

Transportation Impact Assessment

Proposed Starbucks Coffee Shop
37 Clark's Road
Amesbury, Massachusetts

Prepared for:

CREFIII-Waramaug Amesbury LLC
Corning, New York

September 2023

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

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the construction of a Starbucks coffee shop to be located at 37 Clark's Road in Amesbury, Massachusetts (hereafter referred to as the "Project"). This assessment was prepared in consultation with the City of Amesbury and the Massachusetts Department of Transportation (MassDOT), 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.

This assessment has concluded the following with respect to the Project and the study area roadways and intersections:

1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹ and with appropriate adjustments to account for pass-by trips, the Project is expected to generate 592 new vehicle trips on an average weekday and 604 new vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 95 new vehicle trips expected during the weekday morning peak-hour, 44 new vehicle trips expected during the weekday evening peak-hour and 98 new vehicle trips expected during the Saturday midday 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 conditions); however, it was noted that one or more movements at the study intersections are currently or are predicted to operate at or over capacity (defined as level-of-service (LOS) "E" or "F", respectively) independent of the Project;
3. All movements exiting the shared access driveway that will also serve the Project site to Clark's Road are predicted to operate at LOS A during the peak hours with residual vehicle queues of up to one (1) vehicle, which can be contained within the Project site without impeding access or circulation within the Project site or the movement of vehicles, pedestrians or bicyclists along Clark's Road;

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

4. Independent of the Project, the Macy Street (Route 110)/Merrill Street/Rabbit Road intersection was found to have a motor vehicle crash rate that is below the MassDOT statewide average crash rate for a signalized intersection but is above the MassDOT District 4 average crash rate. No (0) Highway Safety Improvement Program (HSIP) eligible crash locations were identified within the study area;
5. The drive-through window facility is appropriately sized to accommodate the predicted maximum vehicle queue without impeding access to parking or the movement of vehicles, pedestrians or bicyclists within the Project site; and
6. Lines of sight to and from the intersection of shared access driveway that will also serve the Project site with Clark's Road were found to exceed the recommended minimum distance for safe and efficient operation.

In consideration of the above, it has been 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 the existing driveway that serves the Project site and the Fairfield Inn, and intersects the east side of Clark's Road approximately 260 feet south of Route 110. The existing northern driveway that serves the Project site and intersects the east side of Clark's Road approximately 150 feet south of Route 110 will be closed in conjunction with the Project thereby reducing the number of conflict points along Clark's Road and enhancing safety. The following recommendations are offered with respect to Project access, internal circulation, and parking, many of which are reflected on the Site Plans for the Project:

- The shared access Project site driveway should continue to be a minimum of 24 feet in width and designed to accommodate the turning and maneuvering requirements of service and delivery vehicles and the largest anticipated responding emergency vehicle.
- Vehicles exiting the Project site to Clark's Road should be placed under STOP-sign control with a marked STOP-line provided.
- Drive aisles within the Project site should be a minimum of 23-feet in width where perpendicular parking is proposed in order to allow for vehicle maneuvering.
- Appropriate signs ("One-Way" and "Do Not Enter") and pavement markings should be provided to regulate and reinforce the one-way traffic flow through the drive-through facility.

- Vehicles exiting the drive-through window facility should be placed under STOP-sign control with a marked STOP-line provided.
- All signs and pavement markings to be installed within the Project shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).²
- A sidewalk connection should be provided to link the proposed coffee shop to the sidewalks along Clark's Road and Route 110. In addition, a sidewalk should be provided to link the 10 parking spaces to the east of the coffee shop to the proposed building.
- Marked crosswalks and Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided for crossing the Project site driveway and at pedestrian crossings within the Project site.
- Consideration should be given to developing a pedestrian accommodation to link the Fairfield Inn to the proposed coffee shop that would include marked crosswalks along the defined path.
- The drive aisle opposite the drive-through exit and parallel to Clark's Road should be one-way southbound and placed under STOP-sign control with a marked STOP-line approaching the shared access driveway with accompanying "One Way" and "Do Not Enter" signs.
- The four (4) parking spaces adjacent to Clark's Road opposite the exit from the drive-through lane should be designated as employee parking spaces so as to minimize the activity associated with the use of these spaces.
- 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 shall be promptly removed where such accumulations would impede sight lines.

Off-Site

Route 110 Traffic Signal System

Independent of the Project, one or more movements at the intersections that comprise the Route 110 coordinated traffic signal system are currently or are predicted to operate at or over capacity. In an effort to improve traffic operations and off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing, phasing and coordination plan at the following intersections that comprise the Route 110 coordinated traffic signal system:

- Route 110 at the Carriagetown Marketplace Driveway
- Route 110 at Elm Street and Clark's Road
- Route 110 at Merrill Street and Rabbit Road

The recommended improvements will be completed prior to the issuance of a Certificate of Occupancy for the Project, subject to receipt of all necessary rights, permits and approvals. With the implementation of an optimal traffic signal timing, phasing and coordination plan, overall

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

motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

Route 110 at Merrill Street and Rabbit Road

Independent of the Project, the Route 110/Merrill Street/Rabbit Road intersection was identified to have a motor vehicle crash rate that was above the MassDOT District 4 average crash rate for a signalized intersection. In an effort to enhance safety at the intersection, the Project proponent will undertake the following improvements:

1. Review the “yellow” and “all-red” clearance intervals and the pedestrian phase times for compliance with current standards and adjust as necessary; and
2. Relamp the traffic signal indications with LED type indications and add reflective yellow tape to the traffic signal indication backplates.

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

Transportation Demand Management

Public transportation services are provided within the study area and along Route 110 by the Merrimack Valley Regional Transit Authority (MVRTA). The MVRTA operates fixed route bus service along Route 110, Main Street and Elm Street by way of Route 17, *Haverhill-Salisbury Beach via Amesbury*, with the closes regular stop located within the Carriagetown Marketplace (approximately 0.4 miles or an 8 minute walking distance to the west of the Project site). In addition to regular stops, MVTA buses also operate in a “flag stop” mode, where a rider can request a stop anywhere along the regular service route by signaling to the driver. The MVRTA Ring & Ride program also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA).

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

- A transportation coordinator will be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules and fare information will be made available to employees of the project;
- A “welcome packet” will be provided to new employees detailing available public transportation services, bicycle and walking alternatives, and other commuter options;
- Specific amenities will be provided to discourage off-site trips, which may include the following: providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing telecommuting or flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic volume periods;

- Pedestrian accommodations will be incorporated within the Project site to encourage walking; 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 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 Starbucks coffee shop to be located at 37 Clark's Road in Amesbury, Massachusetts (hereafter referred to as the "Project"). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Macy Street (Route 110) and Clark's Road, and at major intersections located along these roadways through which Project-related traffic will travel.

PROJECT DESCRIPTION

The Project will entail the construction of a 2,460± square foot (sf) Starbucks coffee shop that will include 34 seats and a drive-through window facility to be located at 37 Clark's Road in Amesbury, Massachusetts. The Project site encompasses approximately 2.99± acres of land that is bounded by Route 110 and the on-ramp to Interstate 95 (I-95) southbound to the north; residential properties to the south; the on-ramp to I-95 southbound to the east; and Clark's Road to the west. The Project site is currently improved with two (2) buildings and associated parking areas and appurtenances that include a Fairfield Inn and a vacant building that was formerly tenanted by a Friendly's restaurant. In conjunction with the Project, the former Friendly's restaurant building will be removed and the adjacent parking area reconfigured to accommodate the Starbucks building and drive-through facility. 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 the existing driveway that serves the Project site and the Fairfield Inn, and intersects the east side of Clark's Road approximately 260 feet south of Route 110. The existing northern driveway that serves the Project site and intersects the east side of Clark's Road approximately 150 feet south of Route 110 will be closed in conjunction with the Project thereby reducing the number of conflict points along Clark's Road and enhancing safety.



Figure 1

Site Location Map

On-site parking will be provided for 128 vehicles to accommodate both the Fairfield Inn and the proposed coffee shop, which exceeds the parking requirements of Section VIII, *Off-Street Parking and Loading*, of the Amesbury Zoning Ordinance.³

STUDY METHODOLOGY

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

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

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

³For the hotel use, the Zoning Ordinance requires 1.0 parking spaces for each sleeping room plus 1.0 parking spaces for each 200 sq. ft. of public meeting room and restaurant space. For the restaurant use, the Zoning Ordinance requires 1.0 parking spaces for each four (4) seats of total seating capacity. The hotel has 99 rooms and no (0) meeting room/restaurant space; the coffee shop will have 34 seats. As such, the total required parking supply is 108 parking spaces.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in July 2023. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area that was assessed for the Project consisted of Route 110 and Clark's Road, and the following specific intersections: Route 110 at the Carriagetown Marketplace; Route 110 at Clark's Road and Elm Street; Route 110 at the I-95 Southbound Ramps; Route 110 at the I-95 Northbound Ramps; Route 110 at Merrill Street and Rabbitt Road; and Clark's Road at the Burger King and Fairfield Inn Driveways

The following describes the study area roadways and intersections.

ROADWAYS

Macy Street (Route 110)

- Four-lane urban principal arterial roadway between I-495 and Elm Street/Rabbit Road and a two-lane urban minor arterial with center turn lane to the east under MassDOT jurisdiction;
- Traverses a general east-west alignment providing a full access interchange with I-95 to the east of the Project site and a limited access interchange with I-495 to the west;
- Within the study area, provides two (2) 11 to 12-foot wide travel lanes per direction that are separated by a raised or painted median or double-yellow centerline with variable width marked shoulders and additional travel lanes provided at major intersections;
- The posted speed limit varies from 40 to 45 miles per hour (mph);
- A sidewalk is provided along the south side of the roadway extending to Rocky Hill Road where the sidewalk shifts to the north side to Elm Street where a sidewalk is then provided along both sides of the roadway;
- Illumination is provided by way of street lights mounted on wood poles;
- Land use within the study area consists of the Project site, commercial properties and areas of open and wooded space.

Clark's Road

- Two lane urban collector roadway under City jurisdiction;
- Traverses a general northeast-southwest alignment between Route 110 and Main Street;
- Provides two (2) 12- to 18-foot wide travel lanes that are separated by a double-yellow centerline with variable width or no marked shoulders and additional travel lanes provided at major intersections;
- The posted speed limit in the vicinity of the Project site is 25 mph;
- A sidewalk is provided along the east side of the roadway between Route 110 and the Birchwood Pointe Condominium;
- Illumination is provided by way of street lights mounted on wood poles;
- Land use within the study area consists of the Project site, residential and commercial properties and areas of open and wooded space.

INTERSECTIONS

Table 1 and Figure 2 summarize existing lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in July 2023.

Table 1
STUDY AREA INTERSECTION DESCRIPTION

Intersection	Traffic Control Type ^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Rte. 110/ Carriagetown Marketplace Dwy.	TS	1 left-turn lane and 2 through lanes on Rte. 110 eastbound; 1 through lane and 1 through/right-turn lane on Rte. 110 westbound; 1 left-turn lane and 1 right-turn lane on the Carriagetown Marketplace Dwy.	Yes; 3-feet on Rte. 110; 1-foot on the Carriagetown Marketplace Dwy.	Yes; sidewalks along the north side of Rte. 110 and the west side of the Carriagetown Marketplace Dwy.; Crosswalk provided across the Carriagetown Marketplace Dwy.; Pedestrian traffic signal equipment and phasing (exclusive) provided	Yes; Shared traveled-way ^b on Rte. 110
Rte. 110/ Elm St/ Clarks Rd	TS	1 left-turn lane, 1 through lane and 1 through/right-turn lane on Rte. 110 eastbound; 1 left-turn lane, 2 through lanes and 1 channelized right-turn lane on Rte. 110 westbound; 2 left-turn lanes and 1 through/right-turn lane on Elm St.; 1 left-turn lane and 1 through/right-turn lane Clarks Rd.	Yes; 2 to 4-feet on Rte. 110; 1 to 2-feet on Elm St. and Clarks Rd.	Yes; sidewalks along the north side of Rte. 110 west of the intersection; both sides of Rte. 110 east of the intersection; east side of Elm St. and Clarks Rd.; Crosswalks provided across the Rte. 110 east leg and Elm St.; Pedestrian traffic signal equipment and phasing (exclusive) provided	Yes; Shared-use path north of Rte. 110 east of the intersection; Shared traveled-way on Rte. 110 west of the intersection and on Clarks Rd. southbound

See notes at end of table.

Table 1 (Continued)
STUDY AREA INTERSECTION DESCRIPTION

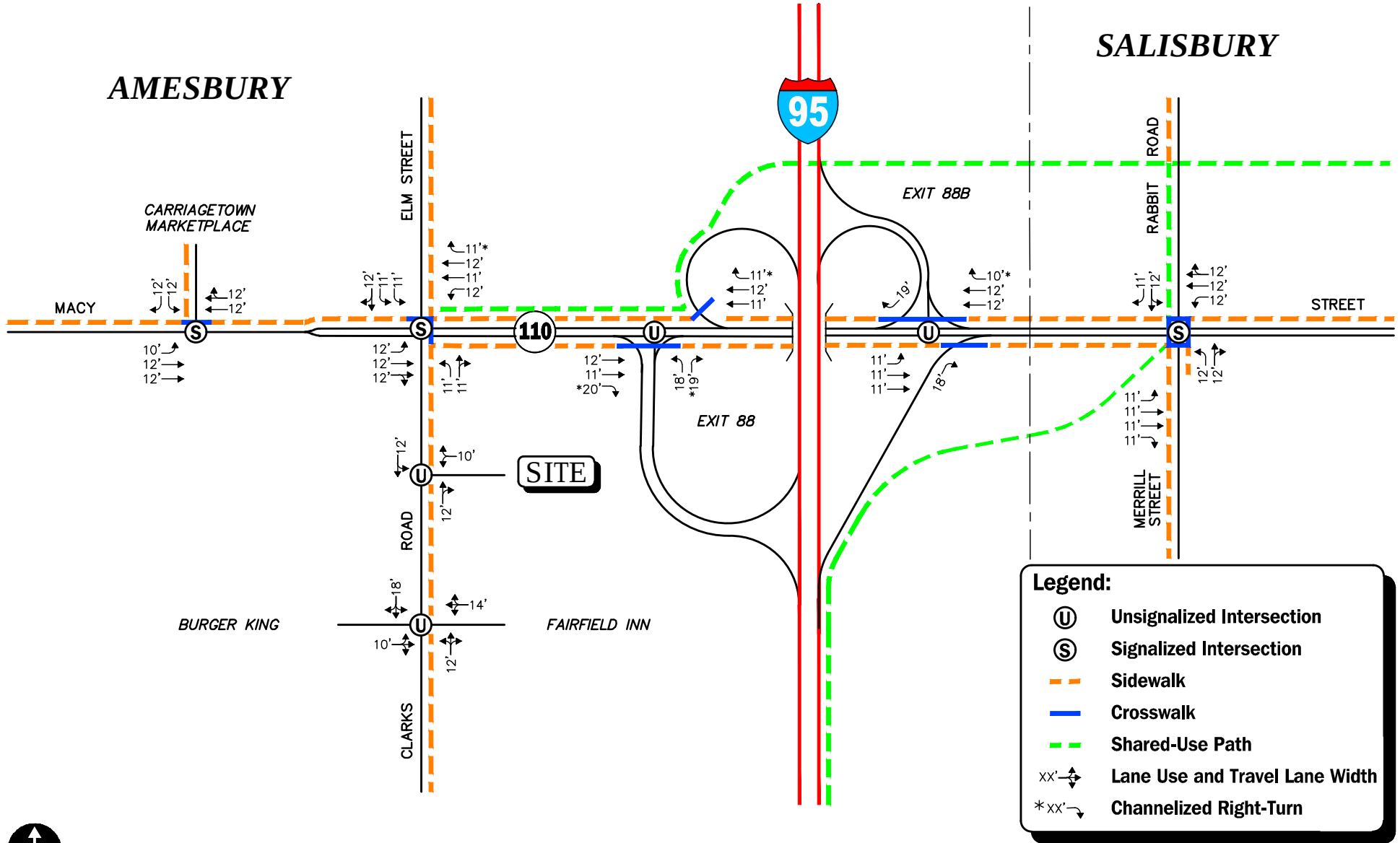
Intersection	Traffic Control Type^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Rte. 110/ I-95 SB Ramps	U	2 through lanes and 1 channelized right-turn lane on Rte. 110; 1 left-turn lane and 1 channelized right-turn lane on the I-95 SB Off-Ramp	Yes; 2-feet on Rte. 110; 2-feet on the I-95 SB Ramps	Yes; Sidewalks along both sides of Rte. 110; Crosswalks provided across the I-95 SB Ramps	Yes; Shared-use path north of Rte. 110 west of the intersection
Rte. 110/ I-95 NB Ramps	U	1 left-turn lane and 2 through lanes on Rte. 110 eastbound; 2 through lanes and 1 channelized right-turn lane on Rte. 110 westbound; 1 right-turn lane on the I-95 NB Off-Ramp northbound; 1 left-turn lane and 1 channelized right-turn lane on the I-95 NB Off-Ramp southbound	Yes; 2-feet on Rte. 110; 2-feet on the I-95 NB Ramps	Yes; Sidewalks along both sides of Rte. 110; Crosswalks provided across the I-95 NB Ramps	Yes; Shared-use path south of Rte. 110 east of the intersection
Rte. 110/ Merrill St./ Rabbit Rd	TS	1 left-turn lane, 2 through lanes and 1 right-turn lane on Rte. 110 eastbound; 1 left-turn lane, 1 through lane and 1 through/right-turn lane on Rte. 110 westbound; 1 left-turn lane and 1 through/right-turn lane on Merrill St.; 1 left-turn/through lane and 1 right-turn lane on Rabbit Rd.	Yes; 2 to 7-feet on Rte. 110; 1 to 2-feet on Merrill St.; 4 to 5-feet on Rabbit Rd.	Yes; sidewalks along both sides of Rte. 110 west of the intersection and Merrill St., and along the north side of Rte. 110 east of the intersection; Crosswalks provided across all legs; Pedestrian traffic signal equipment and phasing (exclusive) provided	Yes; Shared-use paths south of Rte. 110 west of the intersection and west of Rabbit Rd.; Shared traveled-way along Rte. 110 east of the intersection
Clarks Rd/ North Project Site Driveway	U	1 general purpose travel lane on all approaches	Yes; 1 to 4-feet on Clarks Rd.	Yes; sidewalk along the east side of Clarks Rd.	Yes; shared traveled-way on Clarks Rd. southbound
Clarks Rd./ South Project Site Driveway/ Burger King Driveway	U	1 general purpose travel lane on all approaches	No	Yes; sidewalk along the east side of Clarks Rd.	Yes; shared traveled-way on Clarks Rd. southbound

^aTS = traffic signal control; S = STOP control.

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

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 July 2023. The ATR counts were conducted on Clark's Road in the vicinity of the Project site on July 13th through 15th, 2023 (Thursday through



Saturday, inclusive) in order to record weekday and Saturday traffic conditions over an extended period, with weekday morning (7:00 to 9:00 AM) and weekday evening (4:00 to 6:00 PM) peak-period TMCs performed at the study intersections on July 13, 2023 (Thursday), and during the Saturday midday peak period (11:00 AM to 2:00 PM) on July 15, 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 Group 3 roadways (“other principal arterials”, the functional classification of Route 110) were reviewed.⁴ Based on a review of this data, it was determined that traffic volumes for the month of July are 5.3 percent *above* average-month conditions. In order to provide a conservative assessment of traffic volume conditions within the study area, no adjustment was made to the July traffic volumes, as they are representative of *above* average-month conditions.

Based on updated guidance from MassDOT,⁵ 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 roadway and intersections serve a diverse range of land uses (residential and restaurant/retail), further adjustment of the July 2023 traffic volume data was not required.

The 2023 Existing traffic volumes are summarized in Table 2, with the weekday morning, weekday evening and Saturday midday peak-hour traffic volumes graphically depicted on Figures 3, 4 and 5, respectively. Note that the peak-hour traffic volumes that are presented in Table 2 were obtained from the aforementioned figures.

Table 2
2023 EXISTING TRAFFIC VOLUMES

Location/Peak-Hour	AWT ^a	Saturday ^b	VPH ^c	K Factor ^d	Directional Distribution ^e
<i>Clarks Road, south of Route 110:</i>	2,290	1,860	--	--	--
Weekday Morning (7:45 – 8:45 AM)	--	--	183	8.0	60.7% NB
Weekday Evening (4:30 – 5:30 PM)	--	--	272	11.9	53.3% NB
Saturday Midday (11:45 AM – 12:45 PM)	--	--	220	11.8	54.5% NB

^aAverage weekday traffic in vehicles per day.

^bSaturday traffic in vehicles.

^cVehicles per hour.

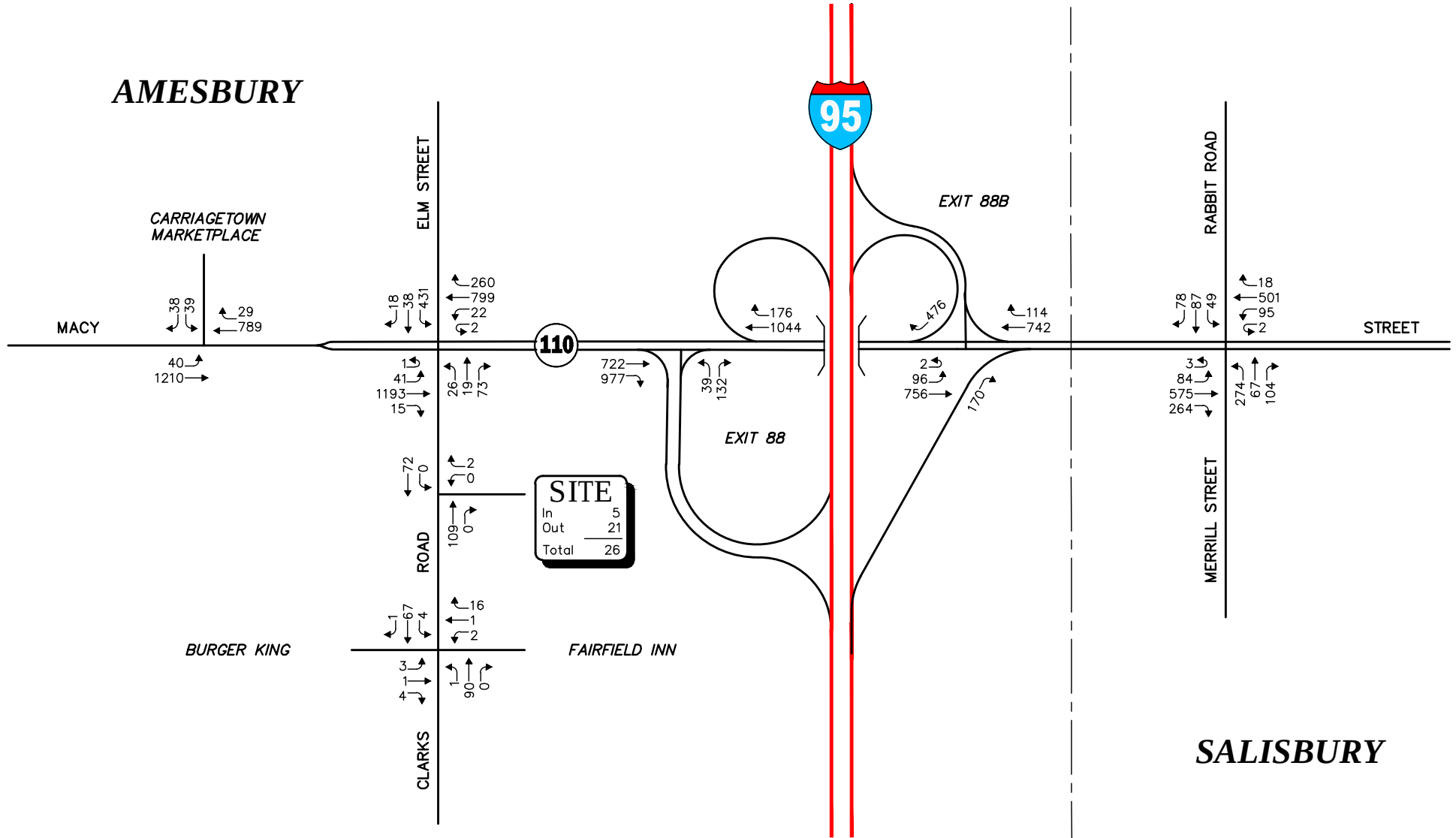
^dPercent of daily traffic occurring during the peak-hour.

^ePercent traveling in peak direction.

NB = northbound

⁴MassDOT Statewide Traffic Data Collection; 2019 Weekday Seasonal Factors, Group U3.

⁵*Traffic and Safety Engineering 25% Design Submission Guidelines*; MassDOT; Revised March 31, 2022.



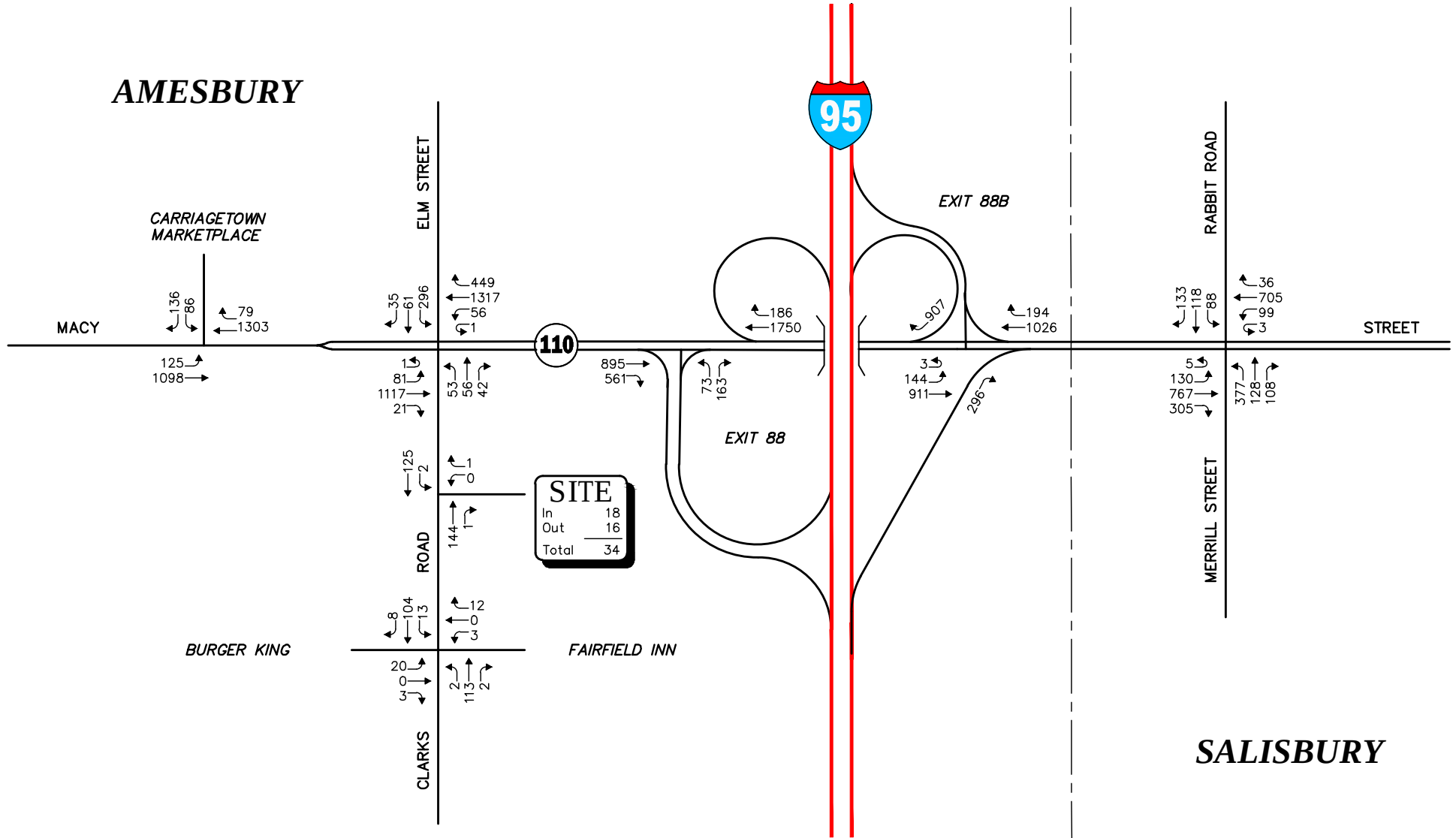
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not to Scale



Figure 3

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



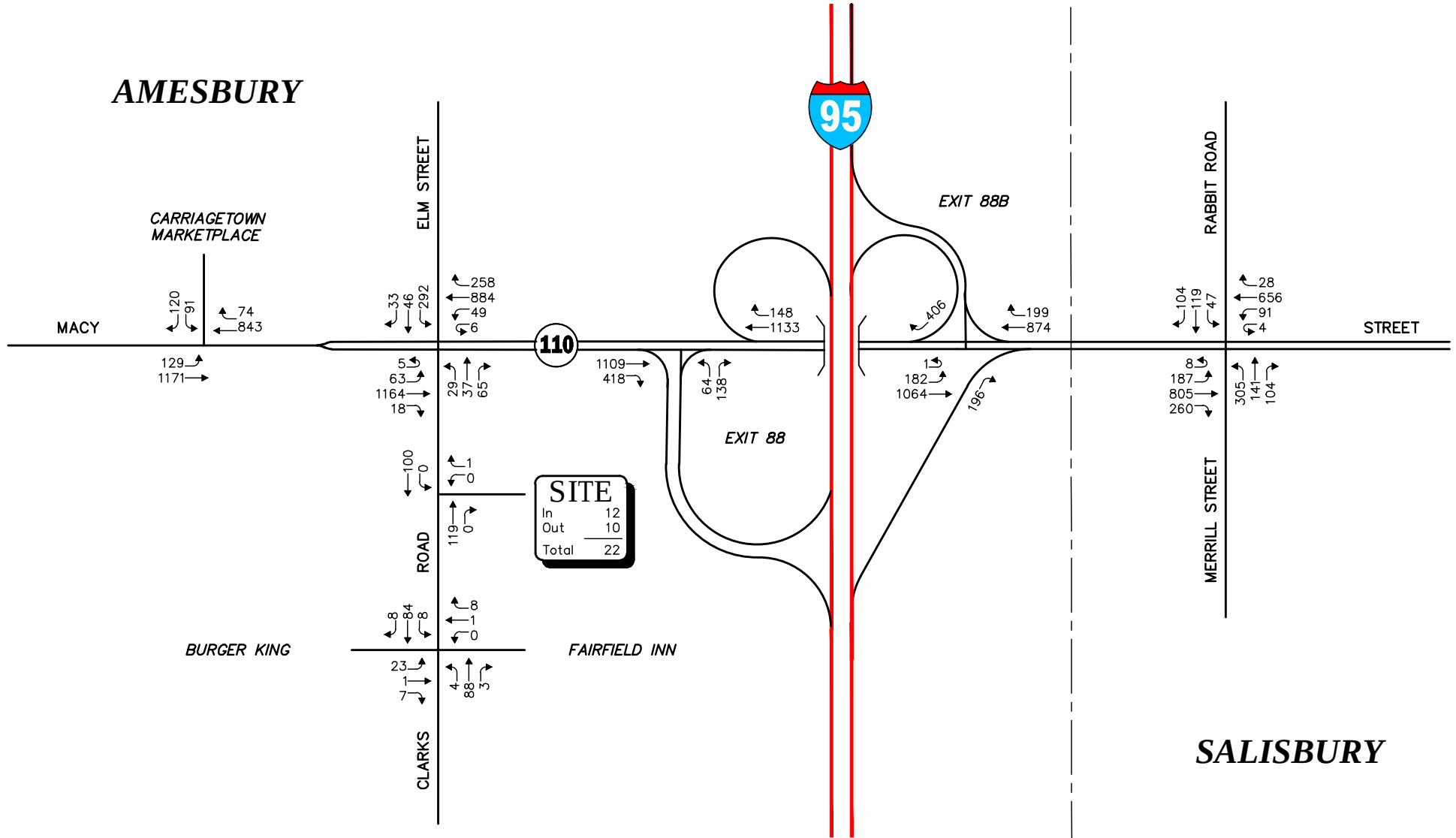
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not to Scale



Figure 4

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



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

Not to Scale



Figure 5

**2023 Existing
Saturday Midday
Peak-Hour Traffic Volumes**

As can be seen in Table 2, Clark's Road in the vicinity of the Project site was found to accommodate approximately 2,290 vehicles on an average weekday and 1,860 vehicles on a Saturday (two-way, 24-hour volumes), with approximately 183 vehicles per hour (vph) during the weekday morning peak-hour, 272 vph during the weekday evening peak-hour and 220 vph during the Saturday midday peak-hour.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in July 2023. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study area intersections. As detailed on Figure 2, Sidewalks are provided along one or both sides of Route 110 and Elm Street, with marked crosswalks provided for crossing Elm Street and the Route 110 east leg of the Route 110/Elm Street/Clarks Road intersection that are incorporated into the traffic signal system at the intersection (i.e., pedestrian traffic signal equipment and phasing are provided). The study area roadways generally provide sufficient width to accommodate bicycle travel in a shared traveled-way condition (i.e., bicyclists and motor vehicles sharing the traveled-way).⁶ Bicycle detection is provided as a part of the traffic signal system at the Route 110/Elm Street/Clarks Road intersection.

To the south of the Project site, the Salisbury Point Ghost Trail multipurpose path traverses an alignment parallel to and north of Route 110 between Elm Street and Lions Way in Salisbury where it connects to the Old Eastern Marsh Trail at Lion's Park.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area and along Route 110 by the Merrimack Valley Regional Transit Authority (MVRTA). The MVRTA operates fixed route bus service along Route 110, Main Street and Elm Street by way of Route 17, *Haverhill-Salisbury Beach via Amesbury*, with the closes regular stop located within the Carriagetown Marketplace (approximately 0.4 miles or an 8 minute walking distance to the west of the Project site). In addition to regular stops, MVTA buses also operate in a "flag stop" mode, where a rider can request a stop anywhere along the regular service route by signaling to the driver. The MVRTA Ring & Ride program also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time due to a physical, cognitive, or mental disability in compliance with the Americans with Disabilities Act (ADA).

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

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on Clark's Road in the vicinity of the Project site in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

⁶A 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

	Clark's Road	
	Northbound	Southbound
Mean Travel Speed (mph)	24	25
85 th Percentile Speed (mph)	27	29
Posted Speed Limit (mph)	25	25

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Clark's Road in the vicinity of the Project site was found to be 24 mph in the northbound direction and 25 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 27 mph in the northbound direction and 29 mph southbound, which is 2 mph below and 4 mph above the posted speed limit in the vicinity of the Project site (25 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.

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2016 through 2020, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, roadway and weather conditions, and day of occurrence, and presented in Table 4.

As can be seen in Table 4, with the exception of the Route 110/Merrill Street/Rabbit Road intersection, the study area intersections experienced an average of 7.2 or fewer reported motor vehicle crashes per year over the five-year review period and were found to have motor vehicle crash rates *below* both the MassDOT statewide and District averages for the MassDOT Highway Division District in which the intersections are located (District 4). The majority of the crashes were reported to have occurred on a weekday; under clear weather conditions; during daylight; and were classified as rear-end type collisions that resulted in property damage only.

The Route 110/Merrill Street/Rabbit Road intersection was found to have experienced a total of 47 reported motor vehicle crashes over the five-year review period, or an average of 9.4 crashes per year, the majority of which occurred on a weekday; under clear weather conditions; during daylight; and were reported as rear-end type collisions that resulted in property damage only. The intersection was found to have a motor vehicle crash rate that was *below* the MassDOT statewide crash rate and *above* the MassDOT District 4 average crash rate for a signalized intersection.

A review of the MassDOT statewide High Crash Location List indicated that there are no (0) locations within the study area that have been designated by MassDOT as being high crash locations and Highway Safety Improvement Program (HSIP) eligible. In addition, no (0) fatal motor vehicle crashes were reported to have occurred at the study area intersections over the five-year review period.

