile vehicle travel speed found to be 16 mph in both the north and southbound directions, which is 14 mph below the posted speed limit along Wheeler Street (30 mph) and is indicative of the horizontal curve along Wheeler Street approaching Wheeler Road from the north.

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 five-year review period 2015 through 2020, inclusive, in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and presented in Table 4.

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Route 113/ Wheeler Street	Wheeler Street/ Wheeler Road	Route 110/ Wheeler Street	Wheeler Road/ Wilshire Circle/ Paddock Lane	Wheeler Road/ Parker Road	Route 113/ Wheeler Road/ Jones Avenue
Traffic Control Type: ^b	S	S	S	S	S	TS
<i>Year:</i>						
2015	1	1	5	0	0	4
2016	4	0	8	0	1	4
2017	3	0	2	1	1	1
2018	4	0	1	1	0	3
2019	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>3</u>
Total	13	1	17	2	2	15
Average	2.60	0.20	3.40	0.40	0.40	3.00
Rate ^c	0.41	0.28	0.67	0.68	0.34	0.64
MassDOT Crash Rate: ^d	0.57/0.57	0.57/0.57	0.57/0.57	0.57/0.57	0.57/0.57	0.78/0.73
Significant? ^e	No	No	Yes	Yes	No	No
<i>Type:</i>						
Angle	3	0	2	1	0	2
Rear-End	6	0	8	0	0	4
Head-On	0	0	0	0	0	0
Sideswipe	2	0	4	0	0	0
Fixed Object	1	1	2	1	1	6
Pedestrian/Bicycle	0	0	0	0	0	0
Unknown/Other	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>3</u>
Total	13	1	17	2	2	15
<i>Conditions:</i>						
Clear	9	0	12	1	2	9
Cloudy	1	1	1	1	0	2
Rain	3	0	3	0	0	2
Snow/Ice	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>2</u>
Total	13	1	17	2	2	15
<i>Lighting:</i>						
Daylight	10	1	15	1	0	9
Dawn/Dusk	1	0	1	0	0	1
Dark (Road Lit)	2	0	1	1	1	4
Dark (Road Unlit)	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	13	1	17	2	2	15
<i>Day of Week:</i>						
Monday through Friday	12	1	14	2	1	11
Saturday	1	0	1	0	0	3
Sunday	<u>0</u>	<u>0</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	13	1	17	2	2	15
<i>Severity:</i>						
Property Damage Only	10	0	11	1	2	8
Personal Injury	3	1	6	1	0	7
Fatality	0	0	0	0	0	0
Unknown	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	13	1	17	2	2	15

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2015 through 2019.

^bTraffic Control Type: S = stop control; TS = traffic signal 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).

As can be seen in Table 4, with the exception of the Route 110/Wheeler Street and Wheeler Road/Wilshire Circle/Paddock Lane intersections, the remaining study area intersections were shown to have experienced an average of 3.0 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 or collisions with a fixed-object that resulted in property damage only. No (0) motor vehicle crashes were reported to have occurred at the Wheeler Street/Rinzee Road or Wheeler Road/Wilshire Circle intersections over the five-year review period based on the MassDOT data.

The Route 110/Wheeler Street and Wheeler Road/Wilshire Circle/Paddock Lane intersections experienced a total of 17 and two (2) reported motor vehicle crashes, respectively, over the five-year review period and were identified to have a motor vehicle crash rate *above* both the MassDOT statewide and District average crash rates for similar intersections. 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. A review of more recent crash data (2016 through 2020, inclusive) for the Route 110/Wheeler Street intersection indicates that there has been a reduction in reported crashes at the intersection such that the crash rate no longer exceeds the MassDOT average crash rates. That being said, specific recommendations have been provided to enhance safety at the Wheeler Road/Wilshire Circle/Paddock Lane intersection and to improve the pavement markings at the Route 110/Wheeler Street intersection that will be advanced as a part of the Project (discussed in the *Recommendations* section).

A review of the MassDOT statewide High Crash Location List indicated that there are no Highway Safety Improvement Program (HSIP) eligible high crash locations within the study area. In addition, no fatal motor vehicle crashes were reported to have occurred at the study area intersections over the five-year review period.

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

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2031, which reflects a seven-year planning horizon consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. Independent of the Project, traffic volumes on the roadway network in the year 2031 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2031 No-Build traffic volumes reflect 2031 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 and April 2024), 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)⁹ 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 2031 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 (2031) and will improve mobility, but are not expected to result in an increase capacity at the Route 110/Wheeler Street intersection.

⁹Institute of Transportation Engineers, op. cit. 1.

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

No-Build Traffic Volumes

The 2031 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 2024 Existing peak-hour traffic volumes and then adding the traffic volumes associated with the identified specific development (Berube Farms). The resulting 2031 No-Build weekday morning and evening peak-hour traffic volumes are shown on Figures 4 and 5.

PROJECT-GENERATED TRAFFIC

Design year (2031 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 268-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 ITE¹⁰ 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>	996	996	1,992
<i>Weekday Morning Peak-Hour:</i>	33	101	134
<i>Weekday Evening Peak-Hour:</i>	93	64	157

^aBased on ITE LUC 215, *Single-Family Attached Housing* (268 units).

Project-Generated Traffic-Volume Summary

As can be seen in Table 5, the Project is expected to generate approximately 1,992 vehicle trips on an average weekday (two-way, 24-hour volume, or 996 vehicles entering and 996 exiting), with 134 vehicle trips (33 vehicles entering and 101 exiting) expected during the weekday morning peak-hour and 157 vehicle trips (93 vehicles entering and 64 exiting) expected during the weekday evening peak-hour.

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

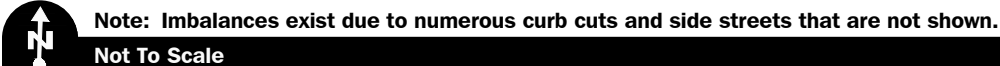
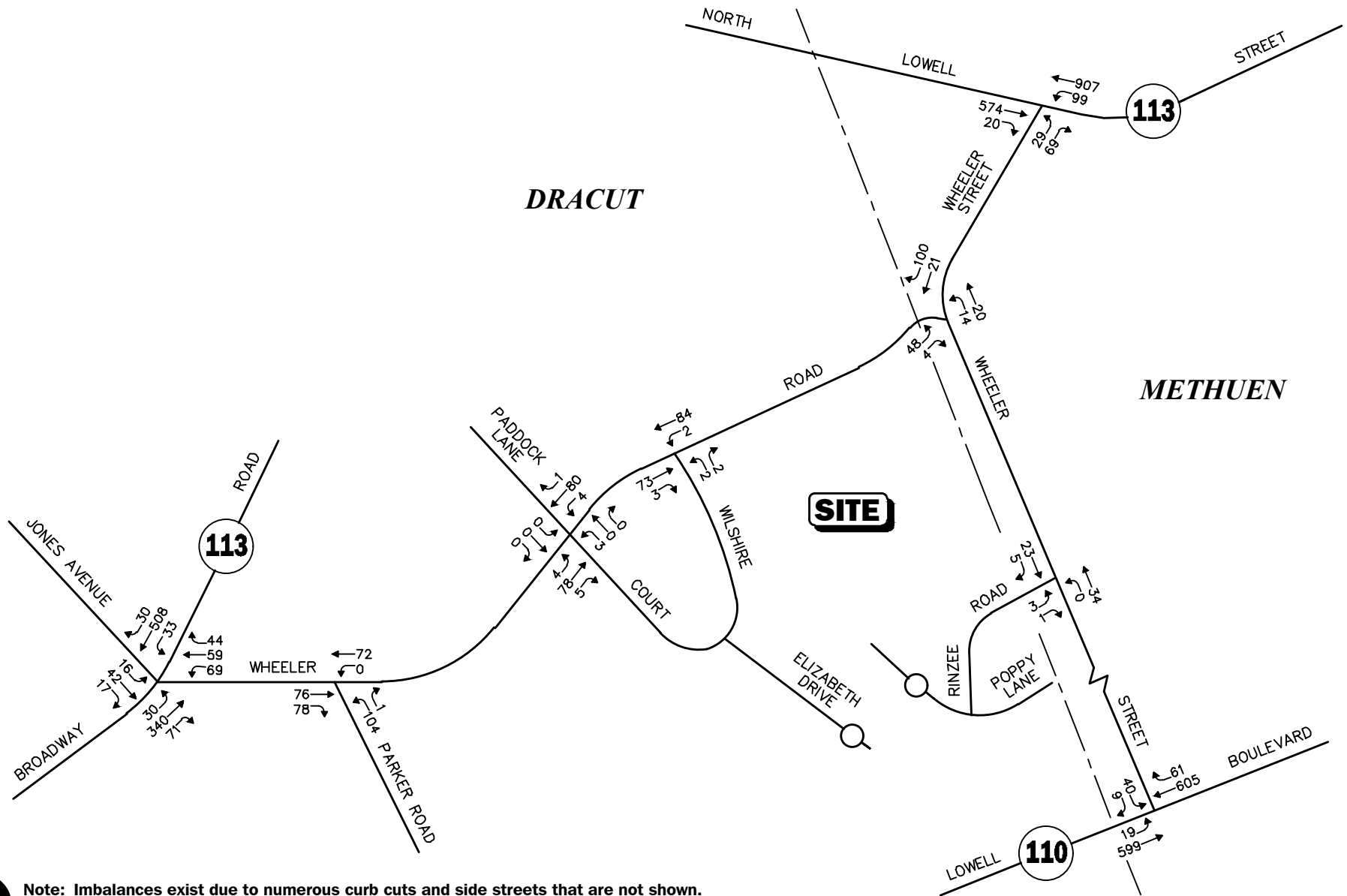


Figure 4
2031 No-Build
Weekday Morning
Peak-Hour Traffic Volumes



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

Not To Scale



Figure 5

2031 No-Build
Weekday Evening
Peak-Hour Traffic Volumes

TRIP DISTRIBUTION AND ASSIGNMENT

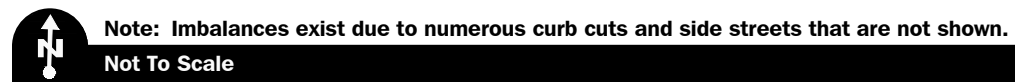
The directional distribution of generated trips to and from the Project site was determined based on a review of Journey-to-Work data from the U.S. Census for the Town of Dracut and then refined based on a review of existing traffic patterns within the study area. The general trip distribution for the Project within the study area is graphically depicted on Figure 6, with Figure 6A showing the anticipated distribution of trips and travel paths between the Project site and Interstate 93 (I-93) and Interstate 495 (I-495). The additional traffic that is expected to be generated by the Project within the study area was assigned on the study area roadway network as shown on Figures 7 and 8 for the weekday morning and evening peak hours, respectively.

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2031 Build condition traffic volumes consist of the 2031 No-Build traffic volumes with the additional traffic expected to be generated by the Project added to them. The 2031 Build weekday morning and evening peak-hour traffic volumes are graphically depicted on Figures 9 and 10, respectively.

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

As shown in Table 6, Project-related traffic-volume changes outside of the study area relative to 2031 No-Build conditions (the first five (5) rows of Table 6) are anticipated to range from increases of 1.0 to 4.3 percent during the peak periods, with vehicle increases shown to range from 13 to 63 vehicles. Traffic volume increases within the study area are anticipated to range from vehicle increases of 26 to 79 vehicles, which represent an increase in traffic that is proportionate to the relatively modest traffic volumes that are currently traveling along these roadways. That being said, sufficient capacity exists along the roadways within the study area to accommodate the additional traffic that will be associated with the Project. Where a defined impact has been identified as a result of the addition of Project-related traffic, improvements have been recommended that are proportionate to the Project's impact.



Trip Distribution Map

Legend:

- To/From I-93 (45%)
- To/From I-495 (3%)

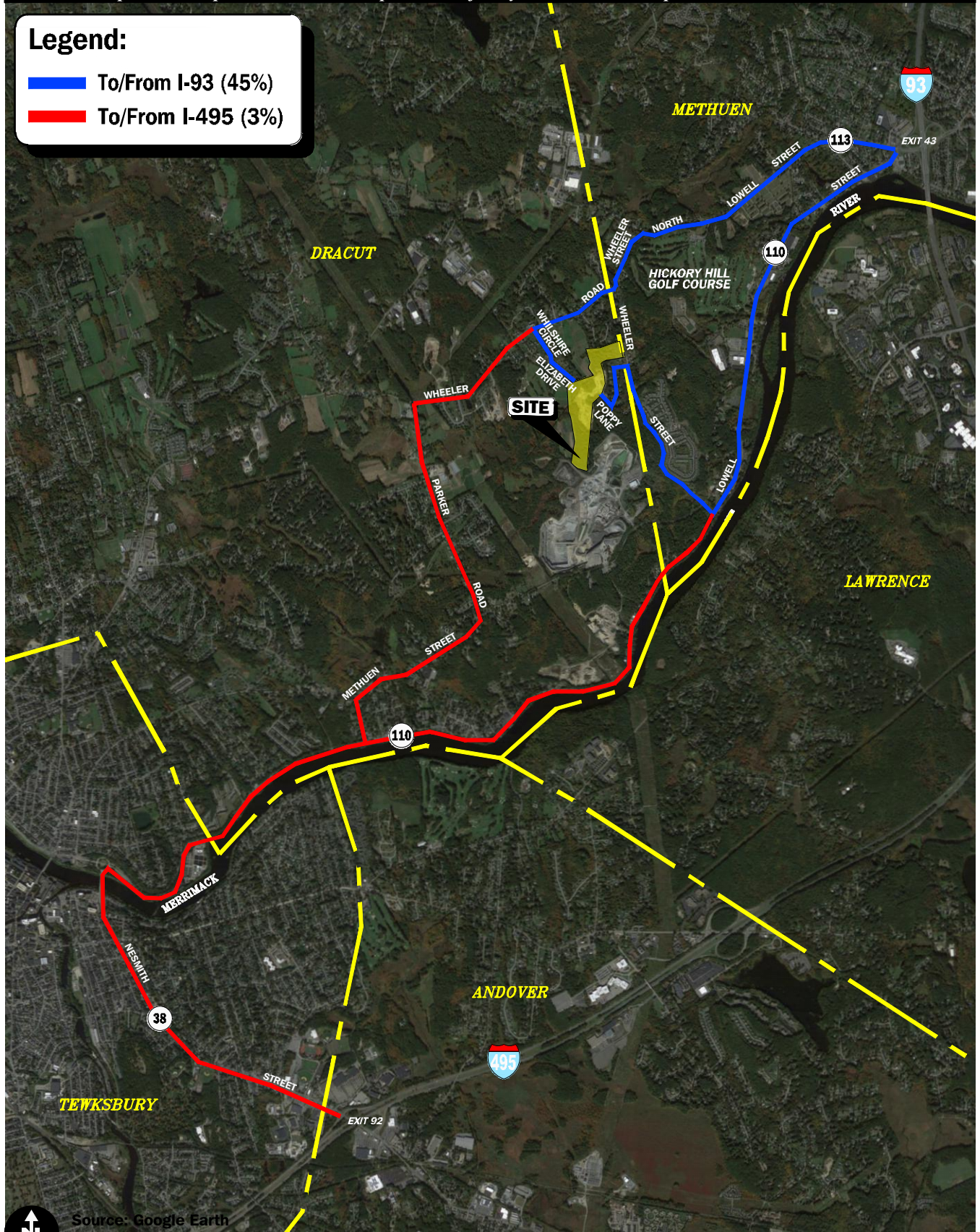


Figure 6A

Expanded Trip Distribution Map



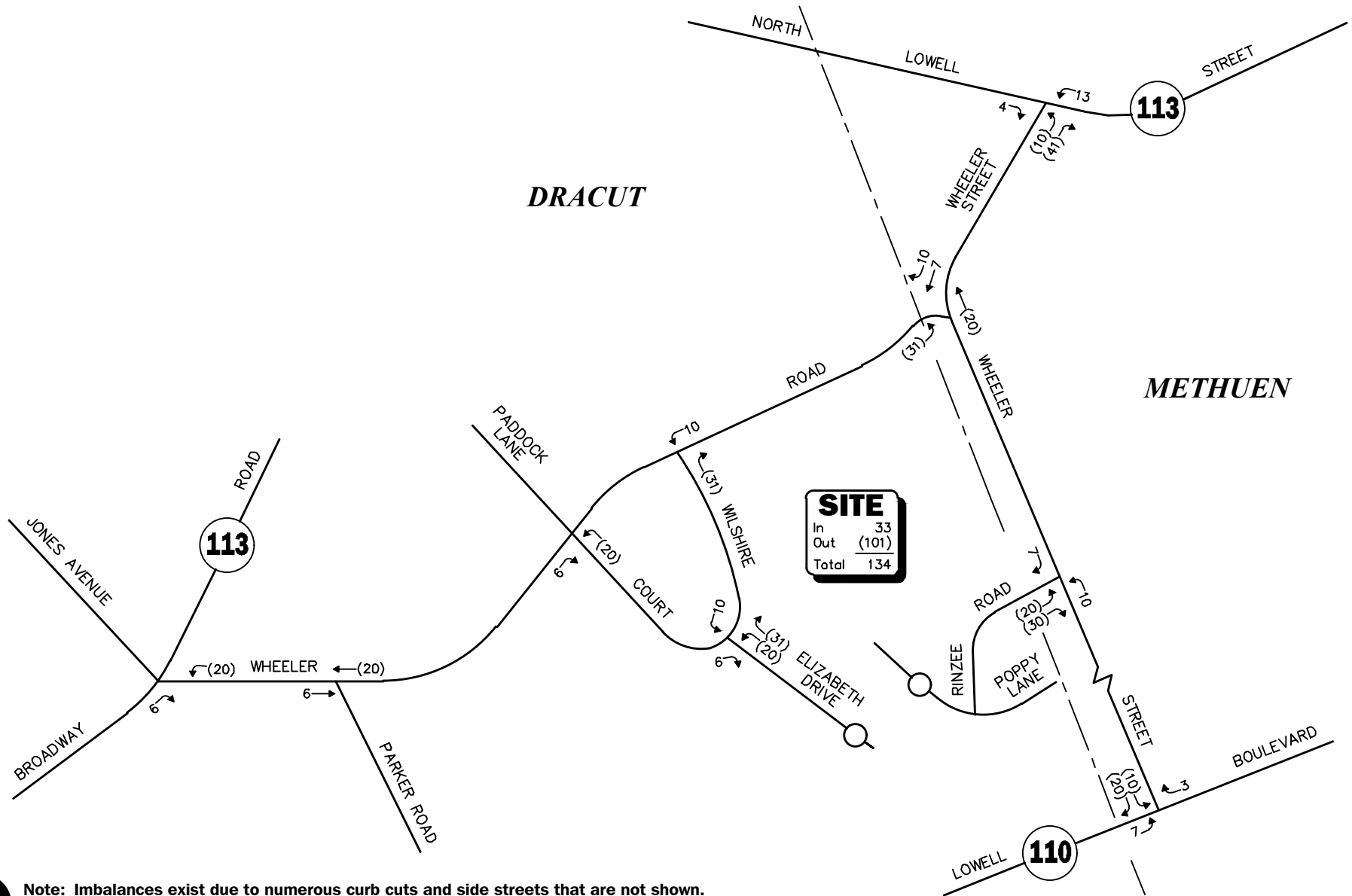
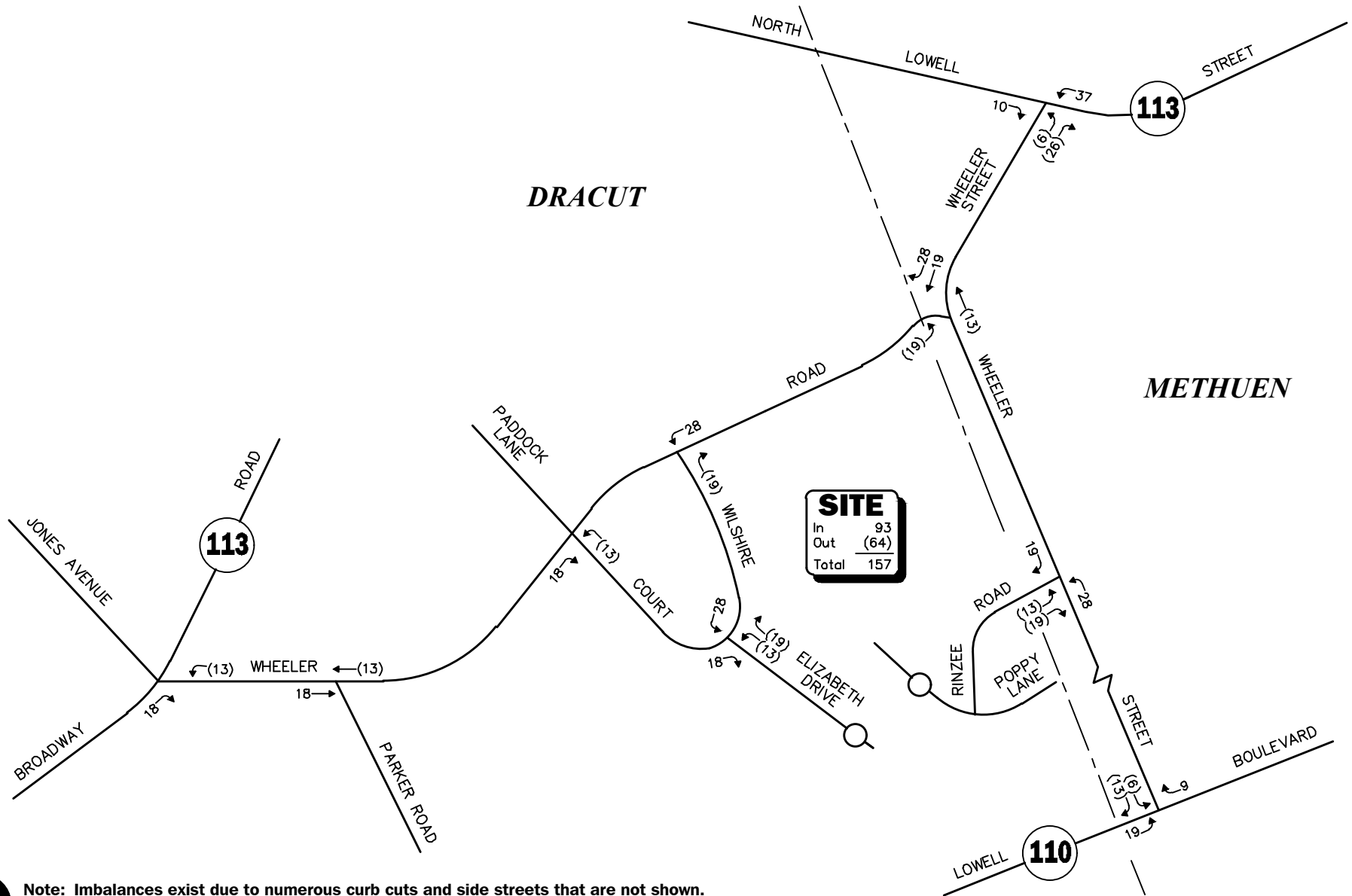


Figure 7

Project-Generated
Weekday Morning
Peak-Hour Traffic Volumes



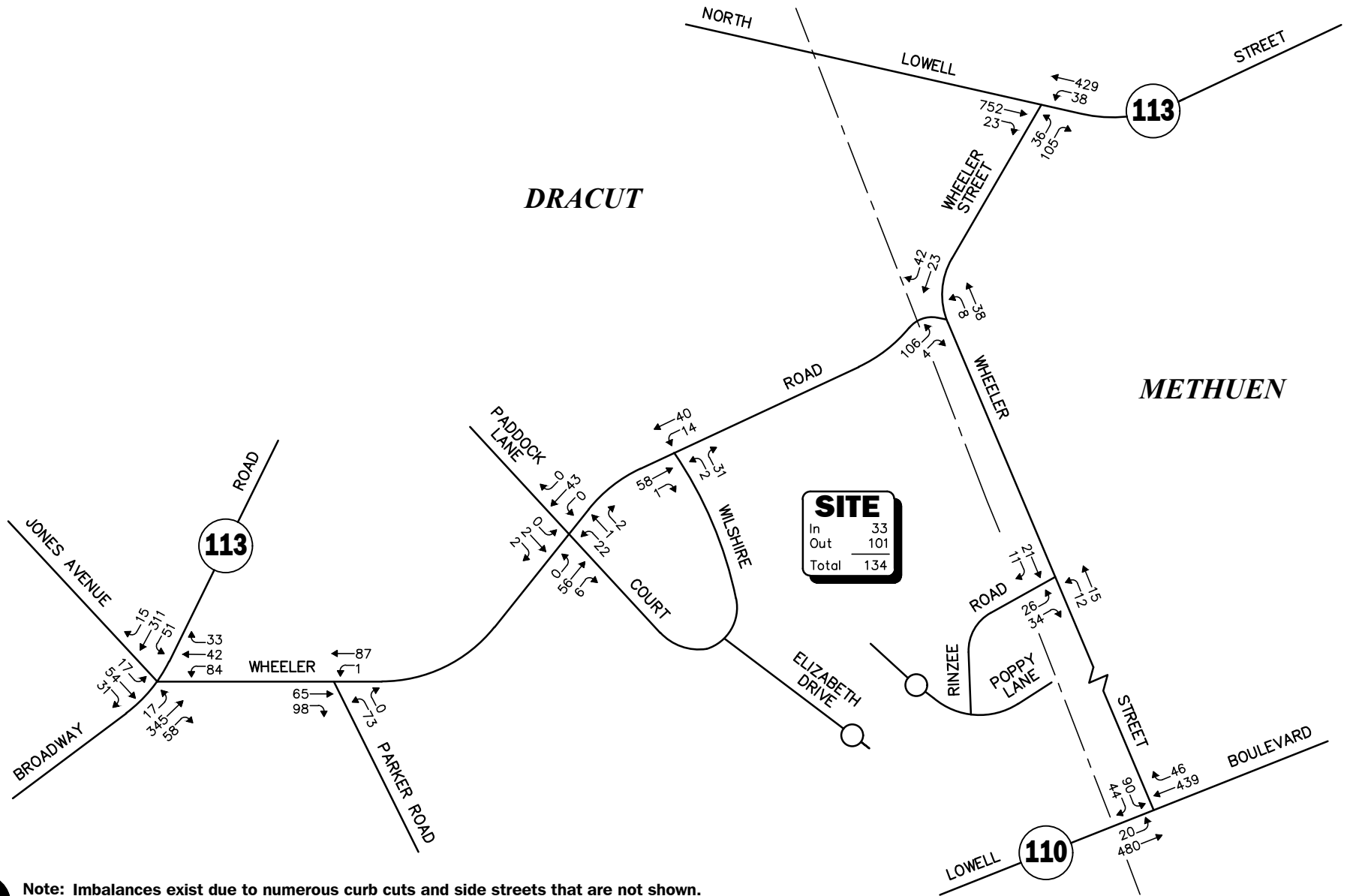
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale



Figure 8

Project-Generated
Weekday Evening
Peak-Hour Traffic Volumes



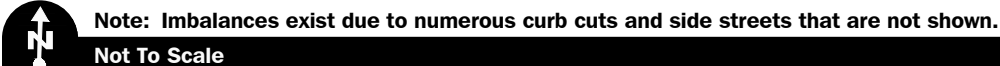
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale



Figure 9

**2031 Build
Weekday Morning
Peak-Hour Traffic Volumes**



2031 Build Weekday Evening Peak-Hour Traffic Volumes

Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak-Hour	2024 Existing	2031 No-Build	2031 Build	Traffic- Volume Increase Over No-Build	Percent Increase Over No-Build
<i>Route 113, east of Wheeler Street</i>					
Weekday Morning	1,170	1,270	1,324	54	4.3%
Weekday Evening	1,520	1,649	1,712	63	3.8%
<i>Route 113, west of Wheeler Street</i>					
Weekday Morning	1,143	1,226	1,240	14	1.1%
Weekday Evening	1,427	1,530	1,546	16	1.0%
<i>Route 110, east of Wheeler Street</i>					
Weekday Morning	972	1,042	1,055	13	1.2%
Weekday Evening	1,217	1,305	1,320	15	1.1%
<i>Route 110, west of Wheeler Street</i>					
Weekday Morning	891	956	983	27	2.8%
Weekday Evening	1,149	1,232	1,264	32	2.6%
<i>Route 113, west of Jones Avenue</i>					
Weekday Morning	754	820	846	26	3.2%
Weekday Evening	949	1,035	1,066	31	3.0%
<i>Rinzee Road, west of Wheeler Street</i>					
Weekday Morning	16	16	83	67	418.8%
Weekday Evening	9	9	88	79	877.8%
<i>Wilshire Circle, east of Elizabeth Drive</i>					
Weekday Morning	7	7	48	41	585.7%
Weekday Evening	9	9	56	47	522.2%
<i>Wilshire Circle, west of Elizabeth Drive</i>					
Weekday Morning	7	7	33	26	371.4%
Weekday Evening	12	12	43	31	258.3%
<i>Wheeler Street, north of Route 110</i>					
Weekday Morning	149	160	200	40	25.0%
Weekday Evening	120	129	176	47	36.4%
<i>Wheeler Street, south of Route 113</i>					
Weekday Morning	111	134	202	68	50.7%
Weekday Evening	185	217	296	79	36.4%
<i>Wheeler Road, east of Route 113</i>					
Weekday Morning	264	296	322	26	8.8%
Weekday Evening	279	318	349	31	9.7%

TRAFFIC OPERATIONS ANALYSIS

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

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.¹¹ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

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

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

¹¹The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2016.

Signalized Intersections

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

- *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- *LOS B* describes operations with relatively low control delay. However, more vehicles stop than LOS A.
- *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- *LOS F* describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the *Highway Capacity Manual 7th Edition*¹² and implemented as a part of the Synchro® 12 software. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 7 summarizes the relationship between level of service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 7
LEVEL-OF-SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS^a

Level of Service	Control (Signal) Delay Per Vehicle (Seconds)
A	≤10.0
B	10.1 to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

^aSource: *Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2023.

¹²*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000.

Unsignalized Intersections

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

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

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 7th Edition*.¹³ Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 7th Edition*. Table 8 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

Table 8
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS^a

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

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2023.

¹³*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 20123

Vehicle Queue Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro® intersection capacity analysis software which is based upon the methodology and procedures presented in the 7th Edition *Highway Capacity Manual*. The Synchro® vehicle queue analysis methodology is a simulation based model which reports the number of vehicles that experience a delay of six seconds or more at an intersection. For signalized intersections, Synchro® reports both the average (50th percentile) and the 95th percentile vehicle queue. For unsignalized intersections, Synchro® reports the 95th percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only 5 percent of the time, or approximately 3 minutes out of 60 minutes during the peak one hour of the day (during the remaining 57 minutes, the vehicle queue length will be less than the 95th percentile queue length).

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2024 Existing, 2031 No-Build and 2031 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 9 and 10, with the detailed analysis results presented in the Appendix.

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

Signalized Intersection (Table 9)

Route 113 at Wheeler Road and Jones Avenue

No change in level of service is predicted to occur over No-Build conditions, with Project-related impacts generally defined as an increase in overall average motorist delay of less than 1.0 seconds that caused an increase in vehicle queuing of up to one (1) vehicle. All movements at the signalized intersection are predicted to operate at LOS B or better.

Unsignalized Intersections (Table 10)

Route 113 at Wheeler Street

The addition of Project-related traffic was shown to result in an increase in average motorist delay of 21.2 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 F. Vehicle queuing at the intersection is predicted to increase by up to five (5) vehicles as a result of the addition of Project-related traffic. Independent of the Project, the Wheeler Street northbound approach is currently operating over capacity (i.e., LOS "F") 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 0.6 seconds on the Wheeler Road approach during both the weekday morning and evening peak hours that 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 7.3 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 6.9 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 (i.e., LOS “E”) under 2031 No-Build conditions.

Wheeler Road at Wilshire Circle and Paddock Lane

No change in level of service 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 that resulted in an increase in vehicle queuing of up to one (1) vehicle.

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 less than 1.0 seconds.

Wheeler Road at Parker Road

No change in level of service or in vehicle queuing is predicted to occur for any movement over No-Build conditions, with all movements continuing to operate at LOS B or better and Project-related impacts generally defined as predicted increase in average motorist delay of less than 1.0 seconds.

Table 9
SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/Peak-Hour/Movement	2024 Existing				2031 No-Build				2031 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th
Route 113 at Wheeler Road and Jones Avenue												
<i>Weekday Morning:</i>												
Jones Avenue EB LT/TH/RT	0.29	8.7	A	1/2	0.30	8.8	A	1/2	0.30	8.7	A	1/2
Wheeler Road WB LT/TH/RT	0.28	8.8	A	1/2	0.32	9.1	A	1/3	0.36	9.3	A	1/3
Route 113 NB LT/TH/RT	0.45	5.8	A	2/4	0.48	6.0	A	2/5	0.48	6.0	A	2/5
Route 113 SB LT/TH/RT	0.51	6.1	A	2/4	0.54	6.4	A	2/5	0.54	6.4	A	2/5
Overall	--	6.7	A	--	--	6.9	A	--	--	7.0	A	--
<i>Weekday Evening:</i>												
Jones Avenue EB LT/TH/RT	0.18	9.4	A	1/2	0.19	9.9	A	1/2	0.18	9.9	A	1/2
Wheeler Road WB LT/TH/RT	0.42	10.8	B	1/3	0.46	11.5	B	2/4	0.48	11.7	B	2/4
Route 113 NB LT/TH/RT	0.44	5.4	A	2/5	0.46	5.7	A	3/5	0.47	5.9	A	3/6
Route 113 SB LT/TH/RT	0.60	6.3	A	3/7	0.63	6.7	A	4/8	0.63	6.9	A	4/8
Overall	--	6.9	A	--	--	7.3	A	--	--	7.6	A	--

^aVolume-to-capacity ratio.

^bControl (signal) delay per vehicle in seconds.

^cLevel of service.

^dQueue length in vehicles.

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

Table 10
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2024 Existing				2031 No-Build				2031 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	719	0.0	A	0	771	0.0	A	0	775	0.0	A	0
Route 113 WB LT/TH	420	9.5	A	0	454	9.8	A	0	467	9.9	A	0
Wheeler Street NB LT/RT	73	24.8	C	2	90	31.0	D	3	141	>50.0	F	6
<i>Weekday Evening:</i>												
Route 113 EB TH/RT	554	0.0	A	0	594	0.0	A	0	604	0.0	A	0
Route 113 WB LT/TH	927	9.1	A	1	1,006	9.4	A	1	1,043	9.7	A	1
Wheeler Street NB LT/RT	85	>50.0	F	4	98	>50.0	F	6	130	>50.0	F	11
Wheeler Street at Wheeler Road												
<i>Weekday Morning:</i>												
Wheeler Road EB LT/RT	64	9.3	A	1	79	9.5	A	1	110	10.1	B	1
Wheeler Street NB LT/TH	24	7.5	A	0	26	7.5	A	0	46	7.5	A	0
Wheeler Street SB TH/RT	41	0.0	A	0	48	0.0	A	0	65	0.0	A	0
<i>Weekday Evening:</i>												
Wheeler Road EB LT/RT	42	9.5	A	0	52	9.7	A	0	71	10.3	B	1
Wheeler Street NB LT/TH	32	7.5	A	0	34	7.5	A	0	47	7.7	A	0
Wheeler Street SB TH/RT	102	0.0	A	0	121	0.0	A	0	168	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	60	9.2	A	1
Wheeler Street NB LT/TH	16	7.3	A	0	17	7.3	A	0	27	7.3	A	0
Wheeler Street SB TH/RT	24	0.0	A	0	25	0.0	A	0	32	0.0	A	0
<i>Weekday Evening:</i>												
Rinzee Road EB LT/RT	4	8.7	A	0	4	8.8	A	0	36	9.2	A	1
Wheeler Street NB LT/TH	32	0.0	A	0	34	0.0	A	0	62	7.3	A	0
Wheeler Street SB TH/RT	26	0.0	A	0	28	0.0	A	0	47	0.0	A	0
Route 110 at Wheeler Street												
<i>Weekday Morning:</i>												
Route 110 EB LT/TH	460	8.7	A	0	493	8.8	A	0	500	8.8	A	0
Route 110 WB TH/RT	449	0.0	A	0	482	0.0	A	0	485	0.0	A	0
Wheeler Street SB LT/RT	97	27.3	D	2	104	33.3	D	3	134	40.2	E	4
<i>Weekday Evening:</i>												
Route 110 EB LT/TH	577	8.9	A	0	618	9.1	A	0	637	9.3	A	0
Route 110 WB TH/RT	621	0.0	A	0	666	0.0	A	0	675	0.0	A	0
Wheeler Street SB LT/RT	45	30.8	D	1	49	37.4	E	2	68	45.2	E	3

See notes at end of Table.

Table 10 (Continued)

UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2024 Existing				2031 No-Build				2031 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	0.0	A	0	62	0.0	A	0
Wheeler Road WB LT/TH/RT	36	0.0	A	0	43	0.0	A	0	43	0.0	A	0
Wilshire Circle NB LT/TH/RT	5	9.1	A	0	5	9.2	A	0	25	9.8	A	1
Paddock Lane 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	75	7.7	A	0	87	7.7	A	0	105	7.7	A	0
Wheeler Road WB LT/TH/RT	68	7.4	A	0	85	7.4	A	0	85	7.5	A	0
Wilshire Circle NB LT/TH/RT	3	10.0	B	0	3	10.3	B	0	16	10.7	B	0
Paddock Lane 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	7.3	A	0	45	7.3	A	0	54	7.4	A	0
Wilshire Circle NB LT/RT	2	9.1	A	0	2	9.3	A	0	33	9.3	A	0
<i>Weekday Evening:</i>												
Wheeler Road EB TH/RT	65	0.0	A	0	75	0.0	A	0	76	0.0	A	0
Wheeler Road WB LT/TH	69	7.4	A	0	86	7.4	A	0	114	7.5	A	0
Wilshire Circle NB LT/RT	4	9.1	A	0	4	9.3	A	0	23	9.3	A	0
<i>Wheeler Road at Parker Road</i>												
<i>Weekday Morning:</i>												
Wheeler Road EB TH/RT	143	0.0	A	0	157	0.0	A	0	163	0.0	A	0
Wheeler Road WB LT/TH	54	7.7	A	0	68	7.7	A	0	88	7.8	A	0
Parker Road NB LT/RT	68	10.5	B	1	73	10.9	B	1	73	11.3	B	1
<i>Weekday Evening:</i>												
Wheeler Road EB TH/RT	132	0.0	A	0	154	0.0	A	0	172	0.0	A	0
Wheeler Road WB LT/TH	62	0.0	A	0	72	0.0	A	0	85	0.0	A	0
Parker Road NB LT/RT	98	10.4	B	1	105	10.8	B	1	105	11.2	B	1

^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

TRAFFIC SIGNAL WARRANT ANALYSIS

Independent of the Project, the Wheeler Street approach to Route 113 was identified to be operating over its design capacity during the weekday evening peak-hour, with the addition of Project-related shown to increase delays during both peak hours causing the Wheeler Street approach to operate over capacity during the weekday morning peak-hour and increasing vehicle queues during the weekday evening peak-hour (already operating over capacity) by five (5) vehicles. In an effort to identify potential improvement measures for the intersection, a detailed Traffic Signal Warrants Analysis (TSWA) was performed for the Route 113 intersection with Wheeler Street following the methodology defined in the *Manual on Uniform Traffic Control Devices* (MUTCD).¹⁴

METHODOLOGY

The MUTCD establishes nine warrants or criteria to evaluate a location for the installation (or retention) of a traffic signal; however, satisfaction of a warrant in and of itself does not necessarily indicate that the installation of a traffic signal is the best traffic control solution. An engineering evaluation of the location in question should indicate that the establishment of traffic signal control will improve the overall safety and/or operation of the intersection. Table 11 lists the nine warrants used to evaluate an intersection for traffic signal control as presented in the MUTCD.

¹⁴Federal Highway Administration; op. cit. 2.

Table 11
TRAFFIC SIGNAL WARRANTS

Warrant No.	Description
1	Eight-Hour Vehicular Volume
2	Four-Hour Vehicular Volume
3	Peak-Hour
4	Pedestrian Volume
5	School Crossing
6	Coordinated Signal System
7	Crash Experience
8	Roadway Network
9	Intersection Near a Grade Crossing

Each of the nine traffic signal warrants listed in Table 11 were evaluated for the subject intersection, the results of which follow.

WARRANTS EVALUATION RESULTS

The traffic signal warrants listed in Table 11 were evaluated for the Route 113 intersection with Wheeler Street under following conditions:

- **Design Speed:** ≤40 mph
- **Traffic Volumes:**¹⁵
 - 2024 Existing conditions
 - 2024 Build conditions
 - 2024 Build conditions with 20% northbound right-turn reduction
 - 2031 Build conditions
 - 2031 Build conditions with 20% northbound right-turn reduction
- **Geometry:**
 - *Route 113 Eastbound Approach:* 1 through/right-turn travel lane
 - *Route 113 Westbound Approach:* 1 left-turn/through travel lane
 - *Wheeler Street Northbound Approach:* 1 left-turn/right-turn travel lane

Table 12 summarizes the results of the TSWA for the subject intersection, with the detailed TSWA worksheets and supporting materials attached.

¹⁵April 2024 traffic volumes were not adjusted to average-month conditions consistent with MassDOT guidelines for counts that were conducted during a year in which a Weekday Seasonal and Axle Correction Factors File is not published. (*Traffic and Safety Engineering 25% Design Submission Guidelines*; MassDOT; Revised March 31, 2022.)

Table 12
TRAFFIC SIGNAL WARRANTS ANALYSIS
ROUTE 113 AT WHEELER STREET

Warrant No.	Description	Analysis Condition				
		2024 Existing	2024 Build	2024 Build (w/ 20% RT Reduction)	2031 Build	2031 Build (w/ 20 % RT Reduction)
		Satisfied?	Satisfied?	Satisfied?	Satisfied?	Satisfied?
1	Eight-Hour Vehicular Volume	No	Yes	No	Yes	No
2	Four-Hour Vehicular Volume	No	Yes	Yes	Yes	Yes
3	Peak Hour ^a	No	Yes	No	Yes	No
4	Pedestrian Volume	No	No	No	No	No
5	School Crossing	No	No	No	No	No
6	Coordinated Signal System	No	No	No	No	No
7	Crash Experience	No	No	No	No	No
8	Roadway Network	No	No	No	No	No
9	Intersection Near a Grade Crossing	No	No	No	No	No

^aWarrant 3 is evaluated when the need for the installation of a traffic control signal is intended to accommodate a peak traffic flow condition during a distinct period or periods of the day, such as a school, factory, or industrial use where there is a significant peak traffic demand during a distinct hour(s) of the day. Warrant 3 does not apply to the subject intersection.

As can be seen in Table 12, the Route 113/Wheeler Street intersection was not found to meet any of the nine warrants for the installation of a traffic signal under 2024 Existing conditions. Under 2024 Build and 2031 Build traffic volume conditions without consideration of right-turn-on-red movements, the intersection was found to satisfy Warrant 1, *Eight-Hour Vehicle Volume*, Warrant 2, *Four-Hour Vehicle Volume*, and Warrant 3, *Peak-Hour*. With consideration of 20 percent of the vehicles on the Wheeler Street approach turning right on a “red” signal indication, the intersection was not found to satisfy Warrant 1, a MassDOT requirement for the installation of a new traffic signal.¹⁶ A review of existing traffic volumes on the Wheeler Street approach to Route 113 indicates that approximately 68 percent of the vehicles on the approach turn right. As such, right-turn-on-red movements would constitute a significant number of vehicles at the intersection to the extent that a traffic control signal were to be installed and should be considered as a part of the traffic volume criteria that is used for the traffic signal warrants analysis.

Given that a small variation in the right-turn-on-red consideration at the intersection would result in the intersection not meeting Warrant 1, it has been recommended that geometric improvements be considered at the intersection to improve traffic operations and reduce vehicle queuing (see *Recommendations* section of this assessment).

¹⁶MassDOT, op. cit. 3.

SIGHT DISTANCE EVALUATION

Sight distance field measurements were performed at the Wheeler Street/Rinzee Road, Wheeler Road/Wilshire Circle/Paddock Lane, Wheeler Road/Wilshire Circle and Wheeler Street/Wheeler Road intersections in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)¹⁷ 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. Sight distance plans for each intersection are provided in the Appendix. Table 13 presents the measured SSD and ISD at the subject intersections.

¹⁷*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 13
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 Wheeler Road</i>			
<i>Stopping Sight Distance:</i>			
Wheeler Street approaching from the north	115	--	129
Wheeler Street approaching from the south	115	--	500+
<i>Intersection Sight Distance:</i>			
Looking to the north from Wheeler Road	115	195	110/115+ ^c
Looking to the south from Wheeler Road	115	225	500+

^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 at Rinzee Road, a 40 mph approach speed along Wheeler Road at the Wilshire Circle intersections and a 20 mph approach speed along Wheeler Street at 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 Wheeler Road.

As can be seen in Table 13, the available lines of sight to and from the Wheeler Street/Rinzee Road, Wheeler Road/Wilshire Circle/Paddock Lane and Wheeler Road/Wilshire Circle intersections were found to exceed the recommended minimum sight distances to function in a safe manner (SSD) based on the appropriate approach speeds along Wheeler Street and Wheeler Road in the vicinity of the intersections, 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 limits (30 mph).

Figures 11 through 13 depict the sight triangles areas for the intersections that provide access to the Project site in both plan and profile.

With the selective trimming of vegetation and the regrading of the existing embankment along the west side of Wheeler Street north of Wheeler Road, the available lines of sight to and from the Wheeler Street/Wheeler Road intersection were found to exceed or can be made to exceed the recommended minimum sight distance to function in a safe manner based on a 20 mph approach speed along Wheeler Street, which is above the measured 85th percentile vehicle travel speed along Wheeler Street in the vicinity of Wheeler Road (16 mph) and is indicative of the horizontal curve along Wheeler Street approaching Wheeler Road from the north. Figure 14 depicts the sight triangle area for the Wheeler Street/Wheeler Road intersection in both plan and profile.

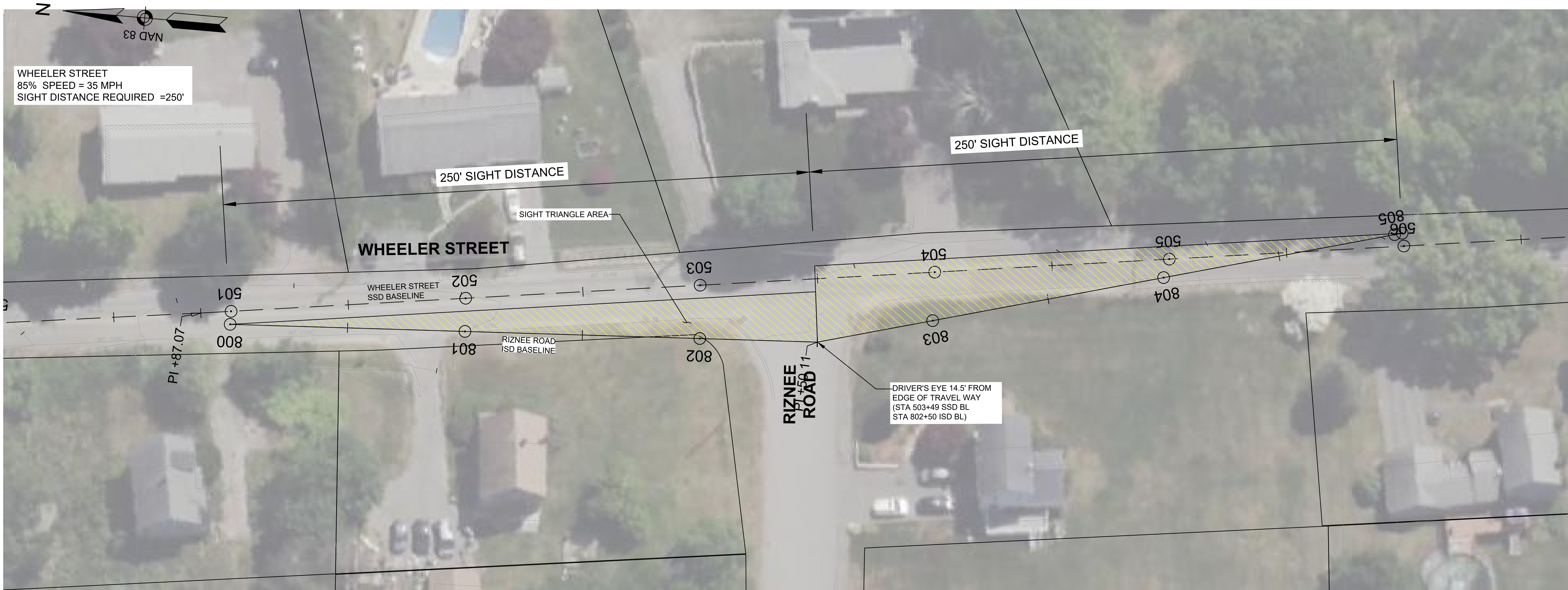


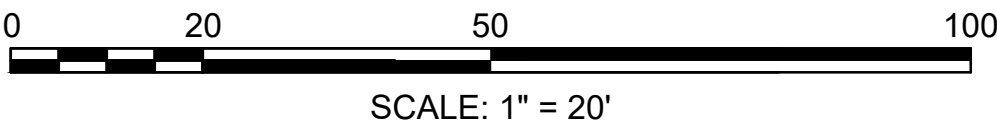
FIGURE 11 - RIZNEE ROAD AT WHEELER STREET SIGHT TRIANGLES

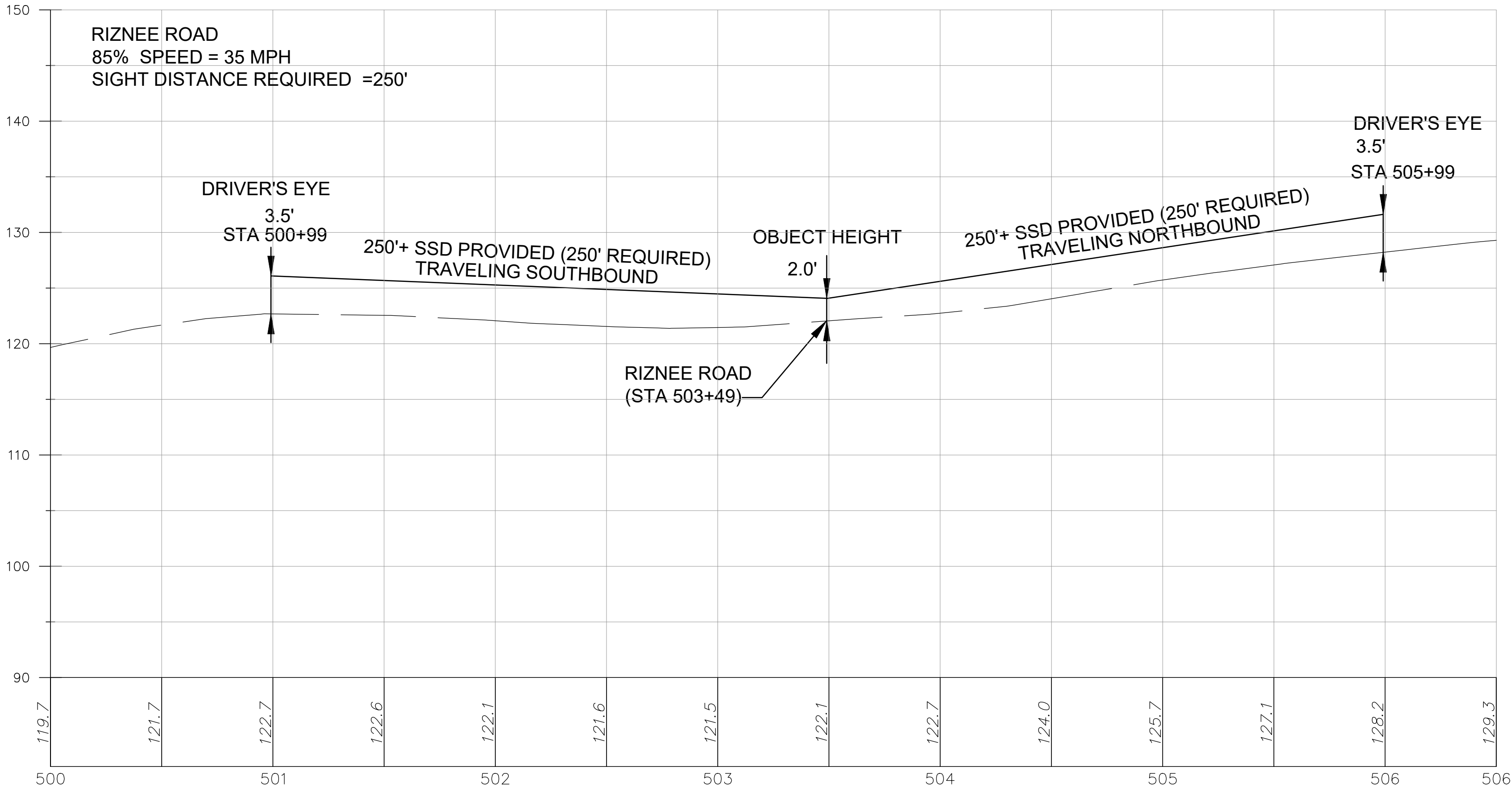
PROJECT:
Proposed Multifamily Residential Development
Dracut, Massachusetts

PROPOSER:
O'Brien Homes, Inc.
Andover, Massachusetts

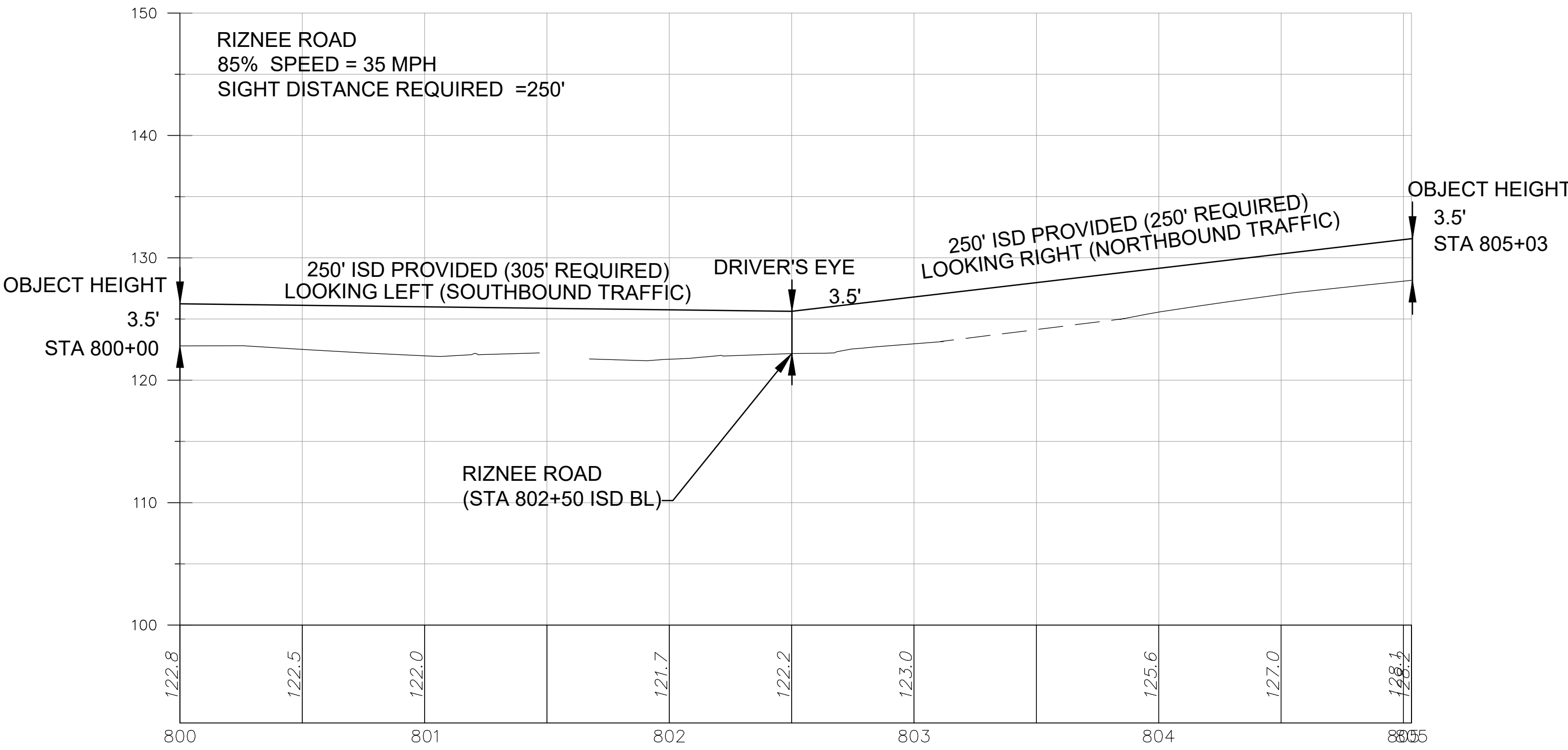
NO.	REVISIONS	DATE	VA Vanasse & Associates inc Transportation Engineers & Planners 35 New England Business Center Drive - Suite 140 - Andover, MA 01810 www.vdva.com 978-474-8800
			DESIGNED BY: TWO
			DATE: 6/24/2024
			DRAWN BY: TWO
			SCALE: 1" = 20'
			CHECKED BY: JPC
			SHEET 1 OF 2

- NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.
2. BASE PLAN INFORMATION OBTAINED FROM SURVEY CONDUCTED BY CIVIL DESIGN CONSULTANTS, INC.





RIZNEE ROAD AT WHEELER STREET STOPPING SIGHT



RIZNEE ROAD AT WHEELER STREET INTERSECTION SIGHT
DISTANCE PROFILE (ISD BASELINE)

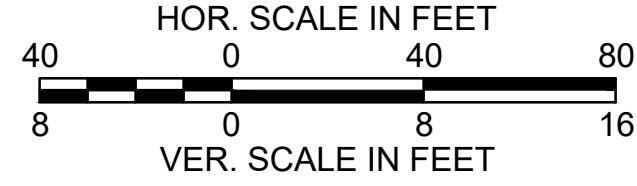
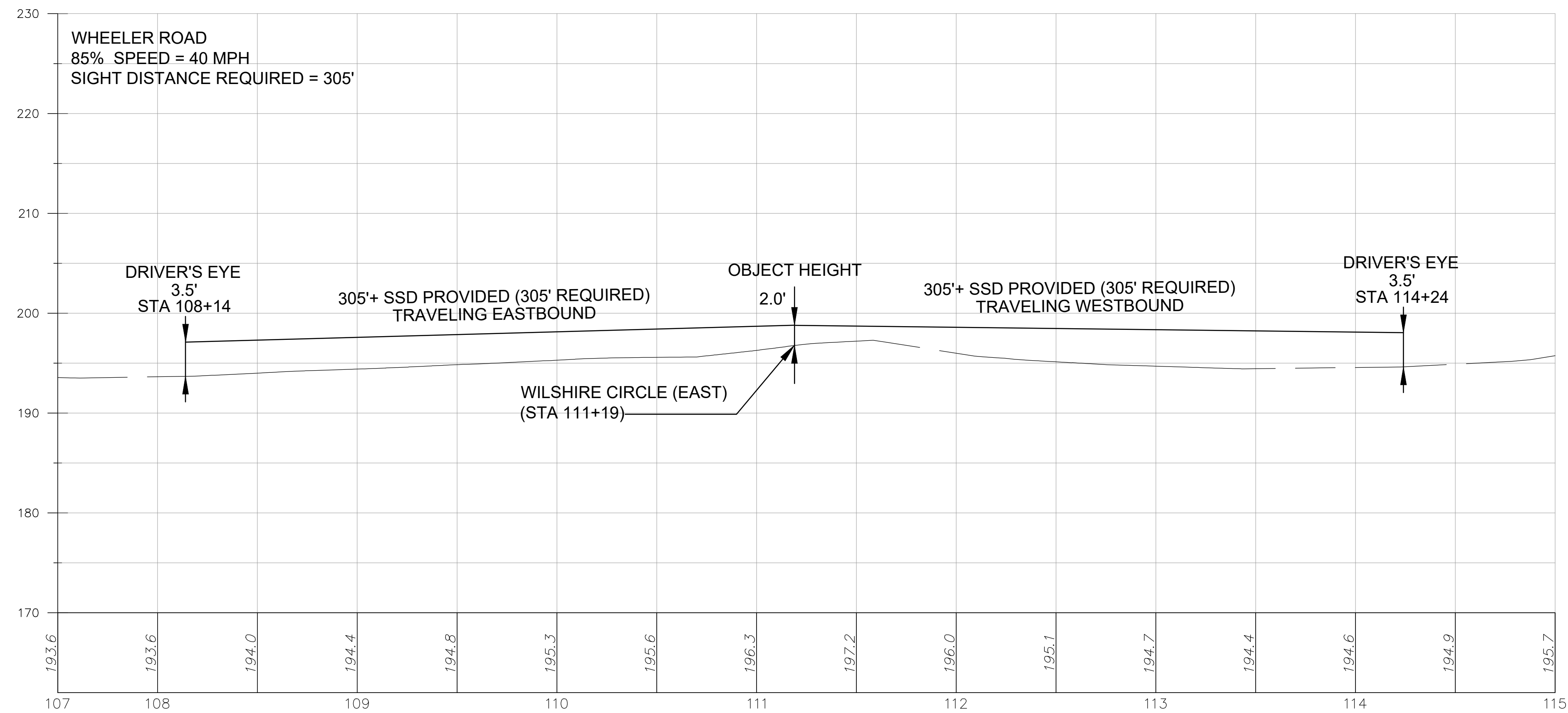
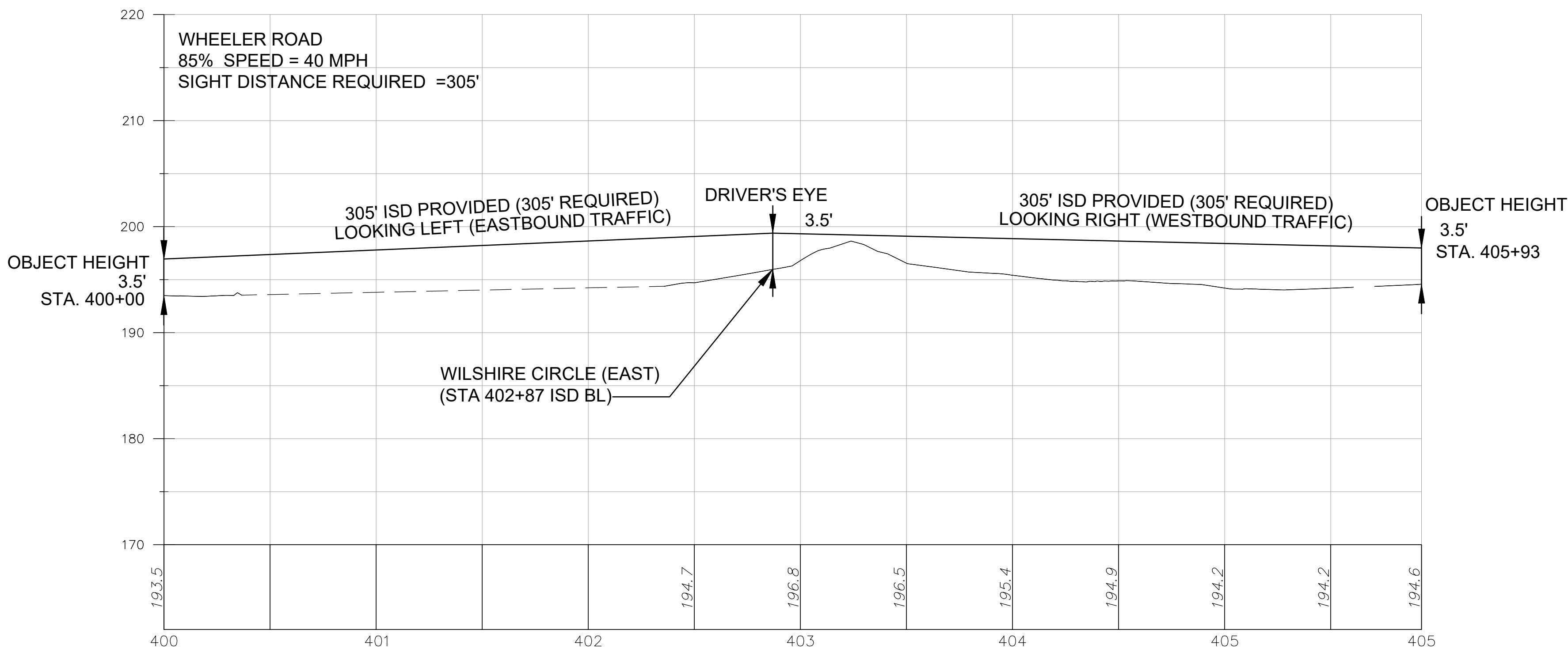


FIGURE 11 - RIZNEE ROAD AT WHEELER STREET PROFILES

PROJECT: Proposed Multifamily Residential Development Dracut, Massachusetts			
PROPOSITOR: O'Brien Homes, Inc. Andover, Massachusetts			
NO.	REVISIONS	DATE	 Transportation Engineers & Planners 35 New England Business Center Drive - Suite 140 - Andover, MA 01810 www.vdva.com 978-474-8800
	DESIGNED BY:	TWO	DATE: 6/24/2024
	DRAWN BY:	TWO	SCALE: 1"=40'H; 1"=8'V
	CHECKED BY:	JPC	SHEET 2 OF 2



WILSHIRE CIRCLE (EAST) AT WHEELER ROAD STOPPING SIGHT
DISTANCE PROFILE (SSD BASELINE)



WILSHIRE CIRCLE (EAST) AT WHEELER ROAD INTERSECTION SIGHT
DISTANCE PROFILE (ISD BASELINE)

FIGURE 12 - WILSHIRE CIRCLE (EAST)
AT WHEELER ROAD PROFILES

PROJECT:
Proposed Multifamily Residential Development
Dracut, Massachusetts

PROPOSER:
O'Brien Homes, Inc.
Andover, Massachusetts

NO.	REVISIONS	DATE

Vanasse & Associates inc
Transportation Engineers & Planners
35 New England Business Center Drive - Suite 140 - Andover, MA 01810
www.vandya.com 978-474-8800

DESIGNED BY: TWO
DRAWN BY: TWO
CHECKED BY: JPC

DATE: 6/24/2024
SCALE: 1"=40'H; 1"=8'V
SHEET 2 OF 2

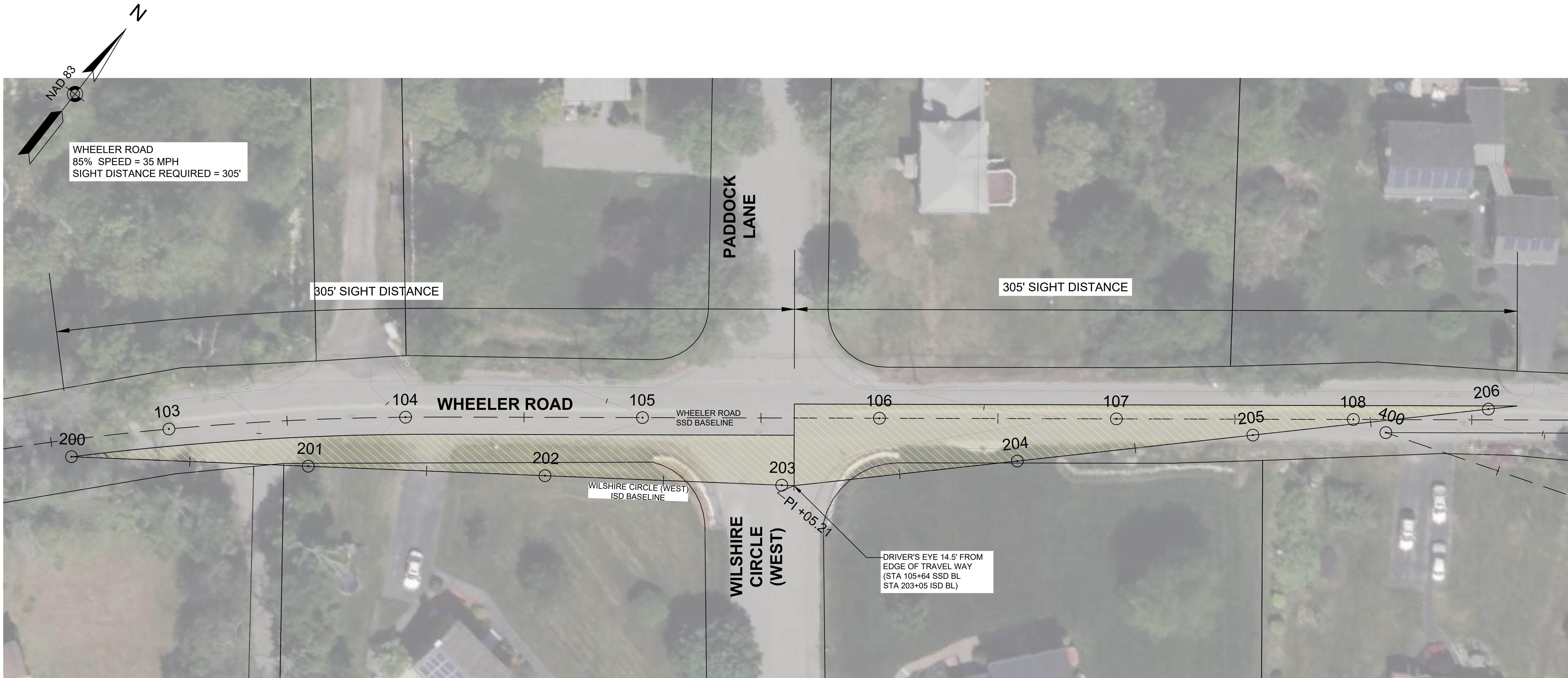
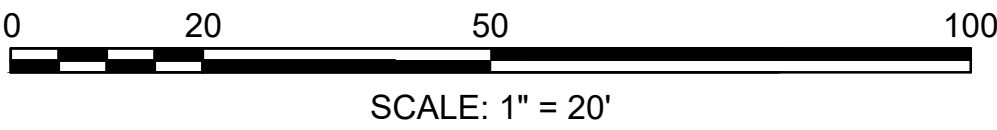


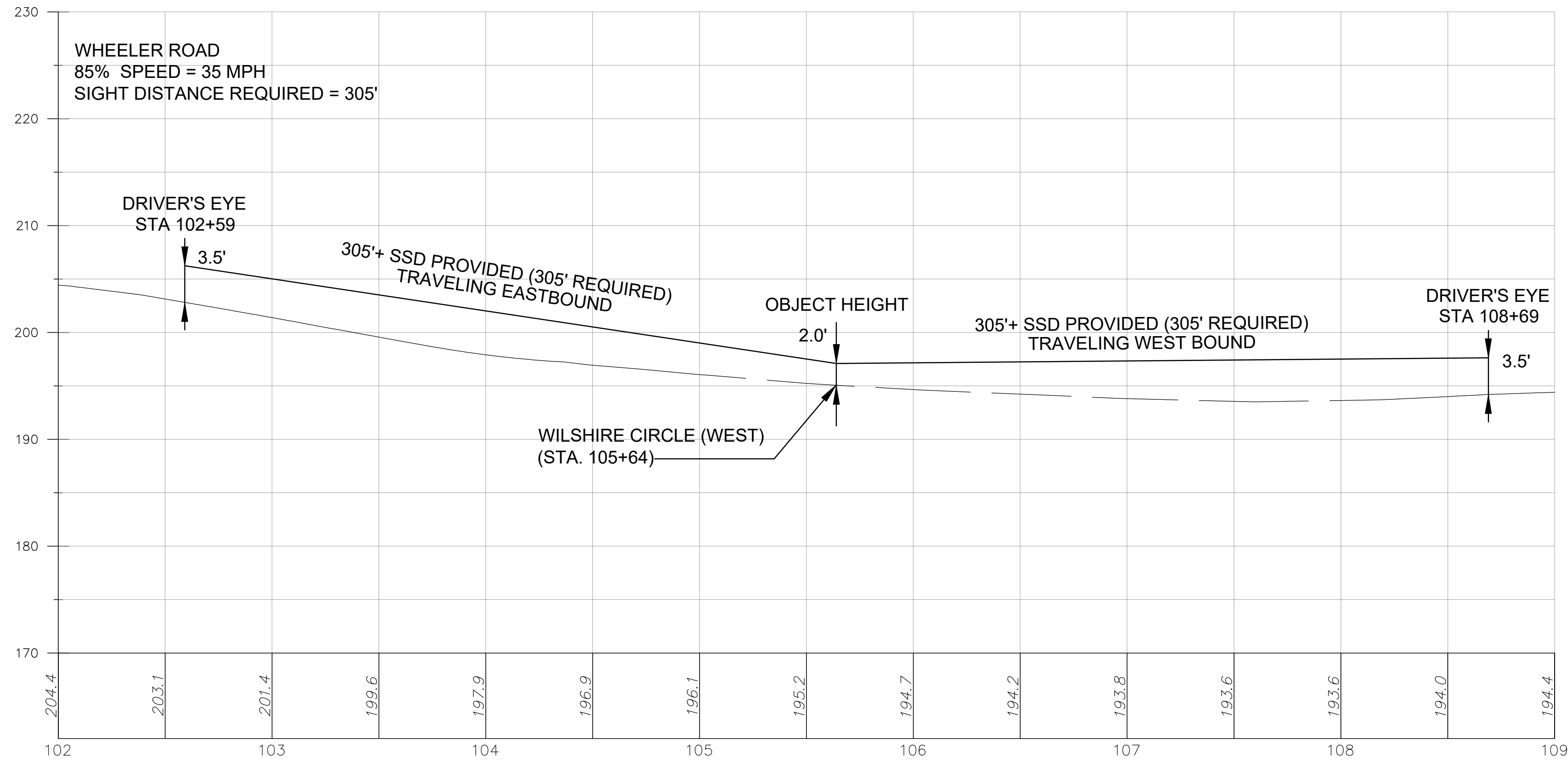
FIGURE 13 - WILSHIRE CIRCLE (WEST) AT
WHEELER ROAD SIGHT TRIANGLES

PROJECT: Proposed Multifamily Residential Development Dracut, Massachusetts			
PROPOSER: O'Brien Homes, Inc. Andover, Massachusetts			
NO.	REVISIONS	DATE	W Vanasse & Associates inc Transportation Engineers & Planners 35 New England Business Center Drive - Suite 140 - Andover, MA 01810 www.vdva.com 978-474-8800 DESIGNED BY: TWO DATE: 6/24/2024 DRAWN BY: TWO SCALE: 1" = 20' CHECKED BY: JPC SHEET 1 OF 2

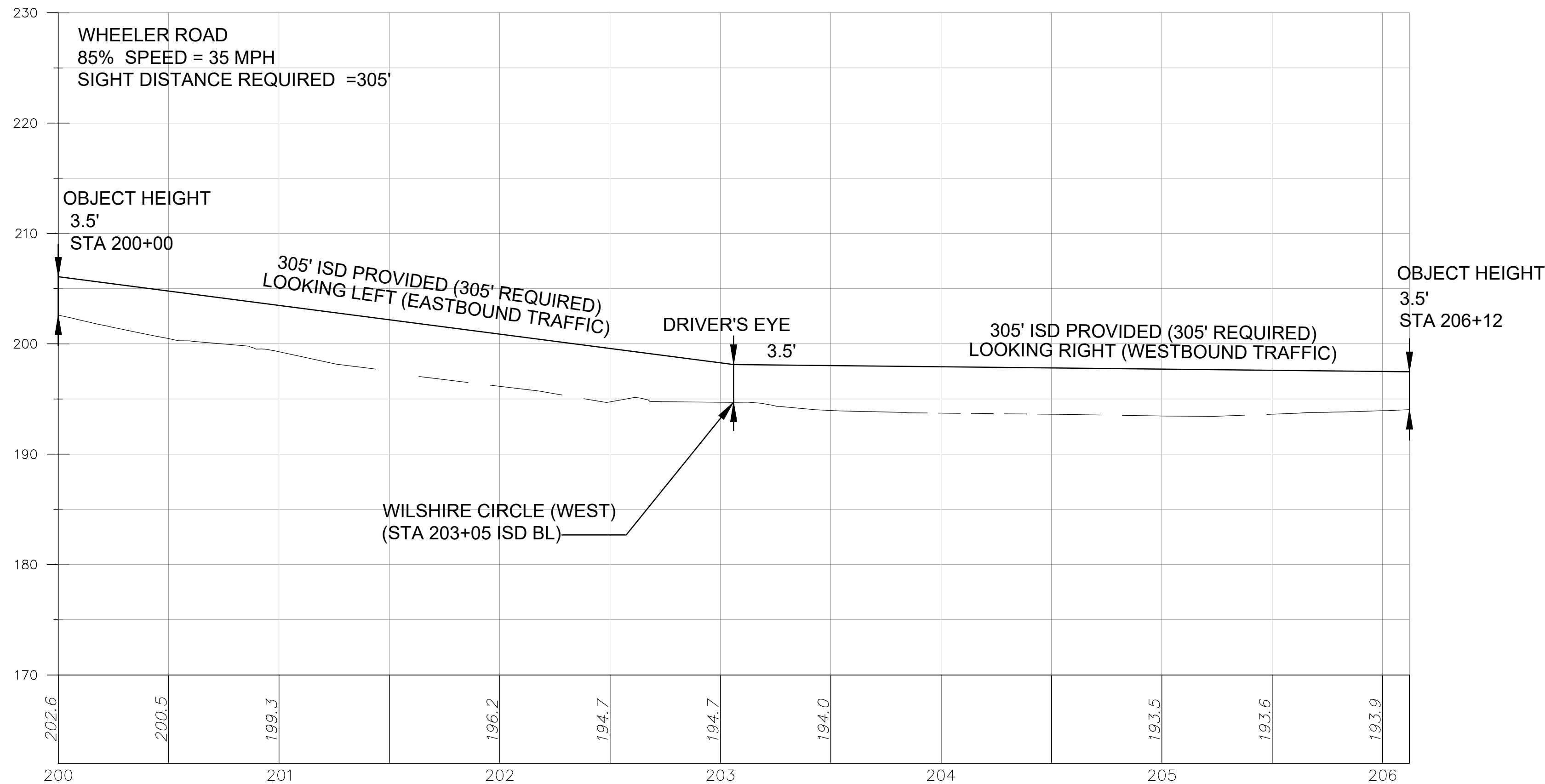
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AND IS NOT INTENDED FOR CONSTRUCTION.

2. BASE PLAN INFORMATION OBTAINED FROM
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WILSHIRE CIRCLE (WEST) AT WHEELER ROAD STOPPING SIGHT
DISTANCE PROFILE (SSD BASELINE)



WILSHIRE CIRCLE (WEST) AT WHEELER ROAD INTERSECTION SIGHT
DISTANCE PROFILE (ISD BASELINE)

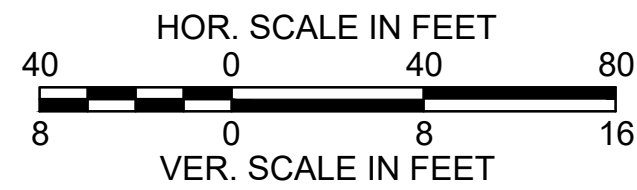
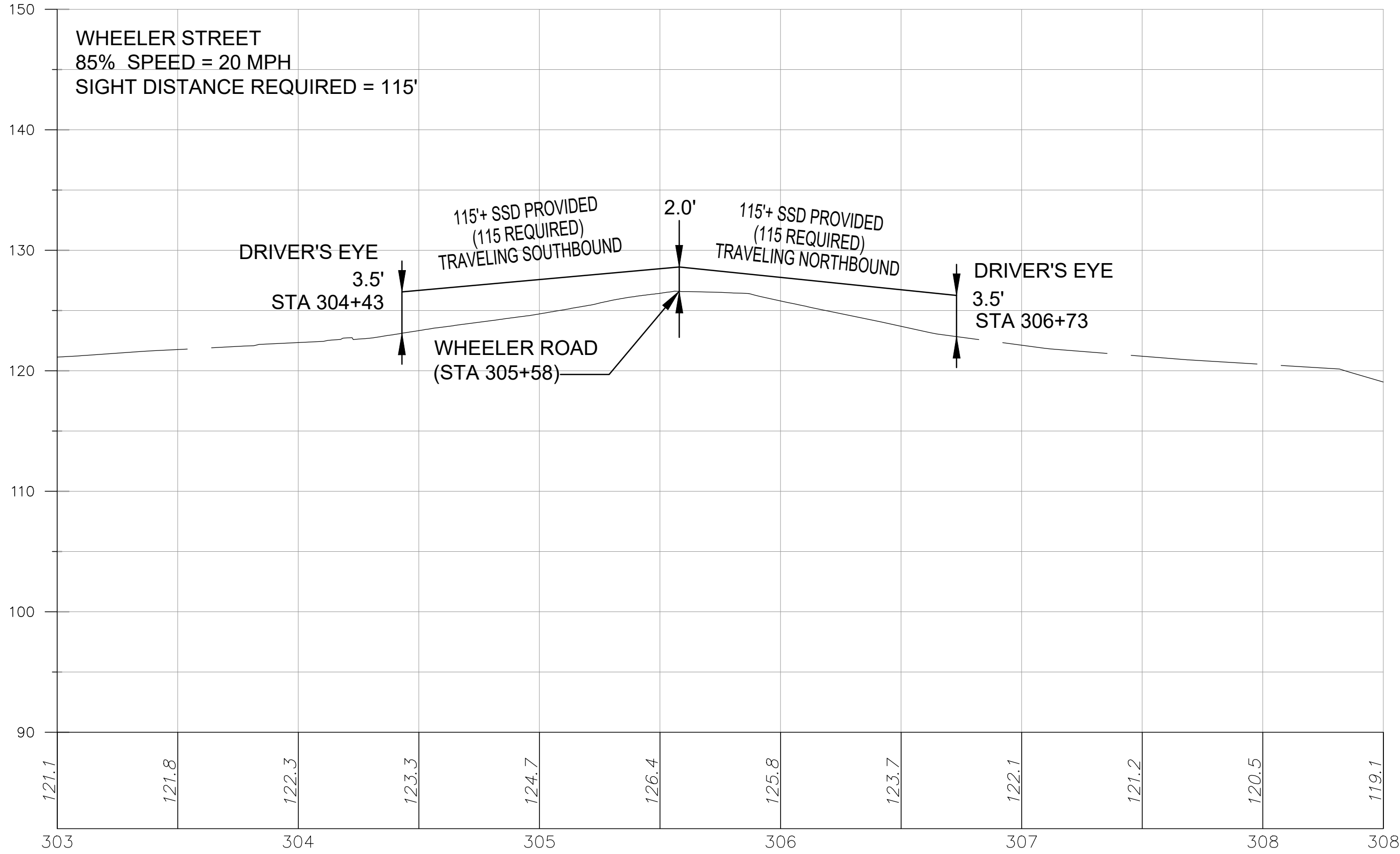
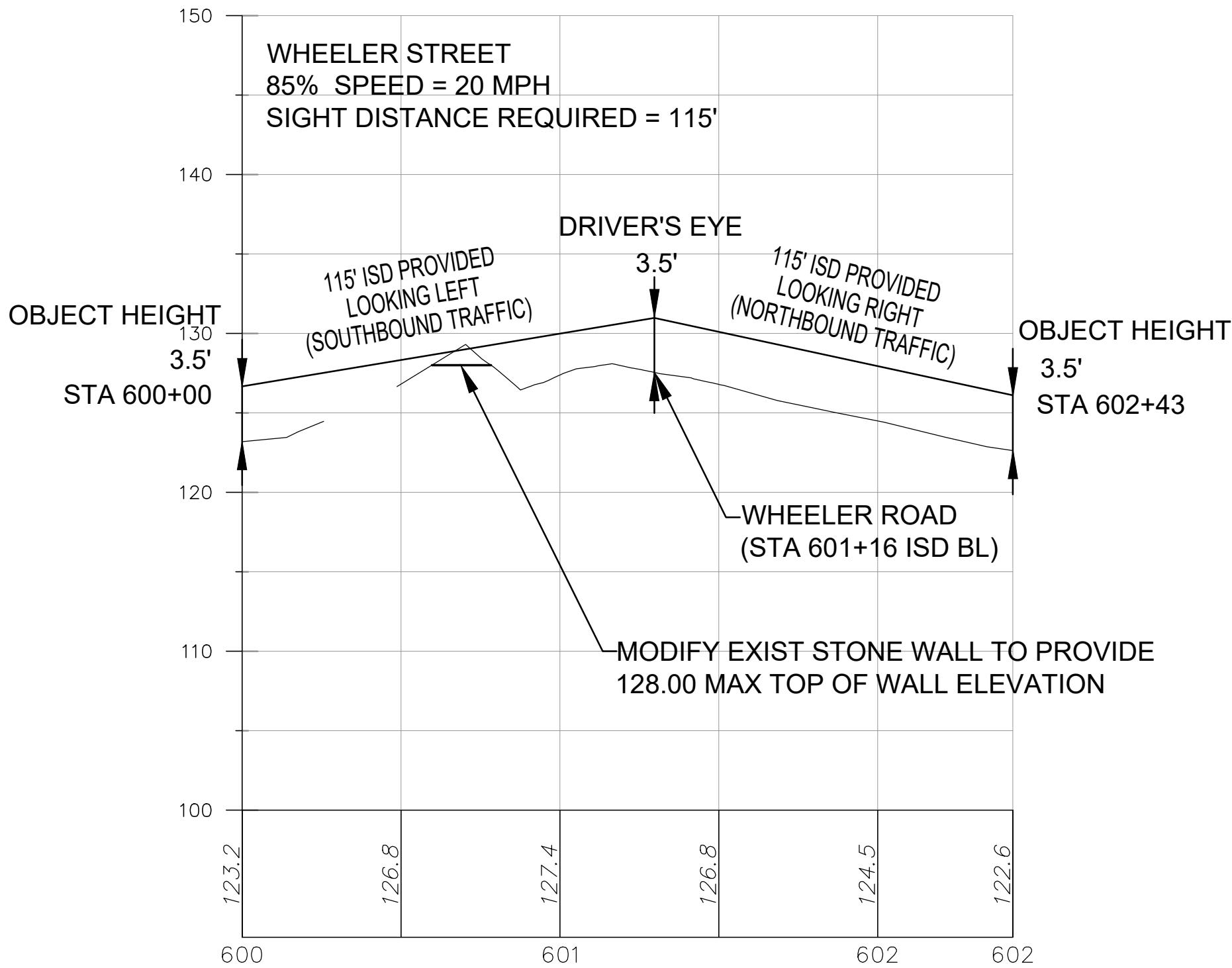


FIGURE 13 - WILSHIRE CIRCLE (WEST) AT
WHEELER ROAD PROFILES

PROJECT: Proposed Multifamily Residential Development Dracut, Massachusetts			
PROPOSER: O'Brien Homes, Inc. Andover, Massachusetts			
NO.	REVISIONS	DATE	Vanasse & Associates inc Transportation Engineers & Planners 35 New England Business Center Drive - Suite 140 - Andover, MA 01810 www.vai.com 978-474-8800
	DESIGNED BY:	TWO	DATE: 6/24/2024
	DRAWN BY:	TWO	SCALE: 1"=40'H; 1"=8'V
	CHECKED BY:	JPC	SHEET 2 OF 2



WHEELER ROAD AT WHEELER STREET STOPPING SIGHT
DISTANCE PROFILE (SSD BASELINE)



WHEELER ROAD AT WHEELER STREET INTERSECTION SIGHT
DISTANCE PROFILE (ISD BASELINE)

FIGURE 4 - WHEELER ROAD AT
WHEELER STREET PROFILES

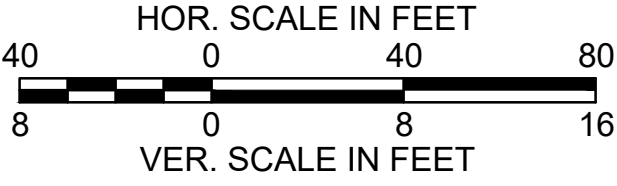
PROJECT:

Proposed Multifamily Residential Development
Dracut, Massachusetts

PROPOSER:

O'Brien Homes, Inc.
Andover, Massachusetts

NO.	REVISIONS	DATE	Vanasse & Associates inc Transportation Engineers & Planners 35 New England Business Center Drive - Suite 140 - Andover, MA 01810 www.vandva.com 978-474-8800	
	DESIGNED BY:	TWO	DATE:	6/24/2024
	DRAWN BY:	TWO	SCALE:	1"=40'H; 1"=8'V
	CHECKED BY:	JPC	SHEET 2 OF	2



CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed construction of a 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,¹⁸ the Project is expected to generate approximately 1,992 vehicle trips on an average weekday (two-way, 24-hour volume), with 134 vehicle trips expected during the weekday morning peak-hour and 157 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 on the critical movements at these intersections defined as a predicted increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of between one (1) and five (5) vehicles;
4. All movements at the intersections that will convey traffic to/from the Project site are predicted to operate at LOS B or better with vehicle queuing limited to one (1) vehicle;
5. Independent of the Project, the Wheeler Road/Wilshire Circle/Paddock Lane intersection was found to have a motor vehicle crash rate that exceeds both the MassDOT statewide

¹⁸Institute of Transportation Engineer, op. cit. 1.

and District average crash rates for similar intersections based on a review of motor vehicle crash data for the period 2015 through 2019, inclusive. As such, safety-related enhancements have been recommended for this intersection will be advanced in conjunction with the Project (see *Recommendations*); and

6. Lines of sight at the intersections along Wheeler Street and Wheeler Road that will provide access to the Project site were found to exceed, or can be made to meet or exceed, the recommended minimum distances 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.

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. 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.
- STOP-signs and marked STOP-lines should be provided on the side street approaches to the main roadway connecting Poppy Lane and Elizabeth Drive.
- 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).¹⁹
- A sidewalk is proposed along at least one side of the roadway network within the Project site that extends between Poppy Lane and Elizabeth Drive.
- 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.

¹⁹ *Manual on Uniform Traffic Control Devices (MUTCD)*; Federal Highway Administration; Washington, D.C.; 2009.

- Signs and landscaping to be installed as a part of the Project within intersection sight triangle areas 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.

Off-Site

Route 113 at Wheeler Street

Independent of the Project, the Wheeler Street approach to Route 113 was identified to be operating over its design capacity during the weekday evening peak-hour, with the addition of Project-related shown to increase delays during both peak hours causing the Wheeler Street approach to operate over capacity during the weekday morning peak-hour and increasing vehicle queues during the weekday evening peak-hour (already operating over capacity) by five (5) vehicles. A review of the warrants defined the MUTCD²⁰ for the installation of a traffic control signal at the intersection indicates that the intersection does not meet Warrant 1, *Eight-Hour Vehicle Volume*, (MassDOT requirement for the installation of a new traffic signal)²¹ under either 2024 Build or 2031 Build traffic volume conditions with consideration of “right-turn-on-red” movements of 20 percent of the approach volume on Wheeler Street (approximately 68 percent of the existing vehicles on the Wheeler Street approach turn right at the intersection).

In an effort to improve traffic operations at the intersection in-lieu of the installation of a traffic control signal, the Wheeler Street approach to Route 113 should be widened to provide separate left and right-turn lanes. With the implementation of these improvements, vehicle queuing on the Wheeler Street approach was found to be reduced over No-Build conditions. The Project Proponent will provide funding to the City of Methuen for the design and construction of the recommended improvements at this intersection, with the level of funding to be commensurate with the predicted increase in traffic that the Project represents at the intersection during the weekday peak hours (i.e., a “fair-share” cost contribution). The funding will be provided to the City prior to the issuance of a Certificate of Occupancy for the Project.

Independent of the Project, the existing STOP-sign on the Wheeler Street approach should be removed from the utility pole and installed on a break-away sign post and a marked STOP-line should be provided adjacent to the STOP-sign installation.

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 based on a review of motor vehicle crash data for the period 2015 through 2019, inclusive. That being said, the intersection experienced a total of two (2)

²⁰Federal Highway Administration, op. cit. 3.

²¹*The Massachusetts Amendments to the 2009 Manual on Uniform Traffic Control Devices for Streets and Highways*; MassDOT; November 2022.

crashes between 2015 and 2019, inclusive, a level of crash frequency that would not be considered excessive; however, the volume of traffic that is processed by the intersection is relatively low, which results in the crash rate (the average number of motor vehicles occurring at the intersection per year per million vehicles travelling through the intersection) being higher than expected. A review of the crash data does not indicate any crash trends or patterns that would indicate a specific roadway or intersection defect.

In an effort to enhance safety at the intersection, the following improvements are recommended:

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 to include yellow reflective tape on the sign post.

The recommended improvements will be designed and constructed prior to the issuance of a Certificate of Occupancy for the Project subject to receipt of all necessary rights, permits and approvals.

Route 110 at Wheeler Street

Independent of the Project, the pavement markings for the STOP-line on the Wheeler Street approach to Route 110 and the crosswalk across Wheeler Street should be reapplied, in addition to the centerline pavement markings along Wheeler Street approaching the intersection.

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.

Wilshire Circle at Elizabeth Drive

Independent of the Project, a STOP-sign and marked STOP-line should be provided on the Elizabeth Drive approach to Wilshire Circle.

Wheeler Street at Wheeler Road

Independent of the Project, trees and vegetation located within the sight triangle areas of the Wheeler Street/Wheeler Road intersection should be trimmed and maintained and the existing embankment located along the west side of Wheeler Street north of Wheeler Road should be regraded to provide the required sight distances for safe operation of the intersection.

Transportation Demand Management

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 along Route 110 to the south of the Project site by way of bus Route 24, *Lawrence-Lowell*. The Route 24 bus travels along Route 110 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.

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

- The Project proponent will become a member of the Merrimack Valley Transportation Management Association (MVTMA) who will manage and coordinate the TDM program for the Project;
- A transportation coordinator will be assigned for the Project to coordinate the TDM program and serve as a point of contact with the TMA;
- The transportation coordinator will facilitate a rideshare matching program for residents through the TMA to encourage carpooling;
- A “welcome packet” will be provided to new residents detailing available public transportation services, bicycle and walking alternatives, and other commuter options;
- Pedestrian accommodations will be incorporated within the Project site to encourage walking;
- Consideration should be given to providing electric vehicle (EV) charging stations for use by residents and guests;
- Short-term parking or a loading zone will be provided for use by carshare and delivery service providers; and
- Secure bicycle parking will be provided at an appropriate location within the Project site.

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.