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

Table 4
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Rte.110/ Carriagetown Marketplace Driveway	Rte. 110/ Elm St/ Clarks Rd.	Rte. 110/ I-95 SB Ramps	Rte. 110/ I-95 NB Ramps	Rte. 110/ Merrill St./ Rabbit Rd.	Clarks Rd./ North Project Site Driveway	Clarks Rd./ South Project Site Driveway/ Burger King Driveway
Traffic Control Type: ^b	TS	TS	U	U	TS	U	U
<i>Year:</i>							
2016	0	7	0	0	10	0	0
2017	0	10	0	4	10	0	0
2018	1	11	1	1	6	1	0
2019	0	8	2	2	8	0	0
2020	2	0	1	0	13	0	0
Total	3	36	4	7	47	1	0
Average	0.6	7.2	0.8	1.4	9.4	0.2	0.0
Rate ^c	0.05	0.50	0.05	0.10	0.77	0.18	0.00
MassDOT Crash Rate: ^d	0.78/0.73	0.78/0.73	0.57/0.57	0.57/0.57	0.78/0.73	0.57/0.57	0.57/0.57
Significant? ^e	No	No	No	No	Yes	No	No
<i>Type:</i>							
Angle	0	6	1	3	9	1	0
Rear-End	2	13	3	0	26	0	0
Head-On	0	1	0	1	4	0	0
Sideswipe	0	15	0	2	8	0	0
Fixed Object	0	0	0	0	0	0	0
Pedestrian/Bicycle	0	0	0	0	0	0	0
Unknown/Other	1	1	0	1	0	0	0
Total	3	36	4	7	47	1	0
<i>Conditions:</i>							
Clear	2	30	4	7	29	0	0
Cloudy	0	1	0	0	10	1	0
Rain	1	4	0	0	5	0	0
Snow/Ice	0	1	0	0	3	0	0
Total	3	36	4	7	47	1	0
<i>Lighting:</i>							
Daylight	0	27	4	2	35	1	0
Dawn/Dusk	1	1	0	0	2	0	0
Dark (Road Lit)	1	8	0	5	9	0	0
Dark (Road Unlit)	0	0	0	0	1	0	0
Dark (Unknown Lighting)	1	0	0	0	0	0	0
Total	3	36	4	7	47	1	0
<i>Day of Week:</i>							
Monday through Friday	3	31	4	5	32	1	0
Saturday	0	3	0	1	7	0	0
Sunday	0	2	0	1	8	0	0
Total	3	36	4	7	47	1	0
<i>Severity:</i>							
Property Damage Only	3	35	2	6	42	1	0
Personal Injury	0	1	2	1	5	0	0
Fatality	0	0	0	0	0	0	0
Unknown	0	0	0	0	0	0	0
Total	3	36	4	7	47	1	0

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

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

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

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

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2030, 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 2030 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2030 No-Build traffic volumes reflect 2030 Build traffic-volume conditions with the Project.

FUTURE TRAFFIC GROWTH

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

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

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

Specific Development by Others

The City of Amesbury Planning Board and the Town of Salisbury Planning and Development were contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on this discussion, the following projects were identified for review in conjunction with this assessment:

- ***The Marina at Amesbury Point, 14 Merrimac Street, Amesbury Massachusetts.*** This project entails the construction of 2,265± sf marina and associated 4,663± sf restaurant to be located at 14 Merrimac Street, west of the Project site.

- ***Barewolf Brewery, 12 Oakland Street, Amesbury, Massachusetts.*** This project entails the construction of a 8,165± sf brewery and restaurant to be located at 12 Oakland Street, northwest of the Project site.
- ***The Hedgehog General Store Market, Cafe & Butchery, 6 Morrill Street, Amesbury Massachusetts.*** This project entails the construction of a 1,120± sf retail bakery and café to be located at 6 Morrill Street, northwest of the Project site.

Traffic volumes associated with the aforementioned specific development projects by others within the study area are expected to be minor and would be reflected in the general background traffic growth rate (discussion follows). In addition to the above projects, there is a proposal for a residential development to be located off Elm Street in the “Golden Triangle” I-95 and I-495 in Amesbury that would include the construction of 387± residential units in several buildings. This project is in the preliminary planning stages.

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

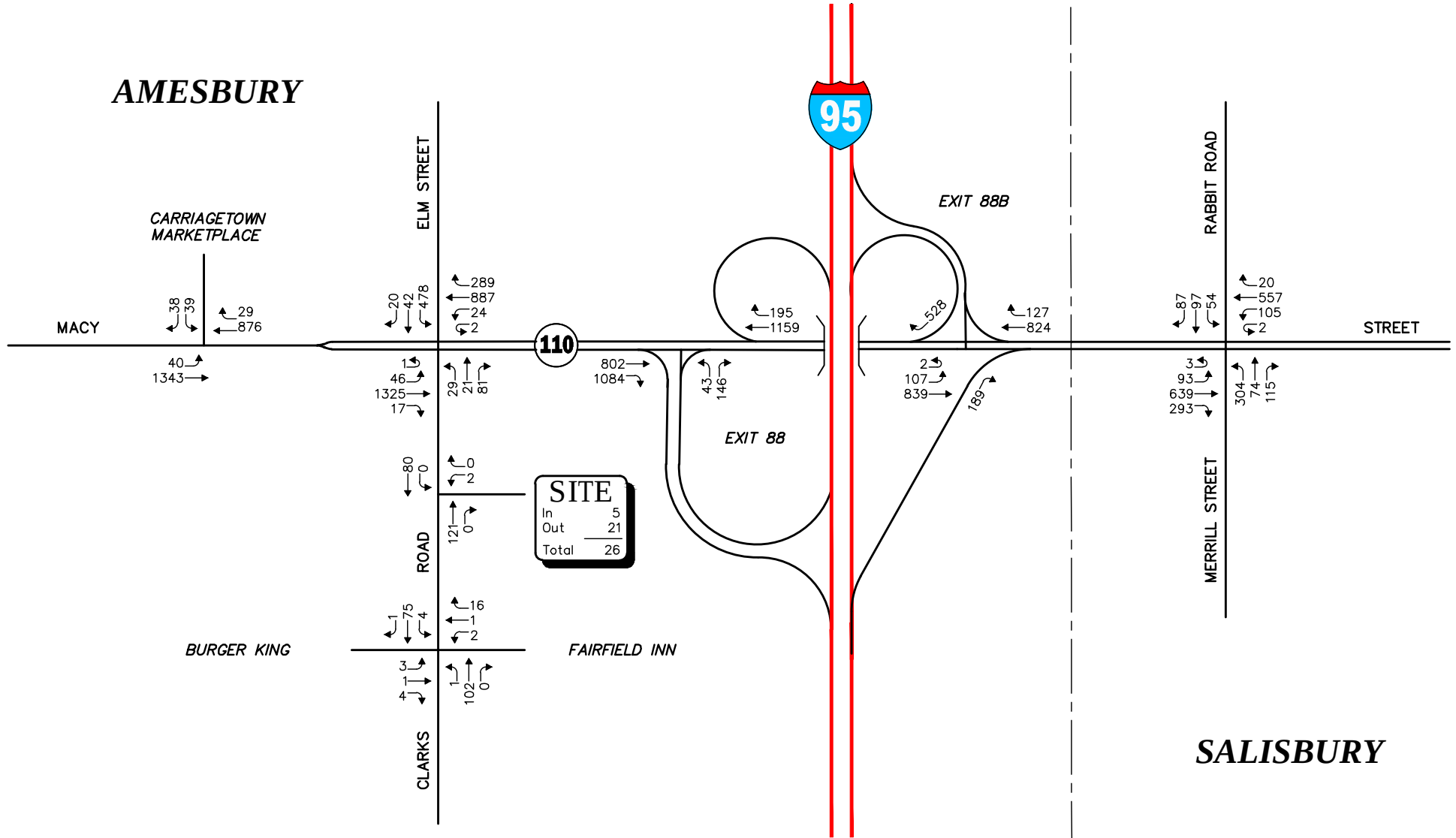
Traffic-volume data compiled by MassDOT from permanent count stations located in Amesbury and surrounding communities were reviewed in order to determine general traffic growth trends in the area. This data indicates that traffic volumes have fluctuated over the 10-year period between 2009 and 2019, with an average traffic growth rate of 1.37 percent per year. In order to provide a prudent planning condition for the Project, a higher 1.5 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

Roadway Improvement Projects

The City of Amesbury and MassDOT were contacted in order to determine if there were any planned future roadway improvement projects expected to be complete by 2030 within the study area. Based on these discussions, no 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 2030 No-Build condition peak-hour traffic-volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2023 Existing peak-hour traffic volumes. The resulting 2030 No-Build weekday morning, weekday evening and Saturday midday peak-hour traffic volumes are shown on Figures 6, 7 and 8, respectively.



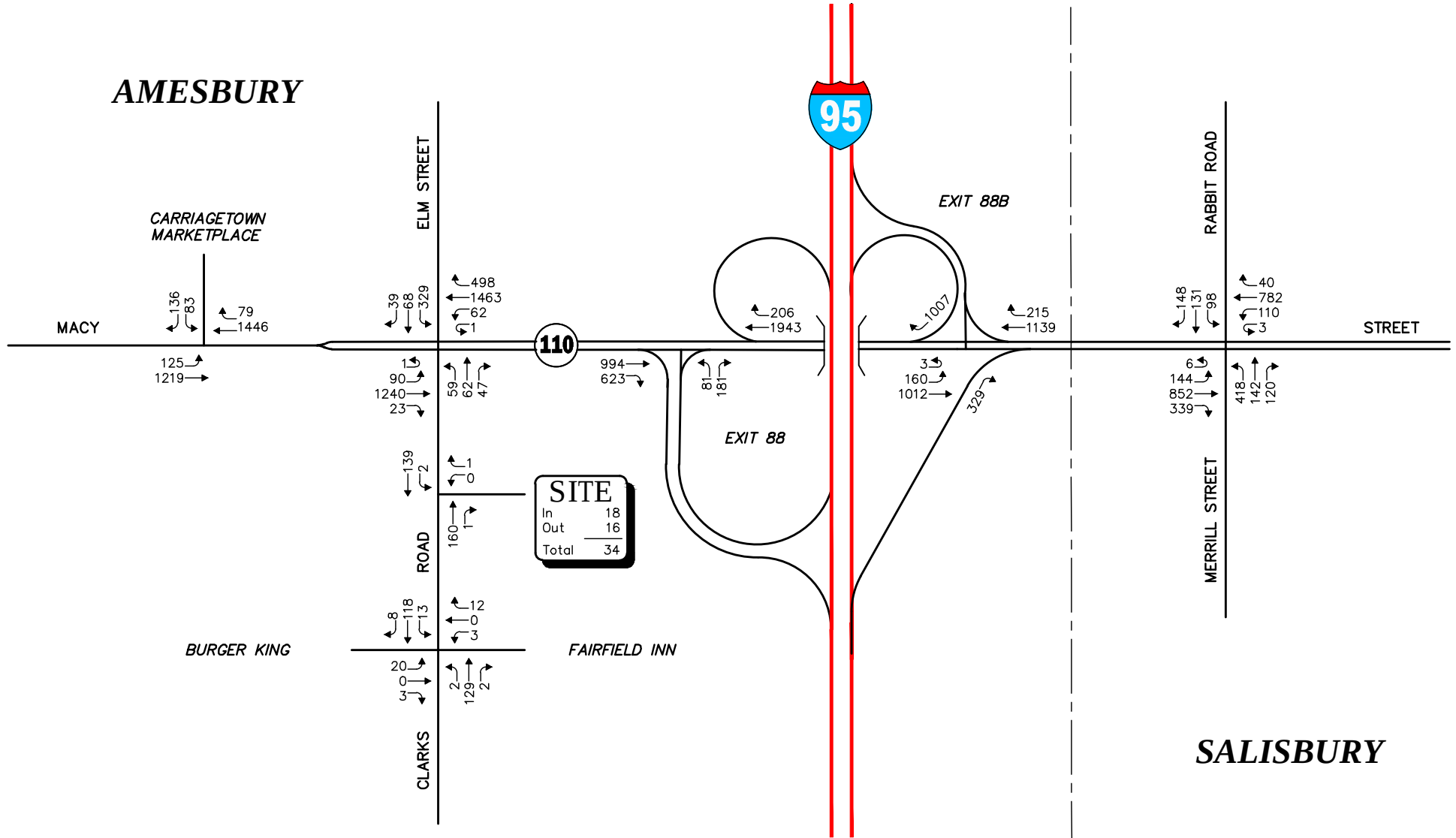
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not to Scale



Figure 6

2030 No-Build
Weekday Morning
Peak-Hour Traffic Volumes



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

Not to Scale



Figure 7

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

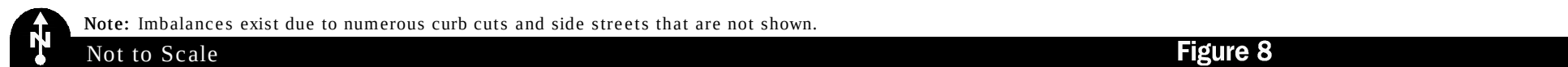


Figure 8

**2030 No-Build
Saturday Midday
Peak-Hour Traffic Volumes**

PROJECT-GENERATED TRAFFIC

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

As proposed, the Project will entail the construction of a 2,460± sf Starbucks coffee shop that will include 34 seats and a drive-through window facility. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁷ for a similar land use as that proposed Project were used. ITE Land Use Code (LUC) 937, *Coffee/Donut Shop with Drive-Through Window*, was used to establish the base trip-generation calculations for the Project.

Pass-By Trips

Not all of the trips expected to be generated by the Project will be new trips on the roadway network. A significant portion of these trips will consist of pass-by trips or vehicles already traveling along Route 110 for other purposes that will patronize the Project in conjunction with their trip and then continue to their original destination. These trips are not new trips on the roadway network as a result of the Project. Statistics published by the ITE⁸ indicate that an average of between 31 percent and 90 percent of the trips associated with a coffee shop with drive-through window may consist of pass-by trips. MassDOT guidelines limit pass-by trips to the lesser of: i) 15 percent of the adjacent roadway traffic volume; or ii) the ITE pass-by trip rate for the specific use. For the purpose of this assessment, the pass-by trip rate was confined (limited) to no more than 55 percent in order to provide conservative (high) traffic volumes for this component of the Project.

Table 5 summarizes the anticipated trip characteristics of the Project using the aforementioned methodology, with the detailed trip-generation calculations provided in the Appendix.

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

⁸Institute of Transportation Engineers, op. cit. 1.

Table 5
TRIP-GENERATION SUMMARY

Time Period/Direction	Vehicle Trips		
	(A) Proposed Starbucks Coffee Shop (2,460 sf) ^a	(B) Pass-By Trips (55%) ^b	(C=A-B) New Trips
<i>Average Weekday Daily:</i>			
Entering	657	361	296
<u>Exiting</u>	<u>657</u>	<u>361</u>	<u>296</u>
Total	1,314	722	592
<i>Weekday Morning Peak-Hour:</i>			
Entering	108	58	50
<u>Exiting</u>	<u>103</u>	<u>58</u>	<u>45</u>
Total	211	116	95
<i>Weekday Evening Peak-Hour:</i>			
Entering	48	26	22
<u>Exiting</u>	<u>48</u>	<u>26</u>	<u>22</u>
Total	96	52	44
<i>Saturday:</i>			
Entering	672	370	302
<u>Exiting</u>	<u>672</u>	<u>370</u>	<u>302</u>
Total	1,344	740	604
<i>Saturday Midday Peak-Hour:</i>			
Entering	108	59	49
<u>Exiting</u>	<u>108</u>	<u>59</u>	<u>49</u>
Total	216	118	98

^aBased on ITE LUC 937, *Coffee/Donut Shop with Drive-Through Window*.

^bPass-by trip rates were obtained from ITE LUC 934, *Fast-Food Restaurant with Drive-Through Window*. An 55 percent pass-by trip rate was applied to the base trip calculations.

^cBased on the ratio of the average weekday trip rate to the weekday morning peak-hour trip rate applied to the Saturday midday peak-hour trip rate for ITE LUC 937, *Coffee/Donut Shop with Drive-Through Window*.

Project-Generated Traffic-Volume Summary

As can be seen in Table 5 and after accounting for pass-by trips, the Project is expected to generate approximately 592 new vehicle trips on an average weekday and 604 new vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 95 new vehicle trips expected during the weekday morning peak-hour (50 vehicles entering and 45 exiting), 44 new vehicle trips (22 vehicles entering and 22 exiting) expected during the weekday evening peak-hour and 98 new vehicle trips (49 vehicles entering and 49 exiting) expected during the Saturday midday peak-hour.

For context, Table 6 compares the traffic volumes associated with the Project to those of the former use that occupied the Project site (Friendly's restaurant). Note that the traffic volumes for both uses include pass-by trips and represent the total volume of traffic as measured at the Project site driveways.

Table 6
TRAFFIC VOLUME COMPARISON

Time Period/Direction	Vehicle Trips		
	(A) Proposed Coffee Shop with Drive-Through Window ^a	(B) Former Restaurant ^b	(A-B) Difference
<i>Average Weekday Daily:</i>	1,314	390	+924
<i>Weekday Morning Peak-Hour:</i>	211	35	+176
<i>Weekday Evening Peak-Hour:</i>	96	33	+63
<i>Saturday:</i>	1,344	446	+898
<i>Saturday Midday Peak-Hour:</i>	216	41	+175

^aSee Table 5, Column A.

^bBased on ITE LUC 932, *High-Turnover (Sit-Down) Restaurant*; 3,640 sf.

Traffic Volume Comparison

As can be seen in Table 6, in comparison to the former use, the Project is expected to generate approximately 924 additional vehicle trips on an average weekday and 898 additional vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 176 additional vehicle trips expected during the weekday morning peak-hour, 63 additional vehicle trips expected during the weekday evening peak-hour and 175 additional vehicle trips expected during the Saturday midday peak-hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was determined based on a review of the existing traffic patterns within the study area during the commuter peak periods. This methodology is consistent with the commercial nature of the corridor and is also reflective of the fact that a significant portion of the trips generated by the Project will be derived from the adjacent traffic stream (i.e., pass-by trips). The general trip distribution for the Project is graphically depicted on Figure 9. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figures 10, 11 and 12.

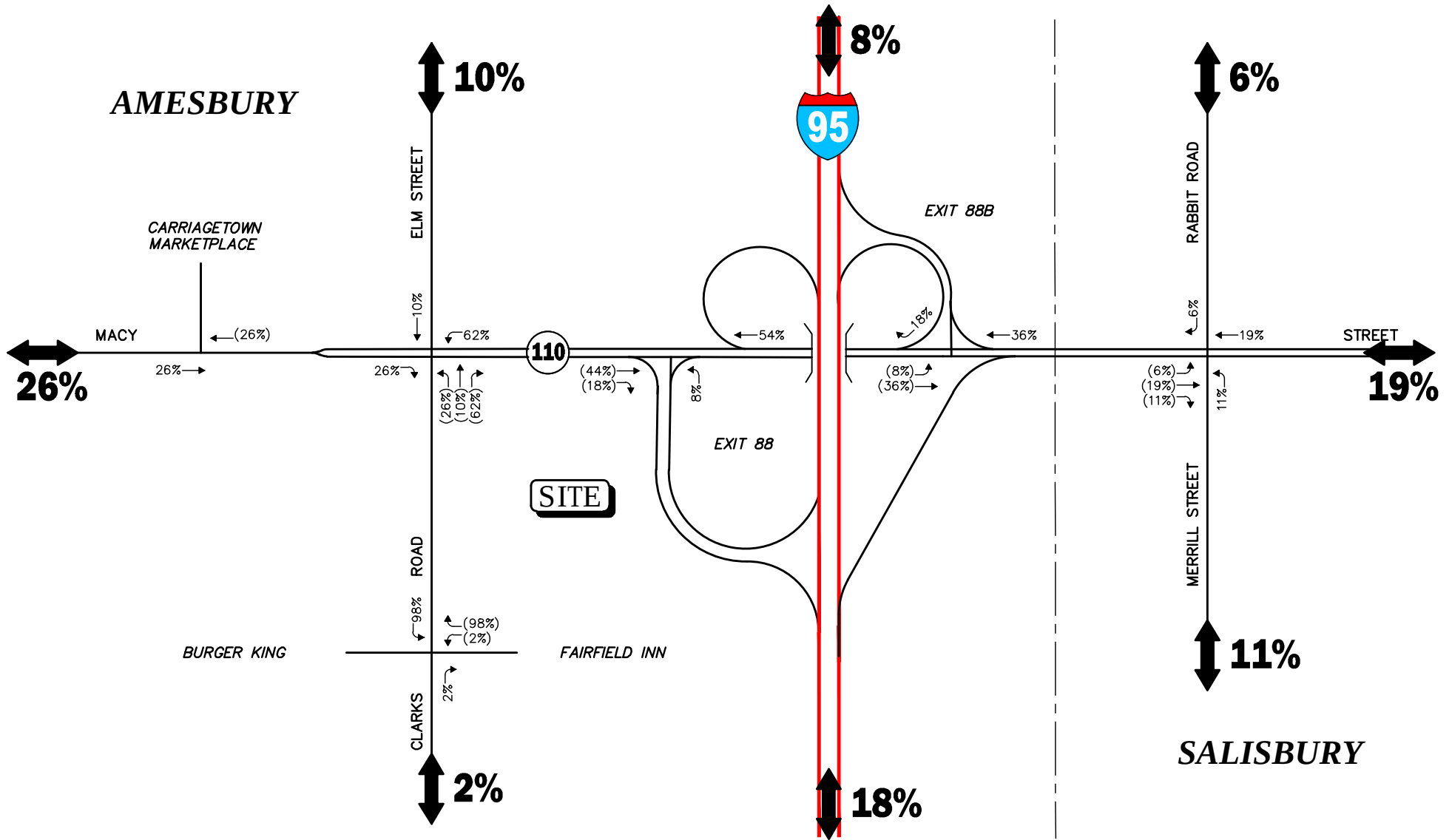


Figure 9

Trip Distribution Map



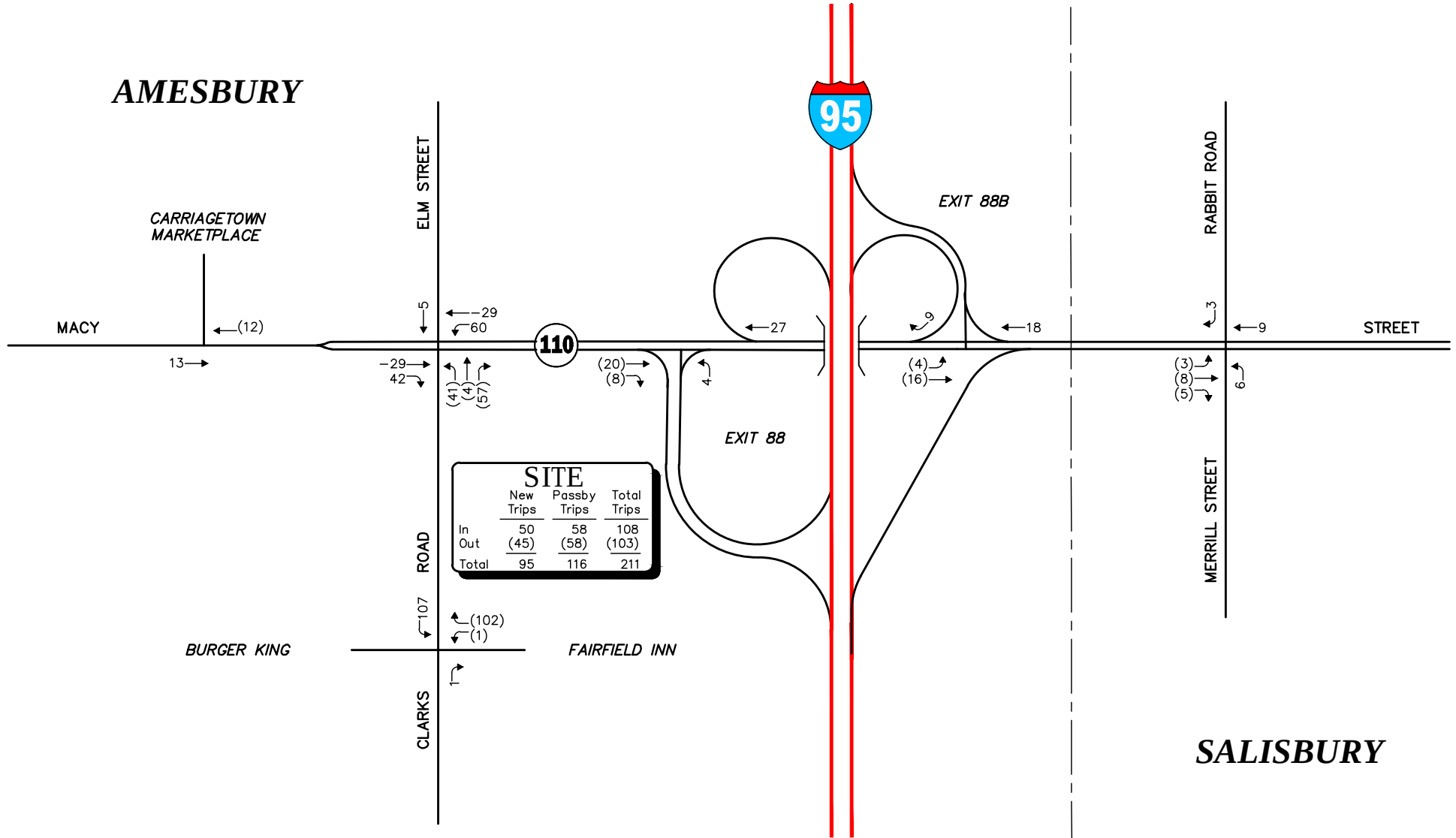


Figure 10

Project-Generated
Weekday Morning
Peak-Hour Traffic Volumes



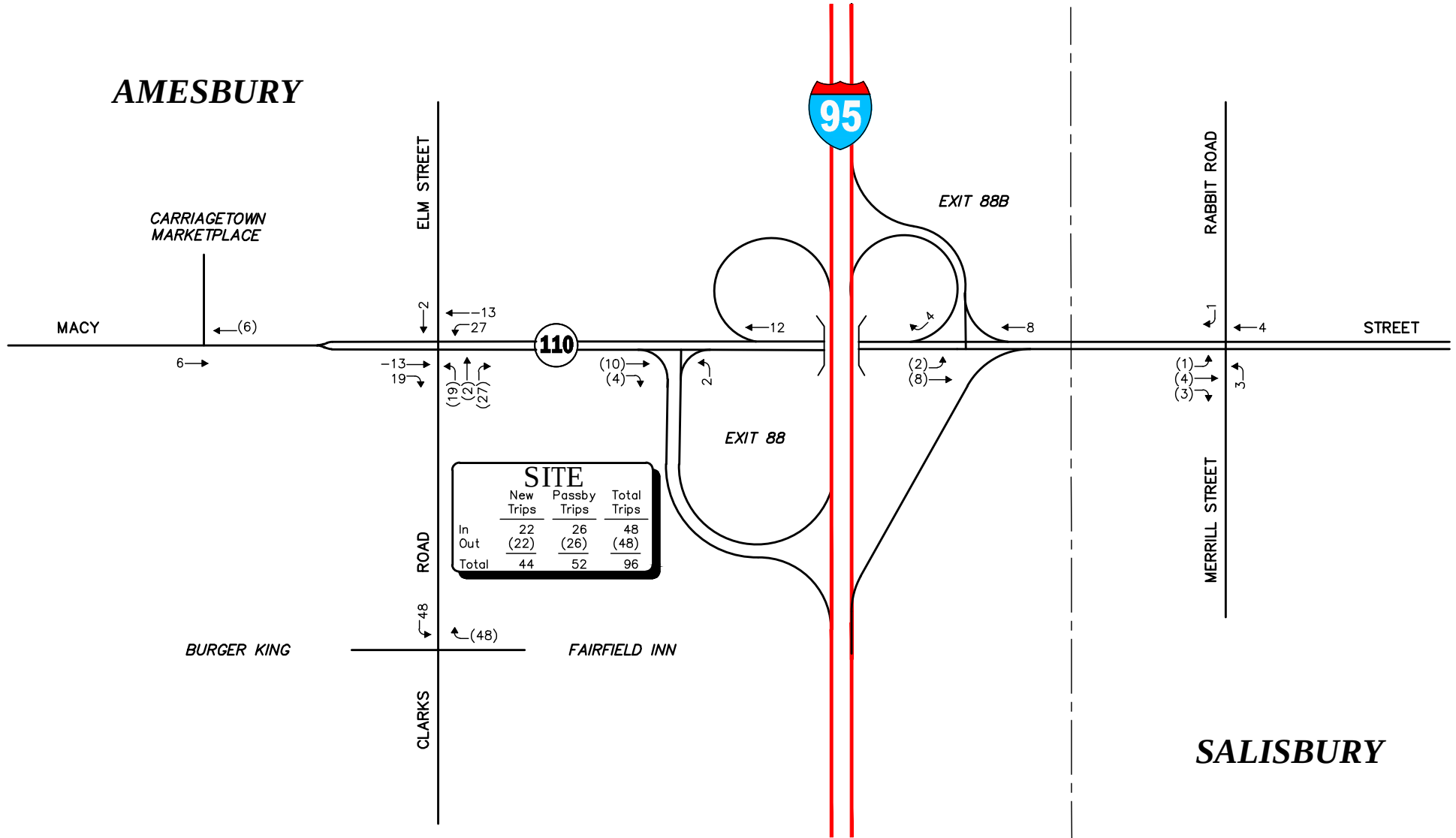


Figure 11

Project-Generated
Weekday Evening
Peak-Hour Traffic Volumes

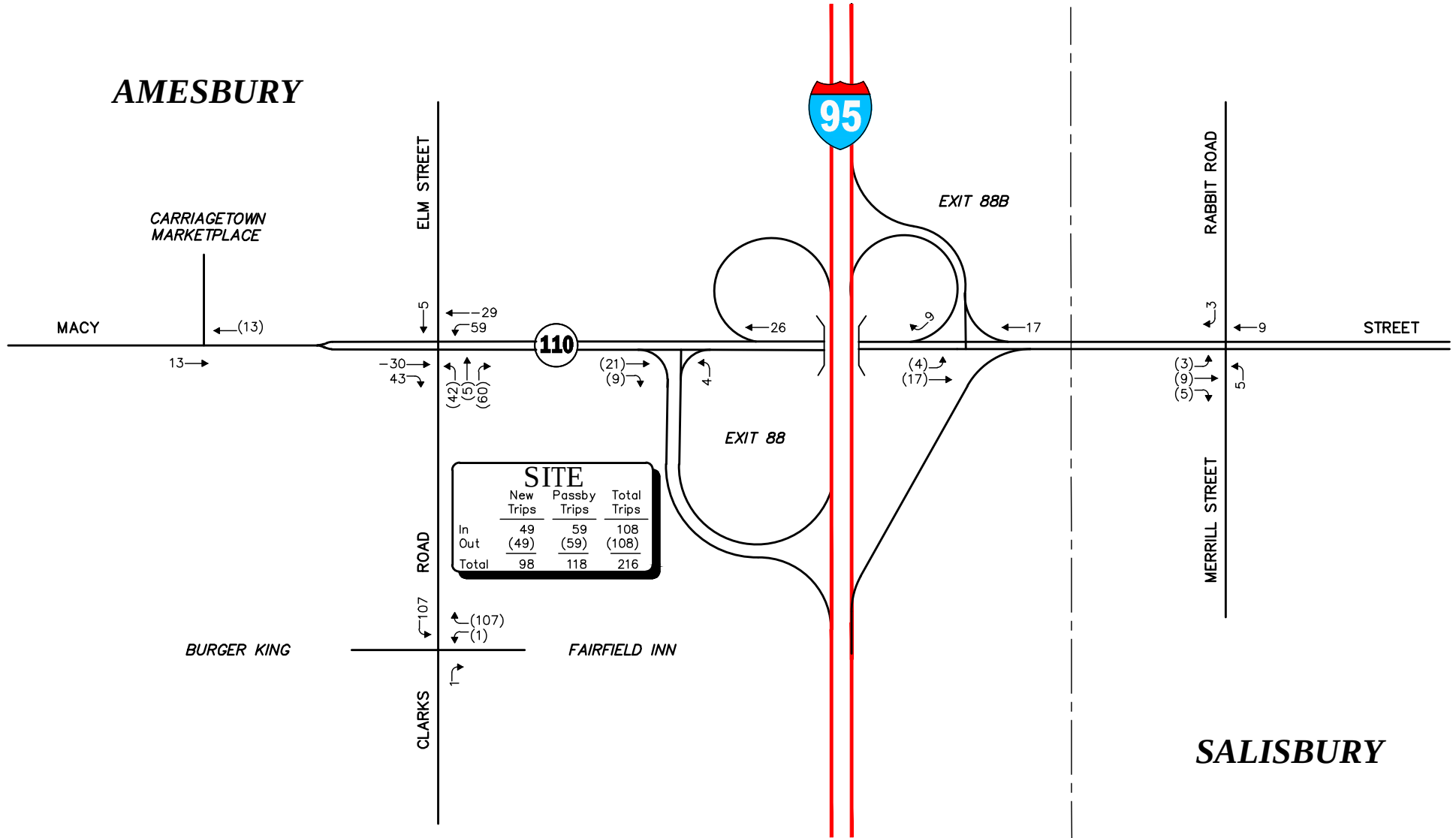


Figure 12

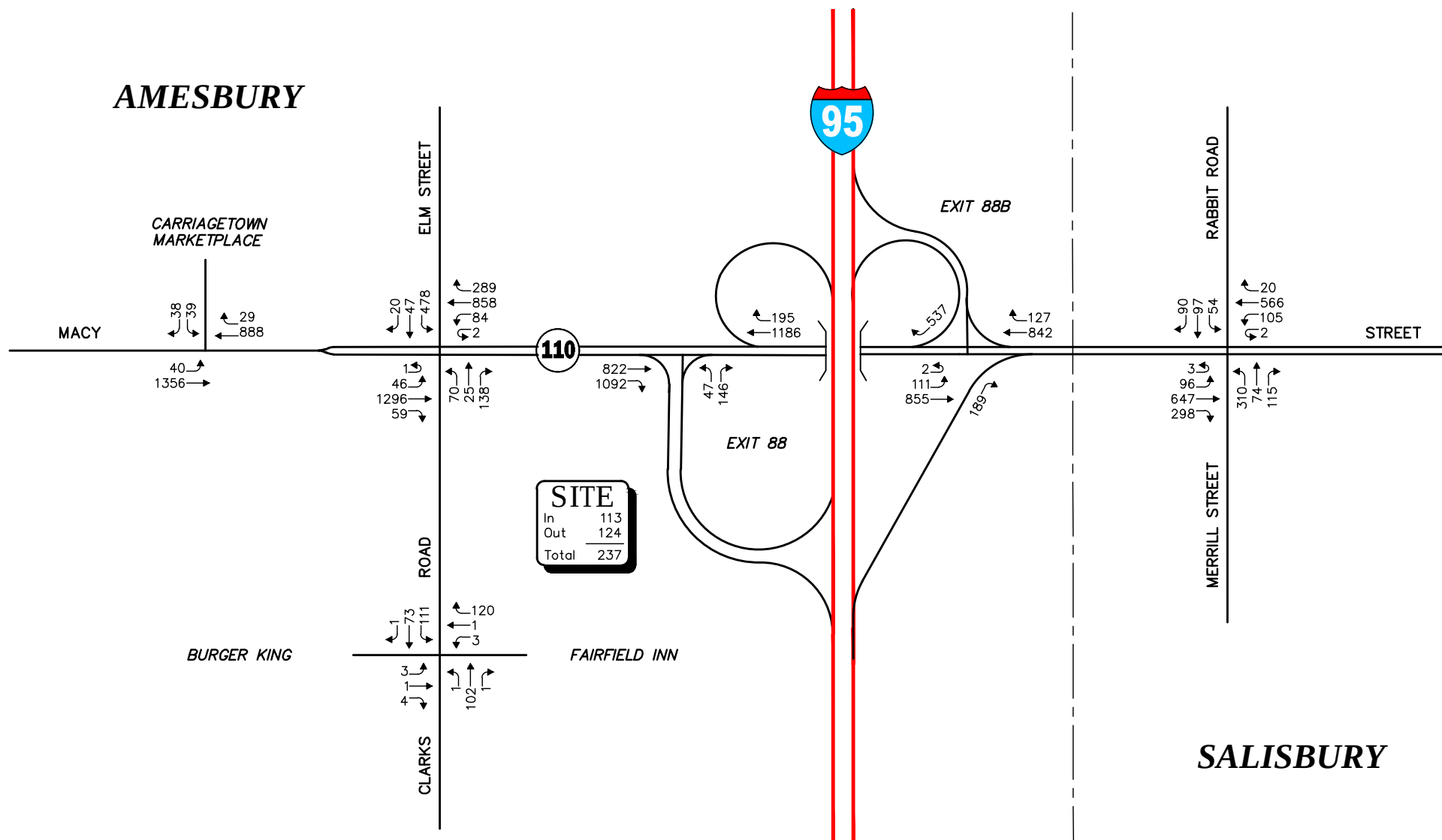
Project-Generated
Saturday Middy
Peak-Hour Traffic Volumes

FUTURE TRAFFIC VOLUMES - BUILD CONDITION

The 2030 Build condition traffic volumes consist of the 2030 No-Build traffic volumes with the additional traffic expected to be generated by the Project added to them. The 2030 Build weekday morning, weekday evening and Saturday midday peak-hour traffic volumes are graphically depicted on Figures 13, 14 and 15, 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 7. These changes are a result of the construction of the Project.

As shown in Table 7, Project-related traffic-volume changes outside of the study area relative to 2030 No-Build conditions are anticipated to range from increases of between 0.0 and 1.5 percent during the peak periods, with changes to vehicular volumes shown to range from increases of between 0 and 26 vehicles. ***When distributed over the peak-hour, the predicted traffic-volume changes would not result in a significant impact (increase) on motorist delays or vehicle queuing outside of the immediate study area that is the subject of this assessment.***



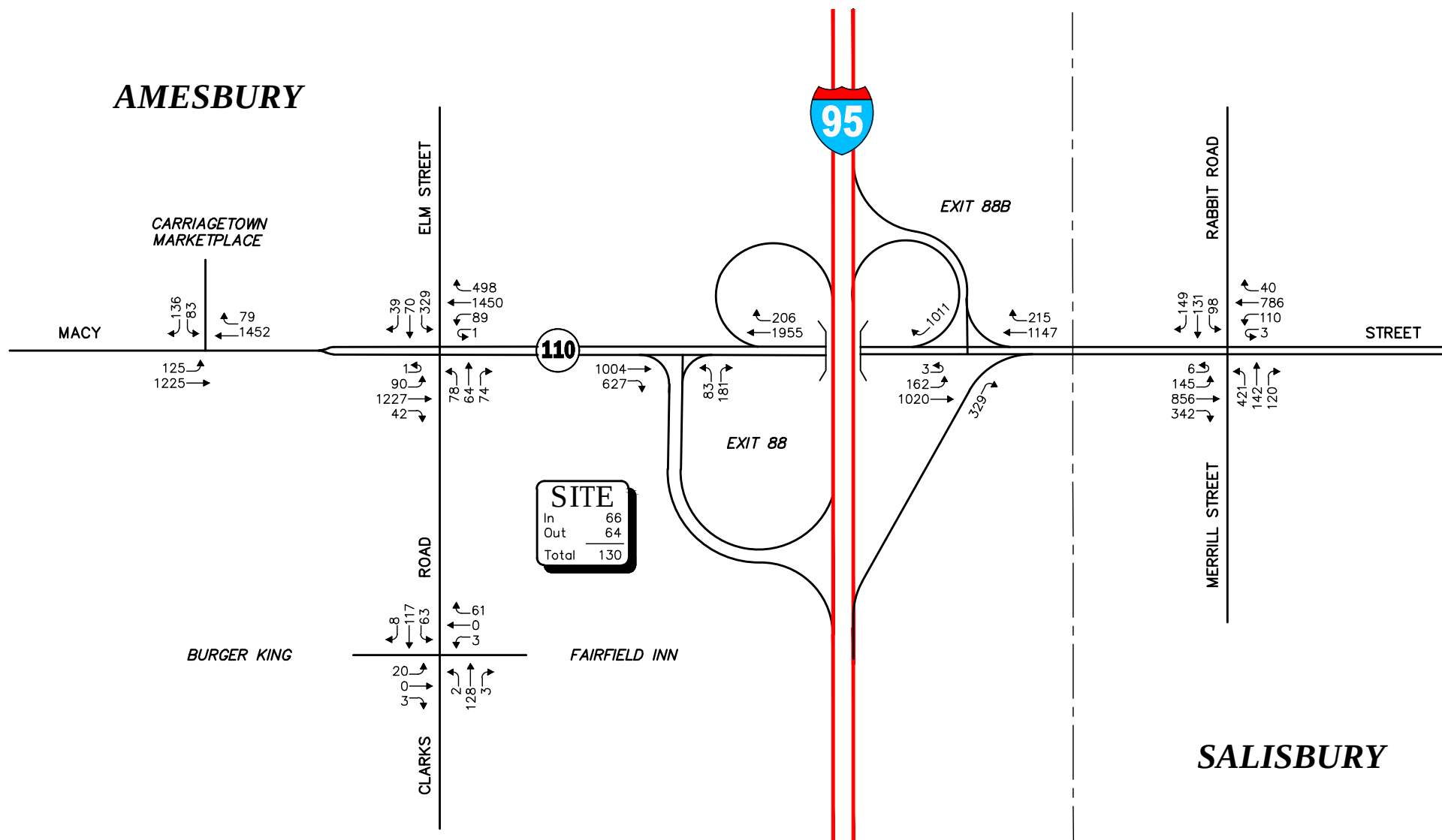
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not to Scale



Figure 13

2030 Build Weekday Morning Peak-Hour Traffic Volumes



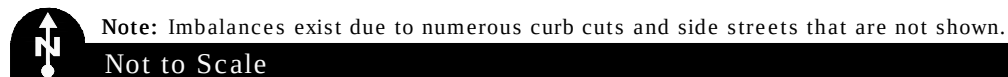
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not to Scale



Figure 14

2030 Build Weekday Evening Peak-Hour Traffic Volumes



2030 Build Saturday Midday Peak-Hour Traffic Volumes

Table 7
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak-Hour	2023 Existing	2030 No-Build	2030 Build	Traffic- Volume Increase Over No-Build	Percent Increase Over No-Build
<i>Route 110, west of the Carriagetown</i>					
<i>Marketplace driveway:</i>					
Weekday Morning	2,077	2,297	2,322	25	1.1
Weekday Evening	2,662	2,926	2,938	12	0.4
Saturday MIDDAY	2,263	2,485	2,511	26	1.0
<i>Route 110, east of Merrill Street:</i>					
Weekday Morning	1,346	1,494	1,511	17	1.1
Weekday Evening	1,809	2,008	2,016	8	0.4
Saturday MIDDAY	1,739	1,928	1,946	18	0.9
<i>Elm Street, north of Route 110:</i>					
Weekday Morning	807	896	905	9	1.0
Weekday Evening	978	1,086	1,090	4	0.4
Saturday MIDDAY	729	809	819	10	1.2
<i>Clarks Road, south of Route 110:</i>					
Weekday Morning	164	184	184	0	0.0
Weekday Evening	227	257	257	0	0.0
Saturday MIDDAY	186	210	212	2	1.0
<i>Interstate 95 Southbound Ramps:</i>					
Weekday Morning	1,324	1,468	1,480	12	0.8
Weekday Evening	983	1,091	1,097	6	0.5
Saturday MIDDAY	768	852	865	13	1.5
<i>Interstate 95 Northbound Ramps:</i>					
Weekday Morning	856	951	964	13	1.4
Weekday Evening	1,541	1,711	1,717	6	0.4
Saturday MIDDAY	983	1,092	1,105	13	1.2
<i>Merrill Street, south of Route 110:</i>					
Weekday Morning	891	988	999	11	1.1
Weekday Evening	1,135	1,260	1,266	6	0.5
Saturday MIDDAY	1,020	1,132	1,142	10	0.9
<i>Rabbit Road, north of Route 110:</i>					
Weekday Morning	383	425	431	6	1.4
Weekday Evening	633	703	705	2	0.3
Saturday MIDDAY	626	694	700	6	0.9

TRAFFIC OPERATIONS ANALYSIS

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

METHODOLOGY

Levels of Service

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

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

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

⁹The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual, 6th Edition*; 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 oversaturation. 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 2000 *Highway Capacity Manual*¹⁰ and implemented as a part of the Synchro® 11 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 8 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.

¹⁰*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000.

Table 8
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; 2000; page 16-2.

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, 6th Edition*.¹¹ Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual, 6th Edition*. Table 9 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

¹¹*Highway Capacity Manual, 6th Edition*; Transportation Research Board; Washington, DC; 2016.

Table 9
LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS^a

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

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

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. 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 three minutes out of sixty minutes during the peak one hour of the day (during the remaining fifty-seven 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 2023 Existing, 2030 No-Build, and 2030 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 10 and 11, 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. Project-related impacts at the study area intersections were identified as follows:

Signalized Intersections

Project-related impacts at the signalized study area intersections are shown on Table 10 and are described as follows:

Route 110 at the Carriagetown Marketplace Driveway

The addition of Project-related traffic was shown to result in an increase in overall average motorist delay of 0.5 seconds during the Saturday midday peak-hour that resulted in a change in overall level of service from LOS A to LOS B. Vehicle queues at the intersection were shown to increase by up to one (1) vehicle with the addition of Project-related traffic.

Route 110 at Elm Street at Clark's Road

The addition of Project-related traffic was shown to result in an increase in overall average motorist delay of 22.8 seconds during the weekday morning peak-hour that resulted in a change in overall level of service from LOS D to LOS E and an increase of 14.3 seconds during the weekday evening peak-hour that caused a change in overall level of service from LOS E to LOS F. Vehicle queues at the intersection were shown to increase by up to two (2) vehicles with the addition of Project-related traffic.

Focusing on individual movements, the addition of Project-related traffic was shown to result in an increase in average motorist delay that caused the following level of service changes: *weekday morning peak-hour* - the Route 110 eastbound through/right-turn movement was shown to change from LOS E to LOS F (57.4 second increase in average motorist delay); *weekday evening peak-hour* - the Route 110 eastbound through/right-turn movement was shown to change from LOS E to LOS F (25.2 second increase in average motorist delay); *Saturday midday peak-hour* - the Route 110 eastbound through/right-turn movement was shown to change from LOS D to LOS F (45.4 second increase in average motorist delay). Independent of the Project, one or more movements at the intersection are predicted to operate at or over capacity (i.e. LOS "E" or "F") during the weekday morning and evening peak hours under No-Build conditions.

Route 110 at Elm Street and Rabbit Road

No change in level of service was shown to occur for any movement as a result of the addition of Project-related traffic, with Project-related impacts generally defined as an increase in overall average motorist delay of up to 3.8 seconds that resulted in a corresponding increase in vehicle queuing of up to one (1) vehicle. Independent of the Project, several movements at the intersection are currently operating at or over capacity during the peak hours.

Unsignalized Intersections

Project-related impacts at the unsignalized study area intersections are shown on Table 11 and are described as follows:

Route 110 at the I-95 Southbound Ramps

No change in level of service was shown to occur for any movement as a result of the addition of Project-related traffic, with Project-related impacts generally defined as an increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of up to one (1) vehicle. Independent of the Project, left-turn movements from the I-95 off-ramp are currently operating at or over capacity during the peak hours.

Route 110 at the I-95 Northbound Ramps

No change in level of service was shown to occur for any movement as a result of the addition of Project-related traffic, with Project-related impacts generally defined as an increase in average motorist delay that resulted in a corresponding increase in vehicle queuing of up to one (1) vehicle. Independent of the Project, right-turn movements from the I-95 off-ramp are currently operating at or over capacity during the peak hours.

Clark's Road at the North Project Site Driveway

This driveway will be closed in conjunction with the Project.

Clark's Road at the Burger King Driveway and the South Project Site Driveway

All movements exiting the Project site driveway are predicted to operate at LOS A during the peak-hours with residual vehicle queues of up to one (1) vehicle, which can be contained within the Project site without impeding access or circulation within the Project site or the movement of vehicles, pedestrians or bicyclists along Clark's Road. The addition of Project-related traffic to the intersection was shown to result in an increase in average motorist delay for vehicles exiting the Burger King driveway of up to 6.7 seconds with no predicted increase in vehicle queuing. All movements along Clark's Road approaching the driveway were shown to operate at LOS A with vehicle queues of up to one (1) vehicle during the peak hours.

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

Signalized Intersection/ Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 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 110 at Carriagetown Driveway												
<i>Weekday Morning:</i>												
Route 110 EB LT	0.29	43.5	D	1/3	0.29	43.5	D	1/3	0.29	43.5	D	1/3
Route 110 EB TH	0.51	5.1	A	4/17	0.57	5.6	A	5/20	0.57	5.7	A	5/21
Route 110 WB TH/RT	0.39	11.6	B	1/12	0.44	12.1	B	1/13	0.44	12.1	B	1/13
Carriagetown Driveway SB LT	0.33	44.8	D	1/3	0.33	44.8	D	1/3	0.33	44.8	D	1/3
Carriagetown Driveway SB RT	0.03	32.1	C	0/1	0.03	32.1	C	0/1	0.03	32.1	C	0/1
Overall	--	9.5	A	--	--	9.8	A	--	--	9.8	A	--
<i>Weekday Evening:</i>												
Route 110 EB LT	0.58	43.3	D	4/6	0.58	43.3	D	4/6	0.58	43.3	D	4/6
Route 110 EB TH	0.46	5.8	A	4/15	0.51	6.2	A	5/17	0.52	6.2	A	5/17
Route 110 WB TH/RT	0.73	7.2	A	1/29	0.81	7.2	A	1/29	0.81	7.7	A	2/29
Carriagetown Driveway SB LT	0.50	44.0	D	3/4	0.50	44.0	D	3/4	0.50	44.0	D	3/4
Carriagetown Driveway SB RT	0.10	26.5	C	0/2	0.10	26.5	C	0/2	0.10	26.5	C	0/2
Overall	--	10.4	B	--	--	10.4	B	--	--	10.5	B	--
<i>Saturday Midday:</i>												
Route 110 EB LT	0.55	41.1	D	4/6	0.55	41.1	D	4/6	0.55	41.1	D	4/6
Route 110 EB TH	0.51	6.7	A	5/18	0.57	7.3	A	5/21	0.57	7.3	A	6/21
Route 110 WB TH/RT	0.55	3.7	A	1/24	0.60	4.5	A	1/27	0.61	6.0	A	2/27
Carriagetown Driveway SB LT	0.48	42.7	D	3/5	0.48	42.7	D	3/5	0.48	42.7	D	3/5
Carriagetown Driveway SB RT	0.09	24.3	C	0/2	0.09	24.3	C	0/2	0.09	24.3	C	0/2
Overall	--	9.7	A	--	--	9.9	A	--	--	10.4	B	--

See notes at end of table.

Table 10 (Continued)
SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/ Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 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 110 at Elm Street and Clarks Road												
<i>Weekday Morning:</i>												
Route 110 EB UT/LT	0.15	21.8	C	1/2	0.23	23.6	C	1/2	0.23	25.7	C	1/2
Route 110 EB TH/RT	0.88	34.3	C	9/34	1.05	68.4	E	10/38	1.19	>80.0	F	16/39
Route 110 WB UT/LT	0.16	20.2	C	1/2	0.15	22.3	C	1/2	0.40	23.0	C	1/4
Route 110 WB TH	0.60	25.4	C	9/22	0.72	30.3	C	10/24	0.74	32.0	C	10/24
Route 110 WB RT	0.18	7.9	A	0/1	0.20	8.6	A	0/1	0.20	9.5	A	0/1
Clarks Road NB LT	0.23	44.0	D	1/2	0.25	44.0	D	1/2	0.49	44.8	D	2/4
Clarks Road NB TH/RT	0.24	44.1	D	1/2	0.26	44.1	D	1/3	0.30	44.1	D	1/3
Elm Street SB LT	0.62	36.7	D	6/8	0.65	36.7	D	6/8	0.65	36.7	D	6/8
Elm Street SB TH/RT	0.11	31.1	C	1/2	0.12	31.1	C	1/3	0.13	31.1	C	1/3
Overall	--	30.0	C	--	--	45.3	D	--	--	68.1	E	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	0.40	28.6	C	1/5	0.43	28.6	C	2/5	0.43	29.0	C	2/5
Route 110 EB TH/RT	0.88	36.0	D	12/34	1.03	64.0	E	15/38	1.10	>80.0	F	16/39
Route 110 WB UT/LT	0.28	20.2	C	1/3	0.31	22.4	C	1/3	0.42	23.4	C	1/4
Route 110 WB TH	0.99	53.7	D	17/38	1.17	>80.0	F	23/42	1.22	>80.0	F	24/42
Route 110 WB RT	0.38	11.3	B	2/3	0.44	12.5	B	2/4	0.44	13.4	B	2/4
Clarks Road NB LT	0.36	42.8	D	2/3	0.38	42.3	D	2/3	0.44	42.3	D	3/4
Clarks Road NB TH/RT	0.53	45.1	D	3/4	0.57	45.7	D	3/5	0.61	45.8	D	3/6
Elm Street SB LT	0.49	36.1	D	4/5	0.51	35.7	D	4/6	0.51	35.7	D	4/6
Elm Street SB TH/RT	0.24	34.1	C	2/4	0.26	34.1	C	2/4	0.27	34.1	C	2/4
Overall	--	39.3	D	--	--	71.4	E	--	--	85.7	F	--
<i>Saturday Midday:</i>												
Route 110 EB UT/LT	0.27	19.1	B	1/4	0.35	21.3	C	1/4	0.36	23.0	C	1/4
Route 110 EB TH/RT	0.87	30.8	C	12/34	1.00	47.8	D	13/39	1.12	>80.0	F	13/41
Route 110 WB UT/LT	0.27	18.7	B	1/2	0.30	21.1	C	1/3	0.49	21.6	C	2/5
Route 110 WB TH	0.63	24.5	C	9/24	0.73	28.2	C	11/28	0.74	29.5	C	11/28
Route 110 WB RT	0.21	9.7	A	1/2	0.24	10.3	B	1/3	0.24	11.0	B	1/3
Clarks Road NB LT	0.19	42.2	D	1/2	0.20	42.2	D	1/2	0.40	42.2	D	2/4
Clarks Road NB TH/RT	0.30	43.2	D	1/3	0.32	43.2	D	1/3	0.42	43.2	D	2/4
Elm Street SB LT	0.57	40.4	D	4/6	0.59	39.6	D	4/7	0.59	39.6	D	4/7
Elm Street SB TH/RT	0.22	36.7	D	1/3	0.23	36.0	D	2/4	0.26	36.2	D	2/4
Overall	--	28.2	C	--	--	36.3	D	--	--	54.7	D	--

See notes at end of table.

Table 10 (Continued)
SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/ Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 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 110 at Merrill Street and Rabbit Road												
<i>Weekday Morning:</i>												
Route 110 EB UT/LT	0.80	59.9	E	2/7	0.93	>80.0	F	2/8	0.96	>80.0	F	2/8
Route 110 EB TH	0.64	21.4	C	4/10	0.67	21.9	C	5/12	0.67	21.9	C	5/12
Route 110 EB RT	0.20	13.4	B	0/1	0.22	13.4	B	0/1	0.22	13.4	B	0/1
Route 110 WB UT/LT	0.75	50.9	D	2/8	0.88	75.5	E	2/9	0.88	75.5	E	2/9
Route 110 WB TH/RT	0.52	19.8	B	4/9	0.55	20.0	C	4/10	0.56	20.0	B	4/10
Merrill Street NB LT	0.80	30.0	C	4/16	0.95	55.2	E	4/19	0.97	60.2	E	4/19
Merrill Street NB TH/RT	0.24	15.7	B	1/5	0.28	16.8	B	2/6	0.28	16.9	B	2/6
Rabbit Road SB LT/TH	0.51	24.4	C	2/8	0.59	28.5	C	3/10	0.58	28.3	C	3/10
Rabbit Road SB TH	0.06	15.2	B	0/1	0.07	16.1	B	0/1	0.07	16.2	B	0/2
Overall	--	23.5	C	--	--	29.5	C	--	--	30.5	C	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	1.21	>80.0	F	3/10	1.35	>80.0	F	4/12	1.36	>80.0	F	4/12
Route 110 EB TH	0.79	28.5	C	6/17	0.88	33.8	C	7/20	0.88	34.1	C	7/20
Route 110 EB RT	0.21	13.0	B	0/1	0.23	13.2	B	0/1	0.23	13.2	B	0/1
Route 110 WB UT/LT	0.86	76.7	E	2/8	0.95	>80.0	F	2/8	0.95	>80.0	F	2/8
Route 110 WB TH/RT	0.71	26.1	C	6/15	0.79	28.7	C	7/18	0.80	28.8	C	7/18
Merrill Street NB LT	1.03	74.0	E	5/19	1.21	>80.0	F	7/23	1.22	>80.0	F	7/23
Merrill Street NB TH/RT	0.34	16.4	B	3/8	0.38	16.8	B	3/9	0.38	16.8	B	3/9
Rabbit Road SB LT/TH	0.89	57.6	E	4/13	1.01	>80.0	F	5/15	1.01	>80.0	F	5/15
Rabbit Road SB TH	0.10	18.7	B	0/2	0.11	18.7	B	0/2	0.11	18.7	B	0/2
Overall	--	41.6	D	--	--	57.0	E	--	--	57.8	E	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	2.46	>80.0	F	5/13	2.75	>80.0	F	5/14	2.78	>80.0	F	5/15
Route 110 EB TH	1.05	63.2	E	6/18	1.16	>80.0	F	7/20	1.17	>80.0	F	4/20
Route 110 EB RT	0.20	13.2	B	0/1	0.22	13.4	B	0/1	0.22	13.4	B	0/1
Route 110 WB UT/LT	1.20	>80.0	F	2/7	1.32	>80.0	F	2/8	1.32	>80.0	F	2/8
Route 110 WB TH/RT	0.89	30.6	C	5/14	0.99	48.0	D	5/17	1.00	51.1	D	5/17
Merrill Street NB LT	1.02	71.4	E	3/16	1.20	>80.0	F	4/18	1.22	>80.0	F	4/18
Merrill Street NB TH/RT	0.42	13.9	B	2/7	0.47	14.3	B	2/8	0.47	14.3	B	2/8
Rabbit Road SB LT/TH	0.63	23.7	C	2/8	0.71	27.4	C	2/10	0.71	27.4	C	2/10
Rabbit Road SB TH	0.08	12.6	B	0/1	0.09	12.6	B	0/1	0.09	12.6	B	0/2
Overall	--	>80.0	F	--	--	>80.0	F	--	--	>80.0	F	--

^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.

UT = U-turning movements; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Table 11
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Route 110 at the Interstate 95 SB Ramps												
<i>Weekday Morning:</i>												
Route 110 EB TH	722	0.0	A	0	802	0.0	A	0	822	0.0	A	0
Route 110 EB RT	977	0.0	A	0	1,084	0.0	A	0	1,092	0.0	A	0
Route 110 WB TH	1,044	0.0	A	0	1,159	0.0	A	0	1,186	0.0	A	0
Route 110 WB RT	176	0.0	A	0	195	0.0	A	0	195	0.0	A	0
I-95 SB Off-Ramp NB LT	39	43.5	E	2	43	>50.0	F	3	47	>50.0	F	3
I-95 SB Off-Ramp NB RT	132	0.0	A	0	146	0.0	A	0	146	0.0	A	0
<i>Weekday Evening:</i>												
Route 110 EB TH	895	0.0	A	0	994	0.0	A	0	1,004	0.0	A	0
Route 110 EB RT	561	0.0	A	0	623	0.0	A	0	627	0.0	A	0
Route 110 WB TH	1,750	0.0	A	0	1,943	0.0	A	0	1,955	0.0	A	0
Route 110 WB RT	186	0.0	A	0	206	0.0	A	0	206	0.0	A	0
I-95 SB Off-Ramp NB LT	73	>50.0	F	7	81	>50.0	F	10	83	>50.0	F	10
I-95 SB Off-Ramp NB RT	163	0.0	A	0	181	0.0	A	0	181	0.0	A	0
<i>Saturday MIDDAY:</i>												
Route 110 EB TH	1,109	0.0	A	0	1,231	0.0	A	0	1,252	0.0	A	0
Route 110 EB RT	418	0.0	A	0	464	0.0	A	0	473	0.0	A	0
Route 110 WB TH	1,133	0.0	A	0	1,258	0.0	A	0	1,284	0.0	A	0
Route 110 WB RT	148	0.0	A	0	164	0.0	A	0	164	0.0	A	0
I-95 SB Off-Ramp NB LT	64	>50.0	F	6	71	>50.0	F	8	75	>50.0	F	9
I-95 SB Off-Ramp NB RT	138	0.0	A	0	153	0.0	A	0	153	0.0	A	0

See notes at end of table.

Table 11 (Continued)
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Route 110 at the Interstate 95 NB Ramps												
<i>Weekday Morning:</i>												
Route 110 EB UT/LT	98	11.4	B	1	109	27.5	D	2	113	27.5	D	2
Route 110 EB TH	756	0.0	A	0	839	0.0	A	0	855	0.0	A	0
Route 110 WB TH	742	0.0	A	0	824	0.0	A	0	842	0.0	A	0
Route 110 WB RT	114	0.0	A	0	127	0.0	A	0	127	0.0	A	0
I-95 NB Off-Ramp NB RT	170	14.9	B	2	189	17.1	C	3	189	17.3	C	3
I-95 NB Off-Ramp SB RT	476	>50.0	F	13	528	>50.0	F	21	537	>50.0	F	22
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	147	0.0	A	0	163	0.0	A	0	165	0.0	A	0
Route 110 EB TH	911	0.0	A	0	1,012	0.0	A	0	1,020	0.0	A	0
Route 110 WB TH	1,026	0.0	A	0	1,139	0.0	A	0	1,147	0.0	A	0
Route 110 WB RT	194	0.0	A	0	215	0.0	A	0	215	0.0	A	0
I-95 NB Off-Ramp NB RT	296	27.0	D	6	329	43.1	E	9	329	44.0	E	9
I-95 NB Off-Ramp SB RT	907	>50.0	F	69	1,007	>50.0	F	87	1,011	>50.0	F	88
<i>Saturday Midday:</i>												
Route 110 EB UT/LT	183	13.1	B	2	203	21.1	C	3	207	21.1	C	3
Route 110 EB TH	1,064	0.0	A	0	1,181	0.0	A	0	1,198	0.0	A	0
Route 110 WB TH	874	0.0	A	0	970	0.0	A	0	987	0.0	A	0
Route 110 WB RT	199	0.0	A	0	221	0.0	A	0	221	0.0	A	0
I-95 NB Off-Ramp NB RT	196	22.0	C	3	218	29.5	D	5	218	30.4	D	5
I-95 NB Off-Ramp SB RT	406	42.5	E	9	451	>50.0	F	15	460	>50.0	F	16

See notes at end of table.

Table 11 (Continued)
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Clarks Road at the North Project Site Driveway												
<i>Weekday Morning:</i>												
Project Driveway WB LT/RT	2	9.0	A	0	2	9.0	A	0	Driveway to be closed under Build conditions			
Clarks Road NB TH/RT	109	0.0	A	0	121	0.0	A	0				
Clarks Road SB LT/TH	72	0.0	A	0	80	0.0	A	0				
<i>Weekday Evening:</i>												
Project Driveway WB LT/RT	1	9.1	A	0	1	9.2	A	0				
Clarks Road NB TH/RT	145	0.0	A	0	161	0.0	A	0				
Clarks Road SB LT/TH	127	0.0	A	0	141	0.1	A	0				
<i>Saturday Midday:</i>												
Project Driveway WB LT/RT	1	9.1	A	0	1	9.2	A	0				
Clarks Road NB TH/RT	119	0.0	A	0	132	0.0	A	0				
Clarks Road SB LT/TH	100	0.0	A	0	111	0.0	A	0				
Clarks Road at the Burger King Driveway and the South Project Site Driveway												
<i>Weekday Morning:</i>												
Burger King Driveway EB LT/TH/RT	8	9.3	A	0	8	9.4	A	0	8	11.4	B	0
Project Driveway WB LT/TH/RT	19	9.0	A	0	19	9.1	A	0	124	9.6	A	1
Clarks Road NB LT/TH/RT	91	0.1	A	0	103	0.1	A	0	104	0.4	A	0
Clarks Road SB LT/TH/RT	72	0.4	A	0	80	0.4	A	0	185	4.6	A	1
<i>Weekday Evening:</i>												
Burger King Driveway EB LT/TH/RT	23	10.5	B	0	23	10.7	B	0	23	12.6	B	0
Project Driveway WB LT/TH/RT	15	9.3	A	0	15	9.4	A	0	64	9.5	A	1
Clarks Road NB LT/TH/RT	117	0.1	A	0	133	0.1	A	0	133	0.1	A	0
Clarks Road SB LT/TH/RT	125	0.8	A	0	139	0.8	A	0	188	2.6	A	0
<i>Saturday Midday:</i>												
Burger King Driveway EB LT/TH/RT	31	10.5	B	1	31	10.8	B	1	31	17.5	C	1
Project Driveway WB LT/TH/RT	9	9.1	A	0	9	9.3	A	0	118	9.9	A	1
Clarks Road NB LT/TH/RT	95	0.3	A	0	108	0.3	A	0	109	0.3	A	0
Clarks Road SB LT/TH/RT	100	0.6	A	0	111	0.6	A	0	218	4.1	A	1

^aDemand in vehicles per hour.

^bAverage control 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.

DRIVE-THROUGH FACILITY QUEUING ANALYSIS

In order to assess vehicle queuing associated with the drive-through window facility, weekday morning peak period vehicle queue observations that were performed at the existing Starbucks® coffee shops located at 271 Main Street in Wilmington, Massachusetts, and at 784 Plain Street in Marshfield, Massachusetts, were obtained from studies conducted for Starbucks® coffee shops in Wilmington¹² and Hyannis.¹³ For reference, the proposed drive-through window facility for the Project can accommodate up to 19 vehicles in queue without impeding access or circulation within the Project site and includes a by-pass lane. Table 12 summarizes the vehicle queue observations obtained from the Wilmington and Marshfield Starbucks® coffee shops.

Table 12
DRIVE-THROUGH WINDOW
VEHICLE QUEUE OBSERVATIONS^a

	271 Main Street, Wilmington, MA (5:30 – 9:30 AM)	784 Plain Street, Marshfield, MA (7:00 – 9:00 AM)
Average	2	7
Maximum	7	9

^aMeasured from the pick-up window to the end of vehicle queue.

As can be seen in Table 12, the average observed vehicle queue was found to be two (2) vehicles at the Wilmington coffee shop and seven (7) vehicles at the Marshfield location. The maximum observed vehicle queue was found to be seven (7) vehicles in Wilmington and nine (9) vehicles in Marshfield. Given that the proposed drive-through window facility can accommodate up to 19 vehicles in queue (measured from the pick-up window to the row of parking at the entrance to the drive-through lane), the proposed design is sufficient to accommodate the maximum observed vehicle queue (nine (9) vehicles) without inhibiting circulation within the Project site or the movement of vehicles, pedestrians, or bicyclists.

¹²Starbucks Coffee Shop Drive-Through Lane Reconfiguration, VAI, January 2021.

¹³Traffic Impact and Access Study, World Tech Engineering, Updated July 2021.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersection with Clark's Road in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)¹⁴ requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 13 presents the measured SSD and ISD at the subject intersection.

¹⁴*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>Clarks Road at the South Project Site Driveway</i>			
<i>Stopping Sight Distance:</i>			
Clarks Road approaching from the north	200	--	500+ ^c
Clarks Road approaching from the south	200	--	299
<i>Intersection Sight Distance:</i>			
Looking to the north from the Project Site Driveway	200	335	500+ ^c
Looking to the south from the Project Site Driveway	200	290	419

^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 30 mph approach speed along Clarks 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.

^cClear line of sight is provided through the Route 110/Elm Street/Clarks Road intersection.

As can be seen in Table 13, the available lines of sight at the Project site driveway intersection with Clark's Road were found to exceed the recommended minimum sight distance for the driveway to function in a safe (SSD) and efficient (ISD) manner based on a 30 mph approach speed along Clark's Road, which is generally consistent with the measured 85th percentile vehicle travel speed (27/29 mph) and 5 mph above the posted speed limit (25 mph).

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has conducted a TIA in order to determine the potential impacts on the transportation infrastructure associated with the proposed construction of a Starbucks coffee shop to be located at 37 Clark's Road in Amesbury, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

1. Using trip-generation statistics published by the ITE¹⁵ and with appropriate adjustments to account for pass-by trips, the Project is expected to generate 592 new vehicle trips on an average weekday and 604 new vehicle trips on a Saturday (both two-way volumes over the operational day of the Project), with 95 new vehicle trips expected during the weekday morning peak-hour, 44 new vehicle trips expected during the weekday evening peak-hour and 98 new vehicle trips expected during the Saturday midday 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 conditions); however, it was noted that one or more movements at the study intersections are currently or are predicted to operate at or over capacity (defined as LOS "E" or "F", respectively) independent of the Project;
3. All movements exiting the shared access driveway that will also serve the Project site to Clark's Road are predicted to operate at LOS A during the peak hours with residual vehicle queues of up to one (1) vehicle, which can be contained within the Project site without impeding access or circulation within the Project site or the movement of vehicles, pedestrians or bicyclists along Clark's Road;
4. Independent of the Project, the Macy Street (Route 110)/Merrill Street/Rabbit Road intersection was found to have a motor vehicle crash rate that is below the MassDOT statewide average crash rate for a signalized intersection but is above the MassDOT

¹⁵Institute of Transportation Engineers, op. cit. 1.

District 4 average crash rate. No (0) Highway Safety Improvement Program (HSIP) eligible crash locations were identified within the study area;

5. The drive-through window facility is appropriately sized to accommodate the predicted maximum vehicle queue without impeding access to parking or the movement of vehicles, pedestrians or bicyclists within the Project site; and
6. Lines of sight to and from the intersection of shared access driveway that will also serve the Project site with Clark's Road were found to exceed the recommended minimum distance for safe and efficient operation.

In consideration of the above, it has been 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 the existing driveway that serves the Project site and the Fairfield Inn, and intersects the east side of Clark's Road approximately 260 feet south of Route 110. The existing northern driveway that serves the Project site and intersects the east side of Clark's Road approximately 150 feet south of Route 110 will be closed in conjunction with the Project thereby reducing the number of conflict points along Clark's Road and enhancing safety. The following recommendations are offered with respect to Project access, internal circulation, and parking, many of which are reflected on the Site Plans for the Project:

- The shared access Project site driveway should continue to be a minimum of 24 feet in width and designed to accommodate the turning and maneuvering requirements of service and delivery vehicles and the largest anticipated responding emergency vehicle.
- Vehicles exiting the Project site to Clark's Road should be placed under STOP-sign control with a marked STOP-line provided.
- Drive aisles within the Project site should be a minimum of 23-feet in width where perpendicular parking is proposed in order to allow for vehicle maneuvering.
- Appropriate signs ("One-Way" and "Do Not Enter") and pavement markings should be provided to regulate and reinforce the one-way traffic flow through the drive-through facility.
- Vehicles exiting the drive-through window facility should be placed under STOP-sign control with a marked STOP-line provided.

- All signs and pavement markings to be installed within the Project shall conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).¹⁶
- A sidewalk connection should be provided to link the proposed coffee shop to the sidewalks along Clark's Road and Route 110. In addition, a sidewalk should be provided to link the 10 parking spaces to the east of the coffee shop to the proposed building.
- Marked crosswalks and Americans with Disabilities Act (ADA) compliant wheelchair ramps should be provided for crossing the Project site driveway and at pedestrian crossings within the Project site.
- Consideration should be given to developing a pedestrian accommodation to link the Fairfield Inn to the proposed coffee shop that would include marked crosswalks along the defined path.
- The drive aisle opposite the drive-through exit and parallel to Clark's Road should be one-way southbound and placed under STOP-sign control with a marked STOP-line approaching the shared access driveway with accompanying "One Way" and "Do Not Enter" signs.
- The four (4) parking spaces adjacent to Clark's Road opposite the exit from the drive-through lane should be designated as employee parking spaces so as to minimize the activity associated with the use of these spaces.
- 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 shall be promptly removed where such accumulations would impede sight lines.

Off-Site

Route 110 Traffic Signal System

Independent of the Project, one or more movements at the intersections that comprise the Route 110 coordinated traffic signal system are currently or are predicted to operate at or over capacity. In an effort to improve traffic operations and off-set the predicted impact of the Project, the Project proponent will design and implement an optimal traffic signal timing, phasing and coordination plan at the following intersections that comprise the Route 110 coordinated traffic signal system:

- Route 110 at the Carriagetown Marketplace Driveway
- Route 110 at Elm Street and Clark's Road
- Route 110 at Merrill Street and Rabbit Road

The recommended improvements will be completed prior to the issuance of a Certificate of Occupancy for the Project, subject to receipt of all necessary rights, permits and approvals. As can be seen in Table 14, with the implementation of an optimal traffic signal timing, phasing and coordination plan, overall motorist delays and vehicle queuing will be reduced to the extent that there will be a general improvement over No-Build conditions.

¹⁶Federal Highway Administration, op. cit. 2.

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

Signalized Intersection/ Peak-Hour/Movement	2030 No-Build				2030 Build				2030 Build with Mitigation			
	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 110 at Carriagetown Driveway												
<i>Weekday Morning:</i>												
Route 110 EB LT	0.29	43.5	D	1/3	0.29	43.5	D	1/3	0.38	59.9	E	2/3
Route 110 EB TH	0.57	5.6	A	5/20	0.57	5.7	A	5/21	0.54	4.5	A	5/19
Route 110 WB TH/RT	0.44	12.1	B	1/13	0.44	12.1	B	1/13	0.39	3.7	A	5/2
Carriagetown Driveway SB LT	0.33	44.8	D	1/3	0.33	44.8	D	1/3	0.41	61.0	E	2/3
Carriagetown Driveway SB RT	0.03	32.1	C	0/1	0.03	32.1	C	0/1	0.03	46.5	D	0/1
Overall	--	9.8	A	--	--	9.8	A	--	--	6.9	A	--
<i>Weekday Evening:</i>												
Route 110 EB LT	0.58	43.3	D	4/6	0.58	43.3	D	4/6	0.67	66.9	E	5/9
Route 110 EB TH	0.51	6.2	A	5/17	0.52	6.2	A	5/17	0.48	5.0	A	5/16
Route 110 WB TH/RT	0.81	7.2	A	1/29	0.81	7.7	A	2/29	0.69	3.7	A	3/3
Carriagetown Driveway SB LT	0.50	44.0	D	3/4	0.50	44.0	D	3/4	0.61	67.7	E	4/6
Carriagetown Driveway SB RT	0.10	26.5	C	0/2	0.10	26.5	C	0/2	0.10	42.0	D	0/2
Overall	--	10.4	B	--	--	10.5	B	--	--	10.5	B	--
<i>Saturday Midday:</i>												
Route 110 EB LT	0.55	41.1	D	4/6	0.55	41.1	D	4/6	0.67	65.0	E	5/8
Route 110 EB TH	0.57	7.3	A	5/21	0.57	7.3	A	6/21	0.53	5.7	A	6/19
Route 110 WB TH/RT	0.60	4.5	A	1/27	0.61	6.0	A	2/27	0.51	7.2	A	5/6
Carriagetown Driveway SB LT	0.48	42.7	D	3/5	0.48	42.7	D	3/5	0.60	66.2	E	4/6
Carriagetown Driveway SB RT	0.09	24.3	C	0/2	0.09	24.3	C	0/2	0.09	40.0	D	0/2
Overall	--	9.9	A	--	--	10.4	B	--	--	12.8	B	--

See notes at end of table.