Table 14
MITIGATED UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2031 No-Build				2031 Build				2031 Build (Mitigated)			
	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	771	0.0	A	0	775	0.0	A	0	775	0.0	A	0
Route 113 WB LT/TH	454	9.8	A	0	467	9.9	A	0	467	9.9	A	0
Wheeler Street NB LT/RT	90	31.0	D	3	141	>50.0	F	6	--	--	--	--
Wheeler Street NB LT	--	--	--	--	--	--	--	--	36	44.0	E	2
Wheeler Street NB RT	--	--	--	--	--	--	--	--	105	21.0	C	2
<i>Weekday Evening:</i>												
Route 113 EB TH/RT	594	0.0	A	0	604	0.0	A	0	604	0.0	A	0
Route 113 WB LT/TH	1,006	9.4	A	1	1,043	9.7	A	1	1,043	9.7	A	1
Wheeler Street NB LT/RT	98	>50.0	F	6	130	>50.0	F	11	--	--	--	--
Wheeler Street NB LT	--	--	--	--	--	--	--	--	35	>50.0	F	5
Wheeler Street NB RT	--	--	--	--	--	--	--	--	95	15.8	C	1

^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

APPENDIX

AUTOMATIC TRAFFIC RECORDER COUNT DATA
TURNING MOVEMENT COUNT DATA
SEASONAL ADJUSTMENT DATA
VEHICLE TRAVEL SPEED DATA
PUBLIC TRANSPORTATION SCHEDULE
MASSDOT CRASH DATA
MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING
MOTOR VEHICLE CRASH TABLE – 2016 THROUGH 2020
GENERAL BACKGROUND TRAFFIC GROWTH
BACKGROUND DEVELOPMENT NETWORKS
TRIP-GENERATION CALCULATIONS
JOURNEY TO WORK TRIP DISTRIBUTION
TRAFFIC SIGNAL WARRANTS ANALYSIS
CAPACITY ANALYSIS WORKSHEETS

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													

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/9/2024	NB,		Hour Totals		SB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1		2		1		4		
12:15		0		3		1		2		
12:30		3		6		0		2		
12:45		0		3		0		1		23
1:00		0		1		0		3		
1:15		0		1		0		5		
1:30		0		3		0		6		
1:45		0		1		0		3		23
2:00		0		1		1		5		
2:15		0		3		0		4		
2:30		0		4		0		4		
2:45		0		2		1		7		30
3:00		0		3		0		6		
3:15		0		4		0		9		
3:30		0		4		1		8		
3:45		1		4		0		4		42
4:00		0		7		0		3		
4:15		1		4		1		4		
4:30		0		4		0		6		
4:45		2		2		0		5		35
5:00		1		9		0		5		
5:15		0		3		0		3		
5:30		0		1		0		7		
5:45		0		3		0		1		32
6:00		1		2		1		6		
6:15		1		2		1		1		
6:30		0		1		4		4		
6:45		1		1		5		6		23
7:00		1		1		3		4		
7:15		2		2		1		6		
7:30		7		1		4		2		
7:45		3		0		5		3		19
8:00		2		0		5		5		
8:15		1		1		4		1		
8:30		2		1		7		5		
8:45		6		4		2		3		20
9:00		2		0		3		2		
9:15		3		1		4		1		
9:30		3		2		1		3		
9:45		2		2		2		2		13
10:00		3		0		5		0		
10:15		4		0		3		2		
10:30		5		0		3		1		
10:45		1		0		5		0		3
11:00		6		1		4		0		
11:15		5		0		5		1		
11:30		3		0		3		1		
11:45		5		0		4		1		4
Total	78	100			90	167			168	267
Percent	43.8%	56.2%			35.0%	65.0%			38.6%	61.4%

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/10/2024		NB,		Hour Totals		SB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	5			0	2				
12:15		0	4			0	4				
12:30		0	4			0	2				
12:45		0	3	0	16	0	3	0	11	0	27
1:00		1	5			0	2				
1:15		0	3			0	5				
1:30		1	4			0	5				
1:45		0	6	2	18	1	5	1	17	3	35
2:00		1	5			0	7				
2:15		0	2			1	5				
2:30		0	4			0	5				
2:45		0	3	1	14	0	4	1	21	2	35
3:00		0	1			0	5				
3:15		0	10			0	4				
3:30		0	3			0	4				
3:45		0	1	0	15	0	5	0	18	0	33
4:00		0	3			0	2				
4:15		1	3			1	2				
4:30		0	4			0	2				
4:45		0	10	1	20	0	4	1	10	2	30
5:00		3	4			0	5				
5:15		0	5			1	9				
5:30		0	1			0	4				
5:45		1	3	4	13	0	4	1	22	5	35
6:00		1	1			0	14				
6:15		1	1			3	3				
6:30		1	3			2	4				
6:45		1	3	4	8	5	4	10	25	14	33
7:00		2	3			4	3				
7:15		2	0			2	2				
7:30		5	1			4	2				
7:45		9	6	18	10	6	5	16	12	34	22
8:00		3	1			3	4				
8:15		1	1			3	3				
8:30		2	0			3	3				
8:45		3	1	9	3	5	1	14	11	23	14
9:00		3	1			5	3				
9:15		3	1			8	0				
9:30		2	0			3	1				
9:45		5	0	13	2	2	0	18	4	31	6
10:00		2	0			2	0				
10:15		3	0			3	0				
10:30		5	0			5	1				
10:45		3	1	13	1	4	0	14	1	27	2
11:00		4	0			5	1				
11:15		3	1			4	1				
11:30		3	0			2	0				
11:45		3	0	13	1	4	0	15	2	28	3
Total		78	121			91	154			169	275
Percent		39.2%	60.8%			37.1%	62.9%			38.1%	61.9%
Grand Total		156	221			181	321			337	542
Percent		41.4%	58.6%			36.1%	63.9%			38.3%	61.7%

ADT

ADT: 440

AADT: 440

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/8/2024	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,
0:00	*	*	4	2	0	0	*	*	*	*	*	*	*	*	2	1
1:00	*	*	0	0	2	1	*	*	*	*	*	*	*	*	1	0
2:00	*	*	0	2	1	1	*	*	*	*	*	*	*	*	0	2
3:00	*	*	1	1	0	0	*	*	*	*	*	*	*	*	0	0
4:00	*	*	3	1	1	1	*	*	*	*	*	*	*	*	2	1
5:00	*	*	1	0	4	1	*	*	*	*	*	*	*	*	2	0
6:00	*	*	3	11	4	10	*	*	*	*	*	*	*	*	4	10
7:00	*	*	13	13	18	16	*	*	*	*	*	*	*	*	16	14
8:00	*	*	11	18	9	14	*	*	*	*	*	*	*	*	10	16
9:00	*	*	10	10	13	18	*	*	*	*	*	*	*	*	12	14
10:00	*	*	13	16	13	14	*	*	*	*	*	*	*	*	13	15
11:00	*	*	19	16	13	15	*	*	*	*	*	*	*	*	16	16
12:00	*	*	14	9	16	11	*	*	*	*	*	*	*	*	15	10
13:00	*	*	6	17	18	17	*	*	*	*	*	*	*	*	12	17
14:00	*	*	10	20	14	21	*	*	*	*	*	*	*	*	12	20
15:00	*	*	15	27	15	18	*	*	*	*	*	*	*	*	15	22
16:00	*	*	17	18	20	10	*	*	*	*	*	*	*	*	18	14
17:00	*	*	16	16	13	22	*	*	*	*	*	*	*	*	14	19
18:00	*	*	6	17	8	25	*	*	*	*	*	*	*	*	7	21
19:00	*	*	4	15	10	12	*	*	*	*	*	*	*	*	7	14
20:00	*	*	6	14	3	11	*	*	*	*	*	*	*	*	4	12
21:00	*	*	5	8	2	4	*	*	*	*	*	*	*	*	4	6
22:00	*	*	0	3	1	1	*	*	*	*	*	*	*	*	0	2
23:00	*	*	1	3	1	2	*	*	*	*	*	*	*	*	1	2
Total	0	0	178	257	199	245	0	0	0	0	0	0	0	0	187	248
Day	0		435		444		0		0		0		0		435	
AM Peak			11:00	8:00	7:00	9:00									7:00	8:00
Volume			19	18	18	18									16	16
PM Peak			16:00	15:00	16:00	18:00									16:00	15:00
Volume			17	27	20	25									18	22
Comb Total	0		435		444		0		0		0		0		435	

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

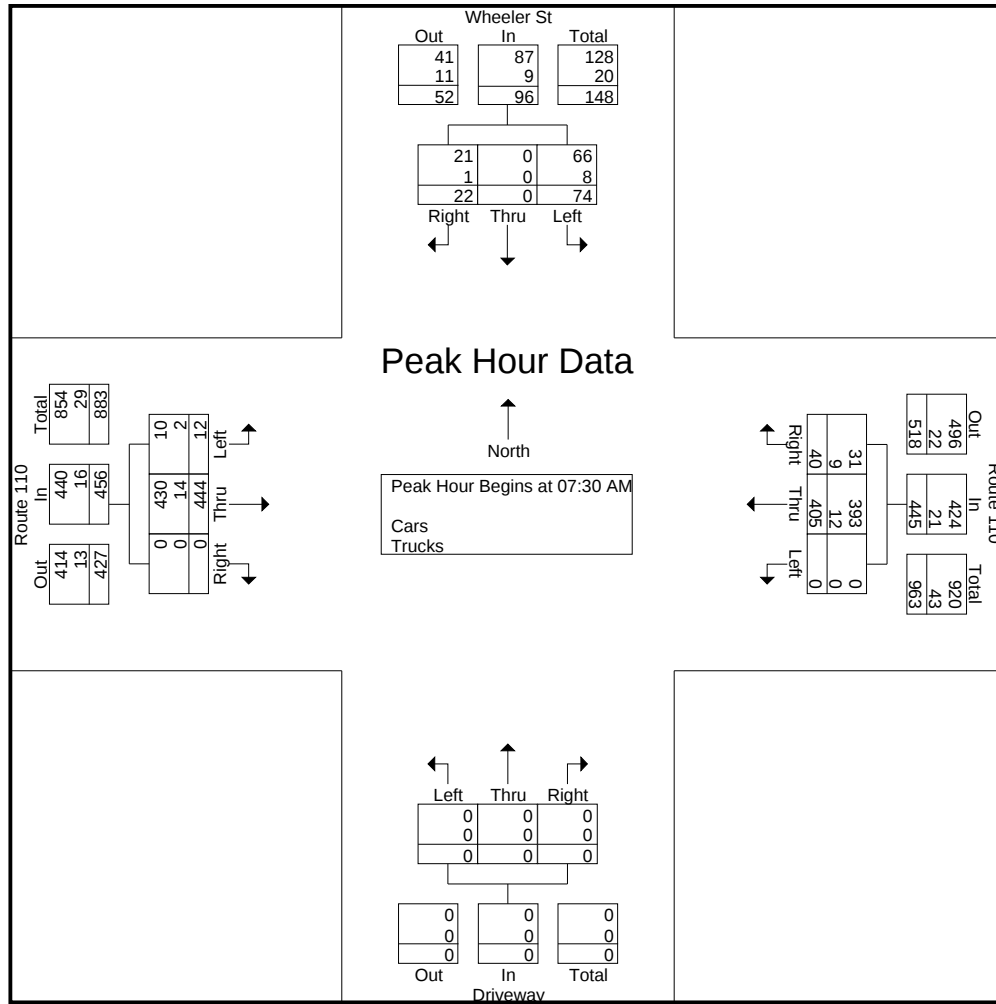
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 2



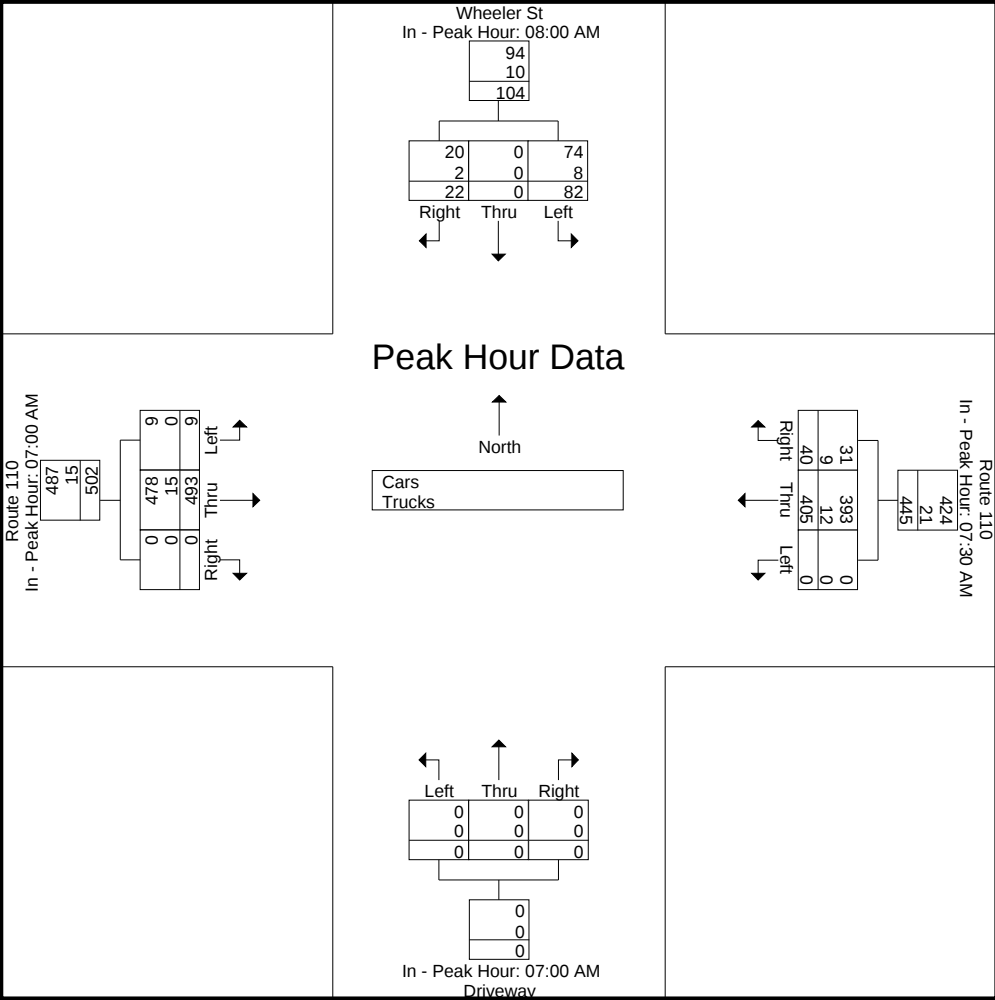
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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

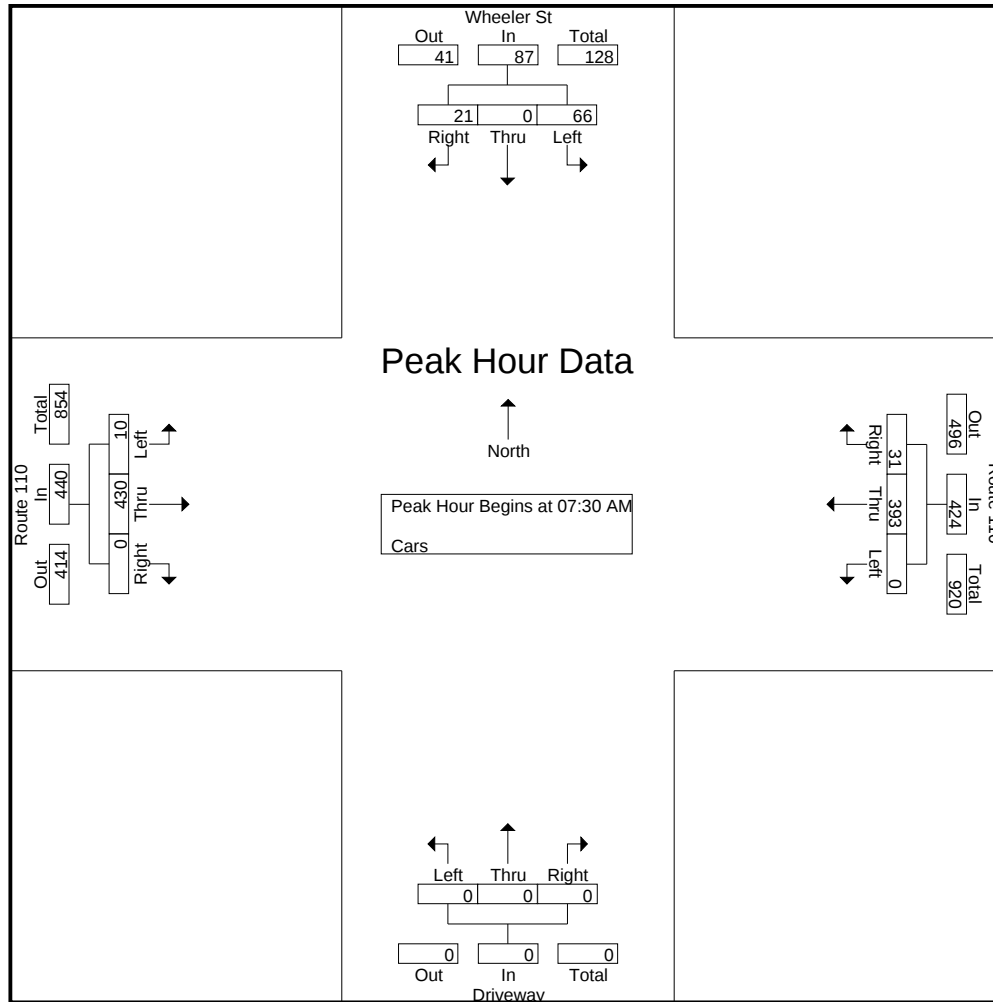
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 5



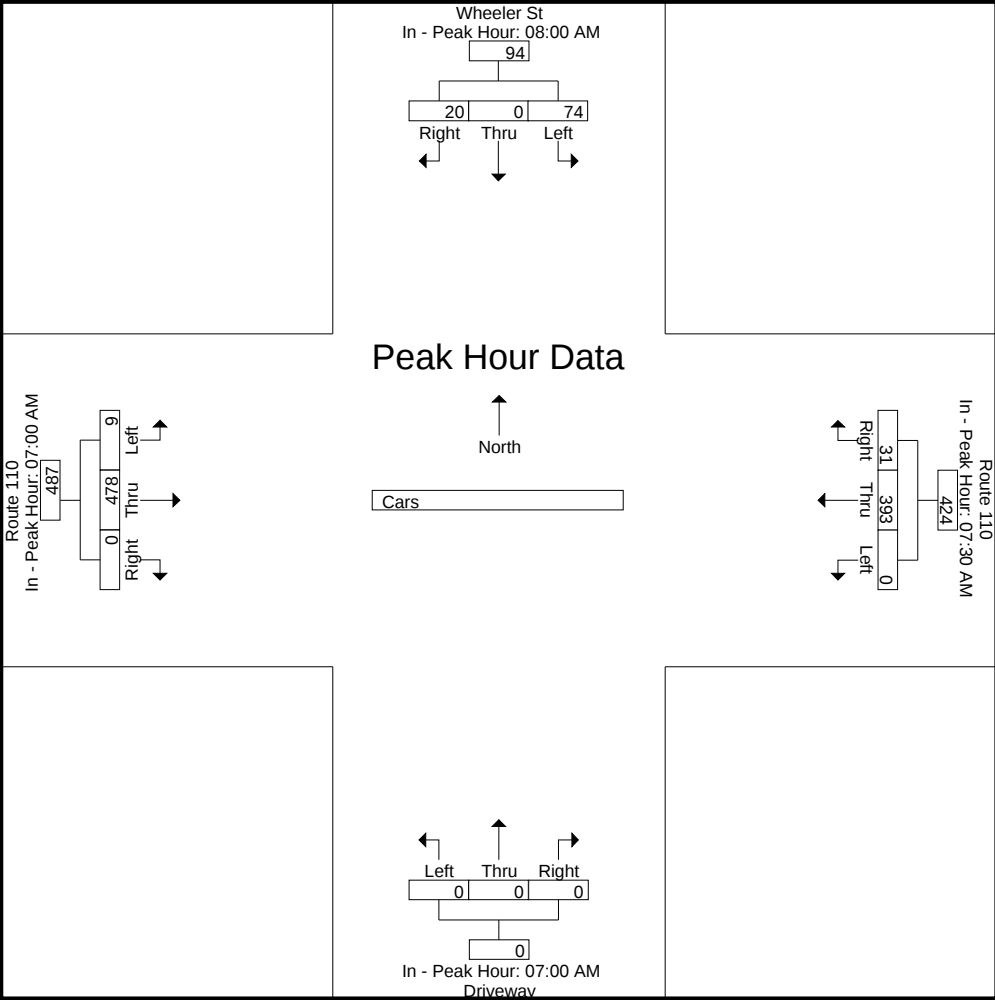
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 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

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	
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

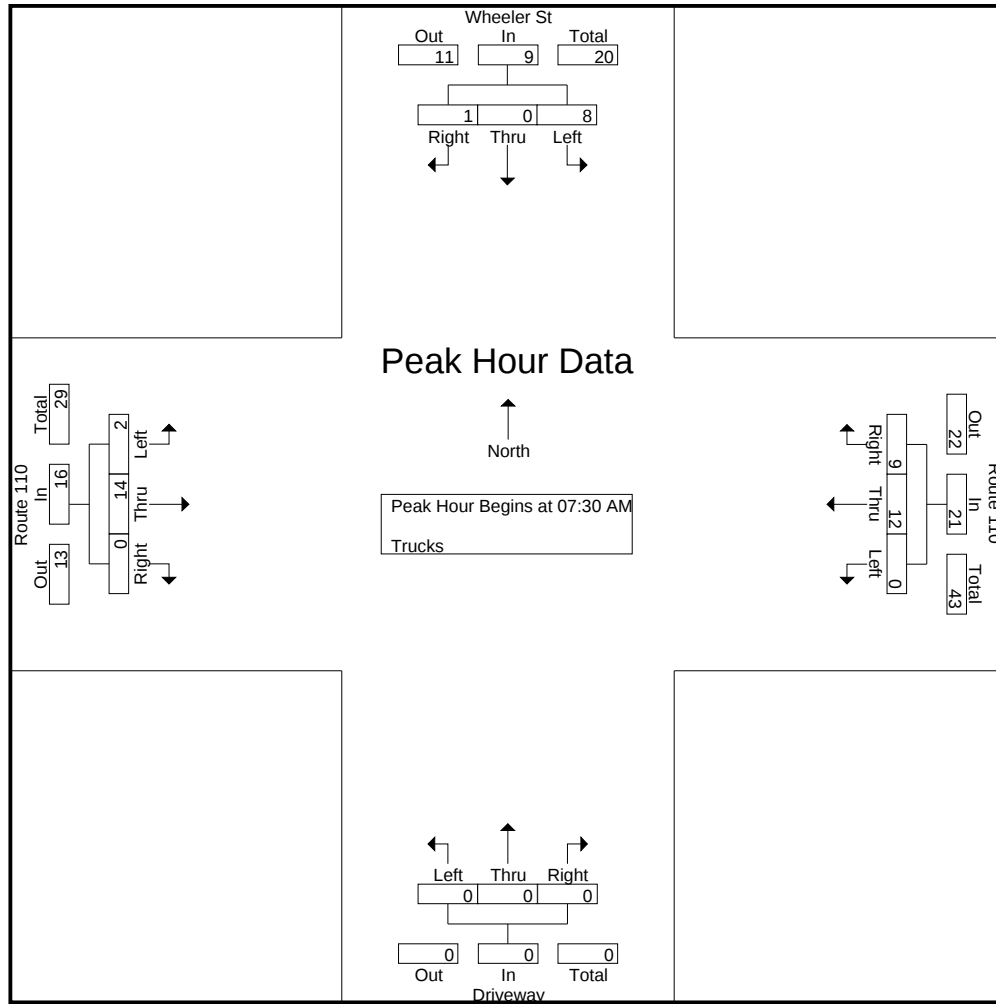
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 8



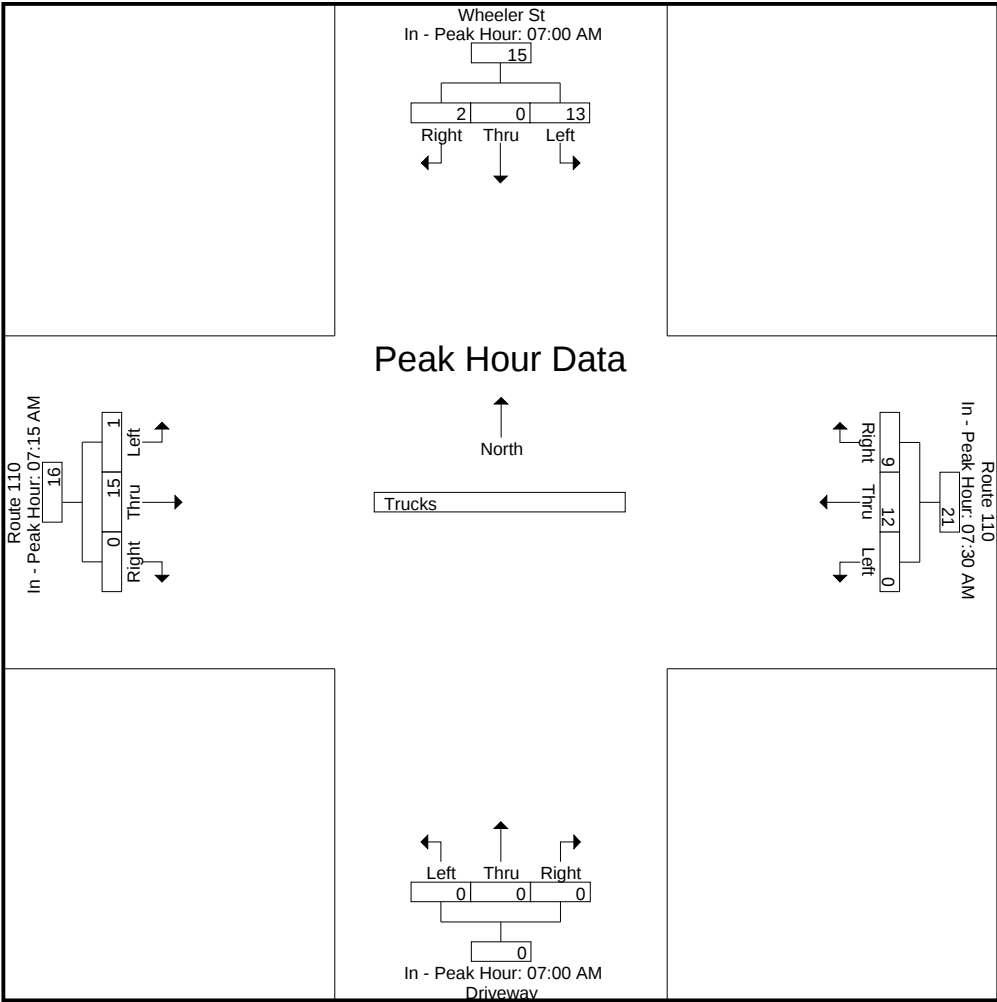
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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
Page No : 9



978-664-2565

Page No : 10

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978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

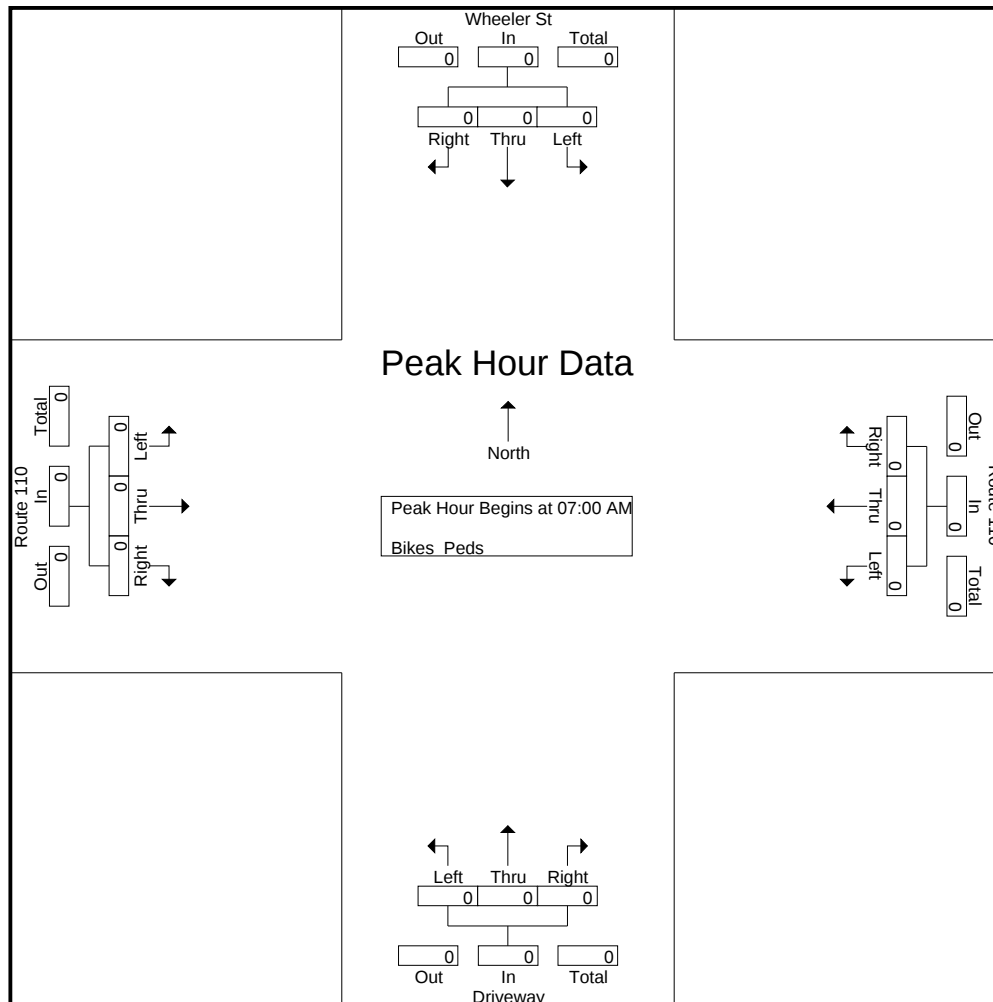
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 11



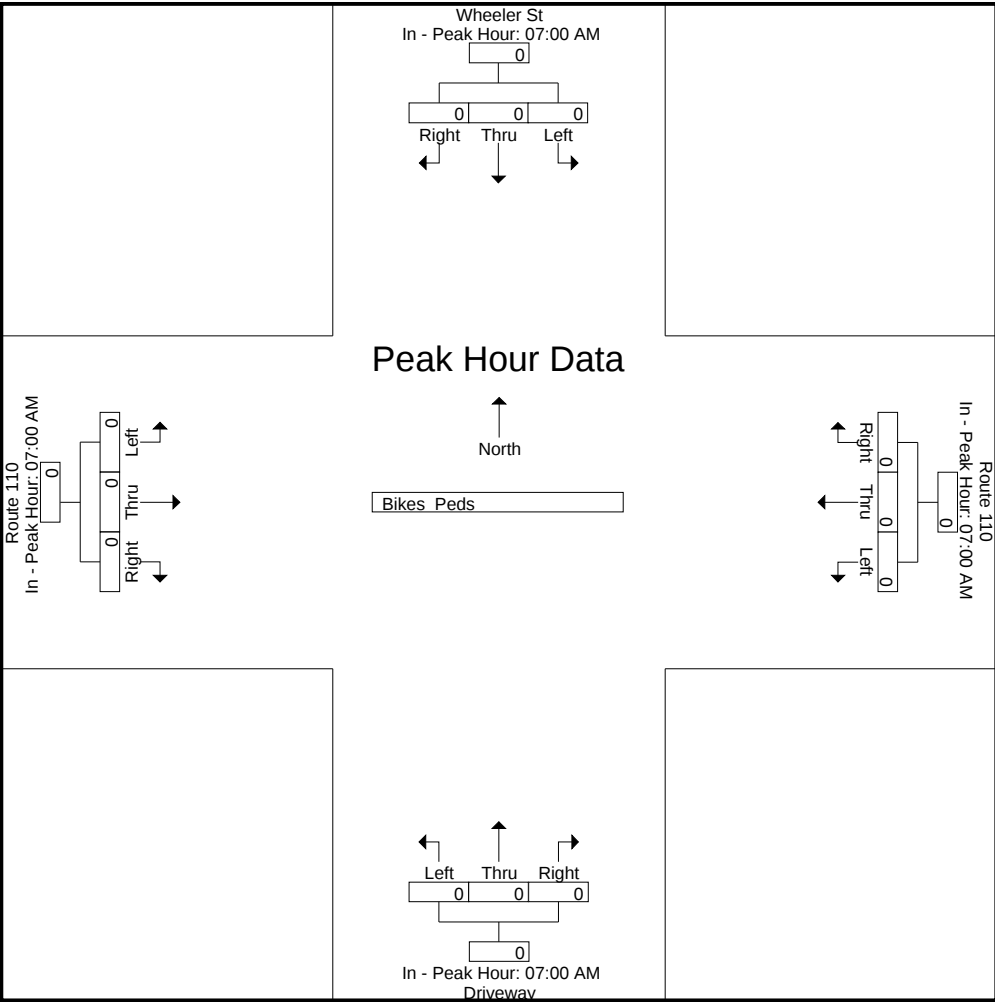
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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	
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
Page No : 12



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

978-664-2565

N/S Street : Wheeler Street / Driveway

E/W Street : Route 110

City/State : Methuen, MA

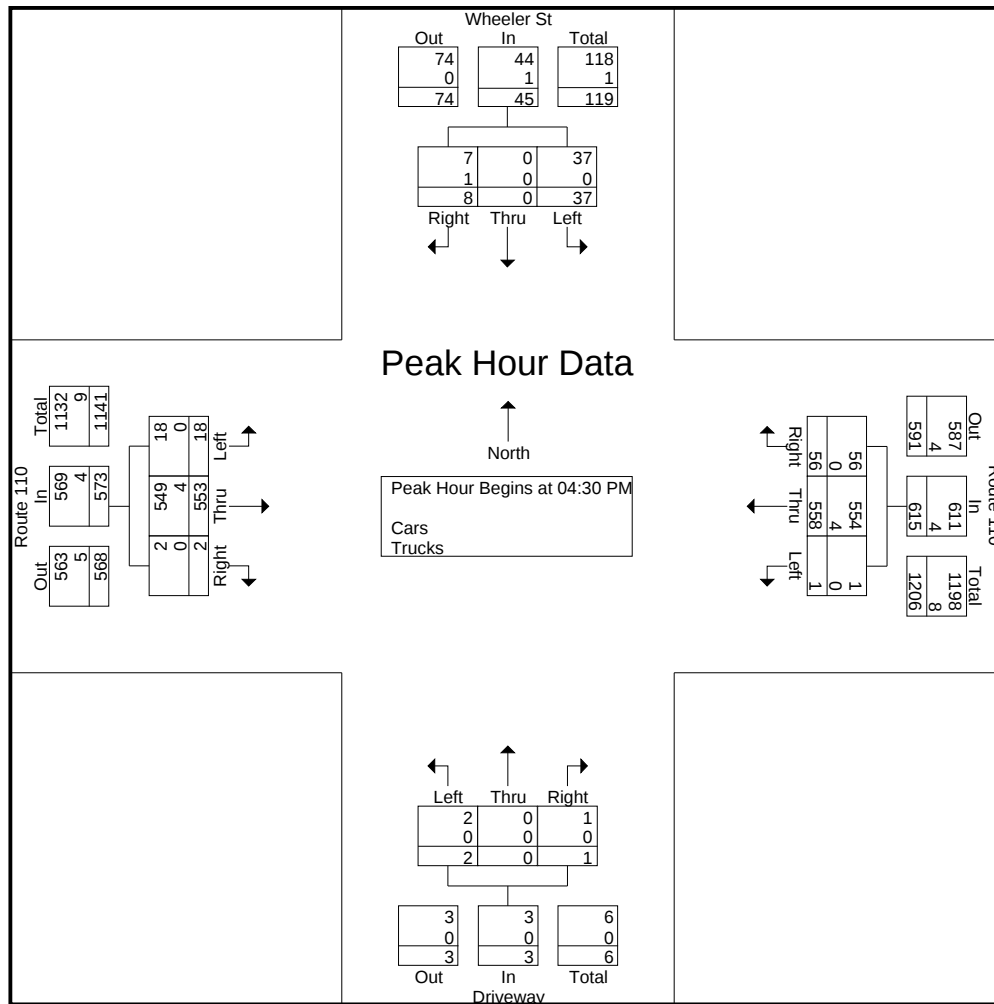
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 2



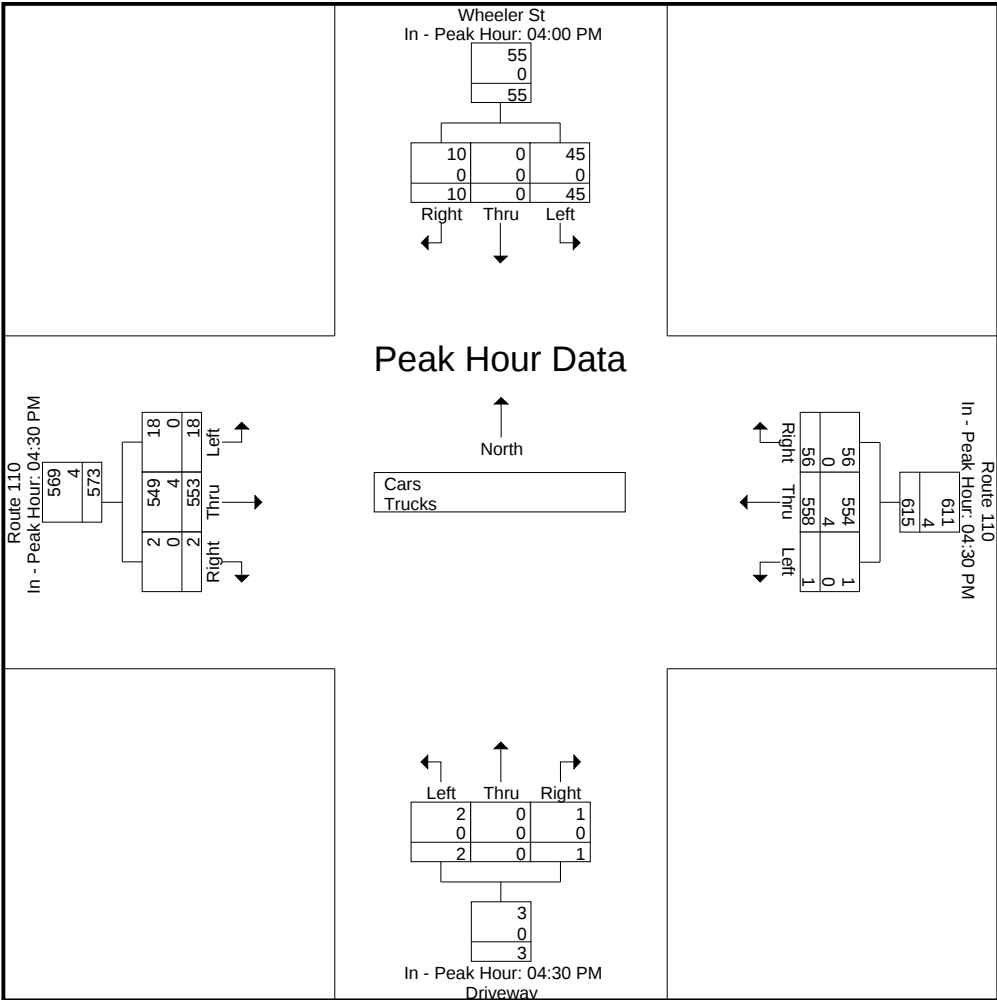
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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	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

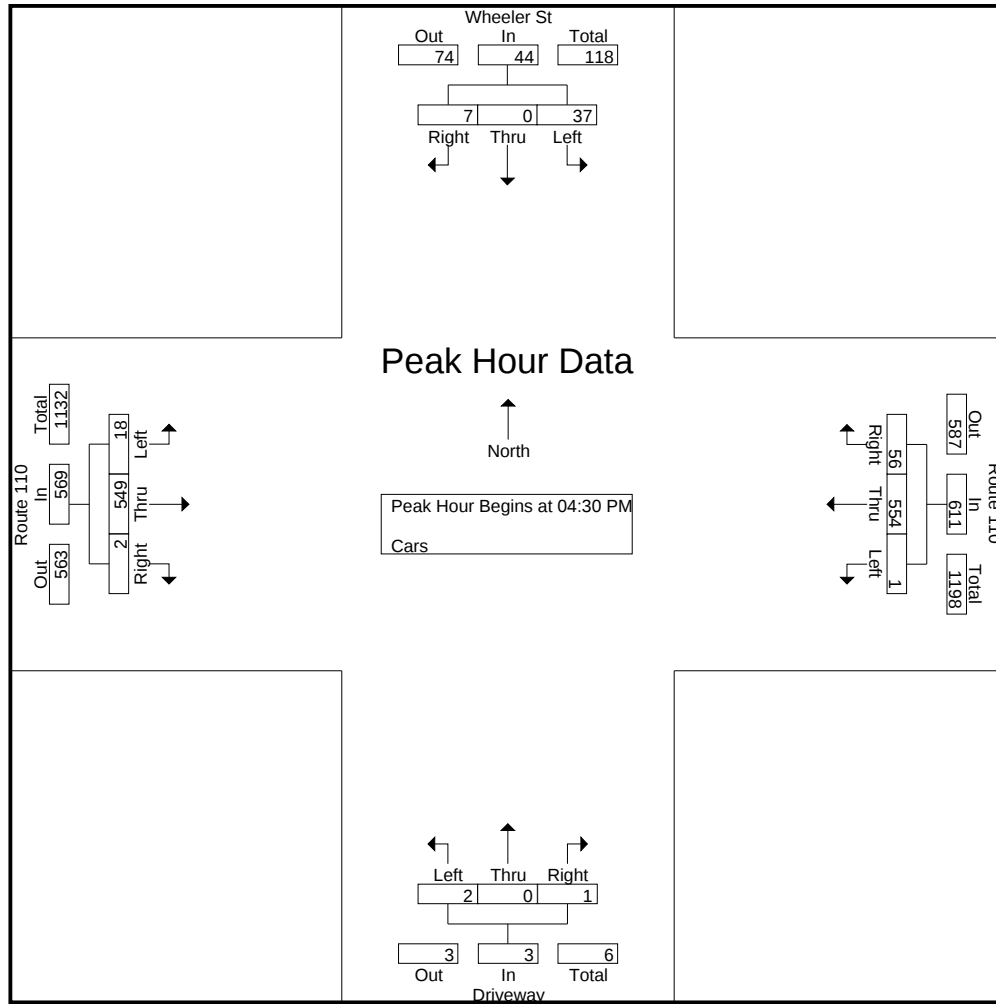
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 5



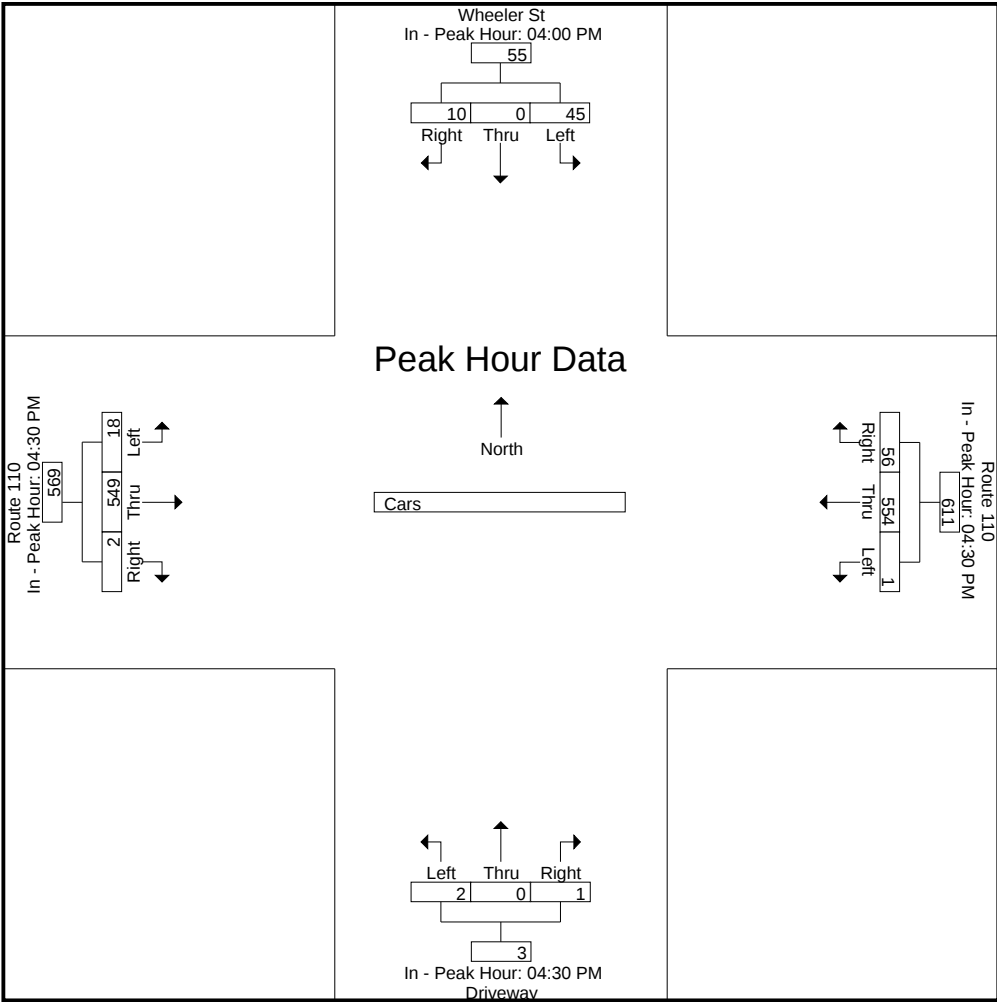
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 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

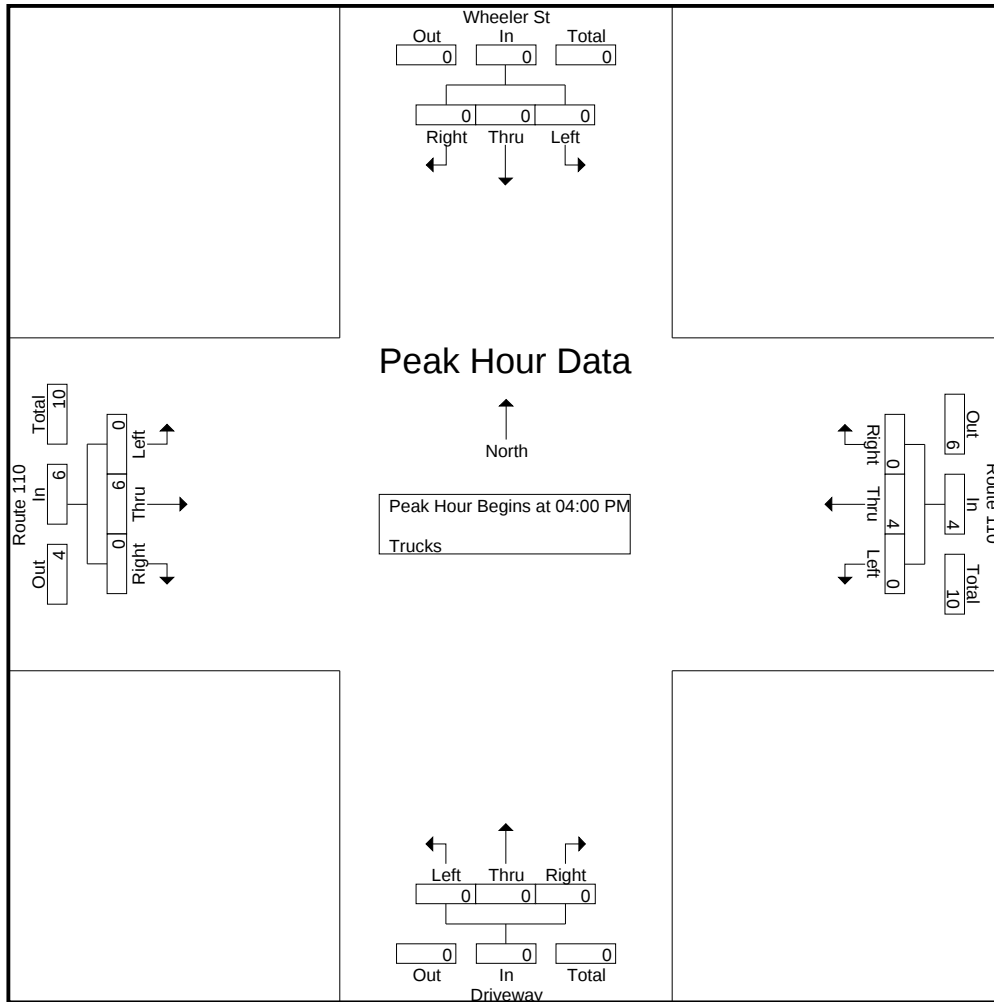
Weather : Clear

File Name : 76430001

Site Code : 76430001

Start Date : 3/7/2023

Page No : 8



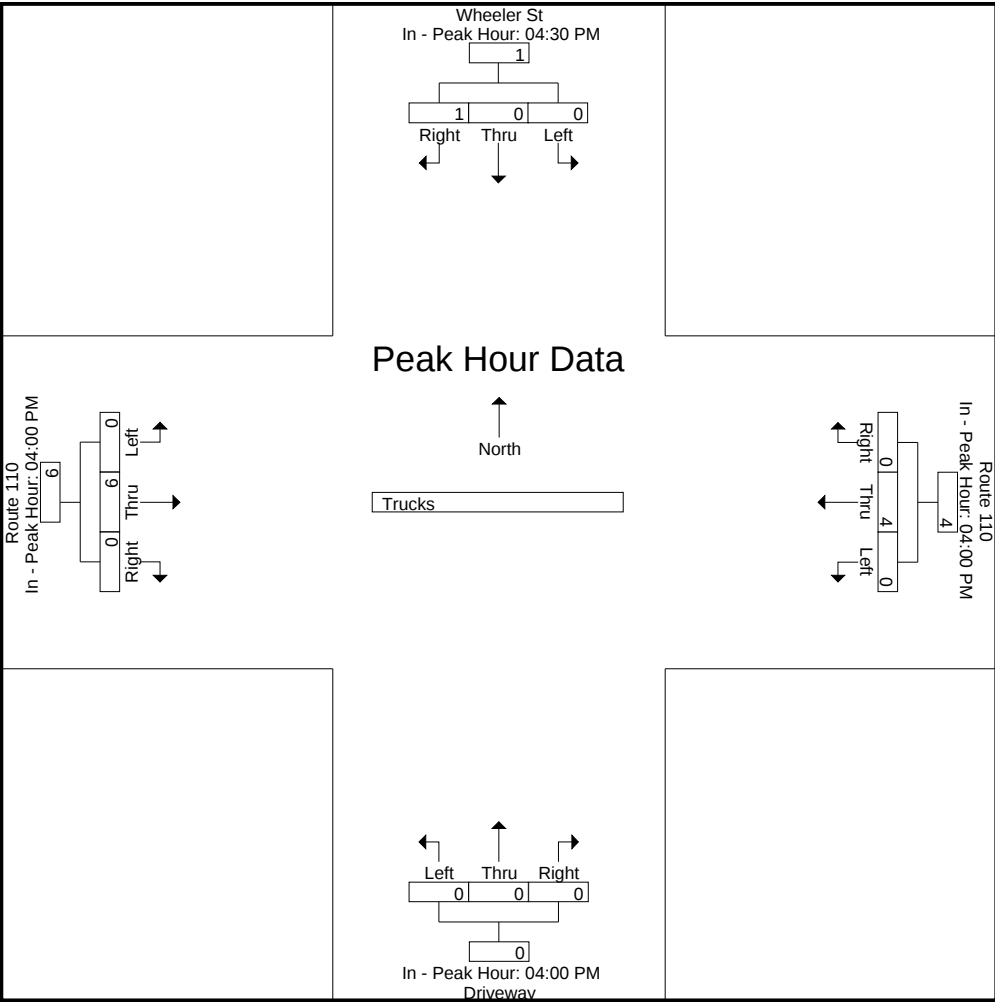
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM				04:00 PM				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
Site Code : 76430001
Start Date : 3/7/2023
Page No : 9



978-664-2565

Page No : 10

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978-664-2565

File Name : 76430001
Site Code : 76430001
Start Date : 3/7/2023
Page No : 11



North

Peak Hour Begins at 04:00 PM

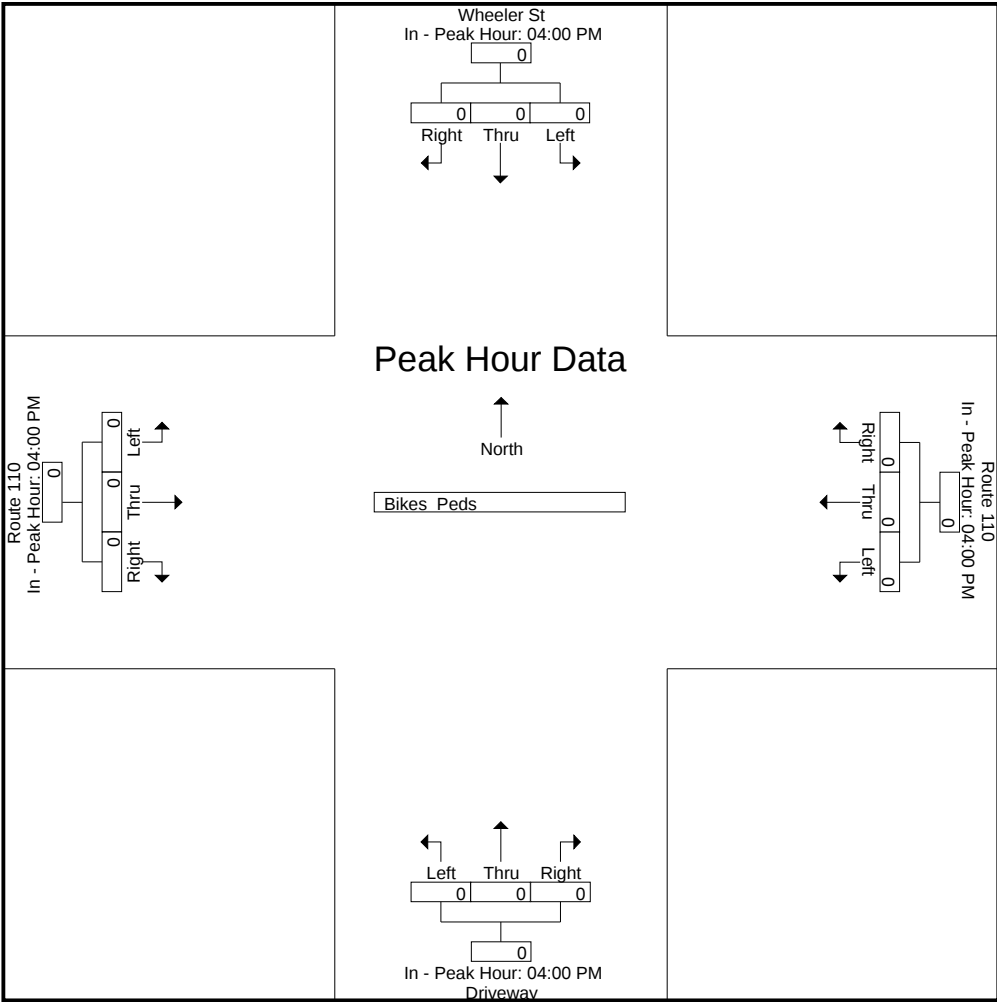
Bikes Peds

Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	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
Page No : 12



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

Page No : 1

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

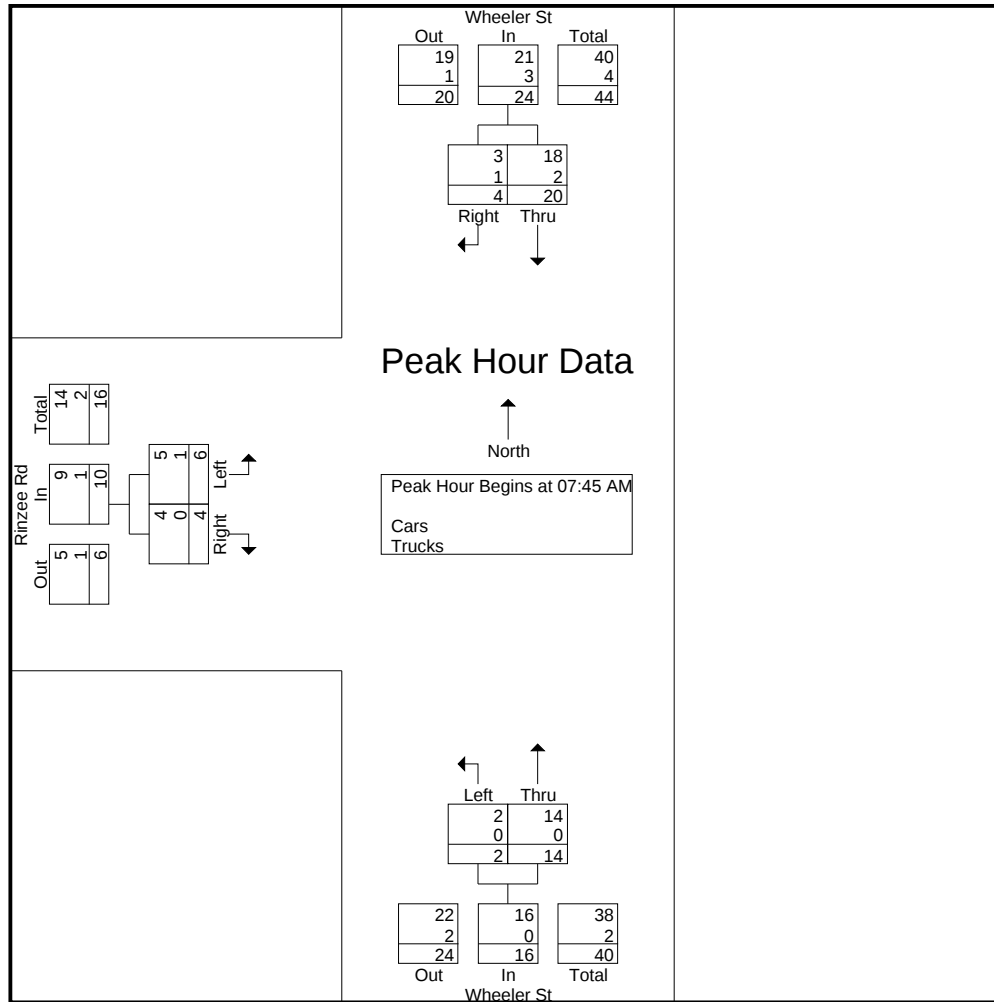
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	6	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
Page No : 2



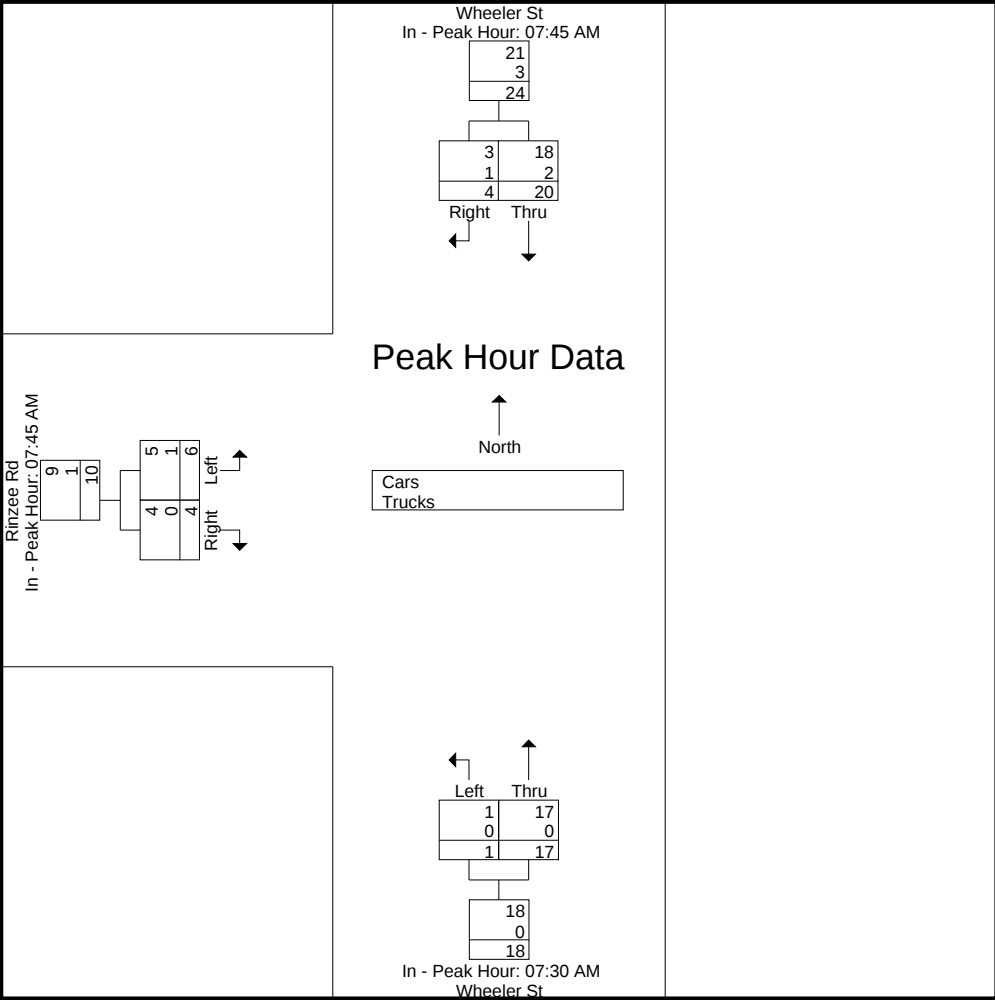
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 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
Page No : 3



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

Page No : 4

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	

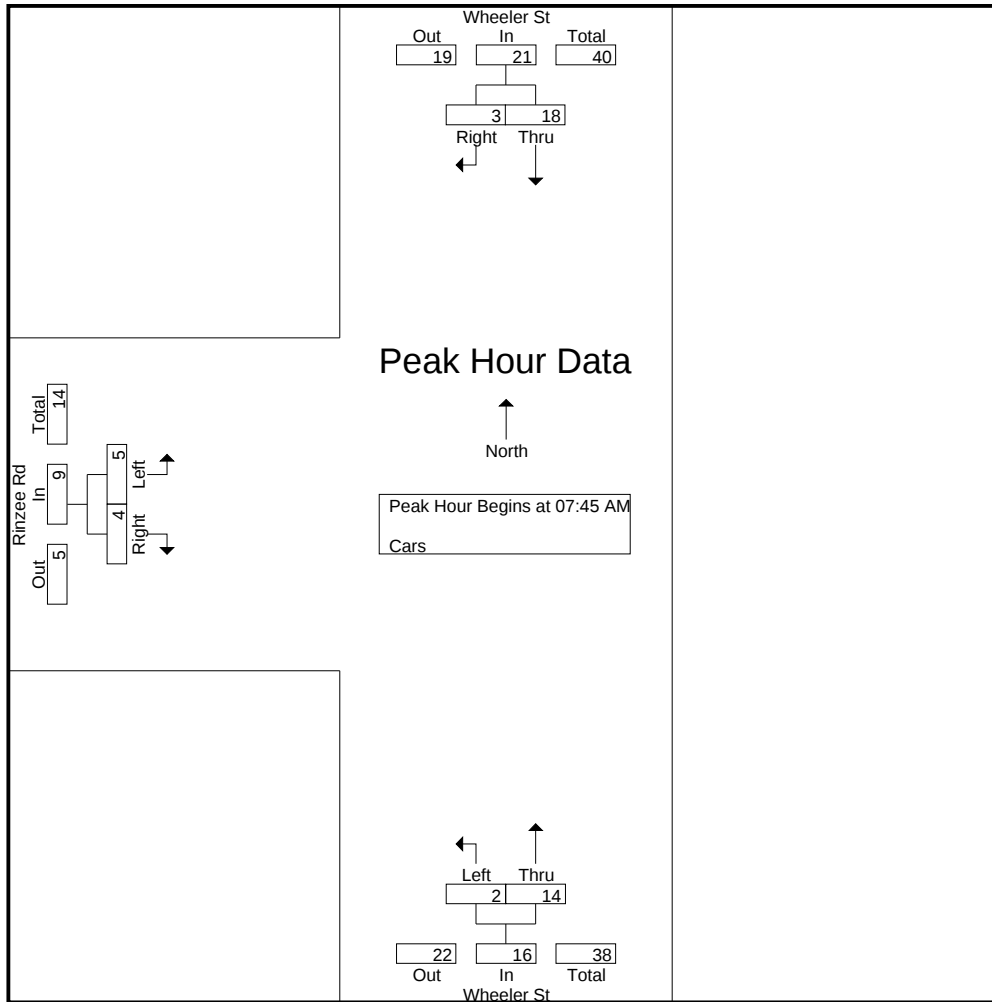
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
07:45 AM	4	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
Page No : 5



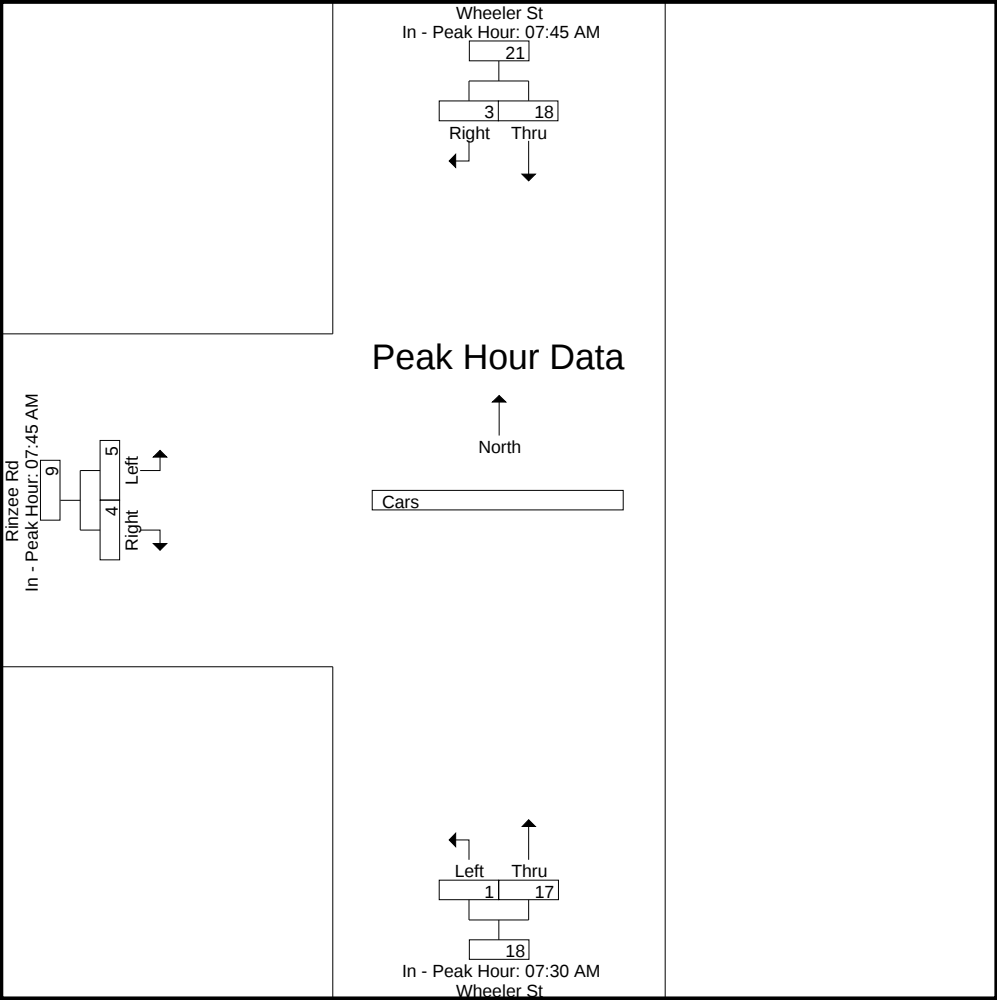
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM			07:30 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
Page No : 6



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

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
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	

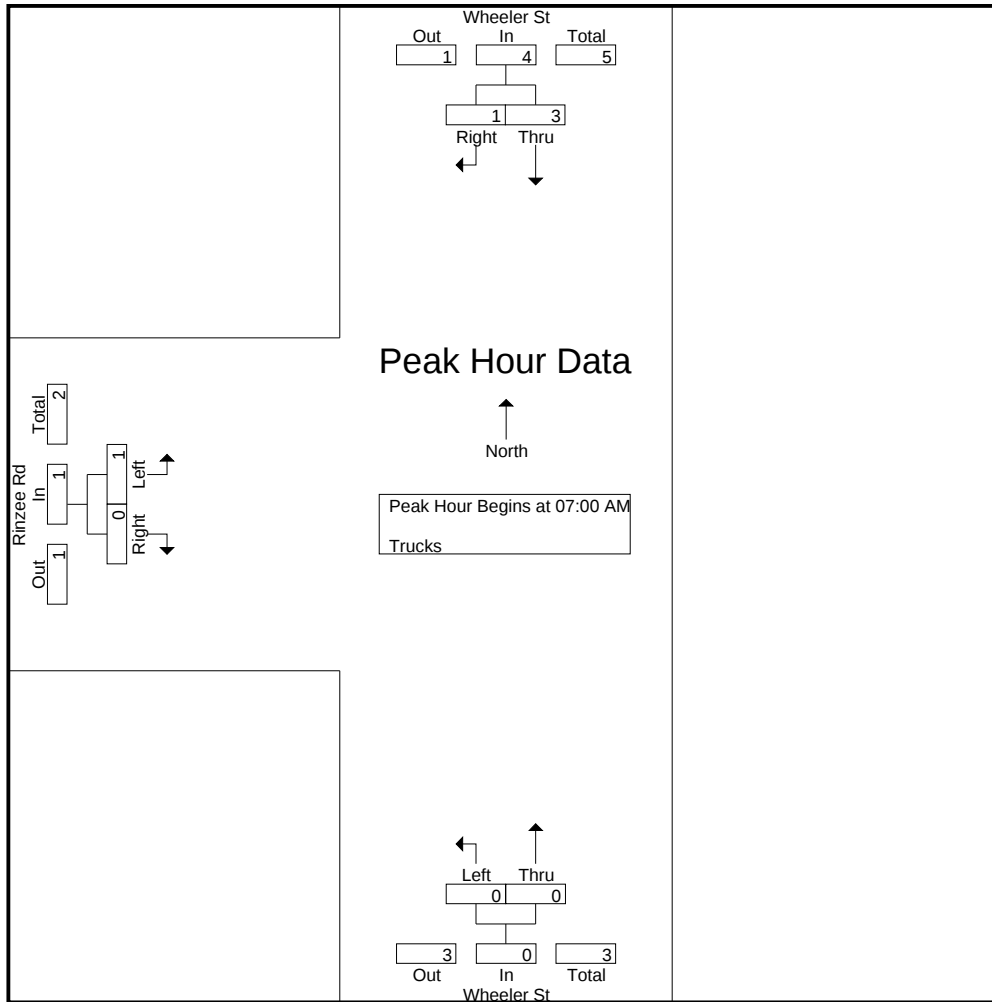
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	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
Page No : 8



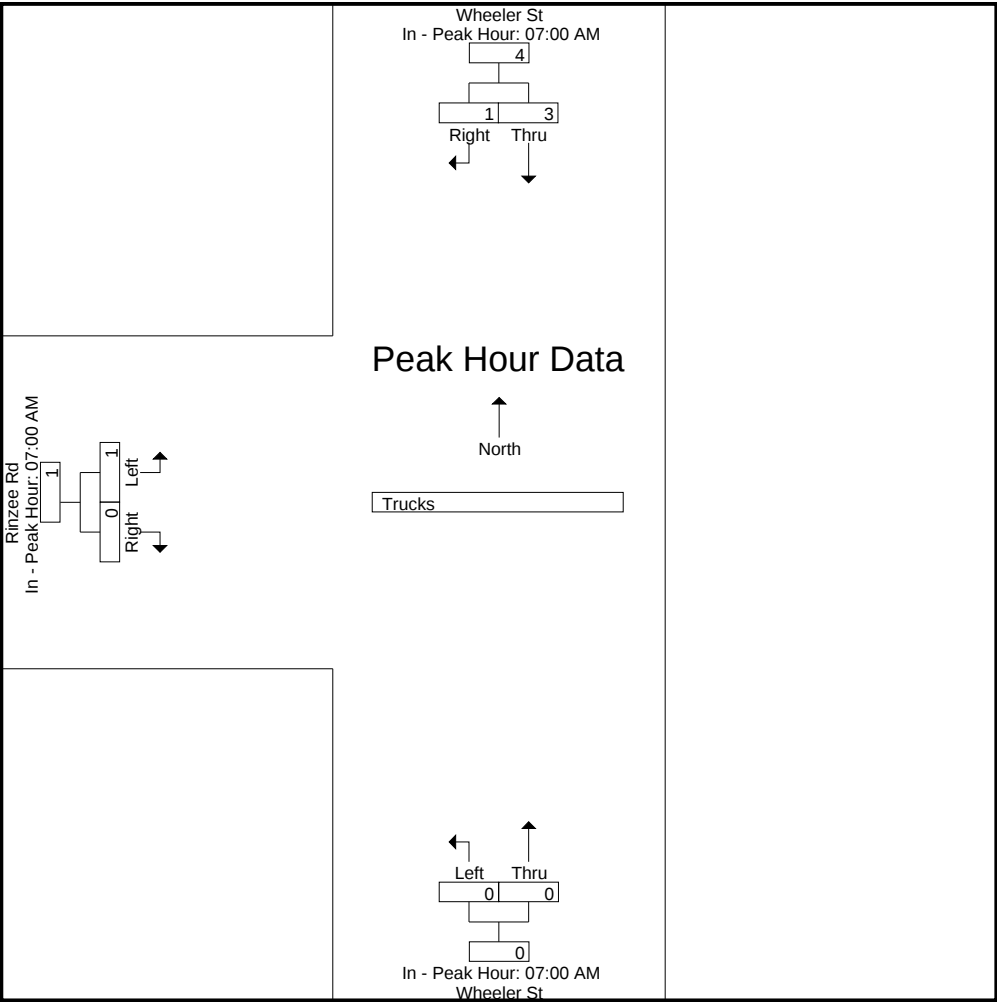
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 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
Start Date : 3/7/2023
Page No : 9



978-664-2565

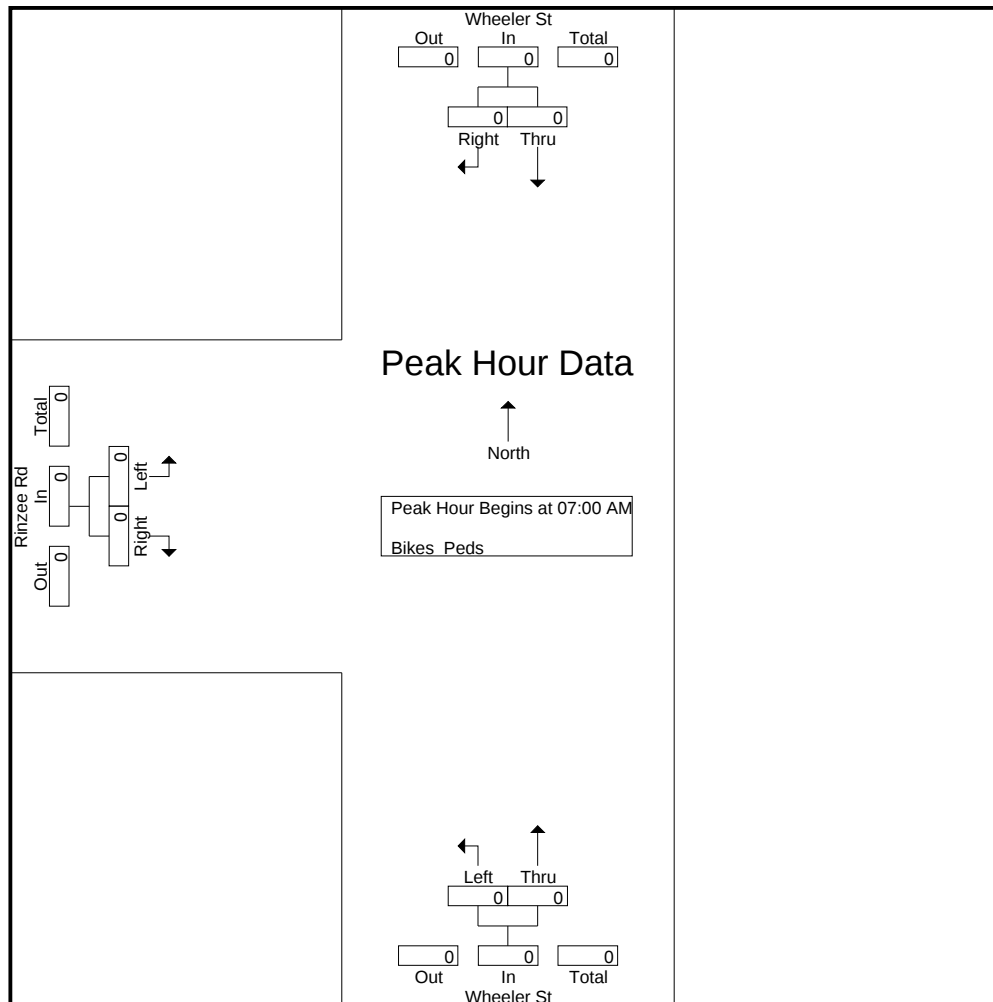
Page No : 10

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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



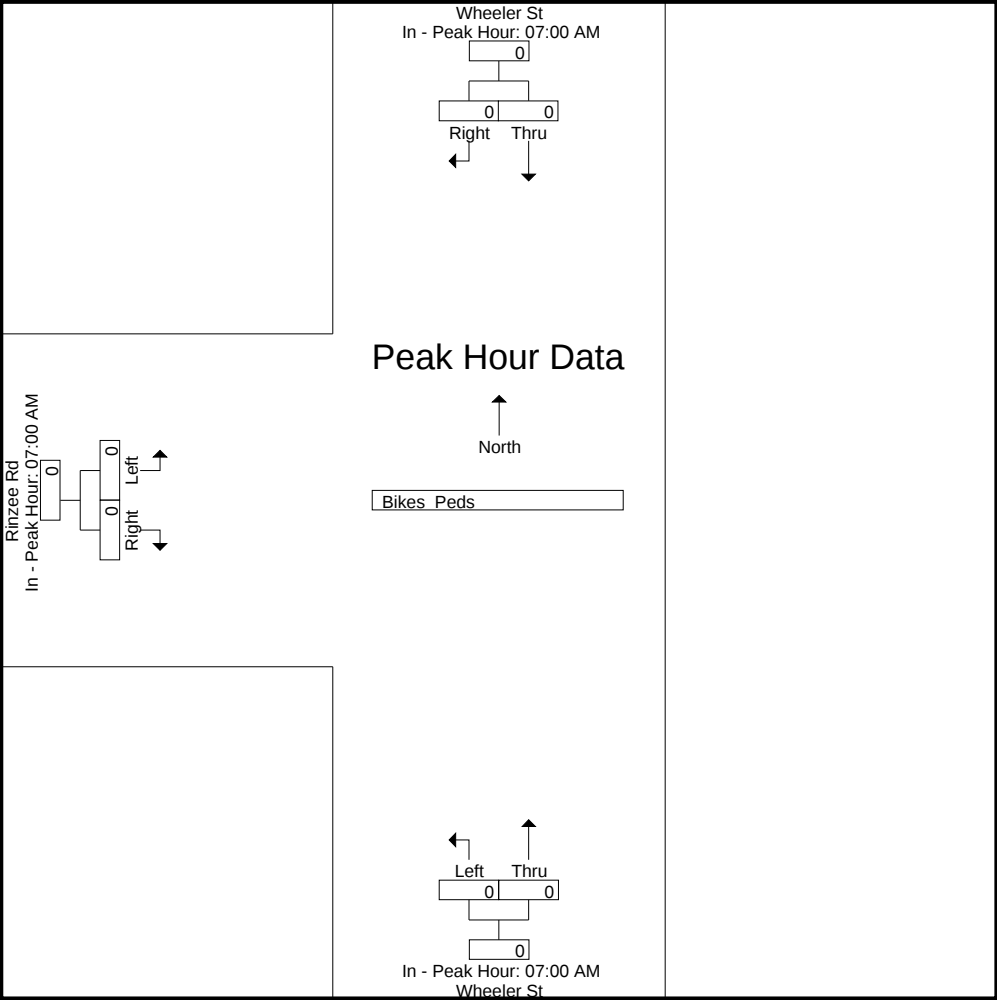
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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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 : 12



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

Page No : 1

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

978-664-2565

N/S Street : Wheeler Street

E/W Street : Rinzee Road

City/State : Methuen, MA

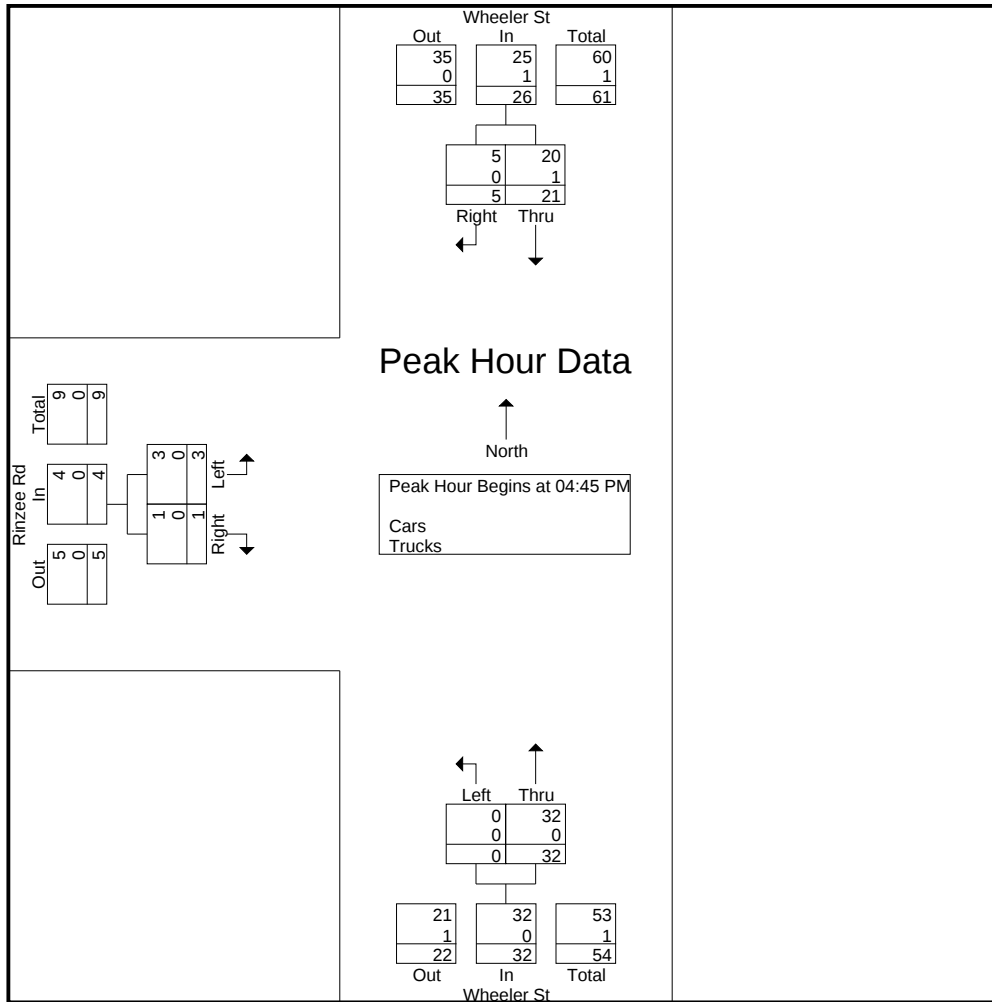
Weather : Clear

File Name : 76430002

Site Code : 76430002

Start Date : 3/7/2023

Page No : 2



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

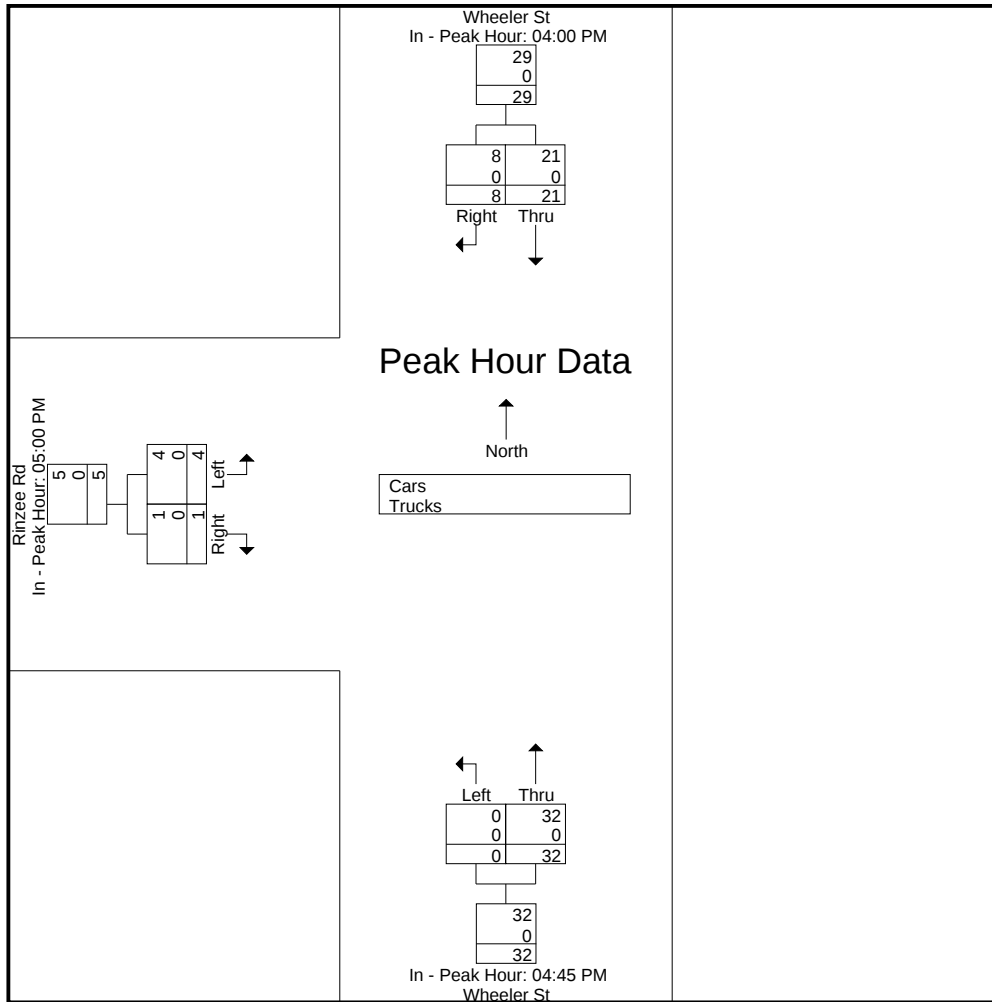
Peak Hour for Each Approach Begins at:

[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 : 3



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

Page No : 4

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	

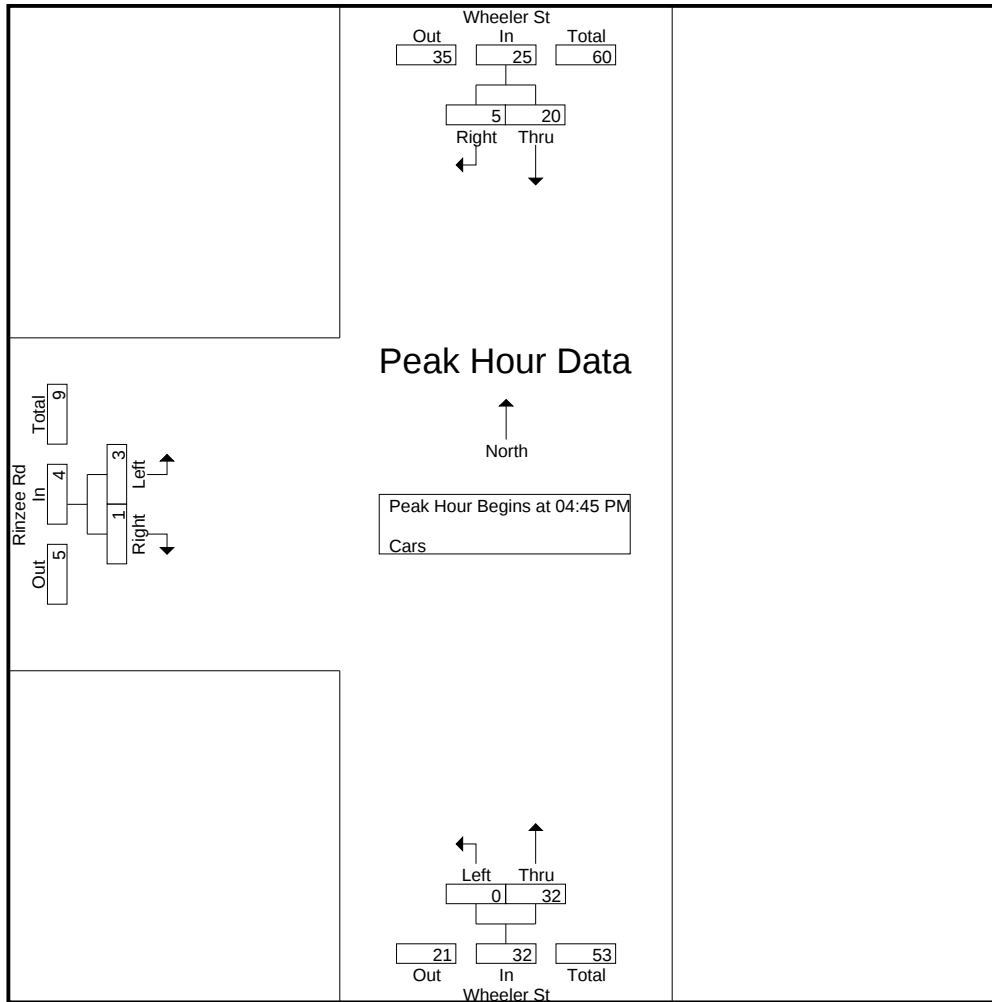
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	5	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
Page No : 5



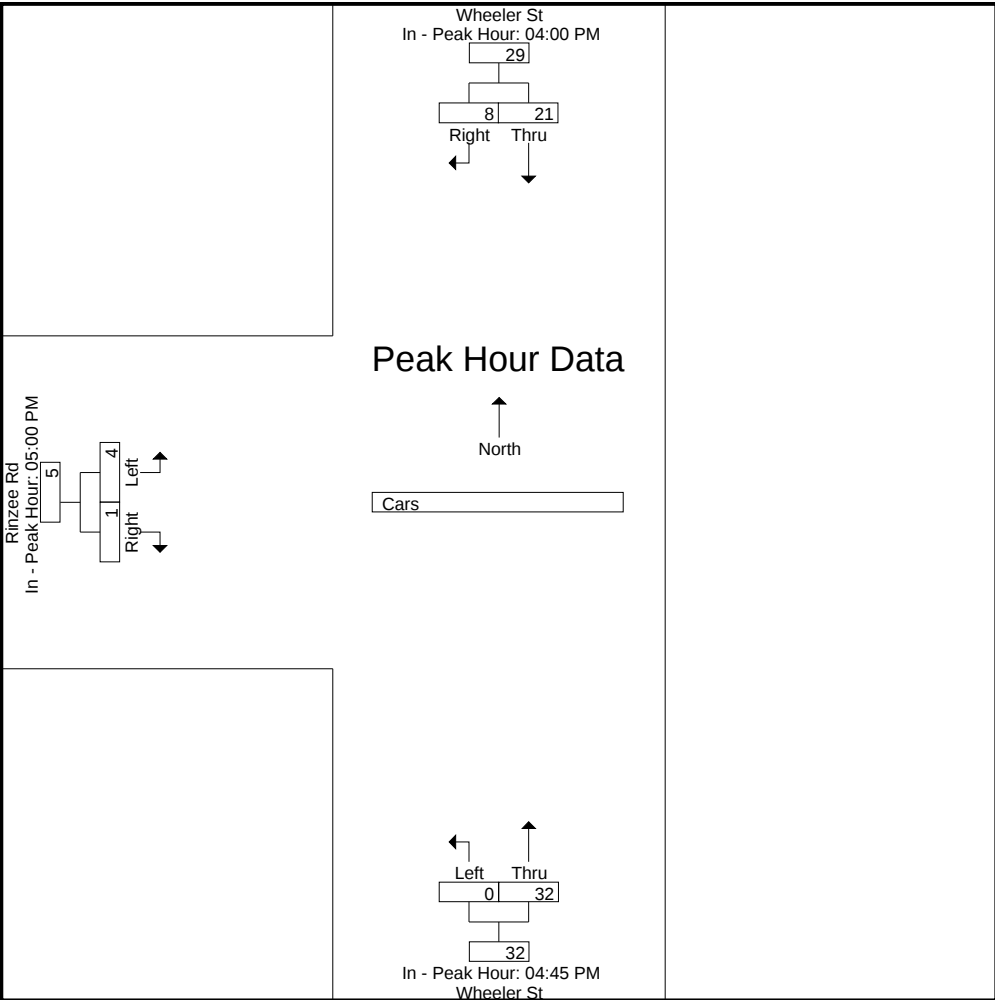
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			04:45 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



978-664-2565

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

Groups Filtered- 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	

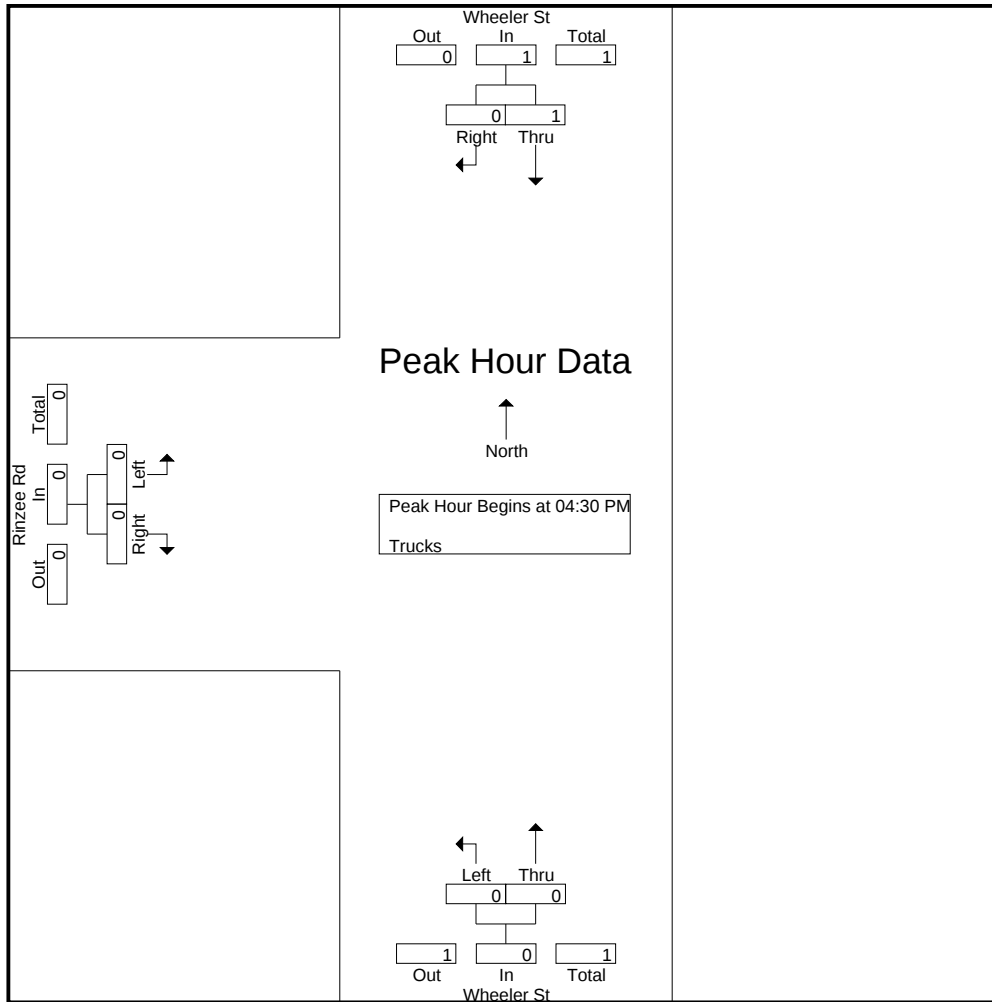
[illegible]

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
Page No : 8



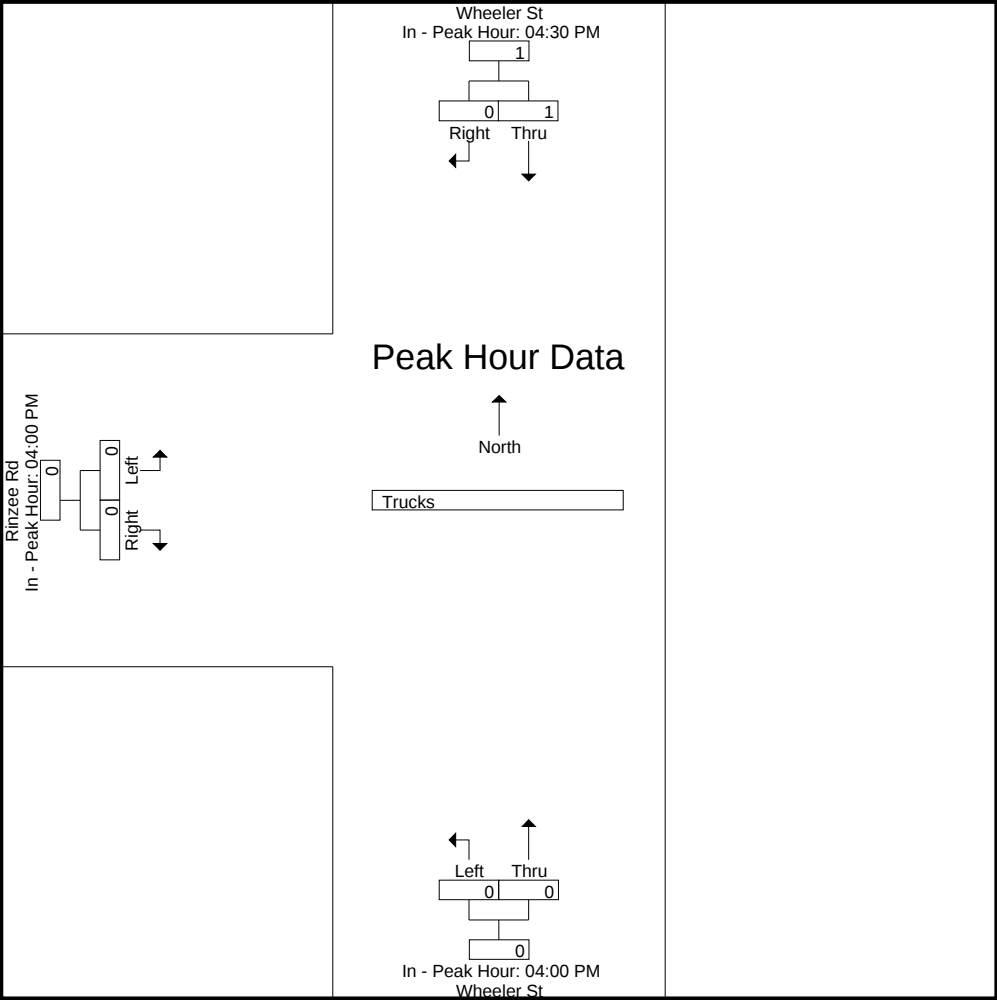
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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

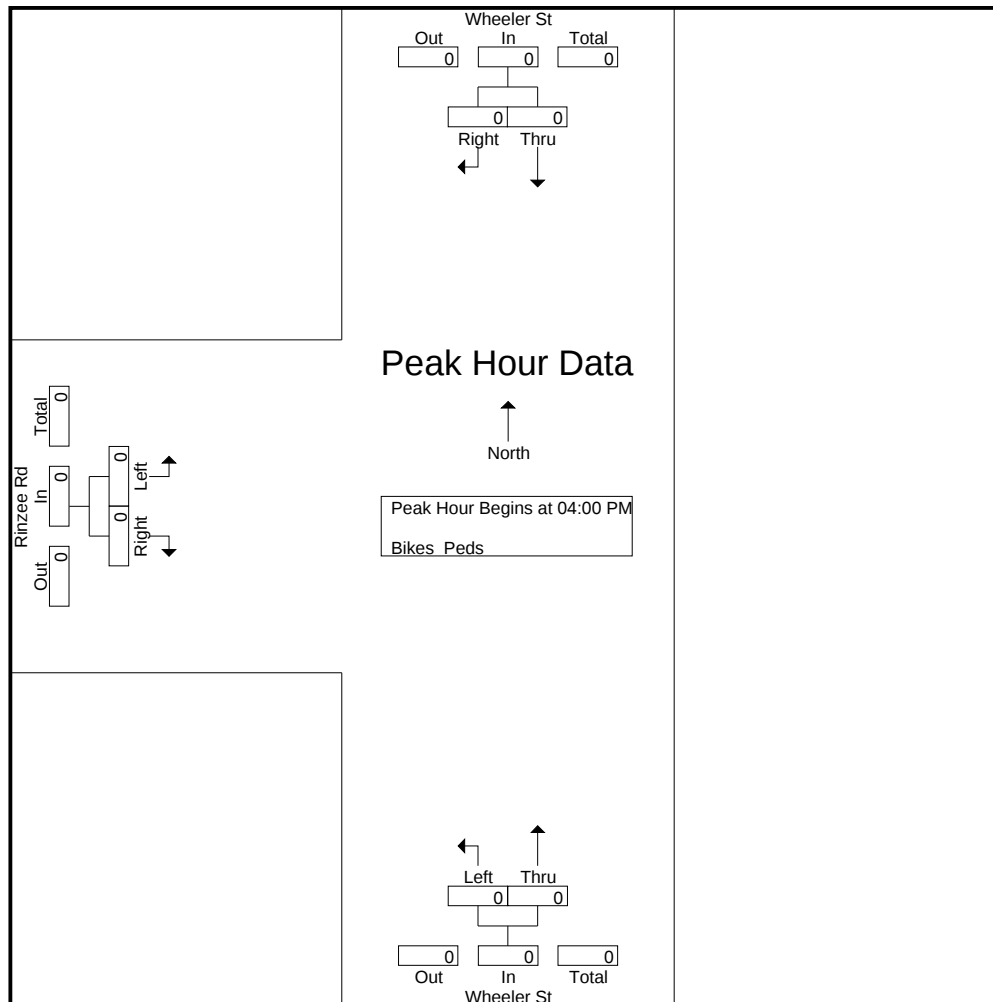
	Wheeler St From North			Wheeler St From South			Rinzee Rd From West			Exclu. Total			Inclu. Total		Int. Total	
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int. Total				
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0			
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0			
04:30 PM	0	0	0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

[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



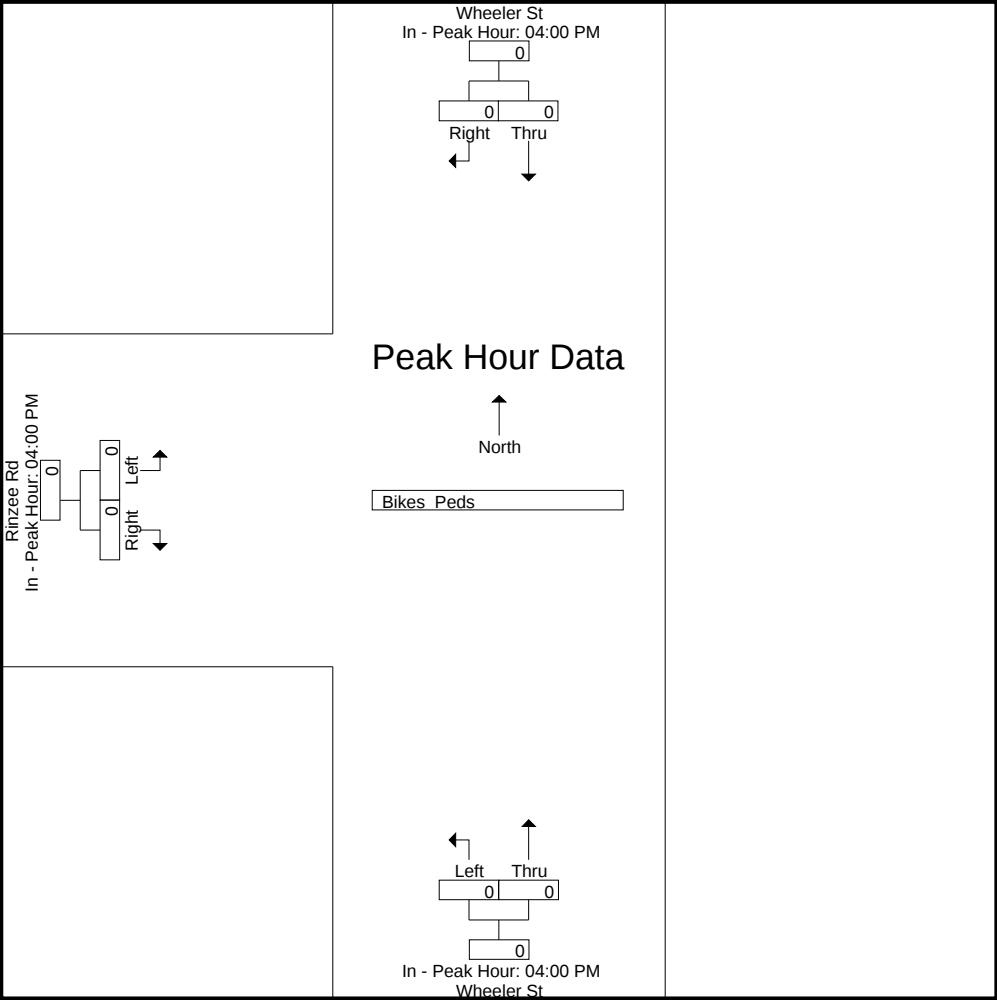
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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

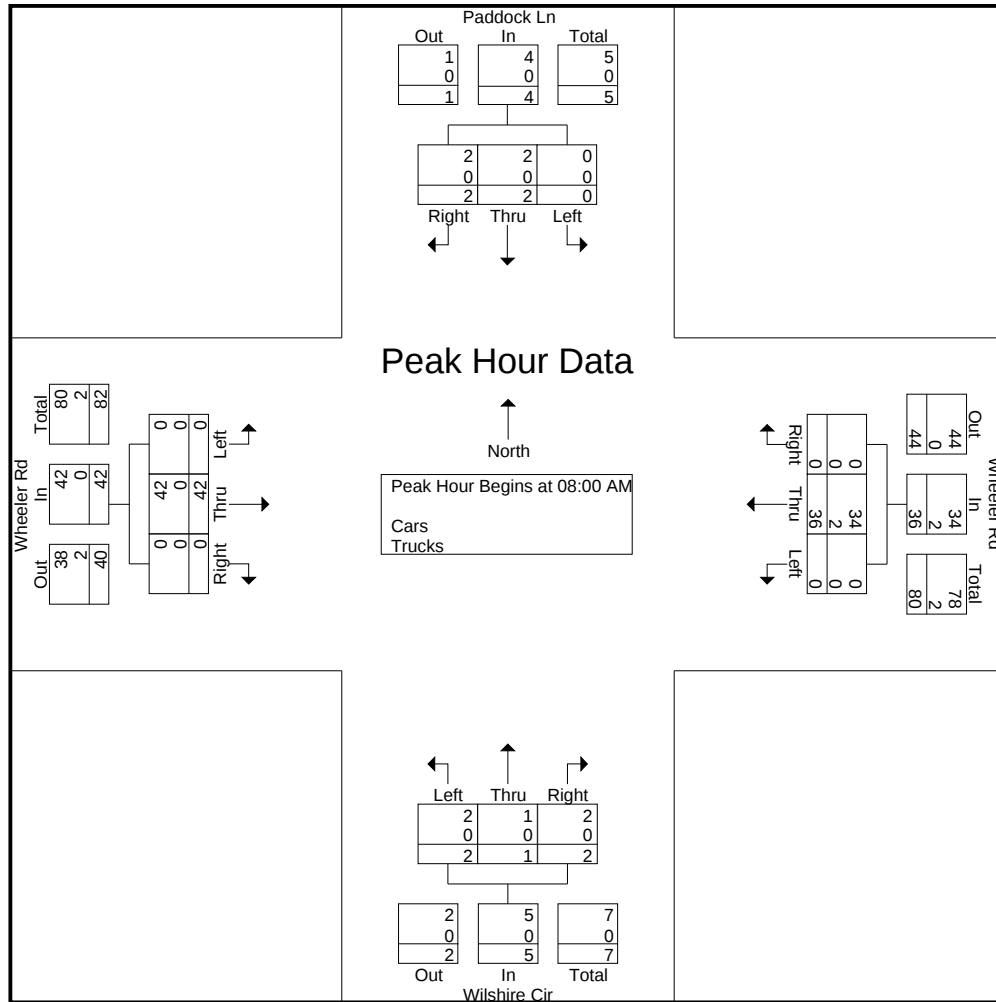
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 2



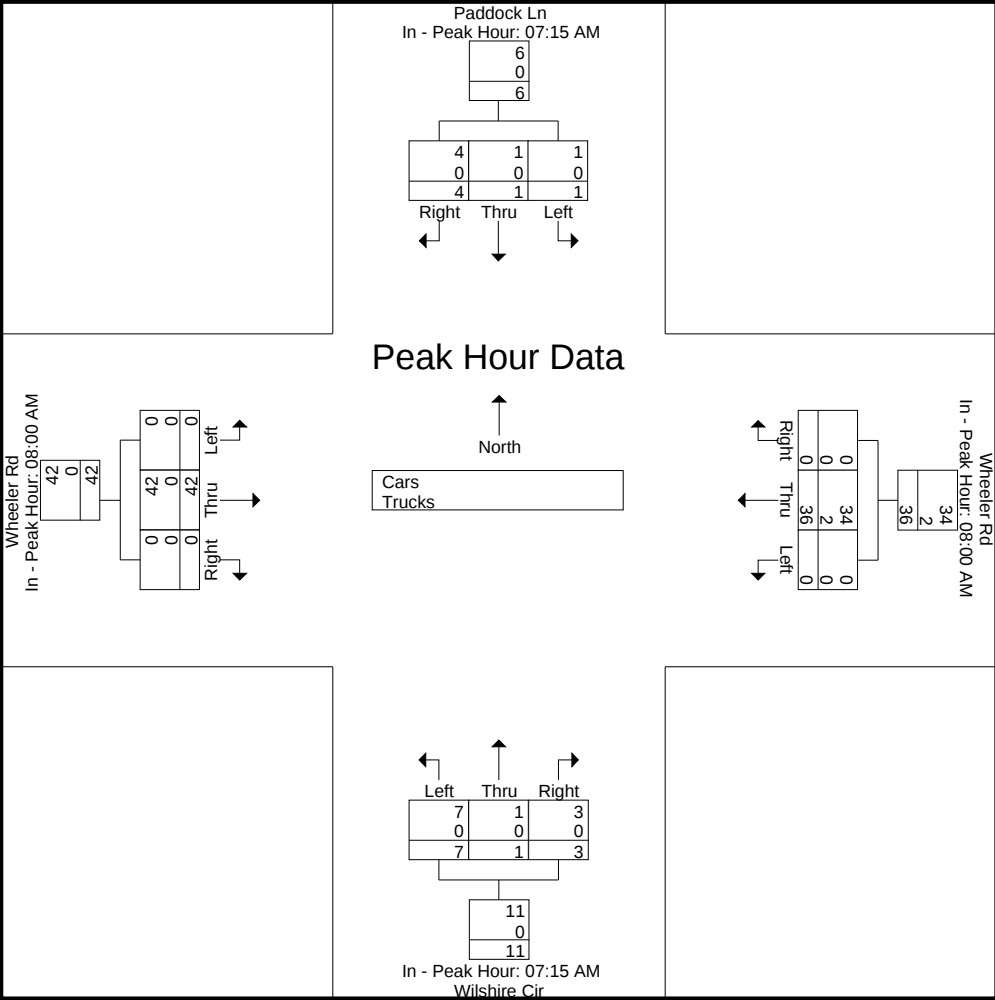
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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

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	
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

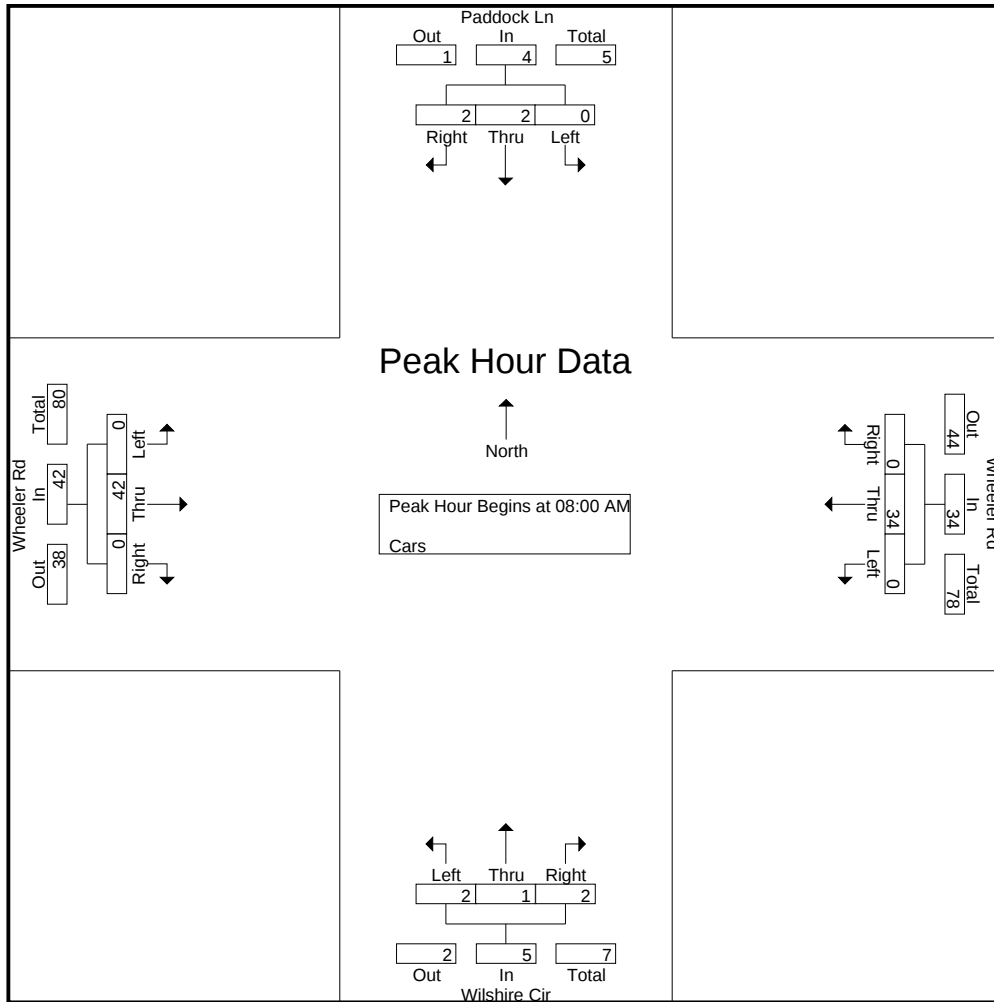
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 5



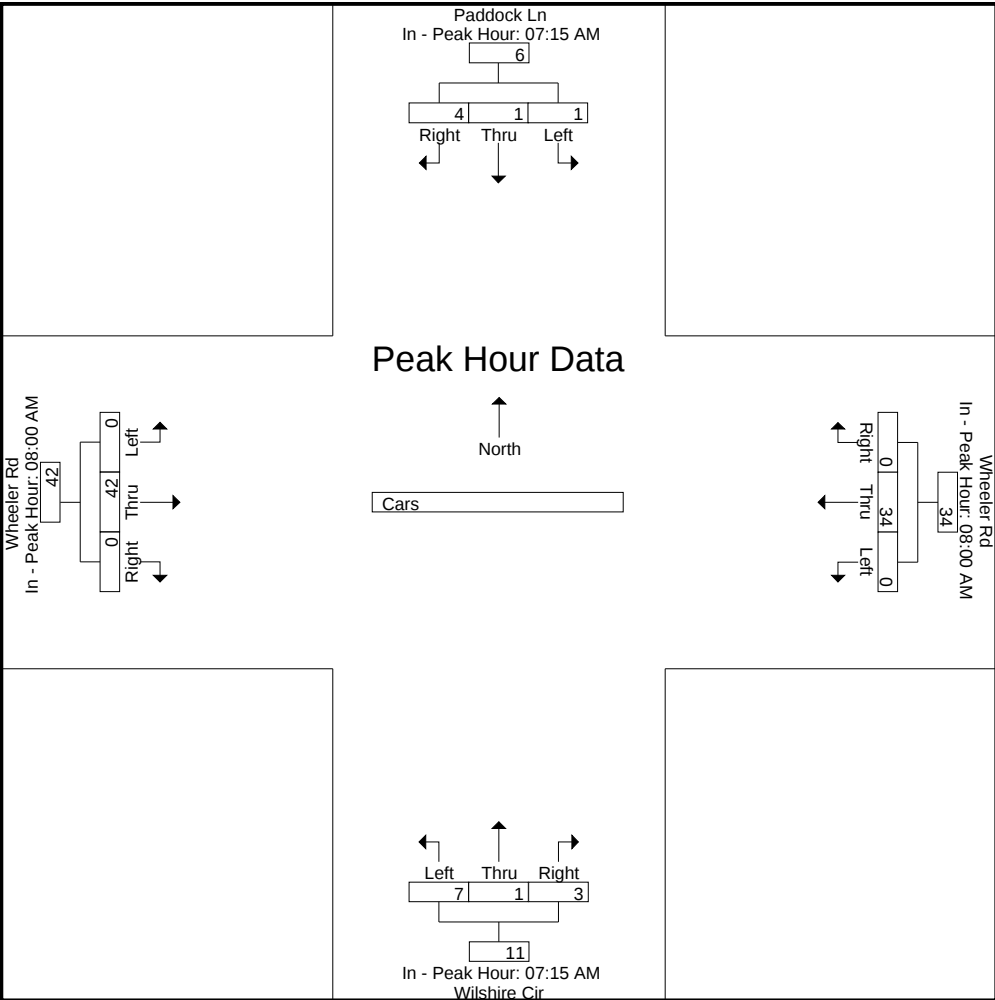
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 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
Page No : 6



978-664-2565

Page No : 7

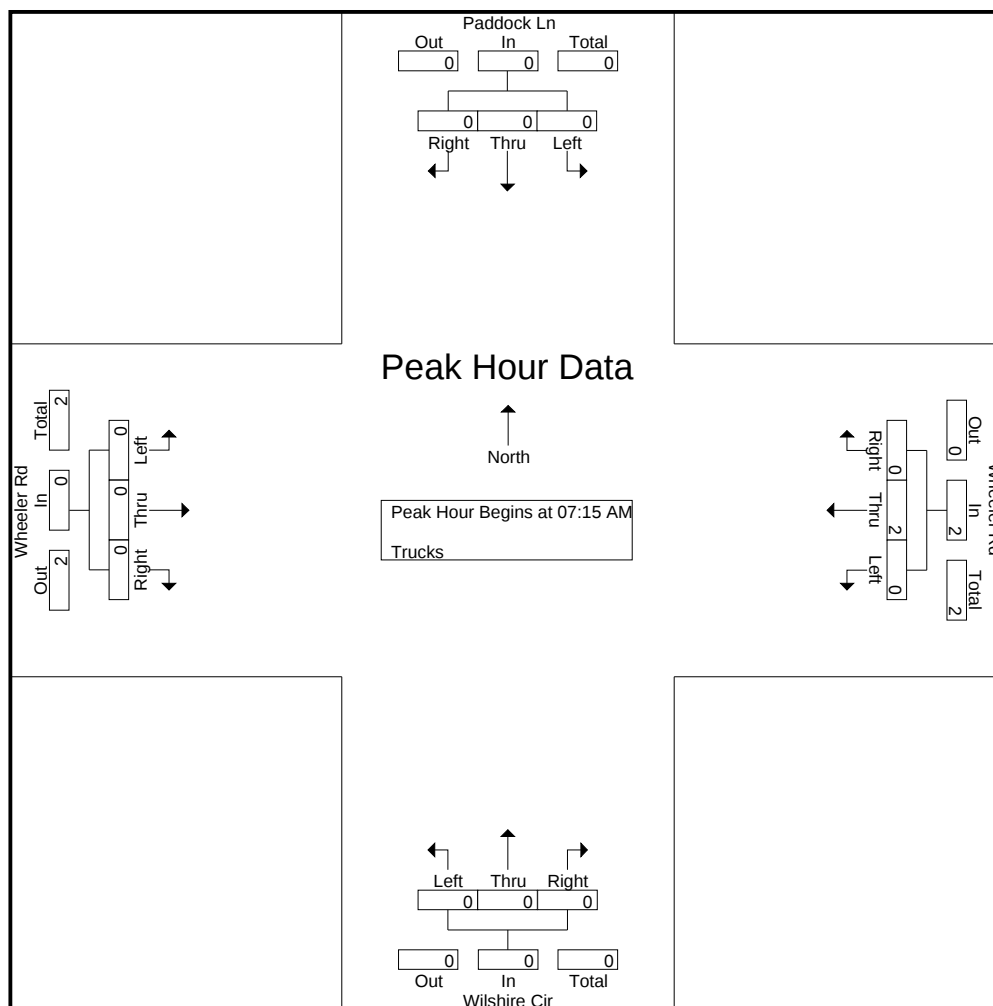
	Paddock Ln From North			Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	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

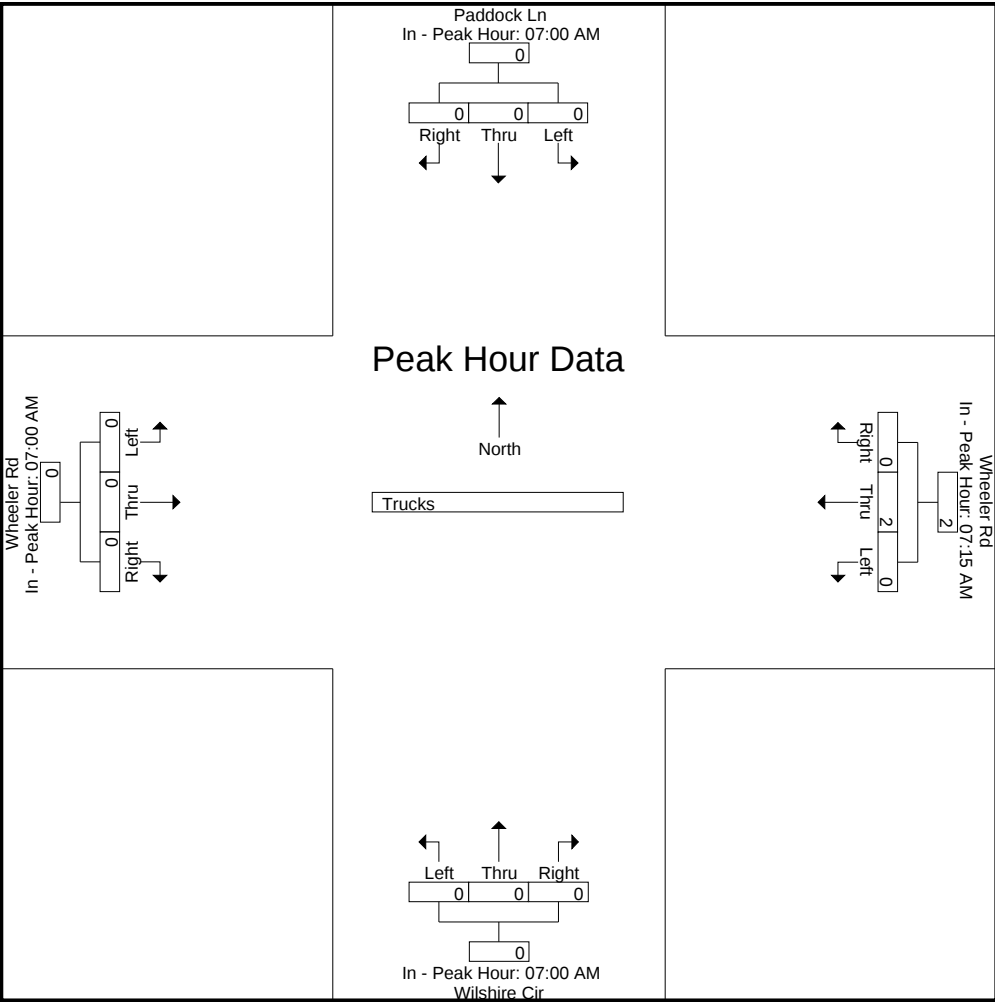


Peak Hour for Each Approach Begins at:

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



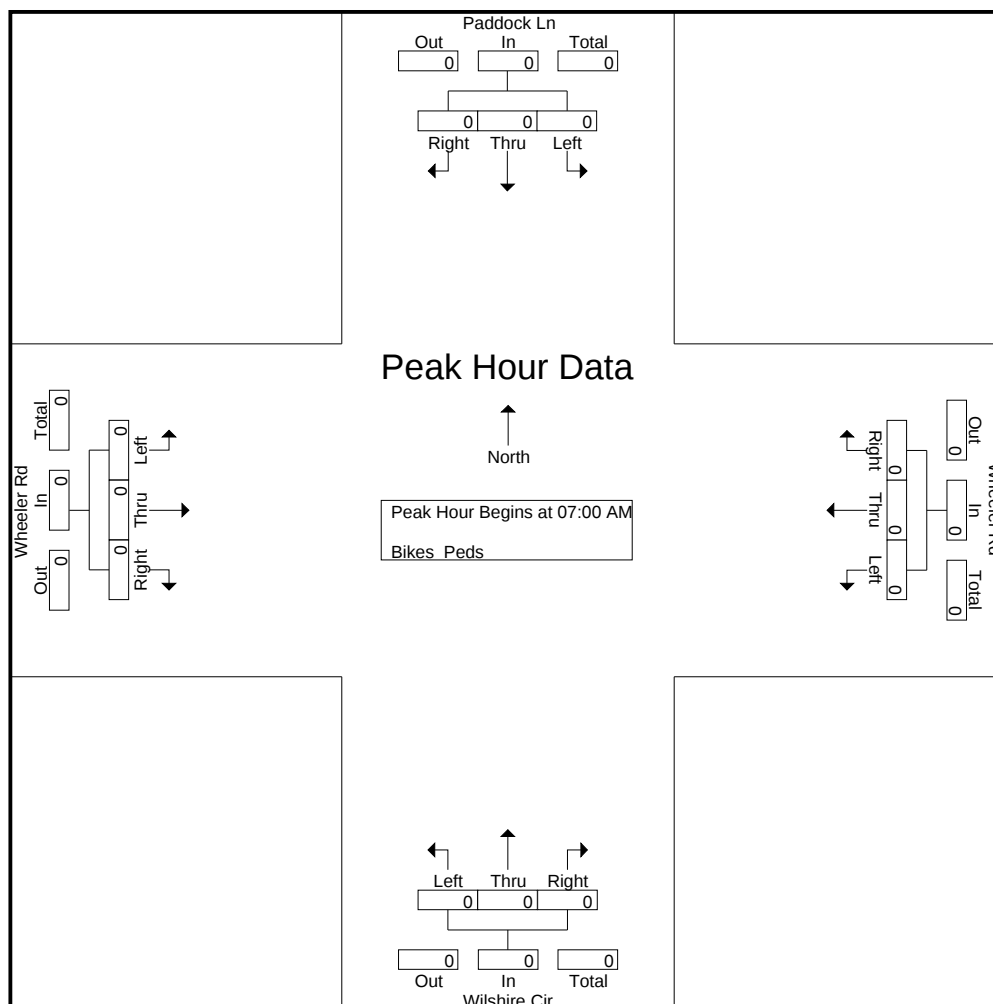
978-664-2565

Page No : 10

[illegible]

978-664-2565

File Name : 76430003
Site Code : 76430003
Start Date : 3/7/2023
Page No : 11

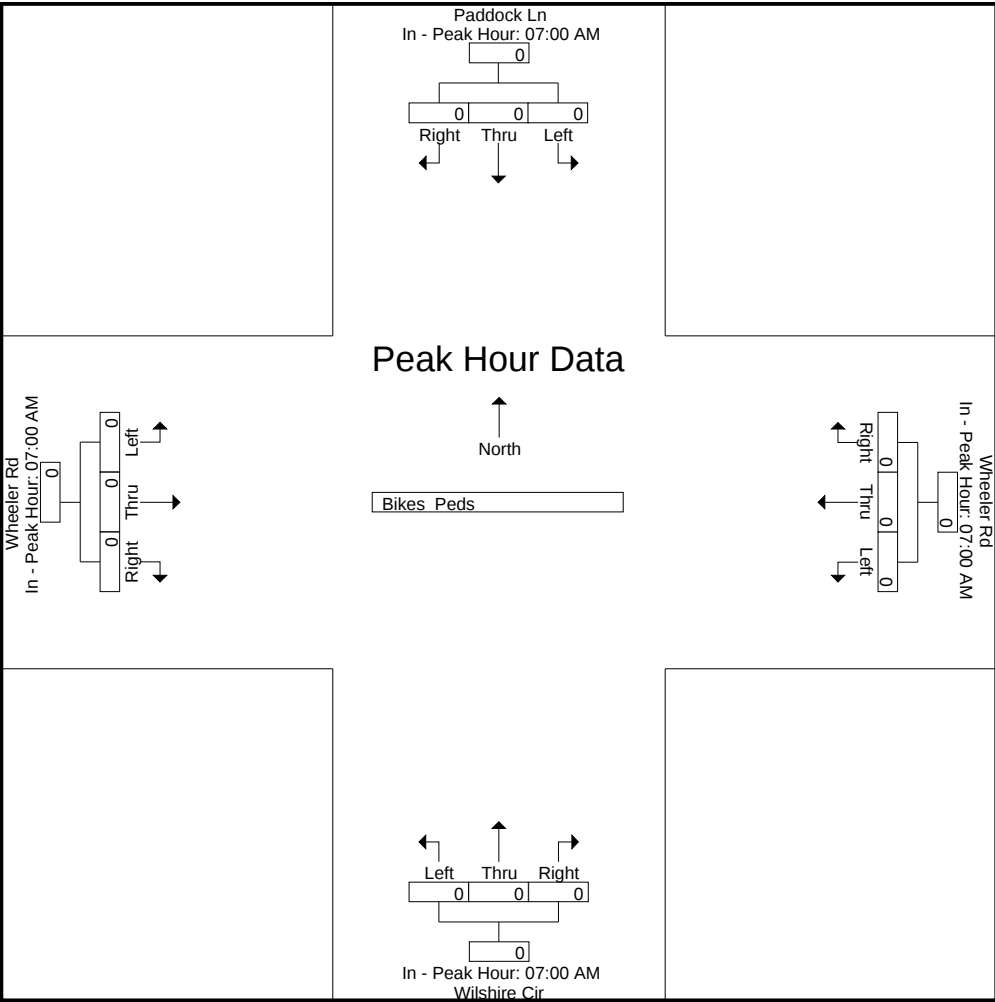


Peak Hour for Each Approach Begins at:

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

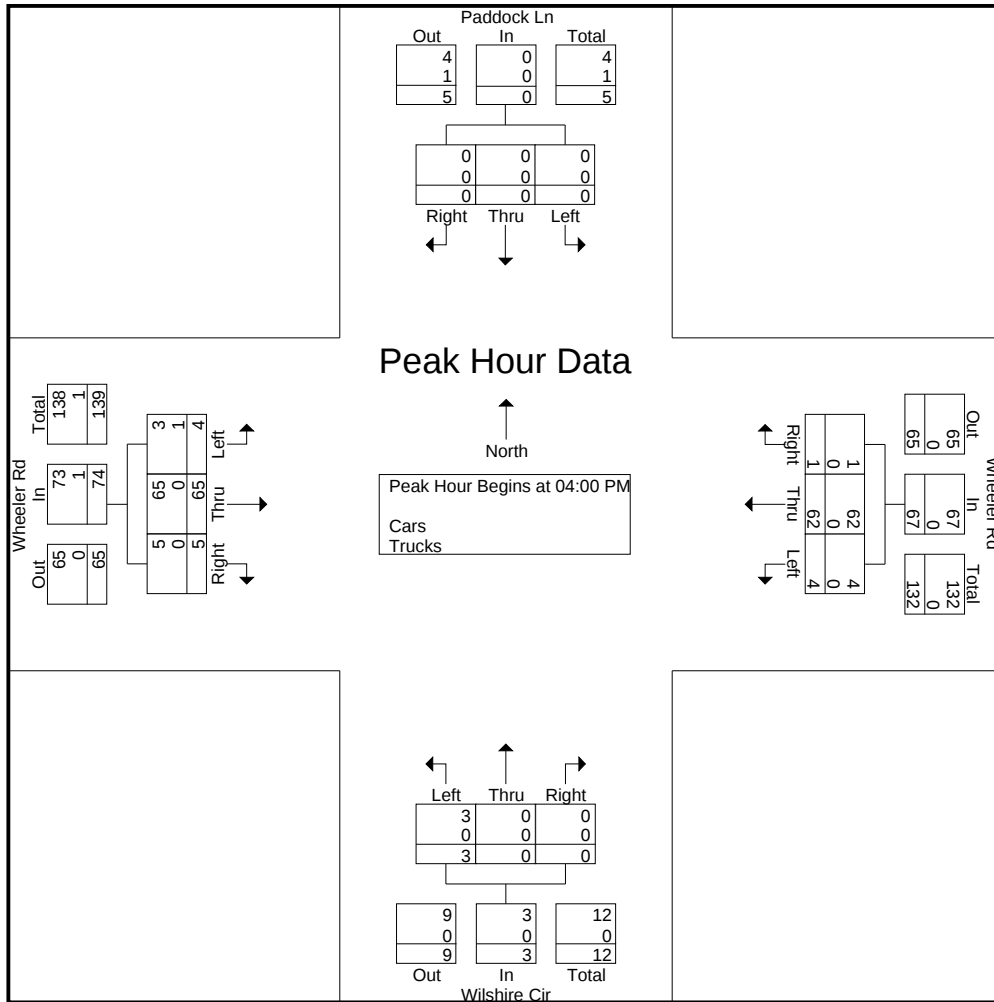
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 2



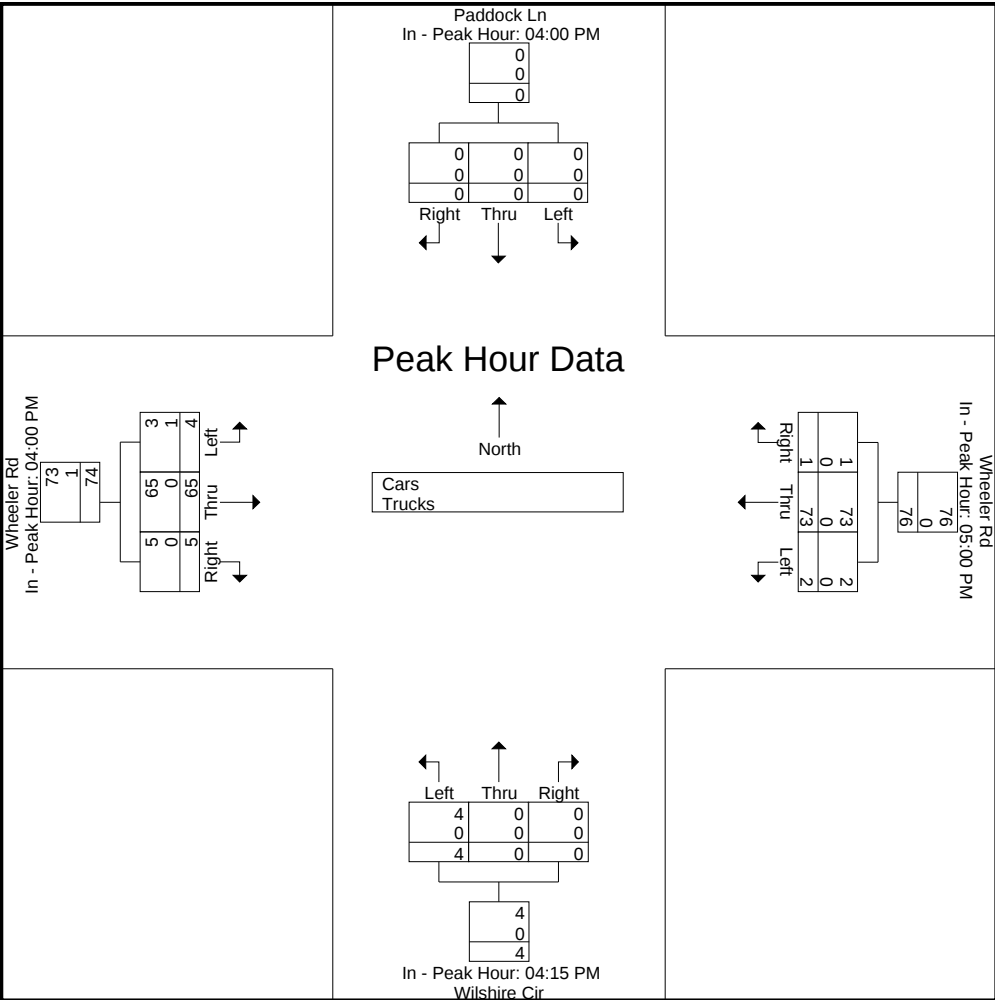
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				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

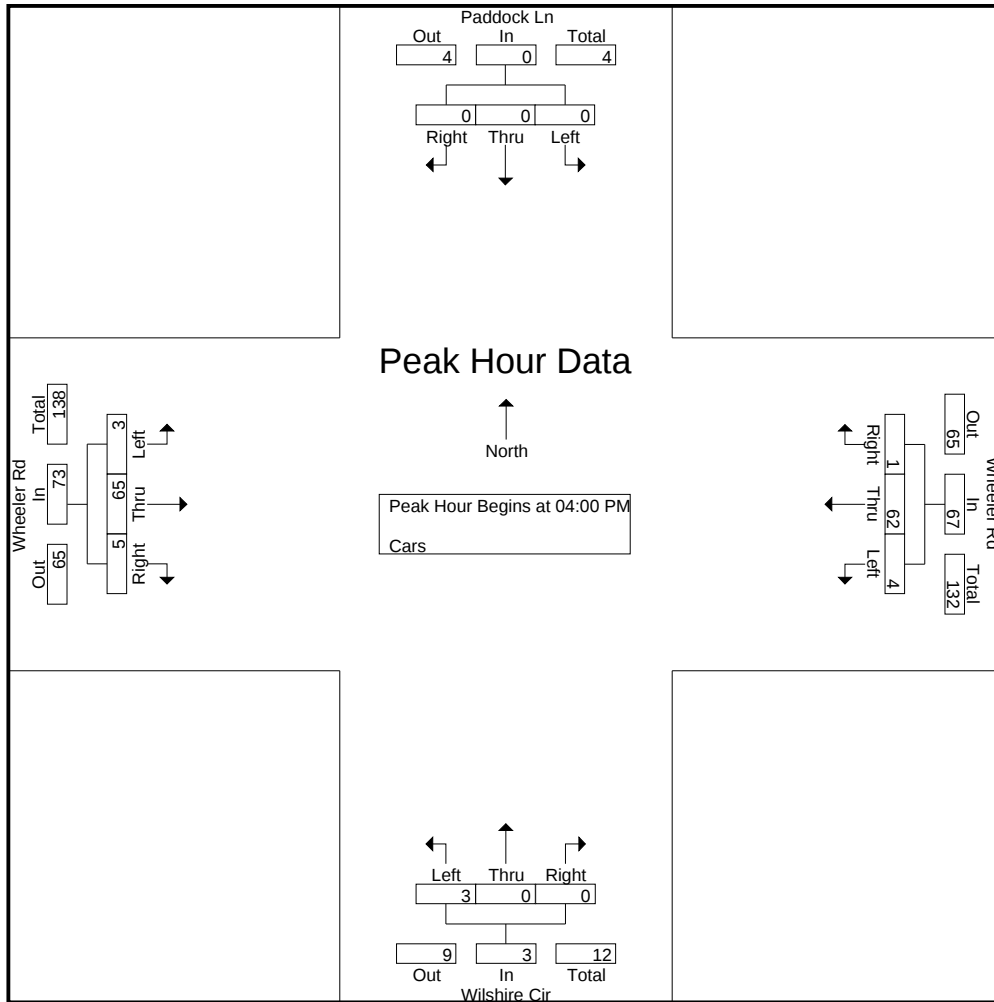
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 5



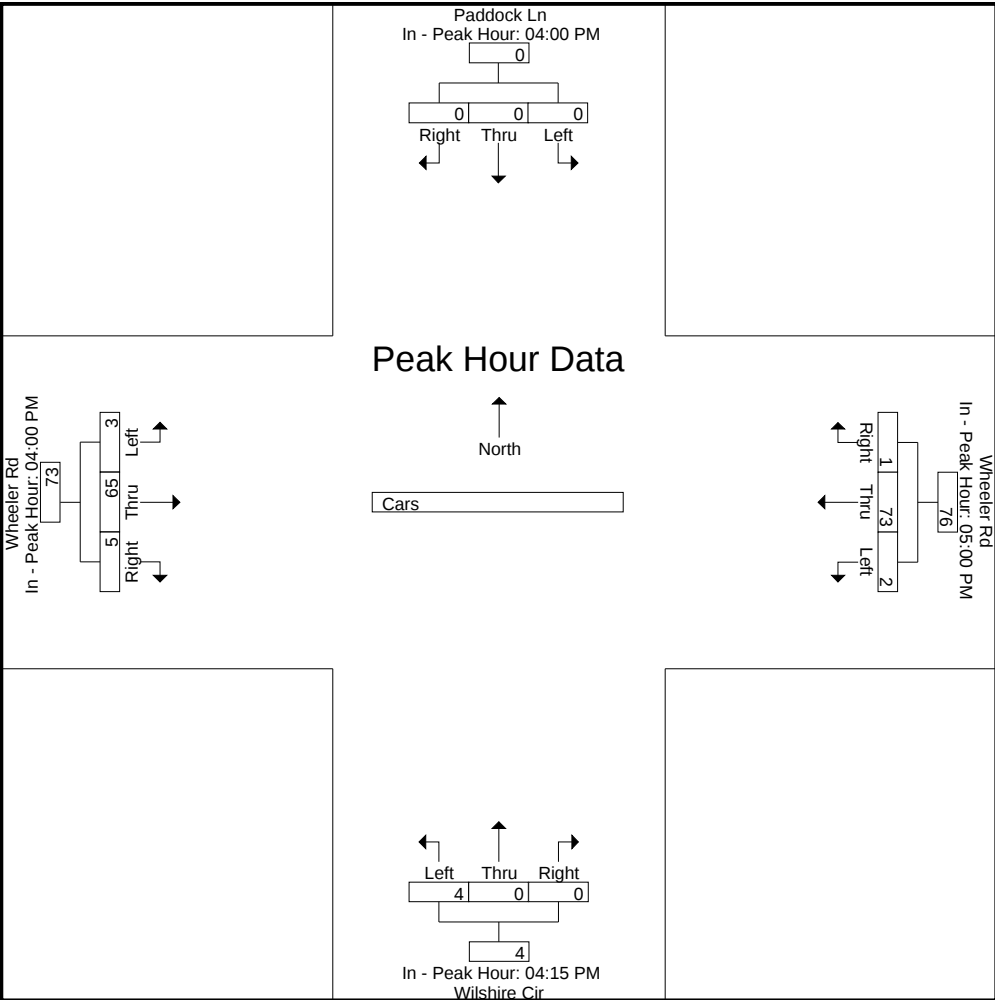
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				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
Page No : 6



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 : 7

Groups Printed- 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	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				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	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

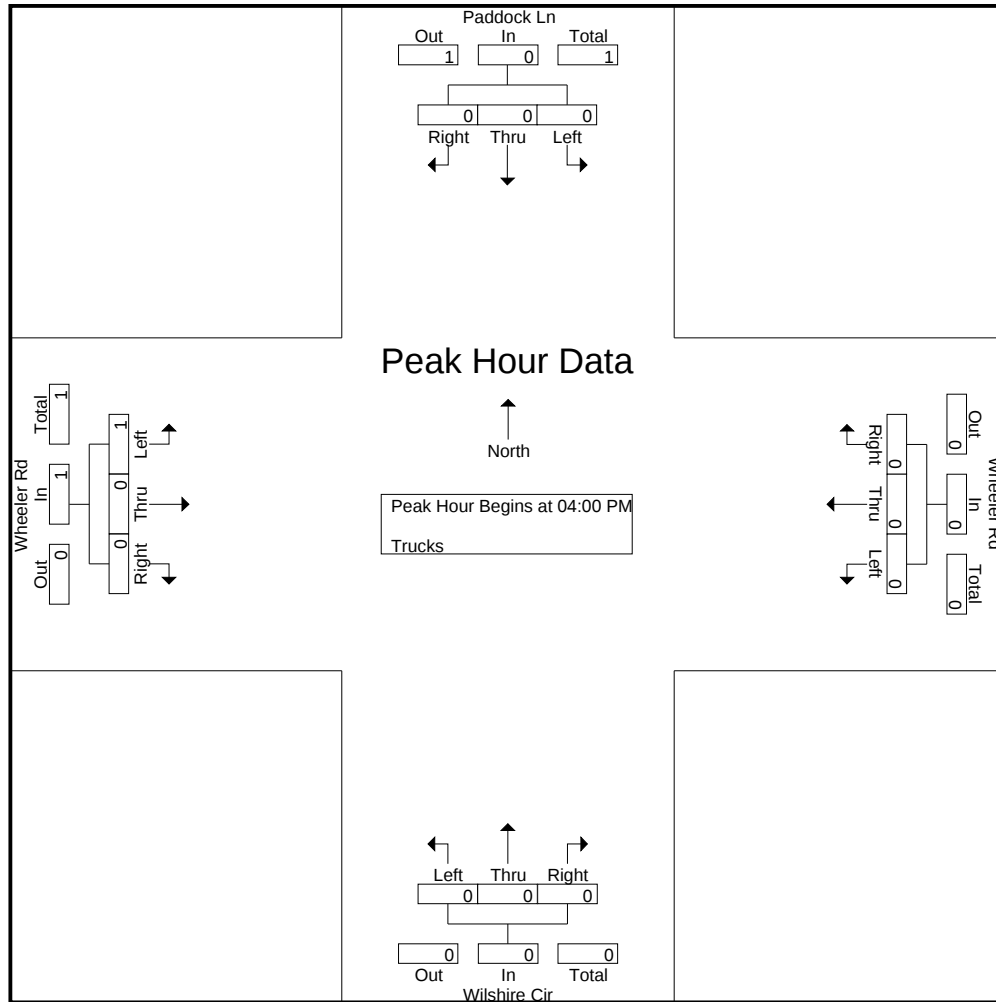
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 8



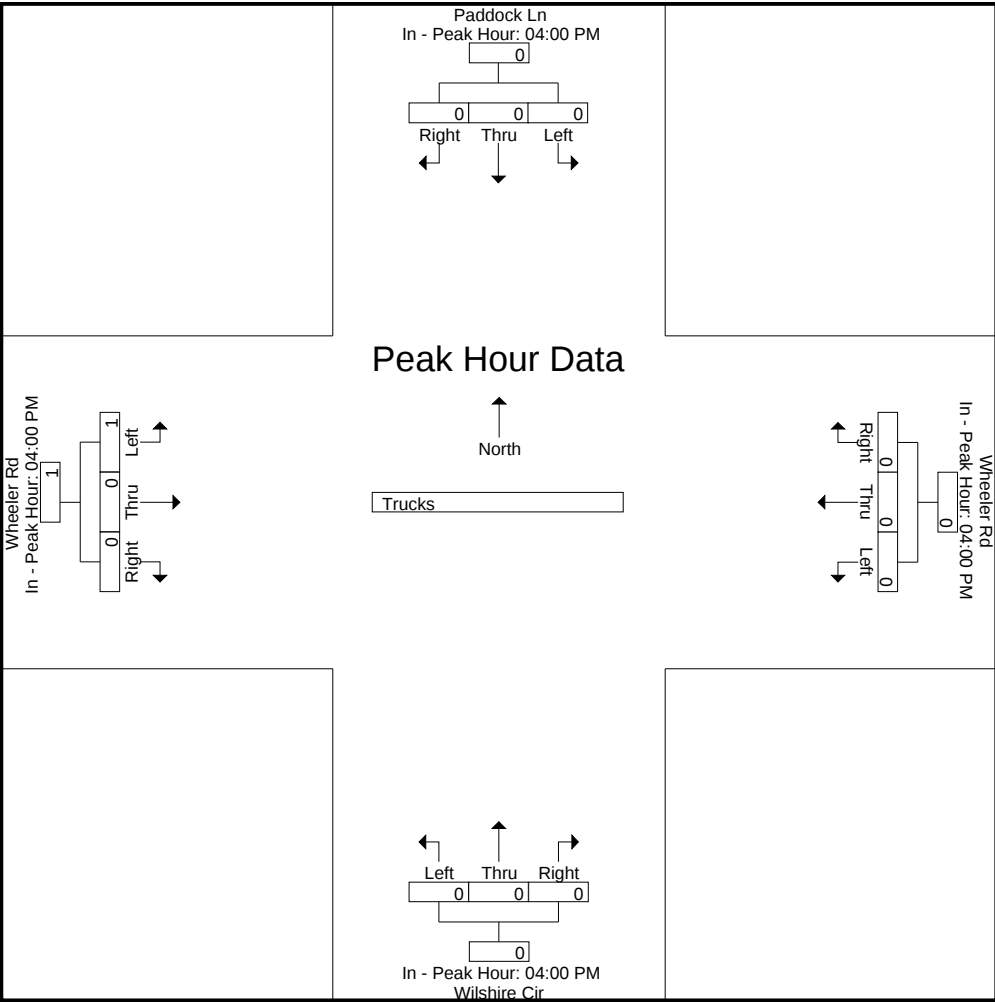
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				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	100
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
Page No : 9



978-664-2565

Page No : 10

[illegible]

978-664-2565

N/S Street : Paddock Ln / Wilshire Cir

E/W Street : Wheeler Road

City/State : Dracut, MA

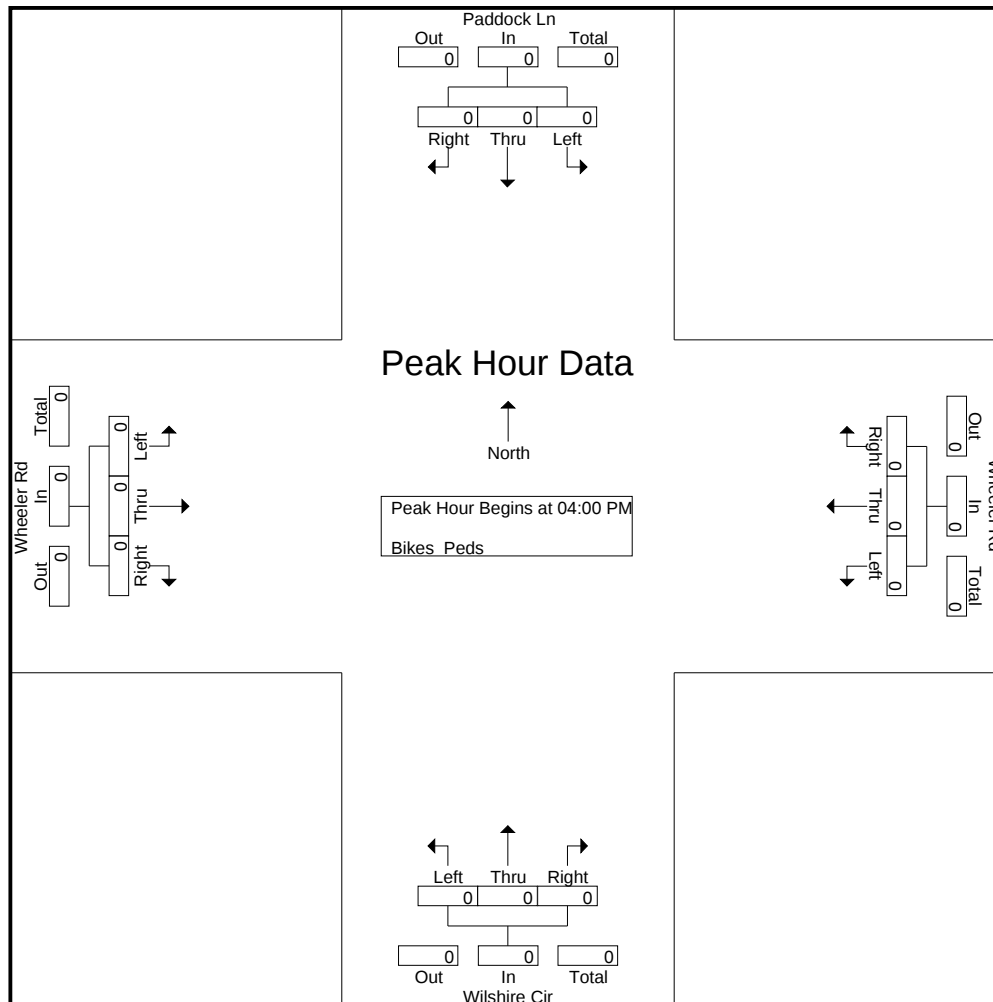
Weather : Clear

File Name : 76430003

Site Code : 76430003

Start Date : 3/7/2023

Page No : 11



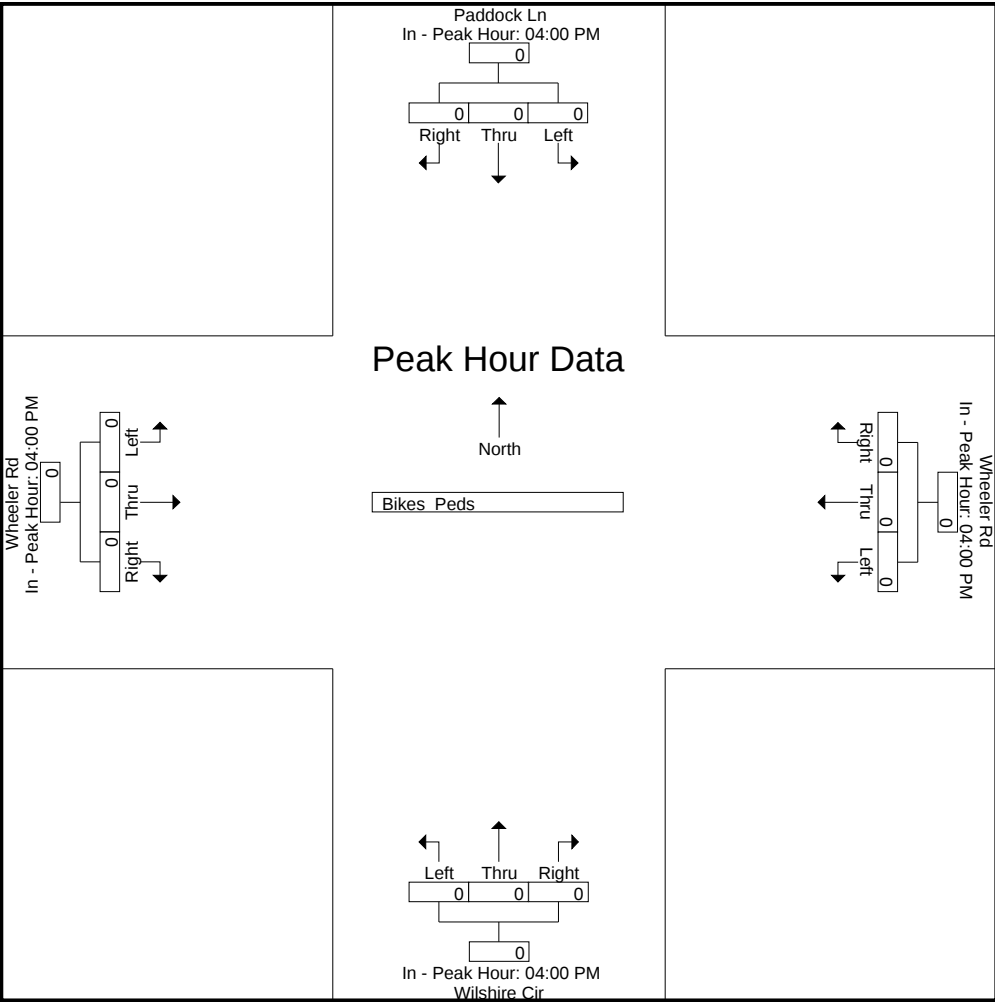
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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 : 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 : 1

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

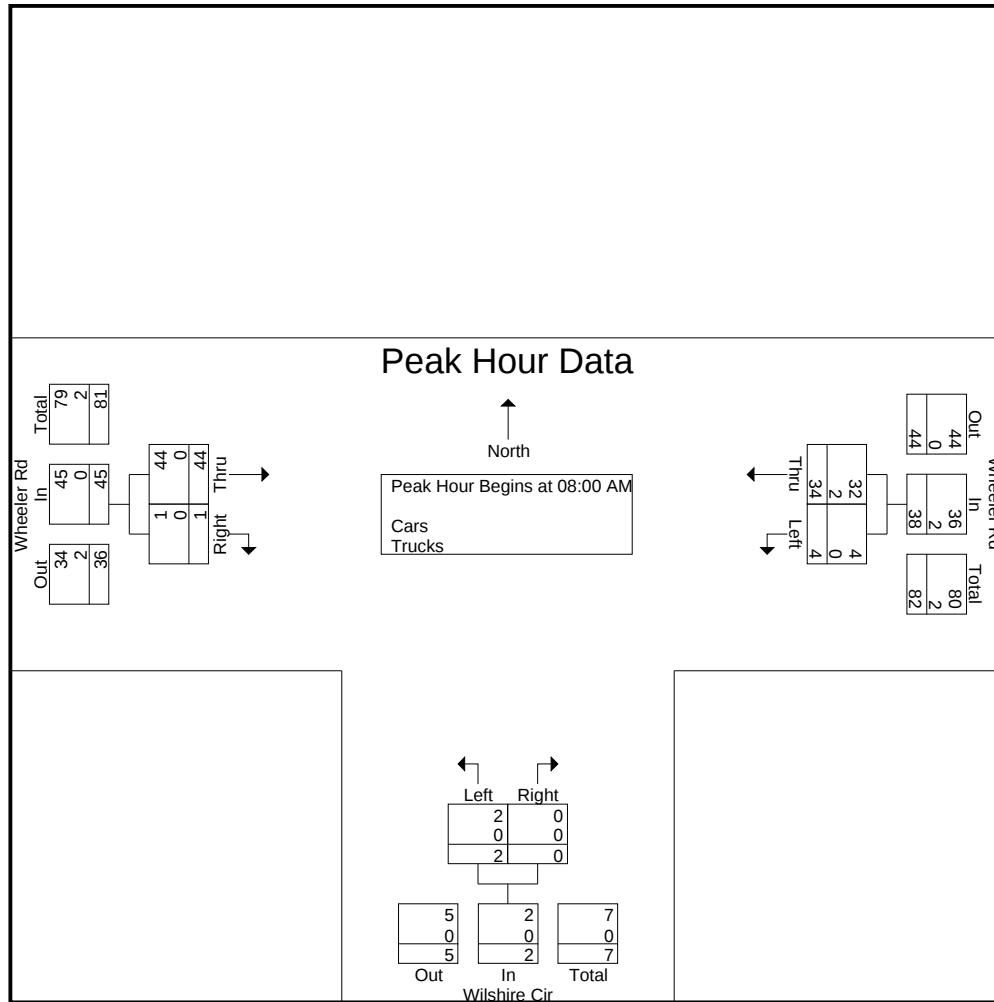
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	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
Page No : 2



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

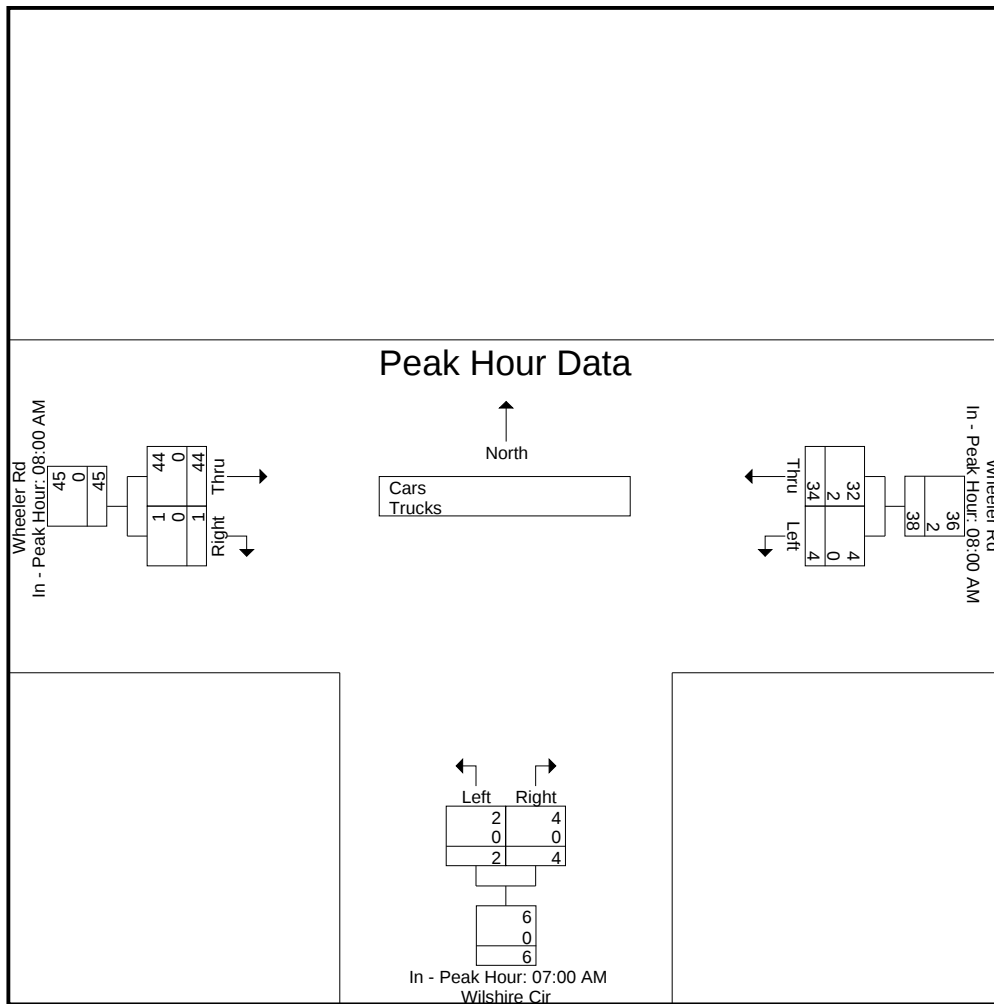
Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 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
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

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	

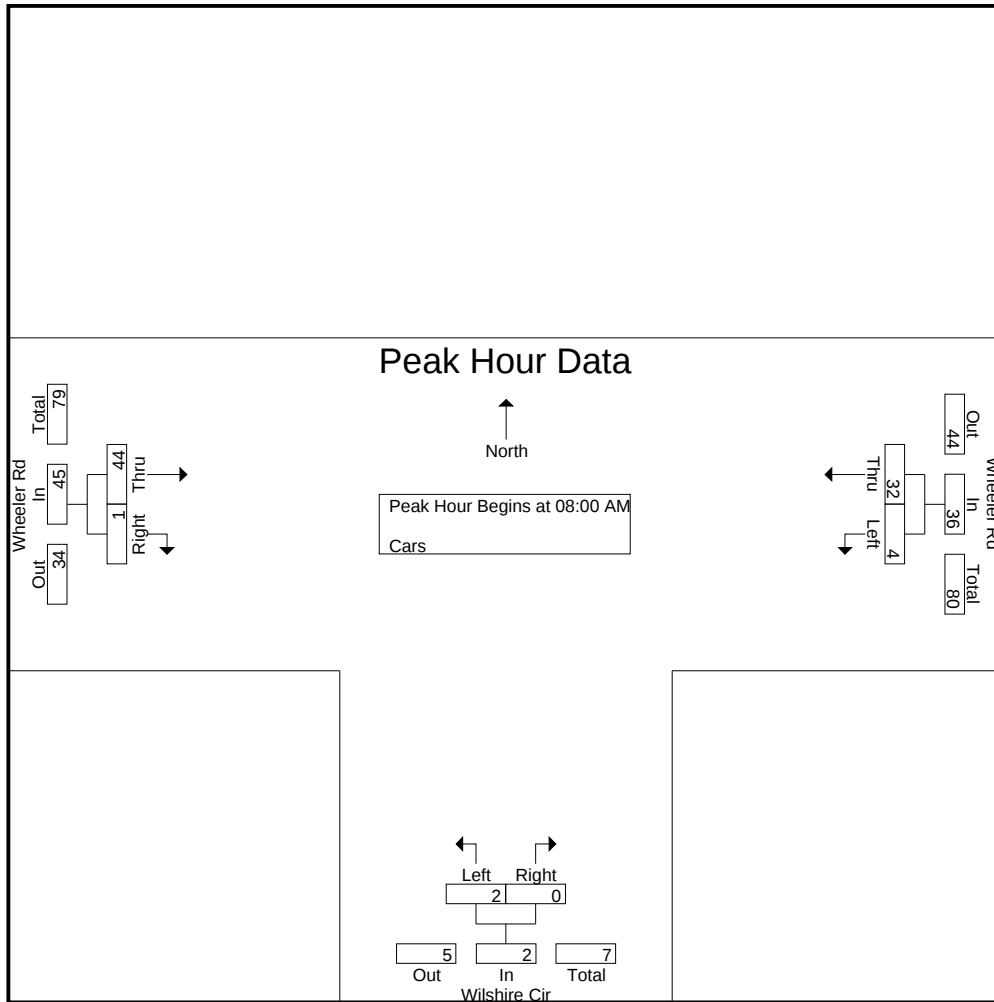
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	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
Page No : 5



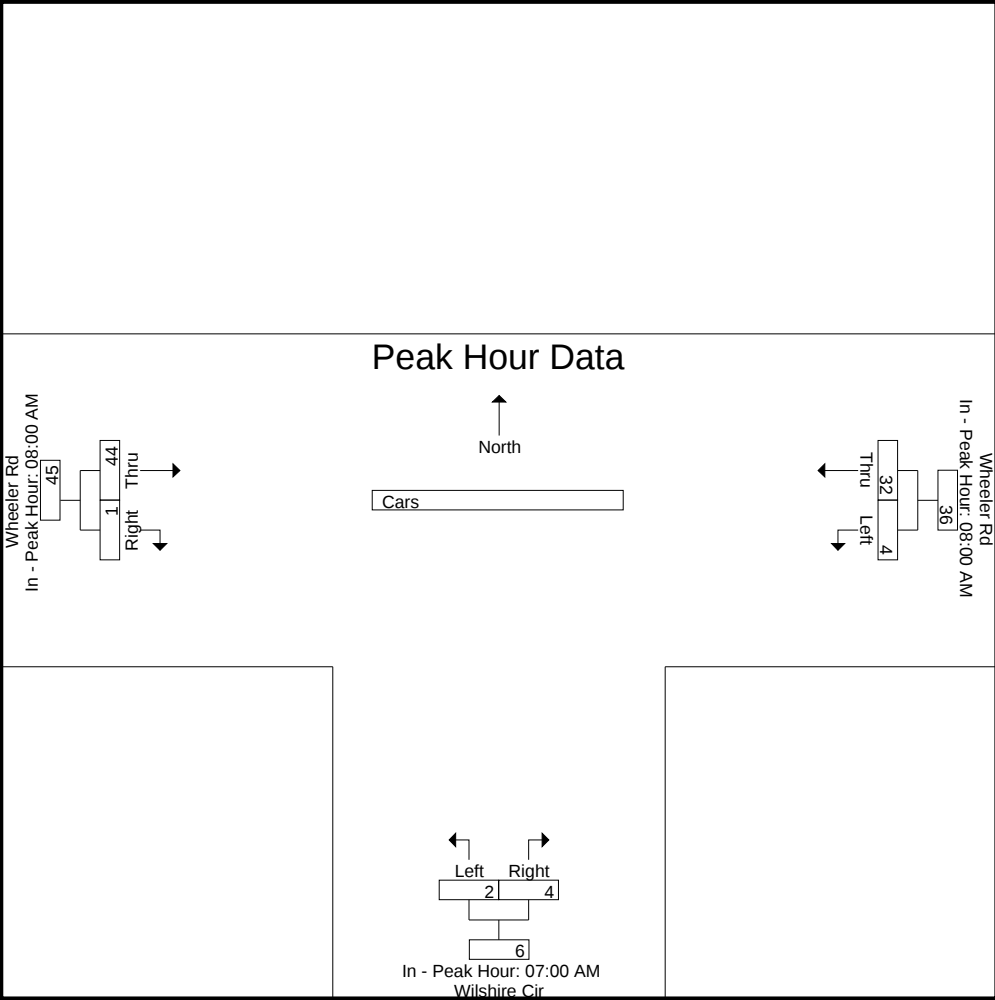
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 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



978-664-2565

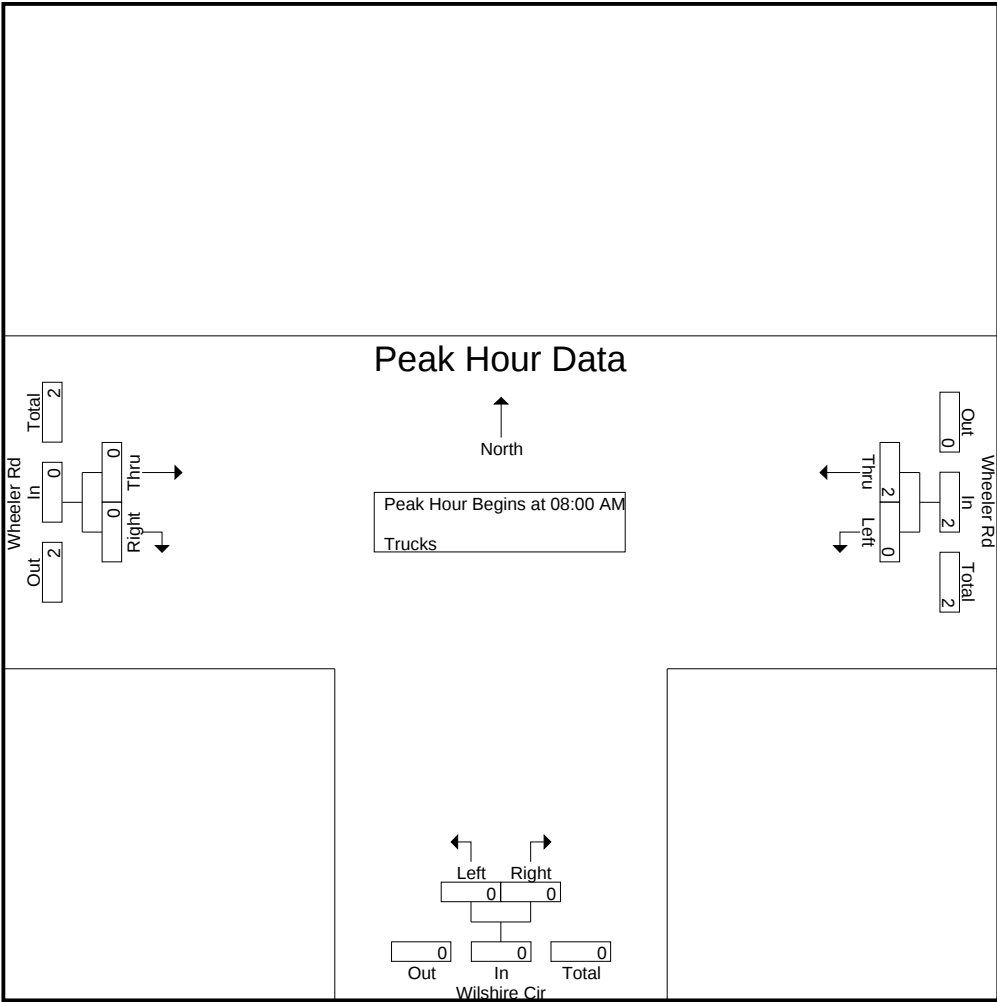
File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 7

Groups Printed- 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	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
Page No : 8

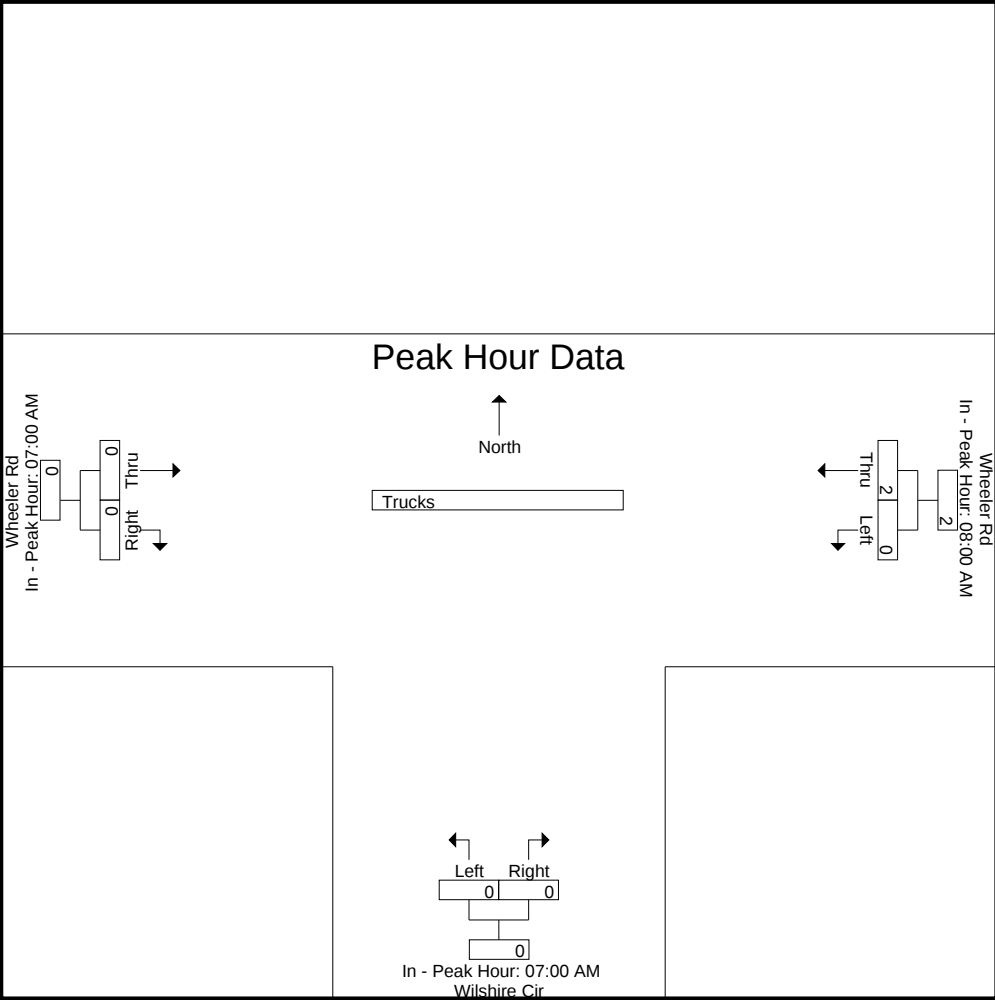


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	1	1	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.	0	1	1	0	0	0	0	0	0
Total Volume	0	2	2	0	0	0	0	0	0
% App. Total	0	100		0	0		0	0	
PHF	.000	.500	.500	.000	.000	.000	.000	.000	.000

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 : 9



978-664-2565

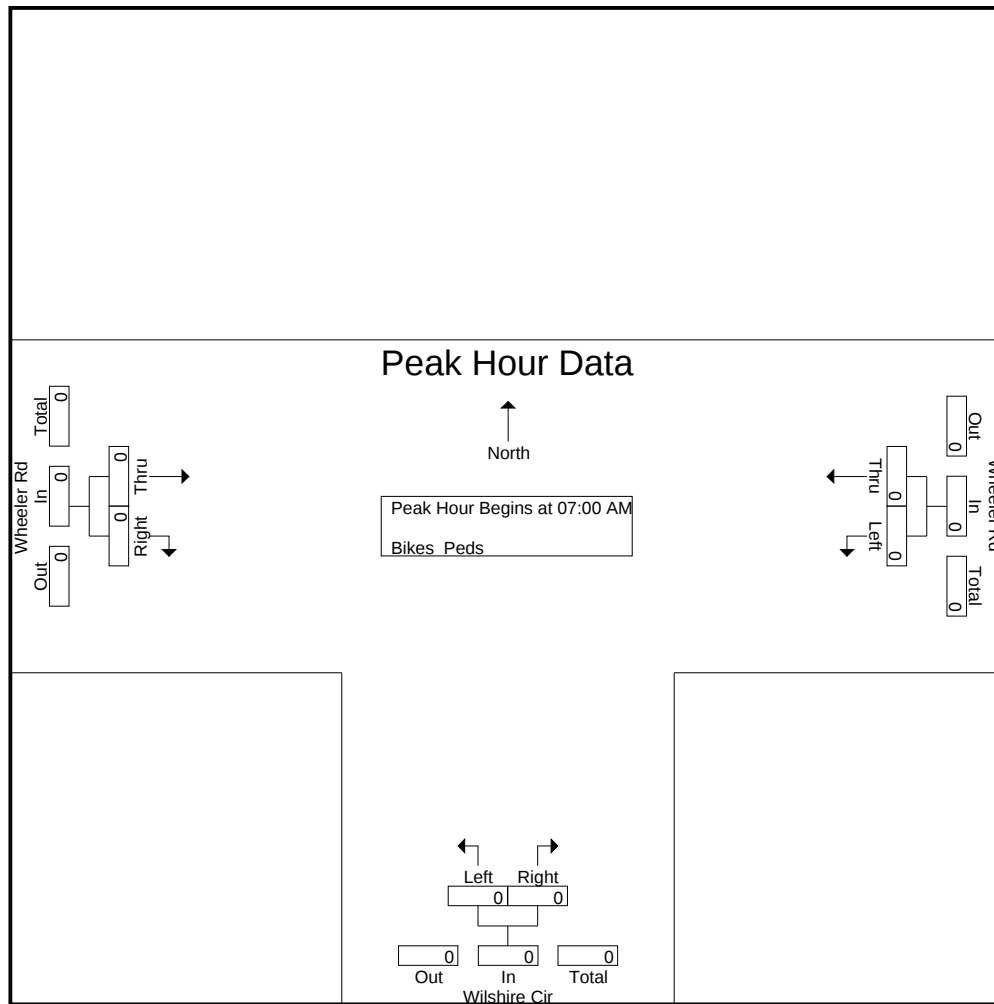
Page No : 10

[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

Page No : 1

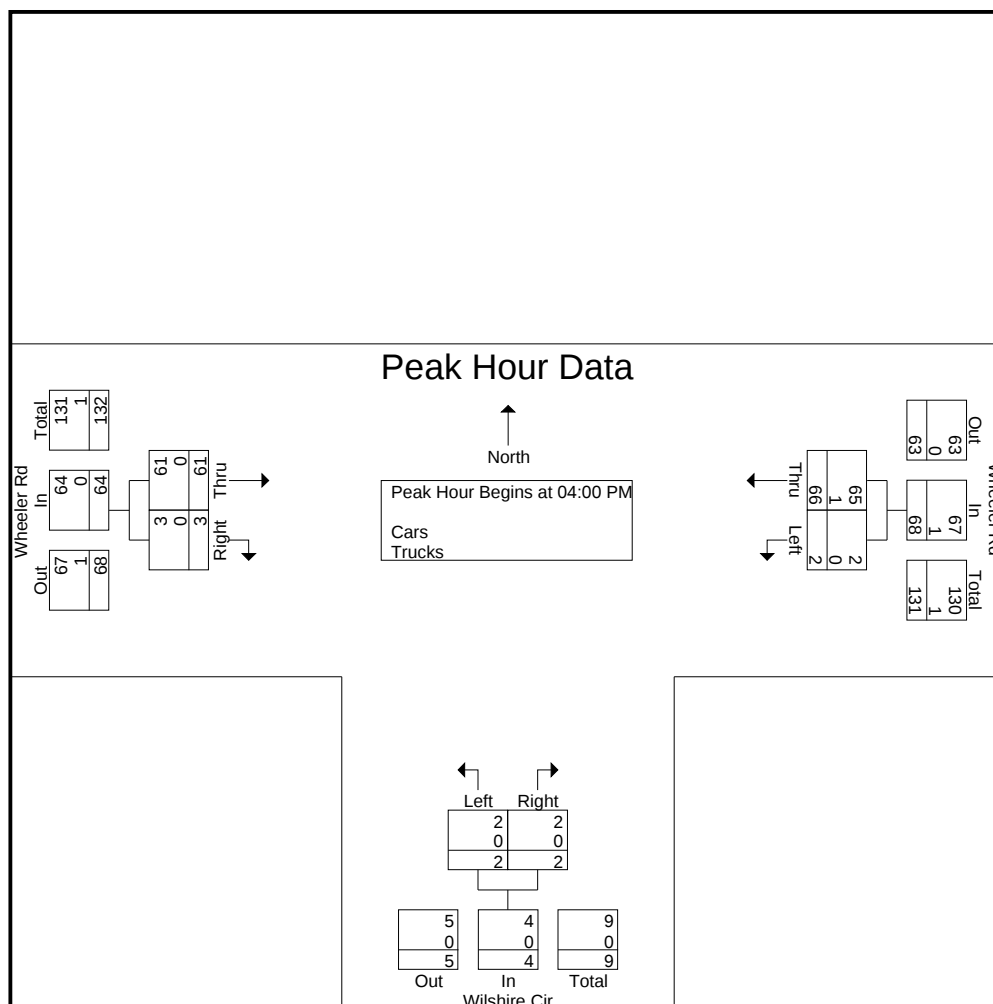
Groups Printed- Cars - Trucks

	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

978-664-2565

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

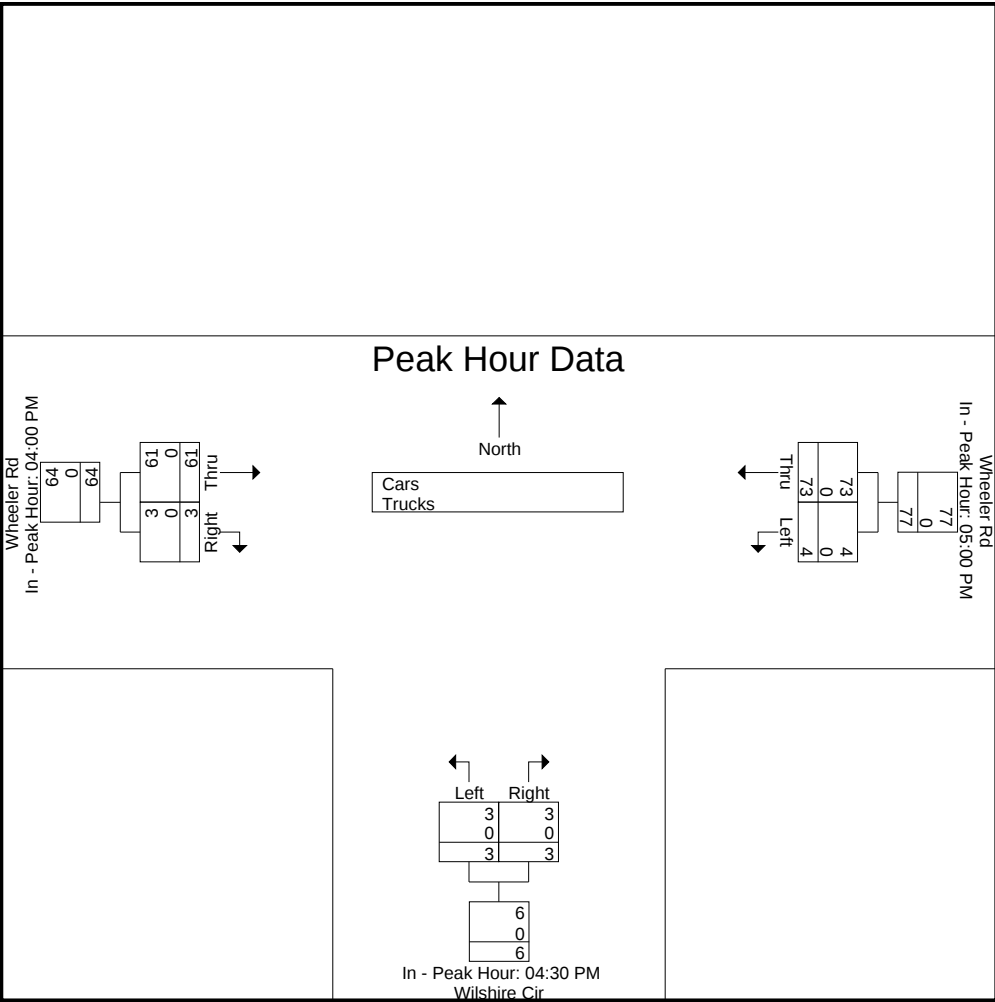


Peak Hour for Each Approach Begins at:

[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

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
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	

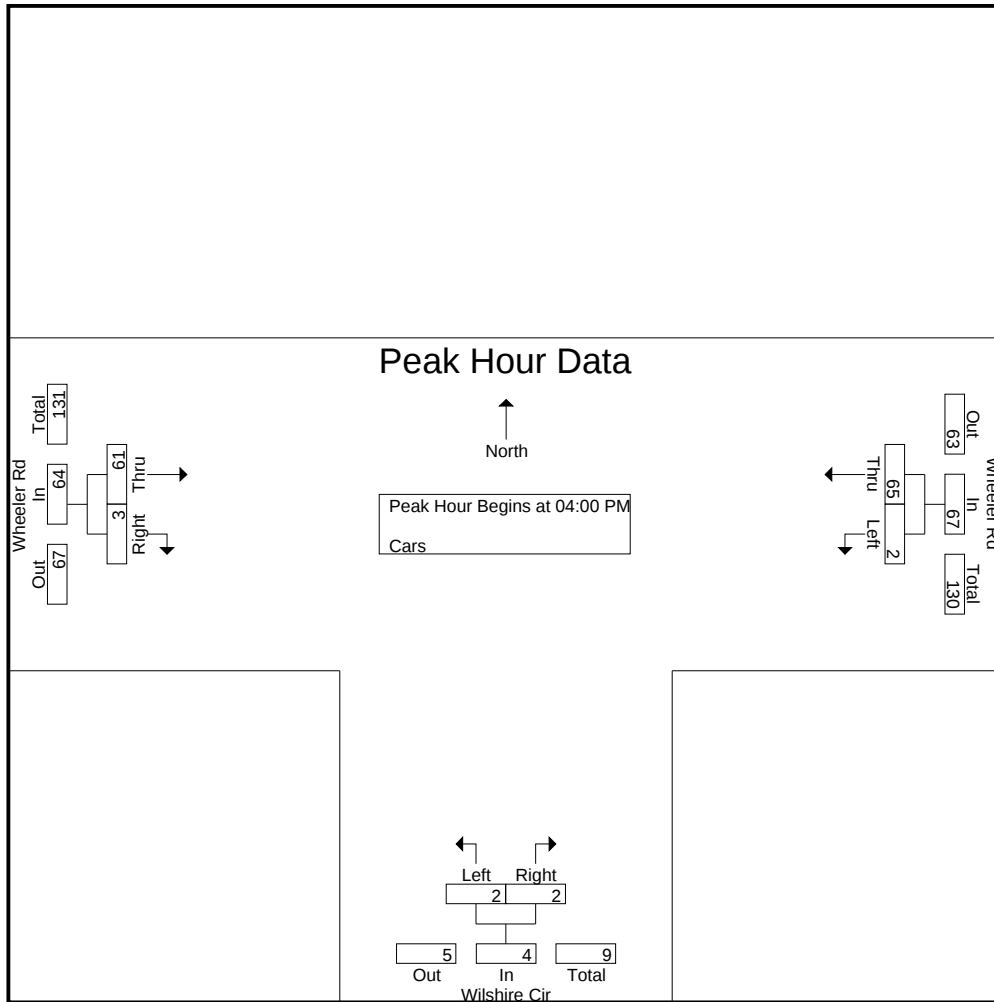
	Wheeler Rd From East			Wilshire Cir From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	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



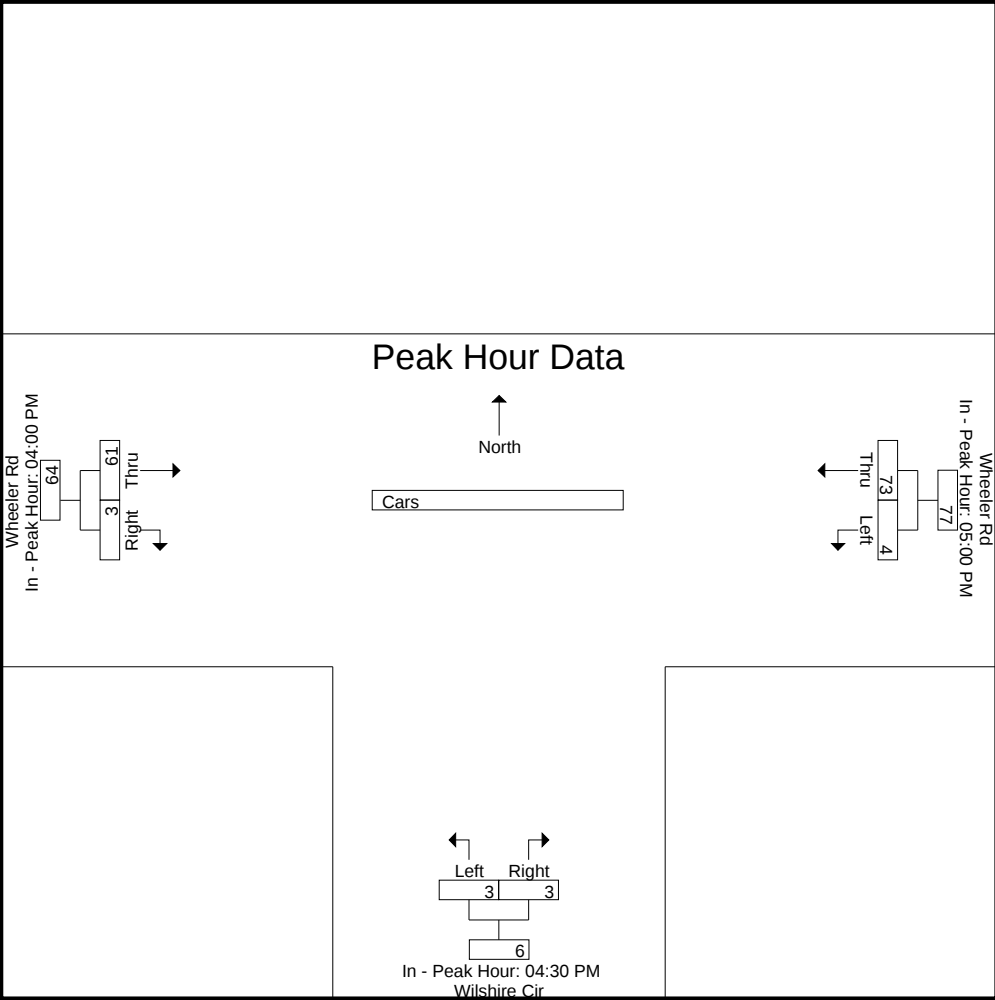
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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