Table 14 (Continued)

MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/ Peak-Hour/Movement	2030 No-Build				2030 Build				2030 Build with Mitigation			
	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 110 at Elm Street and Clarks Road												
<i>Weekday Morning:</i>												
Route 110 EB UT/LT	0.23	23.6	C	1/2	0.23	25.7	C	1/2	0.20	23.0	C	1/3
Route 110 EB TH/RT	1.05	68.4	E	10/38	1.19	>80.0	F	16/39	0.96	50.0	D	24/25
Route 110 WB UT/LT	0.15	22.3	C	1/2	0.40	23.0	C	1/4	0.49	28.7	C	2/4
Route 110 WB TH	0.72	30.3	C	10/24	0.74	32.0	C	10/24	0.58	28.2	C	12/16
Route 110 WB RT	0.20	8.6	A	0/1	0.20	9.5	A	0/1	0.20	8.2	A	0/1
Clarks Road NB LT	0.25	44.0	D	1/2	0.49	44.8	D	2/4	0.53	59.2	E	3/6
Clarks Road NB TH/RT	0.26	44.1	D	1/3	0.30	44.1	D	1/3	0.37	56.8	E	2/5
Elm Street SB LT	0.65	36.7	D	6/8	0.65	36.7	D	6/8	0.69	49.4	D	8/14
Elm Street SB TH/RT	0.12	31.1	C	1/3	0.13	31.1	C	1/3	0.15	41.0	D	2/4
Overall	--	45.3	D	--	--	68.1	E	--	--	40.5	D	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	0.43	28.6	C	2/5	0.43	29.0	C	2/5	0.57	46.4	D	2/5
Route 110 EB TH/RT	1.03	64.0	E	15/38	1.10	>80.0	F	16/39	0.83	33.6	C	12/23
Route 110 WB UT/LT	0.31	22.4	C	1/3	0.42	23.4	C	1/4	0.56	30.4	C	2/5
Route 110 WB TH	1.17	>80.0	F	23/42	1.22	>80.0	F	24/42	0.92	45.6	D	27/34
Route 110 WB RT	0.44	12.5	B	2/4	0.44	13.4	B	2/4	0.41	13.3	B	3/3
Clarks Road NB LT	0.38	42.3	D	2/3	0.44	42.3	D	3/4	0.40	55.6	E	4/6
Clarks Road NB TH/RT	0.57	45.7	D	3/5	0.61	45.8	D	3/6	0.60	60.5	E	5/10
Elm Street SB LT	0.51	35.7	D	4/6	0.51	35.7	D	4/6	0.63	56.2	E	6/11
Elm Street SB TH/RT	0.26	34.1	C	2/4	0.27	34.1	C	2/4	0.35	52.1	D	3/7
Overall	--	71.4	E	--	--	>80.0	F	--	--	39.5	D	--
<i>Saturday Midday:</i>												
Route 110 EB UT/LT	0.35	21.3	C	1/4	0.36	23.0	C	1/4	0.31	15.1	B	2/2
Route 110 EB TH/RT	1.00	47.8	D	13/39	1.12	>80.0	F	13/41	0.87	34.2	C	16/26
Route 110 WB UT/LT	0.30	21.1	C	1/3	0.49	21.6	C	2/5	0.63	38.9	D	3/9
Route 110 WB TH	0.73	28.2	C	11/28	0.74	29.5	C	11/28	0.58	26.0	C	14/19
Route 110 WB RT	0.24	10.3	B	1/3	0.24	11.0	B	1/3	0.21	9.6	A	1/1
Clarks Road NB LT	0.20	42.2	D	1/2	0.40	42.2	D	2/4	0.41	59.5	E	3/5
Clarks Road NB TH/RT	0.32	43.2	D	1/3	0.42	43.2	D	2/4	0.66	68.0	E	4/10
Elm Street SB LT	0.59	39.6	D	4/7	0.59	39.6	D	4/7	0.65	58.3	E	6/11
Elm Street SB TH/RT	0.23	36.0	D	2/4	0.26	36.2	D	2/4	0.31	52.9	D	3/6
Overall	--	36.3	D	--	--	54.7	D	--	--	34.6	C	--

See notes at end of table.

Table 14 (Continued)

MITIGATED SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Signalized Intersection/ Peak-Hour/Movement	2030 No-Build				2030 Build				2030 Build with Mitigation			
	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 110 at Merrill Street and Rabbit Road												
<i>Weekday Morning:</i>												
Route 110 EB UT/LT	0.93	>80.0	F	2/8	0.96	>80.0	F	2/8	0.65	41.0	D	2/7
Route 110 EB TH	0.67	21.9	C	5/12	0.67	21.9	C	5/12	0.81	31.1	C	6/15
Route 110 EB RT	0.22	13.4	B	0/1	0.22	13.4	B	0/1	0.22	12.5	B	0/1
Route 110 WB UT/LT	0.88	75.5	E	2/9	0.88	75.5	E	2/9	0.69	44.4	D	2/8
Route 110 WB TH/RT	0.55	20.0	C	4/10	0.56	20.0	B	4/10	0.70	28.1	C	5/13
Merrill Street NB LT	0.95	55.2	E	4/19	0.97	60.2	E	4/19	0.74	24.0	C	4/13
Merrill Street NB TH/RT	0.28	16.8	B	2/6	0.28	16.9	B	2/6	0.24	15.6	B	2/5
Rabbit Road SB LT/TH	0.59	28.5	C	3/10	0.58	28.3	C	3/10	0.76	45.4	D	3/10
Rabbit Road SB TH	0.07	16.1	B	0/1	0.07	16.2	B	0/2	0.07	18.5	B	0/1
Overall	--	29.5	C	--	--	30.5	C	--	--	27.4	C	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	1.35	>80.0	F	4/12	1.36	>80.0	F	4/12	0.51	70.9	E	5/12
Route 110 EB TH	0.88	33.8	C	7/20	0.88	34.1	C	7/20	0.90	51.0	D	13/25
Route 110 EB RT	0.23	13.2	B	0/1	0.23	13.2	B	0/1	0.24	18.3	B	0/2
Route 110 WB UT/LT	0.95	>80.0	F	2/8	0.95	>80.0	F	2/8	0.73	67.5	E	3/9
Route 110 WB TH/RT	0.79	28.7	C	7/18	0.80	28.8	C	7/18	0.90	53.1	D	12/24
Merrill Street NB LT	1.21	>80.0	F	7/23	1.22	>80.0	F	7/23	0.94	51.6	D	9/23
Merrill Street NB TH/RT	0.38	16.8	B	3/9	0.38	16.8	B	3/9	0.33	20.1	C	4/10
Rabbit Road SB LT/TH	1.01	>80.0	F	5/15	1.01	>80.0	F	5/15	0.79	53.2	D	7/16
Rabbit Road SB TH	0.11	18.7	B	0/2	0.11	18.7	B	0/2	0.11	22.5	C	0/2
Overall	--	57.0	E	--	--	57.8	E	--	--	46.0	D	--
<i>Weekday Evening:</i>												
Route 110 EB UT/LT	2.75	>80.0	F	5/14	2.78	>80.0	F	5/15	0.90	77.6	E	8/17
Route 110 EB TH	1.16	>80.0	F	7/20	1.17	>80.0	F	4/20	0.84	39.8	D	14/25
Route 110 EB RT	0.22	13.4	B	0/1	0.22	13.4	B	0/1	0.25	15.2	B	1/2
Route 110 WB UT/LT	1.32	>80.0	F	2/8	1.32	>80.0	F	2/8	0.71	65.1	E	4/9
Route 110 WB TH/RT	0.99	48.0	D	5/17	1.00	51.1	D	5/17	0.88	48.6	D	13/22
Merrill Street NB LT	1.20	>80.0	F	4/18	1.22	>80.0	F	4/18	0.99	75.0	E	9/21
Merrill Street NB TH/RT	0.47	14.3	B	2/8	0.47	14.3	B	2/8	0.46	29.0	C	6/13
Rabbit Road SB LT/TH	0.71	27.4	C	2/10	0.71	27.4	C	2/10	0.84	68.6	E	6/14
Rabbit Road SB TH	0.09	12.6	B	0/1	0.09	12.6	B	0/2	0.09	24.4	C	0/2
Overall	--	>80.0	F	--	--	>80.0	F	--	--	47.1	D	--

^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.

UT = U-turning movements; LT = left-turning movements; TH = through movements; RT = right-turning movements.

Route 110 at Merrill Street and Rabbit Road

Independent of the Project, the Route 110/Merrill Street/Rabbit Road intersection was identified to have a motor vehicle crash rate that was above the MassDOT District 4 average crash rate for a signalized intersection. In an effort to enhance safety at the intersection, the Project proponent will undertake the following improvements:

1. Review the “yellow” and “all-red” clearance intervals and the pedestrian phase times for compliance with current standards and adjust as necessary; and
2. Relamp the traffic signal indications with LED type indications and add reflective yellow tape to the traffic signal indication backplates.

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

Transportation Demand Management

Public transportation services are provided within the study area and along Route 110 by the MVRTA. The MVRTA operates fixed route bus service along Route 110, Main Street and Elm Street by way of Route 17, *Haverhill-Salisbury Beach via Amesbury*, with the closes regular stop located within the Carriagetown Marketplace (approximately 0.4 miles or an 8 minute walking distance to the west of the Project site). In addition to regular stops, MVTA buses also operate in a “flag stop” mode, where a rider can request a stop anywhere along the regular service route by signaling to the driver. The MVRTA Ring & Ride program also provides Dial-a-Ride paratransit services to eligible people who cannot use fixed-route transit all or some of the time 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 single-occupant vehicles (SOVs), the following Transportation Demand Management (TDM) measures will be implemented as a part of the Project:

- A transportation coordinator will be assigned for the Project to coordinate the TDM program;
- Information regarding public transportation services, maps, schedules and fare information will be made available to employees of the project;
- A “welcome packet” will be provided to new employees detailing available public transportation services, bicycle and walking alternatives, and other commuter options;
- Specific amenities will be provided to discourage off-site trips, which may include the following: providing a breakroom equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing telecommuting or flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic volume periods;
- Pedestrian accommodations will be incorporated within the Project site to encourage walking; 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 transportation system.

APPENDIX

PROJECT SITE PLAN

AUTOMATIC TRAFFIC RECORDER COUNT DATA

MANUAL TURNING MOVEMENT COUNT DATA

SEASONAL ADJUSTMENT DATA

VEHICLE TRAVEL SPEED DATA

TRANSIT SCHEDULES

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION
MAPPING

GENERAL BACKGROUND TRAFFIC GROWTH

PROPOSED TRIP-GENERATION CALCULATIONS

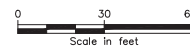
EXISTING TRIP-GENERATION CALCULATIONS

CAPACITY ANALYSIS WORKSHEETS



PROJECT SITE PLAN





11751 EAST CORNING
ROAD
CORNING, NY 14830

37 CLARK'S ROAD
AMESBURY, MA 0191

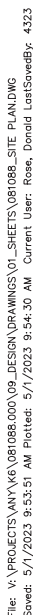
CONCEPTUAL SITE PLAN

Designed By: HD	Drawn By: HD/JAS	Checked: KK
Issue Date: 03/29/2023	Project No: 081088	Scale: 1" = 30'

C-100

ZONING TABLE		
ZONING DISTRICT: OFFICE PARK		
REQUIREMENTS	REQUIRED	PROVIDED
MINIMUM LOT AREA	2 ACRES	2.99 ACRES (130,217± S.F.)
MINIMUM FRONTAGE	150 FEET	200.1 FEET (MACY ST)
MAXIMUM BUILDING HEIGHT	52 FEET OR 4 STORIES	38 FEET, 4 STORIES
MINIMUM FRONT YARD	30 FEET	33.1± FEET
MINIMUM SIDE YARD	25 FEET	26.9± FEET (DRIVE-THRU CANOPY)
MINIMUM REAR YARD	40 FEET	47.6± FEET (EXISTING)
MAXIMUM BUILDING AREA	40%	11.2±% (14,610± S.F.)
MINIMUM OPEN SPACE ¹	30%	32.2% (42,005± S.F.)
OFF-STREET PARKING	118 SPACES ²	128 SPACES ²

1. OPEN SPACE IS SPACE UNOBTSTRUCTED TO THE SKY AND NOT DEVOTED TO STREETS, AN LOT UNOCCUPIED BY BUILDINGS OR STRUCTURES, DRIVEWAYS, WALKWAYS, DRIVEWAYS, FRAMING OR LOADING SPACES AND EXPRESSED AS A PERCENTAGE OF TOTAL LOT AREA. A STRUCTURE IS DEFINED AS A COMBINATION OF MATERIALS ASSEMBLED AT A FIXED LOCATION TO GIVE SUPPORT OR SHELTER, SUCH AS A BUILDING, BRIDGE, TRUSS, PLATFORM, RETAINING WALL, TANK, TUNNEL, TENT, STADIUM, REVIEW STAND, PLATFORM, BIN, FENCE, SIGN, FLAGPOLE, SWIMMING POOL, OR THE LIKE. (SECTION 2)
2. PARKING CALCULATIONS
 - 2.1. 144 EXISTING PARKING SPACES PROVIDED ON THE LOT.
 - 2.2. FOR A HOTEL, THE REQUIRED NUMBER OF PARKING SPACES IS 1 FOR EACH SLEEPING ROOM PLUS 1 FOR EACH 200 SQUARE FEET OF PUBLIC MEETING ROOM AND RESTAURANT SPACES.
 - 2.2.1. THE HOTEL INCLUDES 99 ROOMS.
 - 2.2.2. PER ARCHITECTURE PLAN, THERE IS NO PUBLIC MEETING ROOM OR RESTAURANT SPACE.
 - 2.2.3. 99 SPACES REQUIRED.
 - 2.3. FOR A RESTAURANT, THE REQUIRED NUMBER OF PARKING SPACES IS 1 FOR EACH FOUR (4) SEATS OF TOTAL SEATING CAPACITY. THE TOTAL PROPOSED SEATING CAPACITY FOR THE DRIVE-THRU RESTAURANT IS 34 SEATS.
 - 2.3.1. 9 SPACES REQUIRED.
3. DRIVE-THRU CONFIGURATION PRESENTED PROVIDES FOR A QUEUE OF 15 CARS FROM DRIVE-THRU WINDOW.



AUTOMATIC TRAFFIC RECORDER COUNT DATA



Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA

97650001

7/13/2023	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	0	20			0	31				
12:15	1	19			1	16				
12:30	0	16			0	30				
12:45	1	29	2	84	2	18	3	95	5	179
1:00	0	20			0	19				
1:15	1	21			1	20				
1:30	0	21			0	17				
1:45	1	16	2	78	0	19	1	75	3	153
2:00	1	20			0	23				
2:15	0	19			0	20				
2:30	0	16			0	20				
2:45	0	20	1	75	0	24	0	87	1	162
3:00	0	22			1	24				
3:15	0	21			0	23				
3:30	0	17			0	23				
3:45	2	20	2	80	0	22	1	92	3	172
4:00	1	21			1	30				
4:15	2	30			0	18				
4:30	5	18			2	34				
4:45	4	19	12	88	2	25	5	107	17	195
5:00	4	27			2	21				
5:15	4	24			1	26				
5:30	4	23			6	26				
5:45	3	18	15	92	3	22	12	95	27	187
6:00	4	15			3	21				
6:15	6	14			8	31				
6:30	6	13			8	23				
6:45	26	14	42	56	12	17	31	92	73	148
7:00	20	14			9	14				
7:15	25	10			8	17				
7:30	18	6			9	12				
7:45	28	6	91	36	25	19	51	62	142	98
8:00	21	7			12	17				
8:15	25	10			20	12				
8:30	21	12			17	15				
8:45	20	9	87	38	21	7	70	51	157	89
9:00	13	5			17	8				
9:15	15	8			17	7				
9:30	17	6			20	5				
9:45	10	6	55	25	10	6	64	26	119	51
10:00	17	3			8	4				
10:15	16	3			14	7				
10:30	13	1			20	3				
10:45	20	4	66	11	13	3	55	17	121	28
11:00	21	0			25	2				
11:15	12	0			19	3				
11:30	17	2			20	4				
11:45	15	3	65	5	18	1	82	10	147	15
Total	440	668			375	809			815	1477
Percent	39.7%	60.3%			31.7%	68.3%			35.6%	64.4%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA

97650001

7/14/2023	NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		1	15		3	24				
12:15		3	13		2	29				
12:30		1	18		1	23				
12:45		1	26	6	0	28	6	104	12	176
1:00		1	17		0	20				
1:15		1	20		0	25				
1:30		0	12		0	23				
1:45		1	11	3	0	20	0	88	3	148
2:00		0	19		0	20				
2:15		0	14		0	16				
2:30		0	19		0	18				
2:45		0	21	0	1	13	1	67	1	140
3:00		0	21		0	22				
3:15		0	25		1	27				
3:30		0	24		0	17				
3:45		2	23	2	0	19	1	85	3	178
4:00		4	15		0	31				
4:15		0	16		0	18				
4:30		2	15		0	14				
4:45		0	15	6	0	33	0	96	6	157
5:00		2	16		4	23				
5:15		3	21		1	29				
5:30		5	19		4	27				
5:45		3	9	13	5	30	14	109	27	174
6:00		7	10		3	29				
6:15		6	10		6	19				
6:30		11	9		4	25				
6:45		18	12	42	12	23	25	96	67	137
7:00		8	8		9	25				
7:15		10	12		15	16				
7:30		17	14		9	14				
7:45		8	14	43	15	16	48	71	91	119
8:00		17	7		13	16				
8:15		14	11		12	10				
8:30		19	8		24	17				
8:45		14	8	64	21	9	70	52	134	86
9:00		17	13		24	7				
9:15		11	6		15	3				
9:30		19	5		19	8				
9:45		10	4	57	21	5	79	23	136	51
10:00		13	2		17	5				
10:15		14	2		20	3				
10:30		9	3		16	0				
10:45		14	0	50	21	3	74	11	124	18
11:00		15	6		28	7				
11:15		12	3		22	3				
11:30		17	2		17	4				
11:45		12	1	56	24	6	91	20	147	32
Total		342	594		409	822			751	1416
Percent		36.5%	63.5%		33.2%	66.8%			34.7%	65.3%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA

97650001

7/15/2023		NB		Hour Totals		SB		Hour Totals		Combined Totals	
Time	Morning	Afternoon		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		3	20			1	24				
12:15		1	16			0	21				
12:30		2	17			2	27				
12:45		2	20	8	73	2	18	5	90	13	163
1:00		1	19			0	17				
1:15		2	14			0	22				
1:30		2	15			4	19				
1:45		0	17	5	65	2	19	6	77	11	142
2:00		0	13			4	28				
2:15		0	17			1	26				
2:30		0	14			0	20				
2:45		0	10	0	54	0	18	5	92	5	146
3:00		0	14			1	22				
3:15		0	13			1	26				
3:30		0	10			0	18				
3:45		3	12	3	49	1	24	3	90	6	139
4:00		0	14			0	27				
4:15		0	14			0	26				
4:30		4	14			0	21				
4:45		1	12	5	54	0	15	0	89	5	143
5:00		0	9			1	15				
5:15		2	19			1	19				
5:30		5	12			0	23				
5:45		1	7	8	47	3	14	5	71	13	118
6:00		2	11			1	24				
6:15		3	7			3	16				
6:30		6	13			0	19				
6:45		5	9	16	40	2	8	6	67	22	107
7:00		5	10			3	14				
7:15		6	13			5	19				
7:30		5	13			7	5				
7:45		6	9	22	45	13	9	28	47	50	92
8:00		17	8			3	9				
8:15		10	13			9	11				
8:30		6	12			13	12				
8:45		14	10	47	43	16	14	41	46	88	89
9:00		13	4			9	13				
9:15		19	9			13	4				
9:30		10	3			19	7				
9:45		20	8	62	24	14	7	55	31	117	55
10:00		18	3			26	4				
10:15		18	1			17	9				
10:30		15	4			19	4				
10:45		9	0	60	8	23	6	85	23	145	31
11:00		17	4			17	7				
11:15		16	2			25	3				
11:30		14	4			19	4				
11:45		25	2	72	12	20	2	81	16	153	28
Total		308	514			320	739			628	1253
Percent		37.5%	62.5%			30.2%	69.8%			33.4%	66.6%
Grand Total		1090	1776			1104	2370			2194	4146
Percent		38.0%	62.0%			31.8%	68.2%			34.6%	65.4%

ADT

ADT: 2,113

AADT: 2,113

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA

97650001

7/10/2023	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
12:00 AM	*	*	*	*	*	*	2	3	6	6	8	5	*	*	5	5
1:00	*	*	*	*	*	*	2	1	3	0	5	6	*	*	3	2
2:00	*	*	*	*	*	*	1	0	0	1	0	5	*	*	0	2
3:00	*	*	*	*	*	*	2	1	2	1	3	3	*	*	2	2
4:00	*	*	*	*	*	*	12	5	6	0	5	0	*	*	8	2
5:00	*	*	*	*	*	*	15	12	13	14	8	5	*	*	12	10
6:00	*	*	*	*	*	*	42	31	42	25	16	6	*	*	33	21
7:00	*	*	*	*	*	*	91	51	43	48	22	28	*	*	52	42
8:00	*	*	*	*	*	*	87	70	64	70	47	41	*	*	66	60
9:00	*	*	*	*	*	*	55	64	57	79	62	55	*	*	58	66
10:00	*	*	*	*	*	*	66	55	50	74	60	85	*	*	59	71
11:00	*	*	*	*	*	*	65	82	56	91	72	81	*	*	64	85
12:00 PM	*	*	*	*	*	*	84	95	72	104	73	90	*	*	76	96
1:00	*	*	*	*	*	*	78	75	60	88	65	77	*	*	68	80
2:00	*	*	*	*	*	*	75	87	73	67	54	92	*	*	67	82
3:00	*	*	*	*	*	*	80	92	93	85	49	90	*	*	74	89
4:00	*	*	*	*	*	*	88	107	61	96	54	89	*	*	68	97
5:00	*	*	*	*	*	*	92	95	65	109	47	71	*	*	68	92
6:00	*	*	*	*	*	*	56	92	41	96	40	67	*	*	46	85
7:00	*	*	*	*	*	*	36	62	48	71	45	47	*	*	43	60
8:00	*	*	*	*	*	*	38	51	34	52	43	46	*	*	38	50
9:00	*	*	*	*	*	*	25	26	28	23	24	31	*	*	26	27
10:00	*	*	*	*	*	*	11	17	7	11	8	23	*	*	9	17
11:00	*	*	*	*	*	*	5	10	12	20	4	7	*	*	7	12
Total	0	0	0	0	0	0	1108	1184	936	1231	814	1050	0	0	952	1155
Day	0		0		0		2292		2167		1864		0		2107	
AM Peak							7:00	11:00	8:00	11:00	11:00	10:00			8:00	11:00
Volume							91	82	64	91	72	85			66	85
PM Peak							5:00	4:00	3:00	5:00	12:00 PM	2:00			12:00 PM	4:00
Volume							92	107	93	109	73	92			76	97
Comb Total	0		0		0		2292		2167		1864		0		2107	
ADT	ADT: 2,113		AADT: 2,113													

MANUAL TURNING MOVEMENT COUNT DATA



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars - Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	88	5	4	6	153	36	1	9	1	16	5	248	0	0	572
07:15 AM	97	4	5	5	180	42	0	8	2	12	16	286	1	0	658
07:30 AM	106	4	6	2	168	42	0	7	5	21	15	289	2	0	667
07:45 AM	112	11	5	8	207	62	1	5	8	18	11	313	6	1	768
Total	403	24	20	21	708	182	2	29	16	67	47	1136	9	1	2665
08:00 AM	108	6	5	3	178	64	1	5	4	16	12	299	0	0	701
08:15 AM	105	11	3	7	207	67	0	11	5	20	8	284	4	0	732
08:30 AM	102	10	5	4	189	61	0	5	2	18	10	286	5	0	697
08:45 AM	94	14	7	7	190	89	0	7	8	13	8	279	4	0	720
Total	409	41	20	21	764	281	1	28	19	67	38	1148	13	0	2850
Grand Total	812	65	40	42	1472	463	3	57	35	134	85	2284	22	1	5515
Apprch %	88.5	7.1	4.4	2.1	74.3	23.4	0.2	25.2	15.5	59.3	3.6	95.5	0.9	0	
Total %	14.7	1.2	0.7	0.8	26.7	8.4	0.1	1	0.6	2.4	1.5	41.4	0.4	0	
Cars	798	64	39	42	1415	451	3	56	34	132	77	2204	22	1	5338
% Cars	98.3	98.5	97.5	100	96.1	97.4	100	98.2	97.1	98.5	90.6	96.5	100	100	96.8
Trucks	14	1	1	0	57	12	0	1	1	2	8	80	0	0	177
% Trucks	1.7	1.5	2.5	0	3.9	2.6	0	1.8	2.9	1.5	9.4	3.5	0	0	3.2

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	112	11	5	128	8	207	62	1	278	5	8	18	31	11	313	6	1	331	768
08:00 AM	108	6	5	119	3	178	64	1	246	5	4	16	25	12	299	0	0	311	701
08:15 AM	105	11	3	119	7	207	67	0	281	11	5	20	36	8	284	4	0	296	732
08:30 AM	102	10	5	117	4	189	61	0	254	5	2	18	25	10	286	5	0	301	697
Total Volume	427	38	18	483	22	781	254	2	1059	26	19	72	117	41	1182	15	1	1239	2898
% App. Total	88.4	7.9	3.7		2.1	73.7	24	0.2		22.2	16.2	61.5		3.3	95.4	1.2	0.1		
PHF	.953	.864	.900	.943	.688	.943	.948	.500	.942	.591	.594	.900	.813	.854	.944	.625	.250	.936	.943
Cars	419	38	18	475	22	747	249	2	1020	26	19	71	116	38	1136	15	1	1190	2801
% Cars	98.1	100	100	98.3	100	95.6	98.0	100	96.3	100	100	98.6	99.1	92.7	96.1	100	100	96.0	96.7
Trucks	8	0	0	8	0	34	5	0	39	0	0	1	1	3	46	0	0	49	97
% Trucks	1.9	0	0	1.7	0	4.4	2.0	0	3.7	0	0	1.4	0.9	7.3	3.9	0	0	4.0	3.3

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

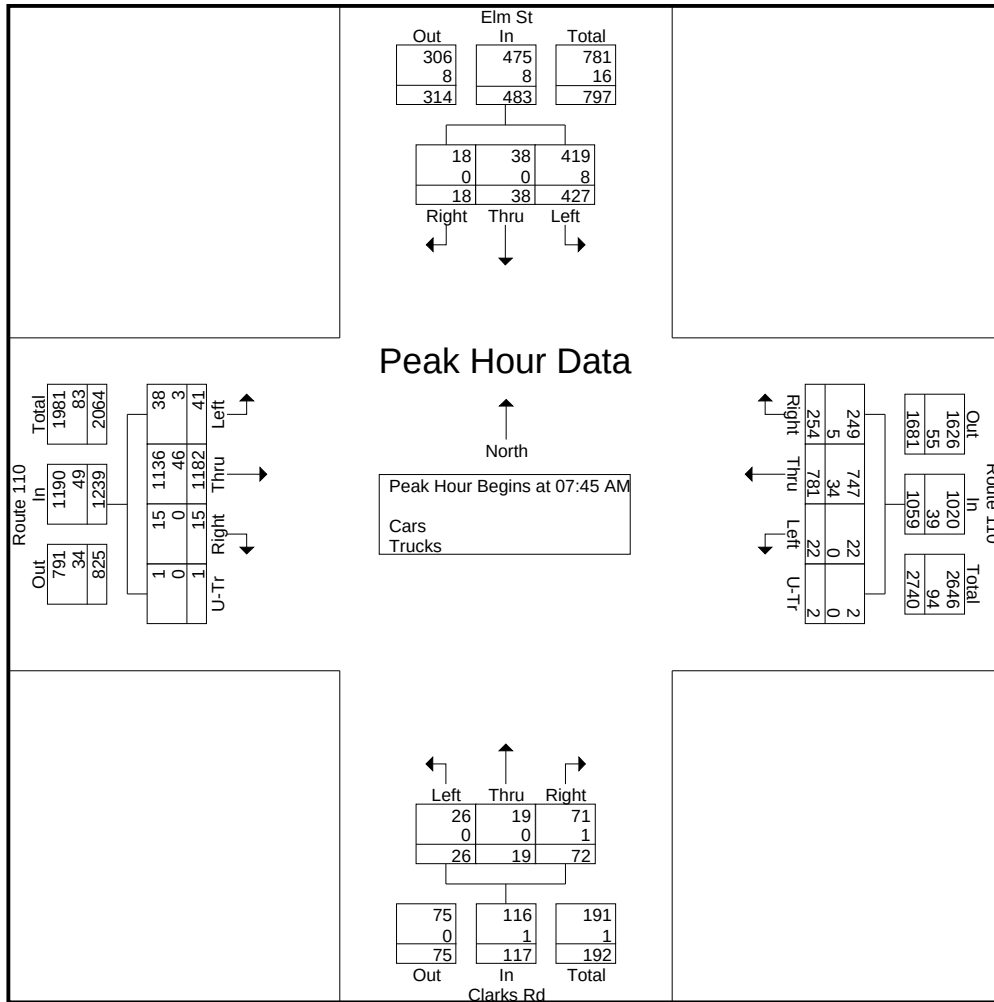
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 2



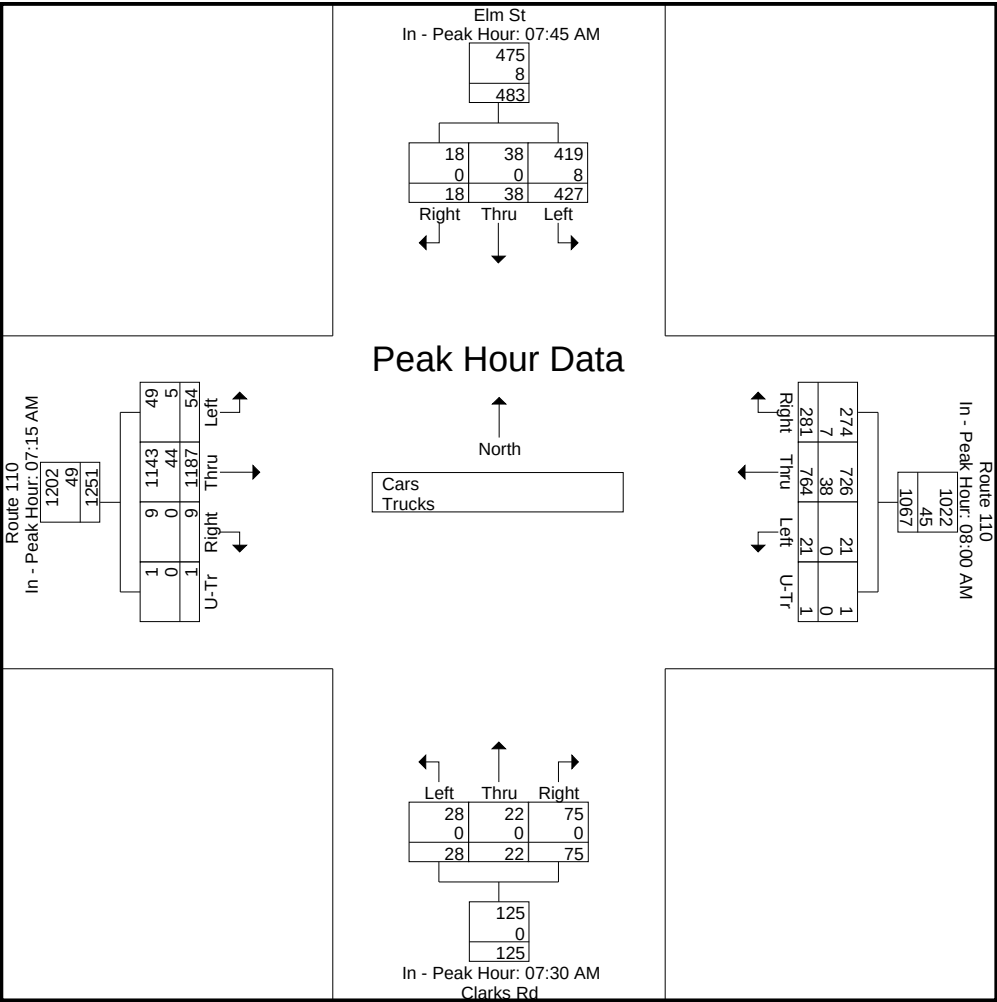
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM					07:30 AM				07:15 AM				
+0 mins.	112	11	5	128	3	178	64	1	246	7	5	21	33	16	286	1	0	303
+15 mins.	108	6	5	119	7	207	67	0	281	5	8	18	31	15	289	2	0	306
+30 mins.	105	11	3	119	4	189	61	0	254	5	4	16	25	11	313	6	1	331
+45 mins.	102	10	5	117	7	190	89	0	286	11	5	20	36	12	299	0	0	311
Total Volume	427	38	18	483	21	764	281	1	1067	28	22	75	125	54	1187	9	1	1251
% App. Total	88.4	7.9	3.7		2	71.6	26.3	0.1		22.4	17.6	60		4.3	94.9	0.7	0.1	
PHF	.953	.864	.900	.943	.750	.923	.789	.250	.933	.636	.688	.893	.868	.844	.948	.375	.250	.945
Cars	419	38	18	475	21	726	274	1	1022	28	22	75	125	49	1143	9	1	1202
% Cars	98.1	100	100	98.3	100	95	97.5	100	95.8	100	100	100	100	90.7	96.3	100	100	96.1
Trucks	8	0	0	8	0	38	7	0	45	0	0	0	0	5	44	0	0	49
% Trucks	1.9	0	0	1.7	0	5	2.5	0	4.2	0	0	0	0	9.3	3.7	0	0	3.9

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

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File Name : 97650001

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Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	88	5	4	6	151	34	1	8	1	15	5	240	0	0	558
07:15 AM	96	4	5	5	177	42	0	8	2	12	15	275	1	0	642
07:30 AM	104	4	6	2	162	40	0	7	5	21	12	278	2	0	643
07:45 AM	110	11	5	8	199	61	1	5	8	18	10	301	6	1	744
Total	398	24	20	21	689	177	2	28	16	66	42	1094	9	1	2587
08:00 AM	105	6	5	3	172	62	1	5	4	16	12	289	0	0	680
08:15 AM	104	11	3	7	198	67	0	11	5	20	8	274	4	0	712
08:30 AM	100	10	5	4	178	59	0	5	2	17	8	272	5	0	665
08:45 AM	91	13	6	7	178	86	0	7	7	13	7	275	4	0	694
Total	400	40	19	21	726	274	1	28	18	66	35	1110	13	0	2751
Grand Total	798	64	39	42	1415	451	3	56	34	132	77	2204	22	1	5338
Apprch %	88.6	7.1	4.3	2.2	74	23.6	0.2	25.2	15.3	59.5	3.3	95.7	1	0	
Total %	14.9	1.2	0.7	0.8	26.5	8.4	0.1	1	0.6	2.5	1.4	41.3	0.4	0	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	110	11	5	126	8	199	61	1	269	5	8	18	31	10	301	6	1	318	744
08:00 AM	105	6	5	116	3	172	62	1	238	5	4	16	25	12	289	0	0	301	680
08:15 AM	104	11	3	118	7	198	67	0	272	11	5	20	36	8	274	4	0	286	712
08:30 AM	100	10	5	115	4	178	59	0	241	5	2	17	24	8	272	5	0	285	665
Total Volume	419	38	18	475	22	747	249	2	1020	26	19	71	116	38	1136	15	1	1190	2801
% App. Total	88.2	8	3.8		2.2	73.2	24.4	0.2		22.4	16.4	61.2		3.2	95.5	1.3	0.1		
PHF	.952	.864	.900	.942	.688	.938	.929	.500	.938	.591	.594	.888	.806	.792	.944	.625	.250	.936	.941