978-664-2565

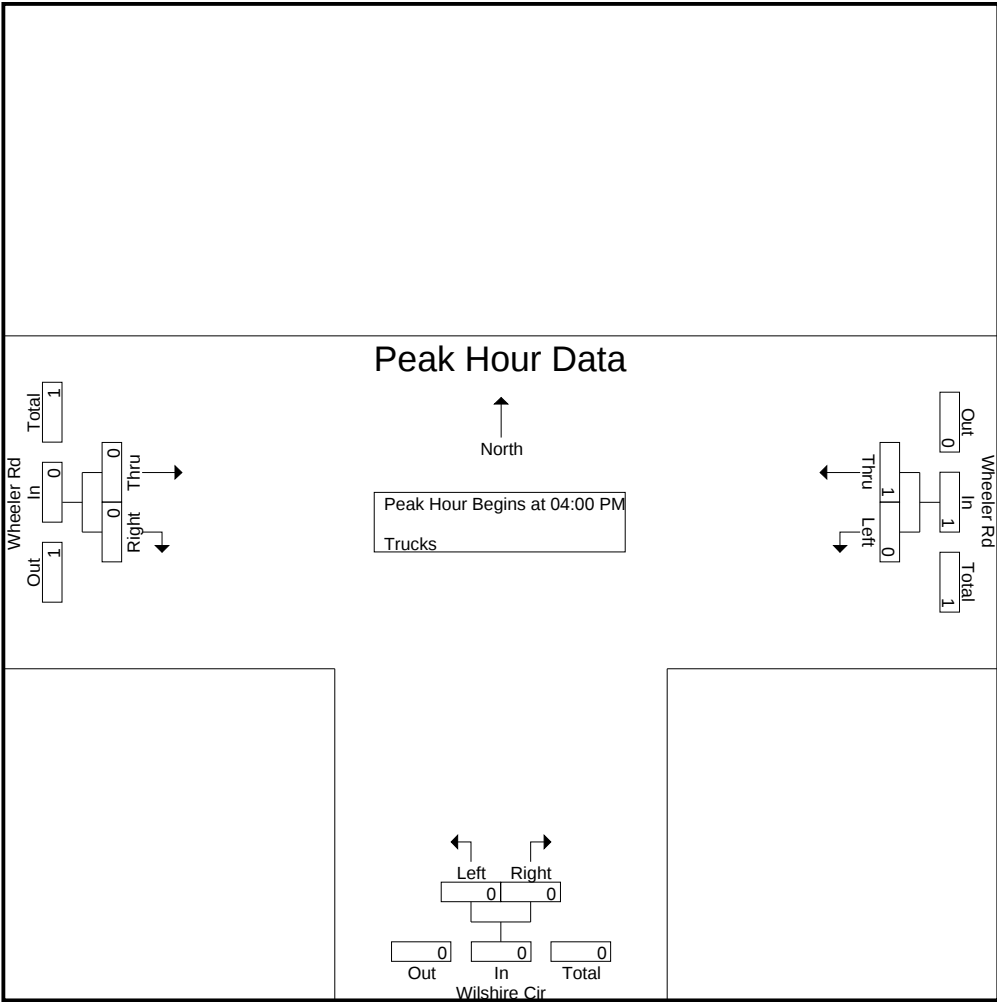
File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 7

	Groups Printed- 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
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	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

N/S Street : Wilshire Circle

E/W Street : Wheeler Road

City/State : Dracut, MA

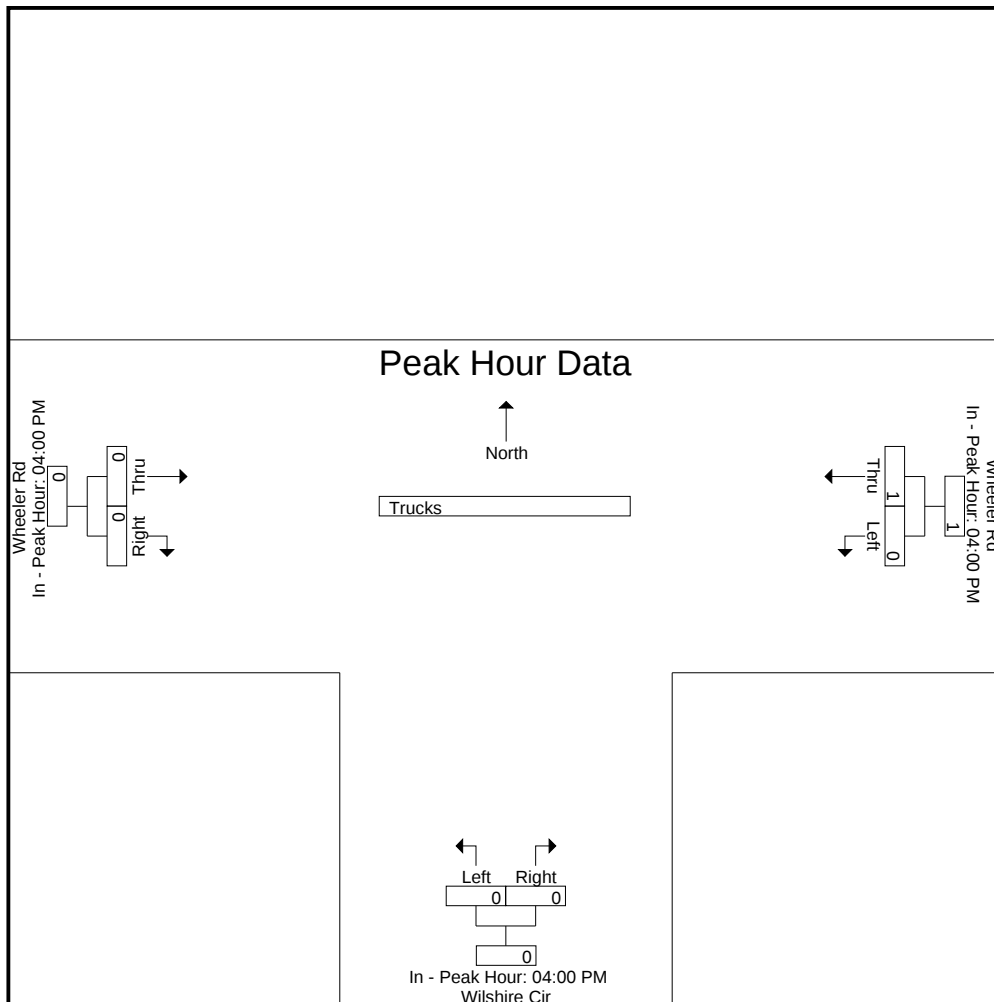
Weather : Clear

File Name : 76430004

Site Code : 76430004

Start Date : 3/7/2023

Page No : 9



978-664-2565

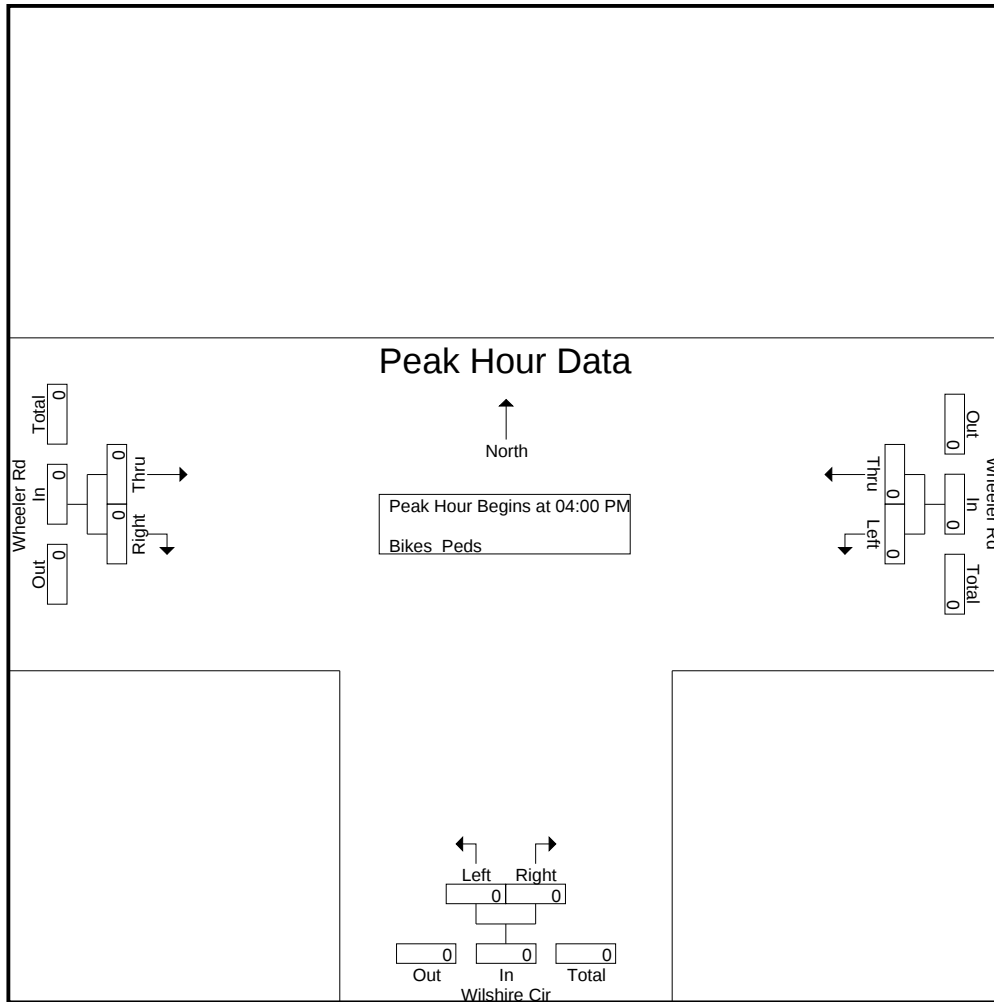
File Name : 76430004
Site Code : 76430004
Start Date : 3/7/2023
Page No : 10

[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



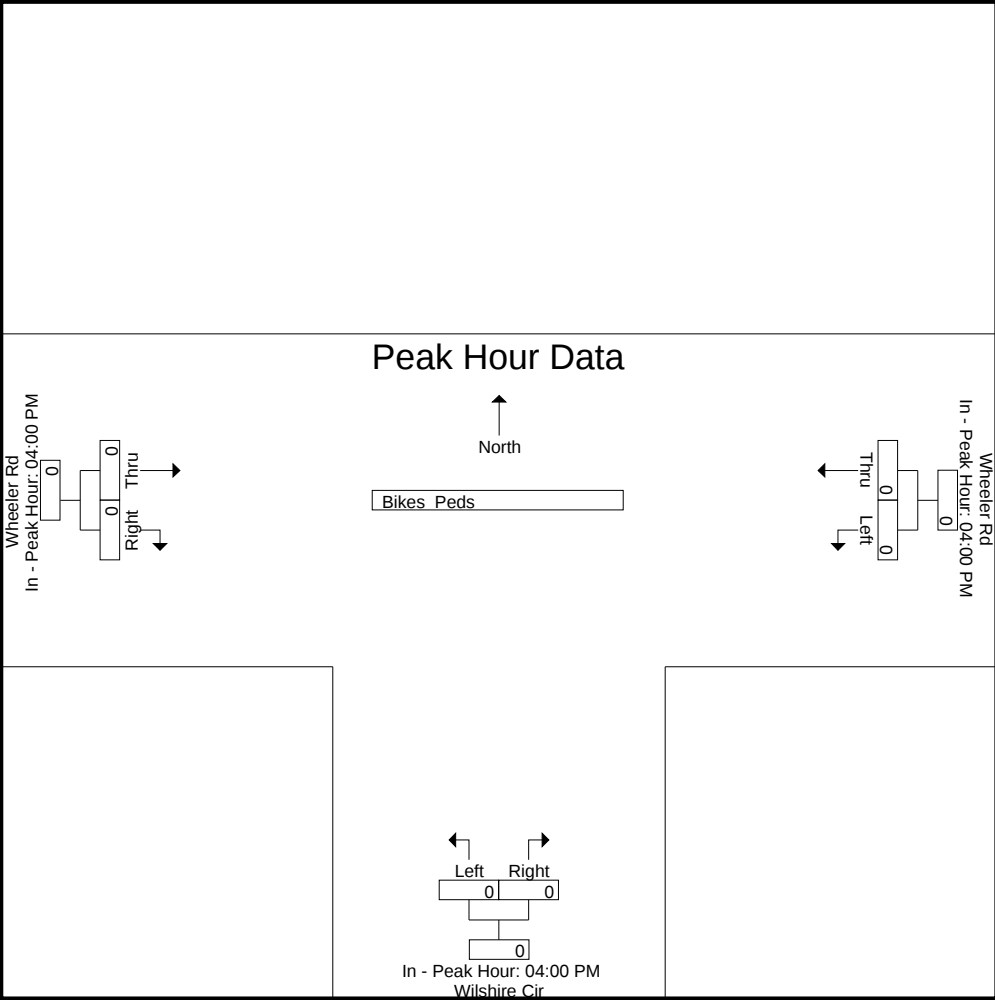
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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
Page No : 12



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

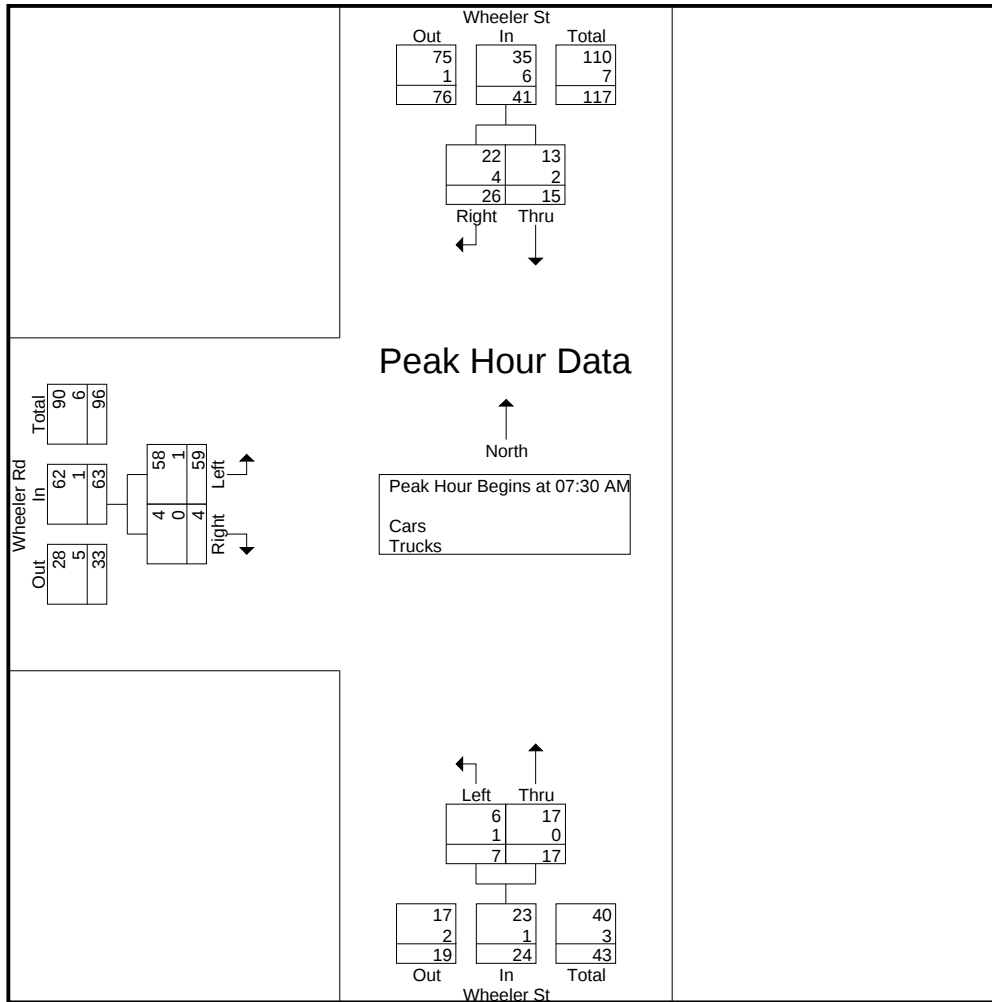
Weather : Clear

File Name : 76430005

Site Code : 76430005

Start Date : 3/7/2023

Page No : 2



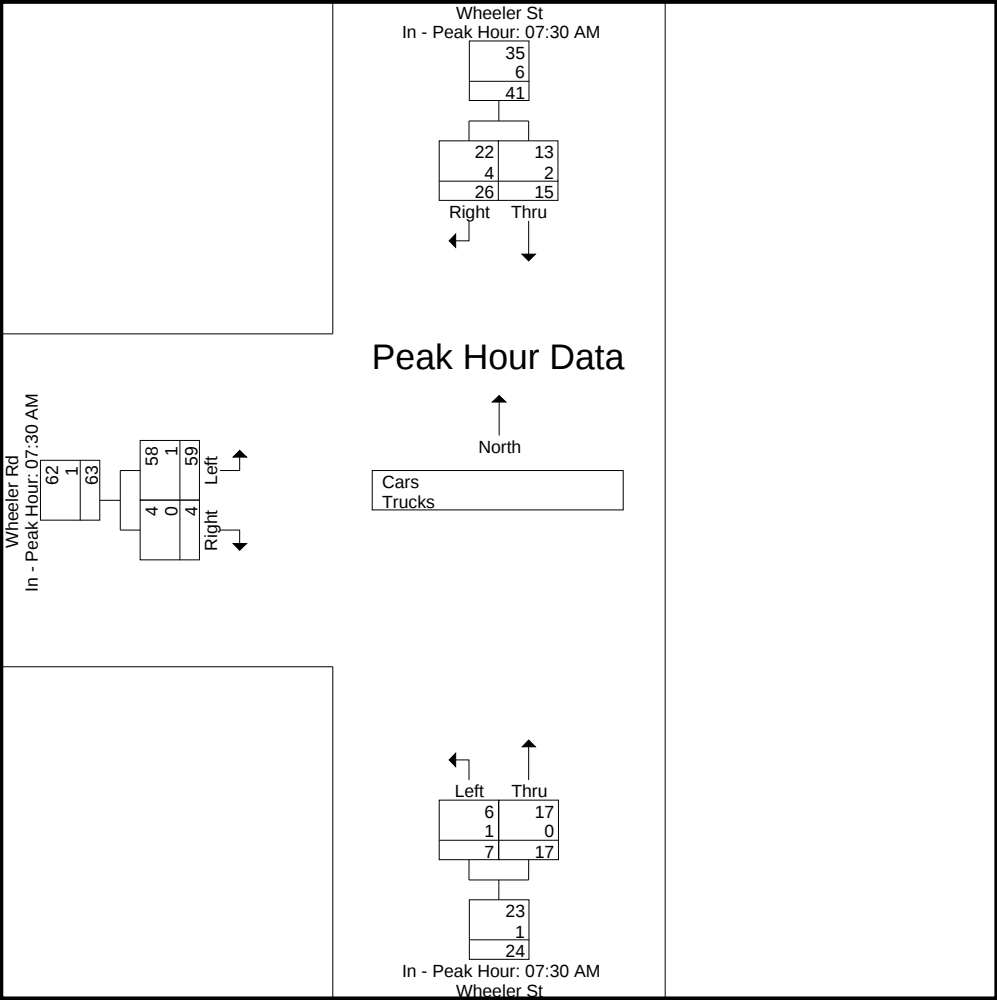
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:30 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
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
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	

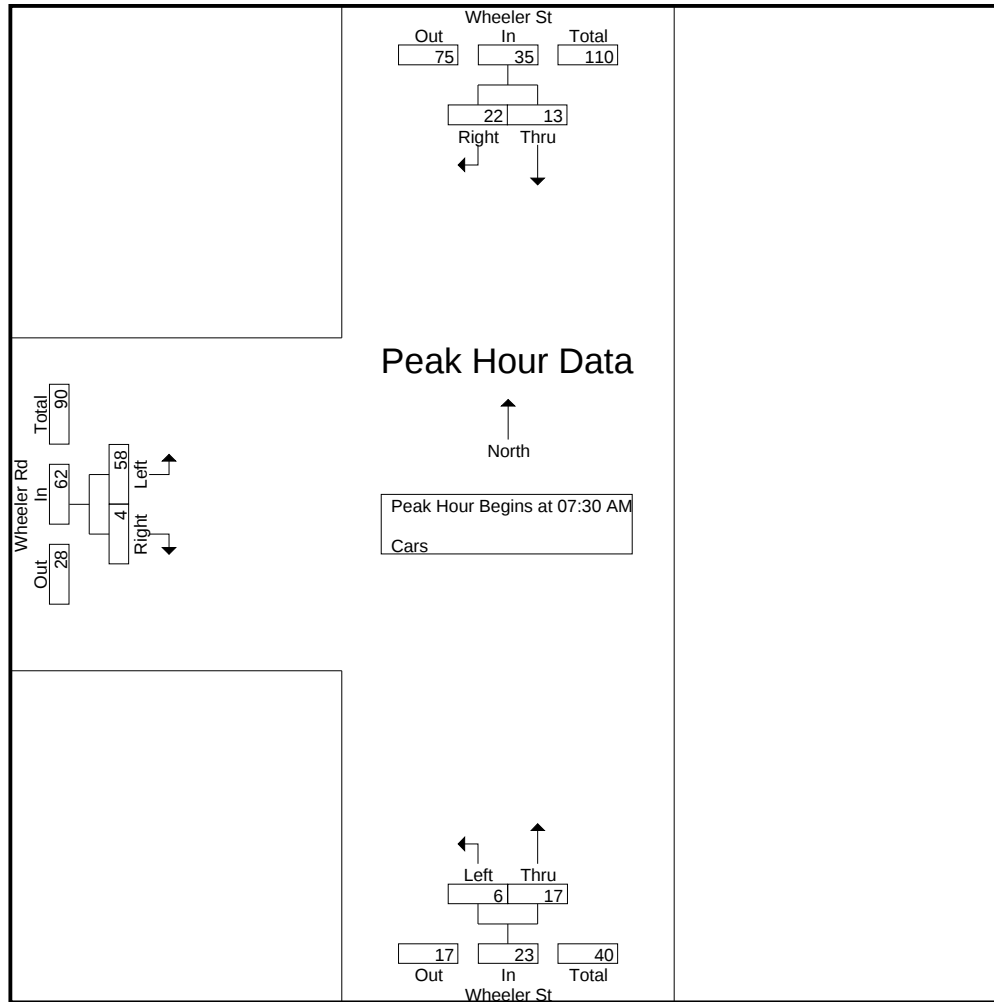
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:30 AM										
07:30 AM	1	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



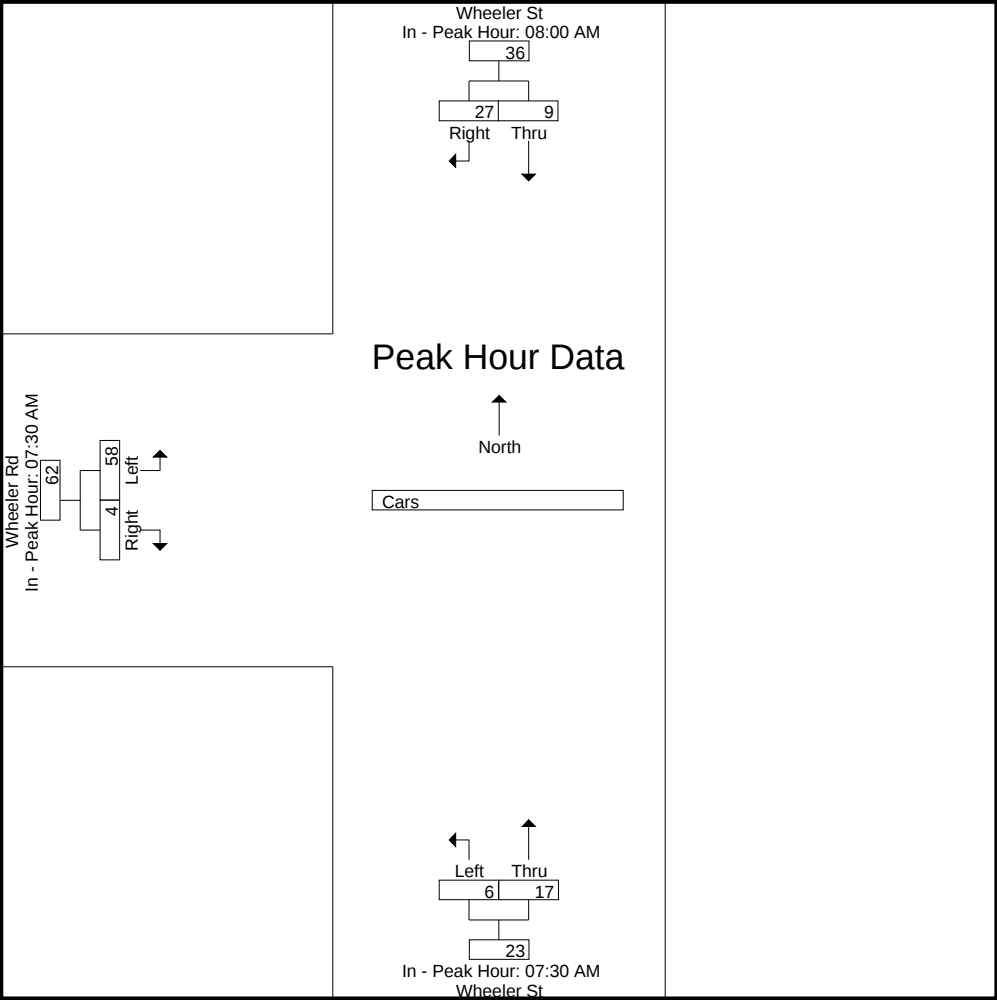
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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
Page No : 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 : 7

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	

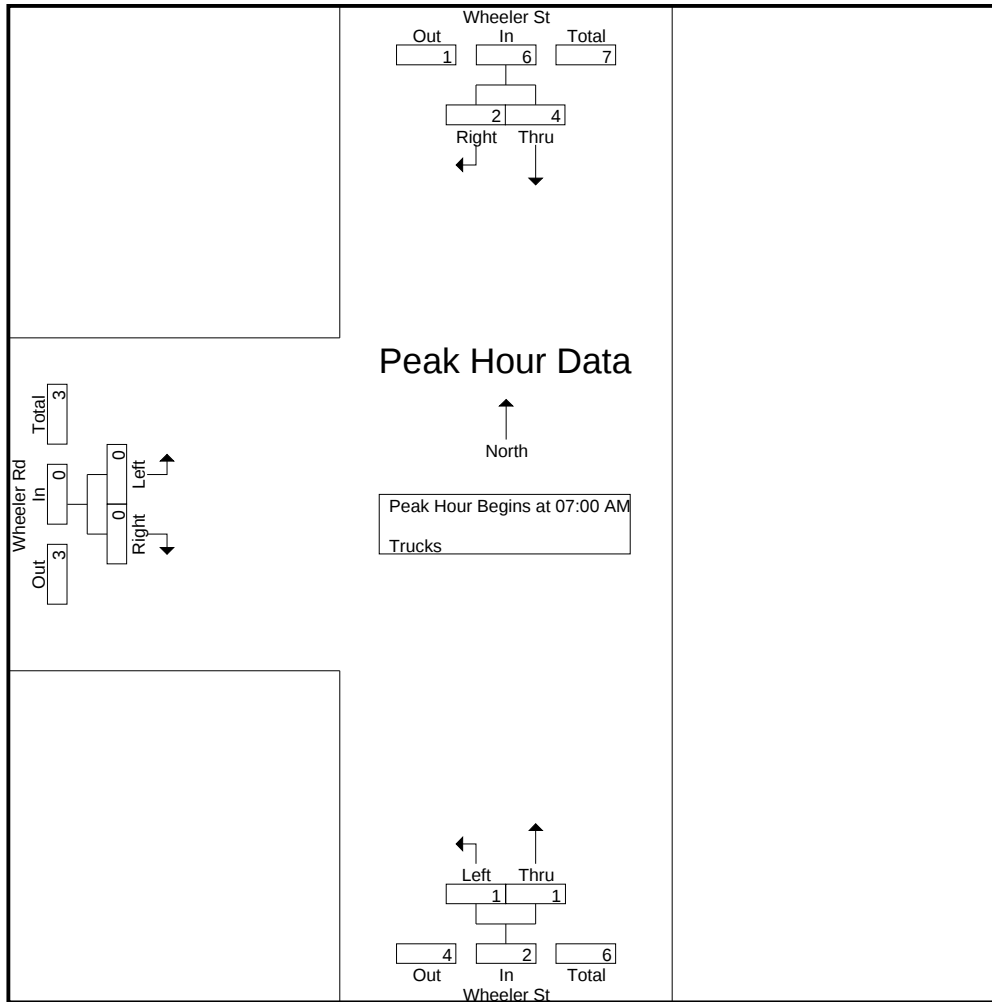
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	1	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
Page No : 8



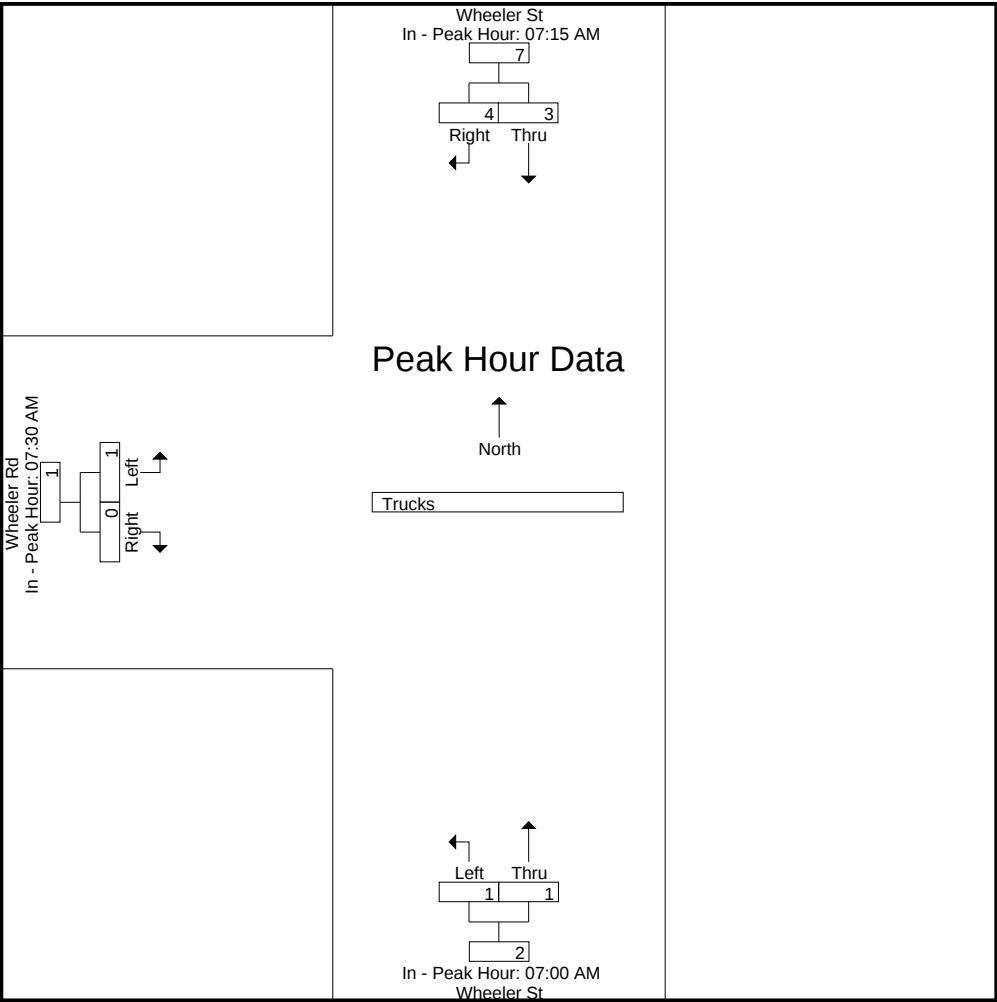
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 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
Page No : 9



978-664-2565

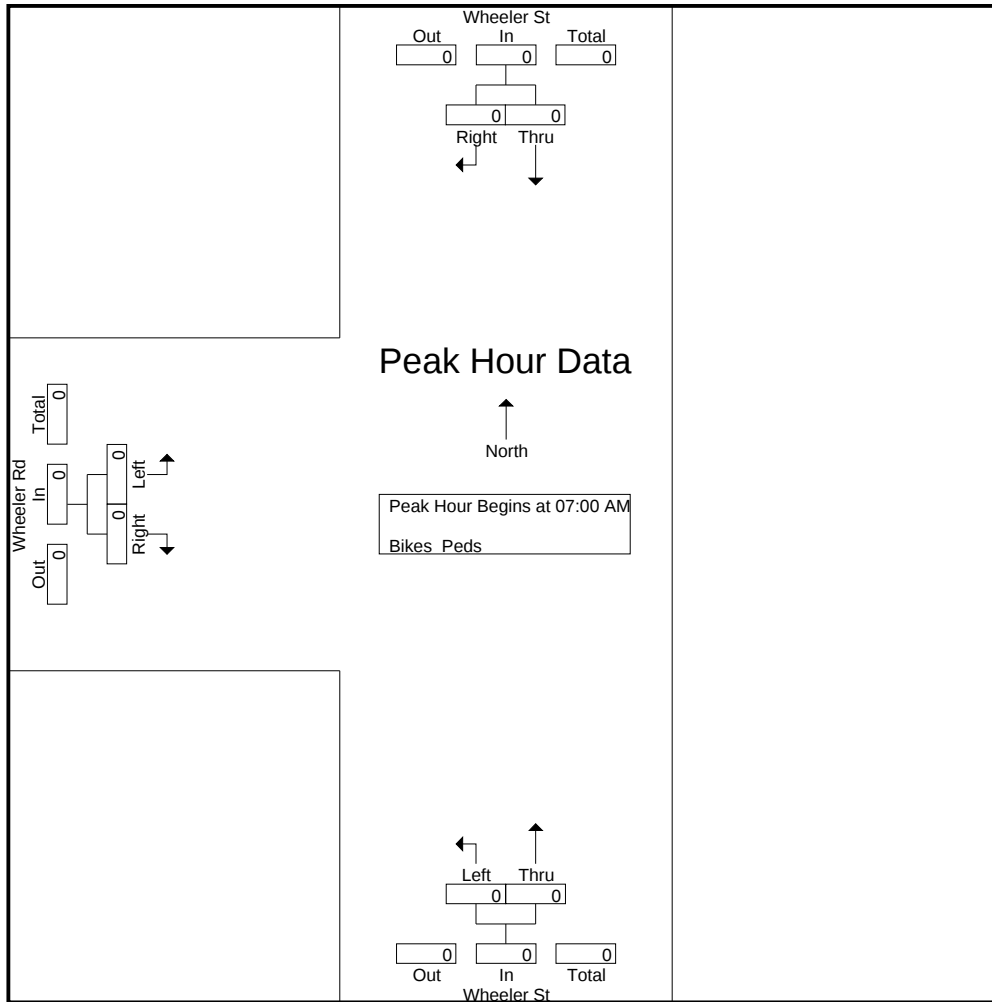
Page No : 10

[illegible][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
Page No : 11



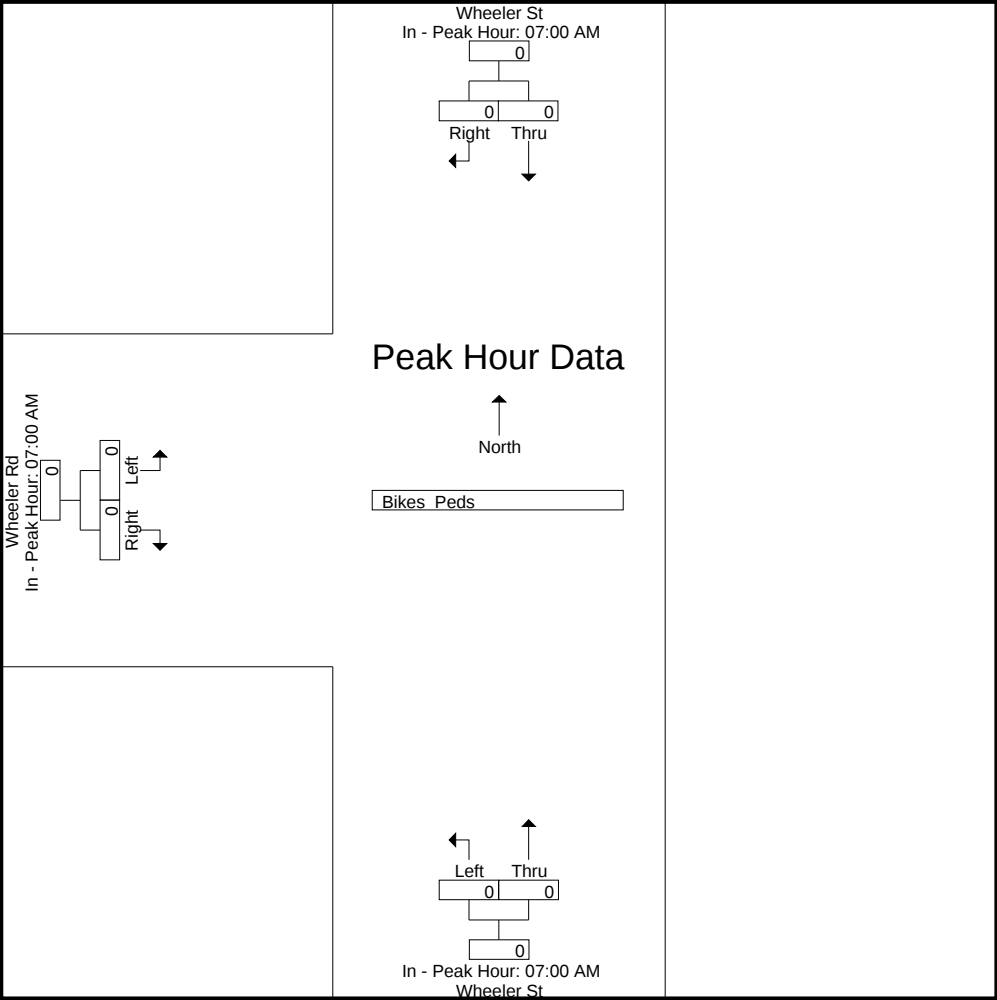
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

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 : 12



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
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

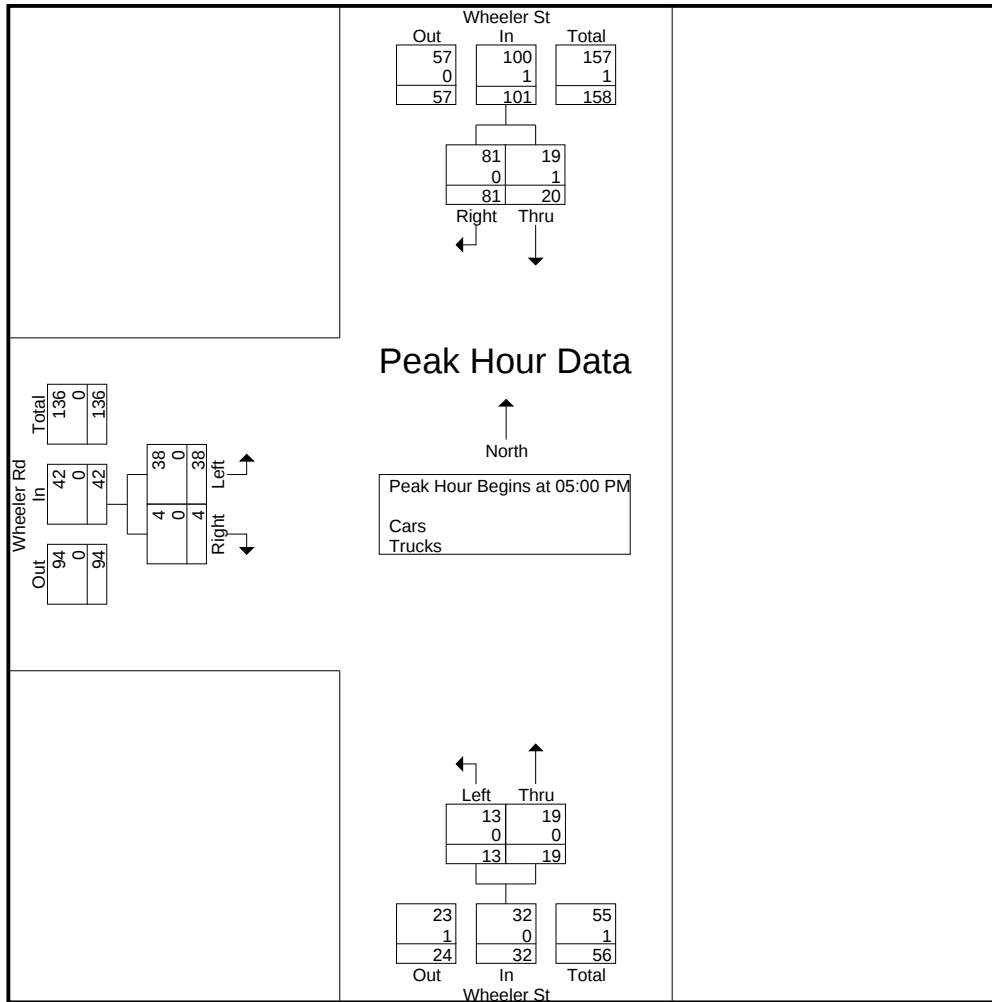
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	5	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



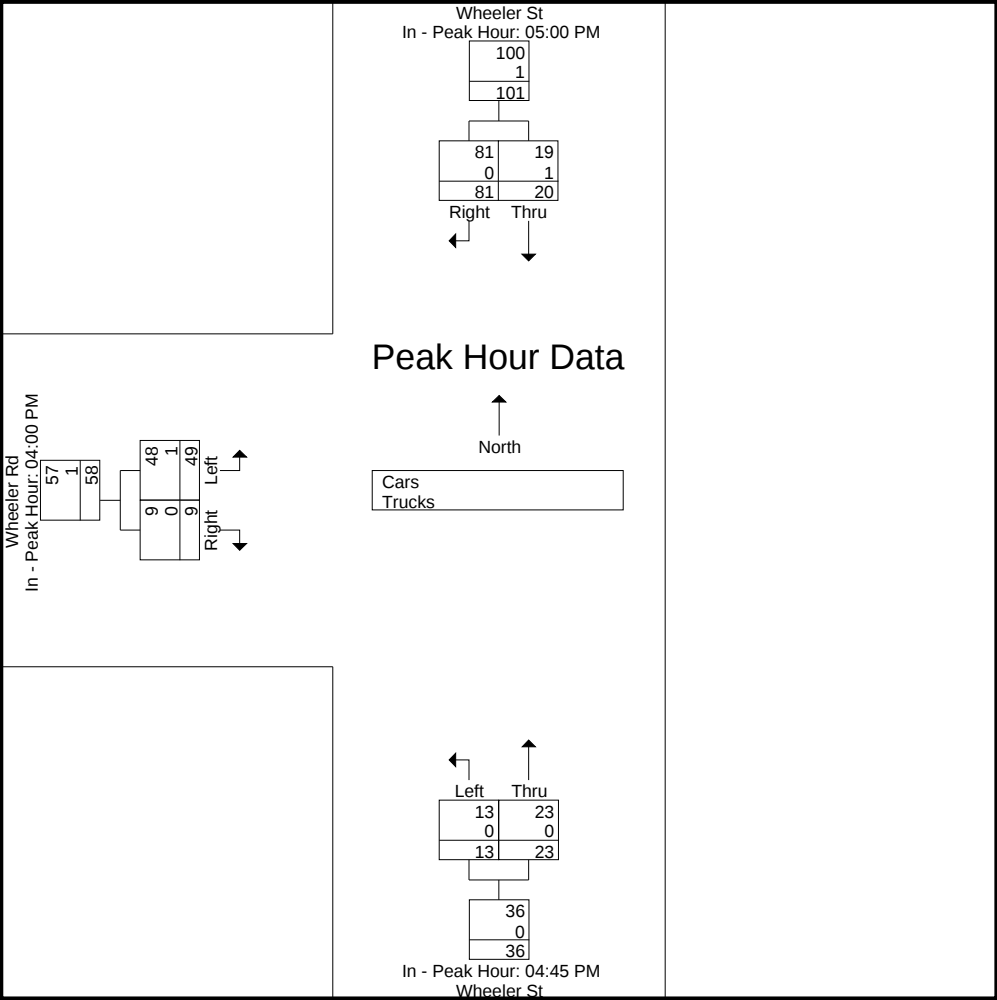
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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	

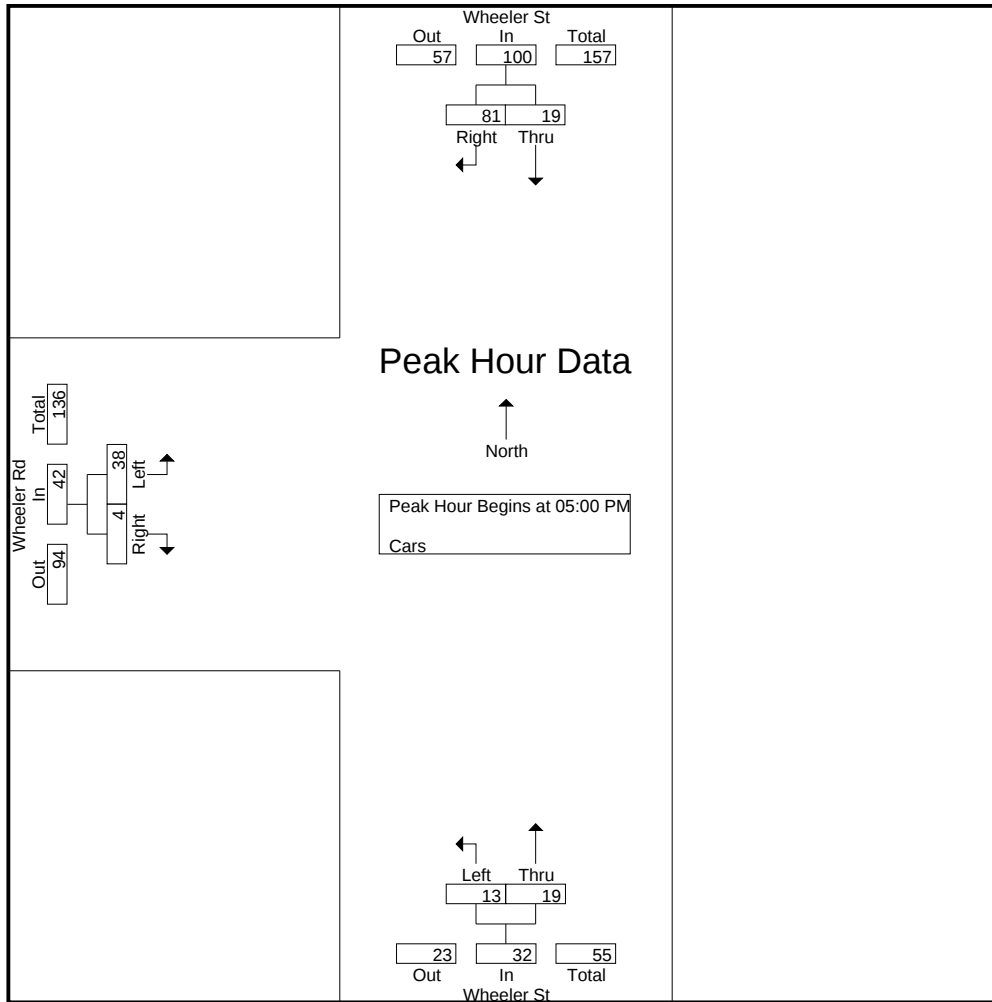
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	5	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
Page No : 5



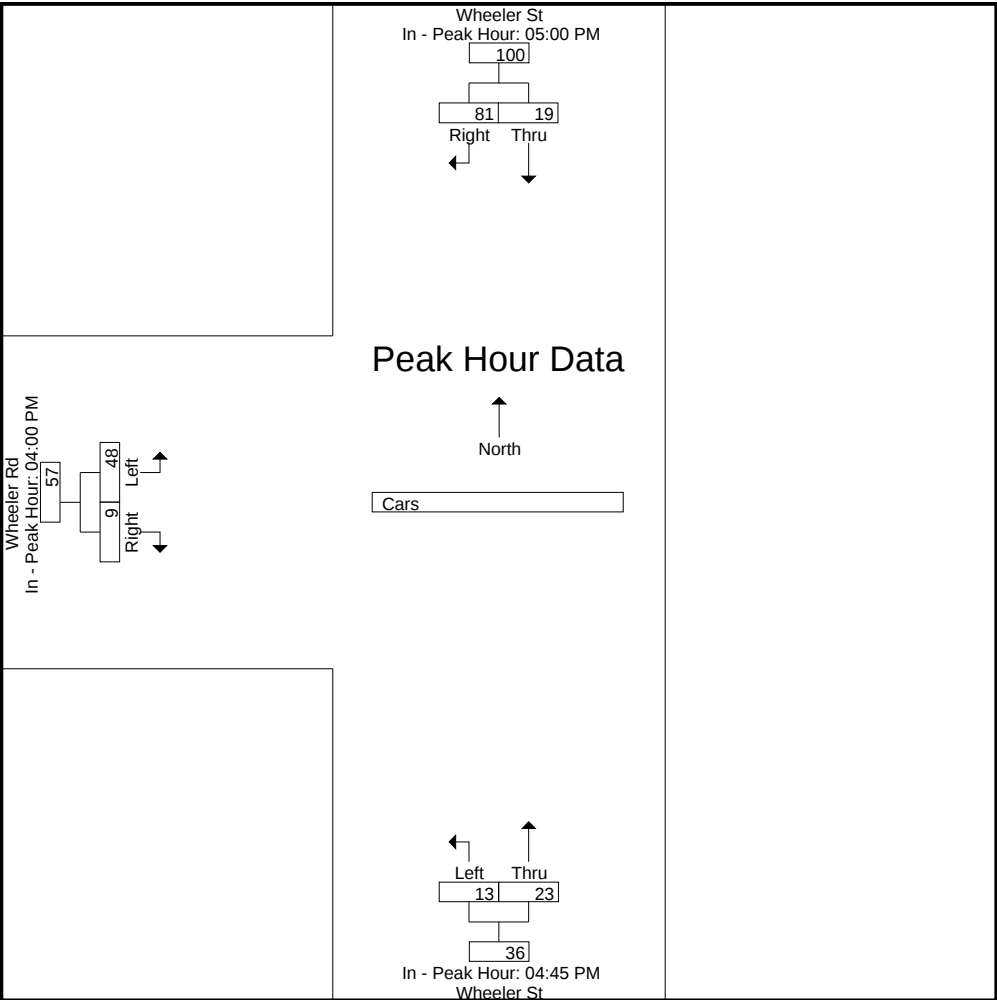
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM			04:45 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
Page No : 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 : 7

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	

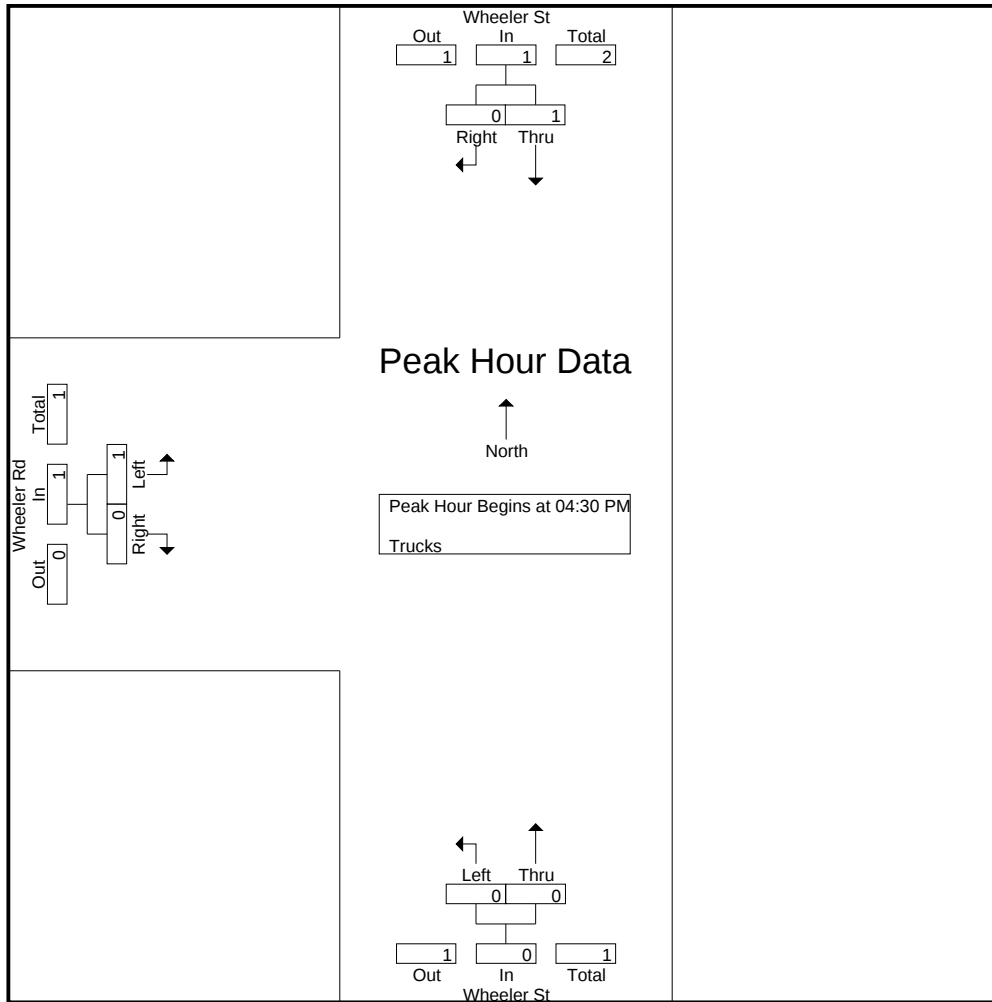
	Wheeler St From North			Wheeler St From South			Wheeler Rd From West			
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	0	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
Page No : 8



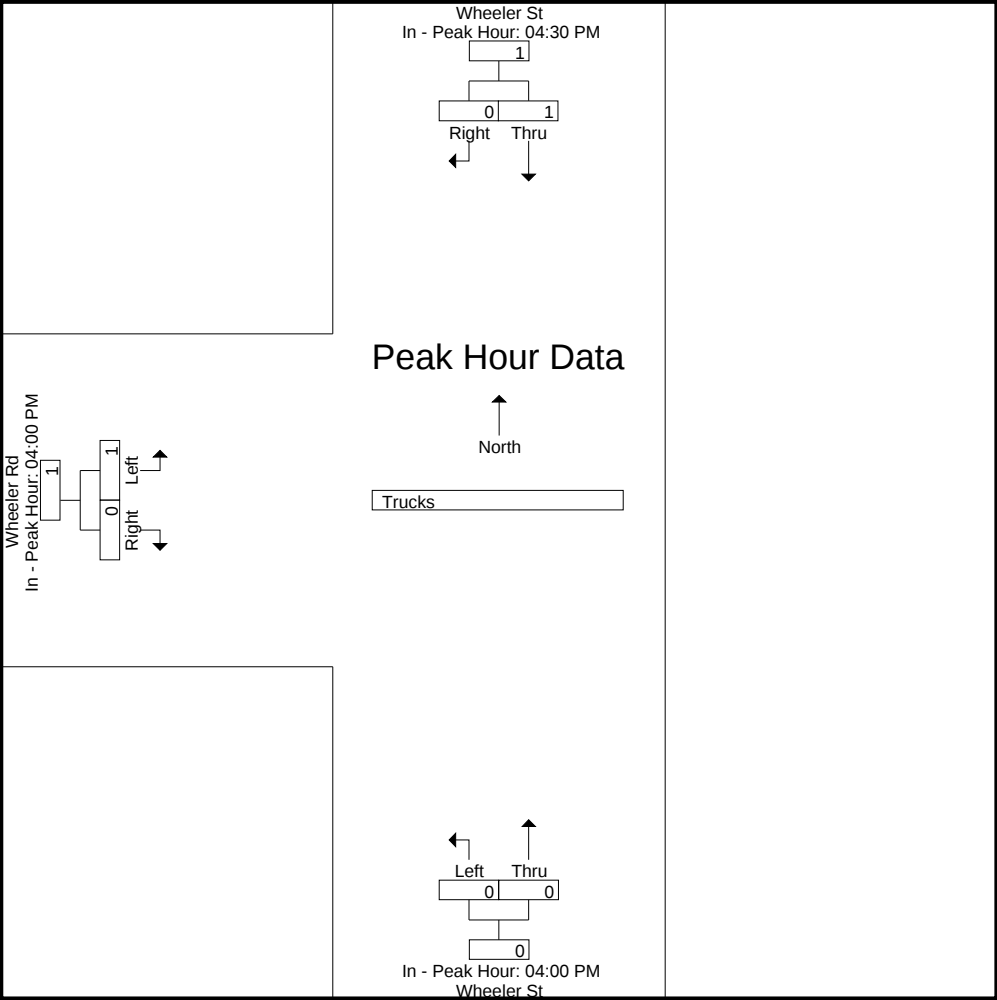
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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	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
Page No : 9



978-664-2565

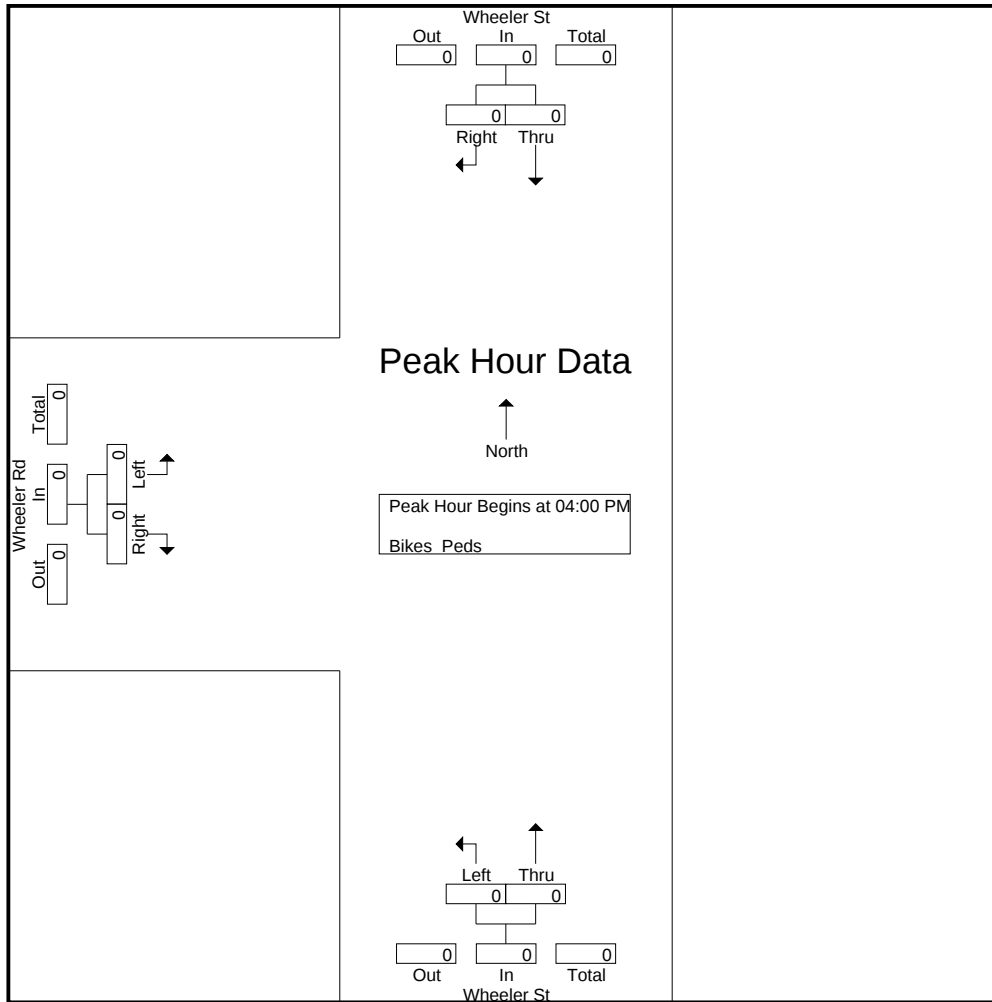
Page No : 10

[illegible][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
Page No : 11



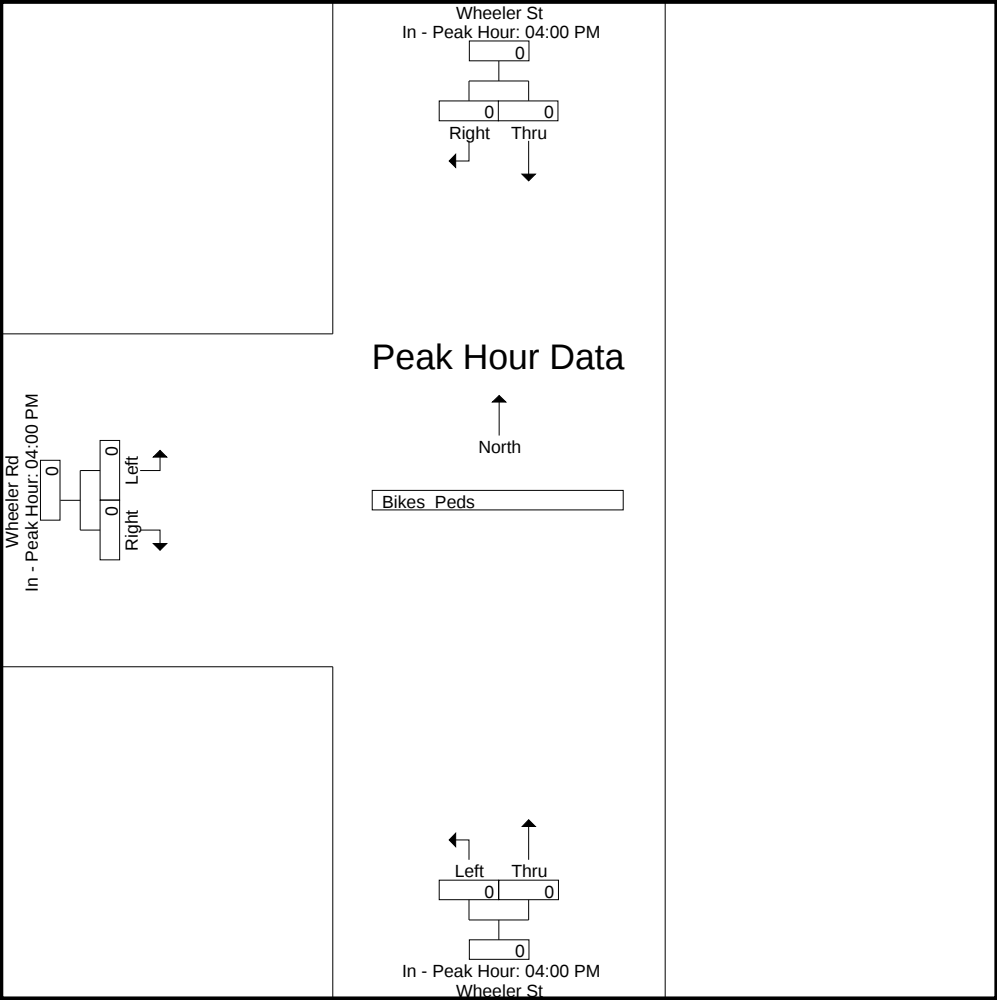
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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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
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

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

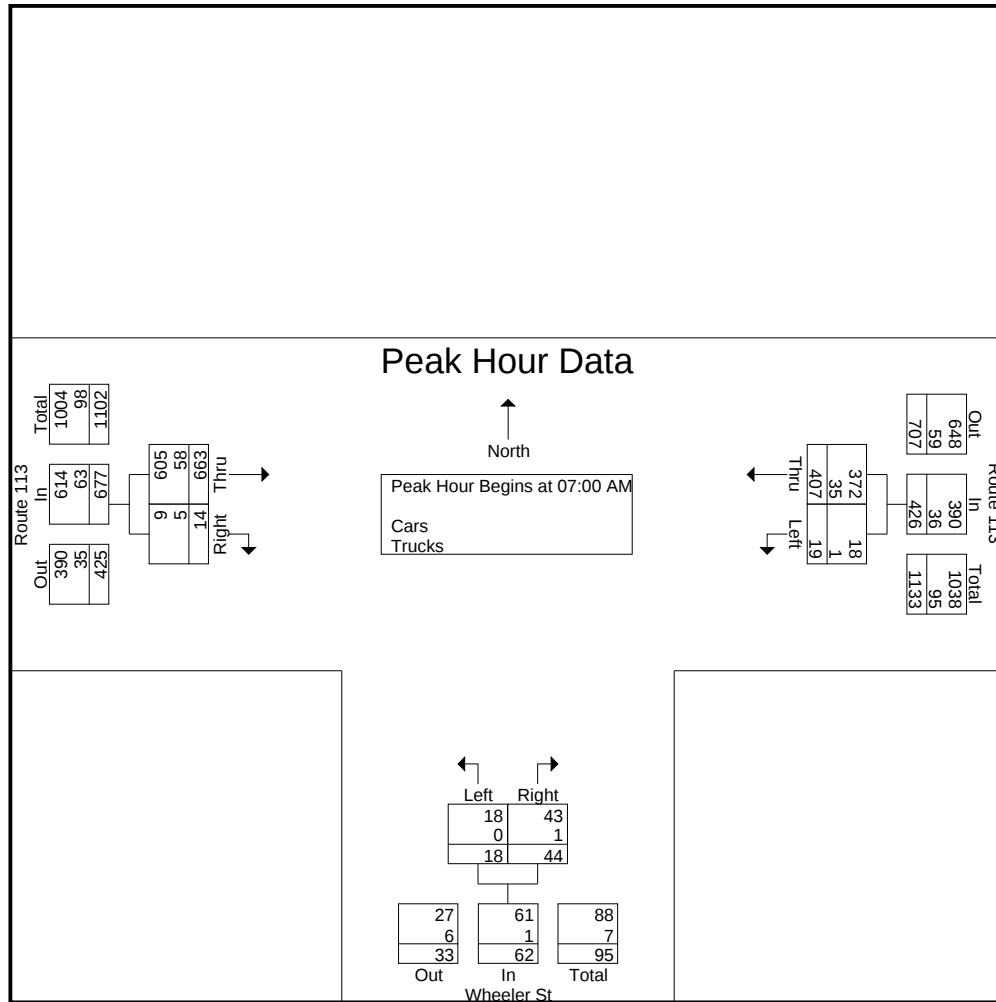
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	4	85	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
Page No : 2



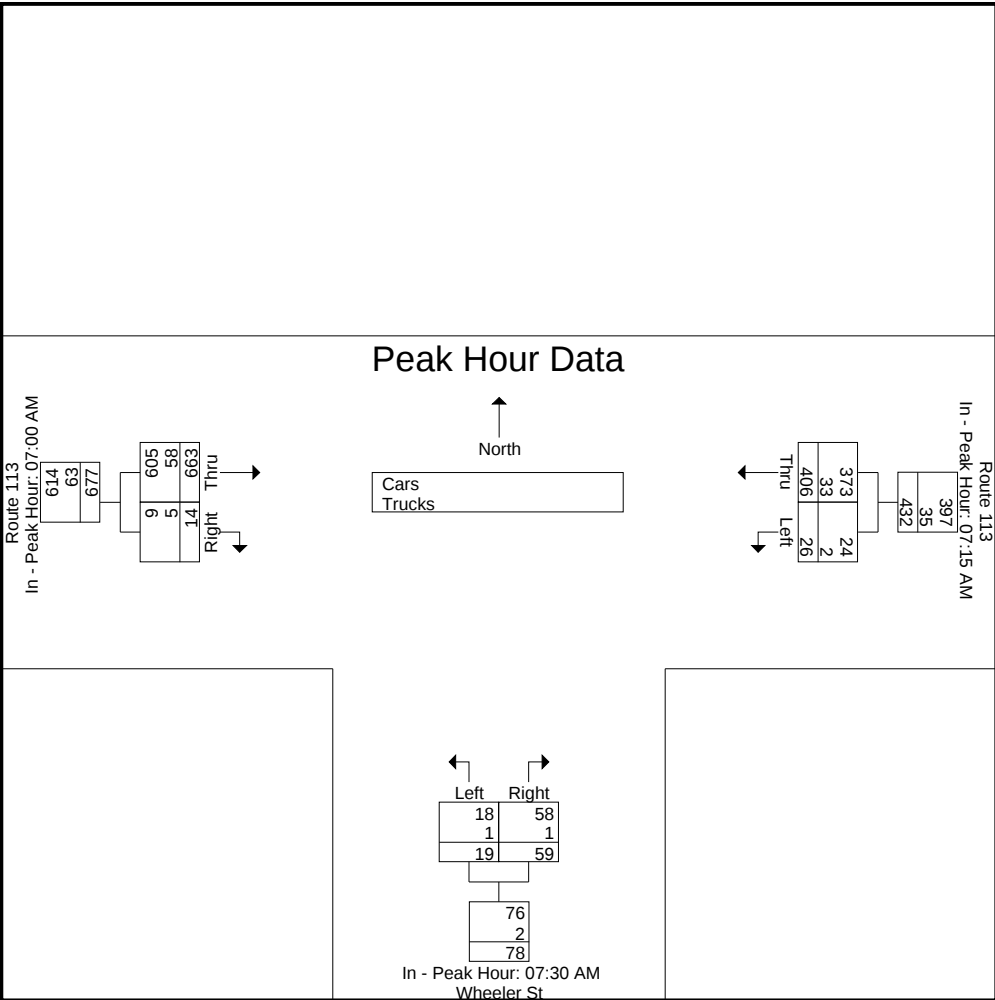
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM			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
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

Page No : 4

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	

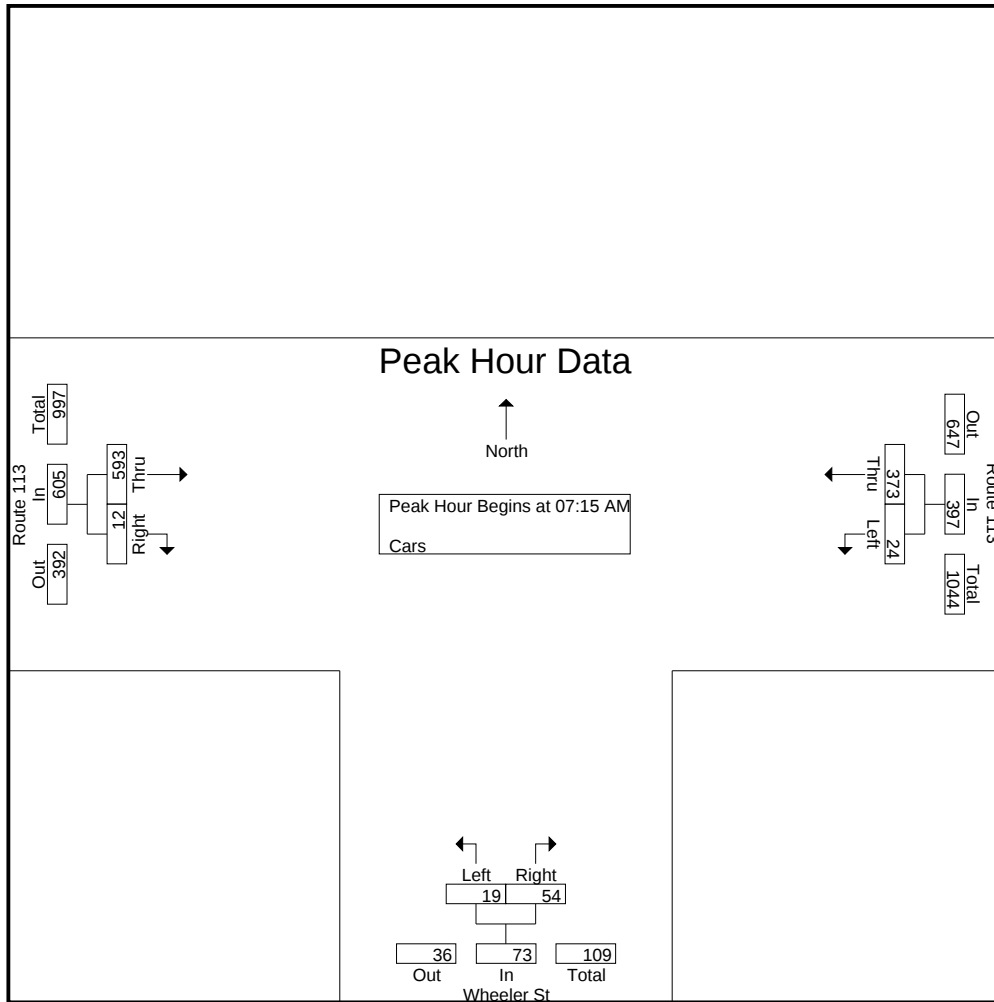
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	3	94	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
Page No : 5



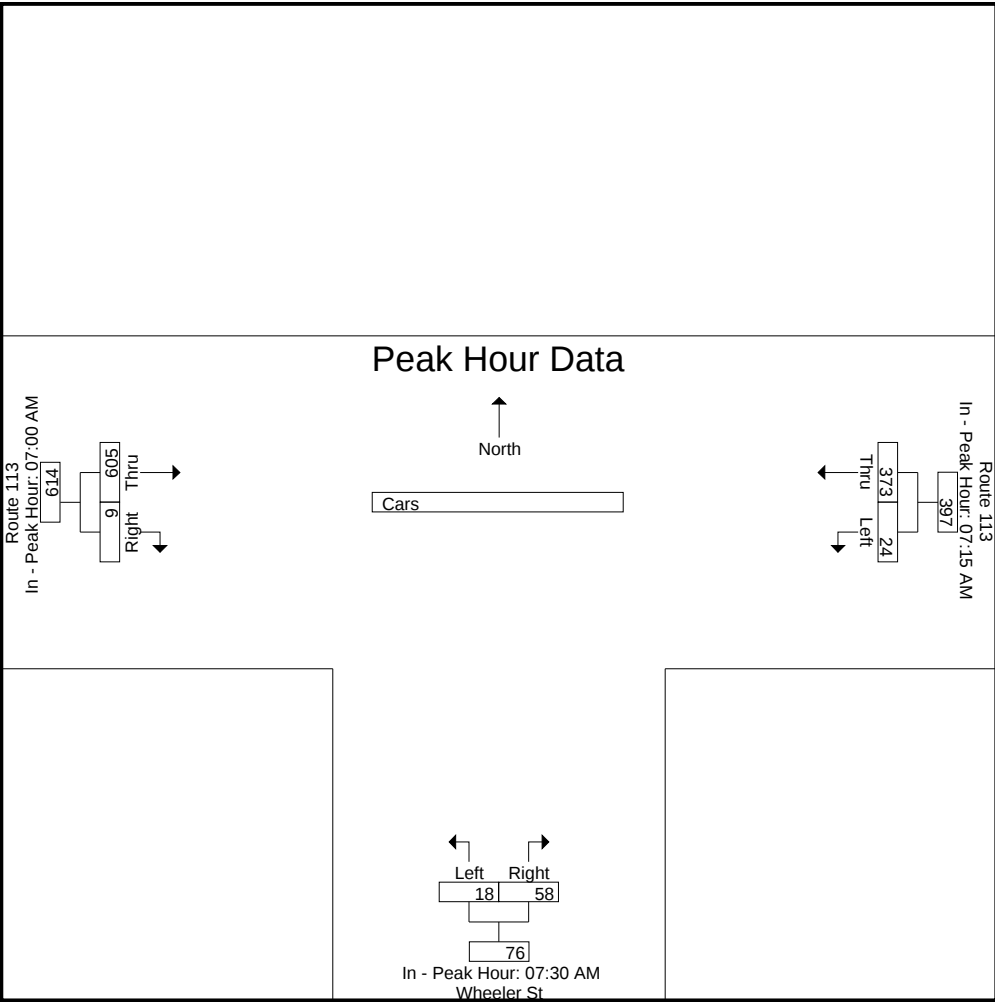
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 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
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

Page No : 7

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	

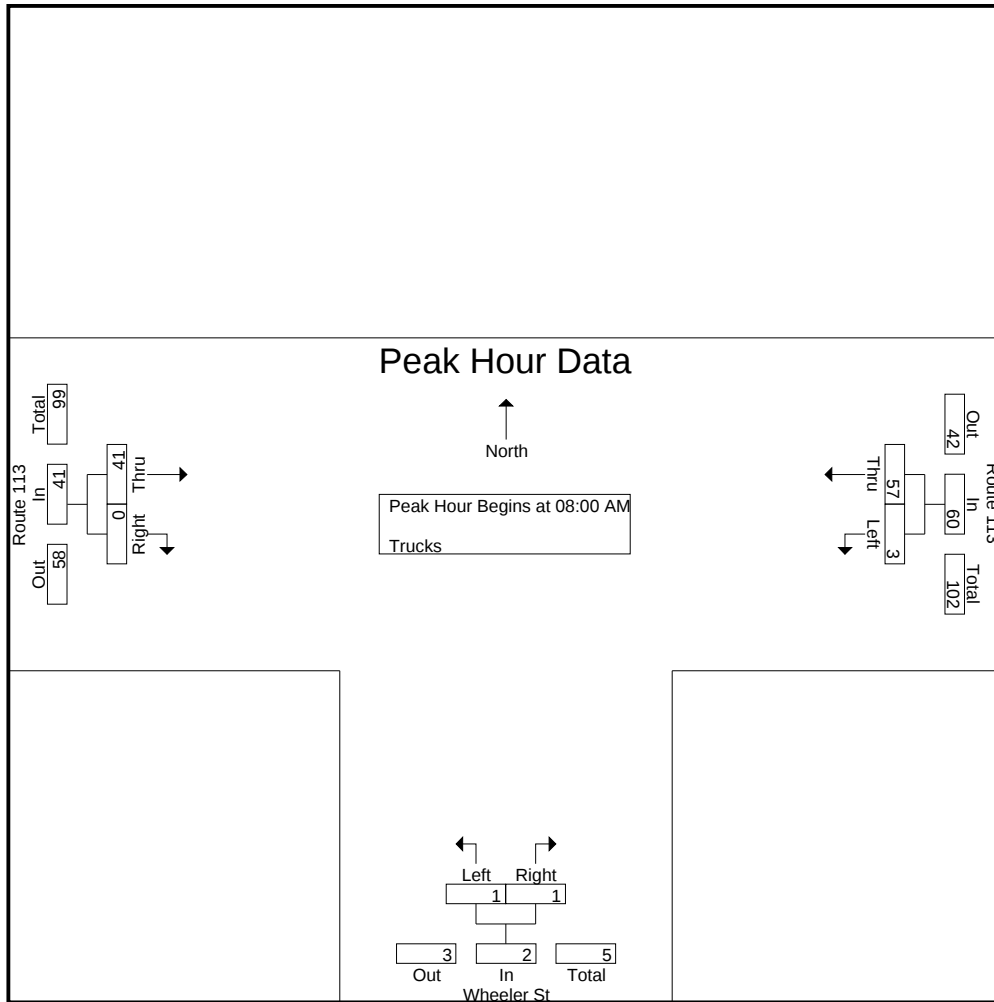
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	8	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
Page No : 8



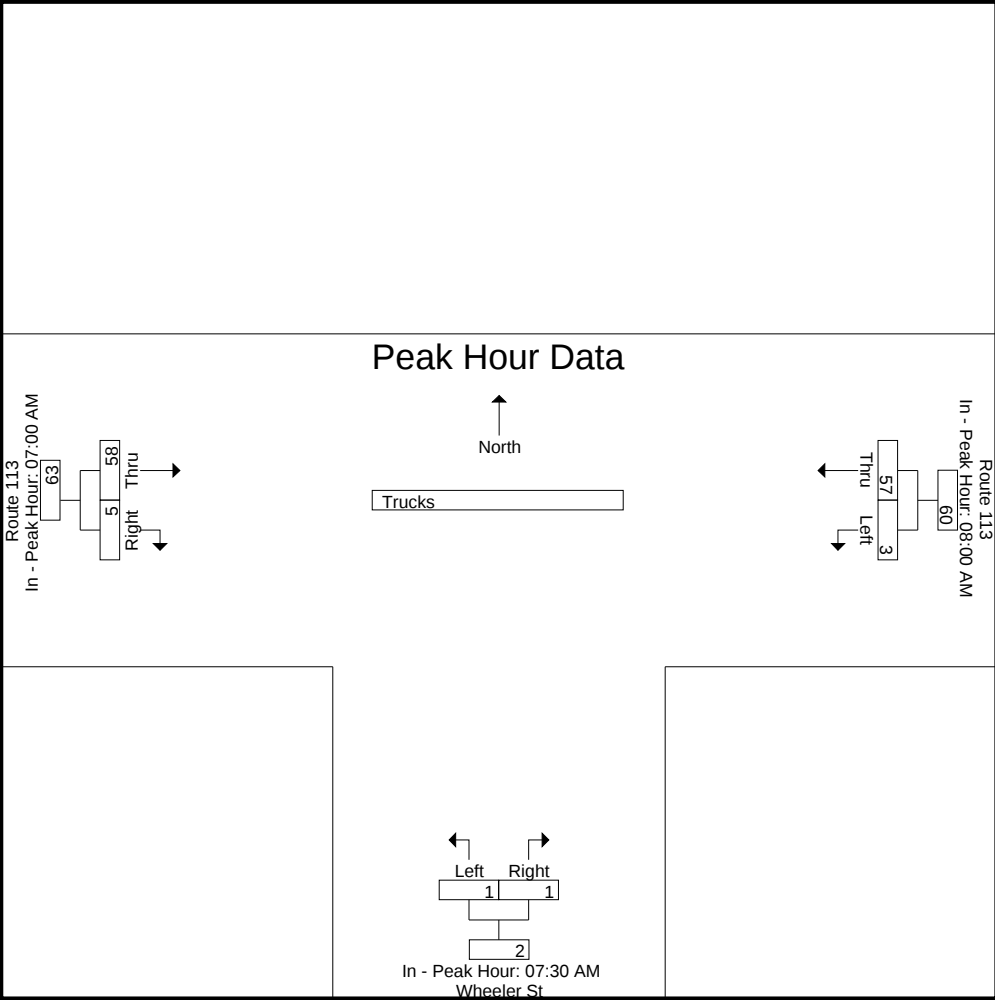
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	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
Page No : 9



978-664-2565

Page No : 10

[illegible]

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

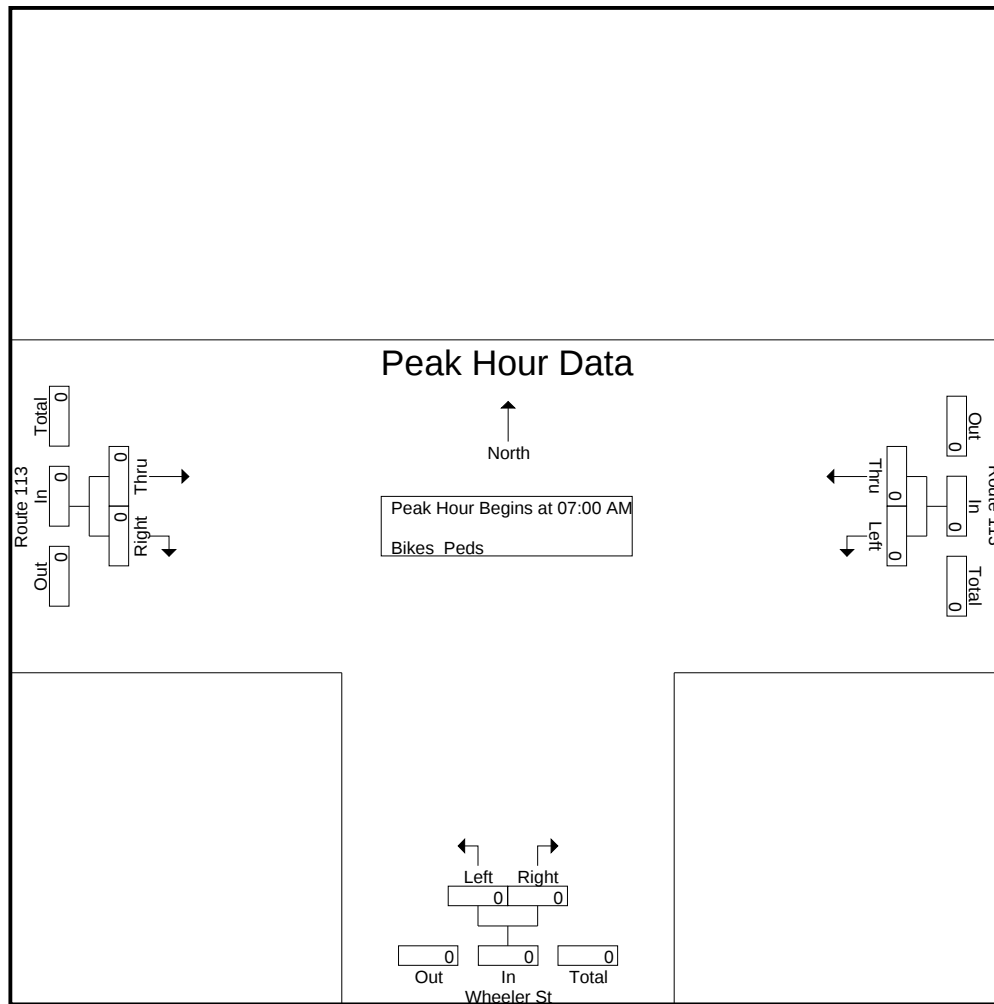
Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

Page No : 11



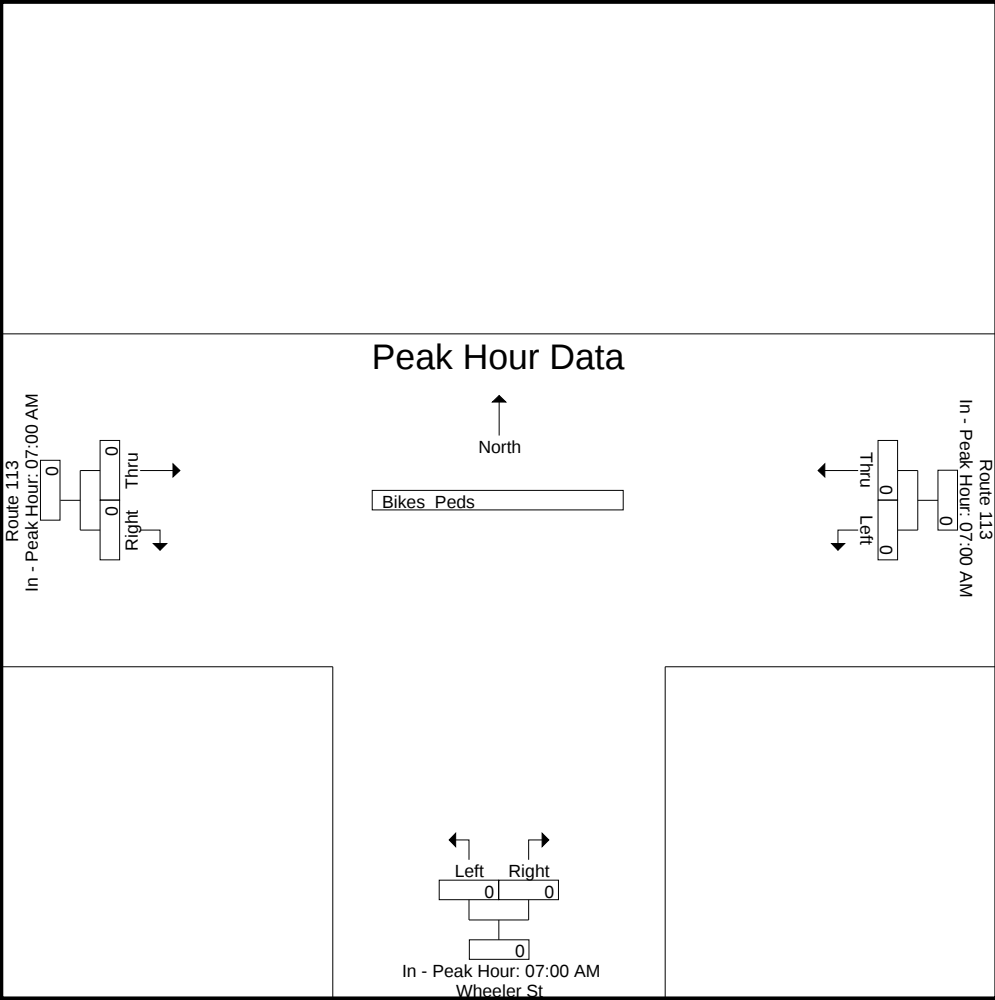
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

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

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
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

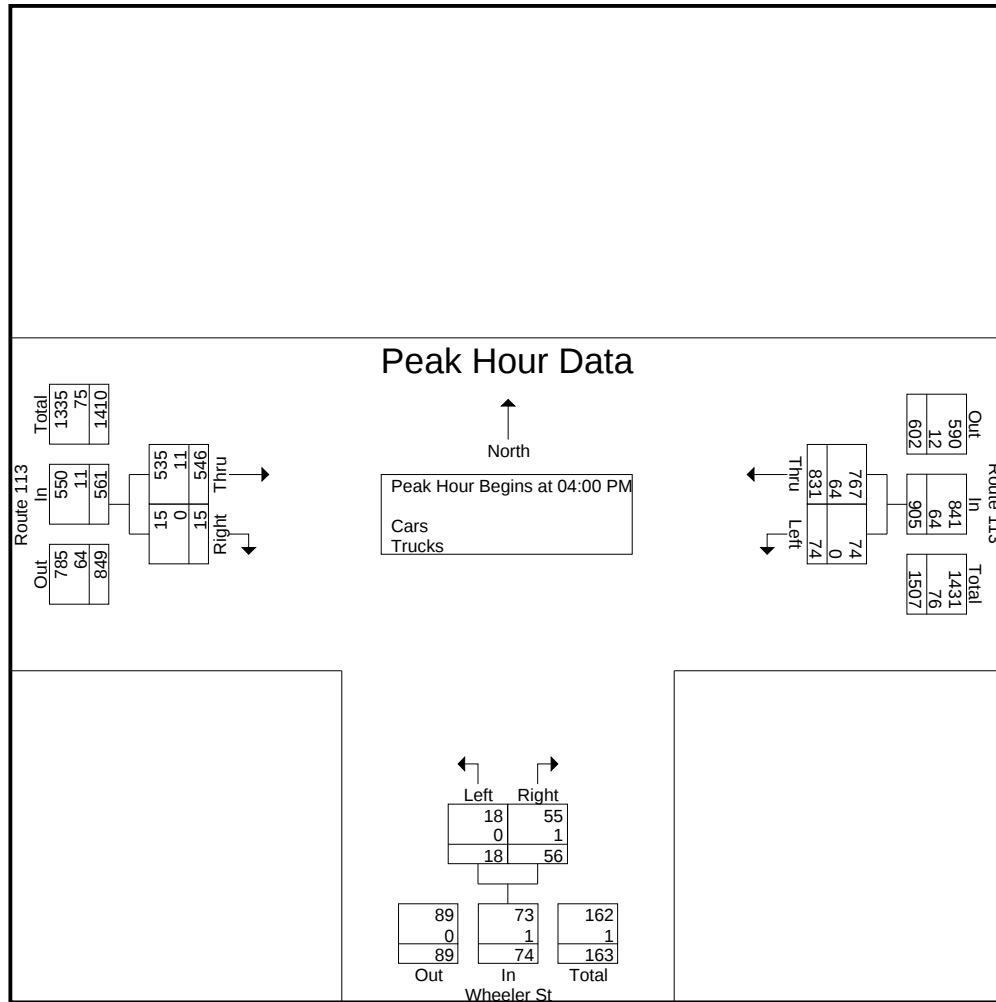
Weather : Clear

File Name : 76430006

Site Code : 76430006

Start Date : 3/7/2023

Page No : 2



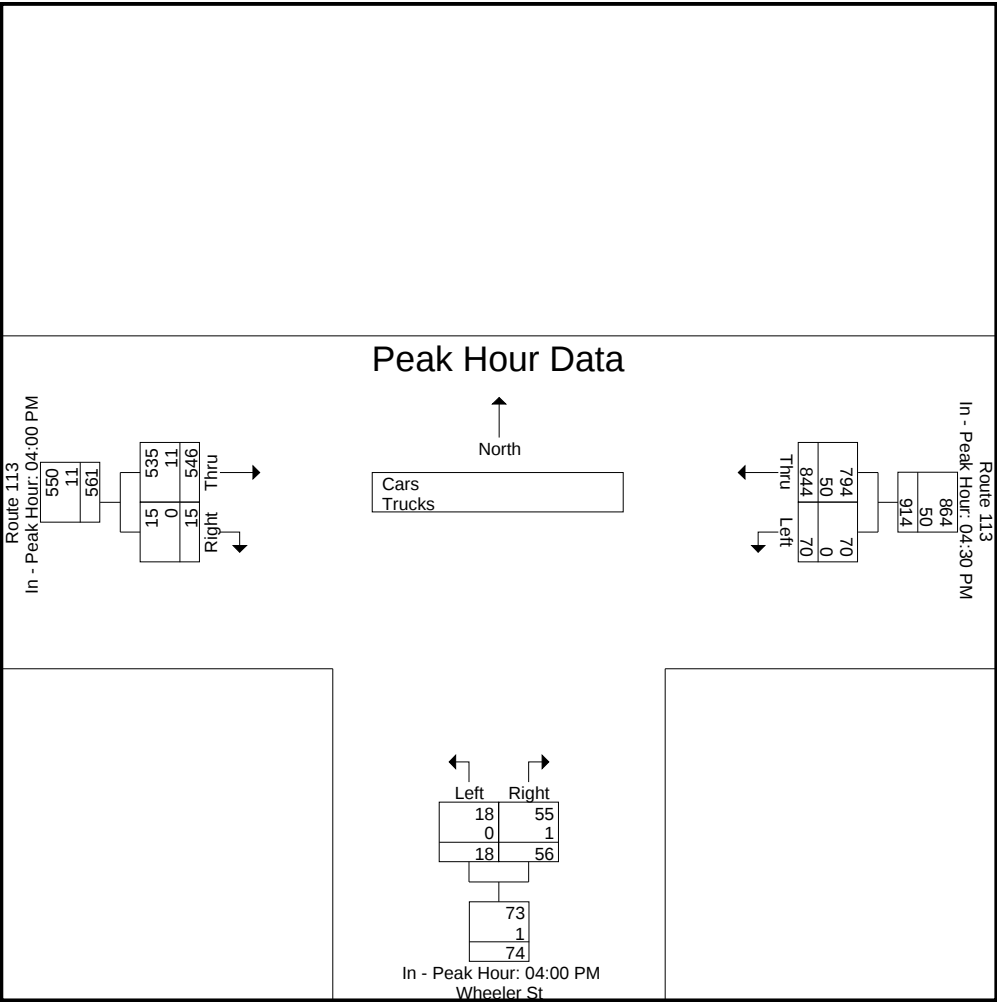
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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

Page No : 4

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	

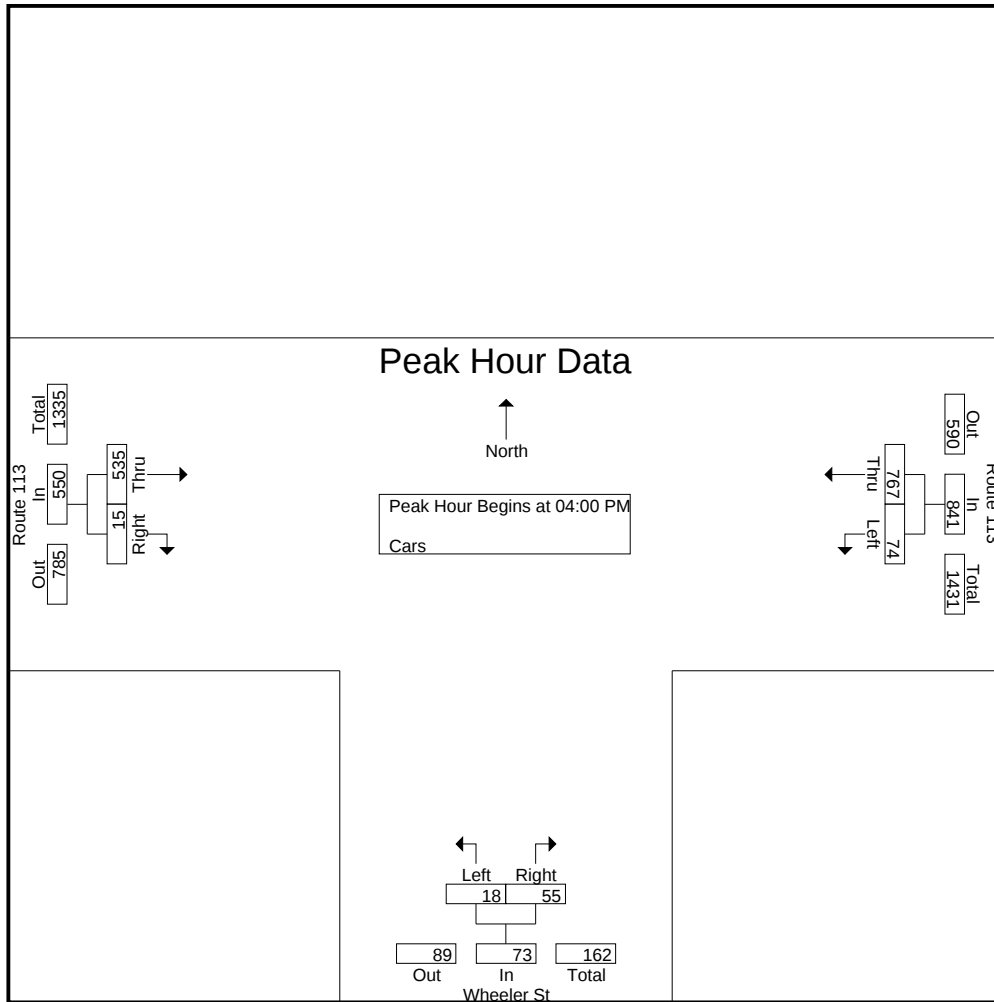
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:00 PM										
04:00 PM	14	211	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