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

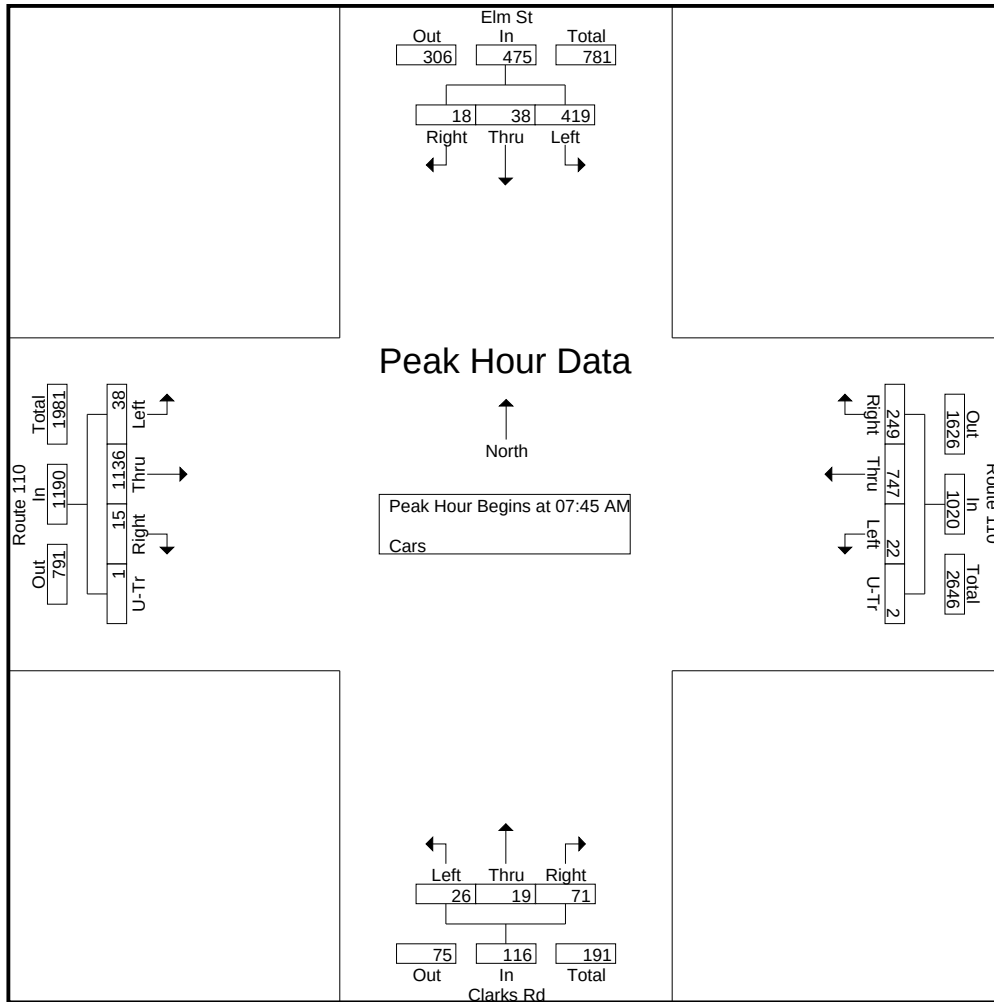
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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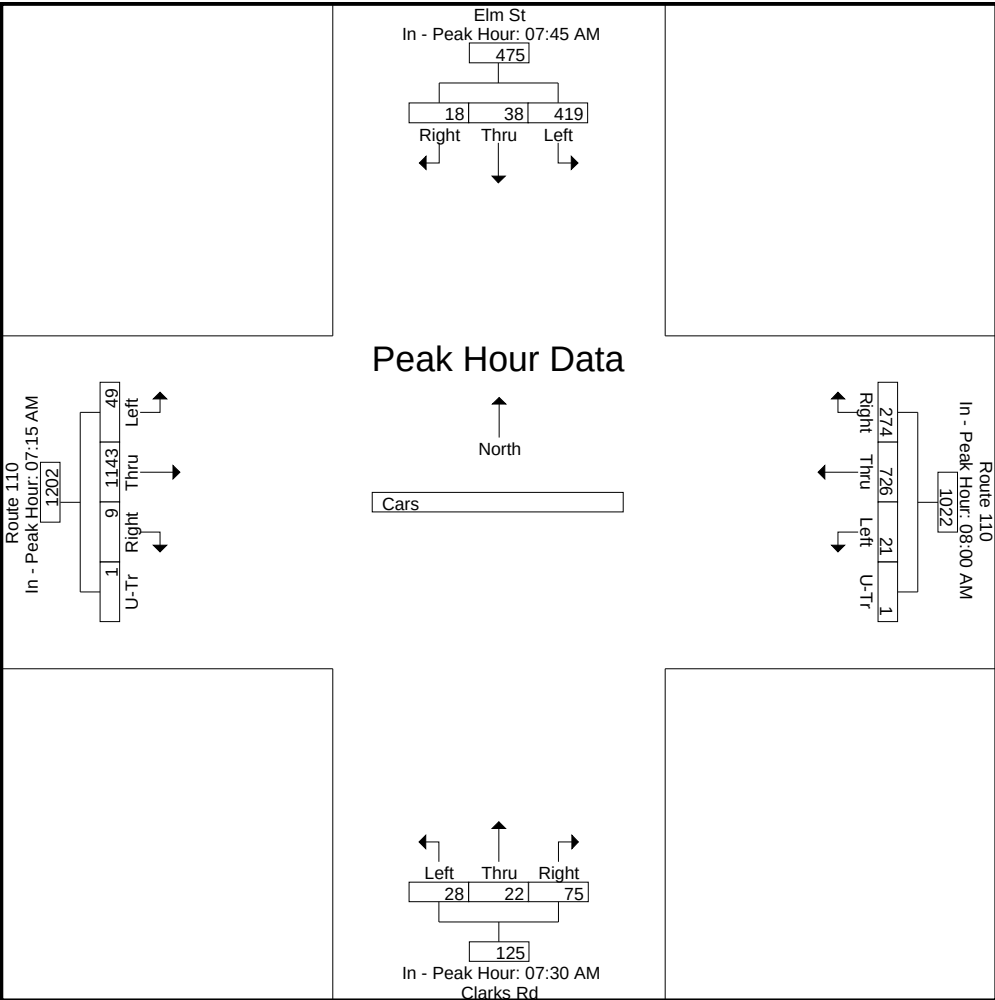
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM				08:00 AM				07:30 AM				07:15 AM					
+0 mins.	110	11	5	126	3	172	62	1	238	7	5	21	33	15	275	1	0	291
+15 mins.	105	6	5	116	7	198	67	0	272	5	8	18	31	12	278	2	0	292
+30 mins.	104	11	3	118	4	178	59	0	241	5	4	16	25	10	301	6	1	318
+45 mins.	100	10	5	115	7	178	86	0	271	11	5	20	36	12	289	0	0	301
Total Volume	419	38	18	475	21	726	274	1	1022	28	22	75	125	49	1143	9	1	1202
% App. Total	88.2	8	3.8		2.1	71	26.8	0.1		22.4	17.6	60		4.1	95.1	0.7	0.1	
PHF	.952	.864	.900	.942	.750	.917	.797	.250	.939	.636	.688	.893	.868	.817	.949	.375	.250	.945

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	0	0	0	0	2	2	0	1	0	1	0	8	0	0	14
07:15 AM	1	0	0	0	3	0	0	0	0	0	1	11	0	0	16
07:30 AM	2	0	0	0	6	2	0	0	0	0	3	11	0	0	24
07:45 AM	2	0	0	0	8	1	0	0	0	0	1	12	0	0	24
Total	5	0	0	0	19	5	0	1	0	1	5	42	0	0	78
08:00 AM	3	0	0	0	6	2	0	0	0	0	0	10	0	0	21
08:15 AM	1	0	0	0	9	0	0	0	0	0	0	10	0	0	20
08:30 AM	2	0	0	0	11	2	0	0	0	1	2	14	0	0	32
08:45 AM	3	1	1	0	12	3	0	0	1	0	1	4	0	0	26
Total	9	1	1	0	38	7	0	0	1	1	3	38	0	0	99
Grand Total	14	1	1	0	57	12	0	1	1	2	8	80	0	0	177
Apprch %	87.5	6.2	6.2	0	82.6	17.4	0	25	25	50	9.1	90.9	0	0	
Total %	7.9	0.6	0.6	0	32.2	6.8	0	0.6	0.6	1.1	4.5	45.2	0	0	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	3	0	0	3	0	6	2	0	8	0	0	0	0	0	10	0	0	10	21
08:15 AM	1	0	0	1	0	9	0	0	9	0	0	0	0	0	10	0	0	10	20
08:30 AM	2	0	0	2	0	11	2	0	13	0	0	1	1	2	14	0	0	16	32
08:45 AM	3	1	1	5	0	12	3	0	15	0	1	0	1	1	4	0	0	5	26
Total Volume	9	1	1	11	0	38	7	0	45	0	1	1	2	3	38	0	0	41	99
% App. Total	81.8	9.1	9.1		0	84.4	15.6	0		0	50	50		7.3	92.7	0	0		
PHF	.750	.250	.250	.550	.000	.792	.583	.000	.750	.000	.250	.250	.500	.375	.679	.000	.000	.641	.773

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

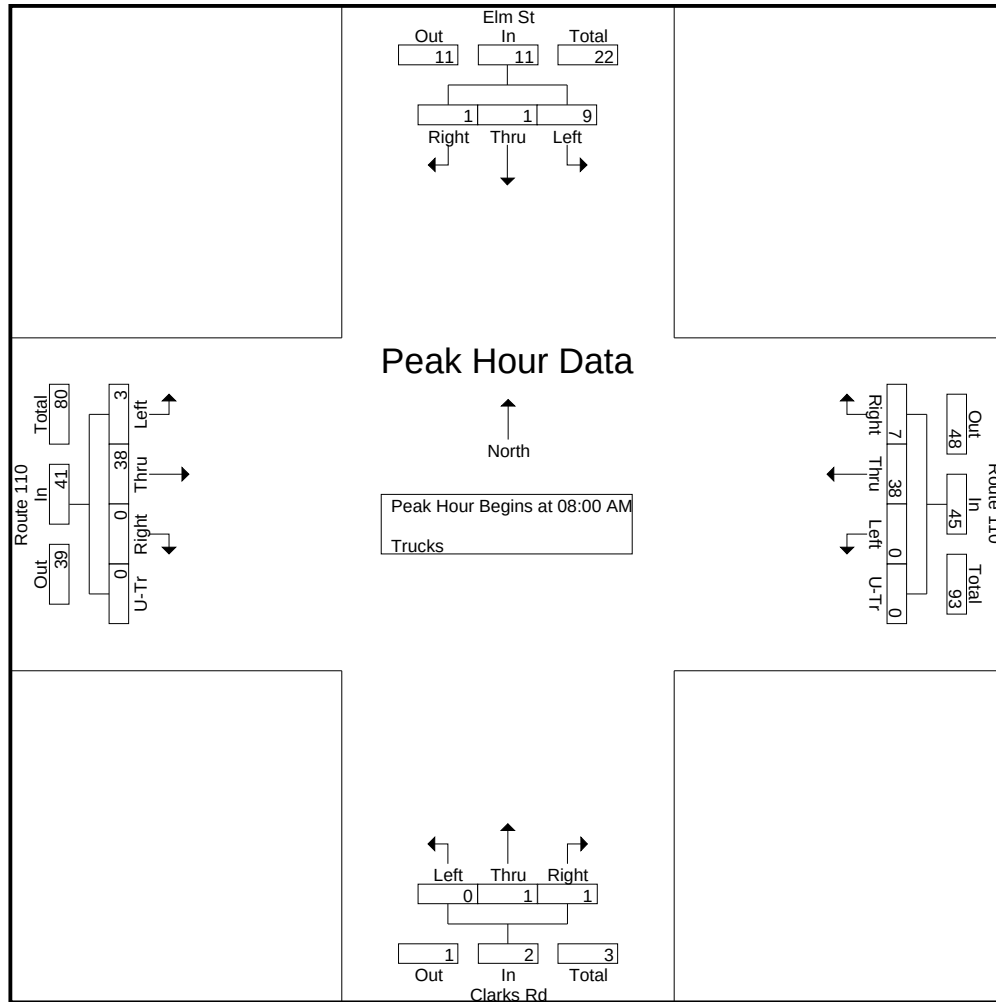
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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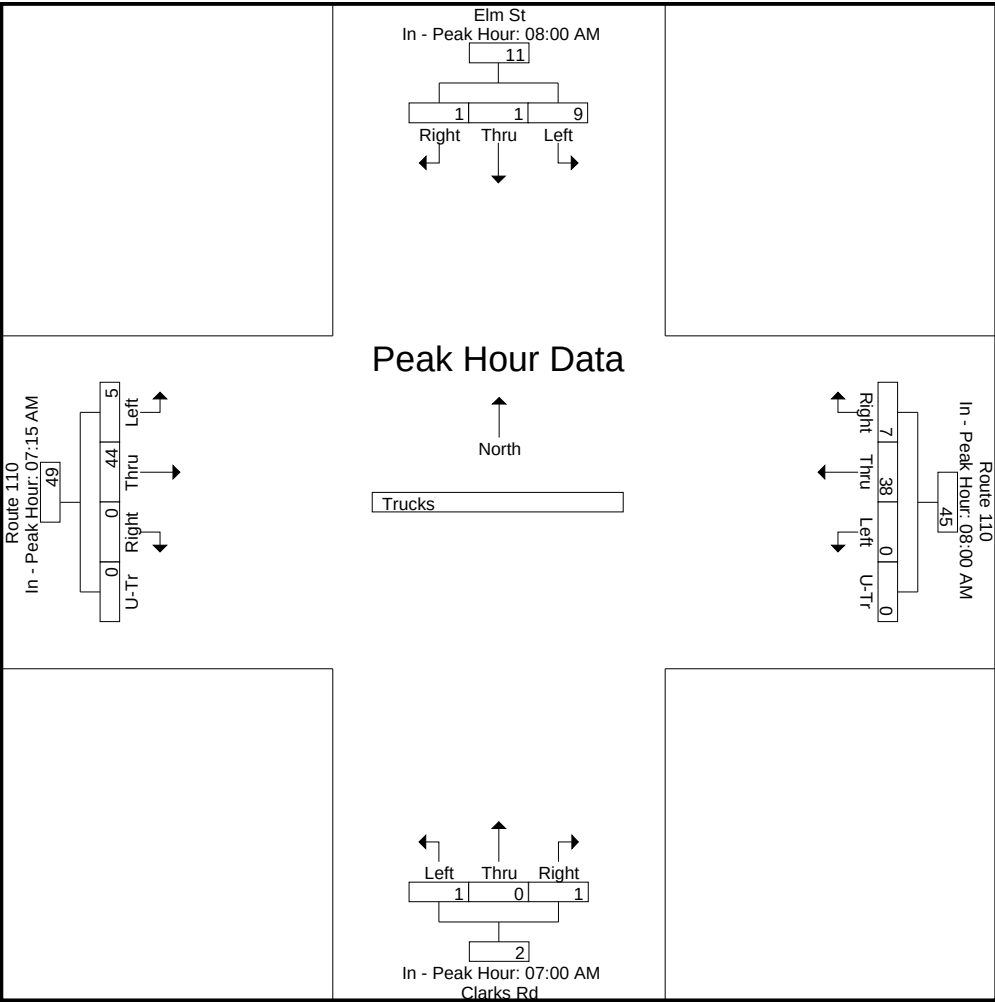
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM					08:00 AM					07:00 AM					07:15 AM				
+0 mins.	3	0	0	3		0	6	2	0	8	1	0	1	2		1	11	0	0	12
+15 mins.	1	0	0	1		0	9	0	0	9	0	0	0	0		3	11	0	0	14
+30 mins.	2	0	0	2		0	11	2	0	13	0	0	0	0		1	12	0	0	13
+45 mins.	3	1	1	5		0	12	3	0	15	0	0	0	0		0	10	0	0	10
Total Volume	9	1	1	11		0	38	7	0	45	1	0	1	2		5	44	0	0	49
% App. Total	81.8	9.1	9.1			0	84.4	15.6	0		50	0	50			10.2	89.8	0	0	
PHF	.750	.250	.250	.550		.000	.792	.583	.000	.750	.250	.000	.250	.250		.417	.917	.000	.000	.875

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Bikes Peds

	Elm St From North				Route 110 From East				Clarks Rd From South				Route 110 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			
07:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2
07:15 AM	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	3
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	2	0	0	1	0	0	0	0	0	0	2	0	0	2	3	5
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	1	0	0	2	2	4
08:30 AM	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	2	0	1	0	1	0	0	0	0	0	1	0	0	2	4	6
Grand Total	0	1	0	4	0	1	1	1	0	0	0	0	0	3	0	0	4	7	11
Apprch %	0	100	0		0	33.3	33.3	33.3	0	0	0		0	100	0	0			
Total %	0	14.3	0		0	14.3	14.3	14.3	0	0	0		0	42.9	0	0	36.4	63.6	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	1	2
08:30 AM	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2
Total Volume	0	1	0	1	0	1	0	1	2	0	0	0	0	0	1	0	0	1	4
% App. Total	0	100	0		0	50	0	50		0	0	0		0	100	0	0		
PHF	.000	.250	.000	.250	.000	.250	.000	.250	.500	.000	.000	.000	.000	.000	.250	.000	.000	.250	.500

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

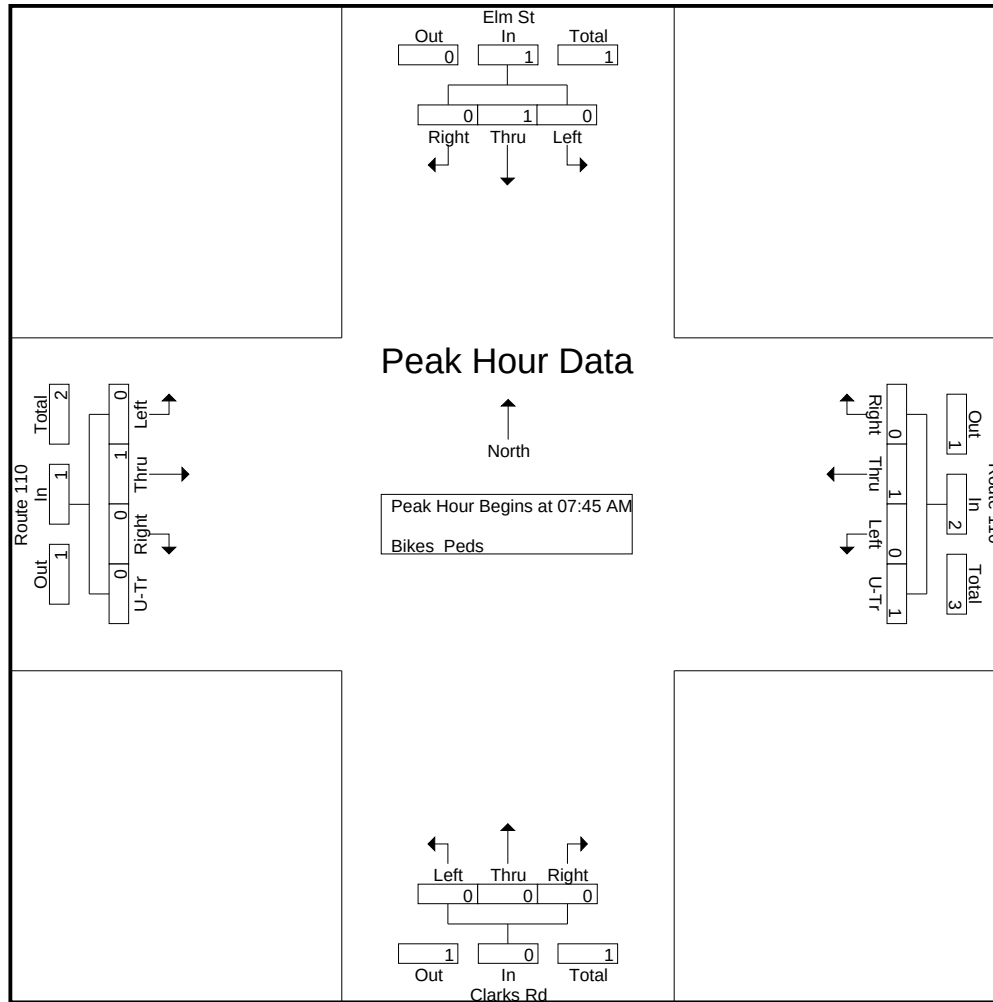
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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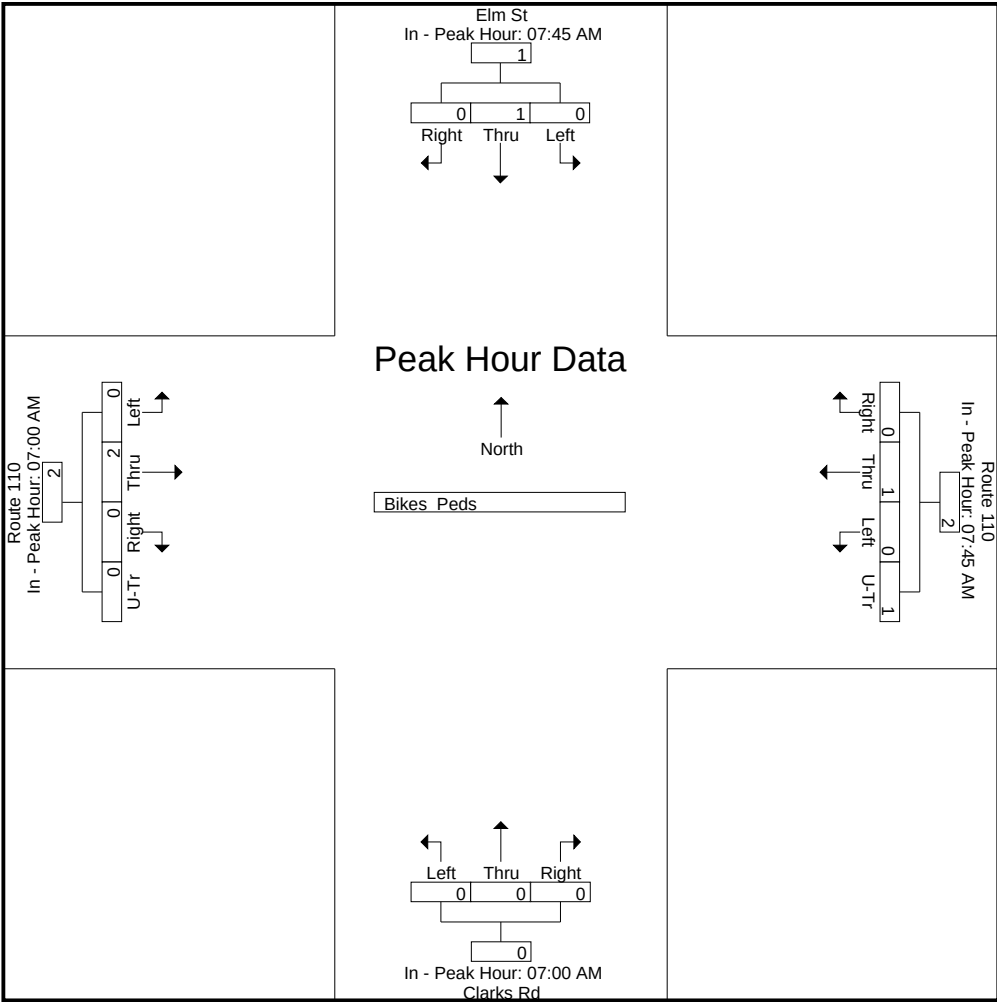
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM					07:00 AM					07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
+30 mins.	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
+45 mins.	0	1	0	1	1	0	0	0	1	1	0	0	0	0	0
Total Volume	0	1	0	1	2	0	1	0	1	2	0	2	0	0	2
% App. Total	0	100	0	50	50	0	50	0	50	100	0	100	0	0	500
PHF	.000	.250	.000	.250	.500	.000	.250	.000	.250	.500	.000	.500	.000	.000	.500

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
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Accurate Counts

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N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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Groups Printed- Cars - Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	78	17	11	19	331	87	2	15	10	9	23	247	5	0	854
04:15 PM	71	12	8	10	318	109	0	16	11	14	14	245	2	1	831
04:30 PM	73	17	17	19	333	107	0	9	16	7	22	293	9	0	922
04:45 PM	61	16	8	15	321	112	0	14	9	13	20	256	3	1	849
Total	283	62	44	63	1303	415	2	54	46	43	79	1041	19	2	3456
05:00 PM	82	17	4	9	315	118	0	19	14	14	19	292	3	0	906
05:15 PM	80	11	6	13	348	112	1	11	17	8	20	276	6	0	909
05:30 PM	92	9	2	12	269	103	0	6	12	12	19	262	5	0	803
05:45 PM	64	10	4	16	323	116	0	4	11	10	12	244	2	1	817
Total	318	47	16	50	1255	449	1	40	54	44	70	1074	16	1	3435
Grand Total	601	109	60	113	2558	864	3	94	100	87	149	2115	35	3	6891
Apprch %	78.1	14.2	7.8	3.2	72.3	24.4	0.1	33.5	35.6	31	6.5	91.9	1.5	0.1	
Total %	8.7	1.6	0.9	1.6	37.1	12.5	0	1.4	1.5	1.3	2.2	30.7	0.5	0	
Cars	598	109	59	113	2530	857	3	93	100	86	149	2082	35	3	6817
% Cars	99.5	100	98.3	100	98.9	99.2	100	98.9	100	98.9	100	98.4	100	100	98.9
Trucks	3	0	1	0	28	7	0	1	0	1	0	33	0	0	74
% Trucks	0.5	0	1.7	0	1.1	0.8	0	1.1	0	1.1	0	1.6	0	0	1.1

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	73	17	17	107	19	333	107	0	459	9	16	7	32	22	293	9	0	324	922
04:45 PM	61	16	8	85	15	321	112	0	448	14	9	13	36	20	256	3	1	280	849
05:00 PM	82	17	4	103	9	315	118	0	442	19	14	14	47	19	292	3	0	314	906
05:15 PM	80	11	6	97	13	348	112	1	474	11	17	8	36	20	276	6	0	302	909
Total Volume	296	61	35	392	56	1317	449	1	1823	53	56	42	151	81	1117	21	1	1220	3586
% App. Total	75.5	15.6	8.9		3.1	72.2	24.6	0.1		35.1	37.1	27.8		6.6	91.6	1.7	0.1		
PHF	.902	.897	.515	.916	.737	.946	.951	.250	.961	.697	.824	.750	.803	.920	.953	.583	.250	.941	.972
Cars	294	61	35	390	56	1300	446	1	1803	52	56	42	150	81	1098	21	1	1201	3544
% Cars	99.3	100	100	99.5	100	98.7	99.3	100	98.9	98.1	100	100	99.3	100	98.3	100	100	98.4	98.8
Trucks	2	0	0	2	0	17	3	0	20	1	0	0	1	0	19	0	0	19	42
% Trucks	0.7	0	0	0.5	0	1.3	0.7	0	1.1	1.9	0	0	0.7	0	1.7	0	0	1.6	1.2

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

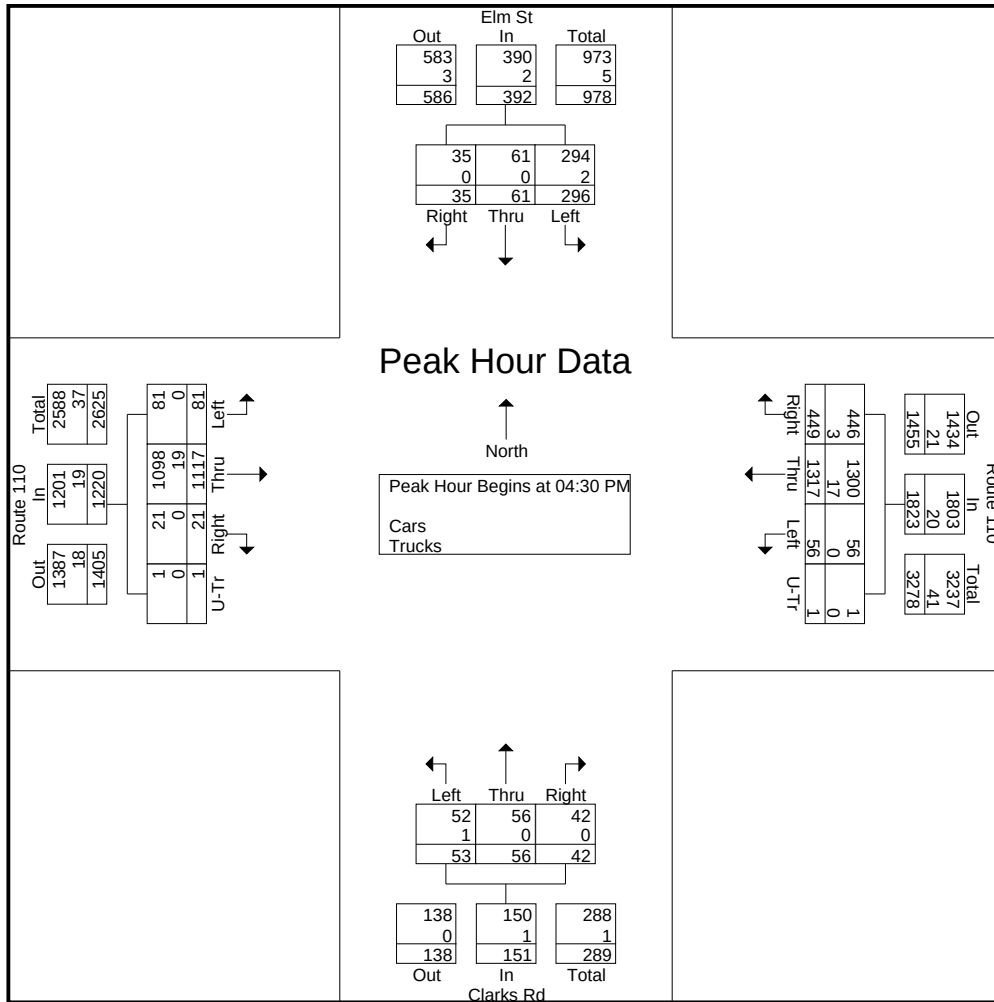
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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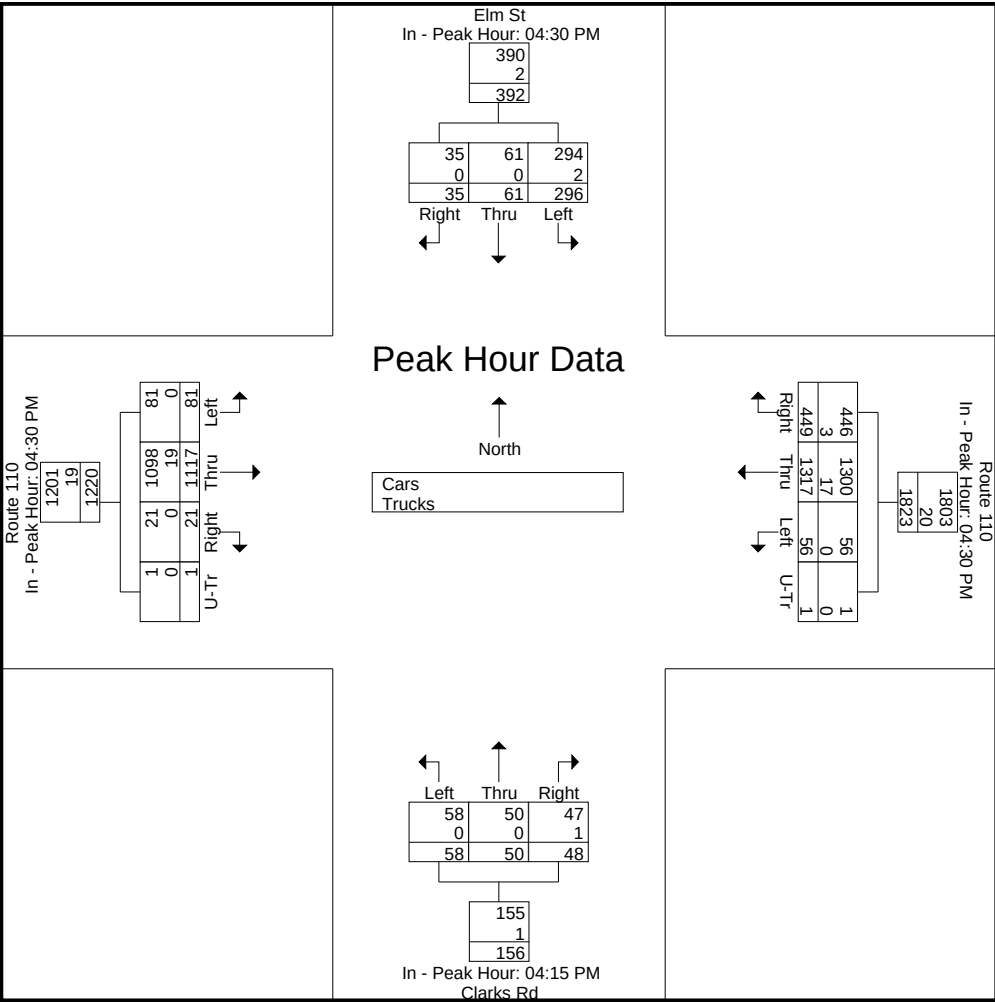
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:15 PM				04:30 PM					
+0 mins.	73	17	17	107	19	333	107	0	459	16	11	14	41	22	293	9	0	324
+15 mins.	61	16	8	85	15	321	112	0	448	9	16	7	32	20	256	3	1	280
+30 mins.	82	17	4	103	9	315	118	0	442	14	9	13	36	19	292	3	0	314
+45 mins.	80	11	6	97	13	348	112	1	474	19	14	14	47	20	276	6	0	302
Total Volume	296	61	35	392	56	1317	449	1	1823	58	50	48	156	81	1117	21	1	1220
% App. Total	75.5	15.6	8.9		3.1	72.2	24.6	0.1		37.2	32.1	30.8		6.6	91.6	1.7	0.1	
PHF	.902	.897	.515	.916	.737	.946	.951	.250	.961	.763	.781	.857	.830	.920	.953	.583	.250	.941
Cars	294	61	35	390	56	1300	446	1	1803	58	50	47	155	81	1098	21	1	1201
% Cars	99.3	100	100	99.5	100	98.7	99.3	100	98.9	100	100	97.9	99.4	100	98.3	100	100	98.4
Trucks	2	0	0	2	0	17	3	0	20	0	0	1	1	0	19	0	0	19
% Trucks	0.7	0	0	0.5	0	1.3	0.7	0	1.1	0	0	2.1	0.6	0	1.7	0	0	1.6

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	78	17	10	19	327	85	2	15	10	9	23	244	5	0	844
04:15 PM	71	12	8	10	313	109	0	16	11	13	14	239	2	1	819
04:30 PM	72	17	17	19	327	106	0	9	16	7	22	287	9	0	908
04:45 PM	61	16	8	15	316	110	0	14	9	13	20	252	3	1	838
Total	282	62	43	63	1283	410	2	54	46	42	79	1022	19	2	3409
05:00 PM	81	17	4	9	312	118	0	19	14	14	19	288	3	0	898
05:15 PM	80	11	6	13	345	112	1	10	17	8	20	271	6	0	900
05:30 PM	92	9	2	12	268	102	0	6	12	12	19	260	5	0	799
05:45 PM	63	10	4	16	322	115	0	4	11	10	12	241	2	1	811
Total	316	47	16	50	1247	447	1	39	54	44	70	1060	16	1	3408
Grand Total	598	109	59	113	2530	857	3	93	100	86	149	2082	35	3	6817
Apprch %	78.1	14.2	7.7	3.2	72.2	24.5	0.1	33.3	35.8	30.8	6.6	91.8	1.5	0.1	
Total %	8.8	1.6	0.9	1.7	37.1	12.6	0	1.4	1.5	1.3	2.2	30.5	0.5	0	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	72	17	17	106	19	327	106	0	452	9	16	7	32	22	287	9	0	318	908
04:45 PM	61	16	8	85	15	316	110	0	441	14	9	13	36	20	252	3	1	276	838
05:00 PM	81	17	4	102	9	312	118	0	439	19	14	14	47	19	288	3	0	310	898
05:15 PM	80	11	6	97	13	345	112	1	471	10	17	8	35	20	271	6	0	297	900
Total Volume	294	61	35	390	56	1300	446	1	1803	52	56	42	150	81	1098	21	1	1201	3544
% App. Total	75.4	15.6	9		3.1	72.1	24.7	0.1		34.7	37.3	28		6.7	91.4	1.7	0.1		
PHF	.907	.897	.515	.920	.737	.942	.945	.250	.957	.684	.824	.750	.798	.920	.953	.583	.250	.944	.976

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

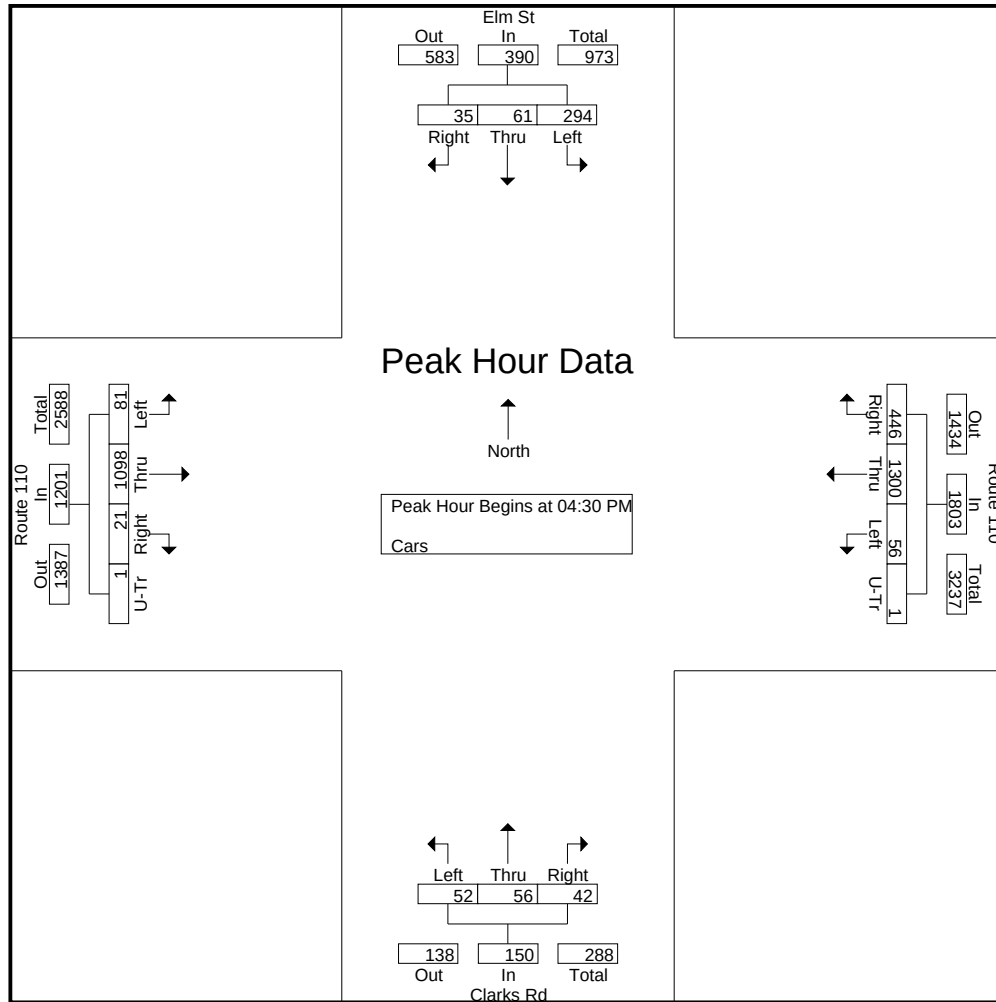
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 2



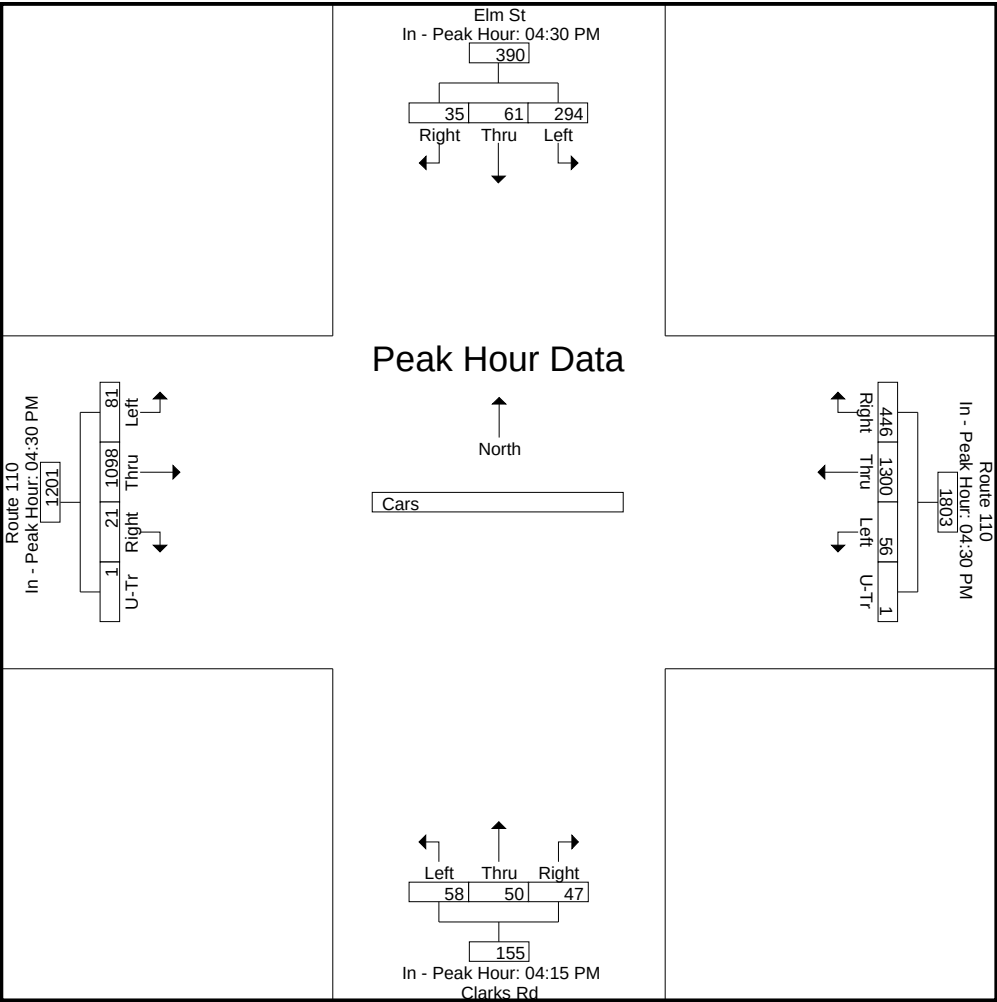
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM				04:30 PM				04:15 PM				04:30 PM					
+0 mins.	72	17	17	106	19	327	106	0	452	16	11	13	40	22	287	9	0	318
+15 mins.	61	16	8	85	15	316	110	0	441	9	16	7	32	20	252	3	1	276
+30 mins.	81	17	4	102	9	312	118	0	439	14	9	13	36	19	288	3	0	310
+45 mins.	80	11	6	97	13	345	112	1	471	19	14	14	47	20	271	6	0	297
Total Volume	294	61	35	390	56	1300	446	1	1803	58	50	47	155	81	1098	21	1	1201
% App. Total	75.4	15.6	9		3.1	72.1	24.7	0.1		37.4	32.3	30.3		6.7	91.4	1.7	0.1	
PHF	.907	.897	.515	.920	.737	.942	.945	.250	.957	.763	.781	.839	.824	.920	.953	.583	.250	.944

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	0	0	1	0	4	2	0	0	0	0	0	3	0	0	10
04:15 PM	0	0	0	0	5	0	0	0	0	1	0	6	0	0	12
04:30 PM	1	0	0	0	6	1	0	0	0	0	0	6	0	0	14
04:45 PM	0	0	0	0	5	2	0	0	0	0	0	4	0	0	11
Total	1	0	1	0	20	5	0	0	0	1	0	19	0	0	47
05:00 PM	1	0	0	0	3	0	0	0	0	0	0	4	0	0	8
05:15 PM	0	0	0	0	3	0	0	1	0	0	0	5	0	0	9
05:30 PM	0	0	0	0	1	1	0	0	0	0	0	2	0	0	4
05:45 PM	1	0	0	0	1	1	0	0	0	0	0	3	0	0	6
Total	2	0	0	0	8	2	0	1	0	0	0	14	0	0	27
Grand Total	3	0	1	0	28	7	0	1	0	1	0	33	0	0	74
Apprch %	75	0	25	0	80	20	0	50	0	50	0	100	0	0	
Total %	4.1	0	1.4	0	37.8	9.5	0	1.4	0	1.4	0	44.6	0	0	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	1	1	0	4	2	0	6	0	0	0	0	0	3	0	0	3	10
04:15 PM	0	0	0	0	0	5	0	0	5	0	0	1	1	0	6	0	0	6	12
04:30 PM	1	0	0	1	0	6	1	0	7	0	0	0	0	0	6	0	0	6	14
04:45 PM	0	0	0	0	0	5	2	0	7	0	0	0	0	0	4	0	0	4	11
Total Volume	1	0	1	2	0	20	5	0	25	0	0	1	1	0	19	0	0	19	47
% App. Total	50	0	50		0	80	20	0		0	0	100		0	100	0	0		
PHF	.250	.000	.250	.500	.000	.833	.625	.000	.893	.000	.000	.250	.250	.000	.792	.000	.000	.792	.839

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

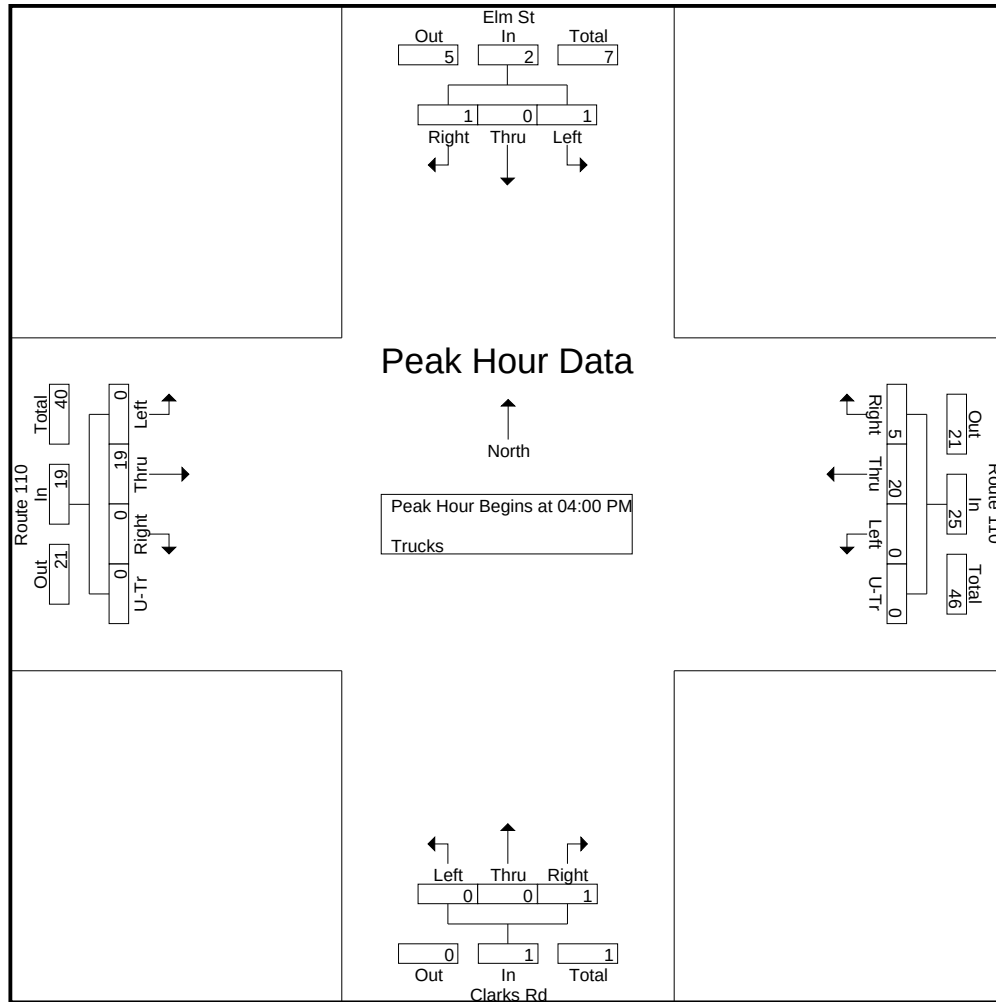
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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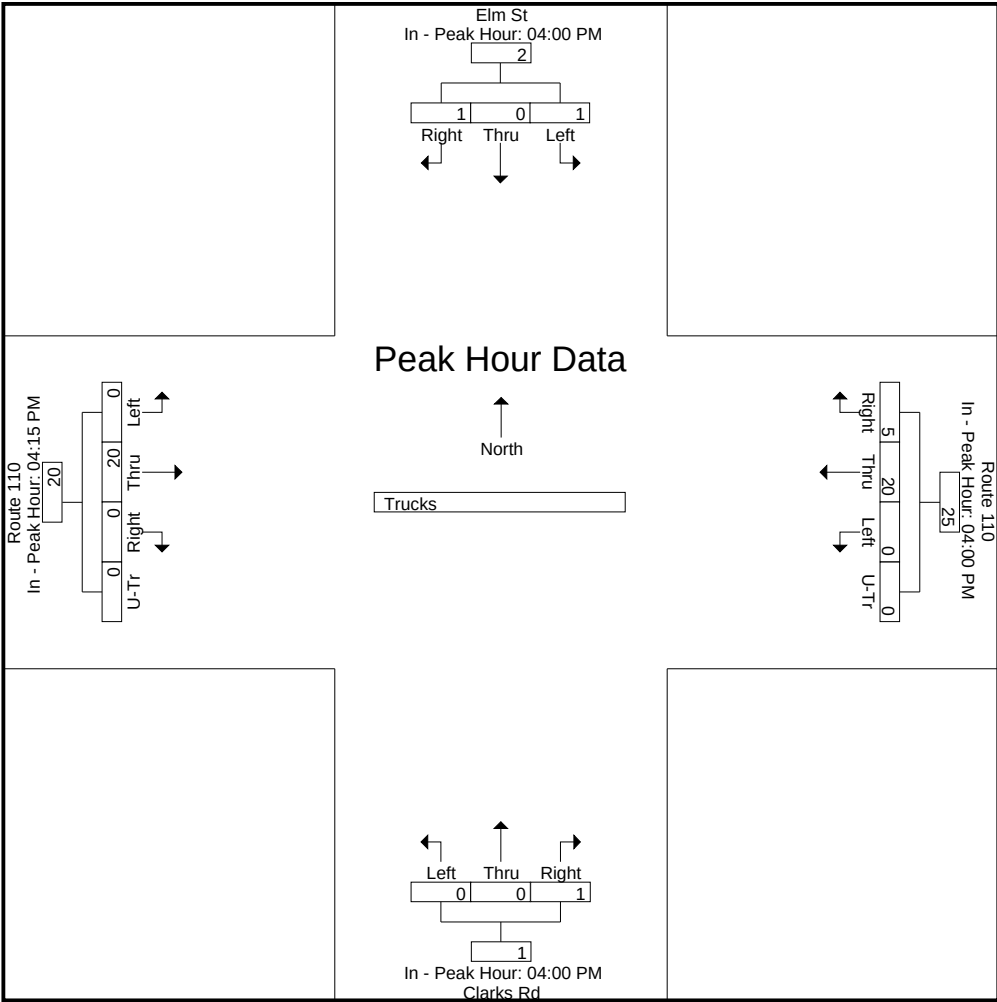
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:00 PM					04:15 PM				
+0 mins.	0	0	1	1		0	4	2	0	6	0	0	0	0		0	6	0	0	6
+15 mins.	0	0	0	0		0	5	0	0	5	0	0	1	1		0	6	0	0	6
+30 mins.	1	0	0	1		0	6	1	0	7	0	0	0	0		0	4	0	0	4
+45 mins.	0	0	0	0		0	5	2	0	7	0	0	0	0		0	4	0	0	4
Total Volume	1	0	1	2		0	20	5	0	25	0	0	1	1		0	20	0	0	20
% App. Total	50	0	50			0	80	20	0		0	0	100			0	100	0	0	
PHF	.250	.000	.250	.500		.000	.833	.625	.000	.893	.000	.000	.250	.250		.000	.833	.000	.000	.833

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

Page No : 1

Groups Printed- Bikes Peds

	Elm St From North				Route 110 From East				Clarks Rd From South				Route 110 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	1	0	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	2	1	4	5
04:45 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	4	4
Total	0	0	0	1	0	0	0	4	0	2	0	0	0	1	0	2	1	9	10
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	2
05:30 PM	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3	3
05:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	2
Total	0	0	0	1	0	0	1	4	0	1	0	0	0	0	0	0	1	6	7
Grand Total	0	0	0	2	0	0	1	8	0	3	0	0	0	1	0	2	2	15	17
Apprch %	0	0	0		0	0	11.1	88.9	0	100	0		0	33.3	0	66.7			
Total %	0	0	0		0	0	6.7	53.3	0	20	0		0	6.7	0	13.3	11.8	88.2	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	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	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2	2	4
04:45 PM	0	0	0	0	0	0	0	2	2	0	2	0	2	0	0	0	0	0	4
Total Volume	0	0	0	0	0	0	0	4	4	0	2	0	2	0	1	0	2	3	9
% App. Total	0	0	0		0	0	0	100		0	100	0		0	33.3	0	66.7		
PHF	.000	.000	.000	.000	.000	.000	.000	.500	.500	.000	.250	.000	.250	.000	.250	.000	.250	.375	.563

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

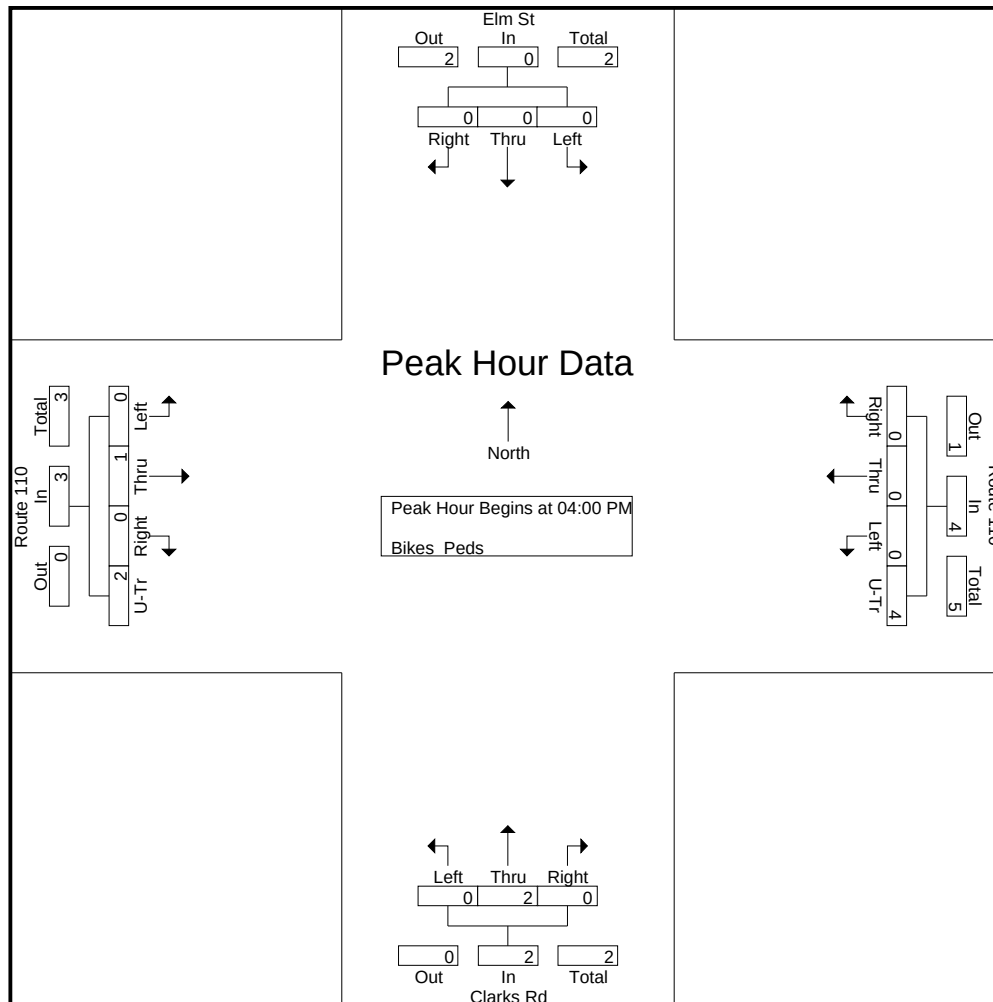
Weather : Cloudy

File Name : 97650001

Site Code : 97650001

Start Date : 7/13/2023

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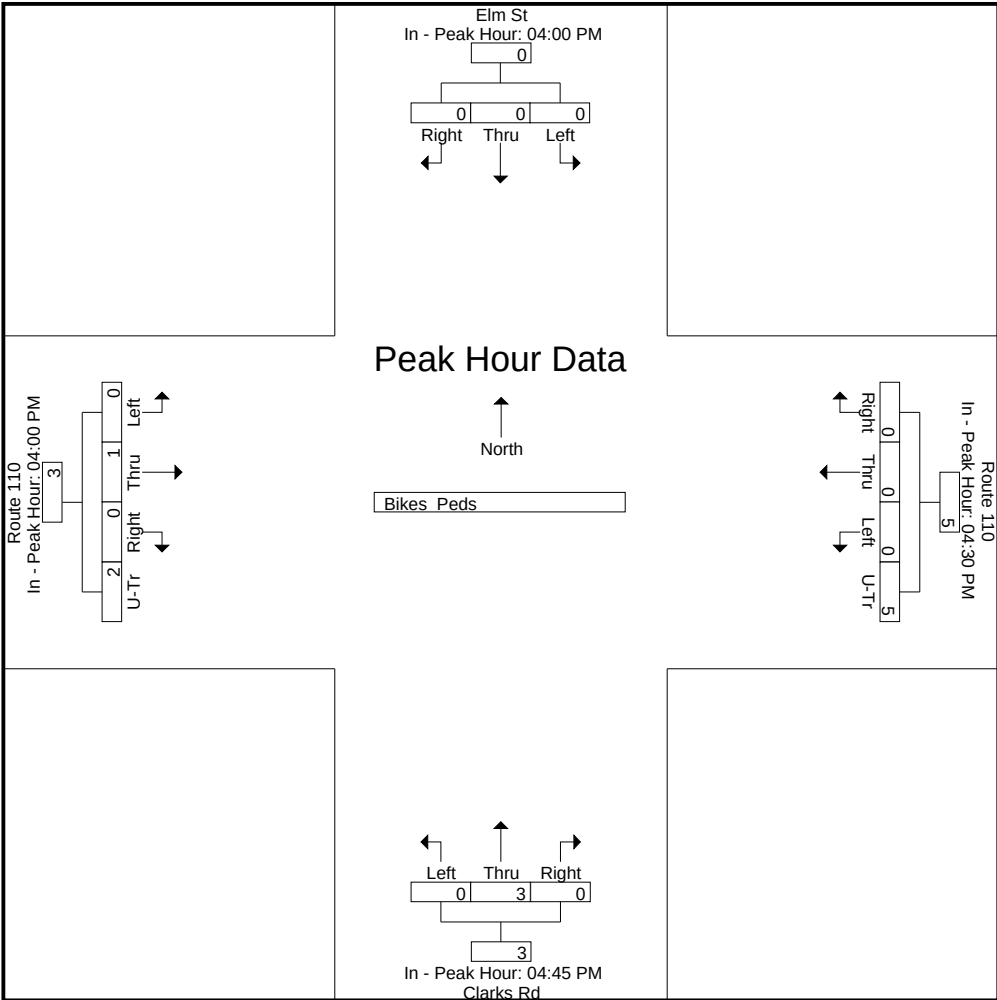
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

Each Hour For	Each Approach Begins At:																	
	04:00 PM				04:30 PM					04:45 PM				04:00 PM				
+0 mins.	0	0	0	0	0	0	0	2	2	0	2	0	2	0	1	0	1	
+15 mins.	0	0	0	0	0	0	0	2	2	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	2	2	
+45 mins.	0	0	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	5	5	0	3	0	3	0	1	0	3	
% App. Total	0	0	0	0	0	0	0	100	100	0	100	0	0	33.3	0	66.7	0	
PHF	.000	.000	.000	.000	.000	.000	.000	.625	.625	.000	.375	.000	.375	.000	.250	.000	.250	.375

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650001
Site Code : 97650001
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

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Groups Printed- Cars - Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	54	8	7	9	186	54	0	8	3	11	22	324	4	0	690
11:15 AM	75	13	7	11	207	74	0	3	9	16	17	285	2	0	719
11:30 AM	75	11	9	11	203	60	0	4	7	9	15	294	4	0	702
11:45 AM	69	12	9	8	202	65	2	13	9	13	14	327	6	1	750
Total	273	44	32	39	798	253	2	28	28	49	68	1230	16	1	2861
12:00 PM	78	14	6	6	200	67	0	7	9	17	16	244	3	4	671
12:15 PM	69	9	12	16	247	49	1	4	7	16	15	288	3	0	736
12:30 PM	73	11	6	17	198	66	3	5	12	18	18	291	6	0	724
12:45 PM	62	6	11	7	209	70	0	7	5	11	12	305	5	0	710
Total	282	40	35	46	854	252	4	23	33	62	61	1128	17	4	2841
01:00 PM	52	9	7	8	194	74	0	6	8	13	19	231	5	1	627
01:15 PM	72	5	4	17	206	59	1	4	5	12	10	233	5	0	633
01:30 PM	62	6	8	12	212	65	2	4	3	12	13	222	4	0	625
01:45 PM	72	10	7	14	189	74	0	8	11	14	11	226	1	1	638
Total	258	30	26	51	801	272	3	22	27	51	53	912	15	2	2523
Grand Total	813	114	93	136	2453	777	9	73	88	162	182	3270	48	7	8225
Apprch %	79.7	11.2	9.1	4	72.7	23	0.3	22.6	27.2	50.2	5.2	93.2	1.4	0.2	
Total %	9.9	1.4	1.1	1.7	29.8	9.4	0.1	0.9	1.1	2	2.2	39.8	0.6	0.1	
Cars	805	114	88	136	2432	769	9	73	88	162	179	3244	48	7	8154
% Cars	99	100	94.6	100	99.1	99	100	100	100	100	98.4	99.2	100	100	99.1
Trucks	8	0	5	0	21	8	0	0	0	0	3	26	0	0	71
% Trucks	1	0	5.4	0	0.9	1	0	0	0	0	1.6	0.8	0	0	0.9

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:45 AM																			
11:45 AM	69	12	9	90	8	202	65	2	277	13	9	13	35	14	327	6	1	348	750
12:00 PM	78	14	6	98	6	200	67	0	273	7	9	17	33	16	244	3	4	267	671
12:15 PM	69	9	12	90	16	247	49	1	313	4	7	16	27	15	288	3	0	306	736
12:30 PM	73	11	6	90	17	198	66	3	284	5	12	18	35	18	291	6	0	315	724
Total Volume	289	46	33	368	47	847	247	6	1147	29	37	64	130	63	1150	18	5	1236	2881
% App. Total	78.5	12.5	9		4.1	73.8	21.5	0.5		22.3	28.5	49.2		5.1	93	1.5	0.4		
PHF	.926	.821	.688	.939	.691	.857	.922	.500	.916	.558	.771	.889	.929	.875	.879	.750	.313	.888	.960
Cars	285	46	31	362	47	838	244	6	1135	29	37	64	130	62	1140	18	5	1225	2852
% Cars	98.6	100	93.9	98.4	100	98.9	98.8	100	99.0	100	100	100	100	98.4	99.1	100	100	99.1	99.0
Trucks	4	0	2	6	0	9	3	0	12	0	0	0	0	1	10	0	0	11	29
% Trucks	1.4	0	6.1	1.6	0	1.1	1.2	0	1.0	0	0	0	0	1.6	0.9	0	0	0.9	1.0

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

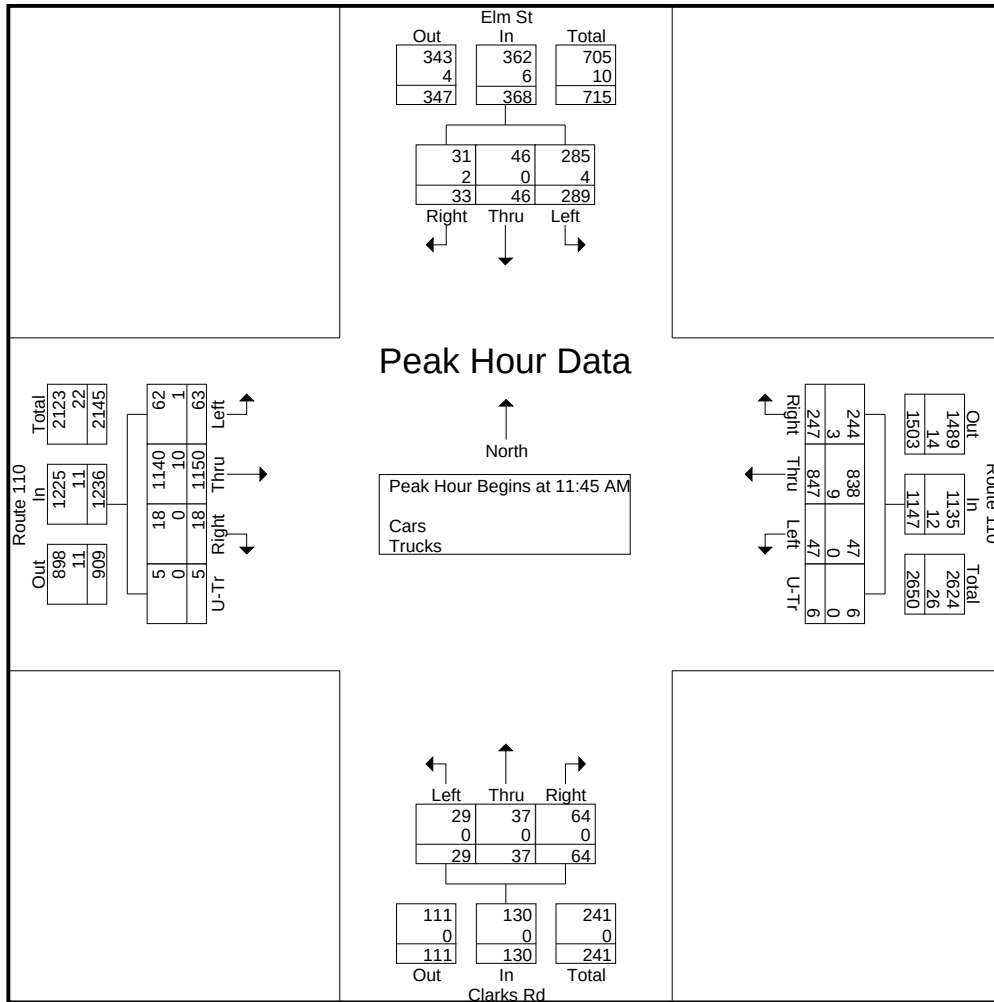
Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

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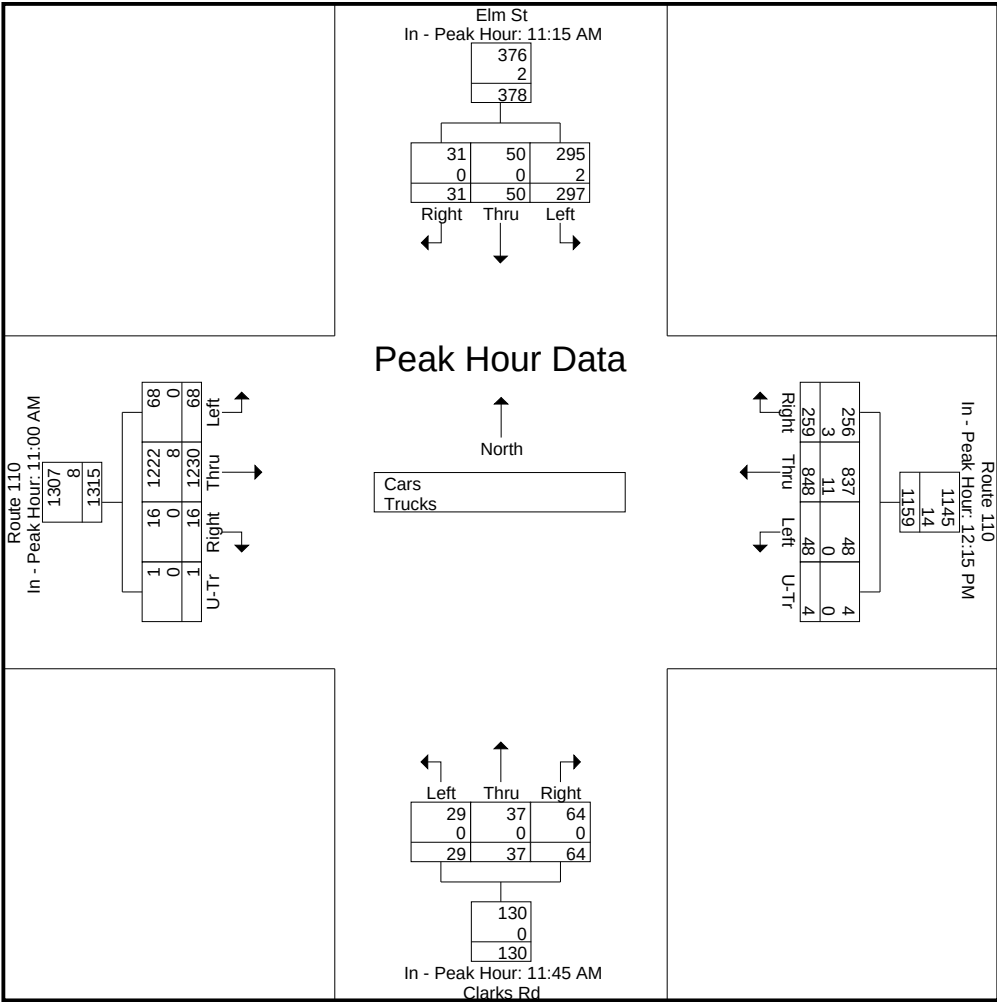
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM				12:15 PM				11:45 AM				11:00 AM					
+0 mins.	75	13	7	95	16	247	49	1	313	13	9	13	35	22	324	4	0	350
+15 mins.	75	11	9	95	17	198	66	3	284	7	9	17	33	17	285	2	0	304
+30 mins.	69	12	9	90	7	209	70	0	286	4	7	16	27	15	294	4	0	313
+45 mins.	78	14	6	98	8	194	74	0	276	5	12	18	35	14	327	6	1	348
Total Volume	297	50	31	378	48	848	259	4	1159	29	37	64	130	68	1230	16	1	1315
% App. Total	78.6	13.2	8.2		4.1	73.2	22.3	0.3		22.3	28.5	49.2		5.2	93.5	1.2	0.1	
PHF	.952	.893	.861	.964	.706	.858	.875	.333	.926	.558	.771	.889	.929	.773	.940	.667	.250	.939
Cars	295	50	31	376	48	837	256	4	1145	29	37	64	130	68	1222	16	1	1307
% Cars	99.3	100	100	99.5	100	98.7	98.8	100	98.8	100	100	100	100	100	99.3	100	100	99.4
Trucks	2	0	0	2	0	11	3	0	14	0	0	0	0	0	8	0	0	8
% Trucks	0.7	0	0	0.5	0	1.3	1.2	0	1.2	0	0	0	0	0	0.7	0	0	0.6

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S1
Site Code : 97650001
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

Page No : 1

Groups Printed- Cars

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	54	8	7	9	186	52	0	8	3	11	22	321	4	0	685
11:15 AM	75	13	7	11	206	74	0	3	9	16	17	285	2	0	718
11:30 AM	75	11	9	11	203	60	0	4	7	9	15	291	4	0	699
11:45 AM	68	12	9	8	197	64	2	13	9	13	14	325	6	1	741
Total	272	44	32	39	792	250	2	28	28	49	68	1222	16	1	2843
12:00 PM	77	14	6	6	199	65	0	7	9	17	16	242	3	4	665
12:15 PM	68	9	10	16	245	49	1	4	7	16	15	283	3	0	726
12:30 PM	72	11	6	17	197	66	3	5	12	18	17	290	6	0	720
12:45 PM	61	6	10	7	204	68	0	7	5	11	12	304	5	0	700
Total	278	40	32	46	845	248	4	23	33	62	60	1119	17	4	2811
01:00 PM	52	9	5	8	191	73	0	6	8	13	18	229	5	1	618
01:15 PM	70	5	4	17	206	59	1	4	5	12	10	230	5	0	628
01:30 PM	62	6	8	12	212	65	2	4	3	12	13	219	4	0	622
01:45 PM	71	10	7	14	186	74	0	8	11	14	10	225	1	1	632
Total	255	30	24	51	795	271	3	22	27	51	51	903	15	2	2500
Grand Total	805	114	88	136	2432	769	9	73	88	162	179	3244	48	7	8154
Apprch %	79.9	11.3	8.7	4.1	72.7	23	0.3	22.6	27.2	50.2	5.1	93.3	1.4	0.2	
Total %	9.9	1.4	1.1	1.7	29.8	9.4	0.1	0.9	1.1	2	2.2	39.8	0.6	0.1	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:45 AM																			
11:45 AM	68	12	9	89	8	197	64	2	271	13	9	13	35	14	325	6	1	346	741
12:00 PM	77	14	6	97	6	199	65	0	270	7	9	17	33	16	242	3	4	265	665
12:15 PM	68	9	10	87	16	245	49	1	311	4	7	16	27	15	283	3	0	301	726
12:30 PM	72	11	6	89	17	197	66	3	283	5	12	18	35	17	290	6	0	313	720
Total Volume	285	46	31	362	47	838	244	6	1135	29	37	64	130	62	1140	18	5	1225	2852
% App. Total	78.7	12.7	8.6		4.1	73.8	21.5	0.5		22.3	28.5	49.2		5.1	93.1	1.5	0.4		
PHF	.925	.821	.775	.933	.691	.855	.924	.500	.912	.558	.771	.889	.929	.912	.877	.750	.313	.885	.962

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

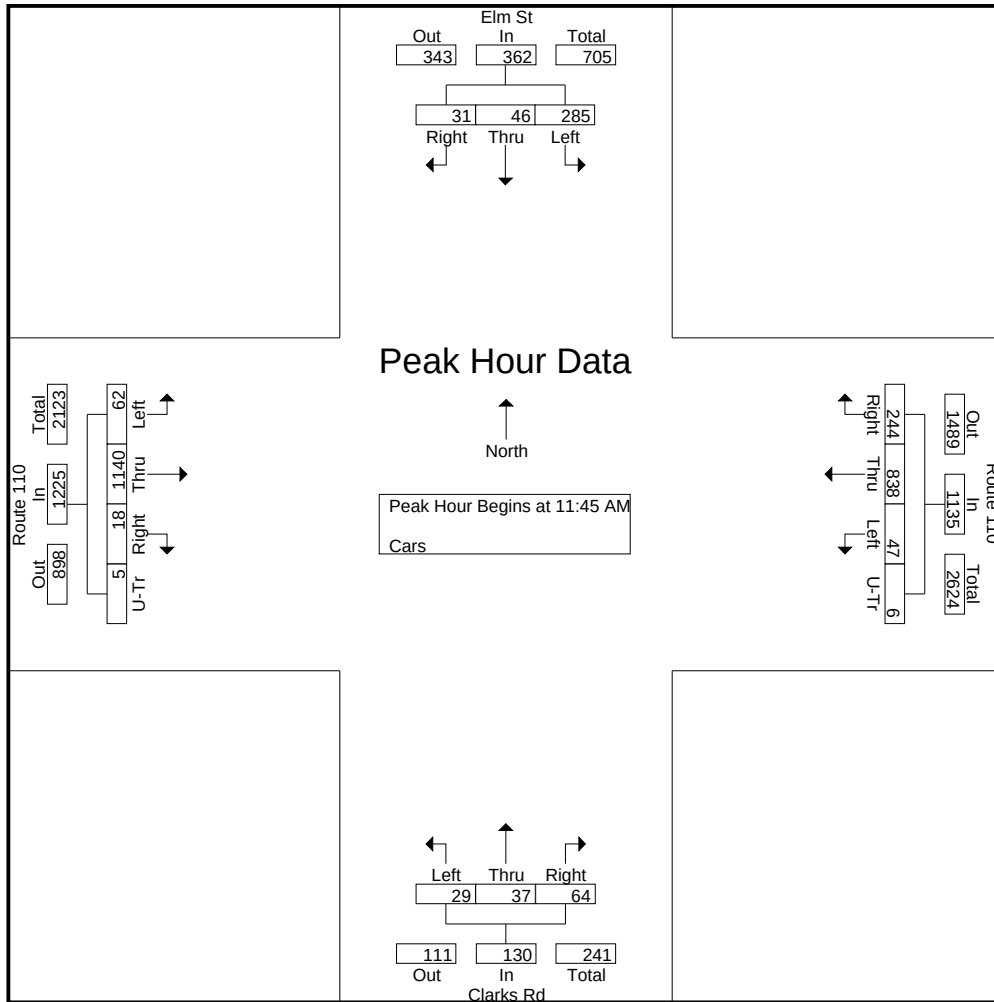
Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