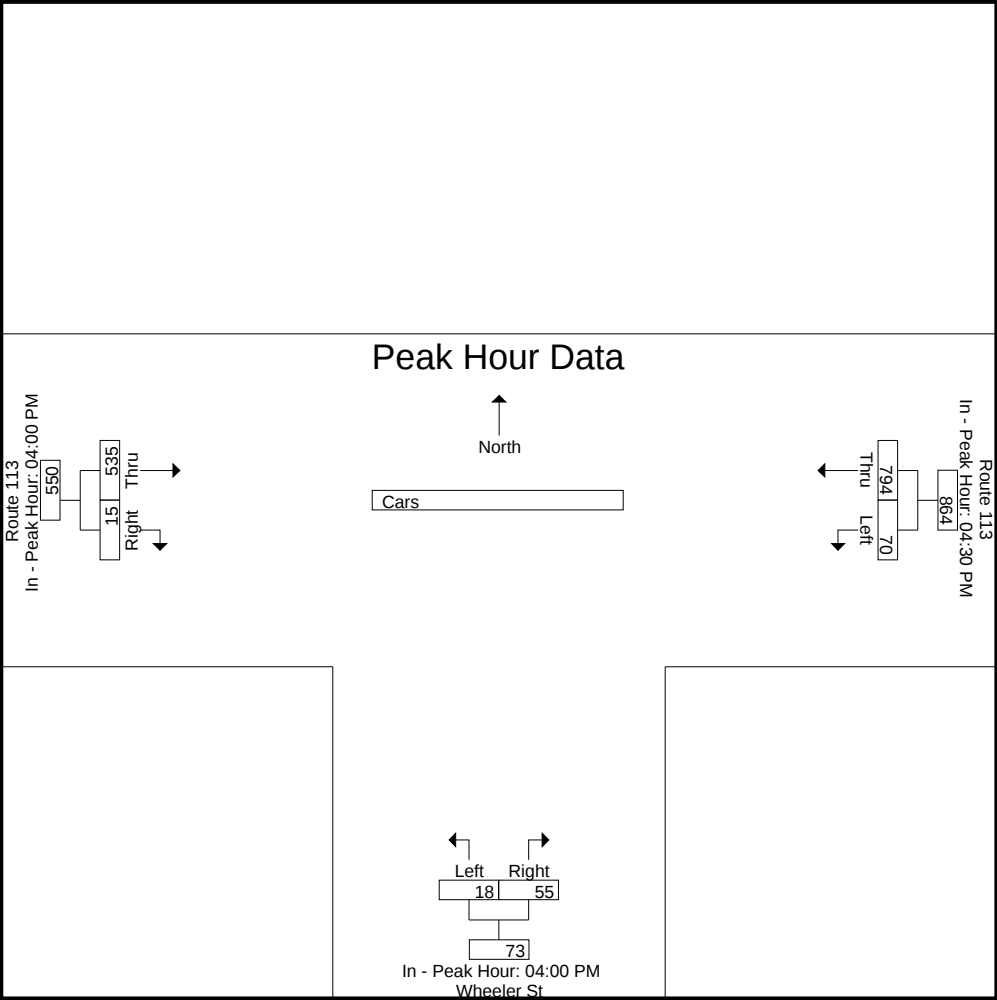
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

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

Page No : 7

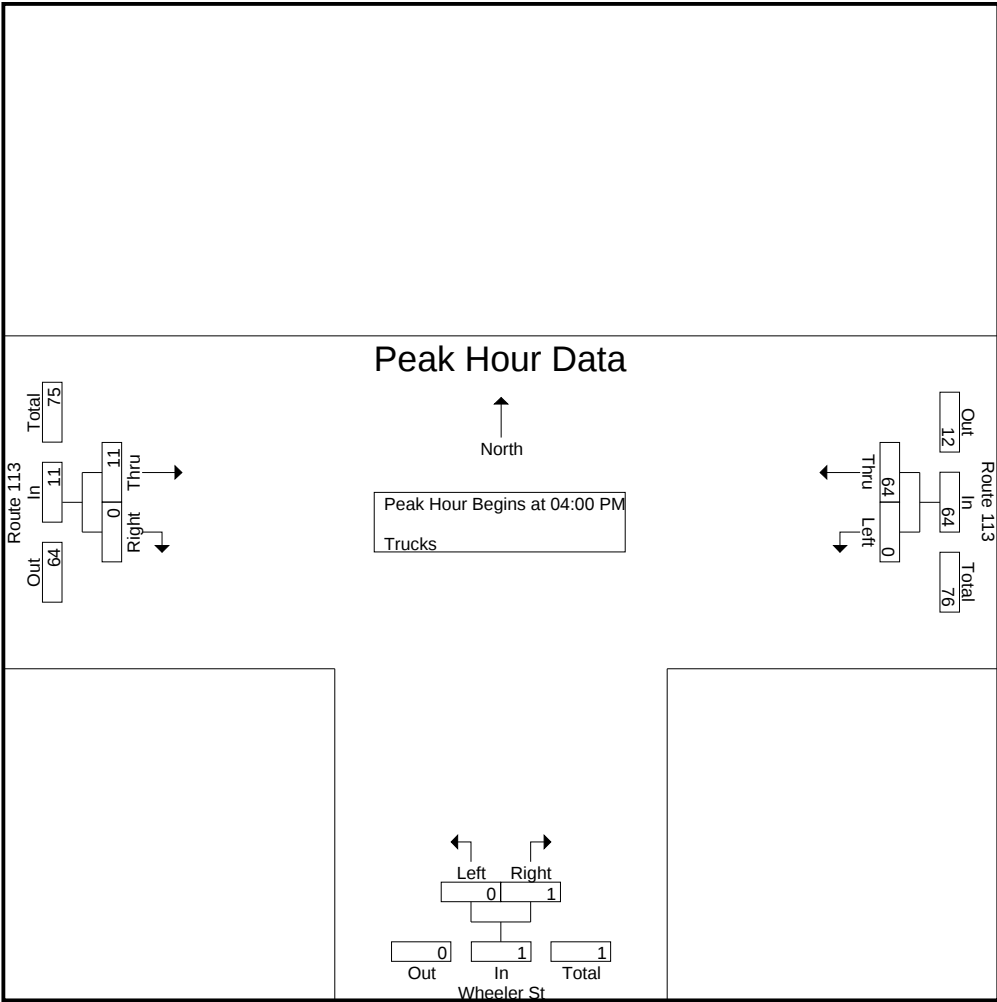
Groups Printed- Trucks

	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

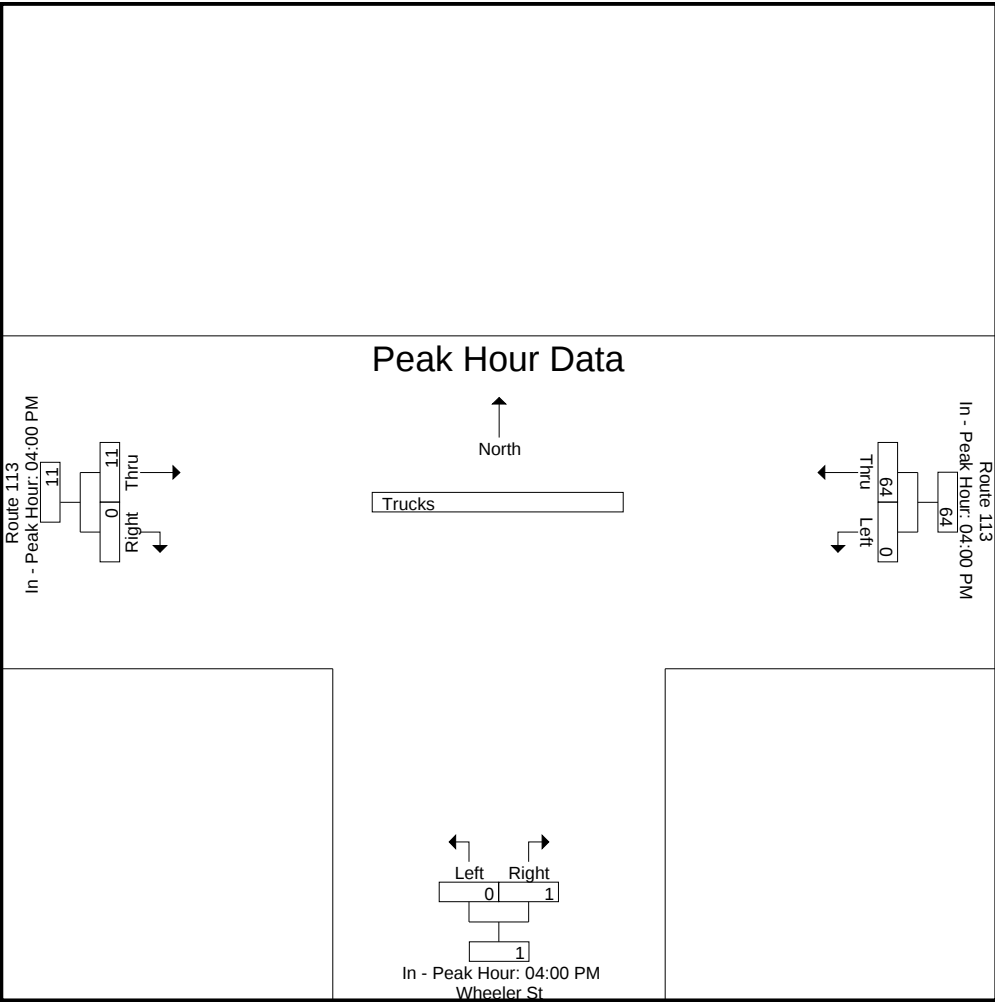


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	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
Page No : 9



978-664-2565

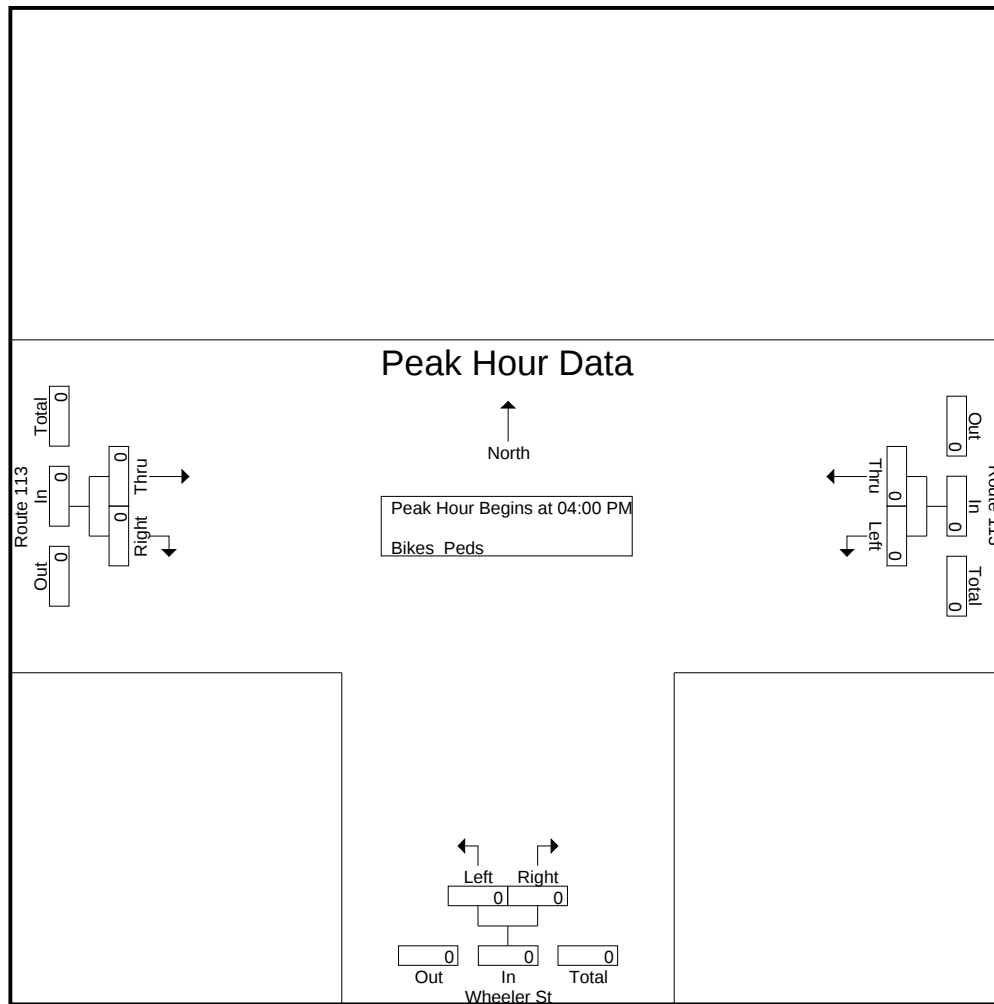
Page No : 10

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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
Page No : 11



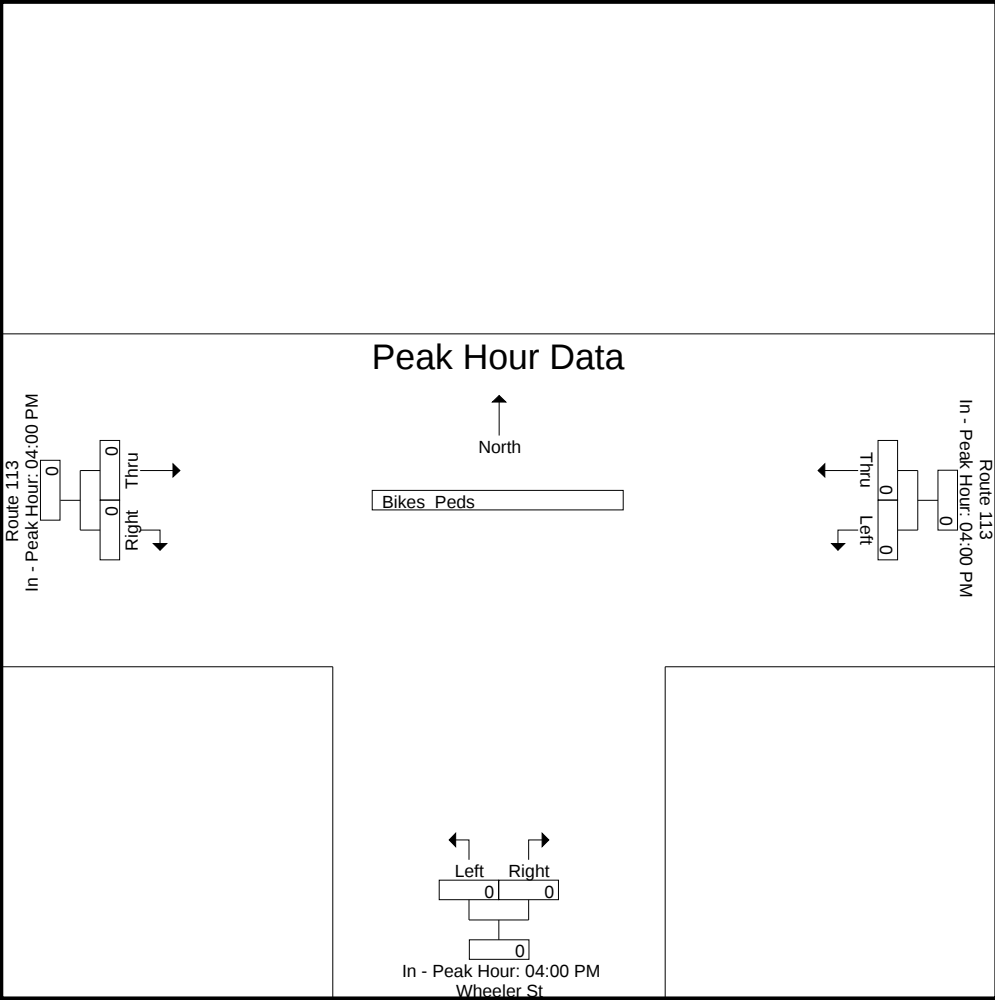
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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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 : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 1

Groups Printed- Cars - Trucks

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	1	11	14	4	56	1	19	8	6	1	87	5	213
07:15 AM	8	18	7	7	64	1	9	9	6	2	76	12	219
07:30 AM	9	7	5	11	73	2	9	8	6	3	84	5	222
07:45 AM	6	8	2	7	65	3	9	5	4	6	84	6	205
Total	24	44	28	29	258	7	46	30	22	12	331	28	859
08:00 AM	4	22	9	23	81	4	10	15	5	3	87	15	278
08:15 AM	2	11	5	11	48	2	14	12	8	5	70	16	204
08:30 AM	6	10	8	8	68	2	15	6	11	5	85	7	231
08:45 AM	4	7	7	6	93	6	12	5	7	3	80	8	238
Total	16	50	29	48	290	14	51	38	31	16	322	46	951
Grand Total	40	94	57	77	548	21	97	68	53	28	653	74	1810
Apprch %	20.9	49.2	29.8	11.9	84.8	3.3	44.5	31.2	24.3	3.7	86.5	9.8	
Total %	2.2	5.2	3.1	4.3	30.3	1.2	5.4	3.8	2.9	1.5	36.1	4.1	
Cars	39	93	55	72	534	20	97	65	50	27	638	72	1762
% Cars	97.5	98.9	96.5	93.5	97.4	95.2	100	95.6	94.3	96.4	97.7	97.3	97.3
Trucks	1	1	2	5	14	1	0	3	3	1	15	2	48
% Trucks	2.5	1.1	3.5	6.5	2.6	4.8	0	4.4	5.7	3.6	2.3	2.7	2.7

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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 08:00 AM																	
08:00 AM	4	22	9	35	23	81	4	108	10	15	5	30	3	87	15	105	278
08:15 AM	2	11	5	18	11	48	2	61	14	12	8	34	5	70	16	91	204
08:30 AM	6	10	8	24	8	68	2	78	15	6	11	32	5	85	7	97	231
08:45 AM	4	7	7	18	6	93	6	105	12	5	7	24	3	80	8	91	238
Total Volume	16	50	29	95	48	290	14	352	51	38	31	120	16	322	46	384	951
% App. Total	16.8	52.6	30.5		13.6	82.4	4		42.5	31.7	25.8		4.2	83.9	12		
PHF	.667	.568	.806	.679	.522	.780	.583	.815	.850	.633	.705	.882	.800	.925	.719	.914	.855
Cars	15	50	27	92	44	282	13	339	51	36	28	115	16	312	45	373	919
% Cars	93.8	100	93.1	96.8	91.7	97.2	92.9	96.3	100	94.7	90.3	95.8	100	96.9	97.8	97.1	96.6
Trucks	1	0	2	3	4	8	1	13	0	2	3	5	0	10	1	11	32
% Trucks	6.3	0	6.9	3.2	8.3	2.8	7.1	3.7	0	5.3	9.7	4.2	0	3.1	2.2	2.9	3.4

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

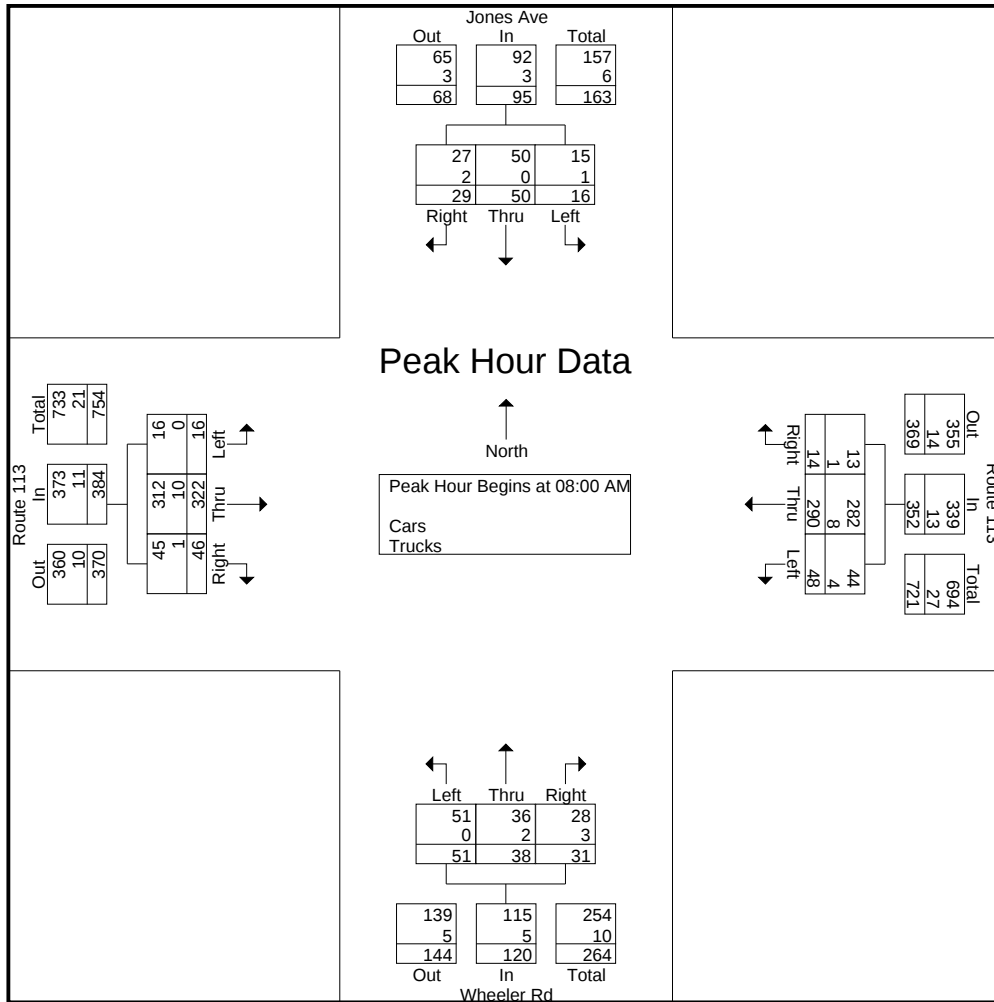
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 2



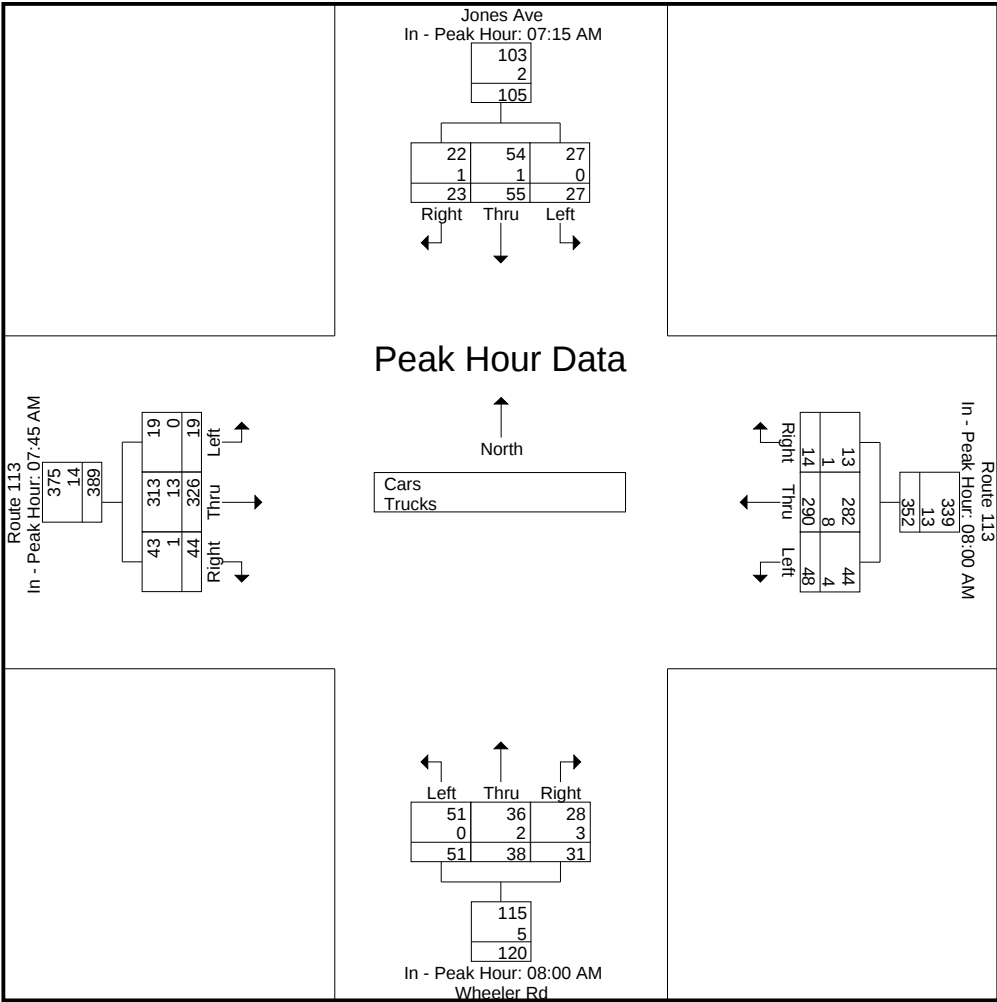
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				08:00 AM				07:45 AM			
+0 mins.	8	18	7	33	23	81	4	108	10	15	5	30	6	84	6	96
+15 mins.	9	7	5	21	11	48	2	61	14	12	8	34	3	87	15	105
+30 mins.	6	8	2	16	8	68	2	78	15	6	11	32	5	70	16	91
+45 mins.	4	22	9	35	6	93	6	105	12	5	7	24	5	85	7	97
Total Volume	27	55	23	105	48	290	14	352	51	38	31	120	19	326	44	389
% App. Total	25.7	52.4	21.9		13.6	82.4	4		42.5	31.7	25.8		4.9	83.8	11.3	
PHF	.750	.625	.639	.750	.522	.780	.583	.815	.850	.633	.705	.882	.792	.937	.688	.926
Cars	27	54	22	103	44	282	13	339	51	36	28	115	19	313	43	375
% Cars	100	98.2	95.7	98.1	91.7	97.2	92.9	96.3	100	94.7	90.3	95.8	100	96	97.7	96.4
Trucks	0	1	1	2	4	8	1	13	0	2	3	5	0	13	1	14
% Trucks	0	1.8	4.3	1.9	8.3	2.8	7.1	3.7	0	5.3	9.7	4.2	0	4	2.3	3.6

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 4

Groups Printed- Cars

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	1	11	14	4	56	1	19	8	6	1	87	5	213
07:15 AM	8	17	7	7	59	1	9	8	6	2	76	11	211
07:30 AM	9	7	5	10	73	2	9	8	6	2	83	5	219
07:45 AM	6	8	2	7	64	3	9	5	4	6	80	6	200
Total	24	43	28	28	252	7	46	29	22	11	326	27	843
08:00 AM	4	22	8	20	81	3	10	14	5	3	86	15	271
08:15 AM	2	11	4	10	44	2	14	11	6	5	69	15	193
08:30 AM	6	10	8	8	67	2	15	6	11	5	78	7	223
08:45 AM	3	7	7	6	90	6	12	5	6	3	79	8	232
Total	15	50	27	44	282	13	51	36	28	16	312	45	919
Grand Total	39	93	55	72	534	20	97	65	50	27	638	72	1762
Apprch %	20.9	49.7	29.4	11.5	85.3	3.2	45.8	30.7	23.6	3.7	86.6	9.8	
Total %	2.2	5.3	3.1	4.1	30.3	1.1	5.5	3.7	2.8	1.5	36.2	4.1	

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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 08:00 AM																	
08:00 AM	4	22	8	34	20	81	3	104	10	14	5	29	3	86	15	104	271
08:15 AM	2	11	4	17	10	44	2	56	14	11	6	31	5	69	15	89	193
08:30 AM	6	10	8	24	8	67	2	77	15	6	11	32	5	78	7	90	223
08:45 AM	3	7	7	17	6	90	6	102	12	5	6	23	3	79	8	90	232
Total Volume	15	50	27	92	44	282	13	339	51	36	28	115	16	312	45	373	919
% App. Total	16.3	54.3	29.3		13	83.2	3.8		44.3	31.3	24.3		4.3	83.6	12.1		
PHF	.625	.568	.844	.676	.550	.783	.542	.815	.850	.643	.636	.898	.800	.907	.750	.897	.848

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

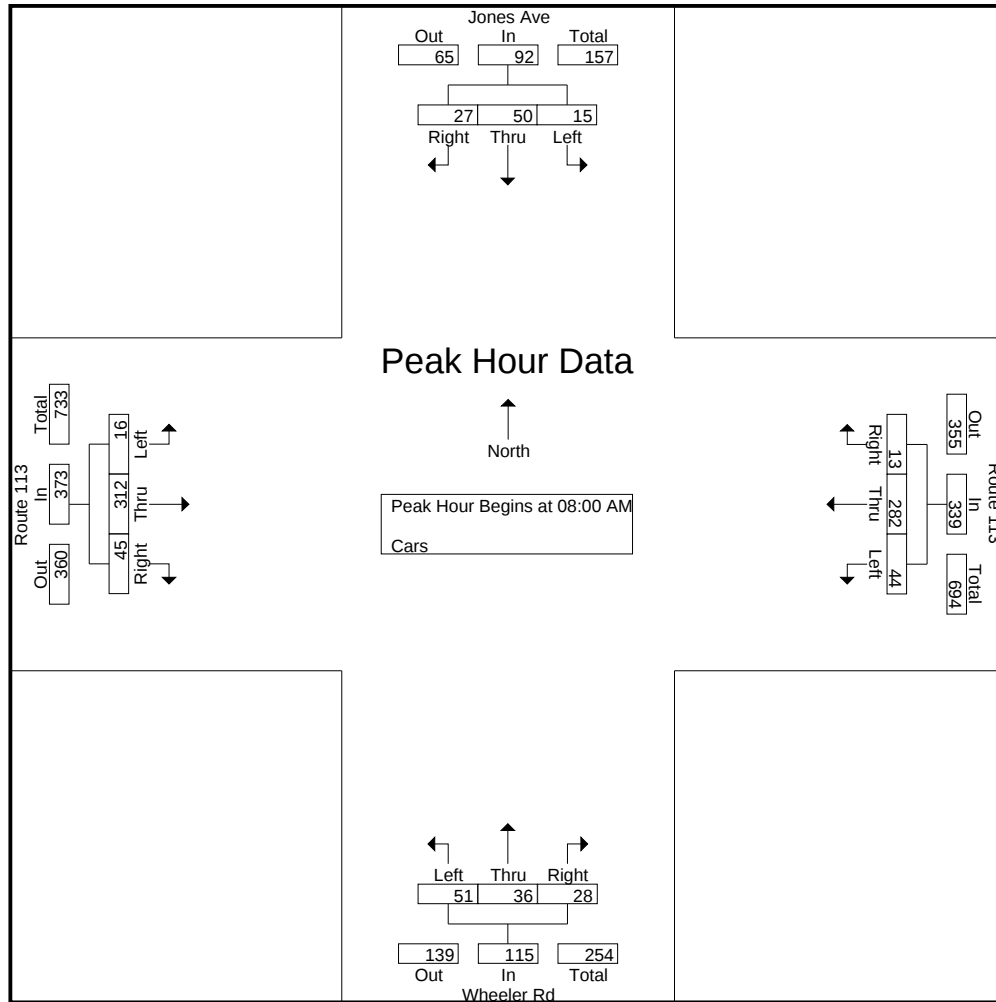
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 5



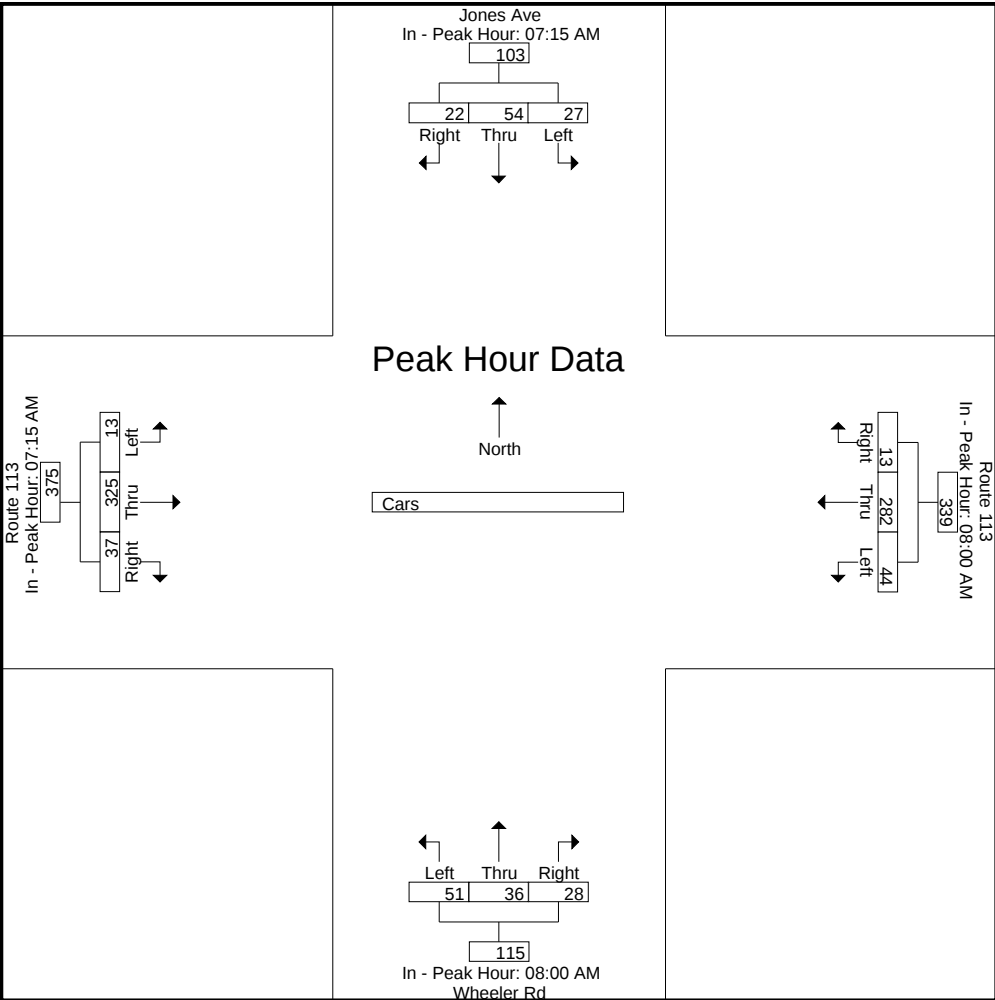
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:15 AM				08:00 AM				08:00 AM				07:15 AM			
+0 mins.	8	17	7	32	20	81	3	104	10	14	5	29	2	76	11	89
+15 mins.	9	7	5	21	10	44	2	56	14	11	6	31	2	83	5	90
+30 mins.	6	8	2	16	8	67	2	77	15	6	11	32	6	80	6	92
+45 mins.	4	22	8	34	6	90	6	102	12	5	6	23	3	86	15	104
Total Volume	27	54	22	103	44	282	13	339	51	36	28	115	13	325	37	375
% App. Total	26.2	52.4	21.4		13	83.2	3.8		44.3	31.3	24.3		3.5	86.7	9.9	
PHF	.750	.614	.688	.757	.550	.783	.542	.815	.850	.643	.636	.898	.542	.945	.617	.901

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 7

Groups Printed- Trucks

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 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	1	0	0	5	0	0	1	0	0	0	1	8
07:30 AM	0	0	0	1	0	0	0	0	0	1	1	0	3
07:45 AM	0	0	0	0	1	0	0	0	0	0	4	0	5
Total	0	1	0	1	6	0	0	1	0	1	5	1	16
08:00 AM	0	0	1	3	0	1	0	1	0	0	1	0	7
08:15 AM	0	0	1	1	4	0	0	1	2	0	1	1	11
08:30 AM	0	0	0	0	1	0	0	0	0	0	7	0	8
08:45 AM	1	0	0	0	3	0	0	0	1	0	1	0	6
Total	1	0	2	4	8	1	0	2	3	0	10	1	32
Grand Total	1	1	2	5	14	1	0	3	3	1	15	2	48
Apprch %	25	25	50	25	70	5	0	50	50	5.6	83.3	11.1	
Total %	2.1	2.1	4.2	10.4	29.2	2.1	0	6.2	6.2	2.1	31.2	4.2	

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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 08:00 AM																	
08:00 AM	0	0	1	1	3	0	1	4	0	1	0	1	0	1	0	1	7
08:15 AM	0	0	1	1	1	4	0	5	0	1	2	3	0	1	1	2	11
08:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	7	0	7	8
08:45 AM	1	0	0	1	0	3	0	3	0	0	1	1	0	1	0	1	6
Total Volume	1	0	2	3	4	8	1	13	0	2	3	5	0	10	1	11	32
% App. Total	33.3	0	66.7		30.8	61.5	7.7		0	40	60		0	90.9	9.1		
PHF	.250	.000	.500	.750	.333	.500	.250	.650	.000	.500	.375	.417	.000	.357	.250	.393	.727

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

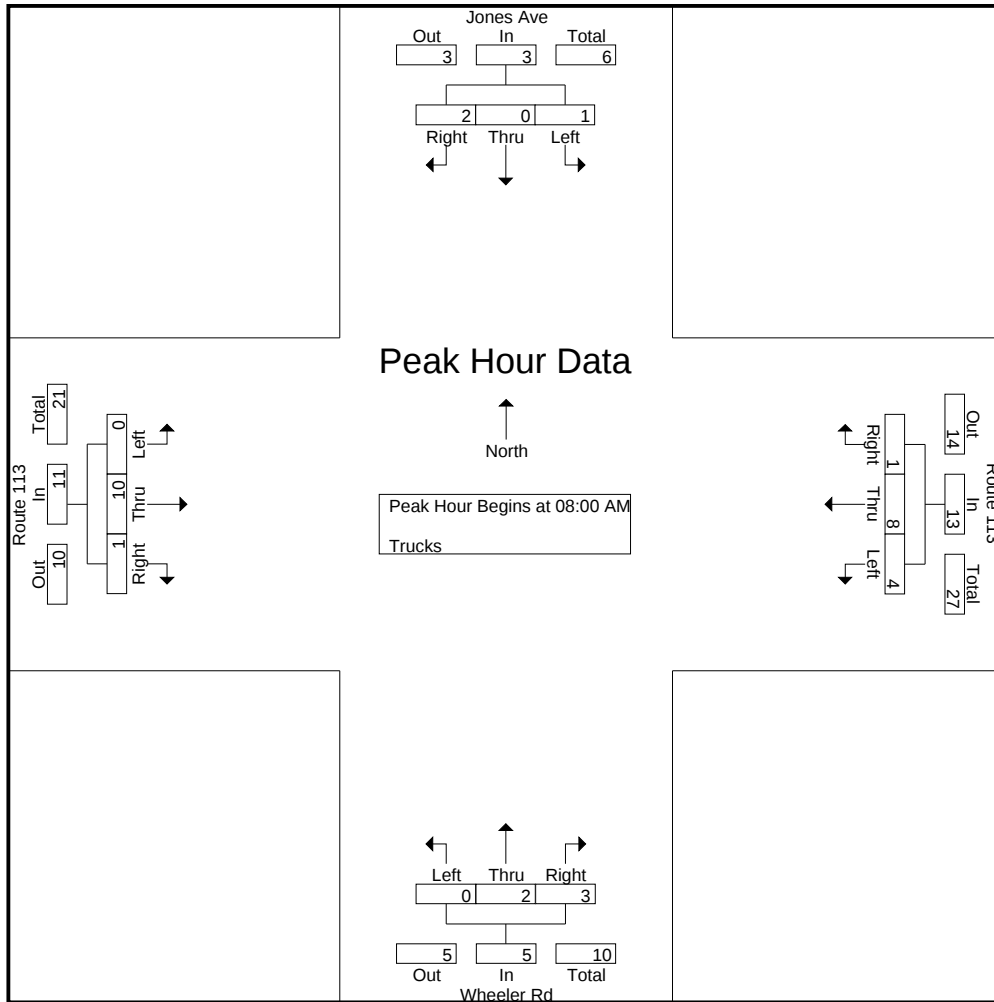
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 8



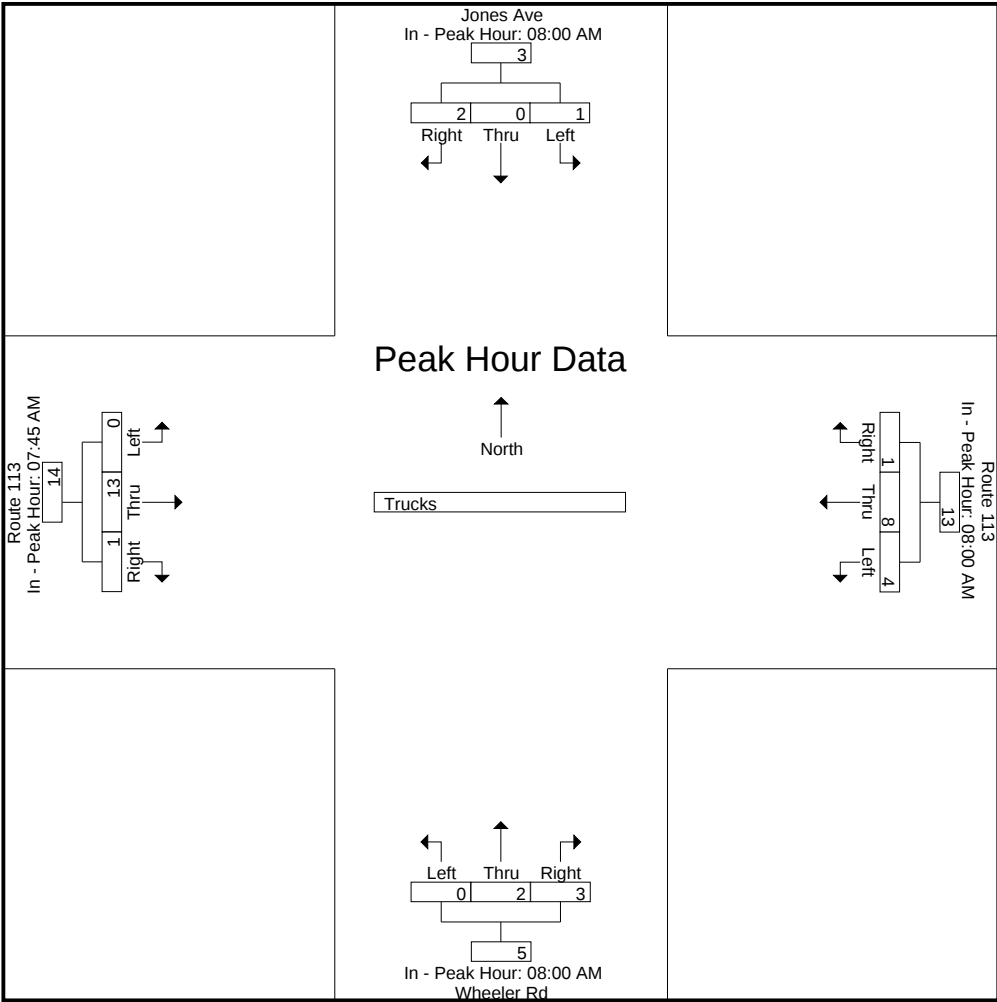
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				07:45 AM			
+0 mins.	0	0	1	1	3	0	1	4	0	1	0	1	0	4	0	4
+15 mins.	0	0	1	1	1	4	0	5	0	1	2	3	0	1	0	1
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	1	2
+45 mins.	1	0	0	1	0	3	0	3	0	0	1	1	0	7	0	7
Total Volume	1	0	2	3	4	8	1	13	0	2	3	5	0	13	1	14
% App. Total	33.3	0	66.7		30.8	61.5	7.7		0	40	60		0	92.9	7.1	
PHF	.250	.000	.500	.750	.333	.500	.250	.650	.000	.500	.375	.417	.000	.464	.250	.500

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 9



978-664-2565

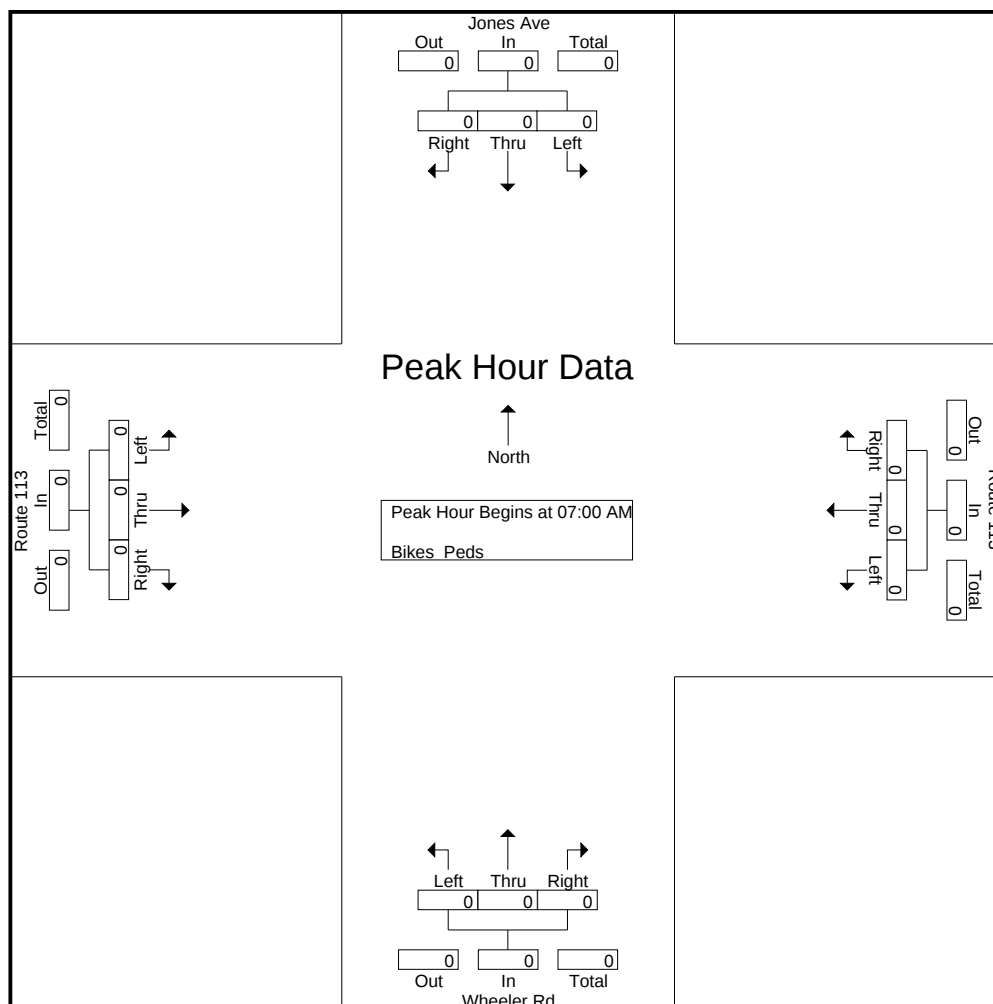
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978-664-2565

Weather : Clear

Page No : 11

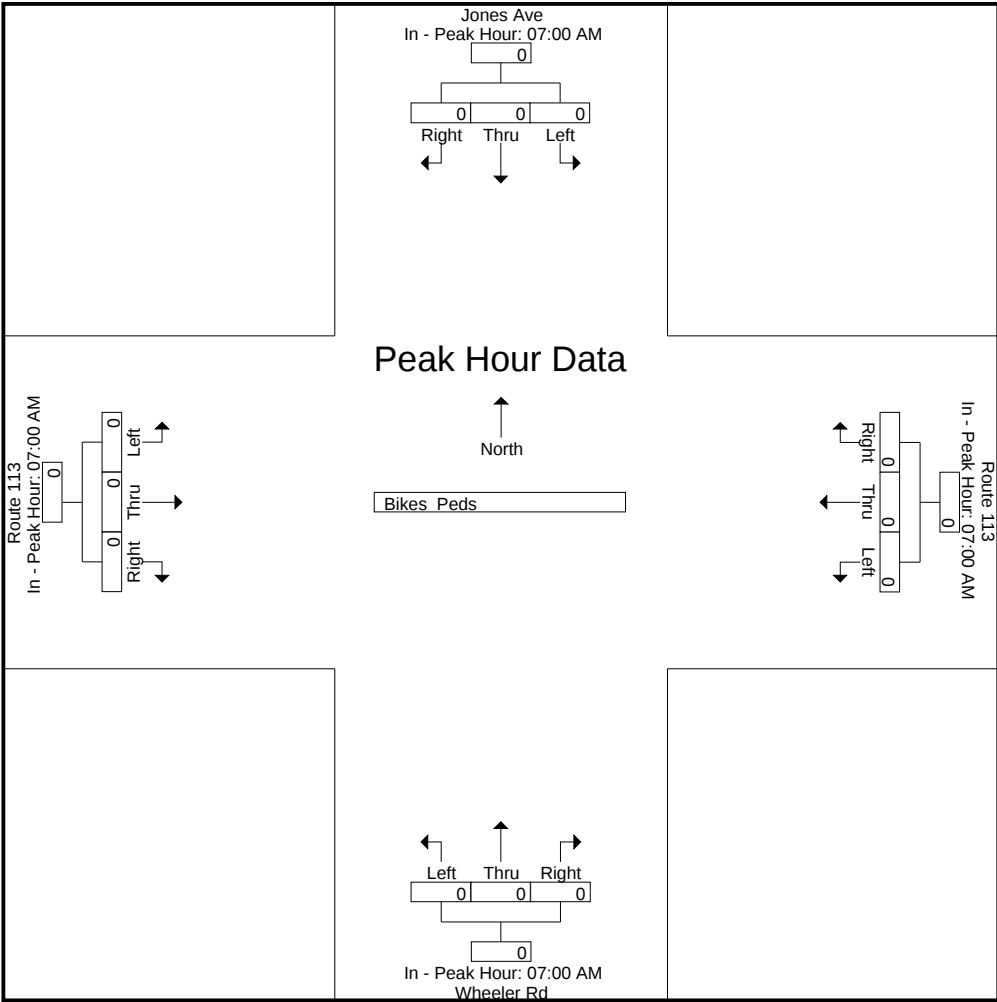


Peak Hour for Each Approach Begins at:

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 : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 1

Groups Printed- Cars - Trucks

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	2	10	5	6	100	6	8	20	10	8	93	15	283
04:15 PM	4	7	5	8	119	9	18	15	15	6	80	15	301
04:30 PM	5	9	2	9	131	6	17	15	7	5	74	11	291
04:45 PM	4	12	4	8	124	7	16	5	9	9	70	14	282
Total	15	38	16	31	474	28	59	55	41	28	317	55	1157
05:00 PM	2	12	4	6	111	8	9	17	14	5	73	20	281
05:15 PM	4	13	8	9	112	6	17	14	16	9	70	11	289
05:30 PM	2	18	3	5	114	6	10	11	12	7	62	13	263
05:45 PM	6	10	11	4	103	3	9	13	2	2	50	14	227
Total	14	53	26	24	440	23	45	55	44	23	255	58	1060
Grand Total	29	91	42	55	914	51	104	110	85	51	572	113	2217
Apprch %	17.9	56.2	25.9	5.4	89.6	5	34.8	36.8	28.4	6.9	77.7	15.4	
Total %	1.3	4.1	1.9	2.5	41.2	2.3	4.7	5	3.8	2.3	25.8	5.1	
Cars	29	90	42	55	909	51	104	109	84	51	564	112	2200
% Cars	100	98.9	100	100	99.5	100	100	99.1	98.8	100	98.6	99.1	99.2
Trucks	0	1	0	0	5	0	0	1	1	0	8	1	17
% Trucks	0	1.1	0	0	0.5	0	0	0.9	1.2	0	1.4	0.9	0.8

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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	2	10	5	17	6	100	6	112	8	20	10	38	8	93	15	116	283
04:15 PM	4	7	5	16	8	119	9	136	18	15	15	48	6	80	15	101	301
04:30 PM	5	9	2	16	9	131	6	146	17	15	7	39	5	74	11	90	291
04:45 PM	4	12	4	20	8	124	7	139	16	5	9	30	9	70	14	93	282
Total Volume	15	38	16	69	31	474	28	533	59	55	41	155	28	317	55	400	1157
% App. Total	21.7	55.1	23.2		5.8	88.9	5.3		38.1	35.5	26.5		7	79.2	13.8		
PHF	.750	.792	.800	.863	.861	.905	.778	.913	.819	.688	.683	.807	.778	.852	.917	.862	.961
Cars	15	37	16	68	31	469	28	528	59	54	40	153	28	311	54	393	1142
% Cars	100	97.4	100	98.6	100	98.9	100	99.1	100	98.2	97.6	98.7	100	98.1	98.2	98.3	98.7
Trucks	0	1	0	1	0	5	0	5	0	1	1	2	0	6	1	7	15
% Trucks	0	2.6	0	1.4	0	1.1	0	0.9	0	1.8	2.4	1.3	0	1.9	1.8	1.8	1.3

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

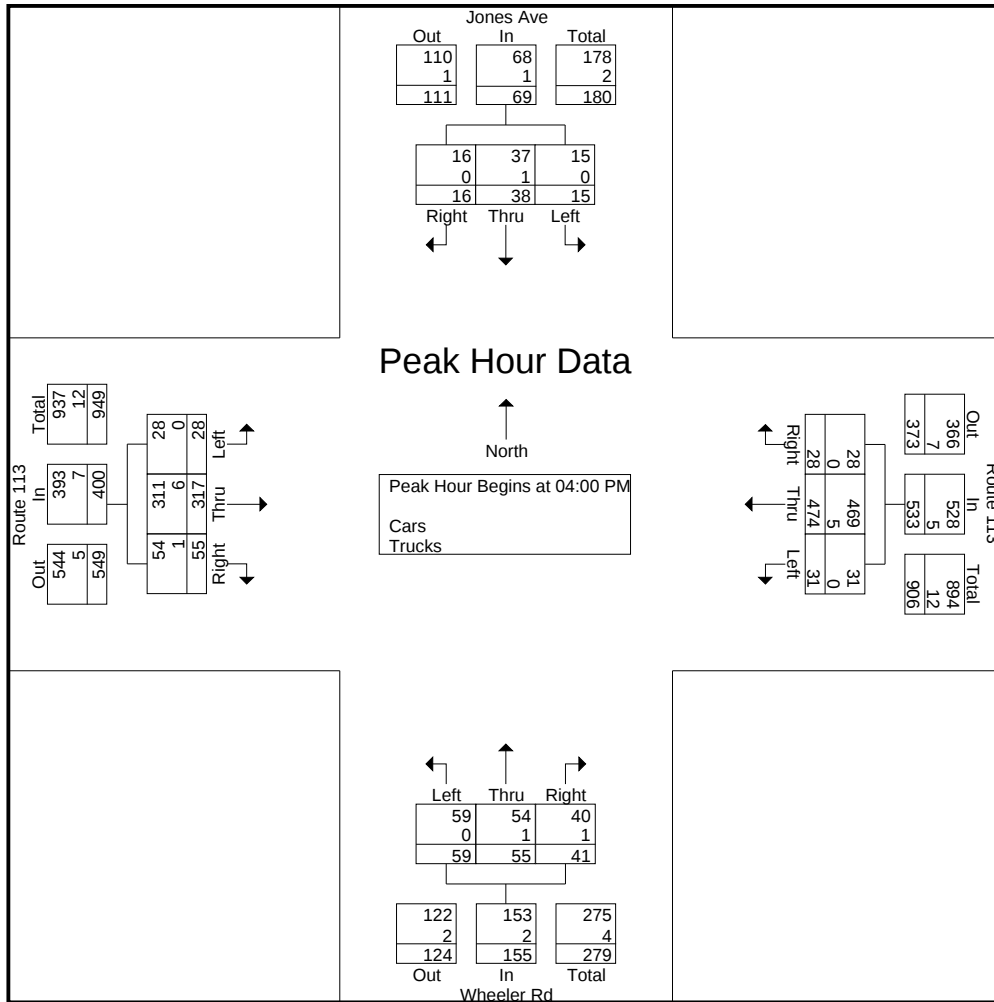
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 2



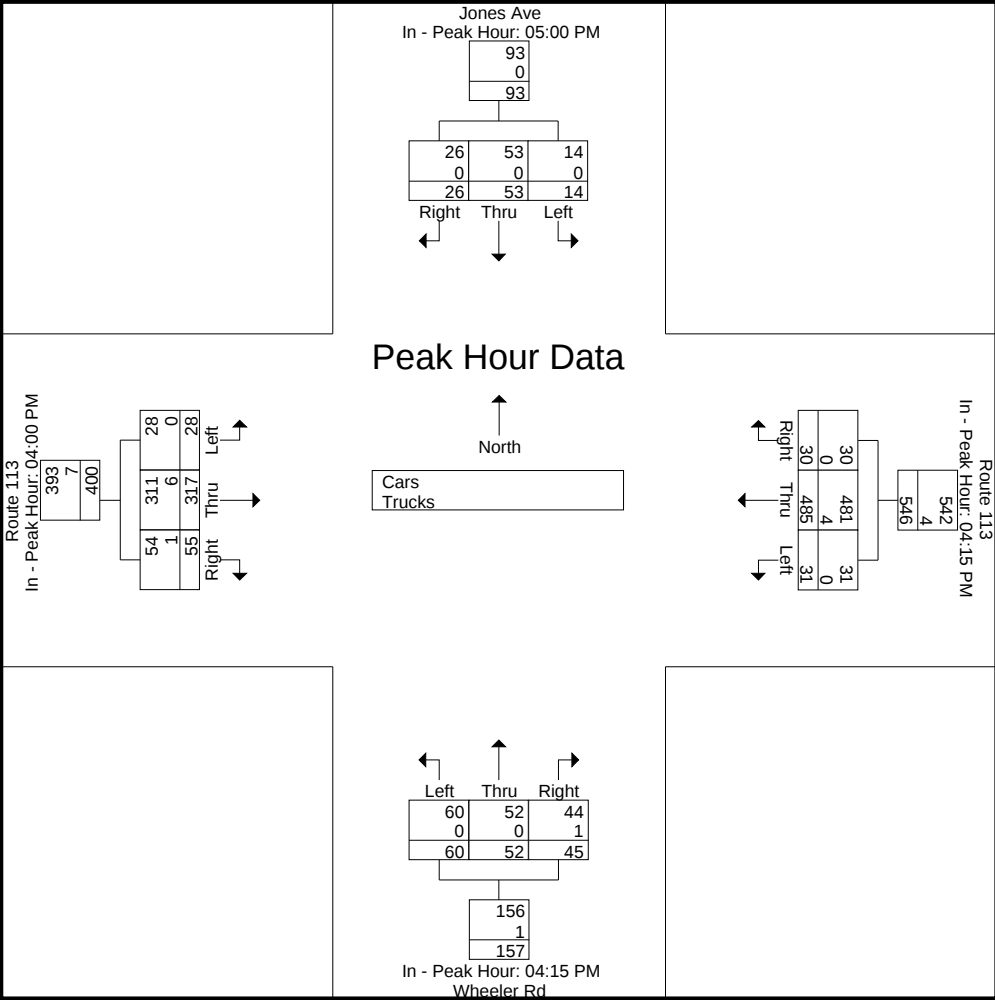
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:15 PM				04:15 PM				04:00 PM			
+0 mins.	2	12	4	18	8	119	9	136	18	15	15	48	8	93	15	116
+15 mins.	4	13	8	25	9	131	6	146	17	15	7	39	6	80	15	101
+30 mins.	2	18	3	23	8	124	7	139	16	5	9	30	5	74	11	90
+45 mins.	6	10	11	27	6	111	8	125	9	17	14	40	9	70	14	93
Total Volume	14	53	26	93	31	485	30	546	60	52	45	157	28	317	55	400
% App. Total	15.1	57	28		5.7	88.8	5.5		38.2	33.1	28.7		7	79.2	13.8	
PHF	.583	.736	.591	.861	.861	.926	.833	.935	.833	.765	.750	.818	.778	.852	.917	.862
Cars	14	53	26	93	31	481	30	542	60	52	44	156	28	311	54	393
% Cars	100	100	100	100	100	99.2	100	99.3	100	100	97.8	99.4	100	98.1	98.2	98.2
Trucks	0	0	0	0	0	4	0	4	0	0	1	1	0	6	1	7
% Trucks	0	0	0	0	0	0.8	0	0.7	0	0	2.2	0.6	0	1.9	1.8	1.8

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 4

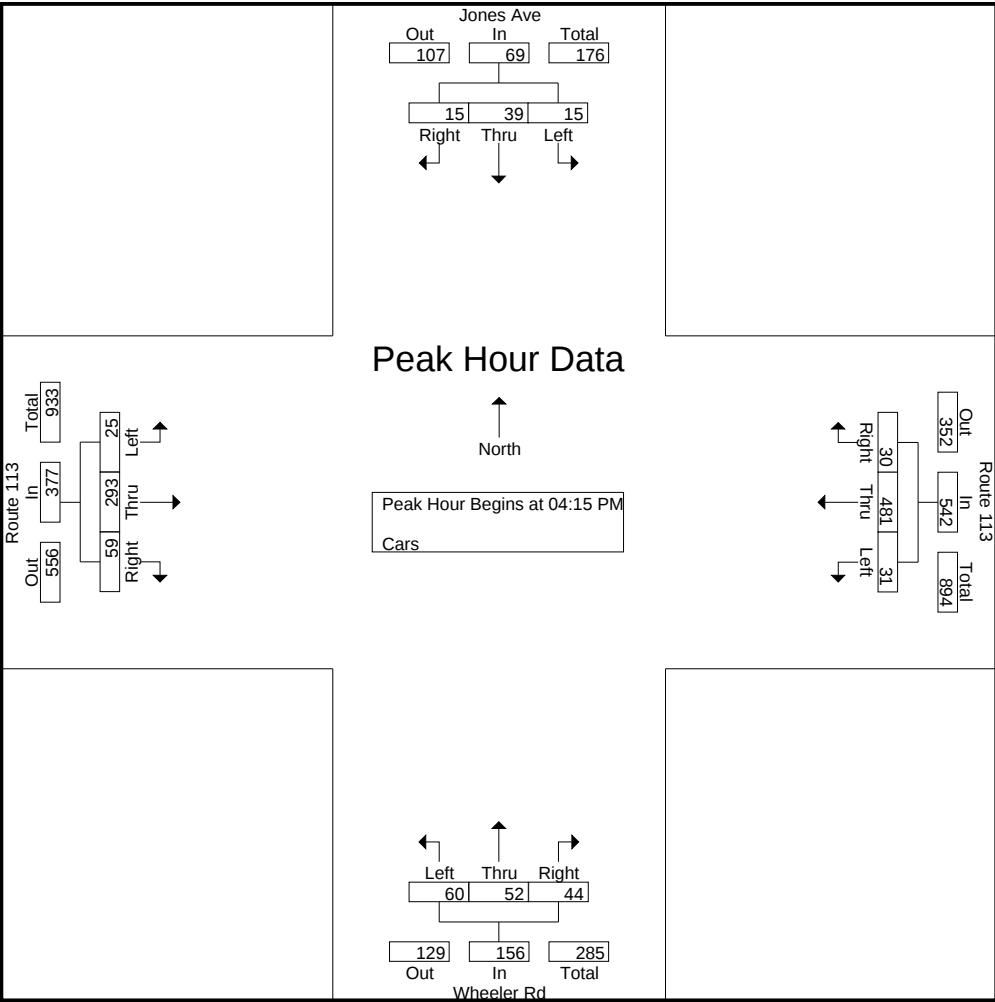
Groups Printed- Cars

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	2	10	5	6	99	6	8	19	10	8	91	15	279
04:15 PM	4	7	5	8	118	9	18	15	14	6	78	14	296
04:30 PM	5	9	2	9	129	6	17	15	7	5	73	11	288
04:45 PM	4	11	4	8	123	7	16	5	9	9	69	14	279
Total	15	37	16	31	469	28	59	54	40	28	311	54	1142
05:00 PM	2	12	4	6	111	8	9	17	14	5	73	20	281
05:15 PM	4	13	8	9	112	6	17	14	16	9	69	11	288
05:30 PM	2	18	3	5	114	6	10	11	12	7	61	13	262
05:45 PM	6	10	11	4	103	3	9	13	2	2	50	14	227
Total	14	53	26	24	440	23	45	55	44	23	253	58	1058
Grand Total	29	90	42	55	909	51	104	109	84	51	564	112	2200
Apprch %	18	55.9	26.1	5.4	89.6	5	35	36.7	28.3	7	77.6	15.4	
Total %	1.3	4.1	1.9	2.5	41.3	2.3	4.7	5	3.8	2.3	25.6	5.1	

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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 04:15 PM																	
04:15 PM	4	7	5	16	8	118	9	135	18	15	14	47	6	78	14	98	296
04:30 PM	5	9	2	16	9	129	6	144	17	15	7	39	5	73	11	89	288
04:45 PM	4	11	4	19	8	123	7	138	16	5	9	30	9	69	14	92	279
05:00 PM	2	12	4	18	6	111	8	125	9	17	14	40	5	73	20	98	281
Total Volume	15	39	15	69	31	481	30	542	60	52	44	156	25	293	59	377	1144
% App. Total	21.7	56.5	21.7		5.7	88.7	5.5		38.5	33.3	28.2		6.6	77.7	15.6		
PHF	.750	.813	.750	.908	.861	.932	.833	.941	.833	.765	.786	.830	.694	.939	.738	.962	.966

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 5



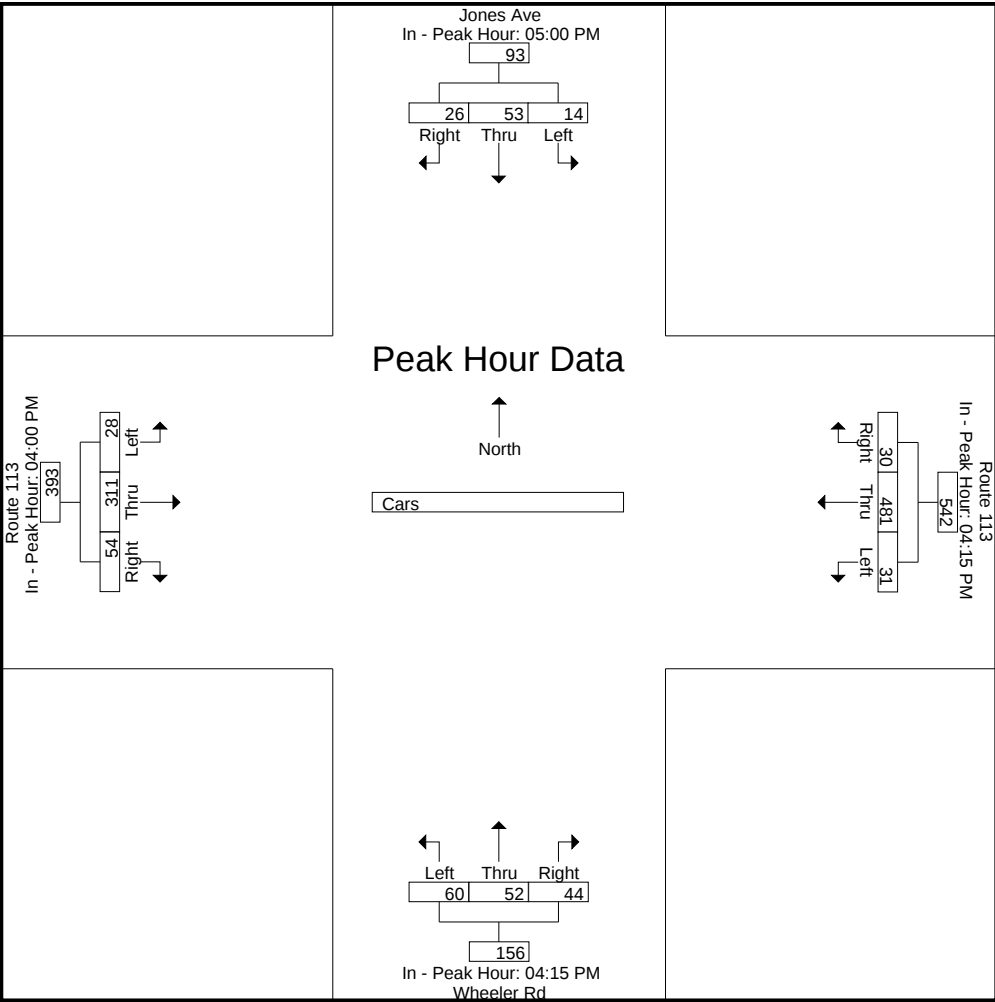
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	05:00 PM				04:15 PM				04:15 PM				04:00 PM			
+0 mins.	2	12	4	18	8	118	9	135	18	15	14	47	8	91	15	114
+15 mins.	4	13	8	25	9	129	6	144	17	15	7	39	6	78	14	98
+30 mins.	2	18	3	23	8	123	7	138	16	5	9	30	5	73	11	89
+45 mins.	6	10	11	27	6	111	8	125	9	17	14	40	9	69	14	92
Total Volume	14	53	26	93	31	481	30	542	60	52	44	156	28	311	54	393
% App. Total	15.1	57	28		5.7	88.7	5.5		38.5	33.3	28.2		7.1	79.1	13.7	
PHF	.583	.736	.591	.861	.861	.932	.833	.941	.833	.765	.786	.830	.778	.854	.900	.862

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 7

Groups Printed- Trucks

	Jones Ave From North			Route 113 From East			Wheeler Rd From South			Route 113 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	1	0	0	2	0	4
04:15 PM	0	0	0	0	1	0	0	0	1	0	2	1	5
04:30 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
04:45 PM	0	1	0	0	1	0	0	0	0	0	1	0	3
Total	0	1	0	0	5	0	0	1	1	0	6	1	15
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	1	0	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	0	2
Grand Total	0	1	0	0	5	0	0	1	1	0	8	1	17
Apprch %	0	100	0	0	100	0	0	50	50	0	88.9	11.1	
Total %	0	5.9	0	0	29.4	0	0	5.9	5.9	0	47.1	5.9	

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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	1	0	1	0	2	0	2	4
04:15 PM	0	0	0	0	0	1	0	1	0	0	1	1	0	2	1	3	5
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
04:45 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1	3
Total Volume	0	1	0	1	0	5	0	5	0	1	1	2	0	6	1	7	15
% App. Total	0	100	0		0	100	0		0	50	50		0	85.7	14.3		
PHF	.000	.250	.000	.250	.000	.625	.000	.625	.000	.250	.250	.500	.000	.750	.250	.583	.750

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

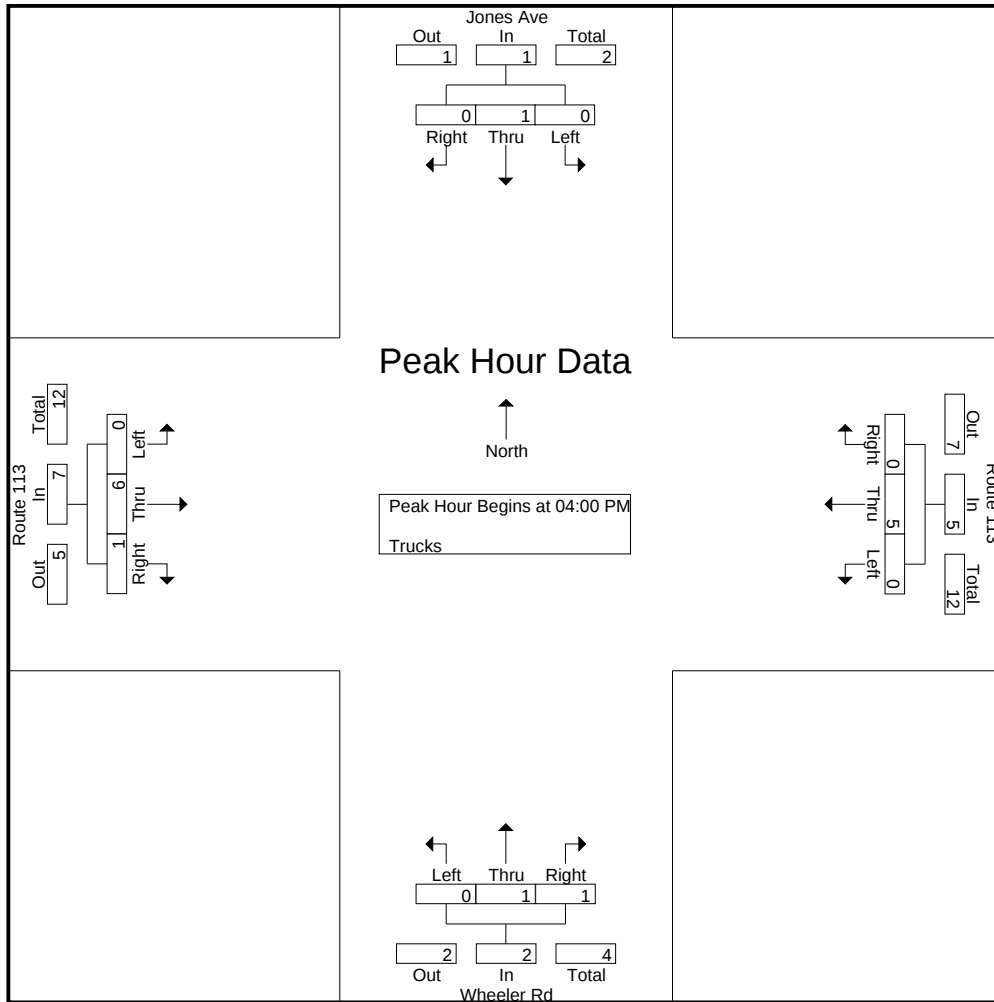
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 8



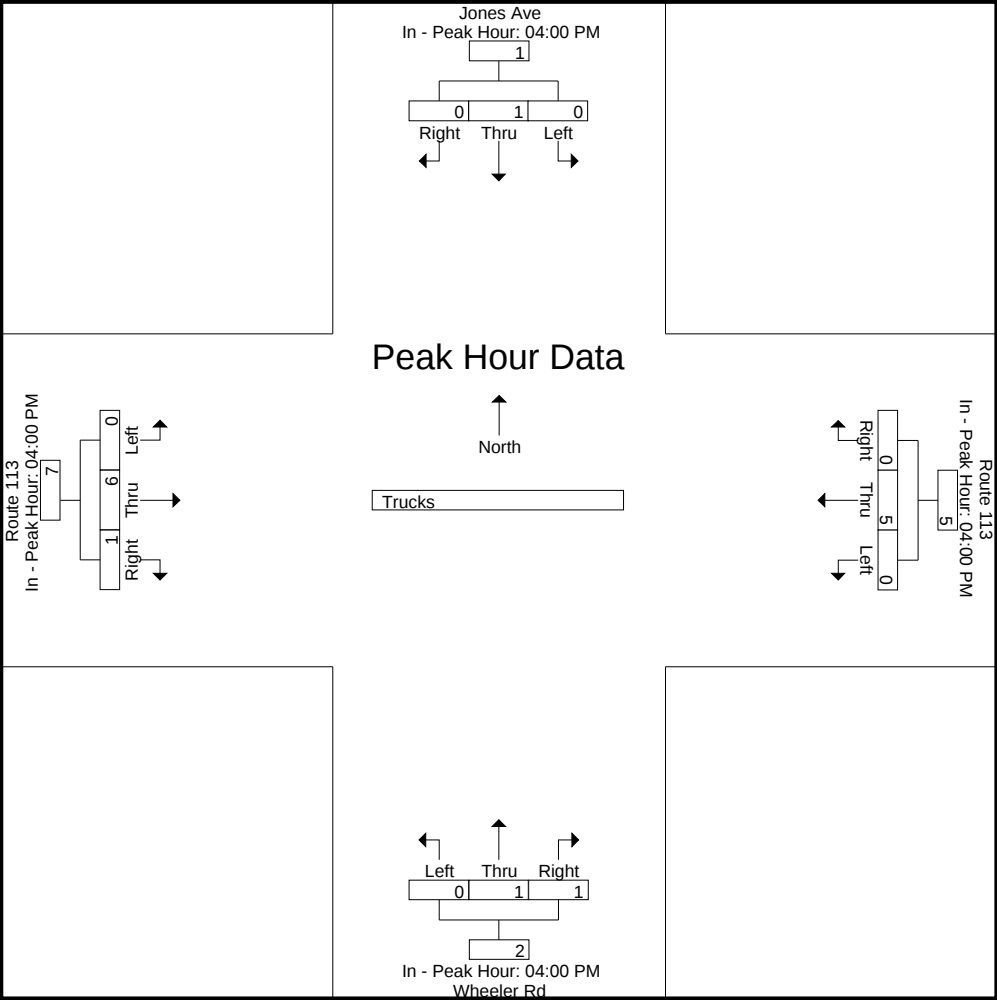
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	1	0	1	0	1	0	1	0	2	0	2
+15 mins.	0	0	0	0	0	1	0	1	0	0	1	1	0	2	1	3
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1
+45 mins.	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	1	0	1	0	5	0	5	0	1	1	2	0	6	1	7
% App. Total	0	100	0		0	100	0		0	50	50		0	85.7	14.3	
PHF	.000	.250	.000	.250	.000	.625	.000	.625	.000	.250	.250	.500	.000	.750	.250	.583

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 9



Accurate Counts
978-664-2565

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 10

Groups Printed- Bikes Peds

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:00 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
Grand Total	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	3
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0				
Total %	0	0	0		0	66.7	0		0	0	0		0	33.3	0		0	100	

	Jones Ave From North				Route 113 From East				Wheeler Rd From South				Route 113 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 04:15 PM																	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	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
05:00 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	2	0	2	0	0	0	0	0	1	0	1	3
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.375

Accurate Counts

978-664-2565

N/S Street : Jones Ave / Wheeler Rd

E/W Street : Route 113

City/State : Dracut, MA

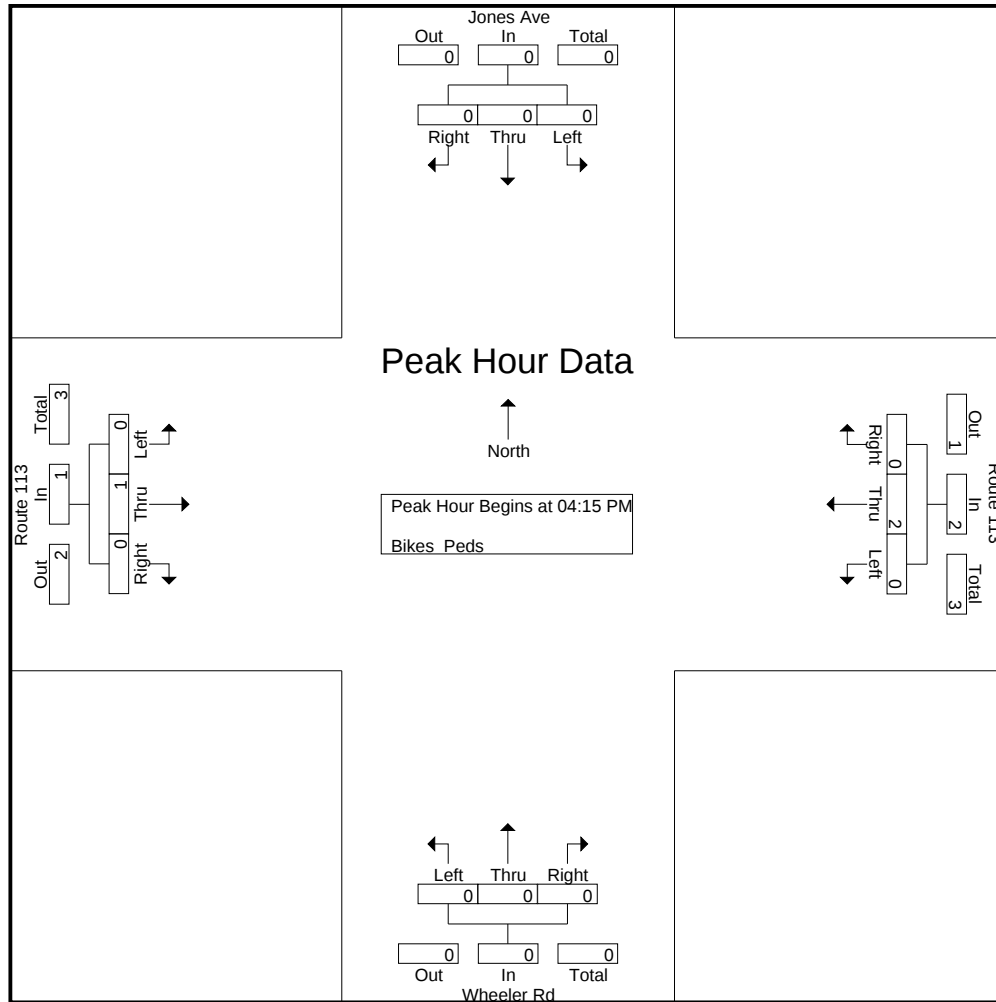
Weather : Clear

File Name : 74630001

Site Code : 74630001

Start Date : 4/9/2024

Page No : 11



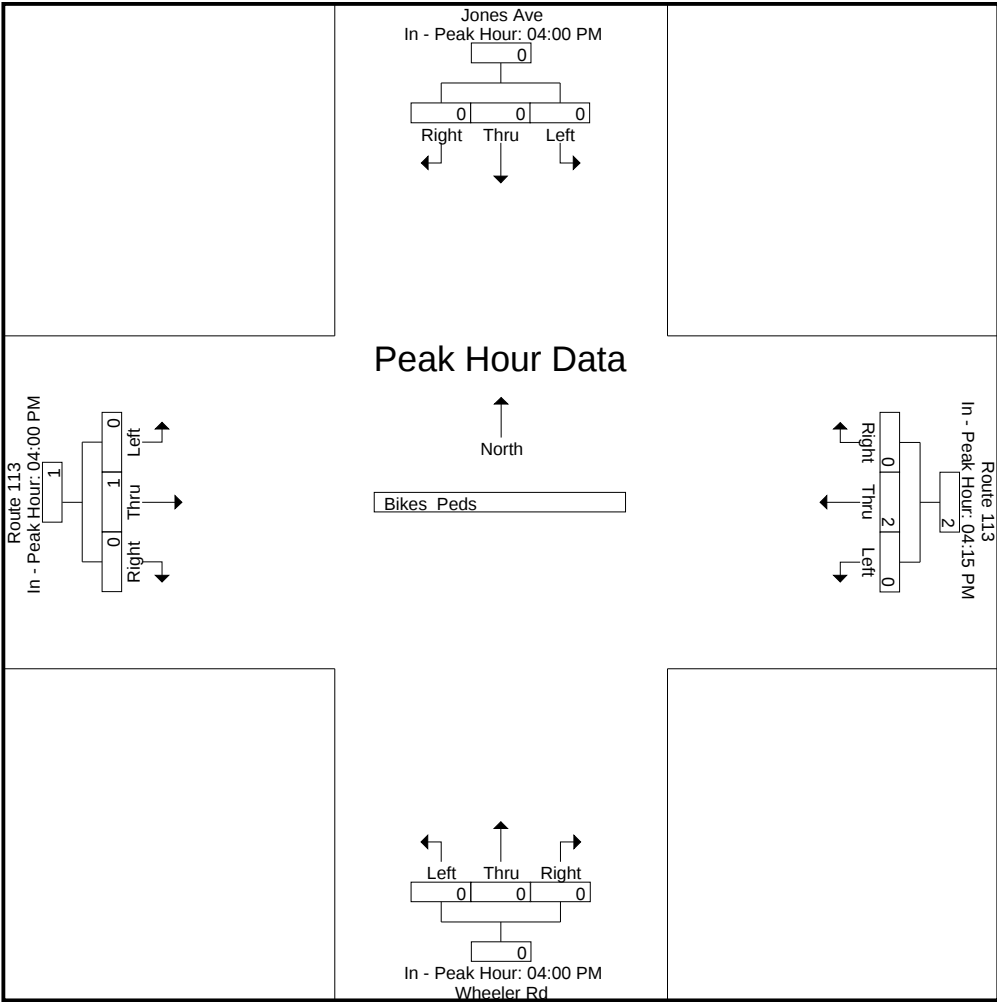
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 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	1	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	2	0	2	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250

N/S Street : Jones Ave / Wheeler Rd
E/W Street : Route 113
City/State : Dracut, MA
Weather : Clear

File Name : 74630001
Site Code : 74630001
Start Date : 4/9/2024
Page No : 12



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 1

Groups Printed- Cars - Trucks

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	16	13	0	3	15	47
07:15 AM	0	9	14	0	9	28	60
07:30 AM	0	12	11	1	5	19	48
07:45 AM	0	7	10	0	8	12	37
Total	0	44	48	1	25	74	192
08:00 AM	0	19	14	0	19	40	92
08:15 AM	1	14	23	0	15	23	76
08:30 AM	0	8	21	0	10	16	55
08:45 AM	0	12	10	0	8	12	42
Total	1	53	68	0	52	91	265
Grand Total	1	97	116	1	77	165	457
Apprch %	1	99	99.1	0.9	31.8	68.2	
Total %	0.2	21.2	25.4	0.2	16.8	36.1	
Cars	1	96	111	1	75	159	443
% Cars	100	99	95.7	100	97.4	96.4	96.9
Trucks	0	1	5	0	2	6	14
% Trucks	0	1	4.3	0	2.6	3.6	3.1

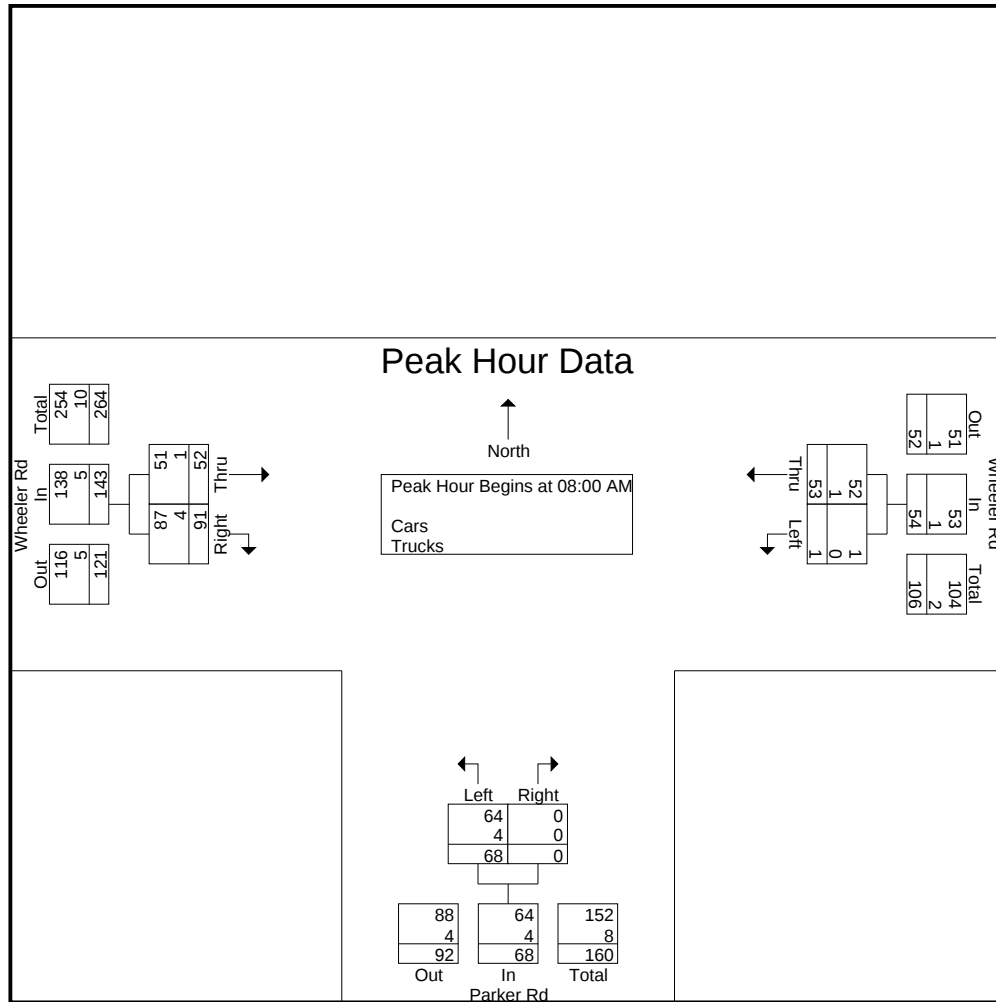
	Wheeler Rd From East			Parker Rd From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	19	19	14	0	14	19	40	59	92
08:15 AM	1	14	15	23	0	23	15	23	38	76
08:30 AM	0	8	8	21	0	21	10	16	26	55
08:45 AM	0	12	12	10	0	10	8	12	20	42
Total Volume	1	53	54	68	0	68	52	91	143	265
% App. Total	1.9	98.1		100	0		36.4	63.6		
PHF	.250	.697	.711	.739	.000	.739	.684	.569	.606	.720
Cars	1	52	53	64	0	64	51	87	138	255
% Cars	100	98.1	98.1	94.1	0	94.1	98.1	95.6	96.5	96.2
Trucks	0	1	1	4	0	4	1	4	5	10
% Trucks	0	1.9	1.9	5.9	0	5.9	1.9	4.4	3.5	3.8

Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 2



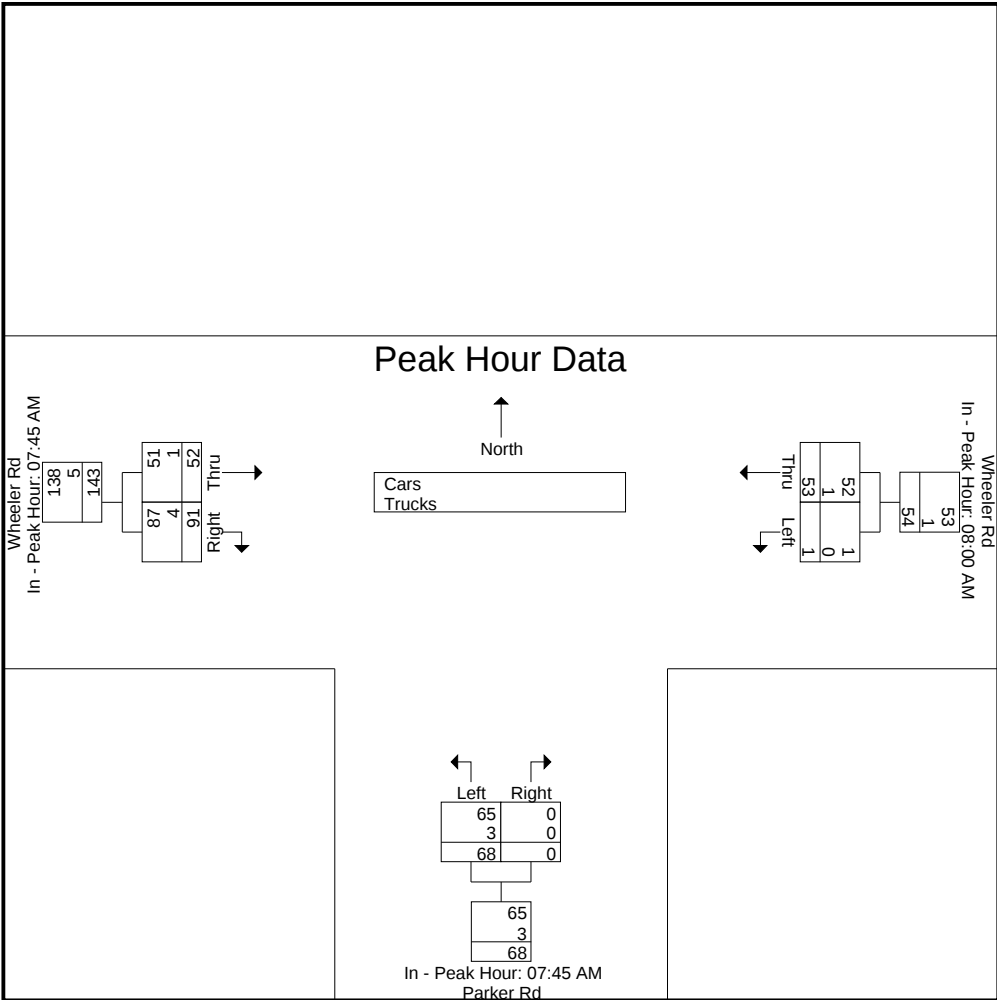
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			07:45 AM		
+0 mins.	0	19	19	10	0	10	8	12	20
+15 mins.	1	14	15	14	0	14	19	40	59
+30 mins.	0	8	8	23	0	23	15	23	38
+45 mins.	0	12	12	21	0	21	10	16	26
Total Volume	1	53	54	68	0	68	52	91	143
% App. Total	1.9	98.1		100	0		36.4	63.6	
PHF	.250	.697	.711	.739	.000	.739	.684	.569	.606
Cars	1	52	53	65	0	65	51	87	138
% Cars	100	98.1	98.1	95.6	0	95.6	98.1	95.6	96.5
Trucks	0	1	1	3	0	3	1	4	5
% Trucks	0	1.9	1.9	4.4	0	4.4	1.9	4.4	3.5

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 3



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 4

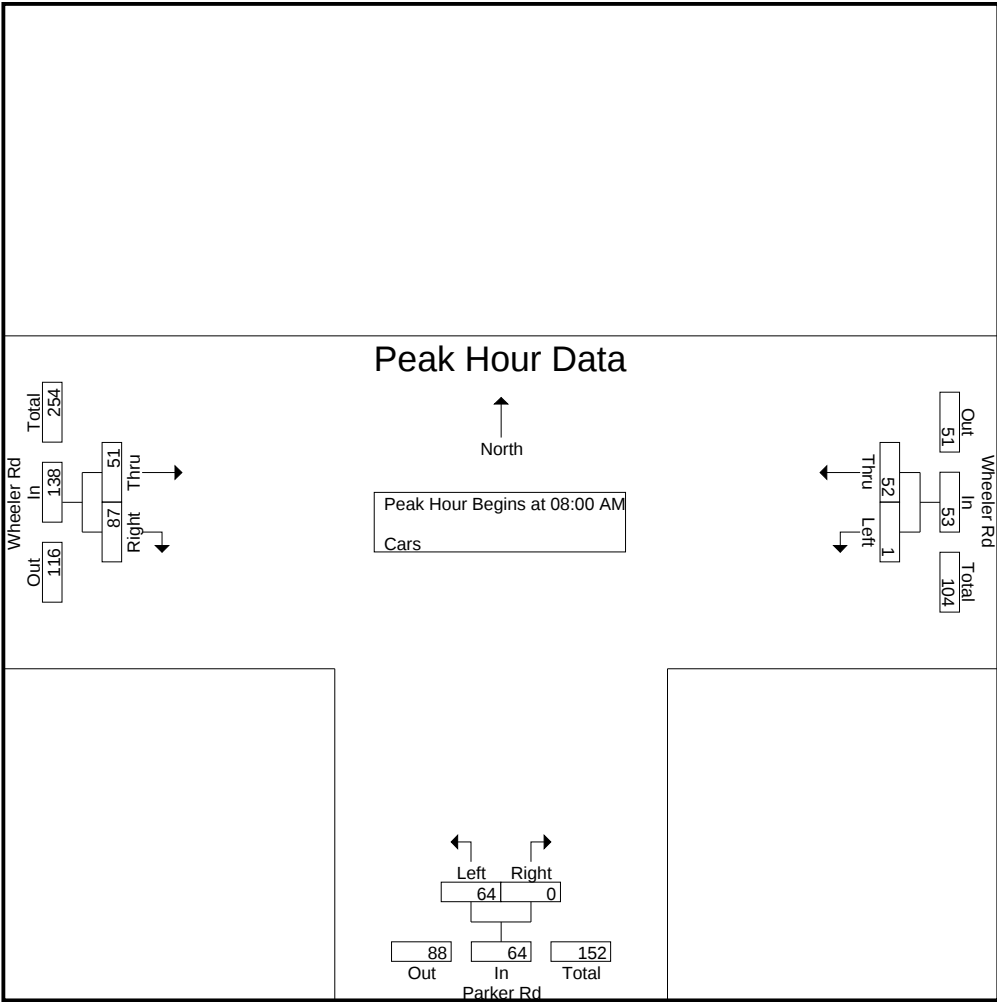
Groups Printed- Cars

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	16	13	0	3	15	47
07:15 AM	0	9	13	0	8	27	57
07:30 AM	0	12	11	1	5	18	47
07:45 AM	0	7	10	0	8	12	37
Total	0	44	47	1	24	72	188
08:00 AM	0	18	14	0	19	37	88
08:15 AM	1	14	20	0	14	22	71
08:30 AM	0	8	21	0	10	16	55
08:45 AM	0	12	9	0	8	12	41
Total	1	52	64	0	51	87	255
Grand Total	1	96	111	1	75	159	443
Apprch %	1	99	99.1	0.9	32.1	67.9	
Total %	0.2	21.7	25.1	0.2	16.9	35.9	

	Wheeler Rd From East			Parker Rd 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	0	18	18	14	0	14	19	37	56	88
08:15 AM	1	14	15	20	0	20	14	22	36	71
08:30 AM	0	8	8	21	0	21	10	16	26	55
08:45 AM	0	12	12	9	0	9	8	12	20	41
Total Volume	1	52	53	64	0	64	51	87	138	255
% App. Total	1.9	98.1		100	0		37	63		
PHF	.250	.722	.736	.762	.000	.762	.671	.588	.616	.724

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 5

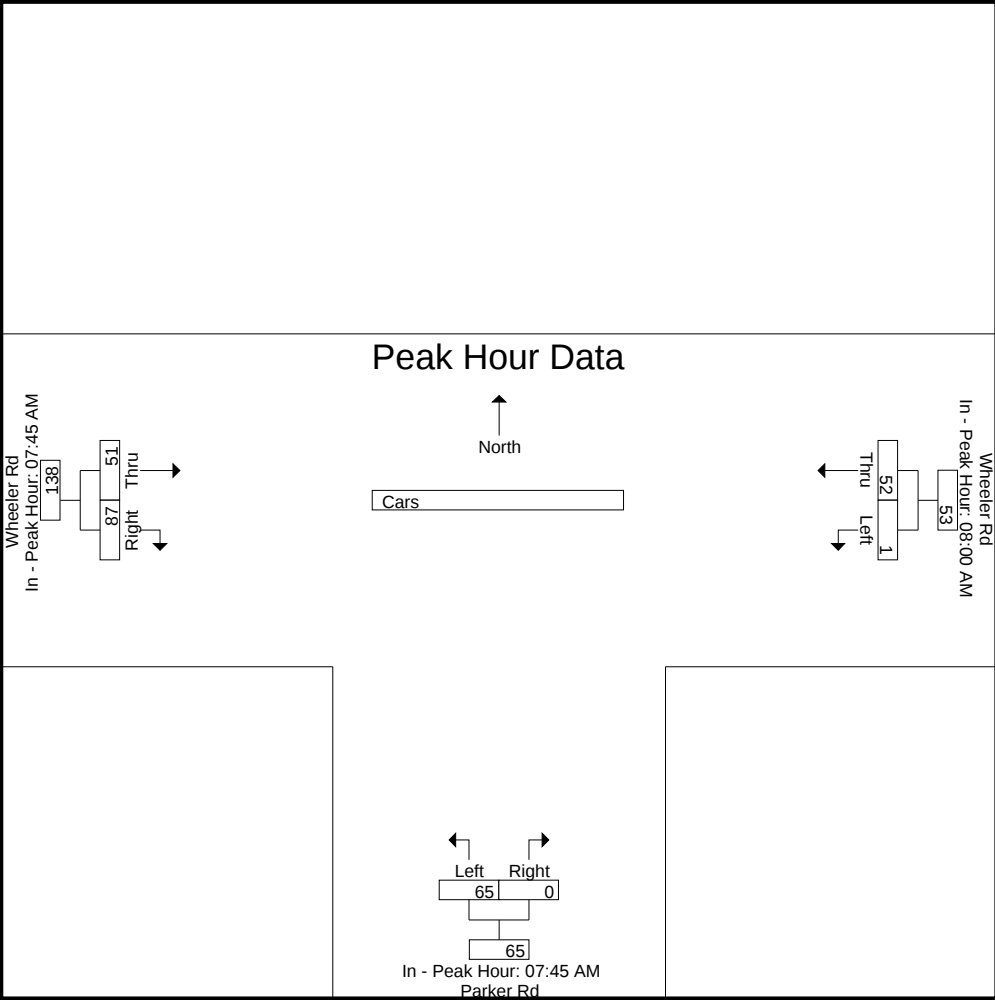


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			07:45 AM		
+0 mins.	0	18	18	10	0	10	8	12	20
+15 mins.	1	14	15	14	0	14	19	37	56
+30 mins.	0	8	8	20	0	20	14	22	36
+45 mins.	0	12	12	21	0	21	10	16	26
Total Volume	1	52	53	65	0	65	51	87	138
% App. Total	1.9	98.1		100	0		37	63	
PHF	.250	.722	.736	.774	.000	.774	.671	.588	.616

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 6



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 7

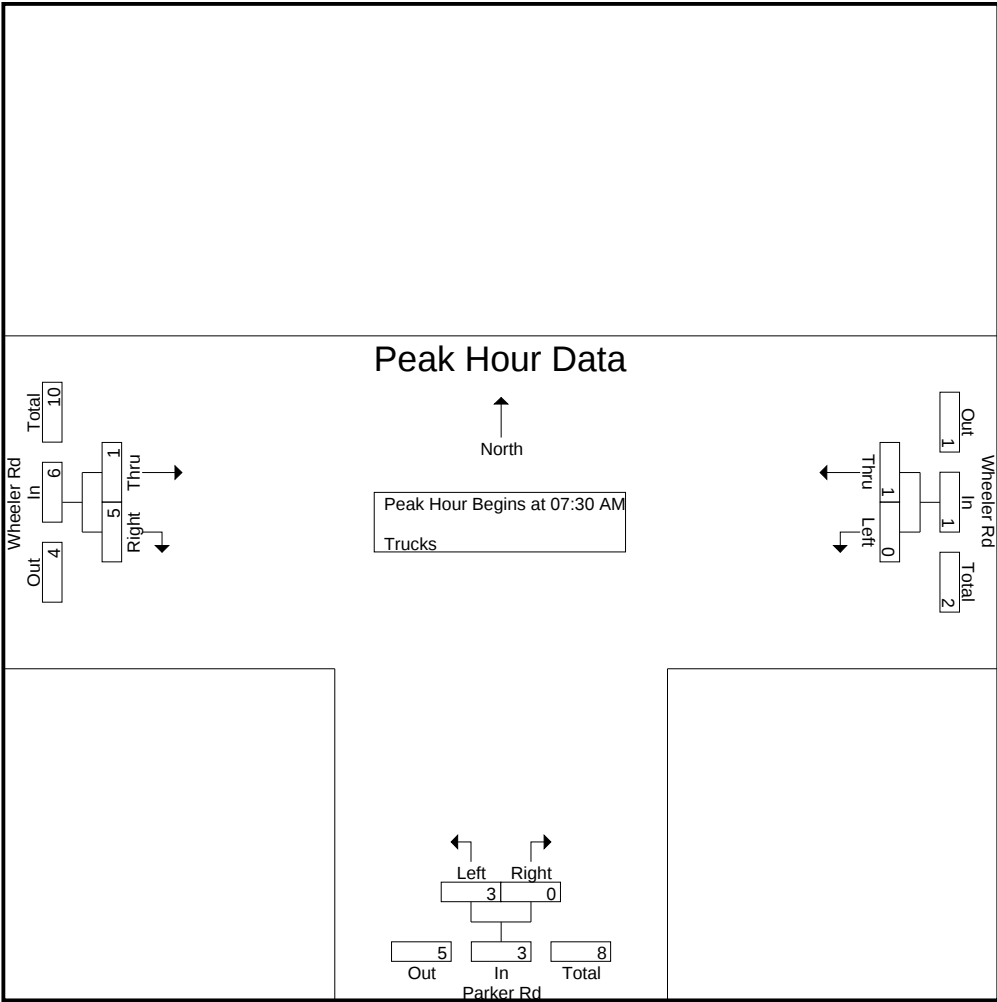
Groups Printed- Trucks

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	0	1	0	1	1	3
07:30 AM	0	0	0	0	0	1	1
07:45 AM	0	0	0	0	0	0	0
Total	0	0	1	0	1	2	4
08:00 AM	0	1	0	0	0	3	4
08:15 AM	0	0	3	0	1	1	5
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	1	0	0	0	1
Total	0	1	4	0	1	4	10
Grand Total	0	1	5	0	2	6	14
Apprch %	0	100	100	0	25	75	
Total %	0	7.1	35.7	0	14.3	42.9	

	Wheeler Rd From East			Parker Rd 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 07:30 AM										
07:30 AM	0	0	0	0	0	0	0	1	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	1	1	0	0	0	0	3	3	4
08:15 AM	0	0	0	3	0	3	1	1	2	5
Total Volume	0	1	1	3	0	3	1	5	6	10
% App. Total	0	100		100	0		16.7	83.3		
PHF	.000	.250	.250	.250	.000	.250	.250	.417	.500	.500

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 8

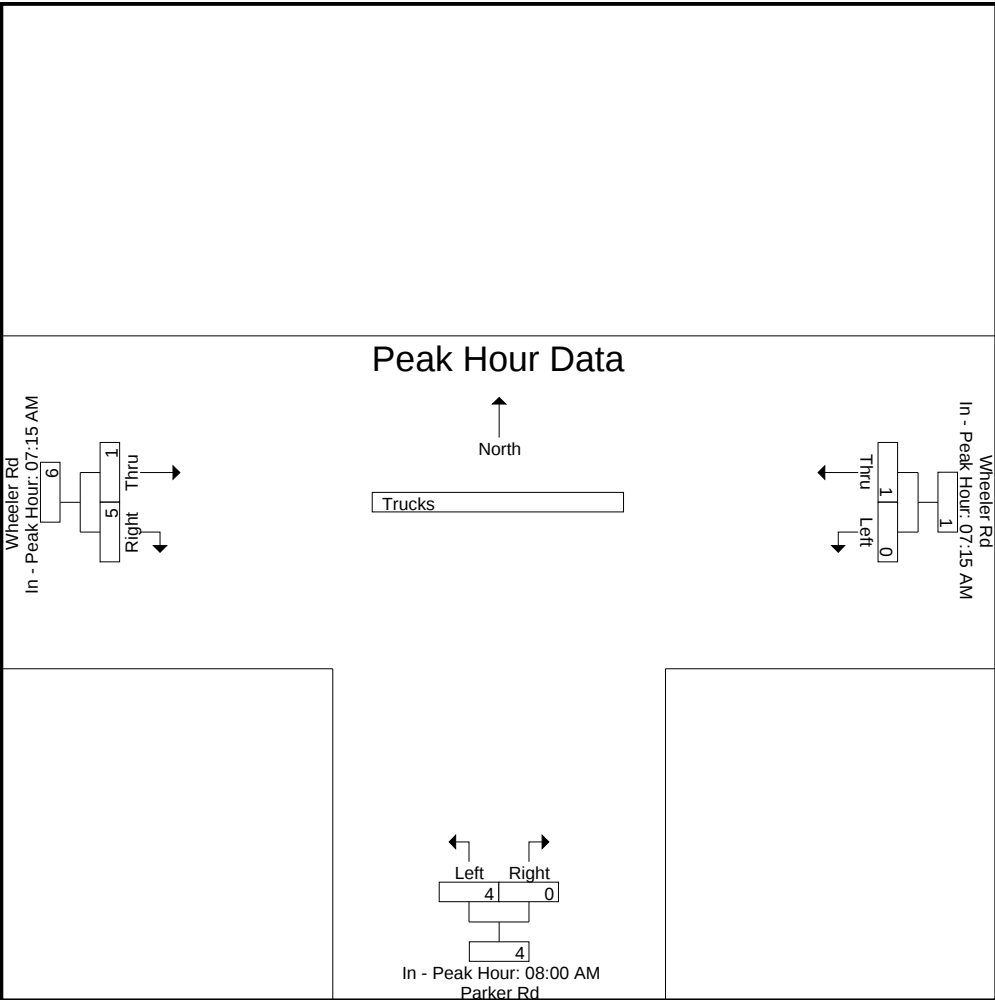


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			08:00 AM			07:15 AM		
+0 mins.	0	0	0	0	0	0	1	1	2
+15 mins.	0	0	0	3	0	3	0	1	1
+30 mins.	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	1	1	0	1	0	3	3
Total Volume	0	1	1	4	0	4	1	5	6
% App. Total	0	100		100	0		16.7	83.3	
PHF	.000	.250	.250	.333	.000	.333	.250	.417	.500

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 9



978-664-2565

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 10

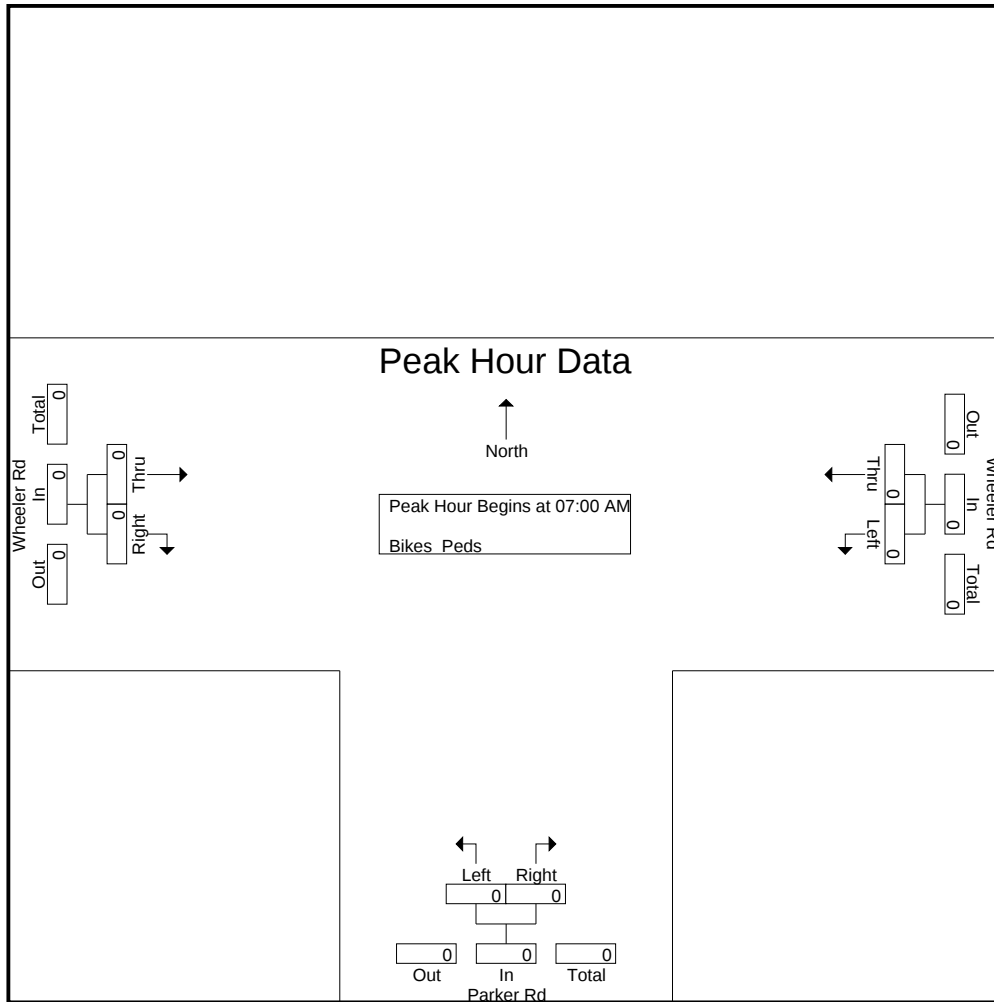
[illegible][illegible]

978-664-2565

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 11



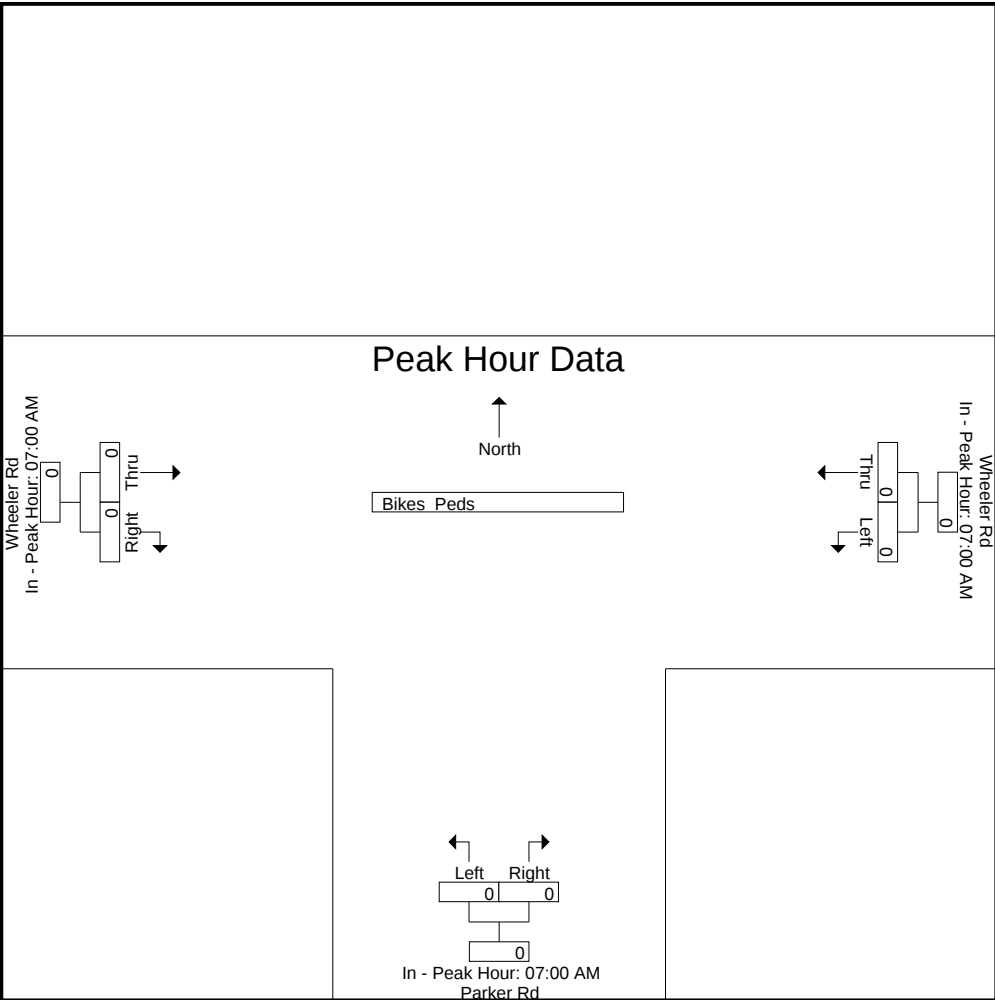
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 12



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 1

Groups Printed- Cars - Trucks

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	14	24	0	12	18	68
04:15 PM	0	18	30	1	16	15	80
04:30 PM	0	22	19	0	8	21	70
04:45 PM	0	12	15	0	15	19	61
Total	0	66	88	1	51	73	279
05:00 PM	0	10	33	0	20	18	81
05:15 PM	0	19	27	1	17	15	79
05:30 PM	0	12	21	0	14	19	66
05:45 PM	0	7	17	0	13	15	52
Total	0	48	98	1	64	67	278
Grand Total	0	114	186	2	115	140	557
Apprch %	0	100	98.9	1.1	45.1	54.9	
Total %	0	20.5	33.4	0.4	20.6	25.1	
Cars	0	113	185	2	114	140	554
% Cars	0	99.1	99.5	100	99.1	100	99.5
Trucks	0	1	1	0	1	0	3
% Trucks	0	0.9	0.5	0	0.9	0	0.5

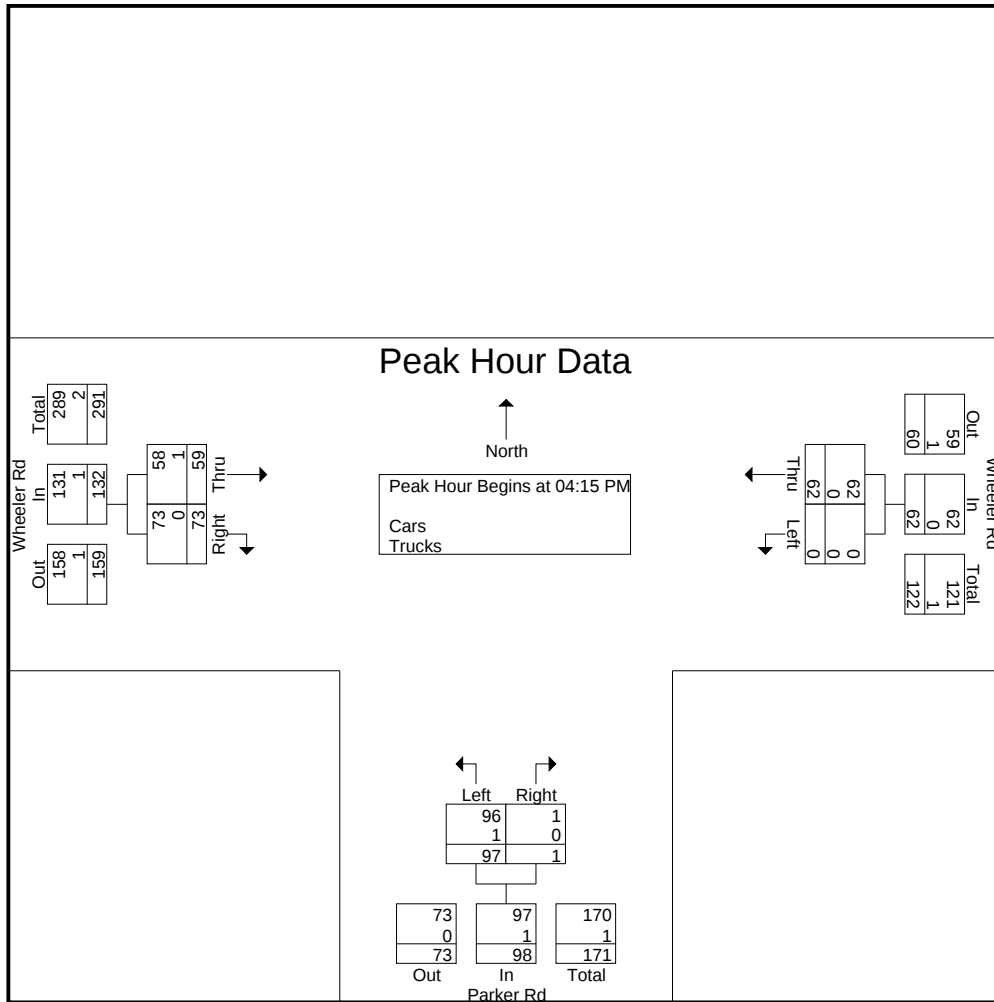
	Wheeler Rd From East			Parker Rd From South			Wheeler Rd From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
04:15 PM	0	18	18	30	1	31	16	15	31	80
04:30 PM	0	22	22	19	0	19	8	21	29	70
04:45 PM	0	12	12	15	0	15	15	19	34	61
05:00 PM	0	10	10	33	0	33	20	18	38	81
Total Volume	0	62	62	97	1	98	59	73	132	292
% App. Total	0	100		99	1		44.7	55.3		
PHF	.000	.705	.705	.735	.250	.742	.738	.869	.868	.901
Cars	0	62	62	96	1	97	58	73	131	290
% Cars	0	100	100	99.0	100	99.0	98.3	100	99.2	99.3
Trucks	0	0	0	1	0	1	1	0	1	2
% Trucks	0	0	0	1.0	0	1.0	1.7	0	0.8	0.7

Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 2



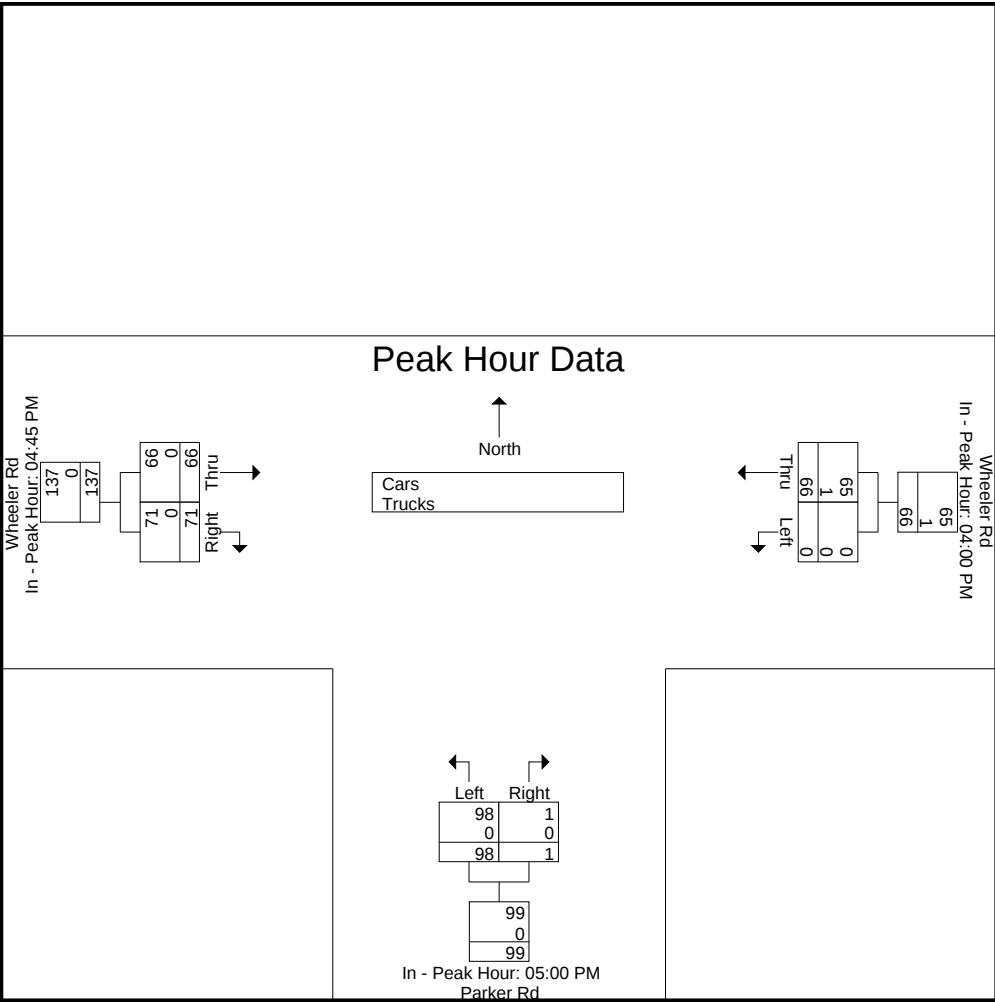
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:45 PM		
+0 mins.	0	14	14	33	0	33	15	19	34
+15 mins.	0	18	18	27	1	28	20	18	38
+30 mins.	0	22	22	21	0	21	17	15	32
+45 mins.	0	12	12	17	0	17	14	19	33
Total Volume	0	66	66	98	1	99	66	71	137
% App. Total	0	100		99	1		48.2	51.8	
PHF	.000	.750	.750	.742	.250	.750	.825	.934	.901
Cars	0	65	65	98	1	99	66	71	137
% Cars	0	98.5	98.5	100	100	100	100	100	100
Trucks	0	1	1	0	0	0	0	0	0
% Trucks	0	1.5	1.5	0	0	0	0	0	0

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 3



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 4

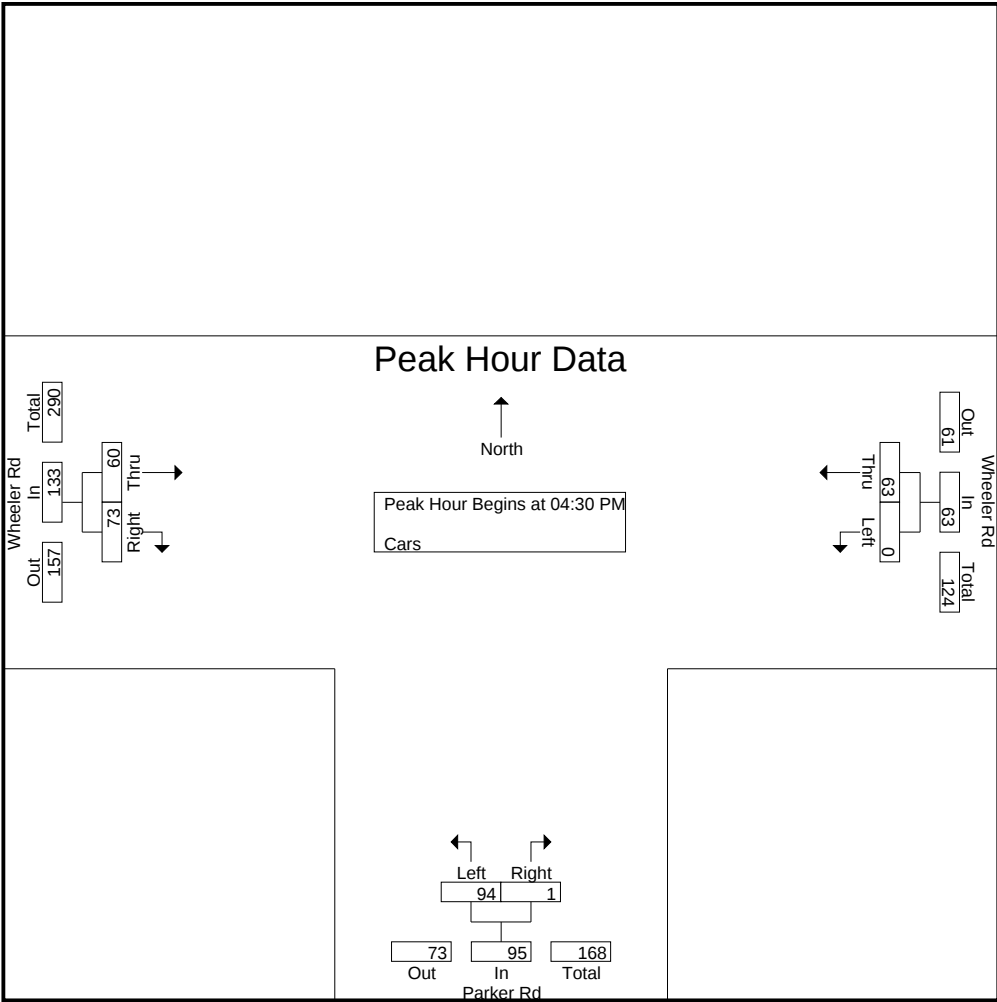
Groups Printed- Cars

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	13	24	0	12	18	67
04:15 PM	0	18	29	1	15	15	78
04:30 PM	0	22	19	0	8	21	70
04:45 PM	0	12	15	0	15	19	61
Total	0	65	87	1	50	73	276
05:00 PM	0	10	33	0	20	18	81
05:15 PM	0	19	27	1	17	15	79
05:30 PM	0	12	21	0	14	19	66
05:45 PM	0	7	17	0	13	15	52
Total	0	48	98	1	64	67	278
Grand Total	0	113	185	2	114	140	554
Apprch %	0	100	98.9	1.1	44.9	55.1	
Total %	0	20.4	33.4	0.4	20.6	25.3	

	Wheeler Rd From East			Parker Rd 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 04:30 PM										
04:30 PM	0	22	22	19	0	19	8	21	29	70
04:45 PM	0	12	12	15	0	15	15	19	34	61
05:00 PM	0	10	10	33	0	33	20	18	38	81
05:15 PM	0	19	19	27	1	28	17	15	32	79
Total Volume	0	63	63	94	1	95	60	73	133	291
% App. Total	0	100		98.9	1.1		45.1	54.9		
PHF	.000	.716	.716	.712	.250	.720	.750	.869	.875	.898

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 5

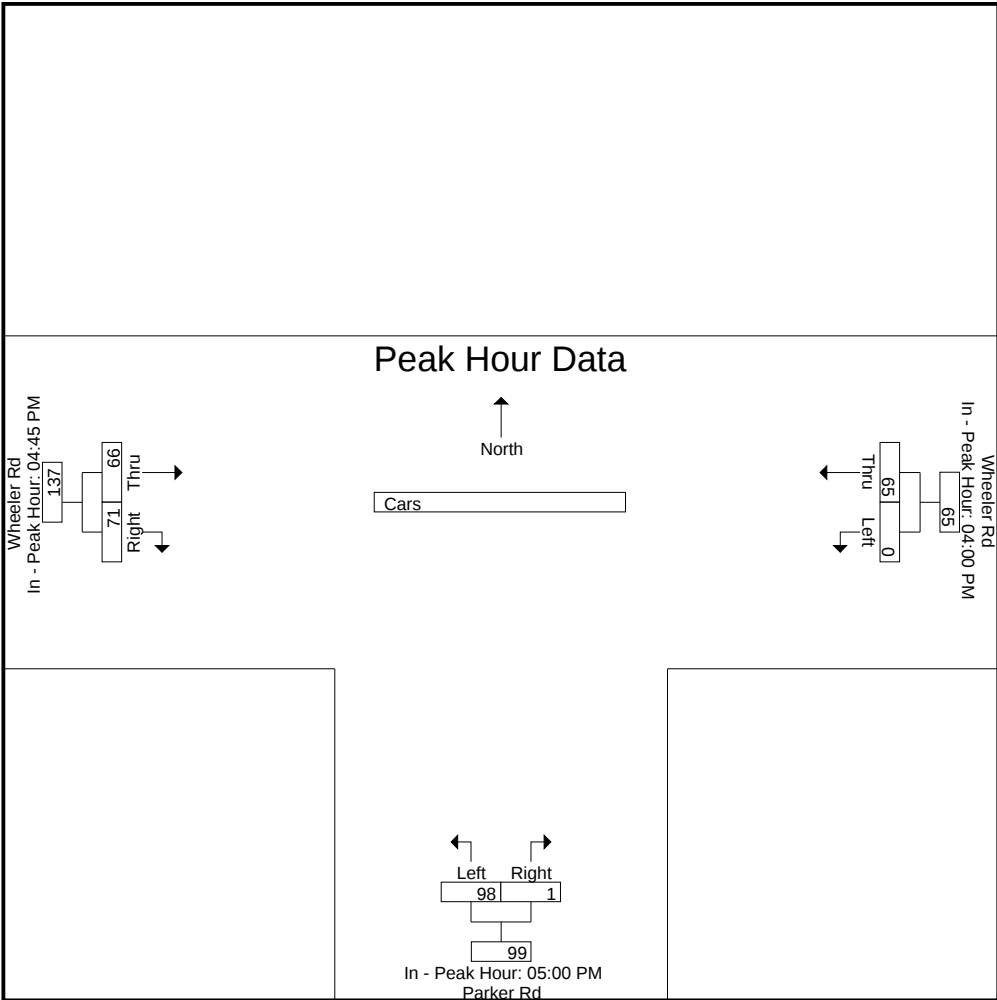


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			05:00 PM			04:45 PM		
+0 mins.	0	13	13	33	0	33	15	19	34
+15 mins.	0	18	18	27	1	28	20	18	38
+30 mins.	0	22	22	21	0	21	17	15	32
+45 mins.	0	12	12	17	0	17	14	19	33
Total Volume	0	65	65	98	1	99	66	71	137
% App. Total	0	100		99	1		48.2	51.8	
PHF	.000	.739	.739	.742	.250	.750	.825	.934	.901

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 6



Accurate Counts

978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 7

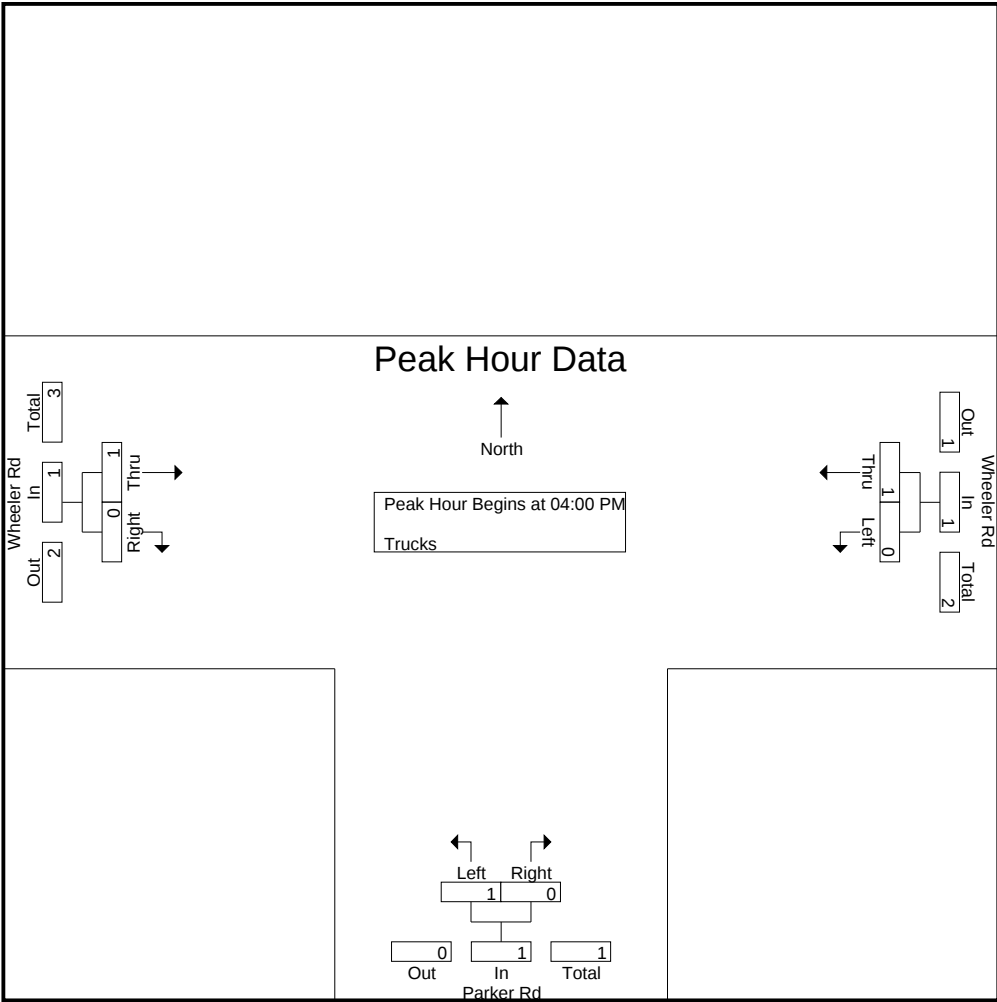
Groups Printed- Trucks

	Wheeler Rd From East		Parker Rd From South		Wheeler Rd From West		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
04:00 PM	0	1	0	0	0	0	1
04:15 PM	0	0	1	0	1	0	2
04:30 PM	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0
Total	0	1	1	0	1	0	3
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	1	0	1	0	3
Apprch %	0	100	100	0	100	0	
Total %	0	33.3	33.3	0	33.3	0	

	Wheeler Rd From East			Parker Rd 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	1	1	0	0	0	0	0	0	1
04:15 PM	0	0	0	1	0	1	1	0	1	2
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	1	1	0	1	1	0	1	3
% App. Total	0	100		100	0		100	0		
PHF	.000	.250	.250	.250	.000	.250	.250	.000	.250	.375

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 8

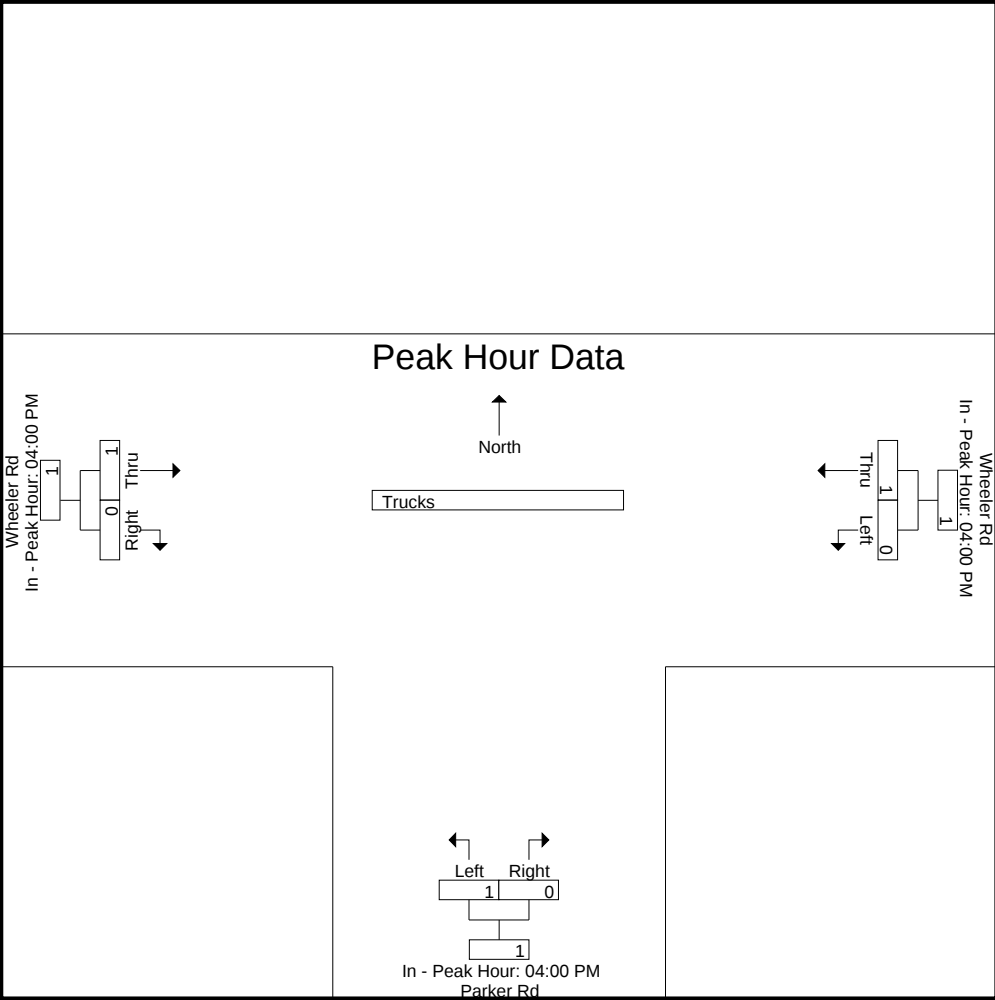


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

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

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 9



978-664-2565

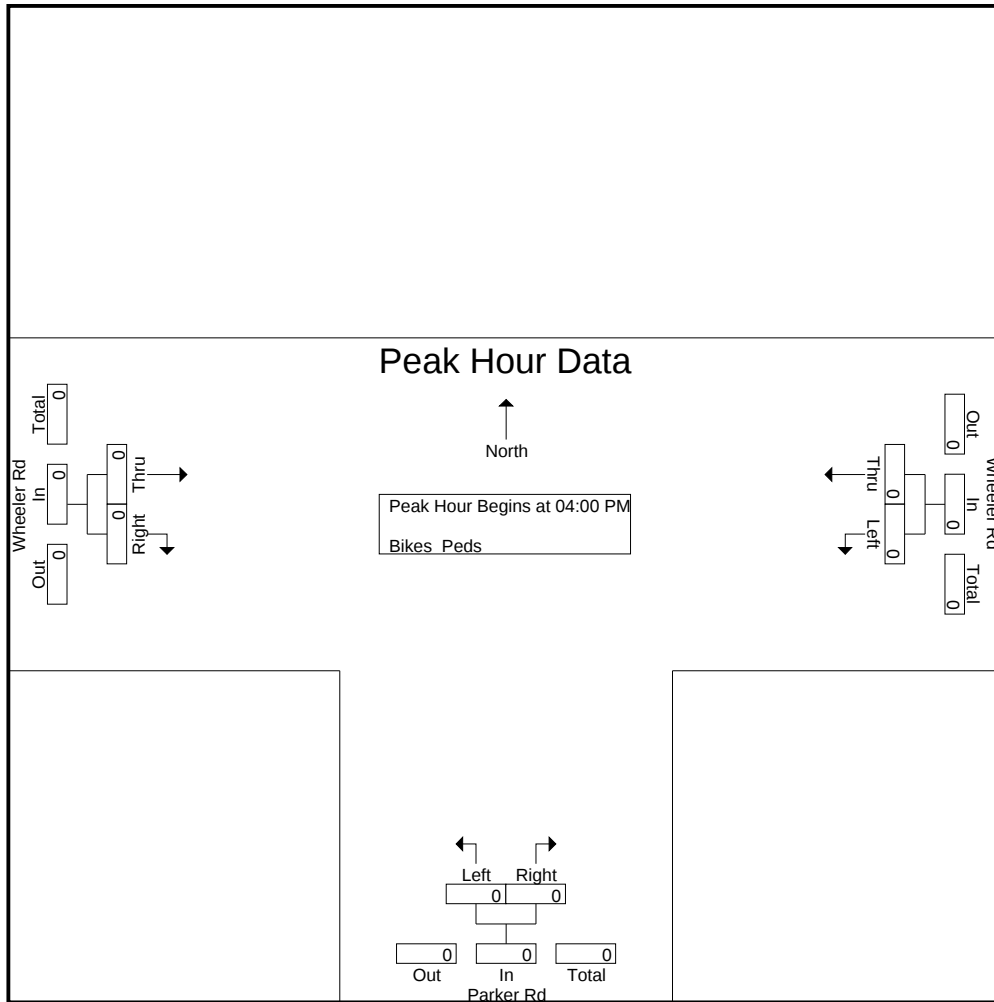
File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 10

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978-664-2565

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
Page No : 11



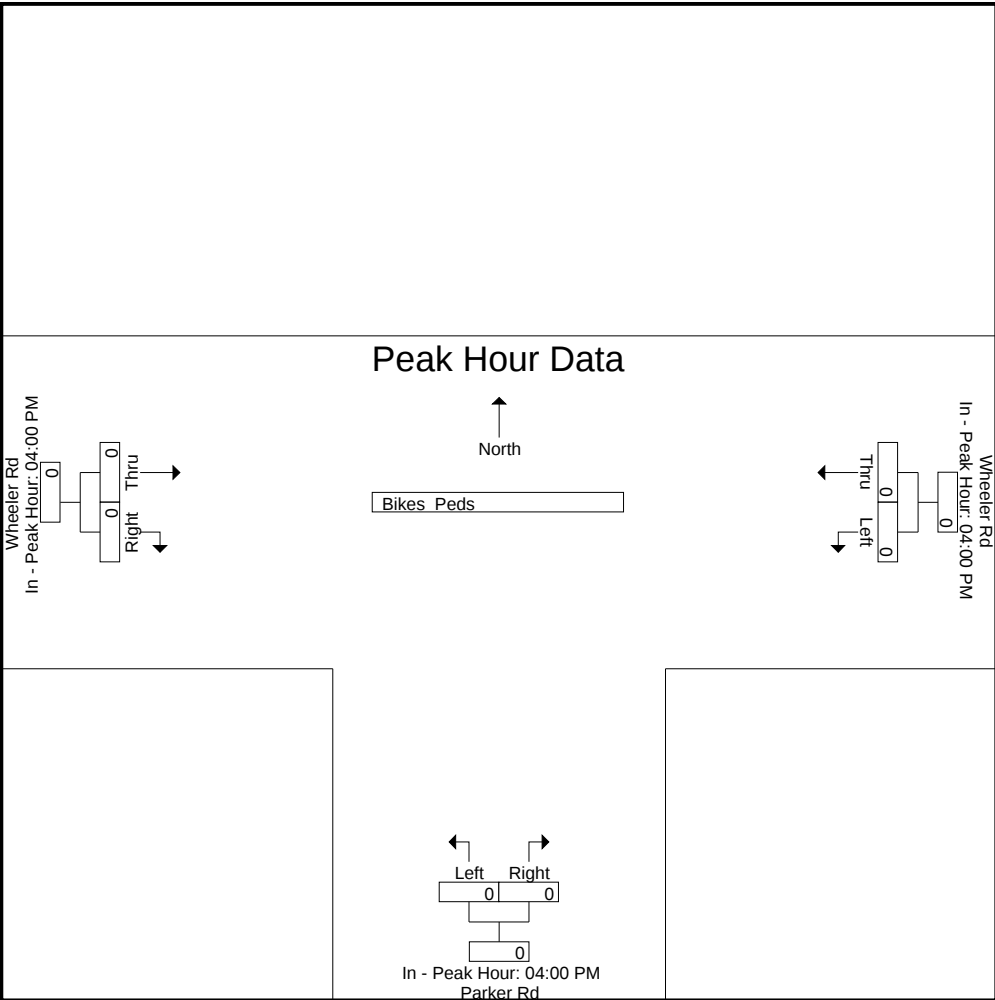
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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

File Name : 74630002
Site Code : 74630002
Start Date : 4/9/2024
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 : 74630003

Site Code : 74630003

Start Date : 4/9/2024

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	8	77	0	9	184	2	280
07:15 AM	2	92	3	11	180	2	290
07:30 AM	7	111	7	11	170	6	312
07:45 AM	2	95	6	9	190	5	307
Total	19	375	16	40	724	15	1189
08:00 AM	9	102	8	18	161	5	303
08:15 AM	9	64	1	11	157	6	248
08:30 AM	5	95	1	8	175	4	288
08:45 AM	7	112	6	13	142	3	283
Total	30	373	16	50	635	18	1122
09:00 AM	7	134	0	10	130	5	286
09:15 AM	6	122	2	14	119	2	265
09:30 AM	6	95	4	11	118	3	237
09:45 AM	5	123	5	7	124	2	266
Total	24	474	11	42	491	12	1054
10:00 AM	7	72	2	8	106	1	196
10:15 AM	14	76	3	16	101	3	213
10:30 AM	10	95	3	9	89	2	208
10:45 AM	13	82	7	9	105	5	221
Total	44	325	15	42	401	11	838
11:00 AM	6	102	6	12	98	3	227
11:15 AM	8	92	5	8	87	3	203
11:30 AM	15	84	1	10	98	5	213
11:45 AM	12	83	1	11	96	3	206
Total	41	361	13	41	379	14	849
12:00 PM	18	94	6	14	92	1	225
12:15 PM	7	107	1	9	99	3	226
12:30 PM	14	96	4	13	110	4	241
12:45 PM	8	125	5	13	100	2	253
Total	47	422	16	49	401	10	945
01:00 PM	13	112	4	5	111	1	246
01:15 PM	14	115	3	11	86	2	231
01:30 PM	11	145	1	8	123	3	291
01:45 PM	4	145	2	12	106	3	272
Total	42	517	10	36	426	9	1040
02:00 PM	10	150	3	10	98	3	274
02:15 PM	18	191	3	8	135	4	359
02:30 PM	17	158	2	6	121	2	306
02:45 PM	20	180	3	13	131	6	353
Total	65	679	11	37	485	15	1292
03:00 PM	19	204	5	8	145	3	384
03:15 PM	14	168	6	15	145	3	351
03:30 PM	21	242	10	11	158	7	449
03:45 PM	17	200	8	11	118	5	359
Total	71	814	29	45	566	18	1543
04:00 PM	14	171	8	12	151	7	363
04:15 PM	15	216	9	11	134	6	391
04:30 PM	11	229	7	16	152	7	422
04:45 PM	25	227	2	13	115	2	384
Total	65	843	26	52	552	22	1560
05:00 PM	30	174	9	18	134	4	369
05:15 PM	21	210	4	10	128	5	378
05:30 PM	15	223	5	13	109	5	370

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 2

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
05:45 PM	13	192	0	10	103	4	322
Total	79	799	18	51	474	18	1439
06:00 PM	30	188	2	6	98	3	327
06:15 PM	20	158	3	5	96	5	287
06:30 PM	16	148	3	13	93	2	275
06:45 PM	20	120	2	6	99	7	254
Total	86	614	10	30	386	17	1143
Grand Total	613	6596	191	515	5920	179	14014
Apprch %	8.5	91.5	27.1	72.9	97.1	2.9	
Total %	4.4	47.1	1.4	3.7	42.2	1.3	
Cars	602	6116	180	504	5548	175	13125
% Cars	98.2	92.7	94.2	97.9	93.7	97.8	93.7
Trucks	11	480	11	11	372	4	889
% Trucks	1.8	7.3	5.8	2.1	6.3	2.2	6.3

	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 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	2	92	94	3	11	14	180	2	182	290
07:30 AM	7	111	118	7	11	18	170	6	176	312
07:45 AM	2	95	97	6	9	15	190	5	195	307
08:00 AM	9	102	111	8	18	26	161	5	166	303
Total Volume	20	400	420	24	49	73	701	18	719	1212
% App. Total	4.8	95.2		32.9	67.1		97.5	2.5		
PHF	.556	.901	.890	.750	.681	.702	.922	.750	.922	.971
Cars	19	370	389	23	49	72	669	17	686	1147
% Cars	95.0	92.5	92.6	95.8	100	98.6	95.4	94.4	95.4	94.6
Trucks	1	30	31	1	0	1	32	1	33	65
% Trucks	5.0	7.5	7.4	4.2	0	1.4	4.6	5.6	4.6	5.4

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

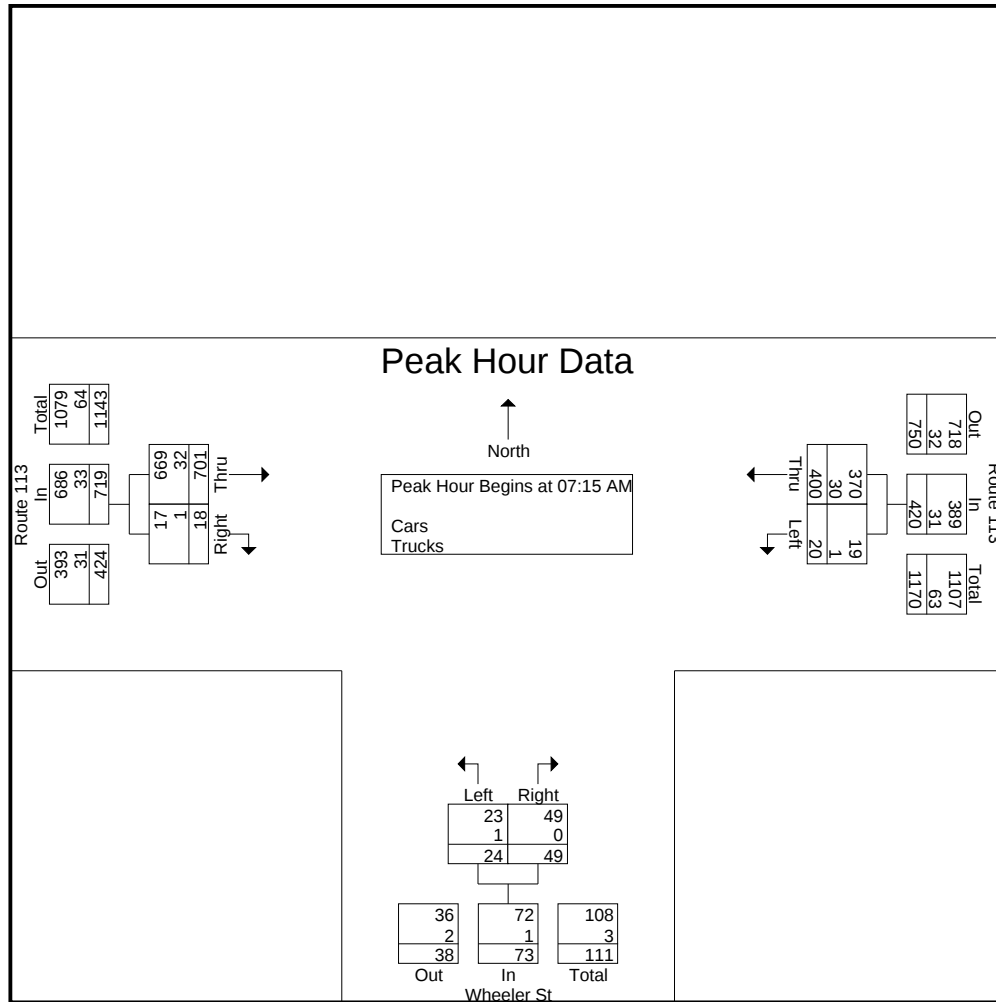
Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 3



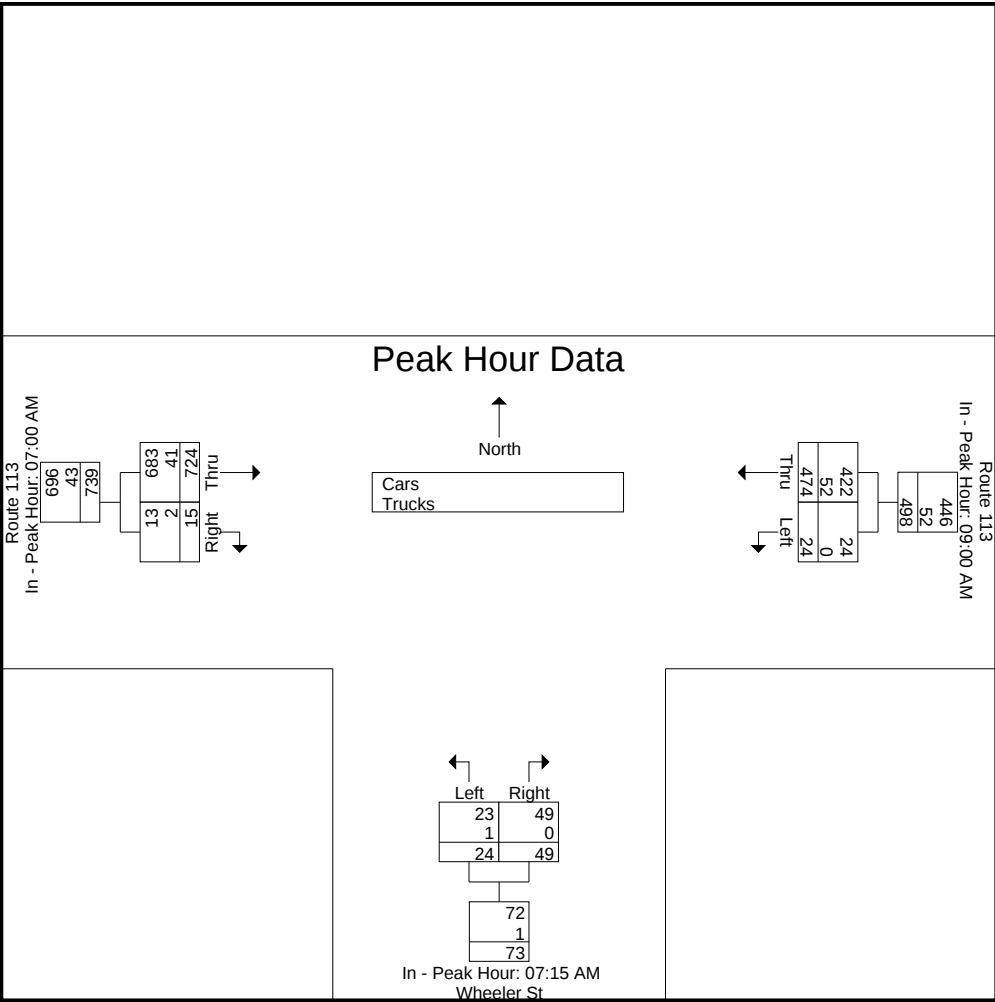
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	09:00 AM			07:15 AM			07:00 AM		
+0 mins.	7	134	141	3	11	14	184	2	186
+15 mins.	6	122	128	7	11	18	180	2	182
+30 mins.	6	95	101	6	9	15	170	6	176
+45 mins.	5	123	128	8	18	26	190	5	195
Total Volume	24	474	498	24	49	73	724	15	739
% App. Total	4.8	95.2		32.9	67.1		98	2	
PHF	.857	.884	.883	.750	.681	.702	.953	.625	.947
Cars	24	422	446	23	49	72	683	13	696
% Cars	100	89	89.6	95.8	100	98.6	94.3	86.7	94.2
Trucks	0	52	52	1	0	1	41	2	43
% Trucks	0	11	10.4	4.2	0	1.4	5.7	13.3	5.8

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 4



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 01:00 PM

01:00 PM	13	112	125	4	5	9	111	1	112	246
01:15 PM	14	115	129	3	11	14	86	2	88	231
01:30 PM	11	145	156	1	8	9	123	3	126	291
01:45 PM	4	145	149	2	12	14	106	3	109	272
Total Volume	42	517	559	10	36	46	426	9	435	1040
% App. Total	7.5	92.5		21.7	78.3		97.9	2.1		
PHF	.750	.891	.896	.625	.750	.821	.866	.750	.863	.893
Cars	42	476	518	10	35	45	376	9	385	948
% Cars	100	92.1	92.7	100	97.2	97.8	88.3	100	88.5	91.2
Trucks	0	41	41	0	1	1	50	0	50	92
% Trucks	0	7.9	7.3	0	2.8	2.2	11.7	0	11.5	8.8

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

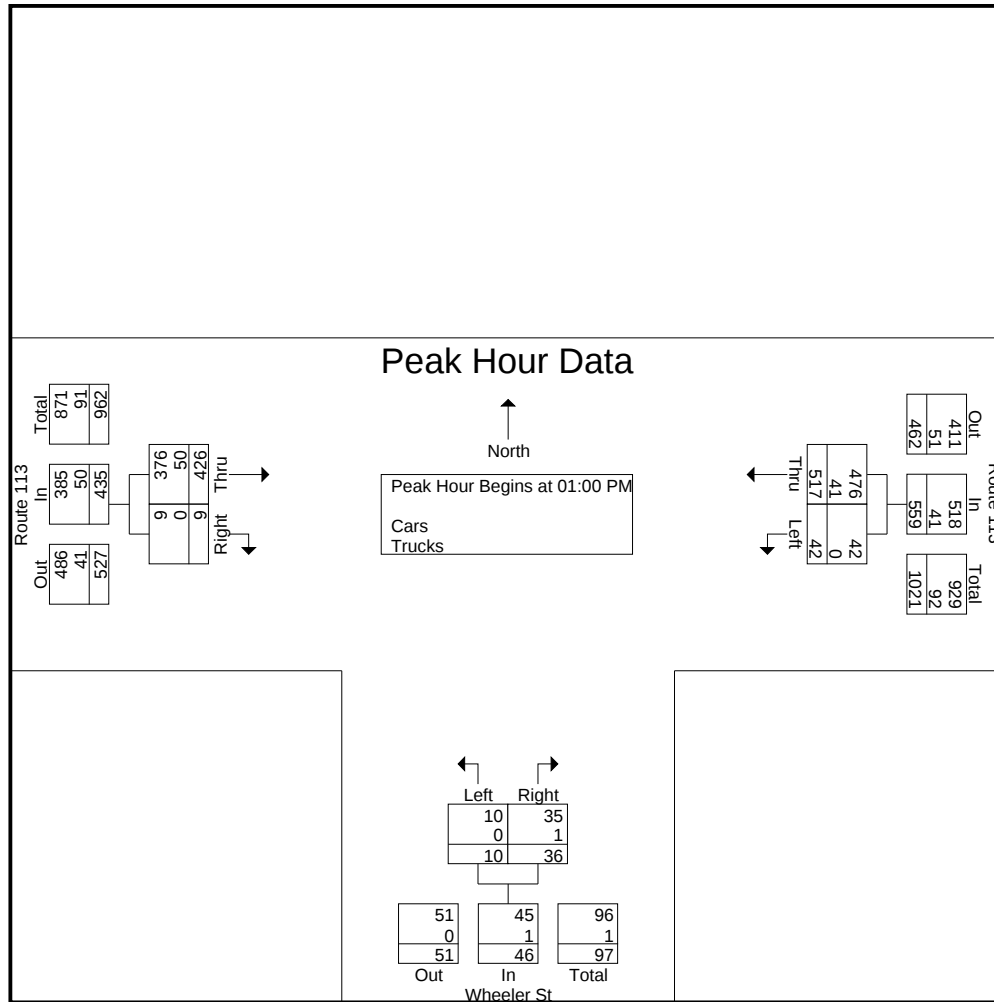
Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 5



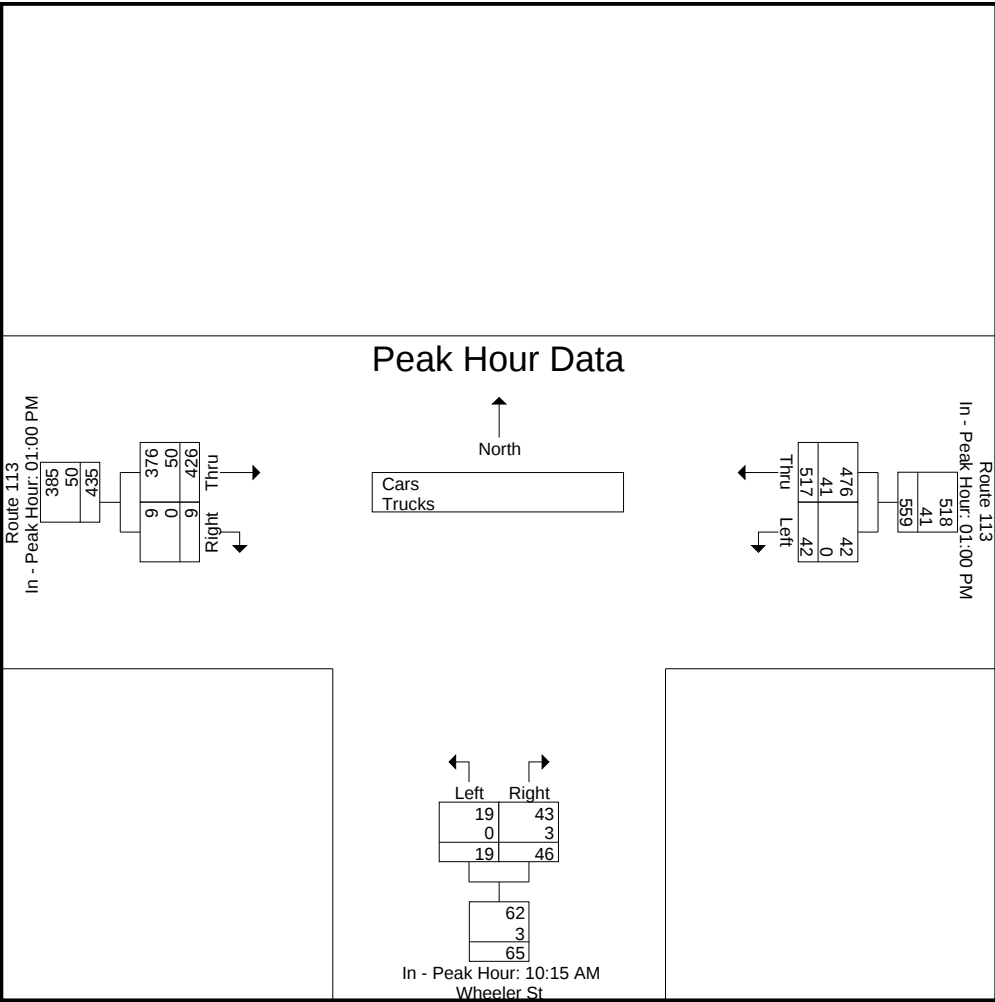
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	01:00 PM			10:15 AM			01:00 PM		
+0 mins.	13	112	125	3	16	19	111	1	112
+15 mins.	14	115	129	3	9	12	86	2	88
+30 mins.	11	145	156	7	9	16	123	3	126
+45 mins.	4	145	149	6	12	18	106	3	109
Total Volume	42	517	559	19	46	65	426	9	435
% App. Total	7.5	92.5		29.2	70.8		97.9	2.1	
PHF	.750	.891	.896	.679	.719	.855	.866	.750	.863
Cars	42	476	518	19	43	62	376	9	385
% Cars	100	92.1	92.7	100	93.5	95.4	88.3	100	88.5
Trucks	0	41	41	0	3	3	50	0	50
% Trucks	0	7.9	7.3	0	6.5	4.6	11.7	0	11.5

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 6



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 04:15 PM

04:15 PM	15	216	231	9	11	20	134	6	140	391
04:30 PM	11	229	240	7	16	23	152	7	159	422
04:45 PM	25	227	252	2	13	15	115	2	117	384
05:00 PM	30	174	204	9	18	27	134	4	138	369
Total Volume	81	846	927	27	58	85	535	19	554	1566
% App. Total	8.7	91.3		31.8	68.2		96.6	3.4		
PHF	.675	.924	.920	.750	.806	.787	.880	.679	.871	.928
Cars	81	795	876	23	57	80	529	19	548	1504
% Cars	100	94.0	94.5	85.2	98.3	94.1	98.9	100	98.9	96.0
Trucks	0	51	51	4	1	5	6	0	6	62
% Trucks	0	6.0	5.5	14.8	1.7	5.9	1.1	0	1.1	4.0

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

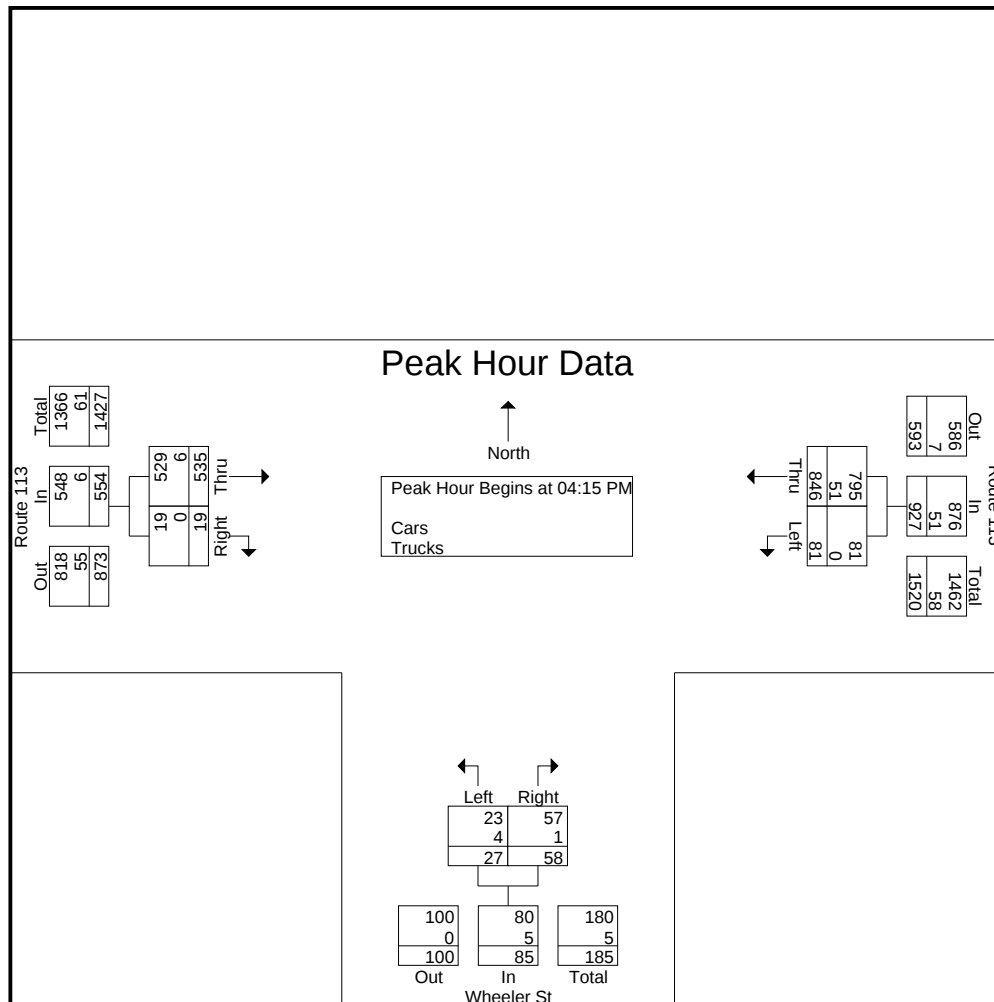
Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 7



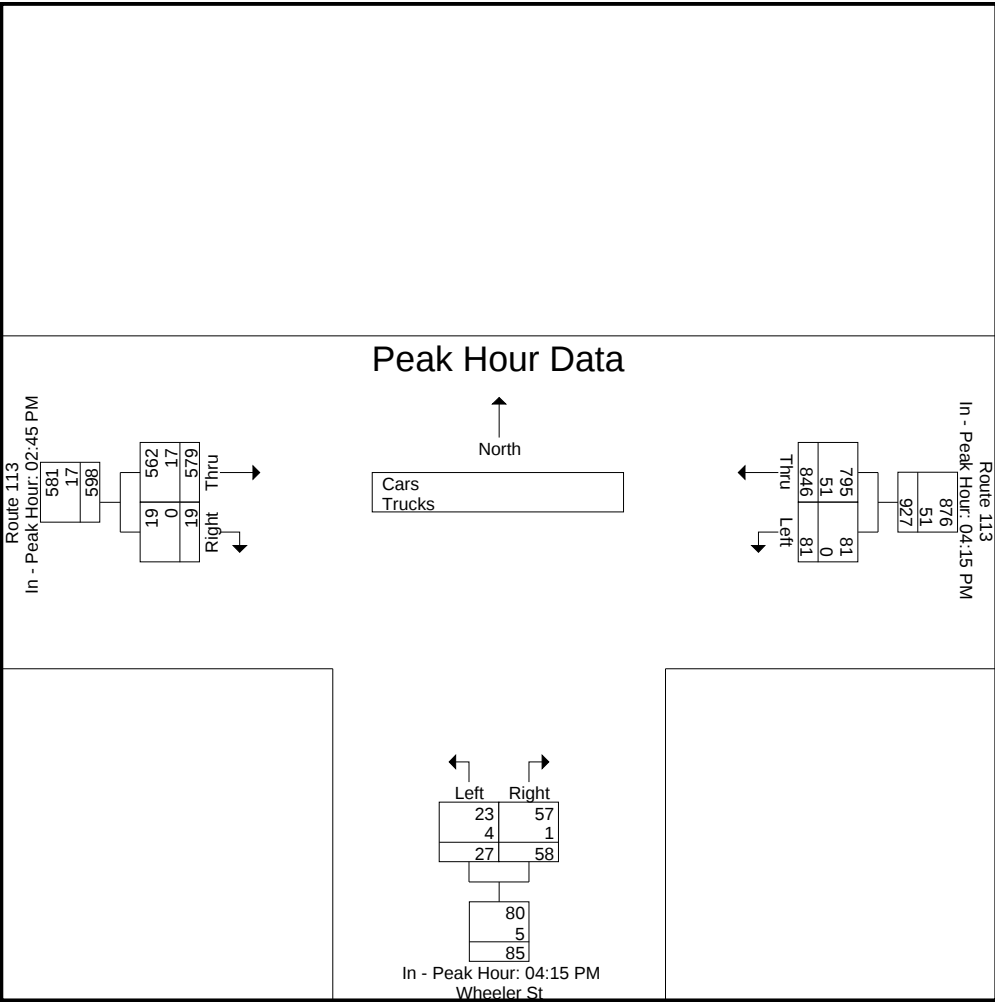
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:15 PM			02:45 PM		
+0 mins.	15	216	231	9	11	20	131	6	137
+15 mins.	11	229	240	7	16	23	145	3	148
+30 mins.	25	227	252	2	13	15	145	3	148
+45 mins.	30	174	204	9	18	27	158	7	165
Total Volume	81	846	927	27	58	85	579	19	598
% App. Total	8.7	91.3		31.8	68.2		96.8	3.2	
PHF	.675	.924	.920	.750	.806	.787	.916	.679	.906
Cars	81	795	876	23	57	80	562	19	581
% Cars	100	94	94.5	85.2	98.3	94.1	97.1	100	97.2
Trucks	0	51	51	4	1	5	17	0	17
% Trucks	0	6	5.5	14.8	1.7	5.9	2.9	0	2.8

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 8



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 9

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	8	67	0	8	170	1	254
07:15 AM	2	83	3	11	173	2	274
07:30 AM	7	106	7	11	161	5	297
07:45 AM	1	89	6	9	179	5	289
Total	18	345	16	39	683	13	1114
08:00 AM	9	92	7	18	156	5	287
08:15 AM	9	57	1	11	138	6	222
08:30 AM	5	85	1	8	161	4	264
08:45 AM	7	91	6	13	130	3	250
Total	30	325	15	50	585	18	1023
09:00 AM	7	109	0	10	122	5	253
09:15 AM	6	113	2	14	106	2	243
09:30 AM	6	90	4	11	105	3	219
09:45 AM	5	110	5	7	108	2	237
Total	24	422	11	42	441	12	952
10:00 AM	7	66	2	8	90	1	174
10:15 AM	14	67	3	14	88	2	188
10:30 AM	10	89	3	8	79	2	191
10:45 AM	12	75	7	9	99	5	207
Total	43	297	15	39	356	10	760
11:00 AM	6	91	6	12	93	3	211
11:15 AM	8	83	5	8	78	3	185
11:30 AM	15	78	1	10	89	5	198
11:45 AM	11	77	1	11	86	3	189
Total	40	329	13	41	346	14	783
12:00 PM	16	87	6	14	84	1	208
12:15 PM	7	99	1	8	91	3	209
12:30 PM	14	87	4	12	103	4	224
12:45 PM	8	110	4	13	90	2	227
Total	45	383	15	47	368	10	868
01:00 PM	13	99	4	5	96	1	218
01:15 PM	14	108	3	11	72	2	210
01:30 PM	11	136	1	7	115	3	273
01:45 PM	4	133	2	12	93	3	247
Total	42	476	10	35	376	9	948
02:00 PM	10	146	3	10	93	2	264
02:15 PM	17	184	3	7	119	4	334
02:30 PM	16	146	1	5	116	2	286
02:45 PM	20	173	3	13	127	6	342
Total	63	649	10	35	455	14	1226
03:00 PM	19	193	4	8	140	3	367
03:15 PM	14	161	6	14	143	3	341
03:30 PM	20	220	9	11	152	7	419
03:45 PM	17	185	8	11	116	5	342
Total	70	759	27	44	551	18	1469
04:00 PM	13	150	6	12	149	7	337
04:15 PM	15	196	6	11	132	6	366
04:30 PM	11	213	6	16	151	7	404
04:45 PM	25	218	2	12	113	2	372
Total	64	777	20	51	545	22	1479
05:00 PM	30	168	9	18	133	4	362
05:15 PM	20	202	4	10	126	5	367
05:30 PM	15	210	5	13	106	5	354
05:45 PM	13	182	0	10	103	4	312
Total	78	762	18	51	468	18	1395

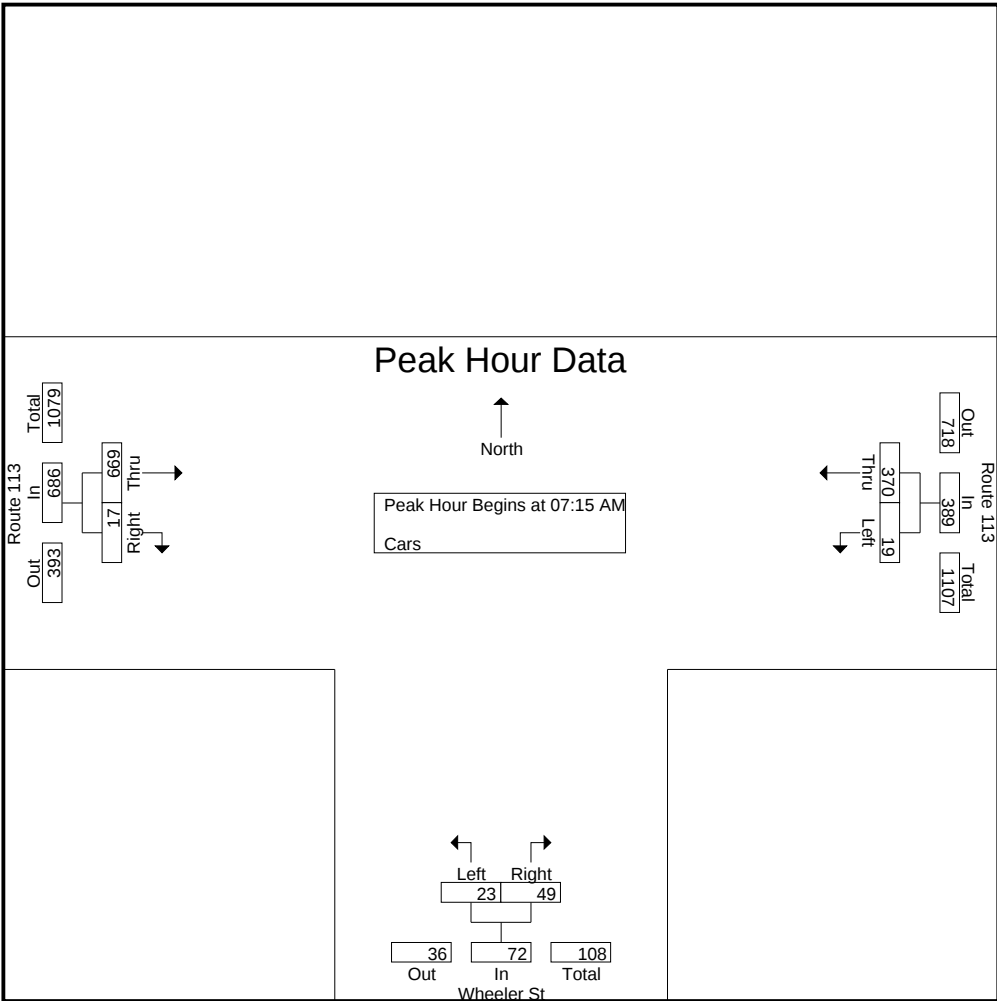
N/S Street : Wheeler Street
E/W Street : Route 113
City/State : Methuen, MA
Weather : Clear

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 10

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
06:00 PM	29	178	2	6	94	3	312
06:15 PM	20	152	3	5	94	5	279
06:30 PM	16	143	3	13	90	2	267
06:45 PM	20	119	2	6	96	7	250
Total	85	592	10	30	374	17	1108
Grand Total	602	6116	180	504	5548	175	13125
Apprch %	9	91	26.3	73.7	96.9	3.1	
Total %	4.6	46.6	1.4	3.8	42.3	1.3	

	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 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:15 AM										
07:15 AM	2	83	85	3	11	14	173	2	175	274
07:30 AM	7	106	113	7	11	18	161	5	166	297
07:45 AM	1	89	90	6	9	15	179	5	184	289
08:00 AM	9	92	101	7	18	25	156	5	161	287
Total Volume	19	370	389	23	49	72	669	17	686	1147
% App. Total	4.9	95.1		31.9	68.1		97.5	2.5		
PHF	.528	.873	.861	.821	.681	.720	.934	.850	.932	.965



Accurate Counts

978-664-2565

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

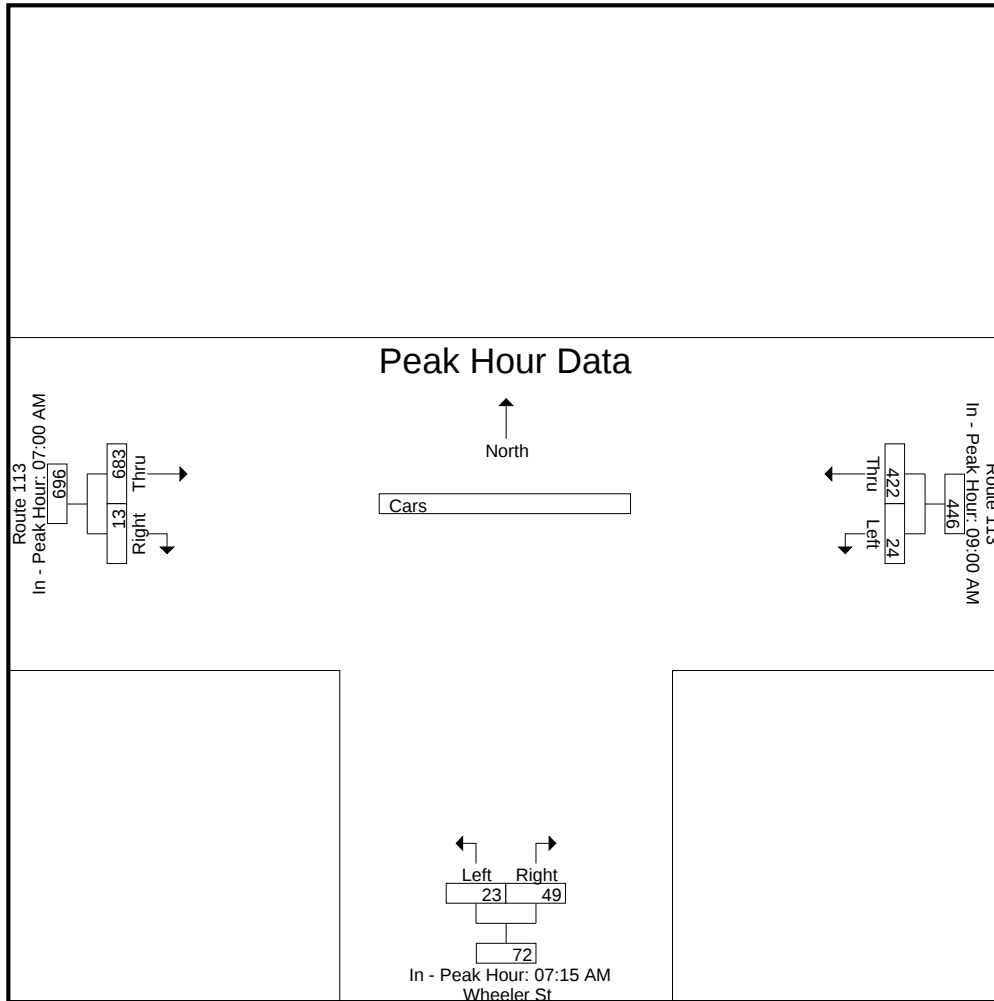
File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 11

	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 09:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	09:00 AM			07:15 AM			07:00 AM		
+0 mins.	7	109	116	3	11	14	170	1	171
+15 mins.	6	113	119	7	11	18	173	2	175
+30 mins.	6	90	96	6	9	15	161	5	166
+45 mins.	5	110	115	7	18	25	179	5	184
Total Volume	24	422	446	23	49	72	683	13	696
% App. Total	5.4	94.6		31.9	68.1		98.1	1.9	
PHF	.857	.934	.937	.821	.681	.720	.954	.650	.946



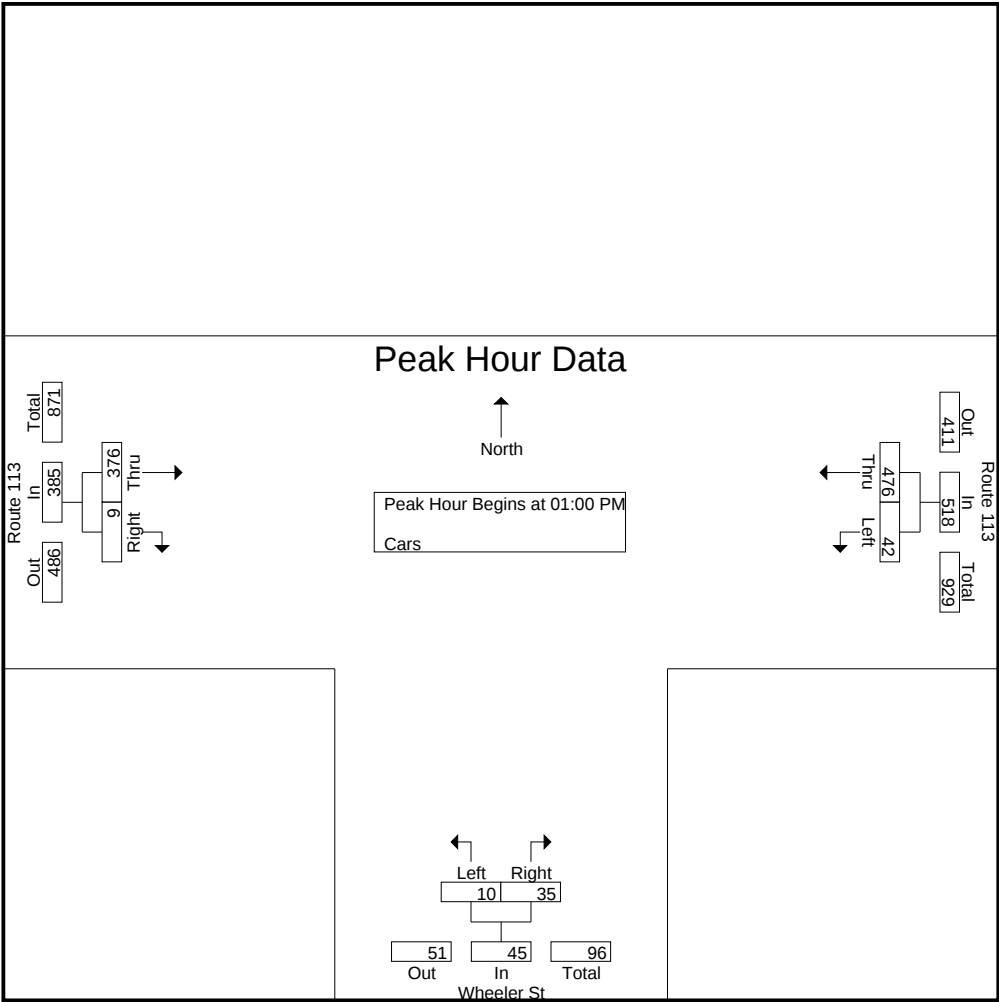
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 01:00 PM

01:00 PM	13	99	112	4	5	9	96	1	97	218
01:15 PM	14	108	122	3	11	14	72	2	74	210
01:30 PM	11	136	147	1	7	8	115	3	118	273
01:45 PM	4	133	137	2	12	14	93	3	96	247
Total Volume	42	476	518	10	35	45	376	9	385	948
% App. Total	8.1	91.9		22.2	77.8		97.7	2.3		
PHF	.750	.875	.881	.625	.729	.804	.817	.750	.816	.868

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 12

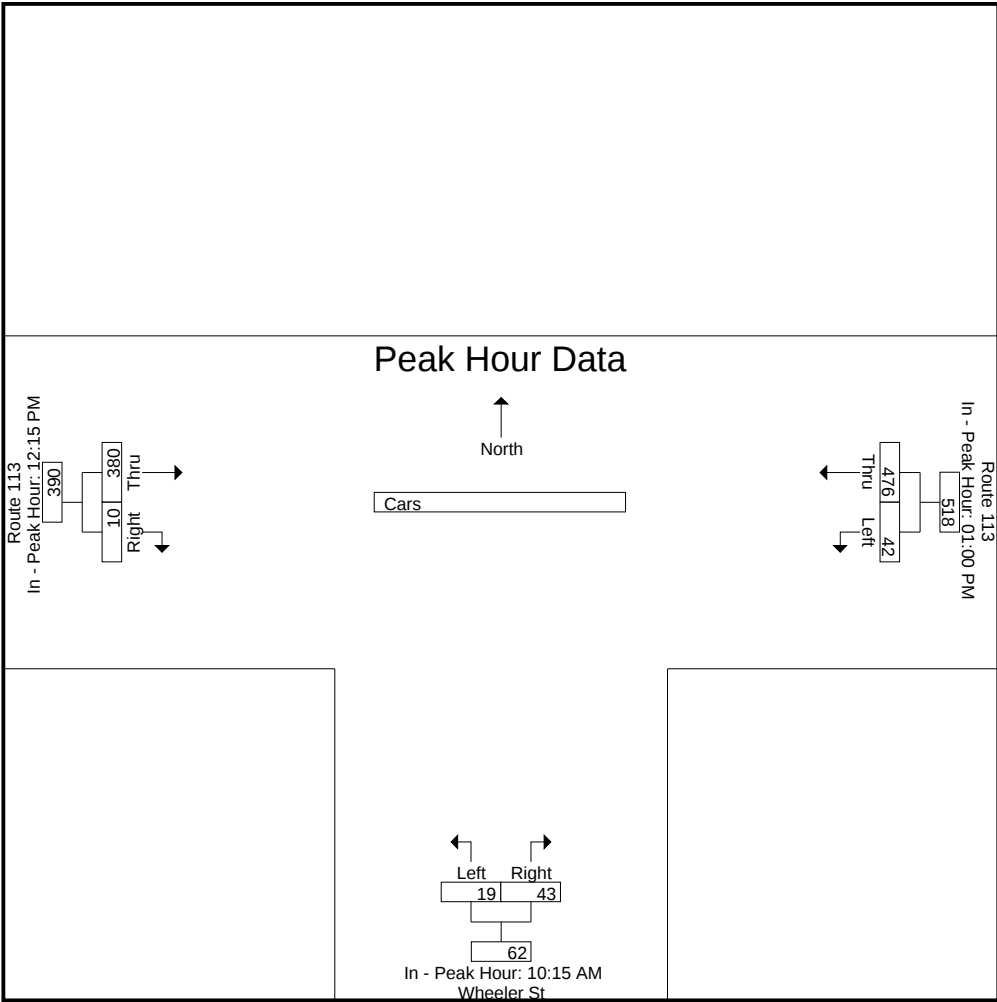


Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	01:00 PM			10:15 AM			12:15 PM		
+0 mins.	13	99	112	3	14	17	91	3	94
+15 mins.	14	108	122	3	8	11	103	4	107
+30 mins.	11	136	147	7	9	16	90	2	92
+45 mins.	4	133	137	6	12	18	96	1	97
Total Volume	42	476	518	19	43	62	380	10	390
% App. Total	8.1	91.9		30.6	69.4		97.4	2.6	
PHF	.750	.875	.881	.679	.768	.861	.922	.625	.911