Page No : 2



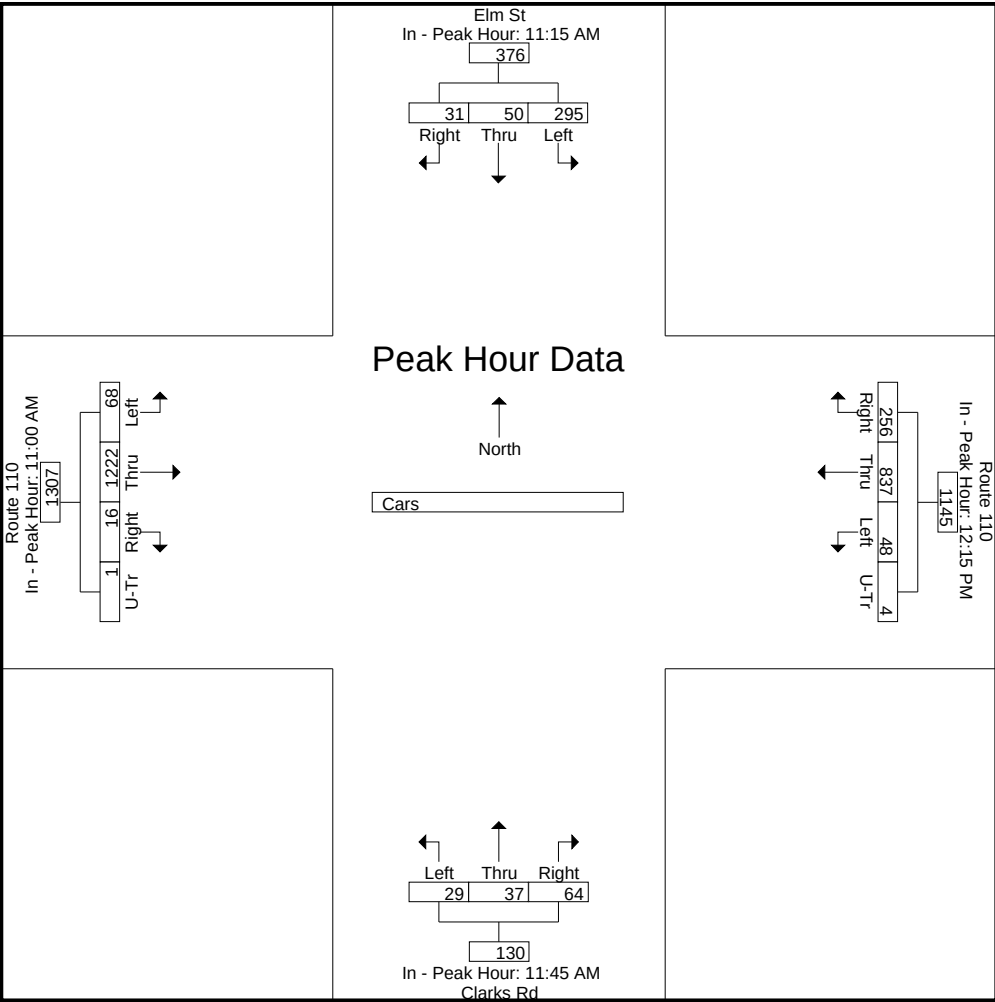
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:15 AM				12:15 PM				11:45 AM				11:00 AM					
+0 mins.	75	13	7	95	16	245	49	1	311	13	9	13	35	22	321	4	0	347
+15 mins.	75	11	9	95	17	197	66	3	283	7	9	17	33	17	285	2	0	304
+30 mins.	68	12	9	89	7	204	68	0	279	4	7	16	27	15	291	4	0	310
+45 mins.	77	14	6	97	8	191	73	0	272	5	12	18	35	14	325	6	1	346
Total Volume	295	50	31	376	48	837	256	4	1145	29	37	64	130	68	1222	16	1	1307
% App. Total	78.5	13.3	8.2		4.2	73.1	22.4	0.3		22.3	28.5	49.2		5.2	93.5	1.2	0.1	
PHF	.958	.893	.861	.969	.706	.854	.877	.333	.920	.558	.771	.889	.929	.773	.940	.667	.250	.942

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S1
Site Code : 97650001
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

Page No : 1

Groups Printed- Trucks

	Elm St From North			Route 110 From East				Clarks Rd From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	0	0	0	0	0	2	0	0	0	0	0	3	0	0	5
11:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
11:45 AM	1	0	0	0	5	1	0	0	0	0	0	2	0	0	9
Total	1	0	0	0	6	3	0	0	0	0	0	8	0	0	18
12:00 PM	1	0	0	0	1	2	0	0	0	0	0	2	0	0	6
12:15 PM	1	0	2	0	2	0	0	0	0	0	0	5	0	0	10
12:30 PM	1	0	0	0	1	0	0	0	0	0	1	1	0	0	4
12:45 PM	1	0	1	0	5	2	0	0	0	0	0	1	0	0	10
Total	4	0	3	0	9	4	0	0	0	0	1	9	0	0	30
01:00 PM	0	0	2	0	3	1	0	0	0	0	1	2	0	0	9
01:15 PM	2	0	0	0	0	0	0	0	0	0	0	3	0	0	5
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3
01:45 PM	1	0	0	0	3	0	0	0	0	0	1	1	0	0	6
Total	3	0	2	0	6	1	0	0	0	0	2	9	0	0	23
Grand Total	8	0	5	0	21	8	0	0	0	0	3	26	0	0	71
Apprch %	61.5	0	38.5	0	72.4	27.6	0	0	0	0	10.3	89.7	0	0	
Total %	11.3	0	7	0	29.6	11.3	0	0	0	0	4.2	36.6	0	0	

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:15 PM																			
12:15 PM	1	0	2	3	0	2	0	0	2	0	0	0	0	0	5	0	0	5	10
12:30 PM	1	0	0	1	0	1	0	0	1	0	0	0	0	1	1	0	0	2	4
12:45 PM	1	0	1	2	0	5	2	0	7	0	0	0	0	0	1	0	0	1	10
01:00 PM	0	0	2	2	0	3	1	0	4	0	0	0	0	1	2	0	0	3	9
Total Volume	3	0	5	8	0	11	3	0	14	0	0	0	0	2	9	0	0	11	33
% App. Total	37.5	0	62.5		0	78.6	21.4	0		0	0	0		18.2	81.8	0	0		
PHF	.750	.000	.625	.667	.000	.550	.375	.000	.500	.000	.000	.000	.000	.500	.450	.000	.000	.550	.825

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

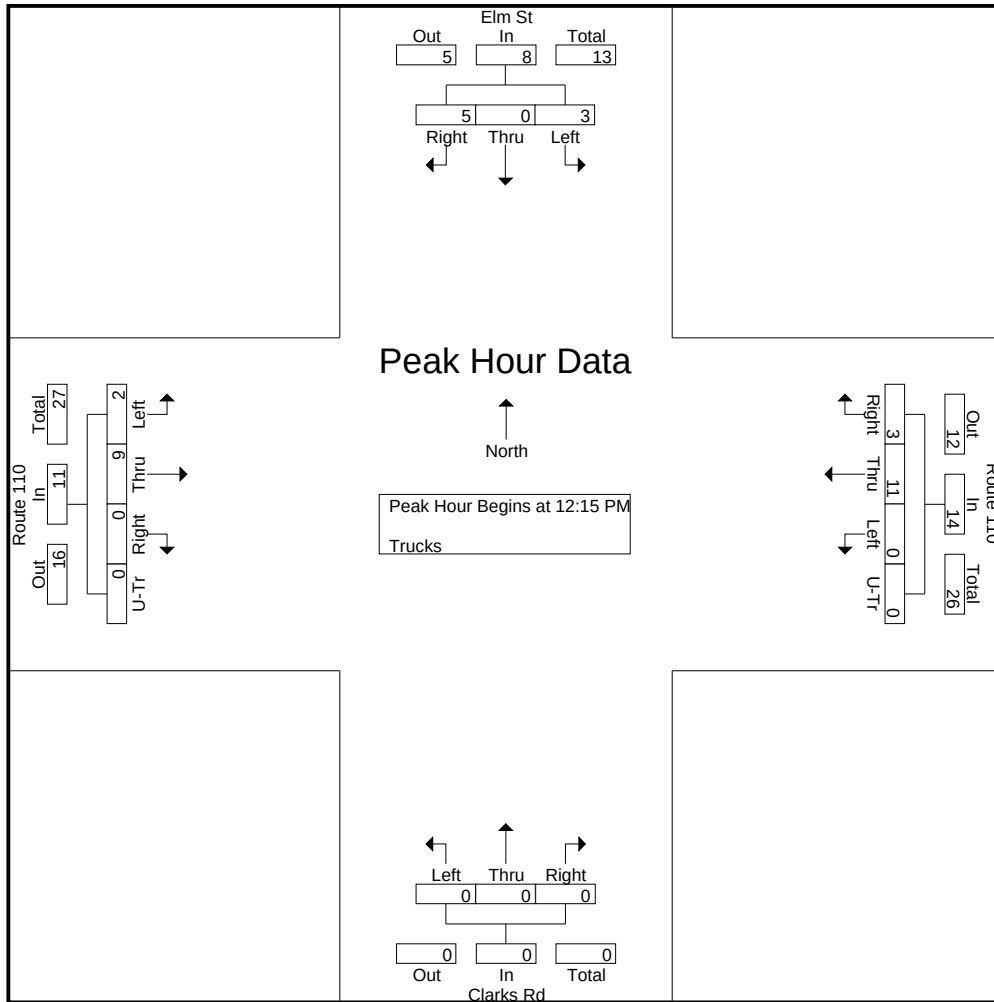
Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

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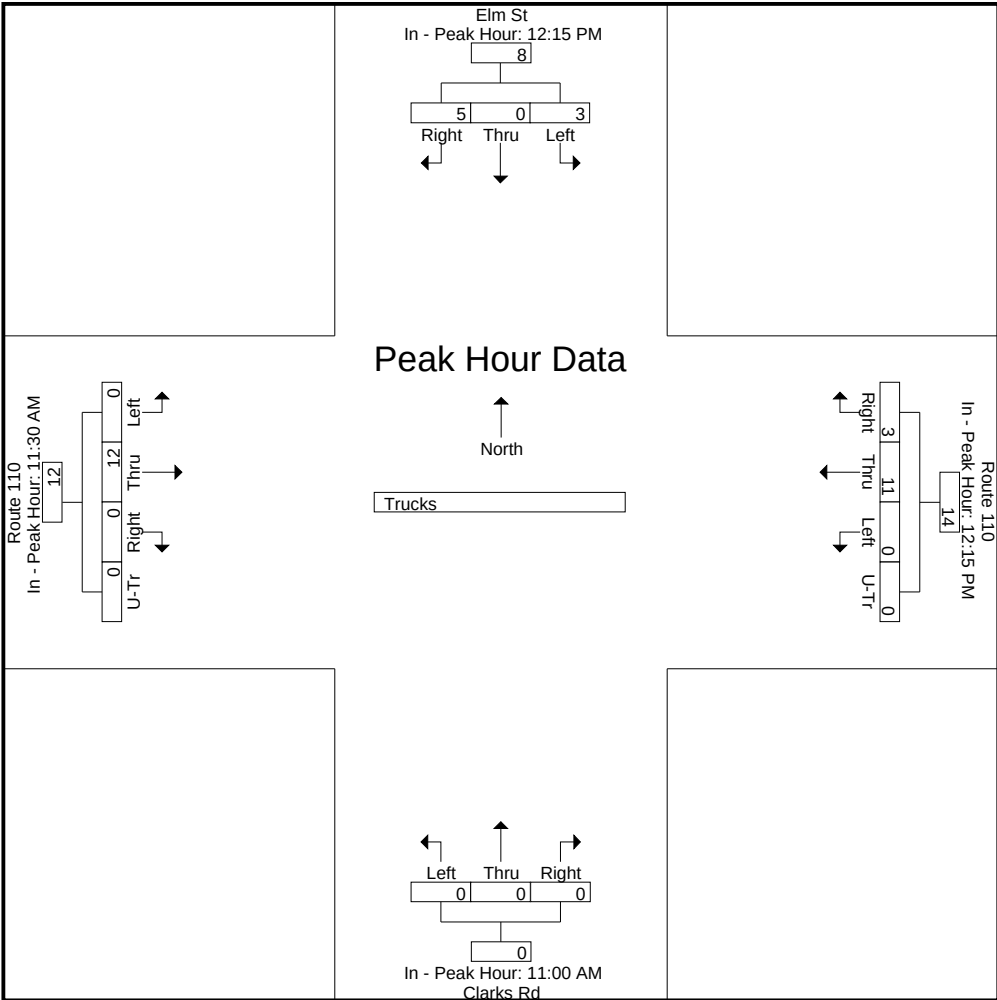
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:15 PM					12:15 PM					11:00 AM					11:30 AM				
+0 mins.	1	0	2	3	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	3
+15 mins.	1	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	2
+30 mins.	1	0	1	2	0	5	2	0	7	0	0	0	0	0	0	0	2	0	0	2
+45 mins.	0	0	2	2	0	3	1	0	4	0	0	0	0	0	0	0	5	0	0	5
Total Volume	3	0	5	8	0	11	3	0	14	0	0	0	0	0	0	0	12	0	0	12
% App. Total	37.5	0	62.5		0	78.6	21.4	0		0	0	0		0	0	0	100	0	0	
PHF	.750	.000	.625	.667	.000	.550	.375	.000	.500	.000	.000	.000	.000	.000	.000	.600	.000	.000	.000	.600

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S1
Site Code : 97650001
Start Date : 7/15/2023
Page No : 3



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	Elm St From North				Route 110 From East				Clarks Rd From South				Route 110 From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
11:15 AM	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2	2	4
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	3	3	6
Total	1	0	0	5	0	5	0	0	0	0	0	0	0	0	0	0	5	6	11
12:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
01:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	3	0	0	0	0	0	0	0	0	0	2	1	5	6
Grand Total	1	1	0	6	0	9	0	0	0	0	0	0	0	0	0	2	6	13	19
Apprch %	50	50	0		0	100	0	0	0	0	0	0	0	0	0	100			
Total %	7.7	7.7	0		0	69.2	0	0	0	0	0	0	0	0	0	15.4	31.6	68.4	

[illegible]

Accurate Counts

978-664-2565

N/S Street : Elm St / Clarks Rd

E/W Street : Route 110

City/State : Amesbury, MA

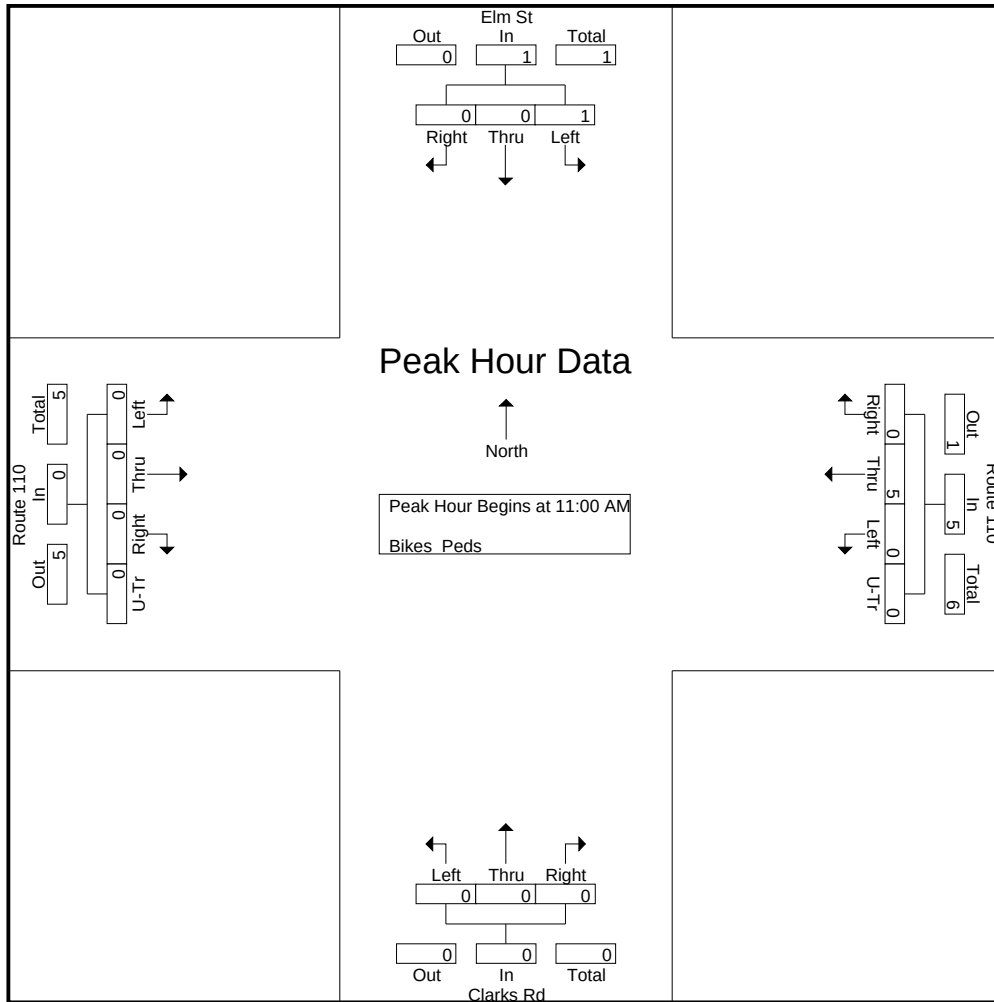
Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

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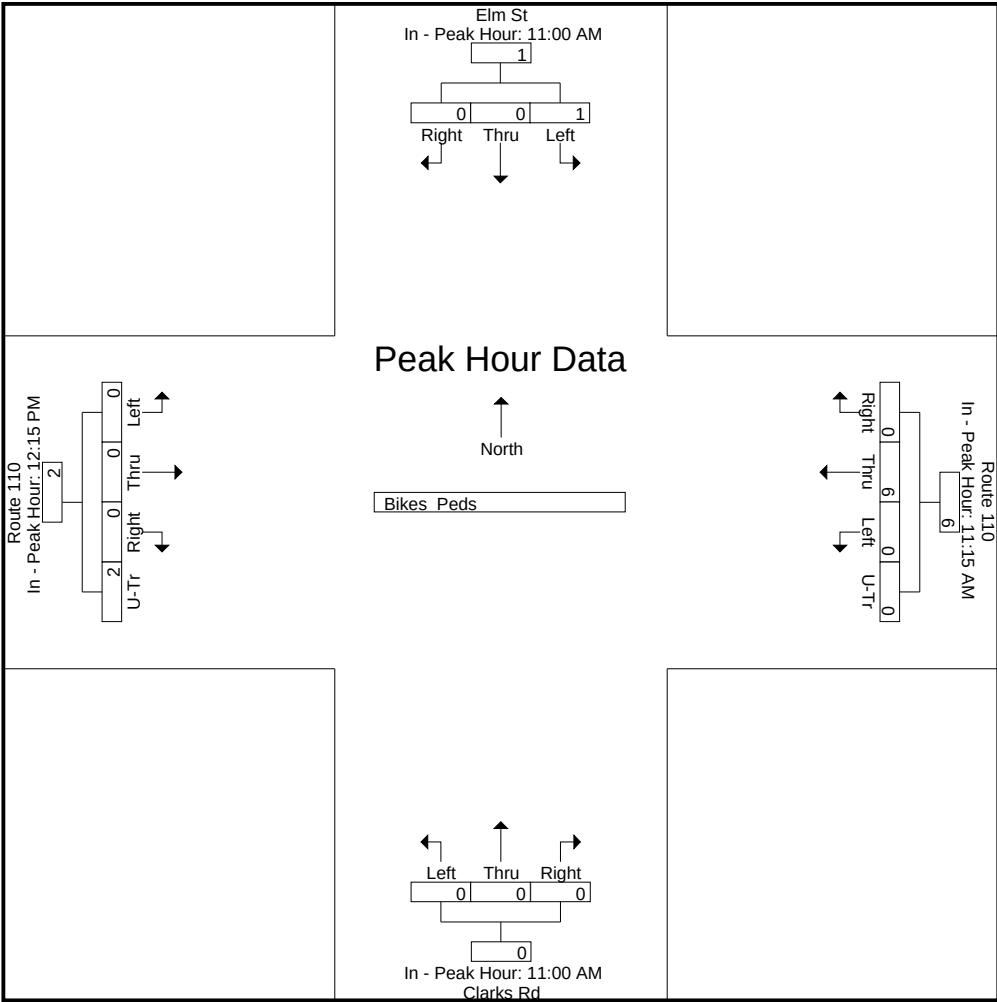
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM					11:15 AM					11:00 AM					12:15 PM				
+0 mins.	1	0	0	1	0	2	0	0	2	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	0	0	0	0
+30 mins.	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2	2	2
Total Volume	1	0	0	1	0	6	0	0	6	0	0	0	0	0	0	0	2	2	2	2
% App. Total	100	0	0	100	0	100	0	0	100	0	0	0	0	0	0	0	100	100	100	100
PHF	.250	.000	.000	.250	.000	.500	.000	.000	.500	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250	.250

N/S Street : Elm St / Clarks Rd
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S1
Site Code : 97650001
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars - Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	7	3	154	4	10	246	424
07:15 AM	10	8	189	4	9	294	514
07:30 AM	11	5	185	3	8	293	505
07:45 AM	9	5	213	3	6	344	580
Total	37	21	741	14	33	1177	2023
08:00 AM	11	12	170	12	15	276	496
08:15 AM	8	12	212	7	9	298	546
08:30 AM	11	9	194	7	10	292	523
08:45 AM	10	5	194	6	13	273	501
Total	40	38	770	32	47	1139	2066
Grand Total	77	59	1511	46	80	2316	4089
Apprch %	56.6	43.4	97	3	3.3	96.7	
Total %	1.9	1.4	37	1.1	2	56.6	
Cars	75	57	1453	45	79	2229	3938
% Cars	97.4	96.6	96.2	97.8	98.8	96.2	96.3
Trucks	2	2	58	1	1	87	151
% Trucks	2.6	3.4	3.8	2.2	1.2	3.8	3.7

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	9	5	14	213	3	216	6	344	350	580
08:00 AM	11	12	23	170	12	182	15	276	291	496
08:15 AM	8	12	20	212	7	219	9	298	307	546
08:30 AM	11	9	20	194	7	201	10	292	302	523
Total Volume	39	38	77	789	29	818	40	1210	1250	2145
% App. Total	50.6	49.4		96.5	3.5		3.2	96.8		
PHF	.886	.792	.837	.926	.604	.934	.667	.879	.893	.925
Cars	38	37	75	755	28	783	40	1163	1203	2061
% Cars	97.4	97.4	97.4	95.7	96.6	95.7	100	96.1	96.2	96.1
Trucks	1	1	2	34	1	35	0	47	47	84
% Trucks	2.6	2.6	2.6	4.3	3.4	4.3	0	3.9	3.8	3.9

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

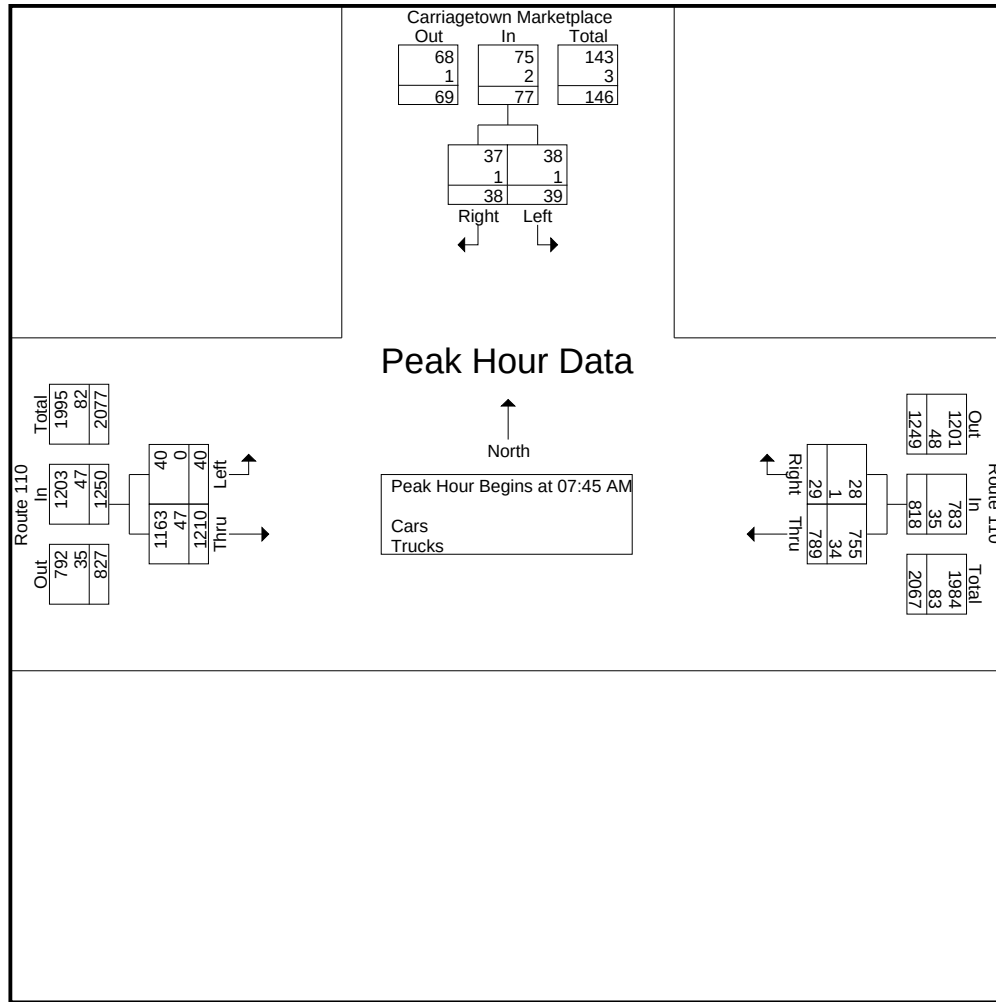
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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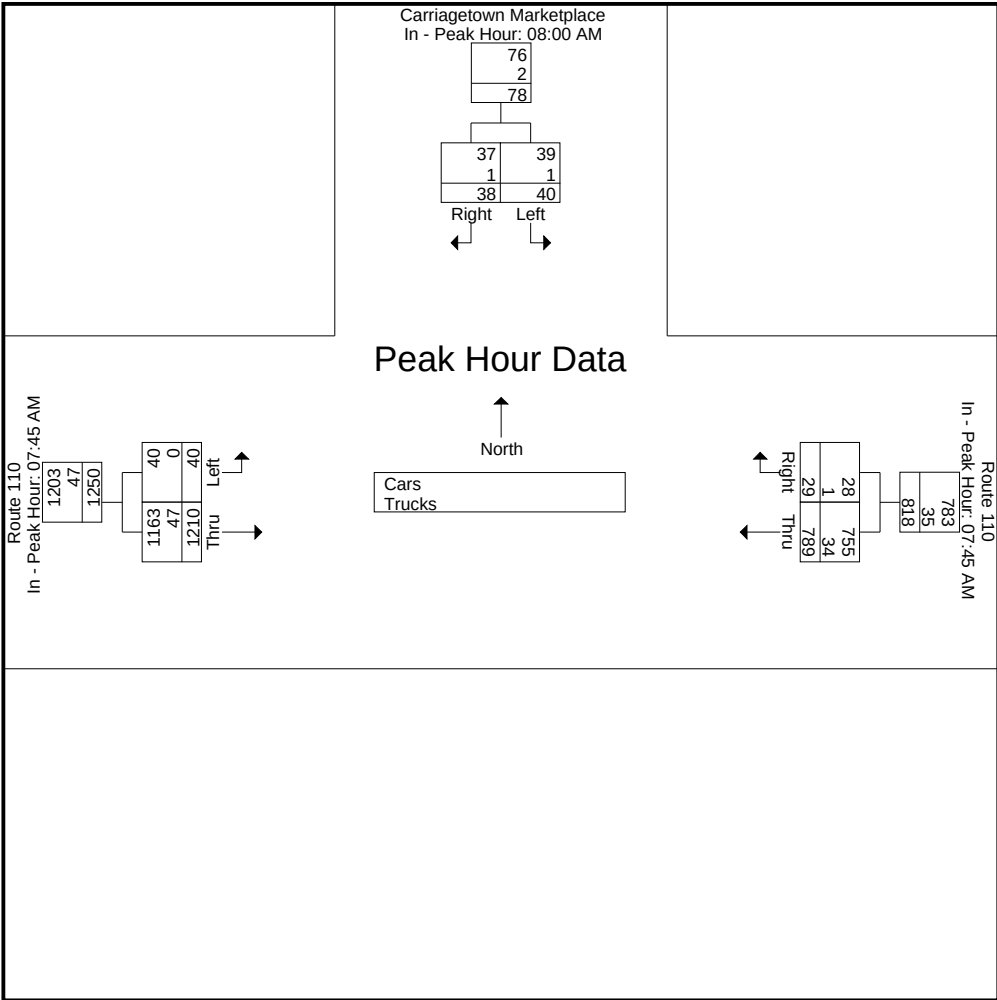
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			07:45 AM		
+0 mins.	11	12	23	213	3	216	6	344	350
+15 mins.	8	12	20	170	12	182	15	276	291
+30 mins.	11	9	20	212	7	219	9	298	307
+45 mins.	10	5	15	194	7	201	10	292	302
Total Volume	40	38	78	789	29	818	40	1210	1250
% App. Total	51.3	48.7		96.5	3.5		3.2	96.8	
PHF	.909	.792	.848	.926	.604	.934	.667	.879	.893
Cars	39	37	76	755	28	783	40	1163	1203
% Cars	97.5	97.4	97.4	95.7	96.6	95.7	100	96.1	96.2
Trucks	1	1	2	34	1	35	0	47	47
% Trucks	2.5	2.6	2.6	4.3	3.4	4.3	0	3.9	3.8

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 4

Groups Printed- Cars

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	7	3	151	4	10	236	411
07:15 AM	10	8	186	4	9	284	501
07:30 AM	10	5	179	3	7	280	484
07:45 AM	9	4	206	3	6	331	559
Total	36	20	722	14	32	1131	1955
08:00 AM	11	12	163	12	15	267	480
08:15 AM	8	12	203	6	9	287	525
08:30 AM	10	9	183	7	10	278	497
08:45 AM	10	4	182	6	13	266	481
Total	39	37	731	31	47	1098	1983
Grand Total	75	57	1453	45	79	2229	3938
Apprch %	56.8	43.2	97	3	3.4	96.6	
Total %	1.9	1.4	36.9	1.1	2	56.6	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	9	4	13	206	3	209	6	331	337	559
08:00 AM	11	12	23	163	12	175	15	267	282	480
08:15 AM	8	12	20	203	6	209	9	287	296	525
08:30 AM	10	9	19	183	7	190	10	278	288	497
Total Volume	38	37	75	755	28	783	40	1163	1203	2061
% App. Total	50.7	49.3		96.4	3.6		3.3	96.7		
PHF	.864	.771	.815	.916	.583	.937	.667	.878	.892	.922

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

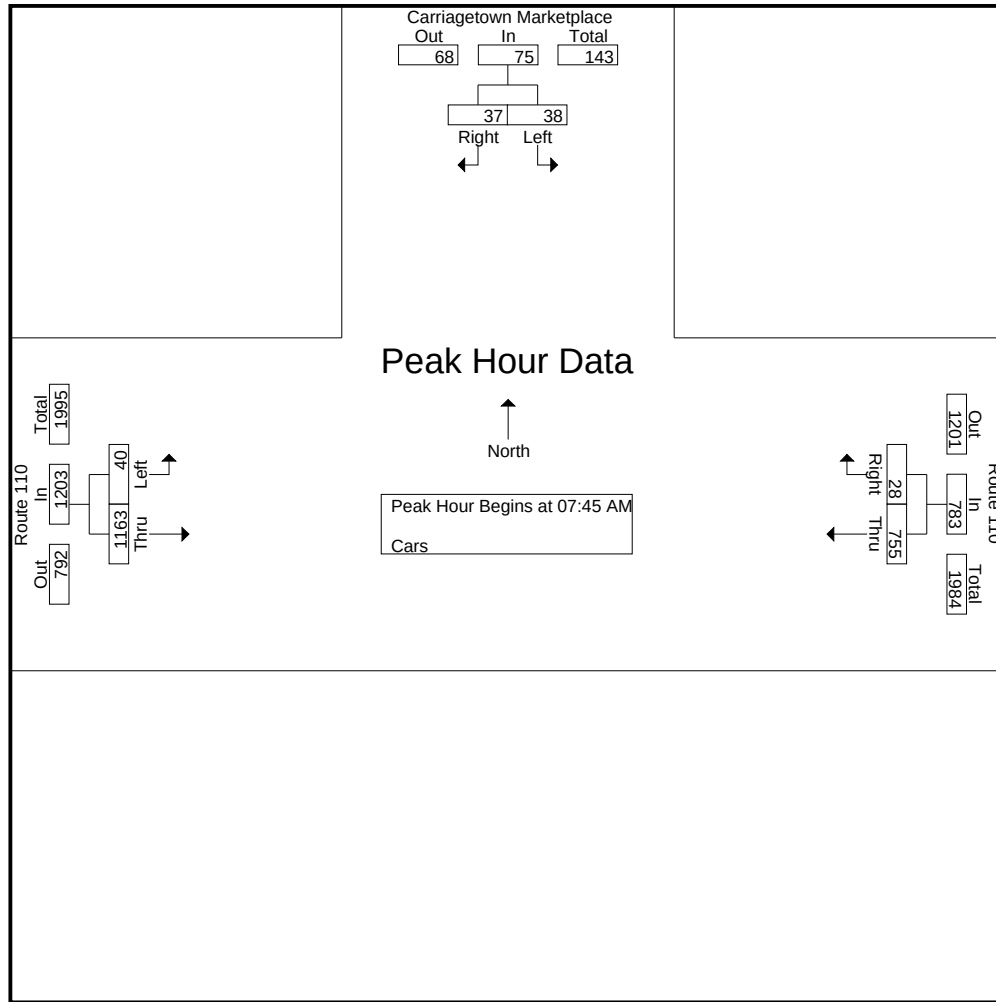
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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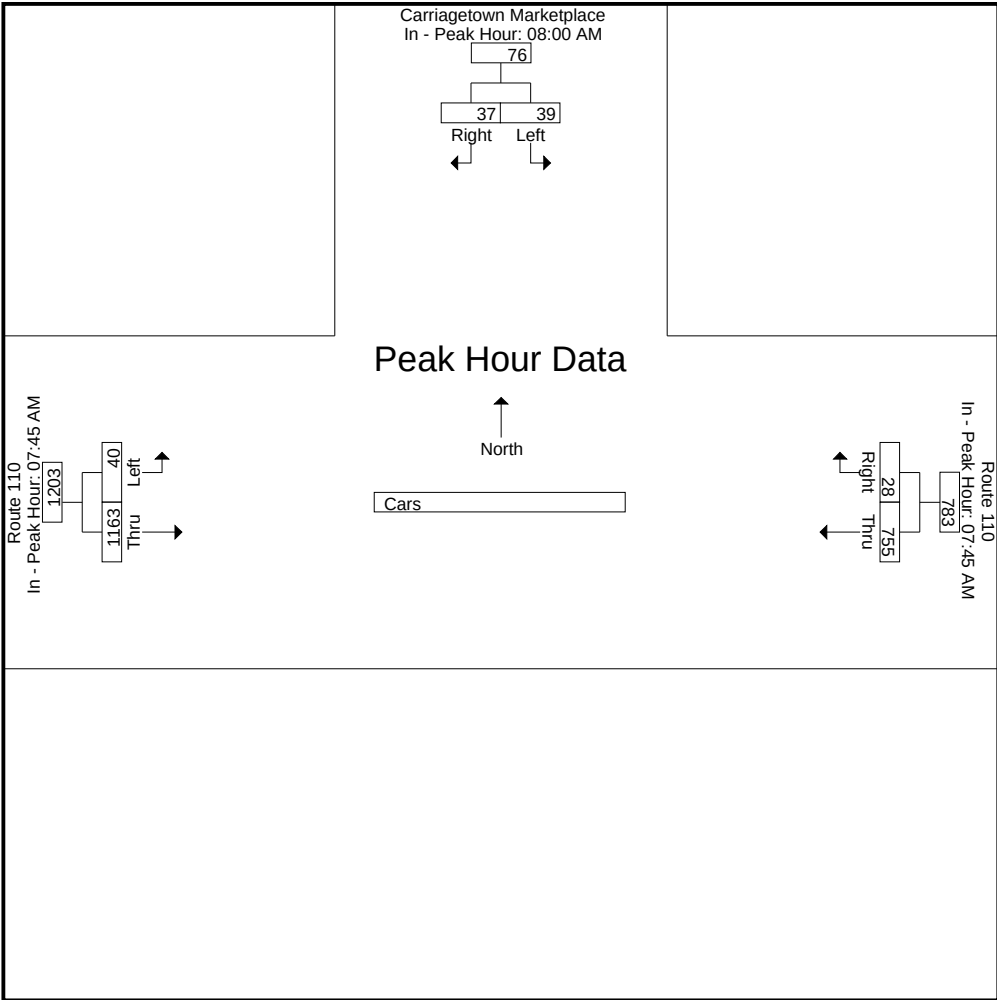
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			07:45 AM		
+0 mins.	11	12	23	206	3	209	6	331	337
+15 mins.	8	12	20	163	12	175	15	267	282
+30 mins.	10	9	19	203	6	209	9	287	296
+45 mins.	10	4	14	183	7	190	10	278	288
Total Volume	39	37	76	755	28	783	40	1163	1203
% App. Total	51.3	48.7		96.4	3.6		3.3	96.7	
PHF	.886	.771	.826	.916	.583	.937	.667	.878	.892

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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Groups Printed- Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM	0	0	3	0	0	10	13
07:15 AM	0	0	3	0	0	10	13
07:30 AM	1	0	6	0	1	13	21
07:45 AM	0	1	7	0	0	13	21
Total	1	1	19	0	1	46	68
08:00 AM	0	0	7	0	0	9	16
08:15 AM	0	0	9	1	0	11	21
08:30 AM	1	0	11	0	0	14	26
08:45 AM	0	1	12	0	0	7	20
Total	1	1	39	1	0	41	83
Grand Total	2	2	58	1	1	87	151
Apprch %	50	50	98.3	1.7	1.1	98.9	
Total %	1.3	1.3	38.4	0.7	0.7	57.6	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	0	1	1	7	0	7	0	13	13	21
08:00 AM	0	0	0	7	0	7	0	9	9	16
08:15 AM	0	0	0	9	1	10	0	11	11	21
08:30 AM	1	0	1	11	0	11	0	14	14	26
Total Volume	1	1	2	34	1	35	0	47	47	84
% App. Total	50	50		97.1	2.9		0	100		
PHF	.250	.250	.500	.773	.250	.795	.000	.839	.839	.808

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

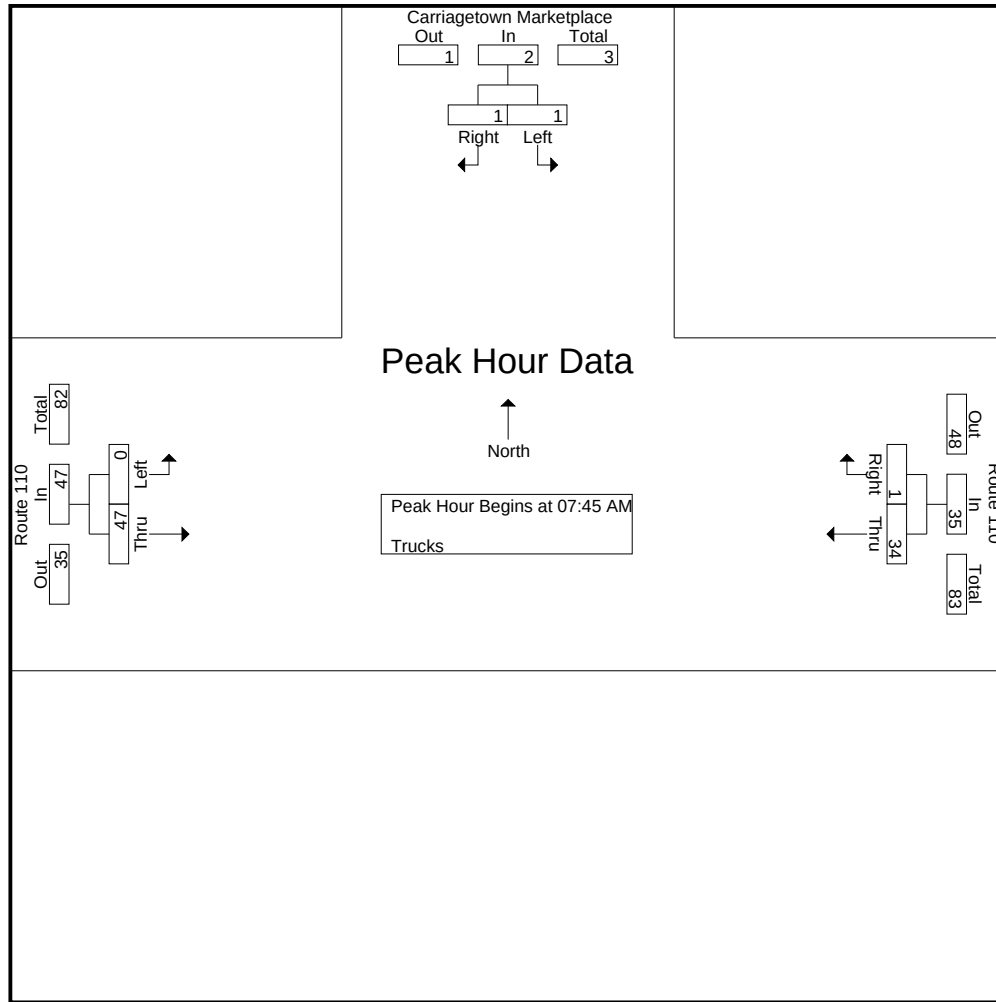
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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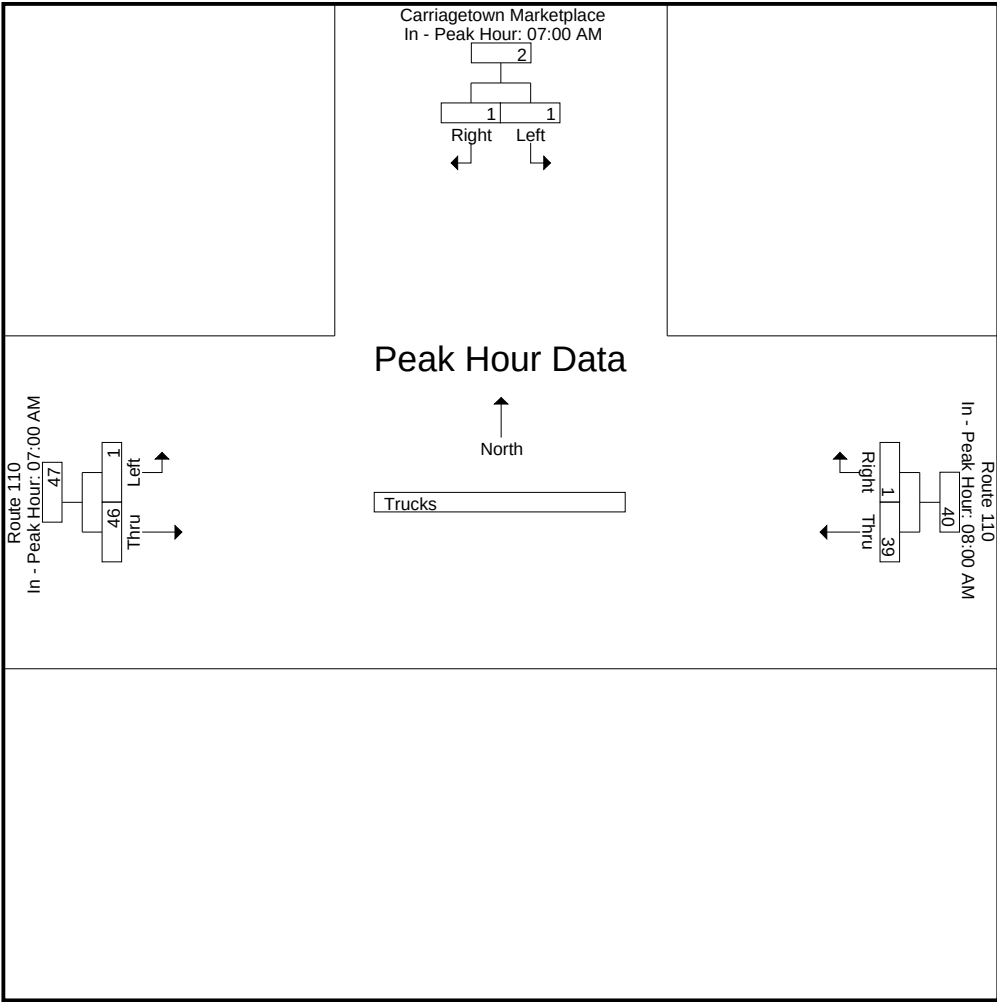
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:00 AM		
+0 mins.	0	0	0	7	0	7	0	10	10
+15 mins.	0	0	0	9	1	10	0	10	10
+30 mins.	1	0	1	11	0	11	1	13	14
+45 mins.	0	1	1	12	0	12	0	13	13
Total Volume	1	1	2	39	1	40	1	46	47
% App. Total	50	50		97.5	2.5		2.1	97.9	
PHF	.250	.250	.500	.813	.250	.833	.250	.885	.839

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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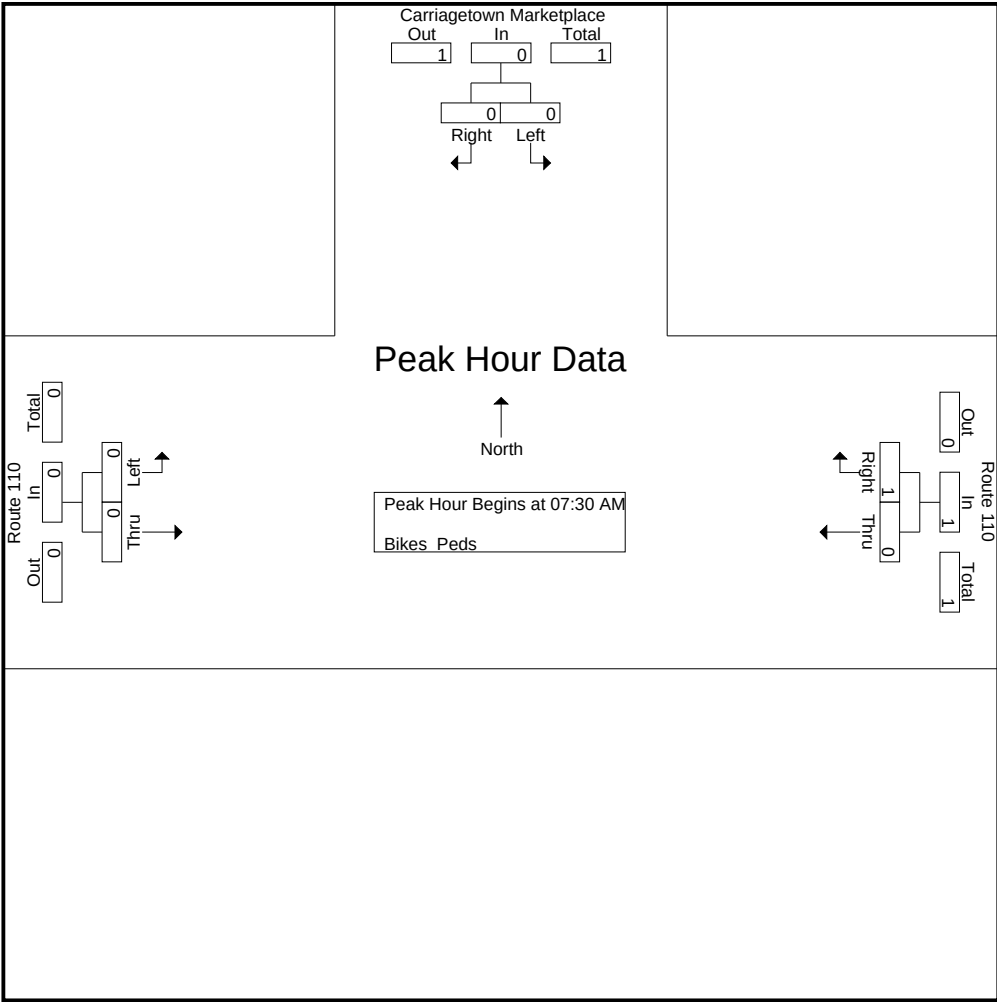
Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	2	0	0	0	0	0	0	2	0	2
07:30 AM	0	0	1	0	0	0	0	0	0	1	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	3	0	0	0	0	0	0	3	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	0	0	0	1	1
Grand Total	0	0	3	0	1	0	0	0	0	3	1	4
Apprch %	0	0		0	100		0	0				
Total %	0	0		0	100		0	0		75	25	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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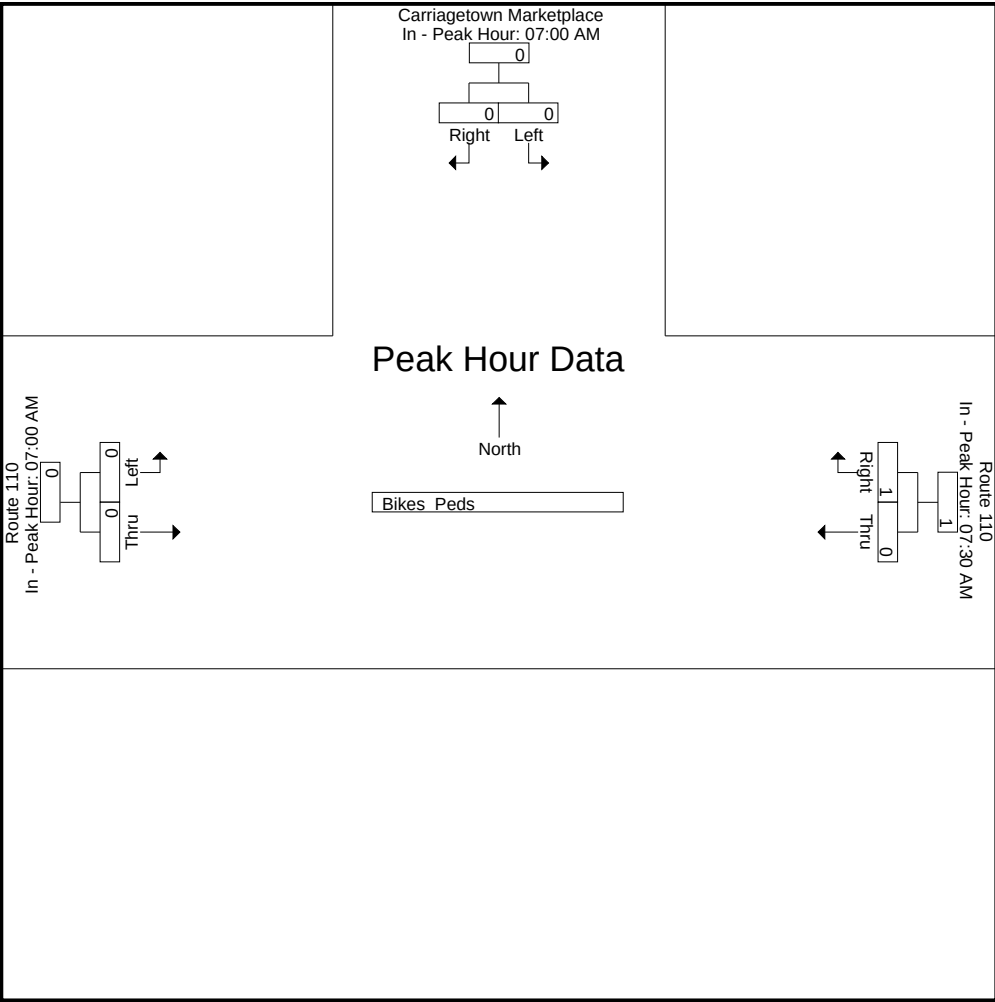


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:30 AM			07:00 AM		
+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.	0	0	0	0	1	1	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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Groups Printed- Cars - Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	14	19	334	19	24	271	681
04:15 PM	24	30	335	23	43	248	703
04:30 PM	19	45	308	22	26	287	707
04:45 PM	21	33	334	20	27	254	689
Total	78	127	1311	84	120	1060	2780
05:00 PM	19	28	326	14	29	309	725
05:15 PM	23	20	327	22	26	266	684
05:30 PM	21	23	265	19	24	261	613
05:45 PM	19	23	315	12	21	245	635
Total	82	94	1233	67	100	1081	2657
Grand Total	160	221	2544	151	220	2141	5437
Apprch %	42	58	94.4	5.6	9.3	90.7	
Total %	2.9	4.1	46.8	2.8	4	39.4	
Cars	157	219	2514	150	218	2111	5369
% Cars	98.1	99.1	98.8	99.3	99.1	98.6	98.7
Trucks	3	2	30	1	2	30	68
% Trucks	1.9	0.9	1.2	0.7	0.9	1.4	1.3

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	24	30	54	335	23	358	43	248	291	703
04:30 PM	19	45	64	308	22	330	26	287	313	707
04:45 PM	21	33	54	334	20	354	27	254	281	689
05:00 PM	19	28	47	326	14	340	29	309	338	725
Total Volume	83	136	219	1303	79	1382	125	1098	1223	2824
% App. Total	37.9	62.1		94.3	5.7		10.2	89.8		
PHF	.865	.756	.855	.972	.859	.965	.727	.888	.905	.974
Cars	82	135	217	1283	78	1361	124	1080	1204	2782
% Cars	98.8	99.3	99.1	98.5	98.7	98.5	99.2	98.4	98.4	98.5
Trucks	1	1	2	20	1	21	1	18	19	42
% Trucks	1.2	0.7	0.9	1.5	1.3	1.5	0.8	1.6	1.6	1.5

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

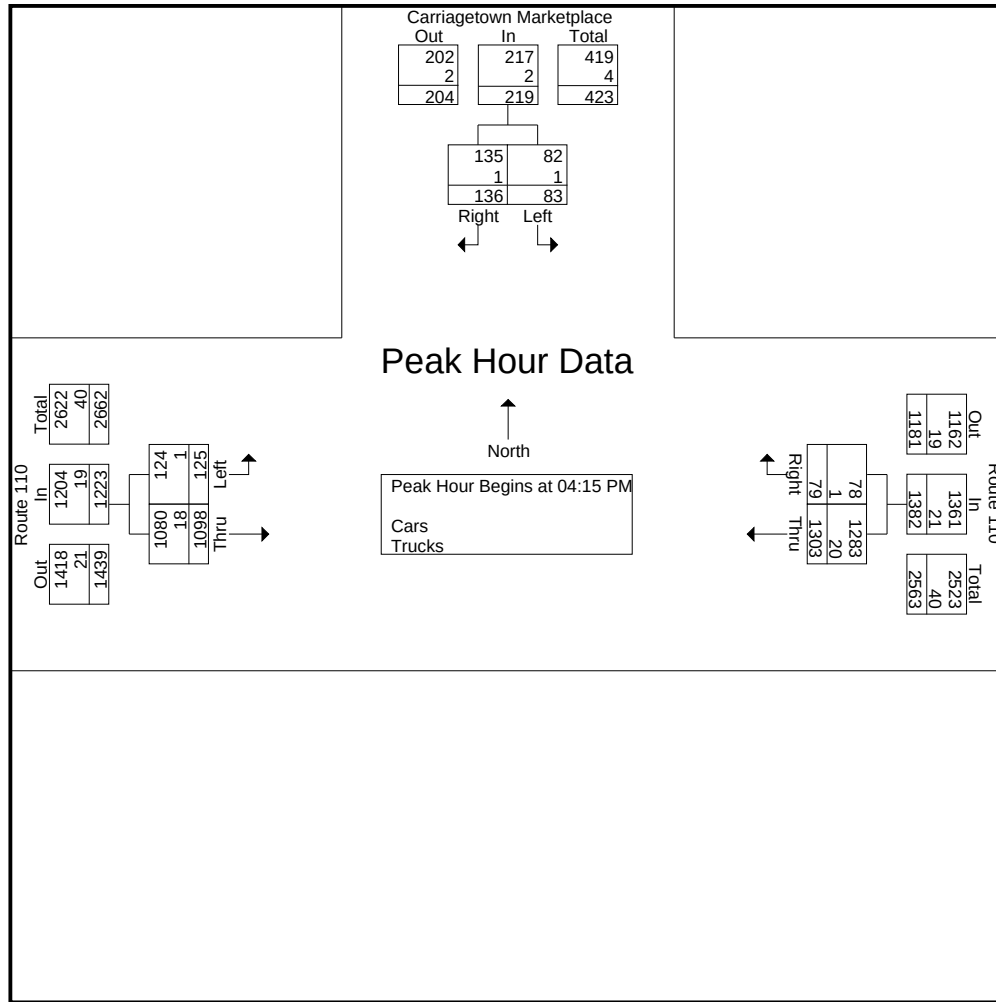
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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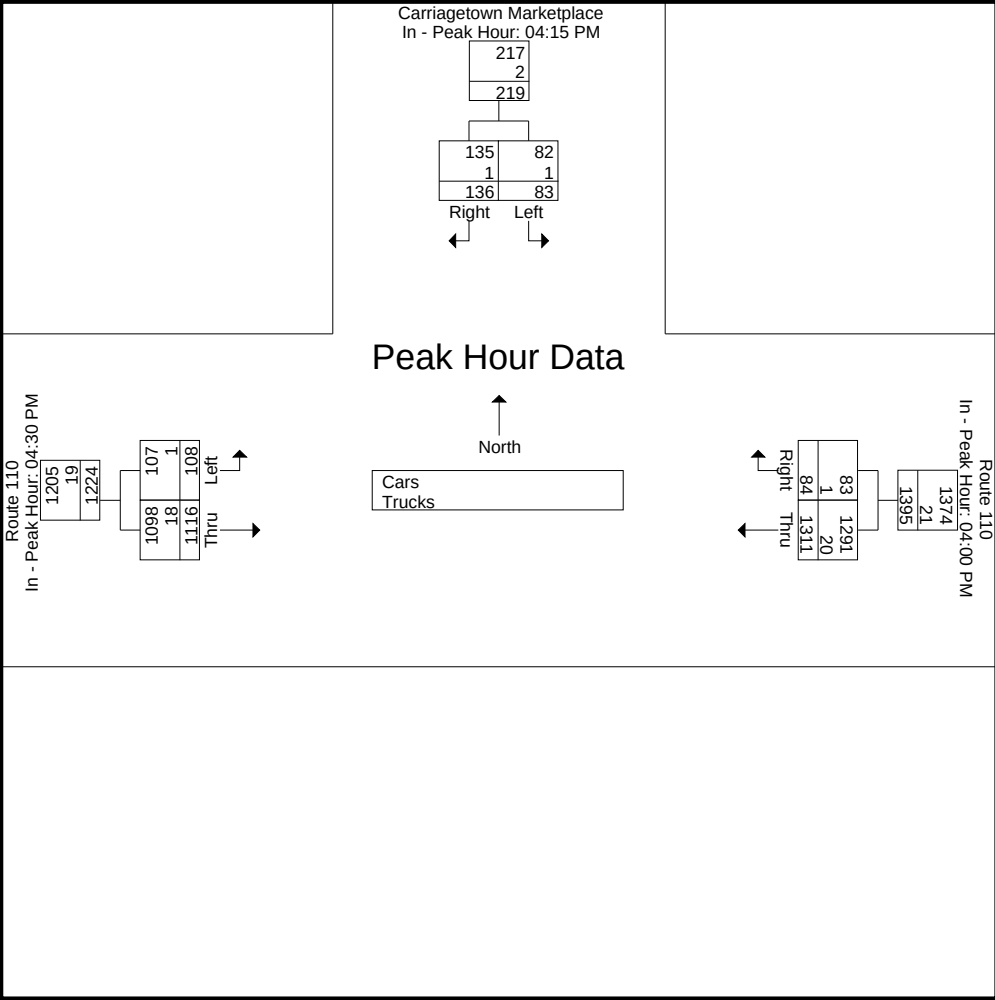
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:30 PM		
+0 mins.	24	30	54	334	19	353	26	287	313
+15 mins.	19	45	64	335	23	358	27	254	281
+30 mins.	21	33	54	308	22	330	29	309	338
+45 mins.	19	28	47	334	20	354	26	266	292
Total Volume	83	136	219	1311	84	1395	108	1116	1224
% App. Total	37.9	62.1		94	6		8.8	91.2	
PHF	.865	.756	.855	.978	.913	.974	.931	.903	.905
Cars	82	135	217	1291	83	1374	107	1098	1205
% Cars	98.8	99.3	99.1	98.5	98.8	98.5	99.1	98.4	98.4
Trucks	1	1	2	20	1	21	1	18	19
% Trucks	1.2	0.7	0.9	1.5	1.2	1.5	0.9	1.6	1.6

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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Groups Printed- Cars

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	14	19	330	19	24	267	673
04:15 PM	24	30	330	23	43	243	693
04:30 PM	18	45	302	22	25	282	694
04:45 PM	21	32	329	19	27	250	678
Total	77	126	1291	83	119	1042	2738
05:00 PM	19	28	322	14	29	305	717
05:15 PM	23	20	323	22	26	261	675
05:30 PM	19	23	265	19	23	260	609
05:45 PM	19	22	313	12	21	243	630
Total	80	93	1223	67	99	1069	2631
Grand Total	157	219	2514	150	218	2111	5369
Apprch %	41.8	58.2	94.4	5.6	9.4	90.6	
Total %	2.9	4.1	46.8	2.8	4.1	39.3	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	24	30	54	330	23	353	43	243	286	693
04:30 PM	18	45	63	302	22	324	25	282	307	694
04:45 PM	21	32	53	329	19	348	27	250	277	678
05:00 PM	19	28	47	322	14	336	29	305	334	717
Total Volume	82	135	217	1283	78	1361	124	1080	1204	2782
% App. Total	37.8	62.2		94.3	5.7		10.3	89.7		
PHF	.854	.750	.861	.972	.848	.964	.721	.885	.901	.970

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

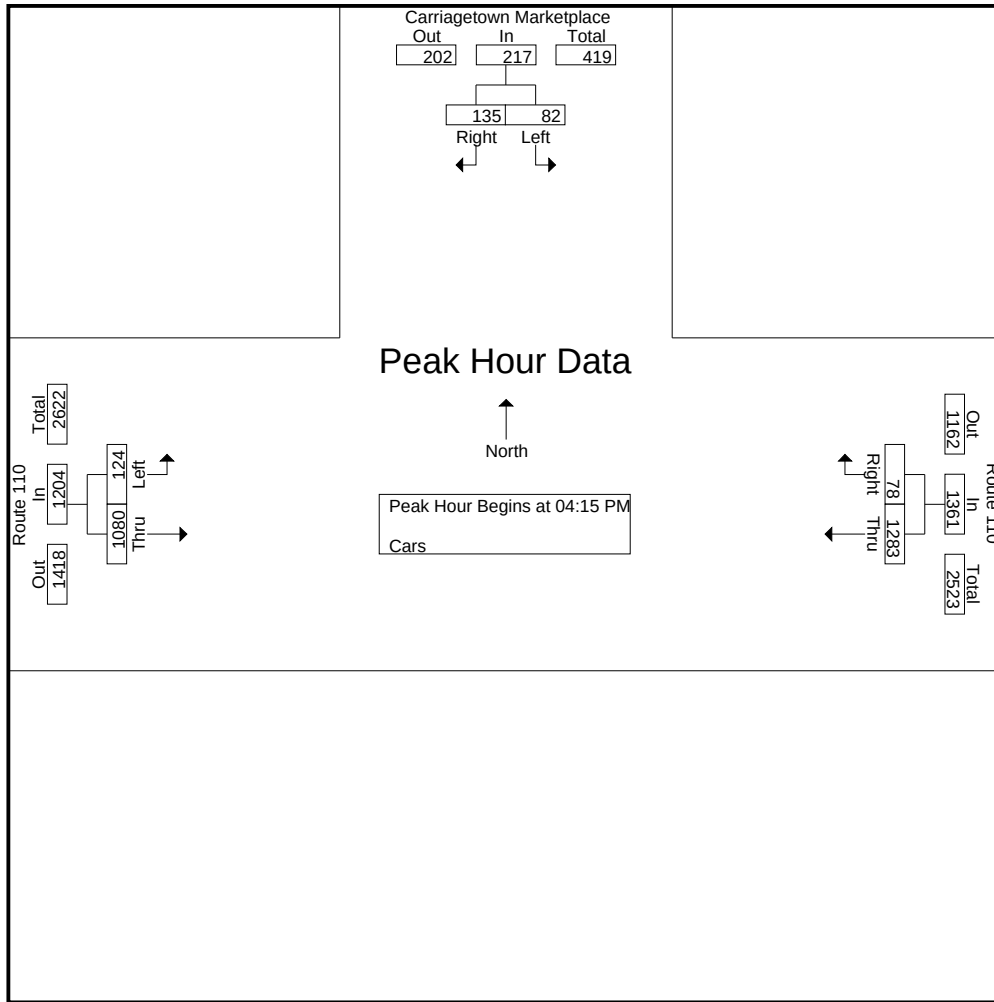
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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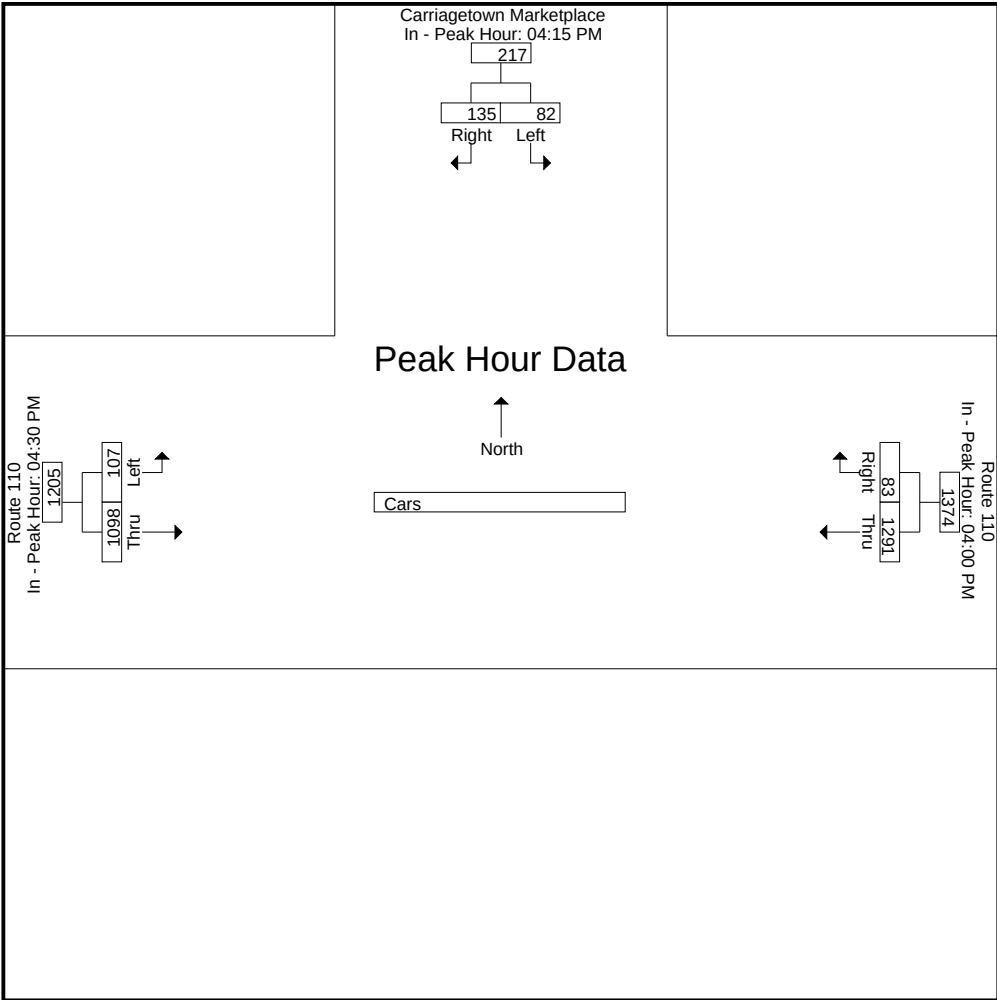
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM			04:00 PM			04:30 PM		
+0 mins.	24	30	54	330	19	349	25	282	307
+15 mins.	18	45	63	330	23	353	27	250	277
+30 mins.	21	32	53	302	22	324	29	305	334
+45 mins.	19	28	47	329	19	348	26	261	287
Total Volume	82	135	217	1291	83	1374	107	1098	1205
% App. Total	37.8	62.2		94	6		8.9	91.1	
PHF	.854	.750	.861	.978	.902	.973	.922	.900	.902

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

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N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 7

Groups Printed- Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM	0	0	4	0	0	4	8
04:15 PM	0	0	5	0	0	5	10
04:30 PM	1	0	6	0	1	5	13
04:45 PM	0	1	5	1	0	4	11
Total	1	1	20	1	1	18	42
05:00 PM	0	0	4	0	0	4	8
05:15 PM	0	0	4	0	0	5	9
05:30 PM	2	0	0	0	1	1	4
05:45 PM	0	1	2	0	0	2	5
Total	2	1	10	0	1	12	26
Grand Total	3	2	30	1	2	30	68
Apprch %	60	40	96.8	3.2	6.2	93.8	
Total %	4.4	2.9	44.1	1.5	2.9	44.1	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	4	0	4	0	4	4	8
04:15 PM	0	0	0	5	0	5	0	5	5	10
04:30 PM	1	0	1	6	0	6	1	5	6	13
04:45 PM	0	1	1	5	1	6	0	4	4	11
Total Volume	1	1	2	20	1	21	1	18	19	42
% App. Total	50	50		95.2	4.8		5.3	94.7		
PHF	.250	.250	.500	.833	.250	.875	.250	.900	.792	.808

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

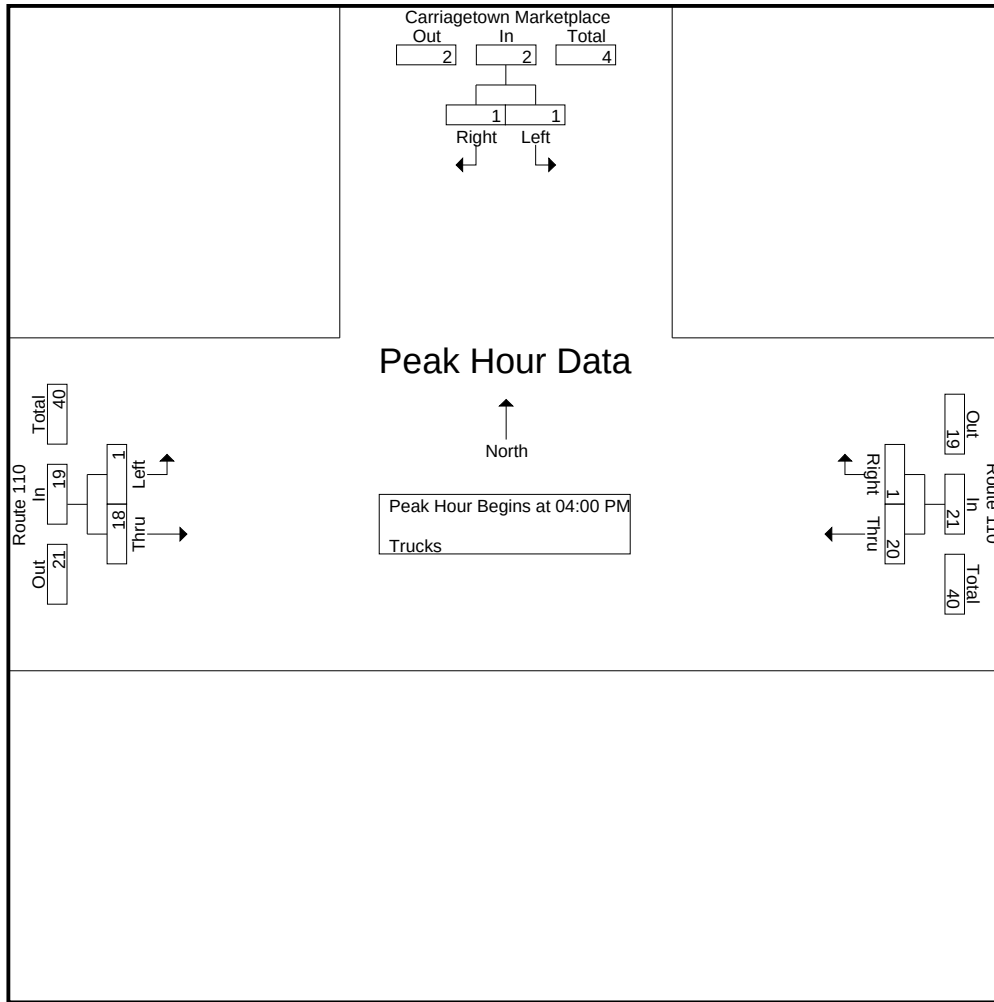
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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