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 13

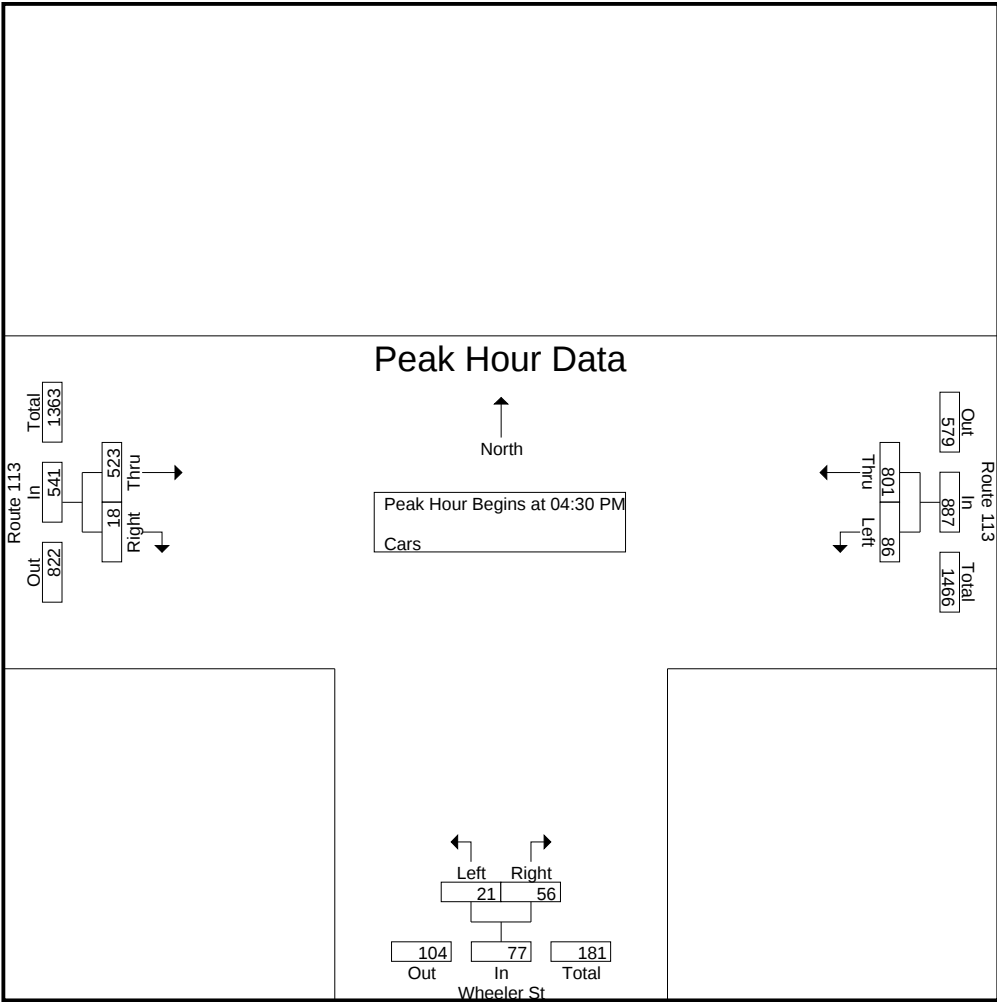


Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 04:30 PM

04:30 PM	11	213	224	6	16	22	151	7	158	404
04:45 PM	25	218	243	2	12	14	113	2	115	372
05:00 PM	30	168	198	9	18	27	133	4	137	362
05:15 PM	20	202	222	4	10	14	126	5	131	367
Total Volume	86	801	887	21	56	77	523	18	541	1505
% App. Total	9.7	90.3		27.3	72.7		96.7	3.3		
PHF	.717	.919	.913	.583	.778	.713	.866	.643	.856	.931

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 14

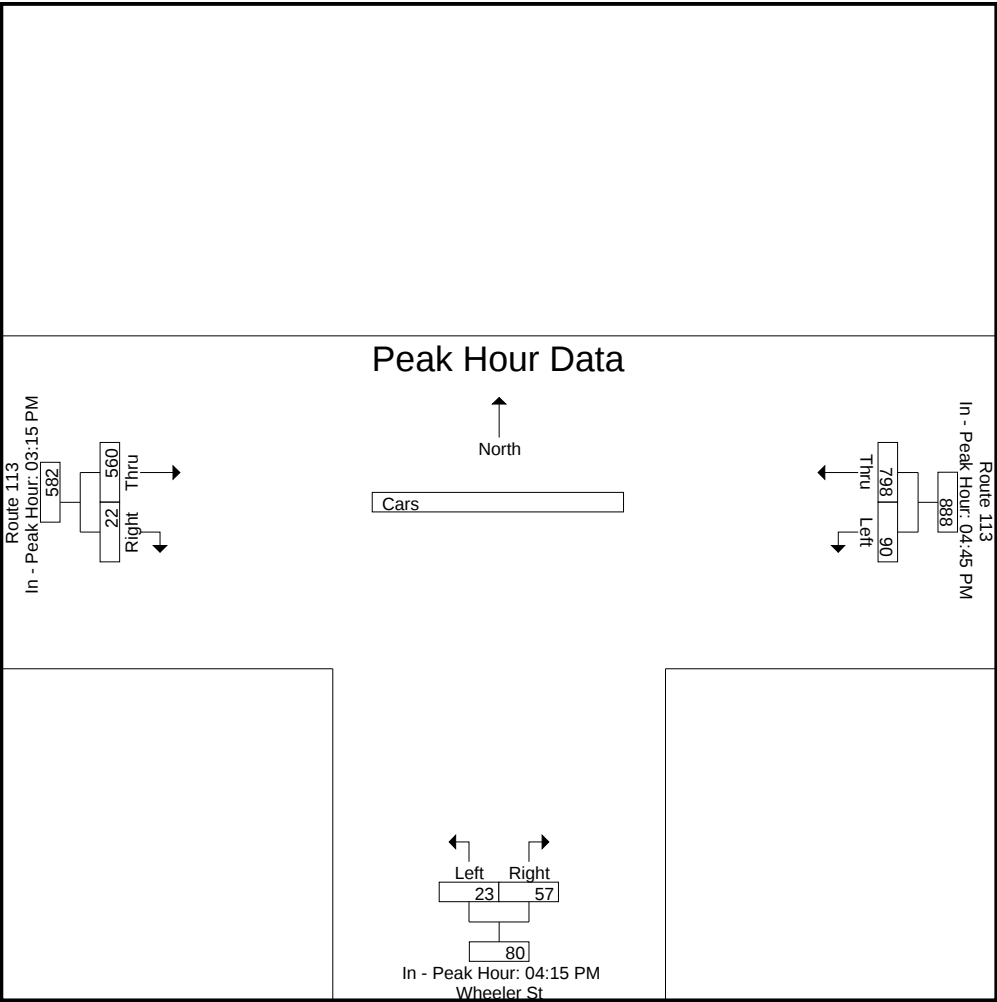


Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:15 PM			03:15 PM		
+0 mins.	25	218	243	6	11	17	143	3	146
+15 mins.	30	168	198	6	16	22	152	7	159
+30 mins.	20	202	222	2	12	14	116	5	121
+45 mins.	15	210	225	9	18	27	149	7	156
Total Volume	90	798	888	23	57	80	560	22	582
% App. Total	10.1	89.9		28.8	71.2		96.2	3.8	
PHF	.750	.915	.914	.639	.792	.741	.921	.786	.915

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 15



Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 16

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	0	10	0	1	14	1	26
07:15 AM	0	9	0	0	7	0	16
07:30 AM	0	5	0	0	9	1	15
07:45 AM	1	6	0	0	11	0	18
Total	1	30	0	1	41	2	75
08:00 AM	0	10	1	0	5	0	16
08:15 AM	0	7	0	0	19	0	26
08:30 AM	0	10	0	0	14	0	24
08:45 AM	0	21	0	0	12	0	33
Total	0	48	1	0	50	0	99
09:00 AM	0	25	0	0	8	0	33
09:15 AM	0	9	0	0	13	0	22
09:30 AM	0	5	0	0	13	0	18
09:45 AM	0	13	0	0	16	0	29
Total	0	52	0	0	50	0	102
10:00 AM	0	6	0	0	16	0	22
10:15 AM	0	9	0	2	13	1	25
10:30 AM	0	6	0	1	10	0	17
10:45 AM	1	7	0	0	6	0	14
Total	1	28	0	3	45	1	78
11:00 AM	0	11	0	0	5	0	16
11:15 AM	0	9	0	0	9	0	18
11:30 AM	0	6	0	0	9	0	15
11:45 AM	1	6	0	0	10	0	17
Total	1	32	0	0	33	0	66
12:00 PM	2	7	0	0	8	0	17
12:15 PM	0	8	0	1	8	0	17
12:30 PM	0	9	0	1	7	0	17
12:45 PM	0	15	1	0	10	0	26
Total	2	39	1	2	33	0	77
01:00 PM	0	13	0	0	15	0	28
01:15 PM	0	7	0	0	14	0	21
01:30 PM	0	9	0	1	8	0	18
01:45 PM	0	12	0	0	13	0	25
Total	0	41	0	1	50	0	92
02:00 PM	0	4	0	0	5	1	10
02:15 PM	1	7	0	1	16	0	25
02:30 PM	1	12	1	1	5	0	20
02:45 PM	0	7	0	0	4	0	11
Total	2	30	1	2	30	1	66
03:00 PM	0	11	1	0	5	0	17
03:15 PM	0	7	0	1	2	0	10
03:30 PM	1	22	1	0	6	0	30
03:45 PM	0	15	0	0	2	0	17
Total	1	55	2	1	15	0	74
04:00 PM	1	21	2	0	2	0	26
04:15 PM	0	20	3	0	2	0	25
04:30 PM	0	16	1	0	1	0	18
04:45 PM	0	9	0	1	2	0	12
Total	1	66	6	1	7	0	81
05:00 PM	0	6	0	0	1	0	7
05:15 PM	1	8	0	0	2	0	11
05:30 PM	0	13	0	0	3	0	16
05:45 PM	0	10	0	0	0	0	10
Total	1	37	0	0	6	0	44

Accurate Counts

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

Weather : Clear

File Name : 74630003

Site Code : 74630003

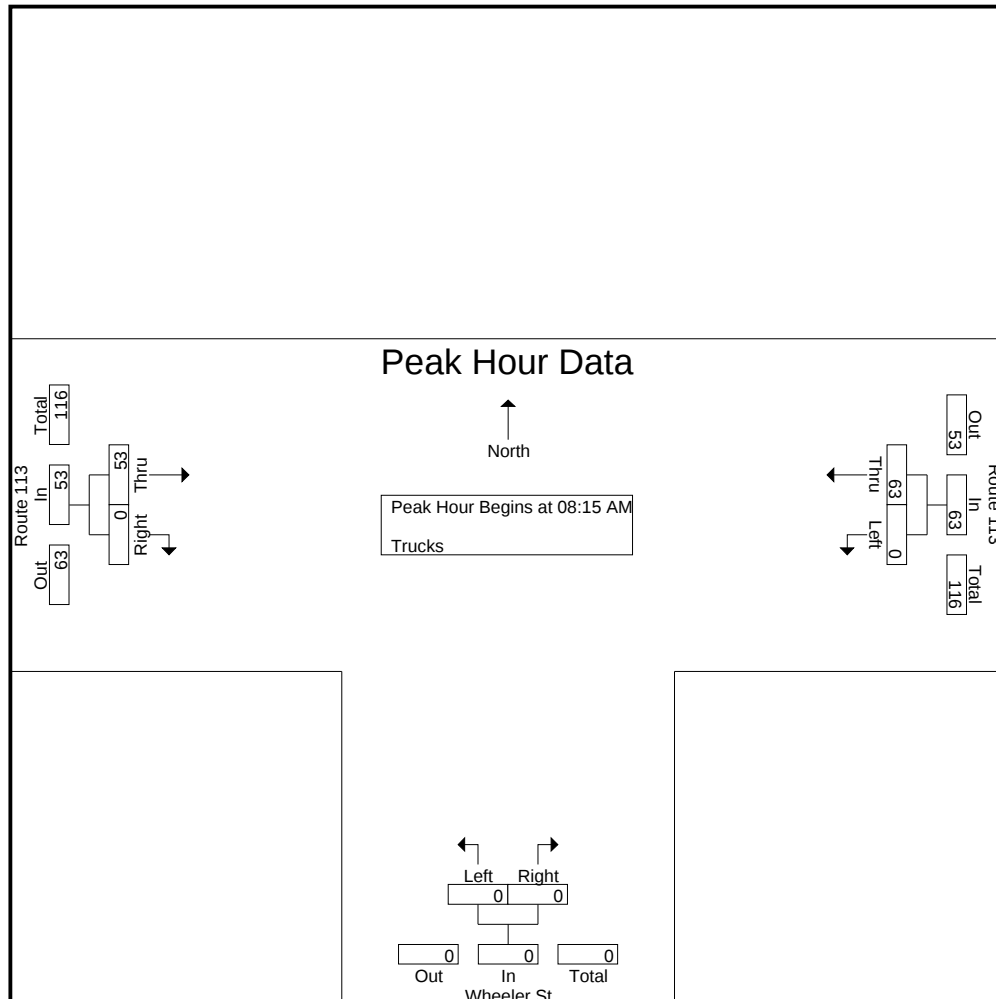
Start Date : 4/9/2024

Page No : 17

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
06:00 PM	1	10	0	0	4	0	15
06:15 PM	0	6	0	0	2	0	8
06:30 PM	0	5	0	0	3	0	8
06:45 PM	0	1	0	0	3	0	4
Total	1	22	0	0	12	0	35
Grand Total	11	480	11	11	372	4	889
Apprch %	2.2	97.8	50	50	98.9	1.1	
Total %	1.2	54	1.2	1.2	41.8	0.4	

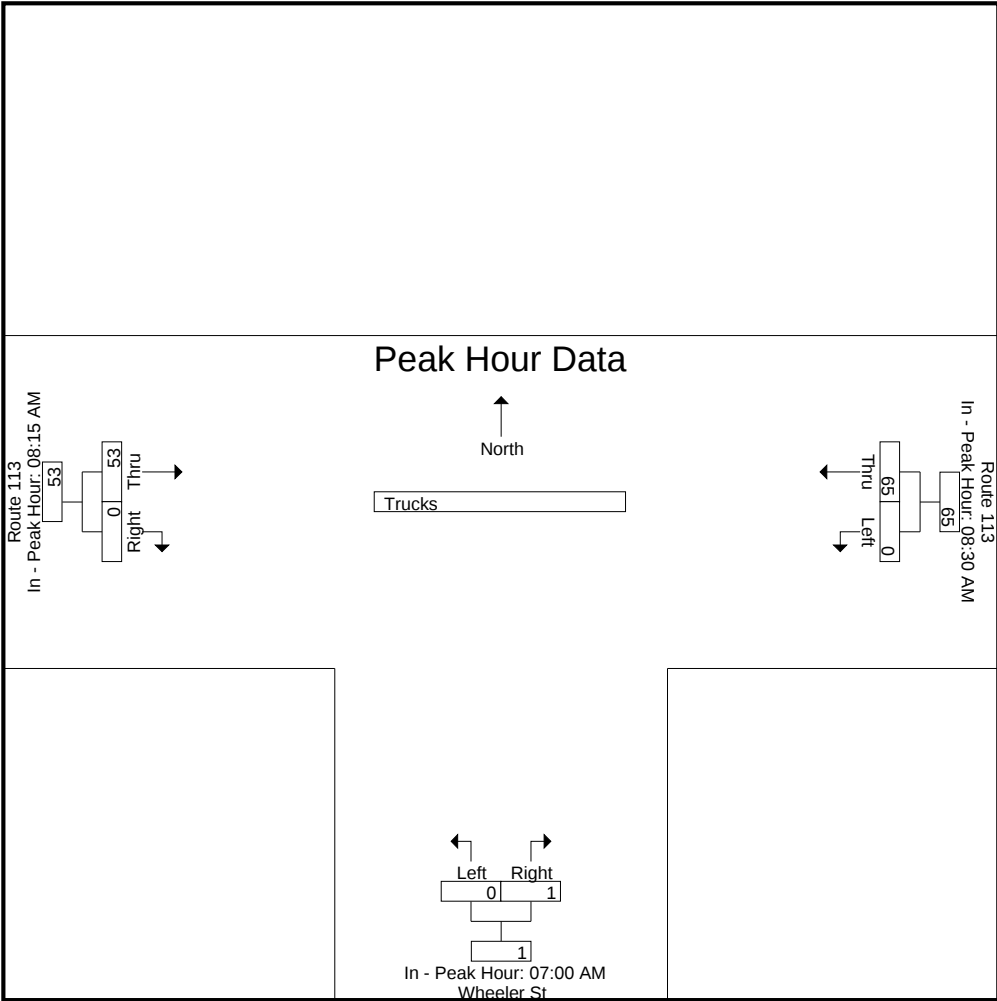
	Route 113 From East			Wheeler St From South			Route 113 From West			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:15 AM										
08:15 AM	0	7	7	0	0	0	19	0	19	26
08:30 AM	0	10	10	0	0	0	14	0	14	24
08:45 AM	0	21	21	0	0	0	12	0	12	33
09:00 AM	0	25	25	0	0	0	8	0	8	33
Total Volume	0	63	63	0	0	0	53	0	53	116
% App. Total	0	100		0	0		100	0		
PHF	.000	.630	.630	.000	.000	.000	.697	.000	.697	.879



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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 18

	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 09:45 AM - Peak 1 of 1										
Peak Hour for Each Approach Begins at:										
	08:30 AM			07:00 AM			08:15 AM			
+0 mins.	0	10	10	0	1	1	19	0	19	
+15 mins.	0	21	21	0	0	0	14	0	14	
+30 mins.	0	25	25	0	0	0	12	0	12	
+45 mins.	0	9	9	0	0	0	8	0	8	
Total Volume	0	65	65	0	1	1	53	0	53	
% App. Total	0	100		0	100		100	0		
PHF	.000	.650	.650	.000	.250	.250	.697	.000	.697	

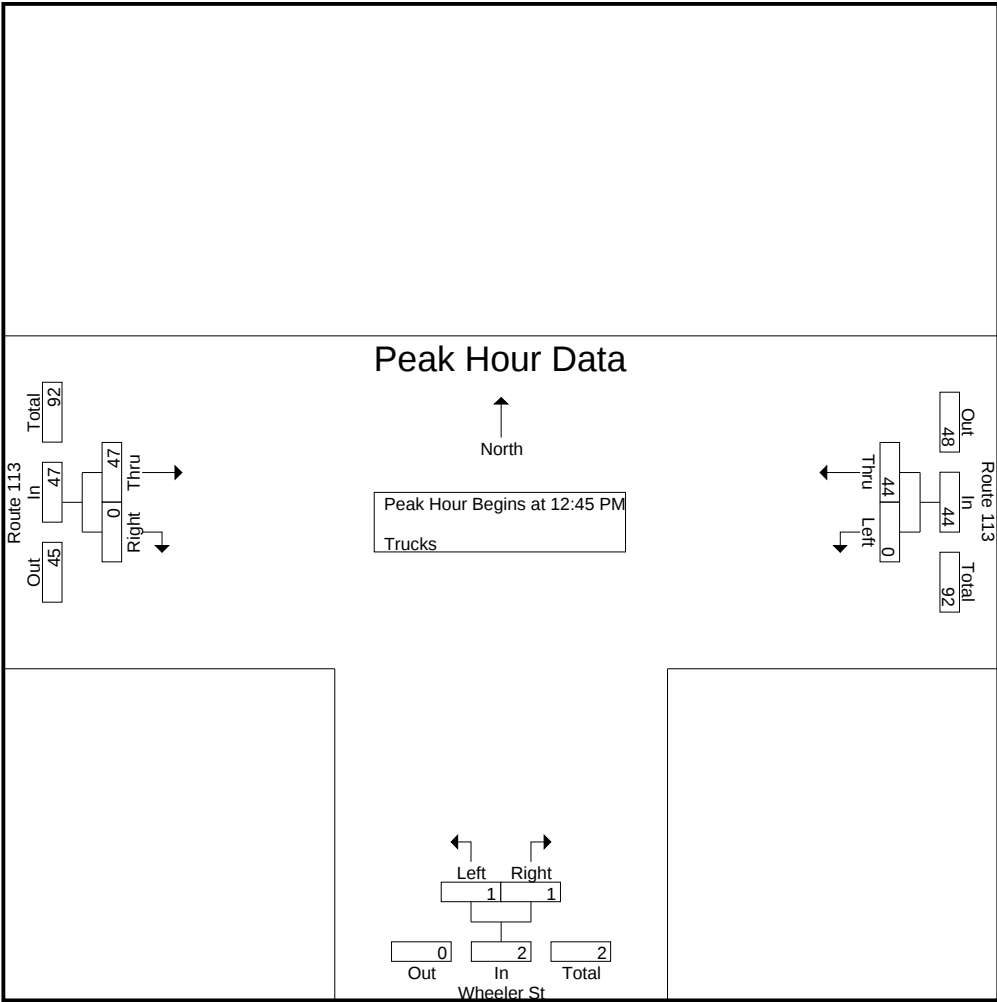


Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 12:45 PM

12:45 PM	0	15	15	1	0	1	10	0	10	26
01:00 PM	0	13	13	0	0	0	15	0	15	28
01:15 PM	0	7	7	0	0	0	14	0	14	21
01:30 PM	0	9	9	0	1	1	8	0	8	18
Total Volume	0	44	44	1	1	2	47	0	47	93
% App. Total	0	100		50	50		100	0		
PHF	.000	.733	.733	.250	.250	.500	.783	.000	.783	.830

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 19

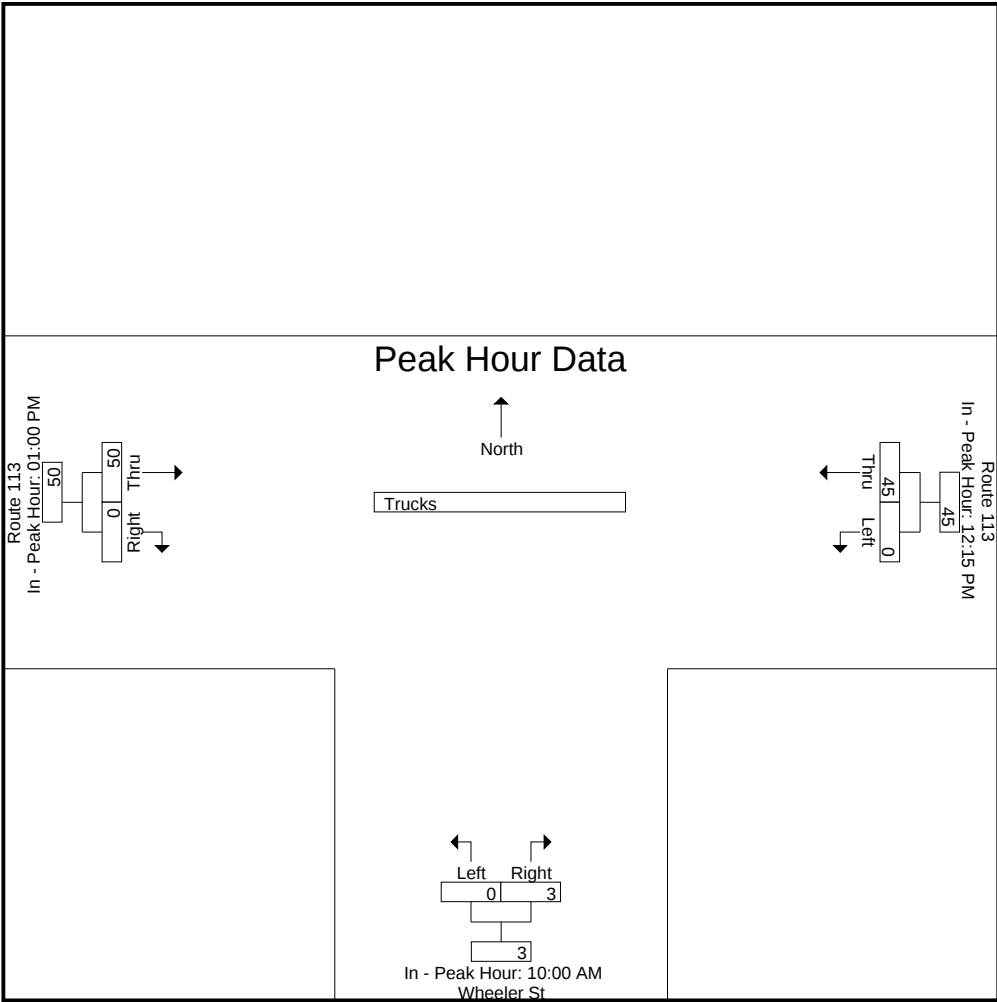


Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:15 PM			10:00 AM			01:00 PM		
+0 mins.	0	8	8	0	0	0	15	0	15
+15 mins.	0	9	9	0	2	2	14	0	14
+30 mins.	0	15	15	0	1	1	8	0	8
+45 mins.	0	13	13	0	0	0	13	0	13
Total Volume	0	45	45	0	3	3	50	0	50
% App. Total	0	100		0	100		100	0	
PHF	.000	.750	.750	.000	.375	.375	.833	.000	.833

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 20

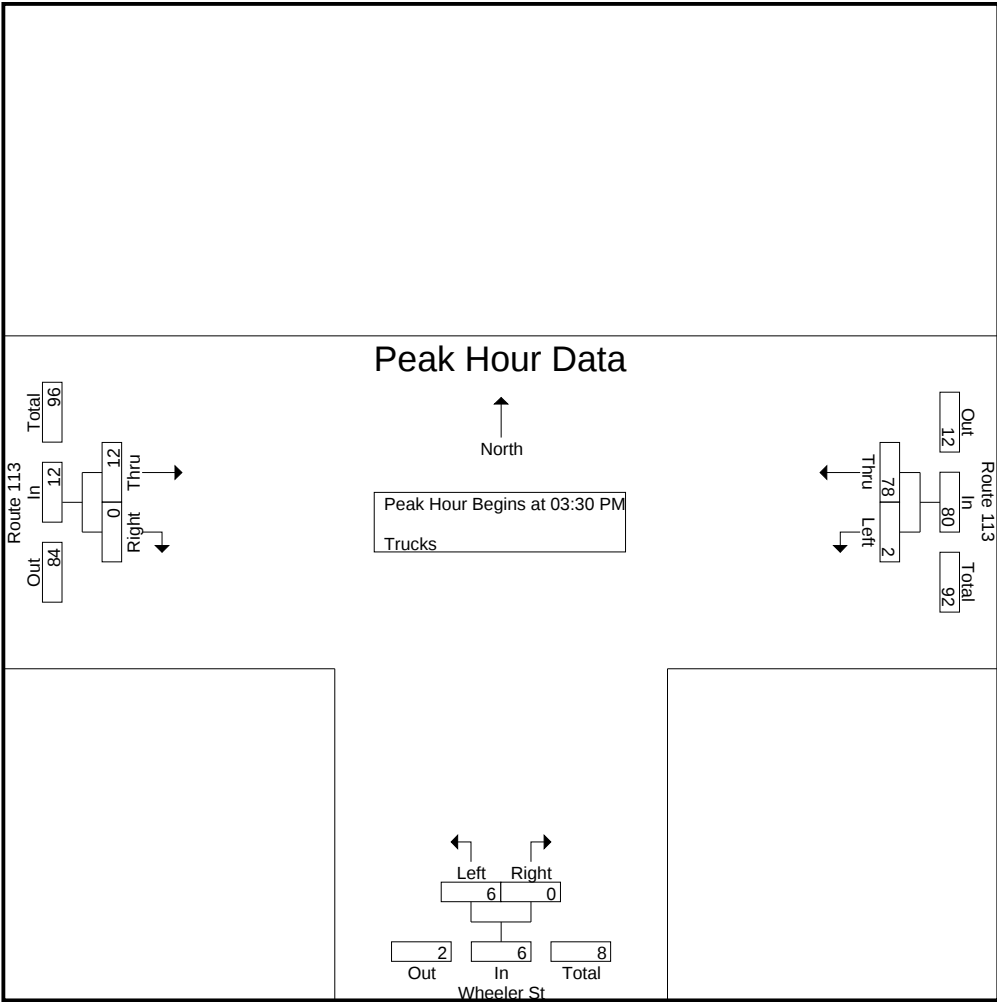


Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 03:30 PM

03:30 PM	1	22	23	1	0	1	6	0	6	30
03:45 PM	0	15	15	0	0	0	2	0	2	17
04:00 PM	1	21	22	2	0	2	2	0	2	26
04:15 PM	0	20	20	3	0	3	2	0	2	25
Total Volume	2	78	80	6	0	6	12	0	12	98
% App. Total	2.5	97.5		100	0		100	0		
PHF	.500	.886	.870	.500	.000	.500	.500	.000	.500	.817

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 21

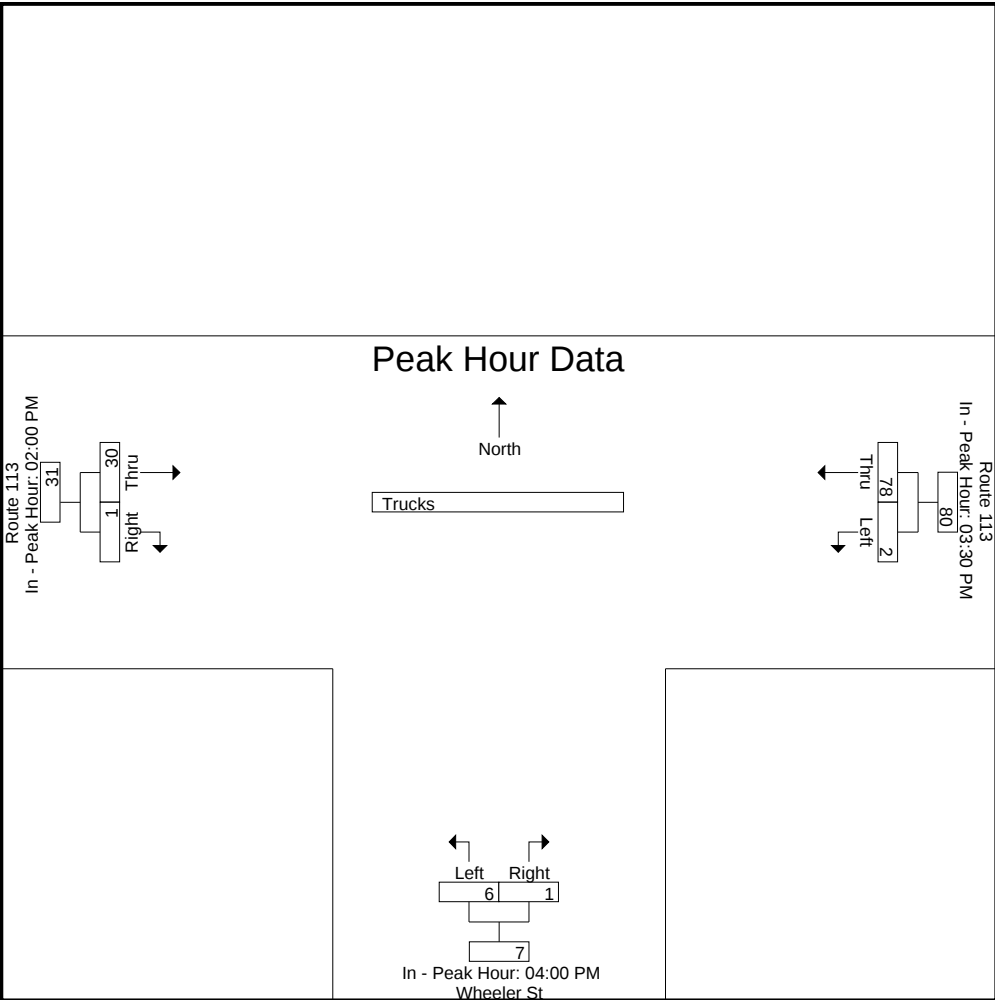


Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	03:30 PM			04:00 PM			02:00 PM		
+0 mins.	1	22	23	2	0	2	5	1	6
+15 mins.	0	15	15	3	0	3	16	0	16
+30 mins.	1	21	22	1	0	1	5	0	5
+45 mins.	0	20	20	0	1	1	4	0	4
Total Volume	2	78	80	6	1	7	30	1	31
% App. Total	2.5	97.5		85.7	14.3		96.8	3.2	
PHF	.500	.886	.870	.500	.250	.583	.469	.250	.484

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 22



978-664-2565

Page No : 23

[illegible]

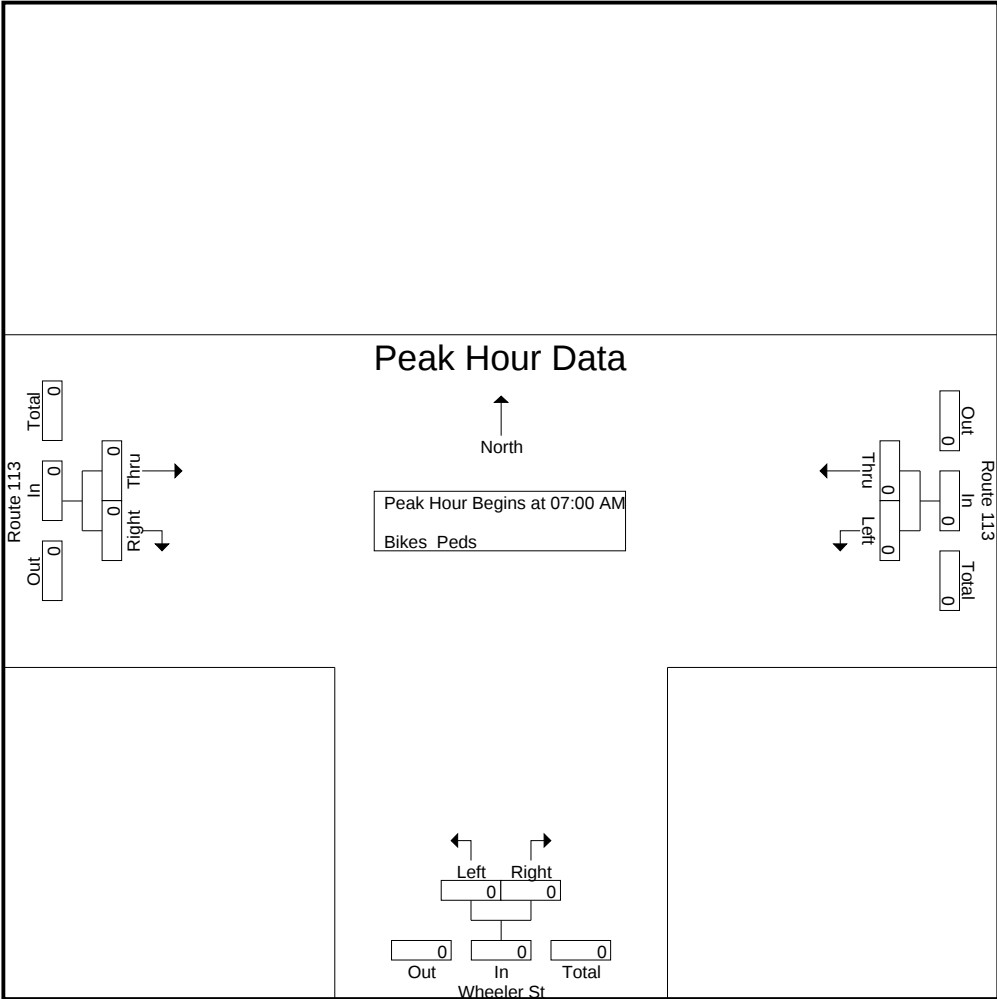
Accurate Counts
978-664-2565

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 24

Groups Printed- Bikes Peds												
	Route 113 From East			Wheeler St From South			Route 113 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Peds	Left	Right	Peds	Thru	Right	Peds			
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	0	0	0	0	0	0	1	0	1
Apprch %	0	0		0	0		0	0				
Total %										100	0	

	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 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:00 AM										
07:00 AM	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0		0	0		0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



978-664-2565

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 25

Peak Hour for Each Approach Begins at:



↑
North

Bikes	Peds
-------	------

Route 113
In - Peak Hour: 07:00 AM

Route 113
In - Peak Hour: 07:00 AM
0

Left Right

0 0

0

In - Peak Hour: 07:00 AM
Wheeler St

[illegible]

978-664-2565

978-664-2565

N/S Street : Wheeler Street

E/W Street : Route 113

City/State : Methuen, MA

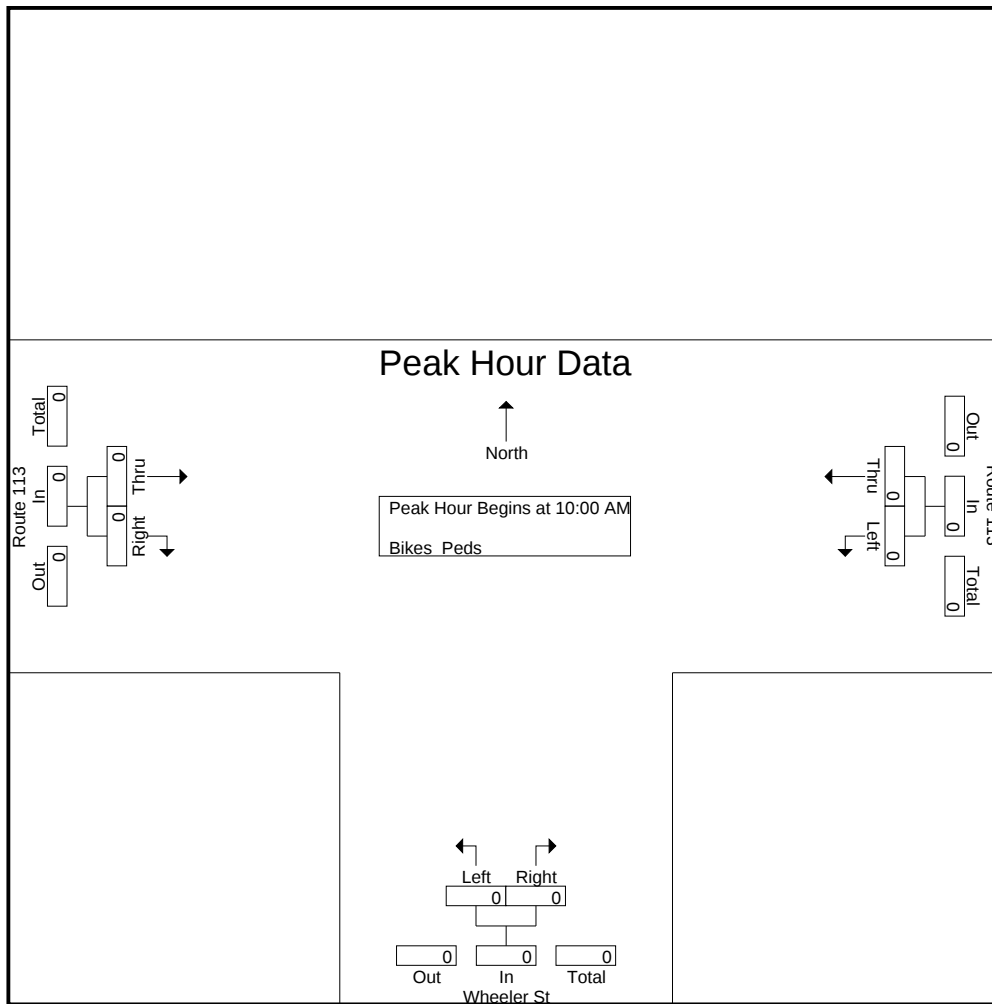
Weather : Clear

File Name : 74630003

Site Code : 74630003

Start Date : 4/9/2024

Page No : 26



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1

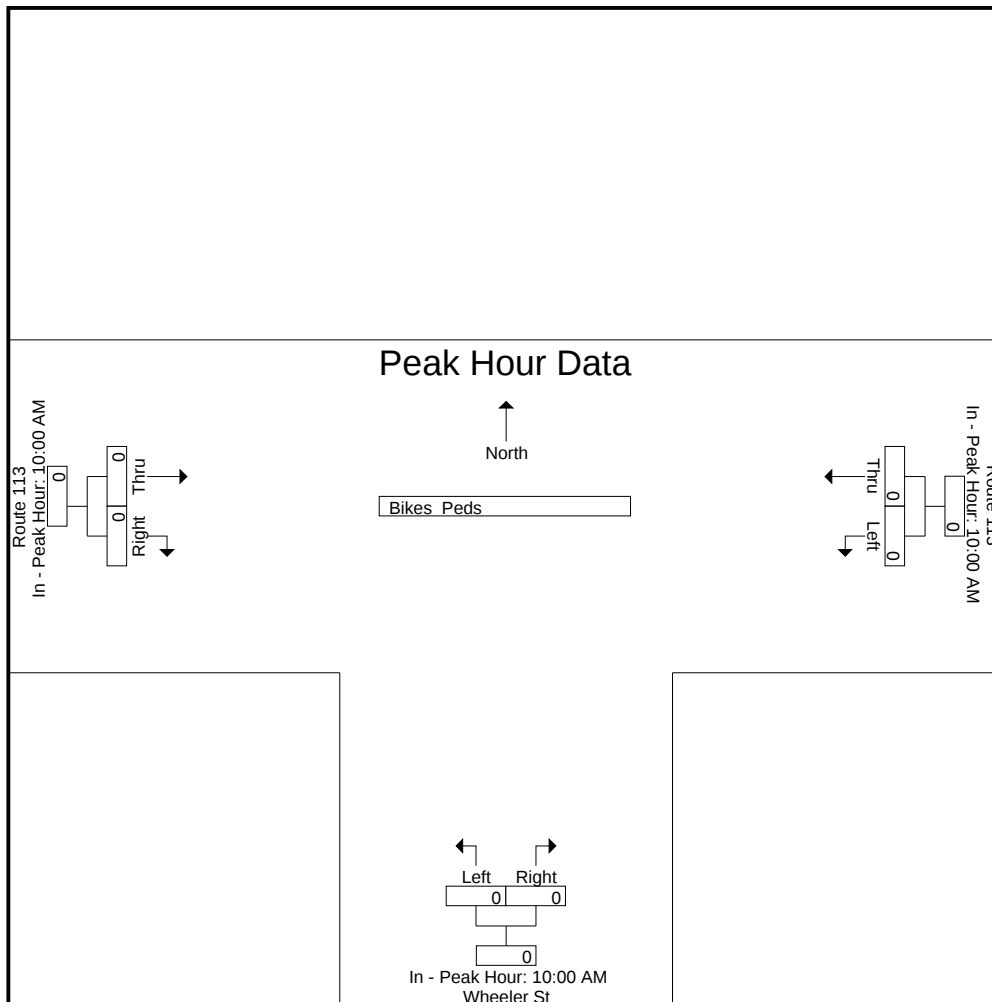
Peak Hour for Each Approach Begins at:

[illegible]

978-664-2565

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 27



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1

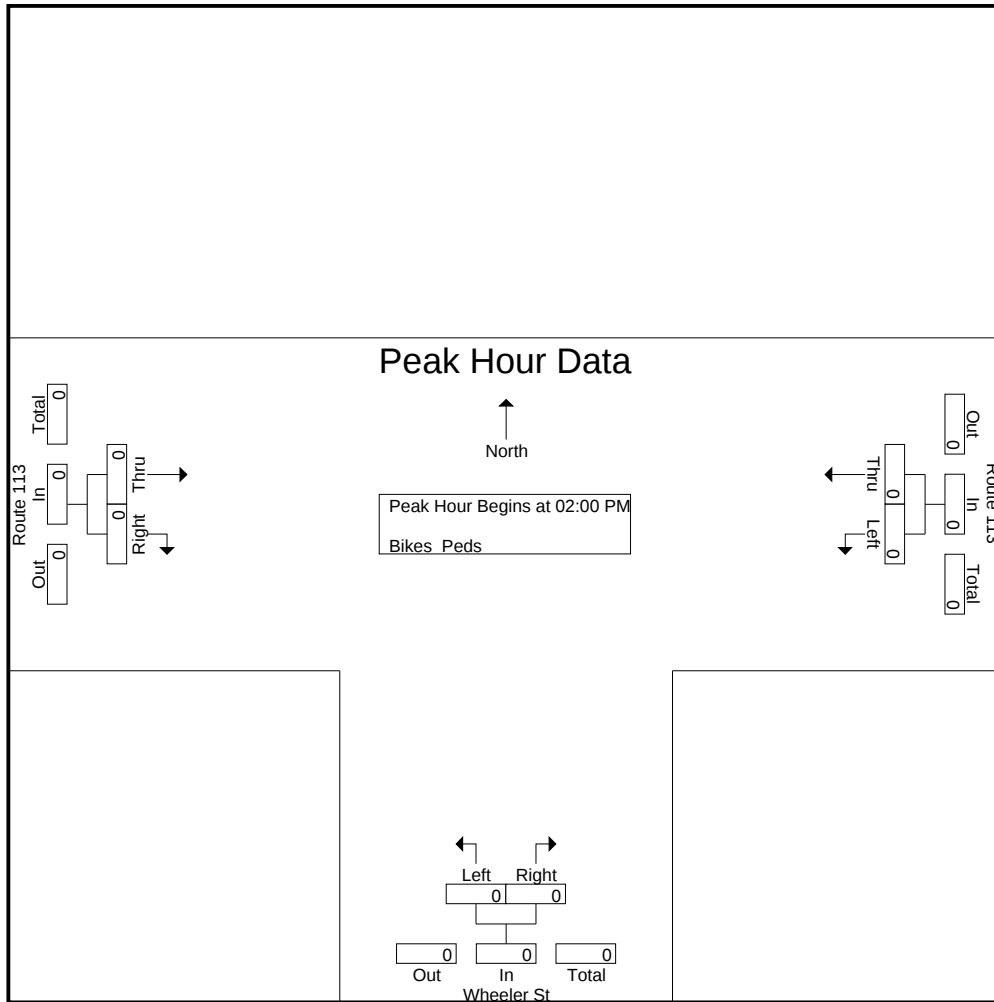
Peak Hour for Entire Intersection Begins at 02:00 PM

[illegible]

978-664-2565

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

File Name : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 28



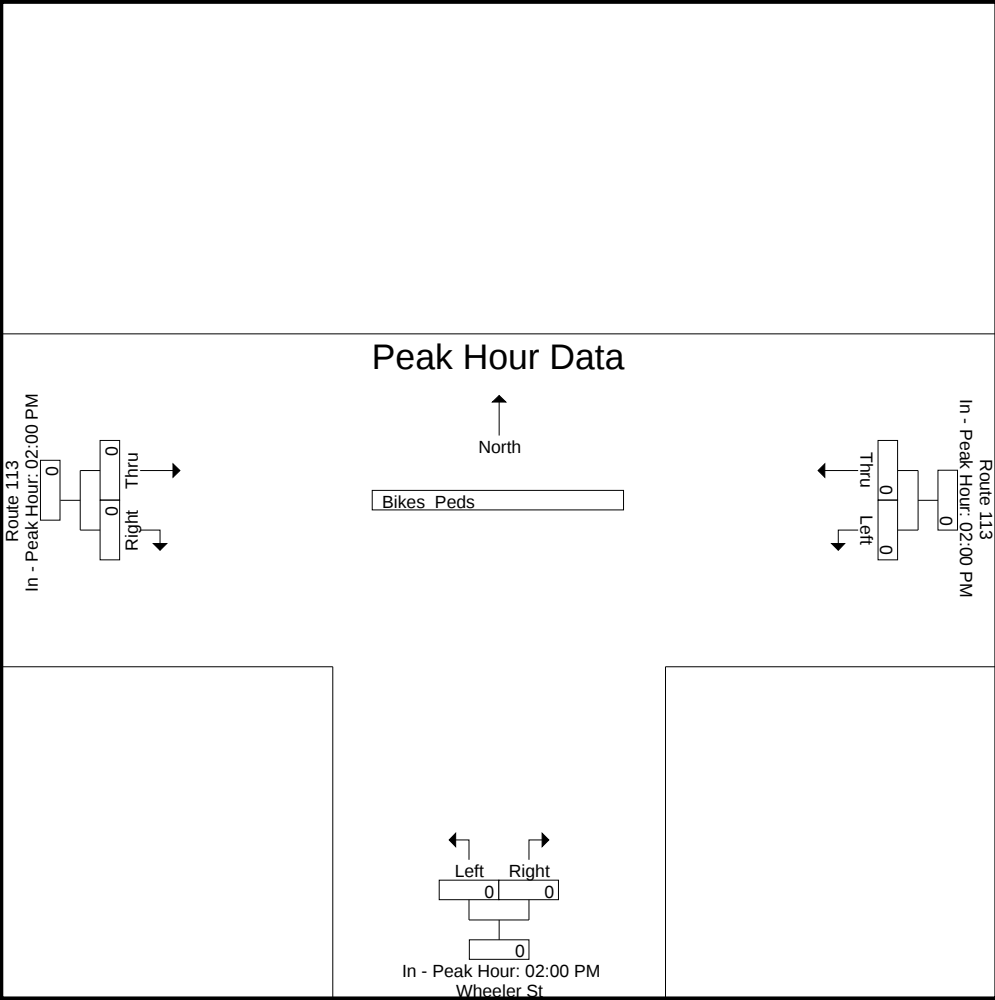
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1

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 : 74630003
Site Code : 74630003
Start Date : 4/9/2024
Page No : 29



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	
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	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 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	1	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	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	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%										

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/9/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	1	1	1	0	0	0	0	0	0	0	0	4
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	2	0	0	1	0	0	0	0	0	0	3
5:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3
7:00	0	0	1	4	8	0	0	0	0	0	0	0	0	0	13
8:00	0	0	2	2	4	1	1	0	1	0	0	0	0	0	11
9:00	0	0	0	4	3	2	1	0	0	0	0	0	0	0	10
10:00	0	0	0	6	6	1	0	0	0	0	0	0	0	0	13
11:00	0	0	1	6	5	3	3	1	0	0	0	0	0	0	19
12:00 PM	0	0	1	5	4	2	1	1	0	0	0	0	0	0	14
1:00	0	0	1	2	3	0	0	0	0	0	0	0	0	0	6
2:00	0	0	1	4	3	1	0	1	0	0	0	0	0	0	10
3:00	0	0	2	5	5	3	0	0	0	0	0	0	0	0	15
4:00	0	0	2	5	4	2	2	1	1	0	0	0	0	0	17
5:00	0	0	0	4	6	4	0	1	0	0	0	1	0	0	16
6:00	0	0	0	3	1	2	0	0	0	0	0	0	0	0	6
7:00	0	0	1	0	3	0	0	0	0	0	0	0	0	0	4
8:00	0	0	0	3	2	0	0	0	0	1	0	0	0	0	6
9:00	0	0	1	2	2	0	0	0	0	0	0	0	0	0	5
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	16	57	64	23	8	6	2	1	0	1	0	0	178

Percentile	15th
Speed	9
	12
	16
	19
Mean Speed (Average)	13.6
10 MPH Pace Speed	9-18
Number in Pace	152
Percent in Pace	85.0%
Number > 12 MPH	105
Percent > 12 MPH	59.0%

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/10/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
2:00	0	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	0
4:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00	0	0	0	1	3	0	0	0	0	0	0	0	0	0	4
6:00	0	0	0	1	2	0	0	0	0	0	1	0	0	0	4
7:00	0	0	0	5	5	3	4	0	0	1	0	0	0	0	18
8:00	0	0	0	3	3	2	0	1	0	0	0	0	0	0	9
9:00	0	0	3	3	5	0	1	0	1	0	0	0	0	0	13
10:00	0	0	2	9	1	0	0	0	0	1	0	0	0	0	13
11:00	0	0	3	4	5	1	0	0	0	0	0	0	0	0	13
12:00 PM	0	0	3	6	3	3	1	0	0	0	0	0	0	0	16
1:00	0	0	3	6	6	1	1	0	1	0	0	0	0	0	18
2:00	0	0	1	6	4	1	1	1	0	0	0	0	0	0	14
3:00	0	0	1	4	6	0	1	1	0	0	0	2	0	0	15
4:00	0	0	3	6	5	2	4	0	0	0	0	0	0	0	20
5:00	0	0	3	4	1	2	3	0	0	0	0	0	0	0	13
6:00	0	0	0	2	5	0	0	0	0	0	0	0	1	0	8
7:00	0	0	0	4	4	1	1	0	0	0	0	0	0	0	10
8:00	0	0	0	2	0	1	0	0	0	0	0	0	0	0	3
9:00	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
10:00	0	0	0	1	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	0	1
Total	0	0	22	68	62	18	17	4	2	2	1	2	1	0	199
Percentile															
Speed				15th	50th	85th	95th								
				9	11	16	23								
Mean Speed (Average)				13.8											
10 MPH Pace Speed				7-16											
Number in Pace				159											
Percent in Pace				81.0%											
Number > 12 MPH				109											
Percent > 12 MPH				54.8%											
Grand Total	0	0	38	125	126	41	25	10	4	3	1	3	1	0	377
Stats															
Percentile				15th	50th	85th	95th								
Speed				9	11	16	21								
Mean Speed (Average)				13.7											
10 MPH Pace Speed				8-17											
Number in Pace				311											
Percent in Pace				83.0%											
Number > 12 MPH				214											
Percent > 12 MPH				56.8%											

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/9/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	1	1	0	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	0
2:00	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
3:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
5:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00	0	0	1	5	3	1	1	0	0	0	0	0	0	0	11
7:00	0	0	5	2	5	1	0	0	0	0	0	0	0	0	13
8:00	0	0	2	7	6	2	1	0	0	0	0	0	0	0	18
9:00	0	0	0	3	4	2	1	0	0	0	0	0	0	0	10
10:00	0	0	1	6	4	3	2	0	0	0	0	0	0	0	16
11:00	0	0	1	8	6	0	1	0	0	0	0	0	0	0	16
12:00 PM	0	0	1	2	6	0	0	0	0	0	0	0	0	0	9
1:00	0	0	0	4	4	7	0	2	0	0	0	0	0	0	17
2:00	0	0	2	7	4	4	2	1	0	0	0	0	0	0	20
3:00	0	0	2	6	16	2	1	0	0	0	0	0	0	0	27
4:00	0	0	0	5	5	3	2	2	1	0	0	0	0	0	18
5:00	0	0	0	7	6	2	1	0	0	0	0	0	0	0	16
6:00	0	0	1	2	12	2	0	0	0	0	0	0	0	0	17
7:00	0	0	0	1	8	5	1	0	0	0	0	0	0	0	15
8:00	0	0	0	8	3	2	1	0	0	0	0	0	0	0	14
9:00	0	0	0	2	4	2	0	0	0	0	0	0	0	0	8
10:00	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
11:00	0	0	2	0	0	0	0	1	0	0	0	0	0	0	3
Total	0	0	18	77	100	39	16	6	1	0	0	0	0	0	257

Percentile	15th
Speed	9
	12
	16
	18
Mean Speed (Average)	13.6
10 MPH Pace Speed	10-19
Number in Pace	229
Percent in Pace	89.0%
Number > 12 MPH	162
Percent > 12 MPH	63.0%

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/10/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total	
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH		
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	
2:00	0	0	0	0	0	1	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	0	
4:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	
5:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	
6:00	0	0	2	4	0	2	1	1	0	0	0	0	0	0	10	
7:00	0	0	1	5	7	3	0	0	0	0	0	0	0	0	16	
8:00	0	0	2	5	4	3	0	0	0	0	0	0	0	0	14	
9:00	0	0	4	6	3	3	2	0	0	0	0	0	0	0	18	
10:00	0	0	2	2	7	1	2	0	0	0	0	0	0	0	14	
11:00	0	0	2	5	6	2	0	0	0	0	0	0	0	0	15	
12:00 PM	0	0	5	3	2	0	1	0	0	0	0	0	0	0	11	
1:00	0	0	4	5	5	2	1	0	0	0	0	0	0	0	17	
2:00	0	0	0	5	10	4	2	0	0	0	0	0	0	0	21	
3:00	0	0	1	2	10	3	1	1	0	0	0	0	0	0	18	
4:00	0	0	0	2	6	2	0	0	0	0	0	0	0	0	10	
5:00	0	0	1	5	12	3	0	1	0	0	0	0	0	0	22	
6:00	0	0	2	9	5	6	3	0	0	0	0	0	0	0	25	
7:00	0	0	2	4	4	0	2	0	0	0	0	0	0	0	12	
8:00	0	0	3	4	2	2	0	0	0	0	0	0	0	0	11	
9:00	0	0	0	2	1	1	0	0	0	0	0	0	0	0	4	
10:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
11:00	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	
Total	0	0	33	69	86	38	16	3	0	0	0	0	0	0	245	
Percentile				15th	50th	85th	95th									
Speed				8	12	15	17									
Mean Speed (Average)				13.2												
10 MPH Pace Speed				8-17												
Number in Pace				207												
Percent in Pace				86.0%												
Number > 12 MPH				143												
Percent > 12 MPH				58.4%												
Grand Total	0	0	51	146	186	77	32	9	1	0	0	0	0	0	502	
Stats				Percentile	15th	50th	85th	95th								
Speed				9	12	16	18									
Mean Speed (Average)				13.4												
10 MPH Pace Speed				8-17												
Number in Pace				433												
Percent in Pace				87.0%												
Number > 12 MPH				305												
Percent > 12 MPH				60.8%												

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/9/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	2	2	1	0	0	0	0	0	0	0	0	6
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
3:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
4:00	0	0	0	0	3	0	0	1	0	0	0	0	0	0	4
5:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
6:00	0	0	2	5	5	1	1	0	0	0	0	0	0	0	14
7:00	0	0	6	6	13	1	0	0	0	0	0	0	0	0	26
8:00	0	0	4	9	10	3	2	0	1	0	0	0	0	0	29
9:00	0	0	0	7	7	4	2	0	0	0	0	0	0	0	20
10:00	0	0	1	12	10	4	2	0	0	0	0	0	0	0	29
11:00	0	0	2	14	11	3	4	1	0	0	0	0	0	0	35
12:00 PM	0	0	2	7	10	2	1	1	0	0	0	0	0	0	23
1:00	0	0	1	6	7	7	0	2	0	0	0	0	0	0	23
2:00	0	0	3	11	7	5	2	2	0	0	0	0	0	0	30
3:00	0	0	4	11	21	5	1	0	0	0	0	0	0	0	42
4:00	0	0	2	10	9	5	4	3	2	0	0	0	0	0	35
5:00	0	0	0	11	12	6	1	1	0	0	0	1	0	0	32
6:00	0	0	1	5	13	4	0	0	0	0	0	0	0	0	23
7:00	0	0	1	1	11	5	1	0	0	0	0	0	0	0	19
8:00	0	0	0	11	5	2	1	0	0	1	0	0	0	0	20
9:00	0	0	1	4	6	2	0	0	0	0	0	0	0	0	13
10:00	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3
11:00	0	0	3	0	0	0	0	1	0	0	0	0	0	0	4
Total	0	0	34	134	164	62	24	12	3	1	0	1	0	0	435

Percentile	15th
Speed	9
	12
	16
	18
Mean Speed (Average)	13.6
10 MPH Pace Speed	10-19
Number in Pace	378
Percent in Pace	87.0%
Number > 12 MPH	267
Percent > 12 MPH	61.4%

Accurate Counts
978-664-2565

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

Site Code: 74630001

4/10/2024	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
2:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
5:00	0	0	0	1	3	0	1	0	0	0	0	0	0	0	5
6:00	0	0	2	5	2	2	1	1	0	0	1	0	0	0	14
7:00	0	0	1	10	12	6	4	0	0	1	0	0	0	0	34
8:00	0	0	2	8	7	5	0	1	0	0	0	0	0	0	23
9:00	0	0	7	9	8	3	3	0	1	0	0	0	0	0	31
10:00	0	0	4	11	8	1	2	0	0	1	0	0	0	0	27
11:00	0	0	5	9	11	3	0	0	0	0	0	0	0	0	28
12:00 PM	0	0	8	9	5	3	2	0	0	0	0	0	0	0	27
1:00	0	0	7	11	11	3	2	0	1	0	0	0	0	0	35
2:00	0	0	1	11	14	5	3	1	0	0	0	0	0	0	35
3:00	0	0	2	6	16	3	2	2	0	0	0	2	0	0	33
4:00	0	0	3	8	11	4	4	0	0	0	0	0	0	0	30
5:00	0	0	4	9	13	5	3	1	0	0	0	0	0	0	35
6:00	0	0	2	11	10	6	3	0	0	0	0	0	1	0	33
7:00	0	0	2	8	8	1	3	0	0	0	0	0	0	0	22
8:00	0	0	3	6	2	3	0	0	0	0	0	0	0	0	14
9:00	0	0	0	2	2	2	0	0	0	0	0	0	0	0	6
10:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
11:00	0	0	1	0	2	0	0	0	0	0	0	0	0	0	3
Total	0	0	55	137	148	56	33	7	2	2	1	2	1	0	444
Percentile				15th	50th	85th	95th								
Speed				8	12	16	18								
Mean Speed (Average)				13.5											
10 MPH Pace Speed				8-17											
Number in Pace				365											
Percent in Pace				83.0%											
Number > 12 MPH				252											
Percent > 12 MPH				56.8%											
Grand Total	0	0	89	271	312	118	57	19	5	3	1	3	1	0	879
Stats				Percentile	15th	50th	85th	95th							
				Speed	9	12	16	18							
Mean Speed (Average)				13.5											
10 MPH Pace Speed				8-17											
Number in Pace				744											
Percent in Pace				85.0%											
Number > 12 MPH				519											
Percent > 12 MPH				59.0%											

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 DATA

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Street Number	Roadway
4009537	02/13/2015	Fri	Property damage only (none injured)	11:16 PM	2015	D1: (No improper driving) / D2: (Failed to yield right of way)		Collision with motor vehicle in traffic	Dark - lighted roadway	Sideswipe, opposite direction	Dry	T-intersection	V1: Travelling straight ahead / V2: Turning right	V1: E / V2: N	Clear/Clear		NORTH LOWELL STREET / WHEELER STREET
4134440	01/11/2016	Mon	Non-fatal injury	2:57 PM	2016	D1: (No improper driving) / D2: (Made an improper turn)		Collision with motor vehicle in traffic	Daylight	Sideswipe, opposite direction	Dry	T-intersection	V1: Turning left / V2: Turning left	V1: N / V2: S	Clear/Clear		WHEELER STREET / NORTH LOWELL STREET
4132210	01/05/2016	Tue	Property damage only (none injured)	8:45 AM	2016		D1: Not Distracted	Collision with motor vehicle in traffic	Daylight	Angle	Dry	T-intersection	V1: Travelling straight ahead / V2: Turning left	V1: W / V2: S	Clear/Clear		NORTH LOWELL STREET / WHEELER STREET
4230931	08/09/2016	Tue	Property damage only (none injured)	4:08 PM	2016	D1: (Failure to keep in proper lane or running off road),(Exceeded authorized speed limit) / D2: (No improper driving)	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Angle	Dry	T-intersection	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: E / V2: E	Clear/Clear		NORTH LOWELL ST / WHEELER ST.
4233108	08/16/2016	Tue	Property damage only (none injured)	5:30 PM	2016	D1: (No improper driving),(No improper driving) / D2: (Inattention)	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Wet	T-intersection	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: W / V2: W	Cloudy/Rain		NORTH LOWELL STREET Rte SR113 N / WHEELER STREET
4394349	07/05/2017	Wed	Non-fatal injury	1:42 PM	2017	D1: (Failed to yield right of way) / D2: (No improper driving)	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Angle	Dry	T-intersection	V1: Turning left / V2: Travelling straight ahead	V1: E / V2: S	Clear/Clear		NORTH LOWELL STREET Rte SR113 W / WHEELER STREET
4320866	01/26/2017	Thu	Property damage only (none injured)	1:38 PM	2017	D1: (Followed too closely) / D2: (No improper driving)	D1: Other activity (searching, eating, personal hygiene, etc.) / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	T-intersection	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: W / V2: W	Clear/Clear		NORTH LOWELL STREET / WHEELER STREET
4438256	10/04/2017	Wed	Property damage only (none injured)	6:46 PM	2017	D1: (No improper driving),(No improper driving)	D1: Not Distracted	Collision with animal - deer	Dusk	Single vehicle crash	Dry	T-intersection	V1: Travelling straight ahead	V1: W	Clear/Clear		NORTH LOWELL ST Rte 113 W / WHEELER ST
4527525	04/16/2018	Mon	Property damage only (none injured)	12:45 PM	2018	D1: (No improper driving),(No improper driving) / D2: (Followed too closely),(Inattention)	D1: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Wet	T-intersection	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: W / V2: W	Rain/Cloudy		NORTH LOWELL ST Rte 113 W / WHEELER ST
4612187	10/20/2018	Sat	Property damage only (none injured)	4:30 PM	2018	D1: (No improper driving),(No improper driving) / D2: (Failed to yield right of way),(Inattention)	D1: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	T-intersection	V1: Turning left / V2: Travelling straight ahead	V1: W / V2: W	Cloudy/Clear		NORTH LOWELL ST Rte 113 W / WHEELER ST
4501510	02/13/2018	Tue	Property damage only (none injured)	9:21 PM	2018	D1: (Failure to keep in proper lane or running off road),(Inattention)	D1: Other activity (searching, eating, personal hygiene, etc.)	Collision with utility pole	Dark - lighted roadway	Single vehicle crash	Dry	T-intersection	V1: Changing lanes	V1: W	Clear/Clear		NORTH LOWELL ST Rte 113 W / WHEELER ST
4595763	09/11/2018	Tue	Property damage only (none injured)	10:25 AM	2018	D1: (Followed too closely) / D2: (No improper driving)	D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Wet	T-intersection	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: W / V2: W	Cloudy/Rain		N LOWELL ST / WHEELER ST
4761269	10/15/2019	Tue	Non-fatal injury	10:18 AM	2019	D1: (No improper driving) / D2: (Followed too closely)	D1: Not Distracted	Collision with motor vehicle in traffic	Daylight	Front to Rear	Dry	T-intersection	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: N / V2: N	Clear		NORTH LOWELL ST Rte 113 N / WHEELER ST

Wheeler Street at Wheeler Road

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Roadway
4053828	06/18/2015	Thu	Non-fatal injury	1:57 PM	2015	D1: (Driving too fast for conditions)		Collision with tree	Daylight	Single vehicle crash	Dry	Y-intersection	V1: Leaving traffic lane	V1: S	Cloudy/Clear	WHEELER STREET / WHEELER ROAD

** No crashes for 2016-2020 review period **

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Street Nurr Roadway	Near Intersection Roadway	
4063029	07/11/2015	Sat	Non-fatal injury	12:35 PM	2015	D1: Not Distracted / D2: External distraction (outside the vehicle)	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Turning left / V2: Travelling straight ahead	V1: E / V2: E	Clear/Clear	0	LOWELL ST	WHEELER STREET
4114582	11/12/2015	Thu	Non-fatal injury	2:19 PM	2015		Overturn/rollover	Daylight	Single vehicle crash	Wet	Not at junction	V1: Travelling straight ahead	V1: W	Cloudy/Rain	0	LOWELL ST	
4085084	09/08/2015	Tue	Non-fatal injury	9:00 AM	2015		Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Off-ramp	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: W / V2: W	Clear/Clear	0	LOWELL ST	
4089780	09/25/2015	Fri	Property damage only (none injured)	12:50 PM	2015		Collision with motor vehicle in traffic	Daylight	Angle	Dry	Not at junction	V1: Turning left / V2: Travelling straight ahead	V1: N / V2: E	Clear/Clear	0	LOWELL ST	
4063847	07/19/2015	Sun	Property damage only (none injured)	4:33 PM	2015		Collision with motor vehicle in traffic	Daylight	Sideswipe, opposite direction	Dry	Not at junction	V1: Travelling straight ahead / V2: Not reported	V1: S / V2: S	Clear/Clear	0	LOWELL ST	
4236454	08/22/2016	Mon	Non-fatal injury	4:35 PM	2016	D1: Other activity (searching, eating, personal hygiene, etc.) / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: E / V2: E	Clear/Clear	0	LOWELL ST	
4206194	06/12/2016	Sun	Non-fatal injury	2:17 AM	2016		Collision with motor vehicle in traffic	Dark - lighted roadway	Rear-end	Dry	Not at junction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: E / V2: E	Clear/Clear	0	LOWELL ST	
4208538	06/22/2016	Wed	Non-fatal injury	9:29 AM	2016	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: E / V2: E	Clear/Clear	0	LOWELL ST	
4294773	12/05/2016	Mon	Property damage only (none injured)	7:10 AM	2016		Collision with tree	Daylight	Single vehicle crash	Snow	Not at junction	V1: Travelling straight ahead	V1: W	Snow/Snow	0	LOWELL ST	
4261846	10/06/2016	Thu	Property damage only (none injured)	2:47 PM	2016	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: E / V2: E	Clear/Clear	0	LOWELL ST	
4172142	03/24/2016	Thu	Property damage only (none injured)	8:45 AM	2016		Collision with parked motor vehicle	Daylight	Sideswipe, same direction	Dry	Five-point or more	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: E / V2: E	Clear/Clear	0	LOWELL ST	
4210133	06/28/2016	Tue	Property damage only (none injured)	10:09 AM	2016	D1: Not Distracted	Collision with utility pole	Daylight	Single vehicle crash	Dry	Not at junction	V1: Travelling straight ahead	V1: E	Cloudy/Rain		LOWELL STREET / WHEELER STREET	EAST CAPITAL
4206207	06/15/2016	Wed	Property damage only (none injured)	6:51 AM	2016		Collision with motor vehicle in traffic	Daylight	Sideswipe, same direction	Dry	Not at junction	V1: Travelling straight ahead / V2: Changing lanes	V1: E / V2: E	Clear/Clear	0	LOWELL STREET Rte 110 E	
4426087	09/15/2017	Fri	Property damage only (none injured)	3:09 PM	2017	D1: Not Distracted / D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: N / V2: N	Clear/Clear	0	LOWELL ST	
4440411	10/09/2017	Mon	Property damage only (none injured)	6:47 AM	2017		Collision with motor vehicle in traffic	Dawn	Sideswipe, same direction	Wet	Not at junction	V1: Travelling straight ahead / V2: Entering traffic lane	V1: W / V2: W	Rain/Rain	0	LOWELL ST	
4613226	10/23/2018	Tue	Property damage only (none injured)	8:31 AM	2018	D1: Not Distracted	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	T-Intersection	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: W / V2: W	Cloudy/Clear		LOWELL BLVD / WHEELER ST	
4678129	03/13/2019	Wed	Property damage only (none injured)	10:27 AM	2019	D1: Manually operating an electronic device	Collision with motor vehicle in traffic	Daylight	Angle	Dry	Not at junction	V1: Turning right / V2: Overtaking/passing	V1: W / V2: W	Clear/Clear		LOWELL BOULEVARD Rte SR110 E / WHEELER STREET	

Wheeler Road at Wilshire Circle and Paddock Lane

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Is Geocode	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Street Number	Roadway
4416236	09/04/2017	Mon	Property damage only (none injured)	12:37 AM	2017	D1: (Fatigued/asleep)	D1: Not Distracted	Collision with utility pole	Yes	Dark - lighted roadway	Single vehicle crash	Wet	Not at junction	V1: Travelling straight ahead	V1: N	Cloudy/Clear	523	WHEELER RD
4585744	08/24/2018	Fri	Non-fatal injury	6:33 PM	2018	D1: (Failed to yield right of way),(Inattention) / D2: (No improper driving)	D2: Not Distracted	Collision with motor vehicle in traffic	Yes	Daylight	Angle	Dry	Four-way intersection	V1: Entering traffic lane / V2: Travelling straight ahead	V1: S / V2: E	Clear	523	WHEELER RD

Wheeler Road at Parker Road

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Street Number	Roadway	Near Intersection Roadway	Distance and Direction From Intersection
4255880	08/04/2016	Thu	Property damage only (none injured)	8:40 PM	2016	D1: (No improper driving)	D1: Not Distracted	Collision with guardrail	Dark - lighted roadway	Single vehicle crash	Dry	Not at junction	V1: Travelling straight ahead	V1: E	Clear		PARKER ROAD	WHEELER ROAD	
4359030	04/30/2017	Sun	Property damage only (none injured)	8:10 PM	2017	D1: (No improper driving)	D1: Not Distracted	Collision with animal - deer	Dark - roadway not lighted	Single vehicle crash	Dry	Not at junction	V1: Travelling straight ahead	V1: S	Clear		PARKER ROAD	WHEELER ROAD	300 feet S of

** Same crashes as 2015-2019 **

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Street Number	Roadway	Near Intersection Roadway
4100473	03/10/2015	Tue	Non-fatal injury	3:43 PM	2015	D3: Manually operating an electronic device	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Not at junction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead / V3: Travelling straight ahead	V1: W / V2: W / V3: W	Clear	702	BROADWAY ROAD	
4116667	09/30/2015	Wed	Non-fatal injury	10:59 AM	2015		Collision with motor vehicle in traffic	Daylight	Rear-end	Wet	Four-way intersection	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: W / V2: W	Cloudy/Rain		BROADWAY ROAD Rte 113 W / JONES AVENUE / WHEELER ROAD	
4159096	12/29/2015	Tue	Property damage only (none injured)	3:28 PM	2015		Collision with utility pole	Dark - unknown roadway lighting	Single vehicle crash	Snow	Not at junction	V1: Travelling straight ahead	V1: S	Sleet, hail (freezing rain or drizzle)	40	JONES AVENUE	
4079899	01/28/2015	Wed	Property damage only (none injured)	8:58 PM	2015		Collision with unknown fixed object	Dark - lighted roadway	Single vehicle crash	Snow	Not at junction	V1: Travelling straight ahead	V1: S	Cloudy	20	WHEELER ROAD	BROADWAY ROAD
4284175	10/13/2016	Thu	Non-fatal injury	7:51 PM	2016	D2: Not Distracted	Collision with motor vehicle in traffic	Dark - roadway not lighted	Angle	Dry	Four-way intersection	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Not Reported / V2: Not Reported	Cloudy		BROADWAY ROAD / JONES AVENUE	
4295158	11/08/2016	Tue	Non-fatal injury	2:52 PM	2016	D1: Not Distracted / D2: External distraction (outside the vehicle)	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Four-way intersection	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: E / V2: E	Clear		BROADWAY ROAD / JONES AVENUE	
4203190	05/06/2016	Fri	Property damage only (none injured)	5:10 PM	2016		Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	Four-way intersection	V1: Travelling straight ahead / V2: Turning left	V1: E / V2: E	Clear/Clear		BROADWAY ROAD Rte 113 E / WHEELER ROAD / /	
4307259	12/17/2016	Sat	Property damage only (none injured)	1:51 PM	2016	D1: Not Distracted	Collision with utility pole	Daylight	Single vehicle crash	Snow	Not at junction	V1: Travelling straight ahead	V1: W	Snow	760	BROADWAY ROAD	
4405517	08/07/2017	Mon	Property damage only (none injured)	8:05 AM	2017	D2: Not Distracted	Collision with motor vehicle in traffic	Daylight	Angle	Dry	Four-way intersection	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: S / V2: W	Not Reported		JONES AV / BROADWAY RD. Rte 113 S / WHEELER RD.	
4608793	10/13/2018	Sat	Non-fatal injury	12:32 AM	2018	D2: Not Distracted	Collision with animal - deer	Dark - lighted roadway	Angle	Dry	Not at junction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: S / V2: S	Clear	702	BROADWAY RD	
4515992	03/18/2018	Sun	Property damage only (none injured)	2:51 AM	2018	D2: Not Distracted	Collision with other movable object	Dark - lighted roadway	Single vehicle crash	Dry	Four-way intersection	V1: Travelling straight ahead	V1: E	Clear		BROADWAY ROAD / BROADWAY ROAD Rte 113 E / WHEELER ROAD	
4577476	08/07/2018	Tue	Property damage only (none injured)	3:29 PM	2018		Collision with motor vehicle in traffic	Daylight	Not reported	Dry	Four-way intersection	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Not Reported / V2: Not Reported	Clear/Clear	730	BROADWAY RD	
4710246	06/08/2019	Sat	Non-fatal injury	3:22 AM	2019		Collision with other light pole or other post/support	Dark - lighted roadway	Single vehicle crash	Dry	Not at junction	V1: Travelling straight ahead	V1: W	Clear	713	BROADWAY RD	
4695873	05/01/2019	Wed	Non-fatal injury	8:38 AM	2019	D1: Not Distracted	Other	Daylight	Single vehicle crash	Wet	Not at junction	V1: Travelling straight ahead	V1: W	Cloudy/Rain	713	BROADWAY RD	
4773459	11/08/2019	Fri	Property damage only (none injured)	6:33 AM	2019		Collision with tree	Dawn	Single vehicle crash	Ice	Not at junction	V1: Travelling straight ahead	V1: E	Clear	700	BROADWAY RD	

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Methuen COUNT DATE : Apr-24

DISTRICT : 4 UNSIGNALIZED : ☒ 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) :	85		554	927		1,566

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

17,400

TOTAL # OF CRASHES :

13

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

2.60

CRASH RATE CALCULATION :

0.41

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

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

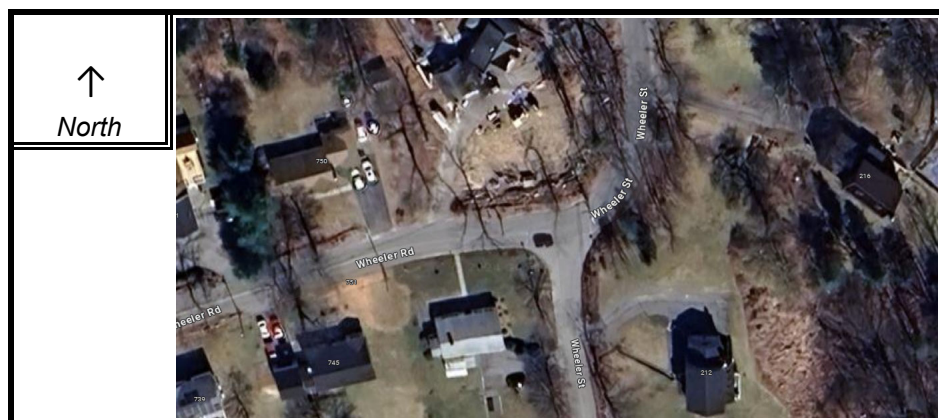
DISTRICT : 4 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Wheeler Street

MINOR STREET(S) : Wheeler Road

**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) :	32	102	42	0		176

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

1,956

TOTAL # OF CRASHES :

1

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

0.20

CRASH RATE CALCULATION :

0.28

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

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 : ☒ 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) :	577	621	45			1,243

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,811

TOTAL # OF CRASHES :

17

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

3.40

CRASH RATE CALCULATION :

0.67

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

Comments : Above 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 : ☒ 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	75	68		146

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

1,622

TOTAL # OF CRASHES :

2

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.40

CRASH RATE CALCULATION :

0.68

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

Comments : Above MassDOT District and Statewide Average Crash Rates

Project Title & Date: 7463 - Dracut/Methuen

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Dracut COUNT DATE : Apr-24

DISTRICT : 4 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Wheeler Road

MINOR STREET(S) : Parker Road

**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) :	98	0	132	62		292

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

3,244

TOTAL # OF CRASHES :

2

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.40

CRASH RATE CALCULATION :

0.34

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

Comments : Below MassDOT District and Statewide Average Crash Rates

Project Title & Date: 7463 - Dracut/Methuen

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Dracut COUNT DATE : Apr-24

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

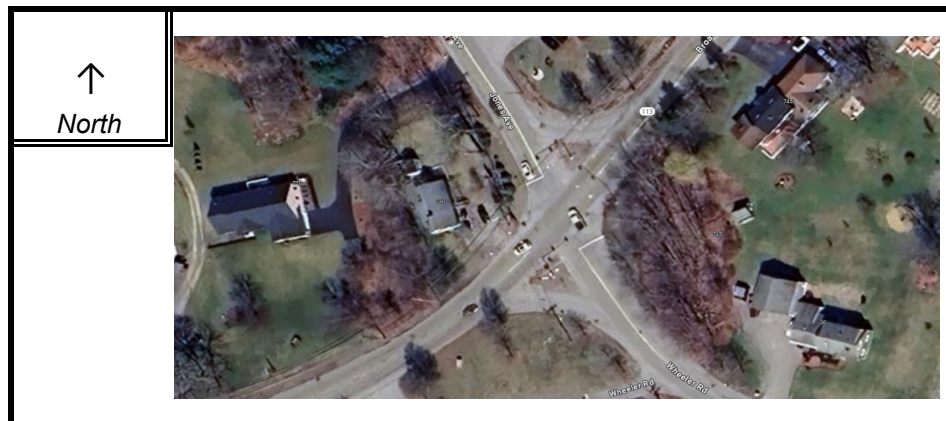
~ INTERSECTION DATA ~

MAJOR STREET : Route 113

MINOR STREET(S) : Wheeler Road

Jones Avenue

**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) :	400	533	69	155		1,157

" K " FACTOR : 0.090 INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : 12,856

TOTAL # OF CRASHES : 15 # OF YEARS : 5 AVERAGE # OF CRASHES PER YEAR (A) : 3.00

CRASH RATE CALCULATION :

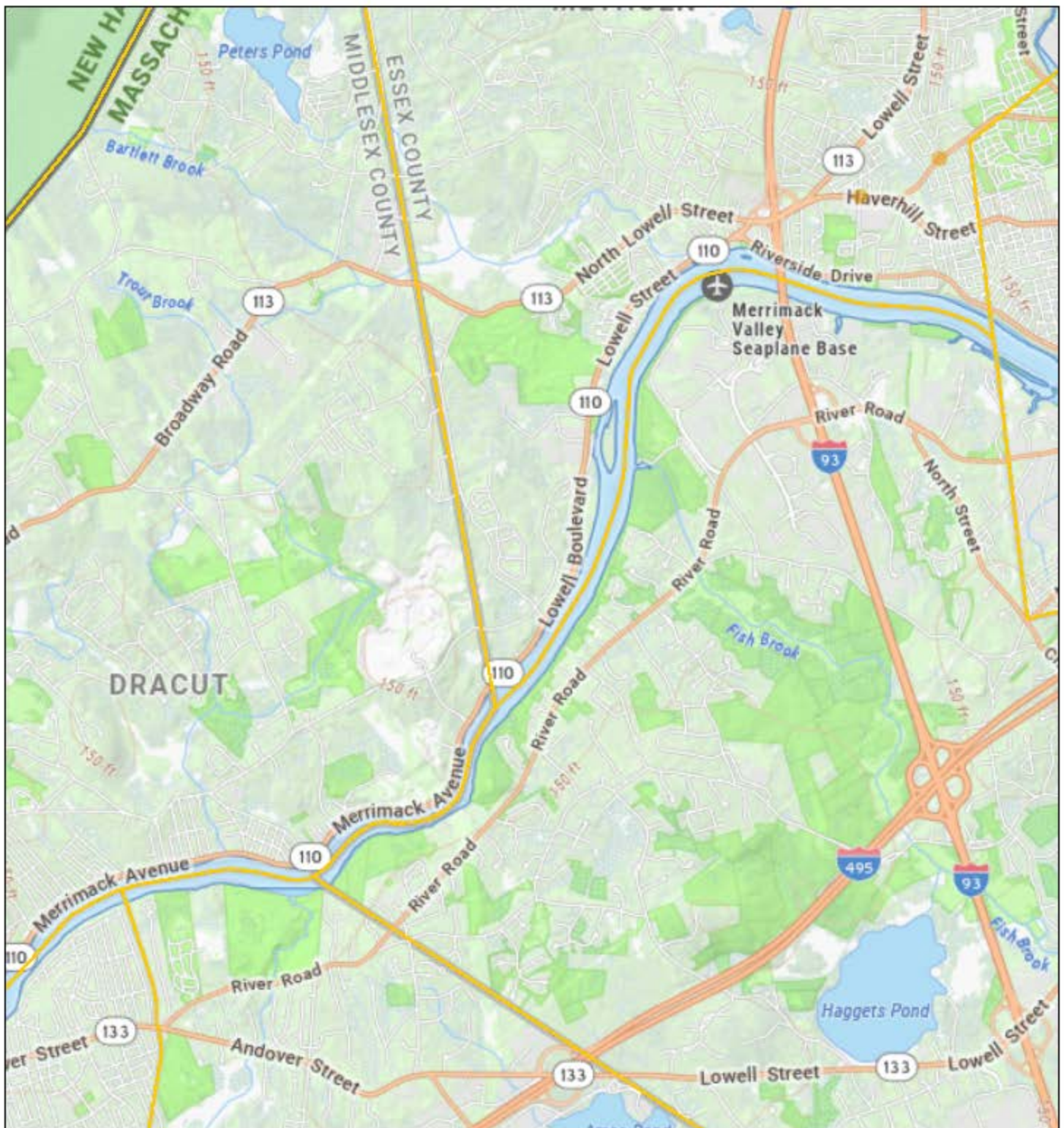
0.64

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

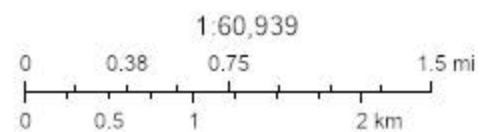
Comments : Below MassDOT District and Statewide Average Crash Rates

Project Title & Date: 7463 - Dracut/Methuen

HSIP



July 3, 2024



MOTOR VEHICLE CRASH TABLE – 2016 THROUGH 2020

Table 4B
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Route 113/ Wheeler Street	Wheeler Street/ Wheeler Road	Route 110/ Wheeler Street	Wheeler Road/ Wilshire Circle/ Paddock Lane	Wheeler Road/ Parker Road	Route 113/ Wheeler Road/ Jones Avenue
Traffic Control Type: ^b	S	S	S	S	S	TS
<i>Year:</i>						
2016	4	0	8	0	1	4
2017	3	0	2	1	1	1
2018	4	0	1	1	0	3
2019	1	0	1	0	0	3
<u>2020</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>3</u>
Total	13	0	12	3	2	14
Average	2.60	0.00	2.40	0.60	0.40	2.80
Rate ^c	0.41	0.00	0.48	1.01	0.34	0.60
MassDOT Crash Rate: ^d	0.57/0.57	0.57/0.57	0.57/0.57	0.57/0.57	0.57/0.57	0.78/0.73
Significant? ^e	No	No	No	Yes	No	No
<i>Type:</i>						
Angle	3	0	1	2	0	3
Rear-End	7	0	6	0	0	3
Head-On	0	0	0	0	0	0
Sideswipe	1	0	3	0	0	0
Fixed Object	1	0	2	1	1	4
Pedestrian/Bicycle	0	0	0	0	0	0
<u>Unknown/Other</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>4</u>
Total	13	0	12	3	2	14
<i>Conditions:</i>						
Clear	9	0	8	2	2	11
Cloudy	1	0	1	1	0	1
Rain	3	0	2	0	0	1
<u>Snow/Ice</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total	13	0	12	3	2	14
<i>Lighting:</i>						
Daylight	11	0	10	2	0	8
Dawn/Dusk	1	0	1	0	0	1
Dark (Road Lit)	1	0	1	1	1	4
<u>Dark (Road Unlit)</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	13	0	12	3	2	14
<i>Day of Week:</i>						
Monday through Friday	12	0	11	3	1	9
Saturday	1	0	0	0	0	4
<u>Sunday</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	13	0	12	3	2	14
<i>Severity:</i>						
Property Damage Only	10	0	9	2	2	7
Personal Injury	3	0	3	1	0	7
Fatality	0	0	0	0	0	0
<u>Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	13	0	12	3	2	14

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

^bTraffic Control Type: S = stop control; TS = traffic signal 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).

GENERAL BACKGROUND TRAFFIC GROWTH

General Background Traffic Growth - Daily Traffic Volumes

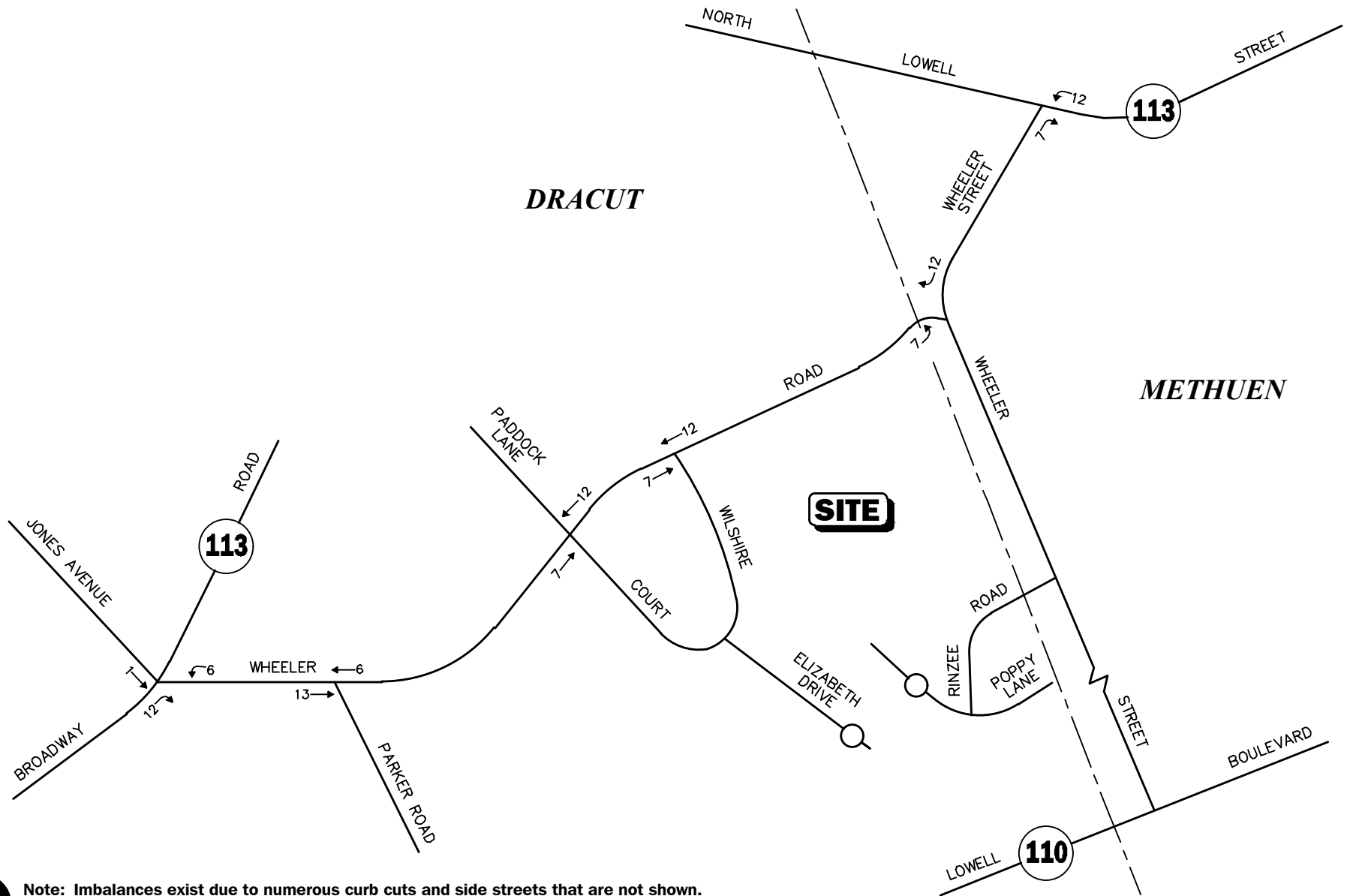
CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual
Dracut	Phineas Street	north of Donahue Road						1,945	1,990			2,121	2,113	0.97%
Lowell	Lakeview Avenue	south of Farmloand Road						9,441	9,658	10,257	10,431	10,462	10,420	2.02%
Dracut	Arlington Street	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

Berube Farms Weekday Morning Peak-Hour Traffic Volumes



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

Not To Scale



Figure A-2

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

TRIP-GENERATION CALCULATIONS



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:

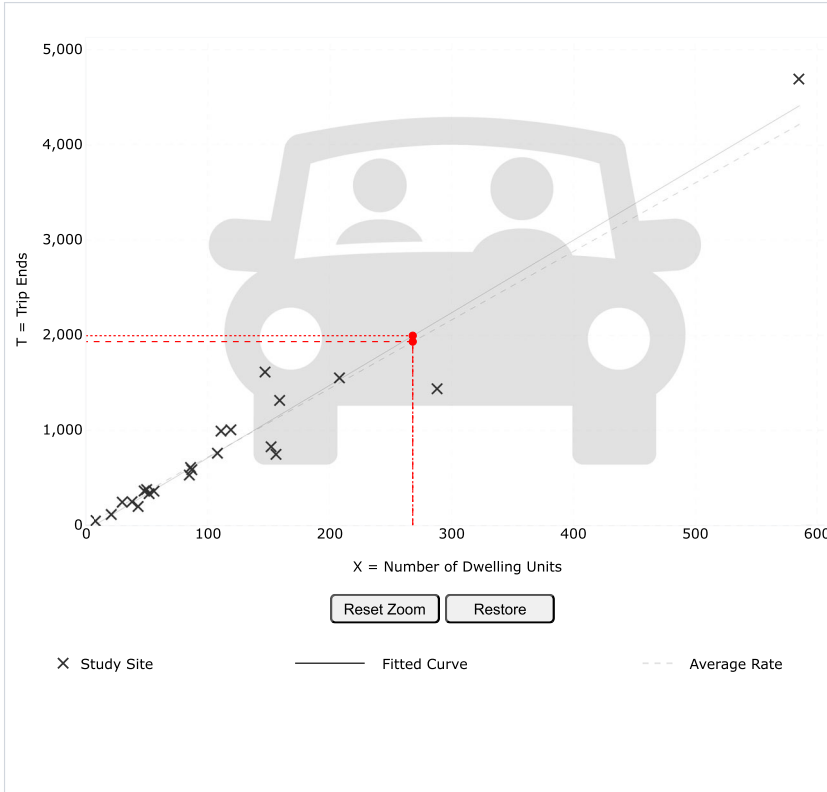
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

268

Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

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:

$T = 7.62(X) - 50.48$

R²:

0.94

Directional Distribution:

50% entering, 50% exiting

Calculated Trip Ends:

Average Rate: 1930 (Total), 965 (Entry), 965 (Exit)
Fitted Curve: 1992 (Total), 996 (Entry), 996 (Exit)



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:

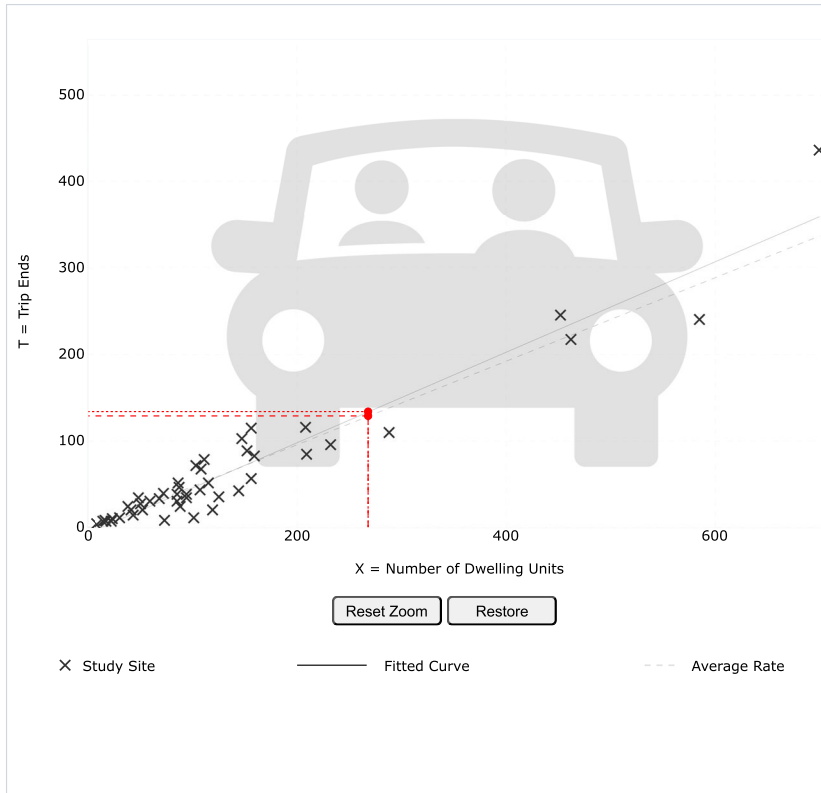
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

268

Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

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: 129 (Total), 32 (Entry), 97 (Exit)

Fitted Curve: 134 (Total), 33 (Entry), 101 (Exit)



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:

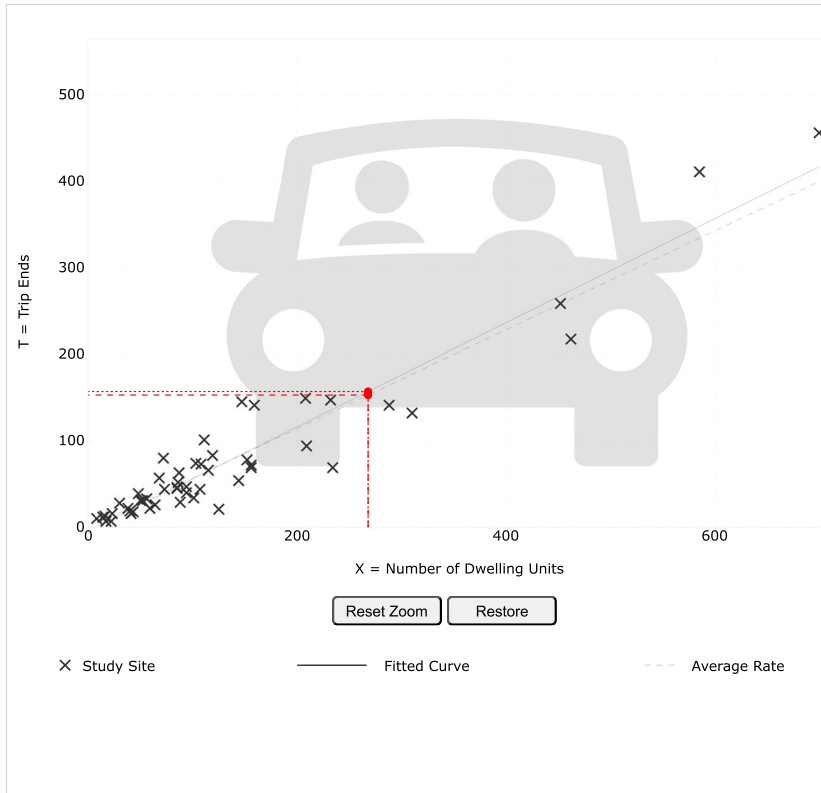
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

268

Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

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:

$T = 0.60(X) - 3.93$

R²:

0.91

Directional Distribution:

59% entering, 41% exiting

Calculated Trip Ends:

Average Rate: 153 (Total), 90 (Entry), 63 (Exit)

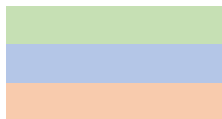
Fitted Curve: 157 (Total), 93 (Entry), 64 (Exit)

JOURNEY TO WORK TRIP DISTRIBUTION

Proposed Residential Development
Murphy's Farm
Dracut, Massachusetts

Residence	Workplace	Number	Route 113 (East)		Route 113 (West) towards NH		Route 113 (West) towards Lowell		Route 110 (East)		Route 110 (West)		to I-93	to I-495
Dracut town	Lowell city	2,734		0	10%	273	50%	1367		0	40%	1094		
Dracut town	Dracut town	2,323		0	10%	232	50%	1162		0	40%	929		
Dracut town	Boston city	774	90%	697		0		0	10%	77		0	5.6%	
Dracut town	Andover town	763	90%	687		0		0	10%	76		0	5.5%	
Dracut town	Chelmsford town	755	70%	529		0		0	10%	76	20%	151	4.3%	1.1%
Dracut town	Burlington town	512	70%	358		0		0	10%	51	20%	102	2.9%	0.7%
Dracut town	Billerica town	474	70%	332		0		0	10%	47	20%	95	2.7%	
Dracut town	Tewksbury town	446	70%	312		0		0	10%	45	20%	89	2.6%	
Dracut town	Nashua city	439		0	100%	439		0		0		0		
Dracut town	Waltham city	415	90%	374		0		0	10%	42		0	3.0%	
Dracut town	Tyngsborough town	374		0		0	50%	187		0	50%	187		
Dracut town	Bedford town	313	50%	157		0		0		0	50%	157	1.1%	
Dracut town	Lawrence city	310		0		0		0	100%	310		0		
Dracut town	Woburn city	303	90%	273		0		0	10%	30		0	2.2%	
Dracut town	Cambridge city	288	90%	259		0		0	10%	29		0	2.1%	
Dracut town	Wilmington town	248	90%	223		0		0	10%	25		0	1.8%	
Dracut town	Newton city	195	90%	176		0		0	10%	20		0	1.4%	
Dracut town	Westford town	178	50%	89		0		0	20%	36	30%	53	0.9%	0.4%
Dracut town	Salem town	157	90%	141		0		0	10%	16		0	1.1%	
Dracut town	North Andover town	154	80%	123		0		0	20%	31		0		
Dracut town	Marlborough city	153	50%	77		0		0	20%	31	30%	46	0.8%	0.3%
Dracut town	Methuen Town city	150		0		0		0	100%	150		0		
Dracut town	Somerville city	150	90%	135		0		0	10%	15		0	1.1%	
Dracut town	Hudson town	147		0	100%	147		0		0		0		
Dracut town	Haverhill city	139		0		0		0	100%	139		0		
Dracut town	Lexington town	138	90%	124		0		0	10%	14		0	1.0%	
Dracut town	Manchester city	134	90%	121		0		0	10%	13		0	1.0%	
Dracut town	Concord town	128	90%	115		0		0	10%	13		0	0.9%	
Dracut town	Watertown Town city	115	90%	104		0		0	10%	12		0	0.8%	
Dracut town	North Reading town	108	90%	97		0		0	10%	11		0	0.8%	
Dracut town	Framingham town	106	90%	95		0		0	10%	11		0	0.8%	
Dracut town	Boxborough town	103	50%	52		0		0	20%	21	30%	31	0.5%	0.2%
Dracut town	Winchester town	101	90%	91		0		0	10%	10		0	0.7%	
Dracut town	Pelham town	100		0	100%	100		0		0		0		
		13,927		5,738		1,192		2,716		1,348		2,934		
				41.2%		8.6%		19.5%		9.7%		21.1%	45.5%	2.8%
		<u>SAY</u>		40%		10%		20%		10%		20%	45%	3%

to I-495
to I-93
to Route 3



TRAFFIC SIGNAL WARRANTS ANALYSIS

Raw Data

Collected on 4/9/24

Time:	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT
12:00 AM						
1:00 AM						
2:00 AM						
3:00 AM						
4:00 AM						
5:00 AM						
6:00 AM						
7:00 AM	19	375	16	40	724	15
8:00 AM	30	373	16	50	635	18
9:00 AM	24	474	11	42	491	12
10:00 AM	44	325	15	42	401	11
11:00 AM	41	361	13	41	379	14
12:00 PM	47	422	16	49	401	10
1:00 PM	42	517	10	36	426	9
2:00 PM	65	679	11	37	485	15
3:00 PM	71	814	29	45	566	18
4:00 PM	65	843	26	52	552	22
5:00 PM	79	799	18	51	474	18
6:00 PM	86	614	10	30	386	17
7:00 PM						
8:00 PM						
9:00 PM						
10:00 PM						
11:00 PM						
	613	6596	191	515	5920	179

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE Trip Generation Manual , 11th Edition			
Land Use Code	215		
Land Use	Single-Family Attached Housing		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	7		
	% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting
12:00 - 1:00 AM	0.5%	0.7%	0.3%
1:00 - 2:00 AM	0.2%	0.4%	0.1%
2:00 - 3:00 AM	0.3%	0.2%	0.3%
3:00 - 4:00 AM	0.3%	0.3%	0.4%
4:00 - 5:00 AM	0.7%	0.4%	1.0%
5:00 - 6:00 AM	1.4%	0.1%	2.6%
6:00 - 7:00 AM	3.5%	1.1%	5.8%
7:00 - 8:00 AM	7.9%	2.7%	13.2%
8:00 - 9:00 AM	6.6%	3.8%	9.3%
9:00 - 10:00 AM	5.3%	3.7%	6.9%
10:00 - 11:00 AM	4.1%	4.0%	4.3%
11:00 - 12:00 PM	5.3%	4.8%	5.7%
12:00 - 1:00 PM	5.2%	5.4%	5.1%
1:00 - 2:00 PM	4.7%	4.5%	4.8%
2:00 - 3:00 PM	5.8%	5.5%	6.0%
3:00 - 4:00 PM	6.5%	8.2%	4.8%
4:00 - 5:00 PM	7.5%	9.8%	5.1%
5:00 - 6:00 PM	9.4%	12.1%	6.8%
6:00 - 7:00 PM	8.2%	9.8%	6.6%
7:00 - 8:00 PM	5.9%	7.3%	4.5%
8:00 - 9:00 PM	4.7%	5.9%	3.5%
9:00 - 10:00 PM	3.0%	4.8%	1.3%
10:00 - 11:00 PM	2.0%	3.0%	1.1%
11:00 - 12:00 AM	0.9%	1.5%	0.4%
	71.6%	64.1%	

= adjusted for balancing

Project-Generated AWT	Total	Enter/Exit
ITE LUC 215	1992	996
Single-Famitly Attached Housing		

Time	Total	Entering	Exiting
12:00 - 1:00 AM	10	7	3
1:00 - 2:00 AM	5	4	1
2:00 - 3:00 AM	5	2	3
3:00 - 4:00 AM	7	3	4
4:00 - 5:00 AM	14	4	10
5:00 - 6:00 AM	27	1	26
6:00 - 7:00 AM	69	11	58
7:00 - 8:00 AM	158	27	131
8:00 - 9:00 AM	131	38	93
9:00 - 10:00 AM	106	37	69
10:00 - 11:00 AM	83	40	43
11:00 - 12:00 PM	104	48	56
12:00 - 1:00 PM	104	54	50
1:00 - 2:00 PM	93	45	48
2:00 - 3:00 PM	115	55	60
3:00 - 4:00 PM	131	82	49
4:00 - 5:00 PM	148	97	51
5:00 - 6:00 PM	188	120	68
6:00 - 7:00 PM	162	97	65
7:00 - 8:00 PM	118	73	45
8:00 - 9:00 PM	93	58	35
9:00 - 10:00 PM	61	48	13
10:00 - 11:00 PM	41	30	11
11:00 - 12:00 AM	19	15	4
	1992	996	996

Peak Hour Adjustments

Time	Total	Entering	Exiting
12:00 - 1:00 AM		0	0
1:00 - 2:00 AM		0	0
2:00 - 3:00 AM		0	0
3:00 - 4:00 AM		0	0
4:00 - 5:00 AM		0	1
5:00 - 6:00 AM		0	1
6:00 - 7:00 AM		0	3
7:00 - 8:00 AM		6	-30
8:00 - 9:00 AM			
9:00 - 10:00 AM		1	4
10:00 - 11:00 AM		1	2
11:00 - 12:00 PM		2	3
12:00 - 1:00 PM		2	3
1:00 - 2:00 PM		2	3
2:00 - 3:00 PM		2	3
3:00 - 4:00 PM		3	3
4:00 - 5:00 PM		3	3
5:00 - 6:00 PM		-27	-4
6:00 - 7:00 PM		-4	-2
7:00 - 8:00 PM		3	3
8:00 - 9:00 PM		2	2
9:00 - 10:00 PM		2	1
10:00 - 11:00 PM		1	1
11:00 - 12:00 AM		1	0
	0	0	0

Adjustments: 25 36

ITE Peak Hour
33 101
27 131
6 -30

ITE Peak Hour
93 64
120 68
-27 -4

Peak Hour Adjusted Project Generated Cars

Time	Total	Entering	Exiting
12:00 - 1:00 AM	10	7	3
1:00 - 2:00 AM	5	4	1
2:00 - 3:00 AM	5	2	3
3:00 - 4:00 AM	7	3	4
4:00 - 5:00 AM	15	4	11
5:00 - 6:00 AM	28	1	27
6:00 - 7:00 AM	72	11	61
7:00 - 8:00 AM	134	33	101
8:00 - 9:00 AM	131	38	93
9:00 - 10:00 AM	111	38	73
10:00 - 11:00 AM	86	41	45
11:00 - 12:00 PM	109	50	59
12:00 - 1:00 PM	109	56	53
1:00 - 2:00 PM	98	47	51
2:00 - 3:00 PM	120	57	63
3:00 - 4:00 PM	137	85	52
4:00 - 5:00 PM	154	100	54
5:00 - 6:00 PM	157	93	64
6:00 - 7:00 PM	156	93	63
7:00 - 8:00 PM	124	76	48
8:00 - 9:00 PM	97	60	37
9:00 - 10:00 PM	64	50	14
10:00 - 11:00 PM	43	31	12
11:00 - 12:00 AM	20	16	4
	1992	996	996

2024 Existing Volumes
** No Seasonal Adjustment **

Time:	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT
12:00 AM	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0
7:00 AM	19	375	16	40	724	15
8:00 AM	30	373	16	50	635	18
9:00 AM	24	474	11	42	491	12
10:00 AM	44	325	15	42	401	11
11:00 AM	41	361	13	41	379	14
12:00 PM	47	422	16	49	401	10
1:00 PM	42	517	10	36	426	9
2:00 PM	65	679	11	37	485	15
3:00 PM	71	814	29	45	566	18
4:00 PM	65	843	26	52	552	22
5:00 PM	79	799	18	51	474	18
6:00 PM	86	614	10	30	386	17
7:00 PM	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0
	613	6596	191	515	5920	179

Project-Generated AWT Total Enter/Exit
ITE LUC 215 1992 996
Single-Family Attached Housing

Time	Total	Entering	Exiting
12:00 - 1:00 AM	10	7	3
1:00 - 2:00 AM	5	4	1
2:00 - 3:00 AM	5	2	3
3:00 - 4:00 AM	7	3	4
4:00 - 5:00 AM	15	4	11
5:00 - 6:00 AM	28	1	27
6:00 - 7:00 AM	72	11	61
7:00 - 8:00 AM	134	33	101
8:00 - 9:00 AM	131	38	93
9:00 - 10:00 AM	111	38	73
10:00 - 11:00 AM	86	41	45
11:00 - 12:00 PM	109	50	59
12:00 - 1:00 PM	109	56	53
1:00 - 2:00 PM	98	47	51
2:00 - 3:00 PM	120	57	63
3:00 - 4:00 PM	137	85	52
4:00 - 5:00 PM	154	100	54
5:00 - 6:00 PM	157	93	64
6:00 - 7:00 PM	156	93	63
7:00 - 8:00 PM	124	76	48
8:00 - 9:00 PM	97	60	37
9:00 - 10:00 PM	64	50	14
10:00 - 11:00 PM	43	31	12
11:00 - 12:00 AM	20	16	4
	1992	996	996

= entering

=exiting

Trip Distribution Percentages

Passenger Cars

40%

10%

40%

10%

Time	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT	w/ 20% reduction
12:00 - 1:00 AM	3	0	0	1	0	1	1
1:00 - 2:00 AM	2	0	0	0	0	0	0
2:00 - 3:00 AM	1	0	0	1	0	0	1
3:00 - 4:00 AM	1	0	0	2	0	0	2
4:00 - 5:00 AM	2	0	1	4	0	0	3
5:00 - 6:00 AM	0	0	3	11	0	0	9
6:00 - 7:00 AM	4	0	6	24	0	1	19
7:00 - 8:00 AM	32	375	26	80	724	18	64
8:00 - 9:00 AM	45	373	25	87	635	22	70
9:00 - 10:00 AM	39	474	18	71	491	16	57
10:00 - 11:00 AM	60	325	20	60	401	15	48
11:00 - 12:00 PM	61	361	19	65	379	19	52
12:00 - 1:00 PM	69	422	21	70	401	16	56
1:00 - 2:00 PM	61	517	15	56	426	14	45
2:00 - 3:00 PM	88	679	17	62	485	21	50
3:00 - 4:00 PM	105	814	34	66	566	27	53
4:00 - 5:00 PM	105	843	31	74	552	32	59
5:00 - 6:00 PM	116	799	24	77	474	27	62
6:00 - 7:00 PM	123	614	16	55	386	26	44
7:00 - 8:00 PM	30	0	5	19	0	8	15
8:00 - 9:00 PM	24	0	4	15	0	6	12
9:00 - 10:00 PM	20	0	1	6	0	5	5
10:00 - 11:00 PM	12	0	1	5	0	3	4
11:00 - 12:00 AM	6	0	0	2	0	2	2

2024 Existing Volumes
** No Seasonal Adjustment **

Time:	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT
12:00 AM	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0
7:00 AM	19	375	16	40	724	15
8:00 AM	30	373	16	50	635	18
9:00 AM	24	474	11	42	491	12
10:00 AM	44	325	15	42	401	11
11:00 AM	41	361	13	41	379	14
12:00 PM	47	422	16	49	401	10
1:00 PM	42	517	10	36	426	9
2:00 PM	65	679	11	37	485	15
3:00 PM	71	814	29	45	566	18
4:00 PM	65	843	26	52	552	22
5:00 PM	79	799	18	51	474	18
6:00 PM	86	614	10	30	386	17
7:00 PM	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0
	613	6596	191	515	5920	179

2031 No-Build Volumes
1.0% @ yrs

Time:	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT
12:00 AM	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0
7:00 AM	20	402	17	43	776	16
8:00 AM	32	400	17	54	681	19
9:00 AM	26	508	12	45	526	13
10:00 AM	47	348	16	45	430	12
11:00 AM	44	387	14	44	406	15
12:00 PM	50	452	17	53	430	11
1:00 PM	45	554	11	39	457	10
2:00 PM	70	728	12	40	520	16
3:00 PM	76	873	31	48	607	19
4:00 PM	70	904	28	56	592	24
5:00 PM	85	857	19	55	508	19
6:00 PM	92	658	11	32	414	18
7:00 PM	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0
	657	7071	205	554	6347	192

Project-Generated AWT Total Enter/Exit
ITE LUC 215 1992 996
Single-Family Attached Housing

Time	Total	Entering	Exiting
12:00 - 1:00 AM	10	7	3
1:00 - 2:00 AM	5	4	1
2:00 - 3:00 AM	5	2	3
3:00 - 4:00 AM	7	3	4
4:00 - 5:00 AM	15	4	11
5:00 - 6:00 AM	28	1	27
6:00 - 7:00 AM	72	11	61
7:00 - 8:00 AM	134	33	101
8:00 - 9:00 AM	131	38	93
9:00 - 10:00 AM	111	38	73
10:00 - 11:00 AM	86	41	45
11:00 - 12:00 PM	109	50	59
12:00 - 1:00 PM	109	56	53
1:00 - 2:00 PM	98	47	51
2:00 - 3:00 PM	120	57	63
3:00 - 4:00 PM	137	85	52
4:00 - 5:00 PM	154	100	54
5:00 - 6:00 PM	157	93	64
6:00 - 7:00 PM	156	93	63
7:00 - 8:00 PM	124	76	48
8:00 - 9:00 PM	97	60	37
9:00 - 10:00 PM	64	50	14
10:00 - 11:00 PM	43	31	12
11:00 - 12:00 AM	20	16	4
	1992	996	996

	=Enter			
	=Exit			
Trip Distribution Percentages				
Passenger Cars	40%	10%	40%	10%
Trucks				

Time	WB LT	WB TH	NB LT	NB RT	EB TH	EB RT
12:00 - 1:00 AM	3	0	0	1	0	1
1:00 - 2:00 AM	2	0	0	0	0	0
2:00 - 3:00 AM	1	0	0	1	0	0
3:00 - 4:00 AM	1	0	0	2	0	0
4:00 - 5:00 AM	2	0	1	4	0	0
5:00 - 6:00 AM	0	0	3	11	0	0
6:00 - 7:00 AM	4	0	6	24	0	1
7:00 - 8:00 AM	33	402	27	83	776	19
8:00 - 9:00 AM	47	400	26	91	681	23
9:00 - 10:00 AM	41	508	19	74	526	17
10:00 - 11:00 AM	63	348	21	63	430	16
11:00 - 12:00 PM	64	387	20	68	406	20
12:00 - 1:00 PM	72	452	22	74	430	17
1:00 - 2:00 PM	64	554	16	59	457	15
2:00 - 3:00 PM	93	728	18	65	520	22
3:00 - 4:00 PM	110	873	36	69	607	28
4:00 - 5:00 PM	110	904	33	78	592	34
5:00 - 6:00 PM	122	857	25	81	508	28
6:00 - 7:00 PM	129	658	17	57	414	27
7:00 - 8:00 PM	30	0	5	19	0	8
8:00 - 9:00 PM	24	0	4	15	0	6
9:00 - 10:00 PM	20	0	1	6	0	5
10:00 - 11:00 PM	12	0	1	5	0	3
11:00 - 12:00 AM	6	0	0	2	0	2

w/ 20% reduction

NB RT

1
0
1
2
3
9
19
66
73
59
50
54
59
47
52
55
62
65
46
15
12
5
4
2

HCS7 Warrants Report

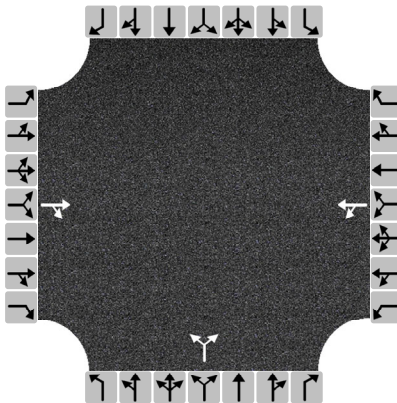
Project Information

Analyst	DCL Vanasse & Associates	Date	6/26/2024
Agency		Analysis Year	2024
Jurisdiction	MassDOT	Time Period Analyzed	7:00 AM to 7:00 PM
Project Description	Proposed Multifamily Residential Development - Murphy's Farm		

General

Major Street Direction	East-West	Population < 10,000	No
Starting Time Interval	7	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	40	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane Usage		TR			LT			LR				
Vehicle Volumes Averages (veh/h)	0	493	14	51	549	0	15	0	42	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	10

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
07 - 08	1133	56	1189	0	0	No	No	No	No	No	No	No	No	No
08 - 09	1056	66	1122	0	0	No	No	No	Yes	No	No	No	No	No
09 - 10	1001	53	1054	0	0	No	No	No	No	No	No	No	No	No
10 - 11	781	57	838	0	0	No	No	No	No	No	No	No	No	No
11 - 12	795	54	849	0	0	No	No	No	No	No	No	No	No	No
12 - 13	880	65	945	0	0	No	No	No	Yes	No	No	No	No	No
13 - 14	994	46	1040	0	0	No	No	No	No	No	No	No	No	No
14 - 15	1244	48	1292	0	0	No	No	No	No	No	No	No	No	No
15 - 16	1469	74	1543	0	0	No	No	No	Yes	No	No	No	No	No
16 - 17	1482	78	1560	0	0	No	No	Yes	Yes	No	No	No	No	No
17 - 18	1370	69	1439	0	0	No	No	No	Yes	No	No	No	No	No
18 - 19	1103	40	1143	0	0	No	No	No	No	No	No	No	No	No
Total	13308	706	14014	0	0	0	0	1	5	0	0	0	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume

A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	

Warrant 2: Four-Hour Vehicular Volume

Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	
--	--

Warrant 3: Peak Hour

A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	

Warrant 4: Pedestrian Volume

A. Four Hour Volumes --or--	
B. One-Hour Volumes	

Warrant 5: School Crossing

Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	

Warrant 6: Coordinated Signal System

Degree of Platooning (Predominant direction or both directions)	
---	--

Warrant 7: Crash Experience

A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	

Warrant 8: Roadway Network

A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	

Warrant 9: Grade Crossing

A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

HCS7 Warrants Report

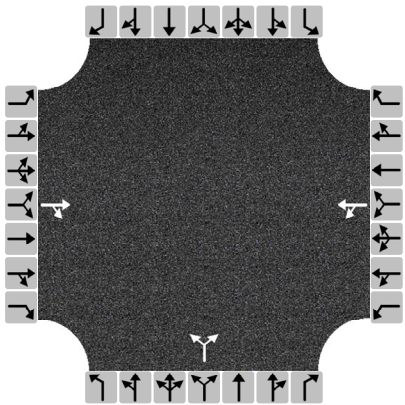
Project Information

Analyst	DCL Vanasse & Associates	Date	6/26/2024
Agency		Analysis Year	2024
Jurisdiction	MassDOT	Time Period Analyzed	7:00 AM to 7:00 PM
Project Description	Proposed Multifamily Residential Development - Murphy's Farm		

General

Major Street Direction	East-West	Population < 10,000	No
Starting Time Interval	7	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	40	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane Usage		TR			LT			LR				
Vehicle Volumes Averages (veh/h)	0	493	21	75	549	0	22	0	68	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	10

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
07 - 08	1149	106	1255	0	0	No	No	Yes	Yes	Yes	No	No	No	No
08 - 09	1075	112	1187	0	0	No	No	Yes	Yes	Yes	No	No	No	No
09 - 10	1020	89	1109	0	0	No	No	Yes	Yes	No	No	No	No	No
10 - 11	801	80	881	0	0	No	No	Yes	Yes	No	No	No	No	No
11 - 12	820	84	904	0	0	No	No	Yes	Yes	No	No	No	No	No
12 - 13	908	91	999	0	0	No	No	Yes	Yes	No	No	No	No	No
13 - 14	1018	71	1089	0	0	No	No	No	Yes	No	No	No	No	No
14 - 15	1273	79	1352	0	0	No	No	Yes	Yes	No	No	No	No	No
15 - 16	1512	100	1612	0	0	No	No	Yes	Yes	Yes	No	No	No	No
16 - 17	1532	105	1637	0	0	No	No	Yes	Yes	Yes	No	Yes	No	No
17 - 18	1416	101	1517	0	0	No	No	Yes	Yes	Yes	No	No	No	No
18 - 19	1149	71	1220	0	0	No	No	No	Yes	No	No	No	No	No
Total	13673	1089	14762	0	0	0	0	10	12	5	0	1	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume	✓
A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	✓
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	
Warrant 2: Four-Hour Vehicular Volume	✓
Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	✓
Warrant 3: Peak Hour	✓
A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	✓
Warrant 4: Pedestrian Volume	
A. Four Hour Volumes --or--	
B. One-Hour Volumes	
Warrant 5: School Crossing	
Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	
Warrant 6: Coordinated Signal System	
Degree of Platooning (Predominant direction or both directions)	
Warrant 7: Crash Experience	
A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	✓
Warrant 8: Roadway Network	
A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	
Warrant 9: Grade Crossing	
A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

HCS7 Warrants Report

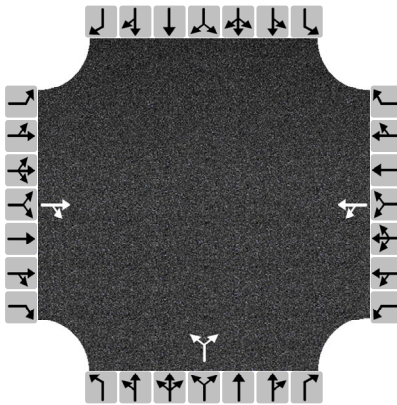
Project Information

Analyst	DCL Vanasse & Associates	Date	6/26/2024
Agency		Analysis Year	2024
Jurisdiction	MassDOT	Time Period Analyzed	7:00 AM to 7:00 PM
Project Description	Proposed Multifamily Residential Development - Murphy's Farm		

General

Major Street Direction	East-West	Population < 10,000	No
Starting Time Interval	7	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	40	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane Usage		TR			LT			LR				
Vehicle Volumes Averages (veh/h)	0	493	21	75	549	0	22	0	55	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	10

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
07 - 08	1149	90	1239	0	0	No	No	Yes	Yes	Yes	No	No	No	No
08 - 09	1075	95	1170	0	0	No	No	Yes	Yes	Yes	No	No	No	No
09 - 10	1020	75	1095	0	0	No	No	Yes	Yes	No	No	No	No	No
10 - 11	801	68	869	0	0	No	No	No	Yes	No	No	No	No	No
11 - 12	820	71	891	0	0	No	No	No	Yes	No	No	No	No	No
12 - 13	908	77	985	0	0	No	No	Yes	Yes	No	No	No	No	No
13 - 14	1018	60	1078	0	0	No	No	No	Yes	No	No	No	No	No
14 - 15	1273	67	1340	0	0	No	No	No	Yes	No	No	No	No	No
15 - 16	1512	87	1599	0	0	No	No	Yes	Yes	Yes	No	No	No	No
16 - 17	1532	90	1622	0	0	No	No	Yes	Yes	Yes	No	No	No	No
17 - 18	1416	86	1502	0	0	No	No	Yes	Yes	Yes	No	No	No	No
18 - 19	1149	60	1209	0	0	No	No	No	Yes	No	No	No	No	No
Total	13673	926	14599	0	0	0	0	7	12	5	0	0	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume

A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	

Warrant 2: Four-Hour Vehicular Volume

Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	✓
--	---

Warrant 3: Peak Hour

A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	

Warrant 4: Pedestrian Volume

A. Four Hour Volumes --or--	
B. One-Hour Volumes	

Warrant 5: School Crossing

Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	

Warrant 6: Coordinated Signal System

Degree of Platooning (Predominant direction or both directions)	
---	--

Warrant 7: Crash Experience

A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	✓

Warrant 8: Roadway Network

A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	

Warrant 9: Grade Crossing

A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

HCS7 Warrants Report

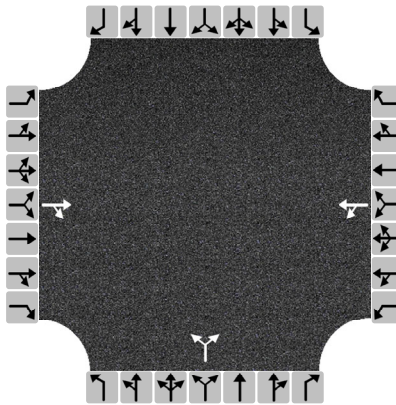
Project Information

Analyst	DCL Vanasse & Associates	Date	6/26/2024
Agency		Analysis Year	2031
Jurisdiction	MassDOT	Time Period Analyzed	7:00 AM to 7:00 PM
Project Description	Proposed Multifamily Residential Development - Murphy's Farm		

General

Major Street Direction	East-West	Population < 10,000	No
Starting Time Interval	7	Coordinated Signal System	No
Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	40	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane Usage		TR			LT			LR				
Vehicle Volumes Averages (veh/h)	0	528	24	79	589	0	23	0	71	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	10

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
07 - 08	1230	110	1340	0	0	No	No	Yes	Yes	Yes	No	No	No	No
08 - 09	1151	117	1268	0	0	No	No	Yes	Yes	Yes	No	No	No	No
09 - 10	1092	93	1185	0	0	No	No	Yes	Yes	Yes	No	No	No	No
10 - 11	857	84	941	0	0	No	No	Yes	Yes	No	No	No	No	No
11 - 12	877	88	965	0	0	No	No	Yes	Yes	No	No	No	No	No
12 - 13	971	96	1067	0	0	No	No	Yes	Yes	No	No	No	No	No
13 - 14	1090	75	1165	0	0	No	No	Yes	Yes	No	No	No	No	No
14 - 15	1396	83	1479	0	0	No	No	Yes	Yes	Yes	No	No	No	No
15 - 16	1618	105	1723	0	0	No	No	Yes	Yes	Yes	No	Yes	No	No
16 - 17	1640	111	1751	0	0	No	No	Yes	Yes	Yes	No	Yes	No	No
17 - 18	1515	106	1621	0	0	No	No	Yes	Yes	Yes	No	Yes	No	No
18 - 19	1228	74	1302	0	0	No	No	No	Yes	No	No	No	No	No
Total	14665	1142	15807	0	0	0	0	11	12	7	0	3	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume	✓
A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	✓
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	
Warrant 2: Four-Hour Vehicular Volume	✓
Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	✓
Warrant 3: Peak Hour	✓
A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	✓
Warrant 4: Pedestrian Volume	
A. Four Hour Volumes --or--	
B. One-Hour Volumes	
Warrant 5: School Crossing	
Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	
Warrant 6: Coordinated Signal System	
Degree of Platooning (Predominant direction or both directions)	
Warrant 7: Crash Experience	
A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	✓
Warrant 8: Roadway Network	
A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	
Warrant 9: Grade Crossing	
A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

HCS7 Warrants Report

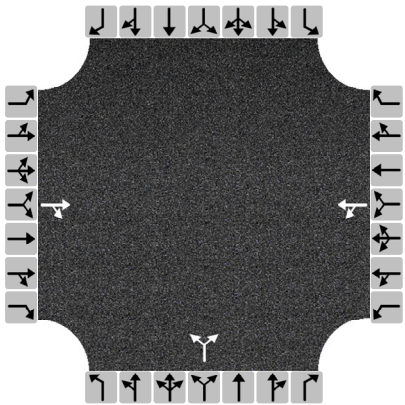
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Median Type	Undivided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	40	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	0	1	0	0	1	0	0	0	0	0	0	0
Lane Usage		TR			LT			LR				
Vehicle Volumes Averages (veh/h)	0	528	24	79	589	0	23	0	57	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)		Tractor-Trailer Trucks (%)	10

HCS7 Warrants Report

Volume Summary

Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	4A (100%)	4B (100%)
07 - 08	1230	93	1323	0	0	No	No	Yes	Yes	Yes	No	No	No	No
08 - 09	1151	99	1250	0	0	No	No	Yes	Yes	Yes	No	No	No	No
09 - 10	1092	78	1170	0	0	No	No	Yes	Yes	No	No	No	No	No
10 - 11	857	71	928	0	0	No	No	No	Yes	No	No	No	No	No
11 - 12	877	74	951	0	0	No	No	No	Yes	No	No	No	No	No
12 - 13	971	81	1052	0	0	No	No	Yes	Yes	No	No	No	No	No
13 - 14	1090	63	1153	0	0	No	No	No	Yes	No	No	No	No	No
14 - 15	1396	70	1466	0	0	No	No	No	Yes	No	No	No	No	No
15 - 16	1618	91	1709	0	0	No	No	Yes	Yes	Yes	No	No	No	No
16 - 17	1640	95	1735	0	0	No	No	Yes	Yes	Yes	No	No	No	No
17 - 18	1515	90	1605	0	0	No	No	Yes	Yes	Yes	No	No	No	No
18 - 19	1228	63	1291	0	0	No	No	No	Yes	No	No	No	No	No
Total	14665	968	15633	0	0	0	0	7	12	5	0	0	0	0

Warrants

Warrant 1: Eight-Hour Vehicular Volume

A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--	
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--	
80% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)	

Warrant 2: Four-Hour Vehicular Volume

Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)	✓
--	---

Warrant 3: Peak Hour

A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--	
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)	

Warrant 4: Pedestrian Volume

A. Four Hour Volumes --or--	
B. One-Hour Volumes	

Warrant 5: School Crossing

Gaps Same Period --and--	
Student Volumes	
Nearest Traffic Control Signal (optional)	

Warrant 6: Coordinated Signal System

Degree of Platooning (Predominant direction or both directions)	
---	--

Warrant 7: Crash Experience

A. Adequate trials of alternatives, observance and enforcement failed --and--	
B. Reported crashes susceptible to correction by signal (12-month period) --and--	
C. 80% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied	✓

Warrant 8: Roadway Network

A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--	
B. Weekend Volume (Five hours total)	

Warrant 9: Grade Crossing

A. Grade Crossing within 140 ft --and--	
B. Peak-Hour Vehicular Volumes	

CAPACITY ANALYSIS WORKSHEETS

2024 Existing
2031 No-Build
2031 Build
2031 Build (Mitigated)

2024 Existing

2024 Existing Weekday Morning
1: Wheeler Street & Route 113

06/25/2024

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	701	18	20	400	24	49
Future Vol, veh/h	701	18	20	400	24	49
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	89	89	70	70
Heavy Vehicles, %	5	6	5	8	4	0
Mvmt Flow	762	20	22	449	34	70
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	782	0	1266	772
Stage 1	-	-	-	-	772	-
Stage 2	-	-	-	-	494	-
Critical Hdwy	-	-	4.15	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.245	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	823	-	185	403
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	823	-	178	403
Mov Cap-2 Maneuver	-	-	-	-	178	-
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	587	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.45		24.78		
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	285	-	-	86	-	
HCM Lane V/C Ratio	0.366	-	-	0.027	-	
HCM Control Delay (s/veh)	24.8	-	-	9.5	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-	

2024 Existing Weekday Morning
2: Wheeler Street & Wheeler Road

06/25/2024

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	60	4	7	17	15	26
Future Vol, veh/h	60	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	91	6	8	20	21	36

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	74	38	56	0	-	0
Stage 1	38	-	-	-	-	-
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	929	1039	1475	-	-	-
Stage 1	984	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	924	1039	1475	-	-	-
Mov Cap-2 Maneuver	924	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	986	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.32	2.17	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	525	-	930	-	-
HCM Lane V/C Ratio	0.006	-	0.104	-	-
HCM Control Delay (s/veh)	7.5	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

2024 Existing Weekday Morning
3: Wheeler Street & Rinzee Road

06/25/2024

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	52	29	32	0	-	0
Stage 1	29	-	-	-	-	-
Stage 2	23	-	-	-	-	-
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	920	1051	1593	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	963	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	919	1051	1593	-	-	-
Mov Cap-2 Maneuver	919	-	-	-	-	-
Stage 1	954	-	-	-	-	-
Stage 2	963	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.78	0.91	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	225	-	968	-	-
HCM Lane V/C Ratio	0.002	-	0.016	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2024 Existing Weekday Morning
4: Route 110 & Wheeler Street

06/25/2024

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	448	409	40	75	22
Future Vol, veh/h	12	448	409	40	75	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	521	449	44	97	29
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	493	0	-	0	1020	471
Stage 1	-	-	-	-	471	-
Stage 2	-	-	-	-	549	-
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	997	-	-	-	252	586
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	561	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	997	-	-	-	247	586
Mov Cap-2 Maneuver	-	-	-	-	247	-
Stage 1	-	-	-	-	598	-
Stage 2	-	-	-	-	561	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.23	0		27.33		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	47	-	-	-	285	
HCM Lane V/C Ratio	0.014	-	-	-	0.443	
HCM Control Delay (s/veh)	8.7	0	-	-	27.3	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0	-	-	-	2.2	

2024 Existing Weekday Morning
5: Wilshire Circle/Paddock Lane & Route 113/Wheeler Road

06/25/2024

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	107	104	48	106	104	56
Stage 1	-	-	-	-	-	-	48	48	-	56	56	-
Stage 2	-	-	-	-	-	-	59	56	-	49	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	1561	-	-	1573	-	-	877	790	1027	879	790	1016
Stage 1	-	-	-	-	-	-	971	859	-	961	852	-
Stage 2	-	-	-	-	-	-	957	852	-	969	859	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1561	-	-	1573	-	-	865	790	1027	870	790	1016
Mov Cap-2 Maneuver	-	-	-	-	-	-	865	790	-	870	790	-
Stage 1	-	-	-	-	-	-	971	859	-	961	852	-
Stage 2	-	-	-	-	-	-	945	852	-	959	859	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	9.05	9.11
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	905	1561	-	-	1573	-	-	889
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-	0.014
HCM Control Delay (s/veh)	9.1	0	-	-	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

2024 Existing Weekday Morning
6: Wilshire Circle & Wheeler Road

06/25/2024

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	0	122
Stage 1	-	-	-	-	56
Stage 2	-	-	-	-	67
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1561	-	878
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	961
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1561	-	874
Mov Cap-2 Maneuver	-	-	-	-	874
Stage 1	-	-	-	-	972
Stage 2	-	-	-	-	957

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.77	9.14
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	874	-	-	189	-
HCM Lane V/C Ratio	0.005	-	-	0.004	-
HCM Control Delay (s/veh)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

2024 Existing Weekday Morning
7: Parker Road & Wheeler Road/Route 113

06/25/2024

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	52	91	1	53	68	0
Future Vol, veh/h	52	91	1	53	68	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	61	61	71	71	74	74
Heavy Vehicles, %	2	4	0	2	6	0
Mvmt Flow	85	149	1	75	92	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	234	0	237	160
Stage 1	-	-	-	-	160	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	-	-	4.1	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.3
Pot Cap-1 Maneuver	-	-	1345	-	742	891
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	936	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	741	891
Mov Cap-2 Maneuver	-	-	-	-	741	-
Stage 1	-	-	-	-	859	-
Stage 2	-	-	-	-	935	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.14		10.54	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	741	-	-	33	-	
HCM Lane V/C Ratio	0.124	-	-	0.001	-	
HCM Control Delay (s/veh)	10.5	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

2024 Existing Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

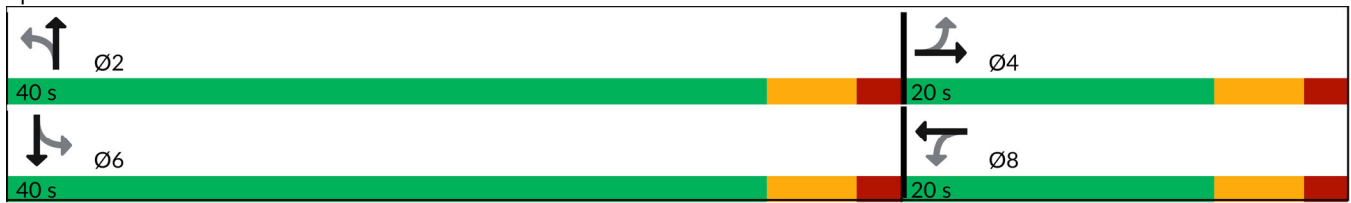
06/25/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	50	29	51	38	31	16	322	46	48	290	14
Future Volume (vph)	16	50	29	51	38	31	16	322	46	48	290	14
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.965			0.984			0.995	
Flt Protected		0.992			0.979			0.998			0.993	
Satd. Flow (prot)	0	1752	0	0	1723	0	0	2058	0	0	2049	0
Flt Permitted		0.909			0.797			0.970			0.892	
Satd. Flow (perm)	0	1606	0	0	1403	0	0	2000	0	0	1840	0
Satd. Flow (RTOR)		36			28			21			6	
Adj. Flow (vph)	24	74	43	58	43	35	18	354	51	59	354	17
Lane Group Flow (vph)	0	141	0	0	136	0	0	423	0	0	430	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.19			0.21			0.30			0.33	
Control Delay (s/veh)		8.8			9.5			5.6			6.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		8.8			9.5			5.6			6.2	
Queue Length 50th (ft)		13			14			41			45	
Queue Length 95th (ft)		36			53			103			98	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		1056			921			1900			1747	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.13			0.15			0.22			0.25	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 28.4												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

2024 Existing Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2024 Existing Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	50	29	51	38	31	16	322	46	48	290	14
Future Volume (veh/h)	16	50	29	51	38	31	16	322	46	48	290	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1796	1900	1826	1752	1976	1930	1945	1853	1930	1868
Adj Flow Rate, veh/h	24	74	43	58	43	35	18	354	0	59	354	0
Peak Hour Factor	0.68	0.68	0.68	0.88	0.88	0.88	0.91	0.91	0.91	0.82	0.82	0.82
Percent Heavy Veh, %	6	0	7	0	5	10	0	3	2	8	3	7
Cap, veh/h	203	272	141	323	176	108	155	818		217	729	
Arrive On Green	0.19	0.27	0.19	0.19	0.27	0.19	0.37	0.44	0.00	0.37	0.44	0.00
Sat Flow, veh/h	182	1019	527	505	659	403	38	1861	0	149	1658	0
Grp Volume(v), veh/h	141	0	0	136	0	0	372	0	0	413	0	0
Grp Sat Flow(s),veh/h/ln	1729	0	0	1567	0	0	1899	0	0	1807	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	1.8	0.0	0.0	1.8	0.0	0.0	3.8	0.0	0.0	4.5	0.0	0.0
Prop In Lane	0.17		0.30	0.43		0.26	0.05		0.00	0.14		0.00
Lane Grp Cap(c), veh/h	489	0	0	491	0	0	834	0		813	0	
V/C Ratio(X)	0.29	0.00	0.00	0.28	0.00	0.00	0.45	0.00		0.51	0.00	
Avail Cap(c_a), veh/h	1030	0	0	962	0	0	2471	0		2337	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	8.5	0.0	0.0	5.4	0.0	0.0	5.6	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.5	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.5	0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.7	0.0	0.0	8.8	0.0	0.0	5.8	0.0	0.0	6.1	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	141		136				372			413		
Approach Delay, s/veh	8.7		8.8				5.8			6.1		
Approach LOS	A		A				A			A		
Timer - Assigned Phs	2		4				6			8		
Phs Duration (G+Y+Rc), s	16.0		11.3				16.0			11.3		
Change Period (Y+Rc), s	6.0		6.0				6.0			6.0		
Max Green Setting (Gmax), s	34.0		14.0				34.0			14.0		
Max Q Clear Time (g_c+I1), s	5.8		3.8				6.5			3.8		
Green Ext Time (p_c), s	2.4		0.5				2.9			0.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	6.7											
HCM 7th LOS	A											
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2024 Existing Weekday Evening
1: Wheeler Street & Route 113

06/25/2024

Intersection						
Int Delay, s/veh	3.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	535	19	81	846	27	58
Future Vol, veh/h	535	19	81	846	27	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	87	87	92	92	79	79
Heavy Vehicles, %	1	0	0	6	15	2
Mvmt Flow	615	22	88	920	34	73
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	637	0	1722	626
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	1096	-
Critical Hdwy	-	-	4.1	-	6.55	6.22
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.2	-	3.635	3.318
Pot Cap-1 Maneuver	-	-	956	-	91	484
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	302	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	956	-	74	484
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	509	-
Stage 2	-	-	-	-	245	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.8		53.61	
HCM LOS					F	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	175	-	-	157	-	
HCM Lane V/C Ratio	0.614	-	-	0.092	-	
HCM Control Delay (s/veh)	53.6	-	-	9.1	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	3.4	-	-	0.3	-	

2024 Existing Weekday Evening
2: Wheeler Street & Wheeler Road

06/25/2024

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	82
Future Vol, veh/h	38	4	13	19	20	82
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	106

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	146	79	132	0	-	0
Stage 1	79	-	-	-	-	-
Stage 2	67	-	-	-	-	-
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	851	987	1465	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	839	987	1465	-	-	-
Mov Cap-2 Maneuver	839	-	-	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.48	3.04	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	731	-	851	-	-
HCM Lane V/C Ratio	0.013	-	0.056	-	-
HCM Control Delay (s/veh)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

2024 Existing Weekday Evening
3: Wheeler Street & Rinzee Road

06/25/2024

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	65	25	28	0	-	0
Stage 1	25	-	-	-	-	-
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	945	1057	1599	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	945	1057	1599	-	-	-
Mov Cap-2 Maneuver	945	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	988	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.74	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1599	-	971	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s/veh)	0	-	8.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

2024 Existing Weekday Evening
4: Route 110 & Wheeler Street

06/25/2024

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	559	564	57	37	8
Future Vol, veh/h	18	559	564	57	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	1	13
Mvmt Flow	19	595	606	61	53	11
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	668	0	-	0	1270	637
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	633	-
Critical Hdwy	4.1	-	-	-	6.41	6.33
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.417
Pot Cap-1 Maneuver	932	-	-	-	186	458
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	531	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	932	-	-	-	181	458
Mov Cap-2 Maneuver	-	-	-	-	181	-
Stage 1	-	-	-	-	512	-
Stage 2	-	-	-	-	531	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.28	0		30.84		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	56	-	-	-	202	
HCM Lane V/C Ratio	0.021	-	-	-	0.318	
HCM Control Delay (s/veh)	8.9	0	-	-	30.8	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.3	

2024 Existing Weekday Evening
5: Wilshire Circle/Paddock Lane & Route 113/Wheeler Road

06/25/2024

Intersection												
Int Delay, s/veh	0.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	66	5	4	63	1	3	0	0	0	0	0
Future Vol, veh/h	4	66	5	4	63	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	89	7	7	105	2	8	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	107	0	0	96	0	0	222	223	93	219	226	106
Stage 1	-	-	-	-	-	-	103	103	-	119	119	-
Stage 2	-	-	-	-	-	-	118	120	-	100	107	-
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	1352	-	-	1510	-	-	738	679	970	741	677	954
Stage 1	-	-	-	-	-	-	907	813	-	890	801	-
Stage 2	-	-	-	-	-	-	891	800	-	911	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1352	-	-	1510	-	-	732	673	970	735	671	954
Mov Cap-2 Maneuver	-	-	-	-	-	-	732	673	-	735	671	-
Stage 1	-	-	-	-	-	-	904	810	-	886	797	-
Stage 2	-	-	-	-	-	-	887	797	-	907	807	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0.41			0.43			9.97			0		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	732	95	-	-	106	-	-	-
HCM Lane V/C Ratio	0.011	0.004	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	10	7.7	0	-	7.4	0	-	0
HCM Lane LOS	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

2024 Existing Weekday Evening
6: Wilshire Circle & Wheeler Road

06/25/2024

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	62	3	2	67	2	2
Future Vol, veh/h	62	3	2	67	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	78	4	3	114	4	4

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	81	0	200
Stage 1	-	-	-	-	79
Stage 2	-	-	-	-	120
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1529	-	793
Stage 1	-	-	-	-	949
Stage 2	-	-	-	-	910
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1529	-	792
Mov Cap-2 Maneuver	-	-	-	-	792
Stage 1	-	-	-	-	949
Stage 2	-	-	-	-	908

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.21	9.14
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	878	-	-	52	-
HCM Lane V/C Ratio	0.009	-	-	0.002	-
HCM Control Delay (s/veh)	9.1	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

2024 Existing Weekday Evening
7: Parker Road & Wheeler Road/Route 113

06/25/2024

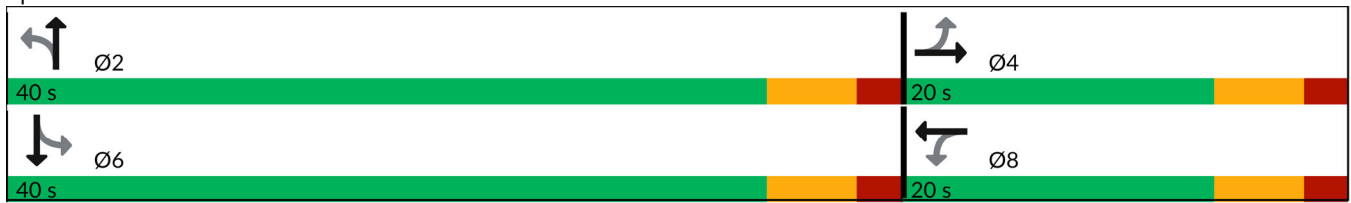
Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	59	73	0	62	97	1
Future Vol, veh/h	59	73	0	62	97	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	71	71	74	74
Heavy Vehicles, %	2	0	0	0	1	0
Mvmt Flow	68	84	0	87	131	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	152	0	197	110
Stage 1	-	-	-	-	110	-
Stage 2	-	-	-	-	87	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1441	-	794	949
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	939	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1441	-	794	949
Mov Cap-2 Maneuver	-	-	-	-	794	-
Stage 1	-	-	-	-	917	-
Stage 2	-	-	-	-	939	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		10.43		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	795	-	-	1441	-	
HCM Lane V/C Ratio	0.167	-	-	-	-	
HCM Control Delay (s/veh)	10.4	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.6	-	-	0	-	

2024 Existing Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	38	16	59	55	41	28	317	55	31	474	28
Future Volume (vph)	15	38	16	59	55	41	28	317	55	31	474	28
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.968			0.964			0.981			0.993	
Flt Protected		0.989			0.981			0.996			0.997	
Satd. Flow (prot)	0	1789	0	0	1775	0	0	2066	0	0	2113	0
Flt Permitted		0.914			0.841			0.941			0.959	
Satd. Flow (perm)	0	1654	0	0	1522	0	0	1952	0	0	2033	0
Satd. Flow (RTOR)		19			30			24			8	
Adj. Flow (vph)	17	44	19	73	68	51	33	369	64	34	521	31
Lane Group Flow (vph)	0	80	0	0	192	0	0	466	0	0	586	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.14			0.36			0.38			0.47	
Control Delay (s/veh)		10.7			13.2			7.1			8.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		10.7			13.2			7.1			8.1	
Queue Length 50th (ft)		9			26			53			75	
Queue Length 95th (ft)		37			75			116			170	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		853			791			1727			1797	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.09			0.24			0.27			0.33	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 37.2												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2024 Existing Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	38	16	59	55	41	28	317	55	31	474	28
Future Volume (veh/h)	15	38	16	59	55	41	28	317	55	31	474	28
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1870	1870	1976	1945	1945	1976	1961	1976
Adj Flow Rate, veh/h	17	44	19	73	68	51	33	369	0	34	521	0
Peak Hour Factor	0.86	0.86	0.86	0.81	0.81	0.81	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	0	3	0	0	2	2	0	2	2	0	1	0
Cap, veh/h	199	273	101	290	168	106	164	872		155	902	
Arrive On Green	0.18	0.25	0.18	0.18	0.25	0.18	0.42	0.49	0.00	0.42	0.49	0.00
Sat Flow, veh/h	214	1104	410	502	680	427	70	1797	0	55	1859	0
Grp Volume(v), veh/h	80	0	0	192	0	0	402	0	0	555	0	0
Grp Sat Flow(s),veh/h/ln	1728	0	0	1609	0	0	1867	0	0	1914	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.1	0.0	0.0	3.2	0.0	0.0	4.2	0.0	0.0	6.5	0.0	0.0
Prop In Lane	0.21		0.24	0.38		0.27	0.08		0.00	0.06		0.00
Lane Grp Cap(c), veh/h	457	0	0	456	0	0	911	0		928	0	
V/C Ratio(X)	0.18	0.00	0.00	0.42	0.00	0.00	0.44	0.00		0.60	0.00	
Avail Cap(c_a), veh/h	927	0	0	907	0	0	2195	0		2272	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.2	0.0	0.0	10.2	0.0	0.0	5.1	0.0	0.0	5.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.6	0.0	0.0	0.3	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.0	0.0	0.0	1.1	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.4	0.0	0.0	10.8	0.0	0.0	5.4	0.0	0.0	6.3	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h		80			192			402			555	
Approach Delay, s/veh		9.4			10.8			5.4			6.3	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		18.5		11.4		18.5		11.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		14.0		34.0		14.0				
Max Q Clear Time (g_c+I1), s		6.2		3.1		8.5		5.2				
Green Ext Time (p_c), s		2.8		0.2		4.0		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			6.9									
HCM 7th LOS			A									
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2031 No-Build

2031 No-Build Weekday Morning
1: Wheeler Street & Route 113

06/25/2024

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	752	19	25	429	26	64
Future Vol, veh/h	752	19	25	429	26	64
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	89	89	70	70
Heavy Vehicles, %	5	6	5	8	4	0
Mvmt Flow	817	21	28	482	37	91
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	838	0	1366	828
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	538	-
Critical Hdwy	-	-	4.15	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.245	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	784	-	161	374
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	581	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	784	-	153	374
Mov Cap-2 Maneuver	-	-	-	-	153	-
Stage 1	-	-	-	-	426	-
Stage 2	-	-	-	-	553	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.54		30.97	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	264	-	-	99	-	
HCM Lane V/C Ratio	0.487	-	-	0.036	-	
HCM Control Delay (s/veh)	31	-	-	9.8	0	
HCM Lane LOS	D	-	-	A	A	
HCM 95th %tile Q(veh)	2.5	-	-	0.1	-	

2031 No-Build Weekday Morning
2: Wheeler Street & Wheeler Road

06/25/2024

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	75	4	8	18	16	32
Future Vol, veh/h	75	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	114	6	9	21	22	44

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	83	44	66	0	-	0
Stage 1	44	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	918	1032	1463	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	983	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	912	1032	1463	-	-	-
Mov Cap-2 Maneuver	912	-	-	-	-	-
Stage 1	972	-	-	-	-	-
Stage 2	983	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.51	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	554	-	918	-	-
HCM Lane V/C Ratio	0.006	-	0.13	-	-
HCM Control Delay (s/veh)	7.5	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

2031 No-Build Weekday Morning
3: Wheeler Street & Rinzee Road

06/25/2024

Intersection						
Int Delay, s/veh	2.2					
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	54	31	33	0	-	0
Stage 1	31	-	-	-	-	-
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	917	1049	1592	-	-	-
Stage 1	955	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	916	1049	1592	-	-	-
Mov Cap-2 Maneuver	916	-	-	-	-	-
Stage 1	953	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.79	0.85	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	212	-	965	-	-
HCM Lane V/C Ratio	0.002	-	0.016	-	-
HCM Control Delay (s/veh)	7.3	0	8.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2031 No-Build Weekday Morning
4: Route 110 & Wheeler Street

06/25/2024

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	480	439	43	80	24
Future Vol, veh/h	13	480	439	43	80	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	558	482	47	104	31
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	530	0	-	0	1094	506
Stage 1	-	-	-	-	506	-
Stage 2	-	-	-	-	588	-
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	-	-	-	227	560
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	538	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	966	-	-	-	222	560
Mov Cap-2 Maneuver	-	-	-	-	222	-
Stage 1	-	-	-	-	574	-
Stage 2	-	-	-	-	538	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.23	0		33.28		
HCM LOS				D		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	47	-	-	-	258	
HCM Lane V/C Ratio	0.016	-	-	-	0.523	
HCM Control Delay (s/veh)	8.8	0	-	-	33.3	
HCM Lane LOS	A	A	-	-	D	
HCM 95th %tile Q(veh)	0	-	-	-	2.8	

2031 No-Build Weekday Morning
5: Wilshire Circle/Paddock Lane & Route 113/Wheeler Road

06/25/2024

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	134	131	64	132	131	67
Stage 1	-	-	-	-	-	-	64	64	-	67	67	-
Stage 2	-	-	-	-	-	-	70	67	-	65	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	-	-	1552	-	-	842	764	1006	844	764	1002
Stage 1	-	-	-	-	-	-	952	846	-	948	843	-
Stage 2	-	-	-	-	-	-	945	843	-	950	846	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1547	-	-	1552	-	-	831	764	1006	835	764	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	831	764	-	835	764	-
Stage 1	-	-	-	-	-	-	952	846	-	948	843	-
Stage 2	-	-	-	-	-	-	932	843	-	941	846	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0	0	9.18	9.21
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	877	1547	-	-	1552	-	-	867
HCM Lane V/C Ratio	0.018	-	-	-	-	-	-	0.014
HCM Control Delay (s/veh)	9.2	0	-	-	0	-	-	9.2
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

2031 No-Build Weekday Morning
6: Wilshire Circle & Wheeler Road

06/25/2024

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	0	149	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	76	-
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	-	-	1539	-	847	994
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	952	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1539	-	844	994
Mov Cap-2 Maneuver	-	-	-	-	844	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	948	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.67		9.29		
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	844	-	-	164	-	
HCM Lane V/C Ratio	0.005	-	-	0.004	-	
HCM Control Delay (s/veh)	9.3	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

2031 No-Build Weekday Morning
7: Parker Road & Wheeler Road/Route 113

06/25/2024

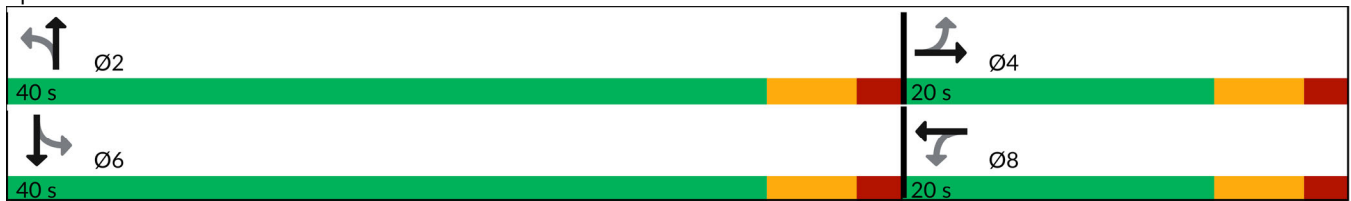
Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	59	98	1	67	73	0
Future Vol, veh/h	59	98	1	67	73	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	71	71	74	74
Heavy Vehicles, %	2	4	0	2	6	0
Mvmt Flow	97	161	1	94	99	0
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	257	0	274	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	97	-
Critical Hdwy	-	-	4.1	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.3
Pot Cap-1 Maneuver	-	-	1319	-	707	871
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	917	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	706	871
Mov Cap-2 Maneuver	-	-	-	-	706	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	916	-
Approach	EB	WB	NB			
HCM Control Delay, s/v	0	0.11	10.92			
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	706	-	-	26	-	
HCM Lane V/C Ratio	0.14	-	-	0.001	-	
HCM Control Delay (s/veh)	10.9	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

2031 No-Build Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	54	31	64	42	33	17	345	52	51	311	15
Future Volume (vph)	17	54	31	64	42	33	17	345	52	51	311	15
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.968			0.983			0.995	
Flt Protected		0.992			0.978			0.998			0.993	
Satd. Flow (prot)	0	1752	0	0	1731	0	0	2056	0	0	2049	0
Flt Permitted		0.915			0.784			0.968			0.902	
Satd. Flow (perm)	0	1616	0	0	1388	0	0	1994	0	0	1861	0
Satd. Flow (RTOR)		36			26			21			6	
Adj. Flow (vph)	25	79	46	73	48	38	19	379	57	62	379	18
Lane Group Flow (vph)	0	150	0	0	159	0	0	455	0	0	459	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.22			0.27			0.39			0.42	
Control Delay (s/veh)		9.7			11.1			7.3			8.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.7			11.1			7.3			8.0	
Queue Length 50th (ft)		15			18			48			52	
Queue Length 95th (ft)		39			64			122			114	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		898			769			1850			1725	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.17			0.21			0.25			0.27	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 32.6												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2031 No-Build Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	54	31	64	42	33	17	345	52	51	311	15
Future Volume (veh/h)	17	54	31	64	42	33	17	345	52	51	311	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1796	1900	1826	1752	1976	1930	1945	1853	1930	1868
Adj Flow Rate, veh/h	25	79	46	73	48	38	19	379	0	62	379	0
Peak Hour Factor	0.68	0.68	0.68	0.88	0.88	0.88	0.91	0.91	0.91	0.82	0.82	0.82
Percent Heavy Veh, %	6	0	7	0	5	10	0	3	2	8	3	7
Cap, veh/h	201	277	144	345	167	101	153	818		215	729	
Arrive On Green	0.20	0.27	0.20	0.20	0.27	0.20	0.37	0.44	0.00	0.37	0.44	0.00
Sat Flow, veh/h	178	1025	532	570	618	373	37	1860	0	149	1659	0
Grp Volume(v), veh/h	150	0	0	159	0	0	398	0	0	441	0	0
Grp Sat Flow(s),veh/h/ln	1736	0	0	1561	0	0	1897	0	0	1808	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	2.2	0.0	0.0	4.2	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.17		0.31	0.46		0.24	0.05		0.00	0.14		0.00
Lane Grp Cap(c), veh/h	495	0	0	499	0	0	833	0		813	0	
V/C Ratio(X)	0.30	0.00	0.00	0.32	0.00	0.00	0.48	0.00		0.54	0.00	
Avail Cap(c_a), veh/h	1020	0	0	949	0	0	2441	0		2305	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	8.7	0.0	0.0	5.5	0.0	0.0	5.8	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.8	0.0	0.0	9.1	0.0	0.0	6.0	0.0	0.0	6.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h		150			159			398			441	
Approach Delay, s/veh		8.8			9.1			6.0			6.4	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.1		11.4		16.1		11.4				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		14.0		34.0		14.0				
Max Q Clear Time (g_c+I1), s		6.2		3.9		7.0		4.2				
Green Ext Time (p_c), s		2.6		0.5		3.1		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			6.9									
HCM 7th LOS			A									
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2031 No-Build Weekday Evening
1: Wheeler Street & Route 113

06/25/2024

Intersection						
Int Delay, s/veh	7.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	20	99	907	29	69
Future Vol, veh/h	574	20	99	907	29	69
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	87	87	92	92	79	79
Heavy Vehicles, %	1	0	0	6	15	2
Mvmt Flow	660	23	108	986	37	87
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	683	0	1872	671
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	1201	-
Critical Hdwy	-	-	4.1	-	6.55	6.22
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.2	-	3.635	3.318
Pot Cap-1 Maneuver	-	-	920	-	73	456
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	268	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	920	-	54	456
Mov Cap-2 Maneuver	-	-	-	-	54	-
Stage 1	-	-	-	-	484	-
Stage 2	-	-	-	-	199	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.93		104.26	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	143	-	-	177	-	
HCM Lane V/C Ratio	0.869	-	-	0.117	-	
HCM Control Delay (s/veh)	104.3	-	-	9.4	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	5.7	-	-	0.4	-	

2031 No-Build Weekday Evening
2: Wheeler Street & Wheeler Road

06/25/2024

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	100
Future Vol, veh/h	48	4	14	20	21	100
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	130

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	164	92	157	0	-	0
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	1435	-	-	-
Stage 1	936	-	-	-	-	-
Stage 2	956	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	819	971	1435	-	-	-
Mov Cap-2 Maneuver	819	-	-	-	-	-
Stage 1	923	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.67	3.11	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	741	-	829	-	-
HCM Lane V/C Ratio	0.015	-	0.071	-	-
HCM Control Delay (s/veh)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

2031 No-Build Weekday Evening
3: Wheeler Street & Rinzee Road

06/25/2024

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	70	27	30	0	-	0
Stage 1	27	-	-	-	-	-
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	940	1054	1596	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	985	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	940	1054	1596	-	-	-
Mov Cap-2 Maneuver	940	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	985	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	8.76	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1596	-	966	-	-
HCM Lane V/C Ratio	-	-	0.008	-	-
HCM Control Delay (s/veh)	0	-	8.8	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

2031 No-Build Weekday Evening
4: Route 110 & Wheeler Street

06/25/2024

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	599	605	61	40	9
Future Vol, veh/h	19	599	605	61	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	1	13
Mvmt Flow	20	637	651	66	57	13
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	716	0	-	0	1361	683
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	4.1	-	-	-	6.41	6.33
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.2	-	-	-	3.509	3.417
Pot Cap-1 Maneuver	894	-	-	-	164	431
Stage 1	-	-	-	-	503	-
Stage 2	-	-	-	-	506	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	894	-	-	-	158	431
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	486	-
Stage 2	-	-	-	-	506	-
Approach	EB	WB		SB		
HCM Control Delay, s/v	0.28	0		37.4		
HCM LOS				E		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	55	-	-	-	179	
HCM Lane V/C Ratio	0.023	-	-	-	0.391	
HCM Control Delay (s/veh)	9.1	0	-	-	37.4	
HCM Lane LOS	A	A	-	-	E	
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7	

2031 No-Build Weekday Evening
5: Wilshire Circle/Paddock Lane & Route 113/Wheeler Road

06/25/2024

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	78	5	4	80	1	3	0	0	0	0	0
Future Vol, veh/h	4	78	5	4	80	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	105	7	7	133	2	8	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	135	0	0	112	0	0	266	268	109	264	270	134
Stage 1	-	-	-	-	-	-	120	120	-	148	148	-
Stage 2	-	-	-	-	-	-	147	148	-	116	123	-
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	1319	-	-	1490	-	-	691	641	950	693	639	920
Stage 1	-	-	-	-	-	-	890	801	-	860	779	-
Stage 2	-	-	-	-	-	-	861	778	-	893	798	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1319	-	-	1490	-	-	684	636	950	687	634	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	684	636	-	687	634	-
Stage 1	-	-	-	-	-	-	886	797	-	856	775	-
Stage 2	-	-	-	-	-	-	857	774	-	889	794	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	0.36	0.35	10.32	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	684	82	-	-	84	-	-	-
HCM Lane V/C Ratio	0.012	0.004	-	-	0.004	-	-	-
HCM Control Delay (s/veh)	10.3	7.7	0	-	7.4	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-

2031 No-Build Weekday Evening
6: Wilshire Circle & Wheeler Road

06/25/2024

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	3	2	84	2	2
Future Vol, veh/h	73	3	2	84	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	91	4	3	142	4	4
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	242	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	149	-
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	-	-	1512	-	750	969
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	883	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	749	969
Mov Cap-2 Maneuver	-	-	-	-	749	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	881	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.17		9.3	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	845	-	-	42	-	
HCM Lane V/C Ratio	0.009	-	-	0.002	-	
HCM Control Delay (s/veh)	9.3	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

2031 No-Build Weekday Evening
7: Parker Road & Wheeler Road/Route 113

06/25/2024

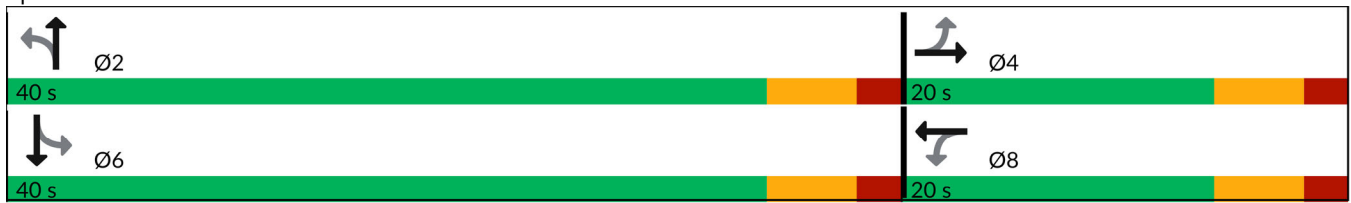
Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	76	78	0	72	104	1
Future Vol, veh/h	76	78	0	72	104	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	71	71	74	74
Heavy Vehicles, %	2	0	0	0	1	0
Mvmt Flow	87	90	0	101	141	1
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	177	0	234	132
Stage 1	-	-	-	-	132	-
Stage 2	-	-	-	-	101	-
Critical Hdwy	-	-	4.1	-	6.41	6.2
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	-	-	2.2	-	3.509	3.3
Pot Cap-1 Maneuver	-	-	1411	-	757	923
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	925	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1411	-	757	923
Mov Cap-2 Maneuver	-	-	-	-	757	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	925	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0		10.84		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	758	-	-	1411	-	
HCM Lane V/C Ratio	0.187	-	-	-	-	
HCM Control Delay (s/veh)	10.8	-	-	0	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.7	-	-	0	-	

2031 No-Build Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	42	17	69	59	44	30	340	71	33	508	30
Future Volume (vph)	16	42	17	69	59	44	30	340	71	33	508	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.966			0.978			0.993	
Flt Protected		0.989			0.980			0.997			0.997	
Satd. Flow (prot)	0	1791	0	0	1777	0	0	2061	0	0	2113	0
Flt Permitted		0.915			0.830			0.939			0.956	
Satd. Flow (perm)	0	1657	0	0	1505	0	0	1941	0	0	2026	0
Satd. Flow (RTOR)		20			28			29			8	
Adj. Flow (vph)	19	49	20	85	73	54	35	395	83	36	558	33
Lane Group Flow (vph)	0	88	0	0	212	0	0	513	0	0	627	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.15			0.40			0.42			0.50	
Control Delay (s/veh)		11.5			14.6			7.4			8.5	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		11.5			14.6			7.4			8.5	
Queue Length 50th (ft)		11			33			64			88	
Queue Length 95th (ft)		42			88			129			186	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		824			753			1666			1736	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.11			0.28			0.31			0.36	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 39.2												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2031 No-Build Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	42	17	69	59	44	30	340	71	33	508	30
Future Volume (veh/h)	16	42	17	69	59	44	30	340	71	33	508	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1870	1870	1976	1945	1945	1976	1961	1976
Adj Flow Rate, veh/h	19	49	20	85	73	54	35	395	0	36	558	0
Peak Hour Factor	0.86	0.86	0.86	0.81	0.81	0.81	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	0	3	0	0	2	2	0	2	2	0	1	0
Cap, veh/h	191	285	100	292	168	103	157	891		147	921	
Arrive On Green	0.19	0.25	0.19	0.19	0.25	0.19	0.43	0.50	0.00	0.43	0.50	0.00
Sat Flow, veh/h	211	1129	394	530	664	408	70	1796	0	55	1857	0
Grp Volume(v), veh/h	88	0	0	212	0	0	430	0	0	594	0	0
Grp Sat Flow(s),veh/h/ln	1734	0	0	1602	0	0	1866	0	0	1912	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	0.0	3.8	0.0	0.0	4.8	0.0	0.0	7.5	0.0	0.0
Prop In Lane	0.22		0.23	0.40		0.25	0.08		0.00	0.06		0.00
Lane Grp Cap(c), veh/h	467	0	0	463	0	0	931	0		949	0	
V/C Ratio(X)	0.19	0.00	0.00	0.46	0.00	0.00	0.46	0.00		0.63	0.00	
Avail Cap(c_a), veh/h	871	0	0	848	0	0	2053	0		2126	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	10.8	0.0	0.0	5.3	0.0	0.0	6.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.2	0.0	0.0	1.3	0.0	0.0	2.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.9	0.0	0.0	11.5	0.0	0.0	5.7	0.0	0.0	6.7	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h		88			212			430			594	
Approach Delay, s/veh		9.9			11.5			5.7			6.7	
Approach LOS		A			B			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		19.8		12.1		19.8		12.1				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		14.0		34.0		14.0				
Max Q Clear Time (g_c+I1), s		6.8		3.3		9.5		5.8				
Green Ext Time (p_c), s		3.0		0.3		4.3		0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh			7.3									
HCM 7th LOS			A									
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2031 Build

Intersection						
Int Delay, s/veh	7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	752	23	38	429	36	105
Future Vol, veh/h	752	23	38	429	36	105
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	89	89	70	70
Heavy Vehicles, %	5	6	5	8	4	0
Mvmt Flow	817	25	43	482	51	150
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	842	0	1397	830
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	567	-
Critical Hdwy	-	-	4.15	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.245	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	781	-	154	373
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	781	-	142	373
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	521	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.8		52.17		
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	264	-	-	146	-	
HCM Lane V/C Ratio	0.764	-	-	0.055	-	
HCM Control Delay (s/veh)	52.2	-	-	9.9	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	5.6	-	-	0.2	-	

2031 Build Weekday Morning
2: Wheeler Street & Wheeler Road

06/27/2024

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	106	4	8	38	23	42
Future Vol, veh/h	106	4	8	38	23	42
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	161	6	9	44	32	58

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	123	60	89	0	-	0
Stage 1	60	-	-	-	-	-
Stage 2	63	-	-	-	-	-
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	872	1011	1434	-	-	-
Stage 1	962	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	866	1011	1434	-	-	-
Mov Cap-2 Maneuver	866	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	960	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v10.11		1.31	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	313	-	871	-	-
HCM Lane V/C Ratio	0.006	-	0.191	-	-
HCM Control Delay (s/veh)	7.5	0	10.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.7	-	-

2031 Build Weekday Morning
3: Wheeler Street & Rinzee Road

06/27/2024

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	26	34	12	15	21	11
Future Vol, veh/h	26	34	12	15	21	11
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	41	54	15	19	28	15

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	84	35	43	0	-	0
Stage 1	35	-	-	-	-	-
Stage 2	49	-	-	-	-	-
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	882	1043	1579	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	873	1043	1579	-	-	-
Mov Cap-2 Maneuver	873	-	-	-	-	-
Stage 1	941	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.15	3.25	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	800	-	962	-	-
HCM Lane V/C Ratio	0.009	-	0.099	-	-
HCM Control Delay (s/veh)	7.3	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

2031 Build Weekday Morning
4: Route 110 & Wheeler Street

06/27/2024

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	480	439	46	90	44
Future Vol, veh/h	20	480	439	46	90	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	86	86	91	91	77	77
Heavy Vehicles, %	17	3	3	23	11	5
Mvmt Flow	23	558	482	51	117	57

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	533	0	0 1112 508
Stage 1	-	-	- 508 -
Stage 2	-	-	- 605 -
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	963	-	- 222 559
Stage 1	-	-	- 586 -
Stage 2	-	-	- 528 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	963	-	- 214 559
Mov Cap-2 Maneuver	-	-	- 214 -
Stage 1	-	-	- 566 -
Stage 2	-	-	- 528 -

Approach	EB	WB	SB
HCM Control Delay, s/v 0.35		0	40.16
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	72	-	-	-	268
HCM Lane V/C Ratio	0.024	-	-	-	0.648
HCM Control Delay (s/veh)	8.8	0	-	-	40.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	4.1

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	56	6	0	43	0	22	1	2	0	2	2
Future Vol, veh/h	0	56	6	0	43	0	22	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	7	0	67	0	71	3	6	0	6	6
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	67	0	0	70	0	0	137	134	67	132	138	67
Stage 1	-	-	-	-	-	-	67	67	-	67	67	-
Stage 2	-	-	-	-	-	-	70	67	-	65	70	-
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	-	-	1543	-	-	838	760	1002	844	757	1002
Stage 1	-	-	-	-	-	-	948	843	-	948	843	-
Stage 2	-	-	-	-	-	-	945	843	-	950	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1547	-	-	1543	-	-	826	760	1002	835	757	1002
Mov Cap-2 Maneuver	-	-	-	-	-	-	826	760	-	835	757	-
Stage 1	-	-	-	-	-	-	948	843	-	948	843	-
Stage 2	-	-	-	-	-	-	932	843	-	941	840	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s/v	0			0			9.77			9.23		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	835	1547	-	-	1543	-	-	862				
HCM Lane V/C Ratio	0.097	-	-	-	-	-	-	0.014				
HCM Control Delay (s/veh)	9.8	0	-	-	0	-	-	9.2				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0				

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	58	1	14	40	2	31
Future Vol, veh/h	58	1	14	40	2	31
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	22	63	4	62
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	74	0	181	73
Stage 1	-	-	-	-	73	-
Stage 2	-	-	-	-	108	-
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	-	-	1539	-	813	994
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	922	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1539	-	801	994
Mov Cap-2 Maneuver	-	-	-	-	801	-
Stage 1	-	-	-	-	955	-
Stage 2	-	-	-	-	908	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.91		8.94	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	980	-	-	467	-	
HCM Lane V/C Ratio	0.067	-	-	0.014	-	
HCM Control Delay (s/veh)	8.9	-	-	7.4	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.2	-	-	0	-	

2031 Build Weekday Morning
7: Parker Road & Wheeler Road/Route 113

06/27/2024

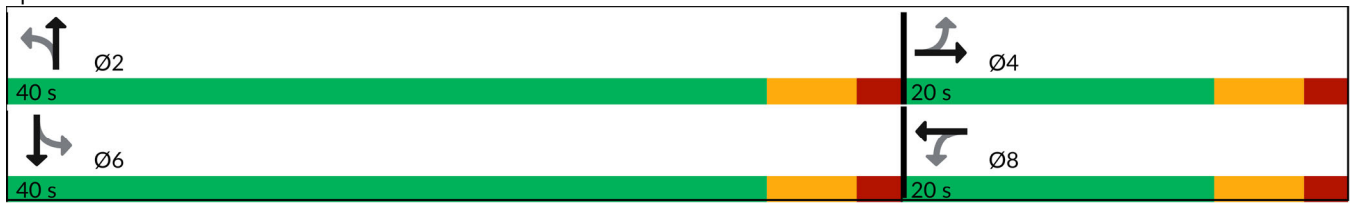
Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	65	98	1	87	73	0
Future Vol, veh/h	65	98	1	87	73	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	61	61	71	71	74	74
Heavy Vehicles, %	2	4	0	2	6	0
Mvmt Flow	107	161	1	123	99	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	267	0	312	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	-	-	4.1	-	6.46	6.2
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.2	-	3.554	3.3
Pot Cap-1 Maneuver	-	-	1308	-	672	860
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1308	-	671	860
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	889	-
Approach	EB	WB		NB		
HCM Control Delay, s/v	0	0.09		11.28		
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	671	-	-	20	-	
HCM Lane V/C Ratio	0.147	-	-	0.001	-	
HCM Control Delay (s/veh)	11.3	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.5	-	-	0	-	

2031 Build Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/27/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	54	31	84	42	33	17	345	58	51	311	15
Future Volume (vph)	17	54	31	84	42	33	17	345	58	51	311	15
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.972			0.981			0.995	
Flt Protected		0.992			0.974			0.998			0.993	
Satd. Flow (prot)	0	1752	0	0	1739	0	0	2052	0	0	2049	0
Flt Permitted		0.913			0.762			0.969			0.903	
Satd. Flow (perm)	0	1613	0	0	1361	0	0	1992	0	0	1863	0
Satd. Flow (RTOR)		36			22			24			6	
Adj. Flow (vph)	25	79	46	95	48	38	19	379	64	62	379	18
Lane Group Flow (vph)	0	150	0	0	181	0	0	462	0	0	459	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.21			0.31			0.39			0.42	
Control Delay (s/veh)		9.6			11.8			7.6			8.3	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		9.6			11.8			7.6			8.3	
Queue Length 50th (ft)		15			23			52			56	
Queue Length 95th (ft)		39			75			126			116	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		880			738			1831			1711	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.17			0.25			0.25			0.27	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 33.5												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2031 Build Weekday Morning
8: Route 113 & Jones Avenue/Wheeler Road

06/27/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	54	31	84	42	33	17	345	58	51	311	15
Future Volume (veh/h)	17	54	31	84	42	33	17	345	58	51	311	15
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1811	1900	1796	1900	1826	1752	1976	1930	1945	1853	1930	1868
Adj Flow Rate, veh/h	25	79	46	95	48	38	19	379	0	62	379	0
Peak Hour Factor	0.68	0.68	0.68	0.88	0.88	0.88	0.91	0.91	0.91	0.82	0.82	0.82
Percent Heavy Veh, %	6	0	7	0	5	10	0	3	2	8	3	7
Cap, veh/h	201	281	146	386	144	88	153	816		214	728	
Arrive On Green	0.20	0.27	0.20	0.20	0.27	0.20	0.37	0.44	0.00	0.37	0.44	0.00
Sat Flow, veh/h	179	1034	537	688	531	324	37	1860	0	150	1659	0
Grp Volume(v), veh/h	150	0	0	181	0	0	398	0	0	441	0	0
Grp Sat Flow(s),veh/h/ln	1750	0	0	1542	0	0	1897	0	0	1808	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0	2.6	0.0	0.0	4.3	0.0	0.0	5.0	0.0	0.0
Prop In Lane	0.17		0.31	0.52		0.21	0.05		0.00	0.14		0.00
Lane Grp Cap(c), veh/h	501	0	0	507	0	0	832	0		811	0	
V/C Ratio(X)	0.30	0.00	0.00	0.36	0.00	0.00	0.48	0.00		0.54	0.00	
Avail Cap(c_a), veh/h	1018	0	0	941	0	0	2430	0		2295	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.4	0.0	0.0	8.8	0.0	0.0	5.6	0.0	0.0	5.9	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	0.0	0.0	0.8	0.0	0.0	1.1	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	8.7	0.0	0.0	9.3	0.0	0.0	6.0	0.0	0.0	6.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h		150			181			398			441	
Approach Delay, s/veh		8.7			9.3			6.0			6.4	
Approach LOS		A			A			A			A	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		16.1		11.5		16.1		11.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		34.0		14.0		34.0		14.0				
Max Q Clear Time (g_c+I1), s		6.3		3.9		7.0		4.6				
Green Ext Time (p_c), s		2.6		0.5		3.1		0.6				
Intersection Summary												
HCM 7th Control Delay, s/veh			7.0									
HCM 7th LOS			A									
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2031 Build Weekday Evening
1: Wheeler Street & Route 113

06/25/2024

Intersection						
Int Delay, s/veh	22.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	30	136	907	35	95
Future Vol, veh/h	574	30	136	907	35	95
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	87	87	92	92	79	79
Heavy Vehicles, %	1	0	0	6	15	2
Mvmt Flow	660	34	148	986	44	120
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	694	0	1959	677
Stage 1	-	-	-	-	677	-
Stage 2	-	-	-	-	1282	-
Critical Hdwy	-	-	4.1	-	6.55	6.22
Critical Hdwy Stg 1	-	-	-	-	5.55	-
Critical Hdwy Stg 2	-	-	-	-	5.55	-
Follow-up Hdwy	-	-	2.2	-	3.635	3.318
Pot Cap-1 Maneuver	-	-	911	-	64	453
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	245	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	911	-	~ 41	453
Mov Cap-2 Maneuver	-	-	-	-	~ 41	-
Stage 1	-	-	-	-	481	-
Stage 2	-	-	-	-	157	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.27		263.43	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	123	-	-	235	-	
HCM Lane V/C Ratio	1.338	-	-	0.162	-	
HCM Control Delay (s/veh)	263.4	-	-	9.7	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	10.9	-	-	0.6	-	
Notes						
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon

2031 Build Weekday Evening
2: Wheeler Street & Wheeler Road

06/25/2024

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	67	4	14	33	40	128
Future Vol, veh/h	67	4	14	33	40	128
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	76	5	21	49	52	166

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	226	135	218	0	-	0
Stage 1	135	-	-	-	-	-
Stage 2	91	-	-	-	-	-
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	767	919	1363	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	754	919	1363	-	-	-
Mov Cap-2 Maneuver	754	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	938	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v10.28		2.29	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	536	-	762	-	-
HCM Lane V/C Ratio	0.015	-	0.106	-	-
HCM Control Delay (s/veh)	7.7	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

2031 Build Weekday Evening
3: Wheeler Street & Rinzee Road

06/25/2024

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	20	28	34	23	24
Future Vol, veh/h	16	20	28	34	23	24
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	32	40	35	43	25	26

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	150	38	51	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	113	-	-	-	-	-
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	847	1040	1569	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	917	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	827	1040	1569	-	-	-
Mov Cap-2 Maneuver	827	-	-	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.18	3.32	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	813	-	933	-	-
HCM Lane V/C Ratio	0.022	-	0.077	-	-
HCM Control Delay (s/veh)	7.3	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

2031 Build Weekday Evening
4: Route 110 & Wheeler Street

06/25/2024

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	38	599	605	70	46	22
Future Vol, veh/h	38	599	605	70	46	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	94	94	93	93	70	70
Heavy Vehicles, %	0	1	1	0	1	13
Mvmt Flow	40	637	651	75	66	31

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	726	0	0 1406 688
Stage 1	-	-	- 688 -
Stage 2	-	-	- 718 -
Critical Hdwy	4.1	-	- 6.41 6.33
Critical Hdwy Stg 1	-	-	- 5.41 -
Critical Hdwy Stg 2	-	-	- 5.41 -
Follow-up Hdwy	2.2	-	- 3.509 3.417
Pot Cap-1 Maneuver	886	-	- 154 428
Stage 1	-	-	- 501 -
Stage 2	-	-	- 485 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	886	-	- 143 428
Mov Cap-2 Maneuver	-	-	- 143 -
Stage 1	-	-	- 465 -
Stage 2	-	-	- 485 -

Approach	EB	WB	SB
HCM Control Delay, s/v 0.55		0	45.18
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	107	-	-	-	183
HCM Lane V/C Ratio	0.046	-	-	-	0.532
HCM Control Delay (s/veh)	9.3	0	-	-	45.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	2.7

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	78	23	4	80	1	16	0	0	0	0	0
Future Vol, veh/h	4	78	23	4	80	1	16	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	105	31	7	133	2	42	0	0	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	135	0	0	136	0	0	278	280	121	264	295	134
Stage 1	-	-	-	-	-	-	132	132	-	148	148	-
Stage 2	-	-	-	-	-	-	147	148	-	116	147	-
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	1319	-	-	1460	-	-	678	632	936	693	620	920
Stage 1	-	-	-	-	-	-	877	791	-	860	779	-
Stage 2	-	-	-	-	-	-	861	778	-	893	779	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1319	-	-	1460	-	-	672	626	936	687	614	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	672	626	-	687	614	-
Stage 1	-	-	-	-	-	-	873	788	-	856	775	-
Stage 2	-	-	-	-	-	-	857	774	-	889	776	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v 0.29		0.35	10.72	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	672	66	-	-	84	-	-	-
HCM Lane V/C Ratio	0.063	0.004	-	-	0.005	-	-	-
HCM Control Delay (s/veh)	10.7	7.7	0	-	7.5	0	-	0
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	73	3	30	84	2	21
Future Vol, veh/h	73	3	30	84	2	21
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	91	4	51	142	4	42
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	95	0	337	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	244	-
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	-	-	1512	-	662	969
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1512	-	638	969
Mov Cap-2 Maneuver	-	-	-	-	638	-
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	772	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		1.96		9.08	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1		EBT	EBR	WBL	WBT
Capacity (veh/h)	928		-	-	474	-
HCM Lane V/C Ratio	0.05		-	-	0.034	-
HCM Control Delay (s/veh)	9.1		-	-	7.5	0
HCM Lane LOS	A		-	-	A	A
HCM 95th %tile Q(veh)	0.2		-	-	0.1	-

2031 Build Weekday Evening
7: Parker Road & Wheeler Road/Route 113

06/25/2024

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	94	78	0	85	104	1
Future Vol, veh/h	94	78	0	85	104	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	71	71	74	74
Heavy Vehicles, %	2	0	0	0	1	0
Mvmt Flow	108	90	0	120	141	1

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	198
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	-	-	1387
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1387
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.22
HCM LOS			B

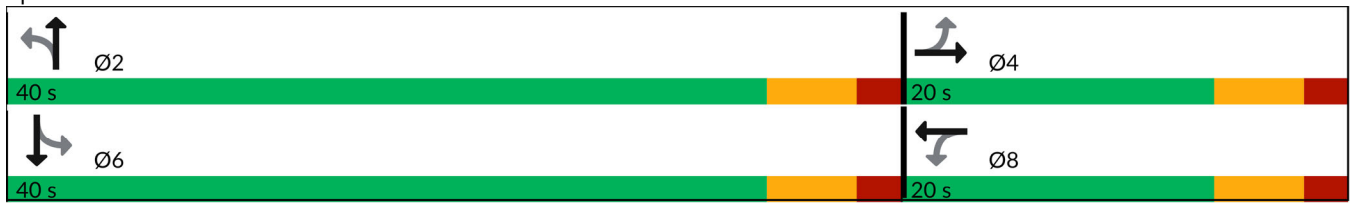
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	720	-	-	1387	-
HCM Lane V/C Ratio	0.197	-	-	-	-
HCM Control Delay (s/veh)	11.2	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0	-

2031 Build Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	42	17	82	59	44	30	340	89	33	508	30
Future Volume (vph)	16	42	17	82	59	44	30	340	89	33	508	30
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.969			0.968			0.974			0.993	
Flt Protected		0.989			0.978			0.997			0.997	
Satd. Flow (prot)	0	1791	0	0	1779	0	0	2053	0	0	2113	0
Flt Permitted		0.914			0.816			0.941			0.954	
Satd. Flow (perm)	0	1655	0	0	1484	0	0	1937	0	0	2022	0
Satd. Flow (RTOR)		20			25			36			8	
Adj. Flow (vph)	19	49	20	101	73	54	35	395	103	36	558	33
Lane Group Flow (vph)	0	88	0	0	228	0	0	533	0	0	627	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	6.0	6.0		6.0	6.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	12.0	12.0		12.0	12.0		16.0	16.0		16.0	16.0	
Total Split (s)	20.0	20.0		20.0	20.0		40.0	40.0		40.0	40.0	
Total Split (%)	33.3%	33.3%		33.3%	33.3%		66.7%	66.7%		66.7%	66.7%	
Maximum Green (s)	14.0	14.0		14.0	14.0		34.0	34.0		34.0	34.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		4.0			4.0			4.0			4.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		None	None		None	None	
v/c Ratio		0.15			0.43			0.44			0.50	
Control Delay (s/veh)		11.4			15.3			7.6			8.7	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay (s/veh)		11.4			15.3			7.6			8.7	
Queue Length 50th (ft)		11			37			69			91	
Queue Length 95th (ft)		42			97			134			186	
Internal Link Dist (ft)		613			959			343			409	
Turn Bay Length (ft)												
Base Capacity (vph)		814			734			1653			1720	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.11			0.31			0.32			0.36	
Intersection Summary												
Cycle Length: 60												
Actuated Cycle Length: 39.6												
Natural Cycle: 40												
Control Type: Actuated-Uncoordinated												

Splits and Phases: 8: Route 113 & Jones Avenue/Wheeler Road



2031 Build Weekday Evening
8: Route 113 & Jones Avenue/Wheeler Road

06/25/2024

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	42	17	82	59	44	30	340	89	33	508	30
Future Volume (veh/h)	16	42	17	82	59	44	30	340	89	33	508	30
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.04	1.04	1.04	1.04	1.04	1.04
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1856	1900	1900	1870	1870	1976	1945	1945	1976	1961	1976
Adj Flow Rate, veh/h	19	49	20	101	73	54	35	395	0	36	558	0
Peak Hour Factor	0.86	0.86	0.86	0.81	0.81	0.81	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	0	3	0	0	2	2	0	2	2	0	1	0
Cap, veh/h	187	300	104	315	163	99	154	884		144	913	
Arrive On Green	0.20	0.26	0.20	0.20	0.26	0.20	0.43	0.49	0.00	0.43	0.49	0.00
Sat Flow, veh/h	202	1139	394	591	619	375	70	1797	0	55	1856	0
Grp Volume(v), veh/h	88	0	0	228	0	0	430	0	0	594	0	0
Grp Sat Flow(s),veh/h/ln	1735	0	0	1585	0	0	1867	0	0	1912	0	0
Q Serve(g_s), s	0.0	0.0	0.0	2.9	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0
Cycle Q Clear(g_c), s	1.3	0.0	0.0	4.2	0.0	0.0	4.9	0.0	0.0	7.8	0.0	0.0
Prop In Lane	0.22		0.23	0.44		0.24	0.08		0.00	0.06		0.00
Lane Grp Cap(c), veh/h	485	0	0	479	0	0	923	0		940	0	
V/C Ratio(X)	0.18	0.00	0.00	0.48	0.00	0.00	0.47	0.00		0.63	0.00	
Avail Cap(c_a), veh/h	852	0	0	826	0	0	2006	0		2076	0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	10.9	0.0	0.0	5.5	0.0	0.0	6.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	1.3	0.0	0.0	1.4	0.0	0.0	2.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.9	0.0	0.0	11.7	0.0	0.0	5.9	0.0	0.0	6.9	0.0	0.0
LnGrp LOS	A			B			A			A		
Approach Vol, veh/h	88			228			430			594		
Approach Delay, s/veh	9.9			11.7			5.9			6.9		
Approach LOS	A			B			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	20.1			12.6			20.1			12.6		
Change Period (Y+Rc), s	6.0			6.0			6.0			6.0		
Max Green Setting (Gmax), s	34.0			14.0			34.0			14.0		
Max Q Clear Time (g_c+I1), s	6.9			3.3			9.8			6.2		
Green Ext Time (p_c), s	3.0			0.3			4.3			0.7		
Intersection Summary												
HCM 7th Control Delay, s/veh				7.6								
HCM 7th LOS				A								
Notes												
Unsignalized Delay for [NBR, SBR] is excluded from calculations of the approach delay and intersection delay.												

2031 Build (Mitigated)

2031 Build Weekday Morning (Mitigated)

1: Wheeler Street & Route 113

06/26/2024

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	752	23	38	429	36	105
Future Vol, veh/h	752	23	38	429	36	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	50	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	89	89	70	70
Heavy Vehicles, %	5	6	5	8	4	0
Mvmt Flow	817	25	43	482	51	150
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	842	0	1397	830
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	567	-
Critical Hdwy	-	-	4.15	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.245	-	3.536	3.3
Pot Cap-1 Maneuver	-	-	781	-	154	373
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	563	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	781	-	142	373
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	521	-
Approach	EB		WB		NB	
HCM Control Delay, s/v	0		0.8		26.86	
HCM LOS	D					
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	142	373	-	-	146	-
HCM Lane V/C Ratio	0.362	0.402	-	-	0.055	-
HCM Control Delay (s/veh)	44	21	-	-	9.9	0
HCM Lane LOS	E	C	-	-	A	A
HCM 95th %tile Q(veh)	1.5	1.9	-	-	0.2	-

2031 Build Weekday Evening (Mitigated)

1: Wheeler Street & Route 113

06/26/2024

Intersection

Int Delay, s/veh 8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	574	30	136	907	35	95
Future Vol, veh/h	574	30	136	907	35	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	50	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	92	92	79	79
Heavy Vehicles, %	1	0	0	6	15	2
Mvmt Flow	660	34	148	986	44	120

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	694
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	-	-	911
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	911
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	1.27	96.16
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	41	453	-	-	235	-
HCM Lane V/C Ratio	1.073	0.266	-	-	0.162	-
HCM Control Delay (s/veh)	\$ 314.3	15.8	-	-	9.7	0
HCM Lane LOS	F	C	-	-	A	A
HCM 95th %tile Q(veh)	4.3	1.1	-	-	0.6	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon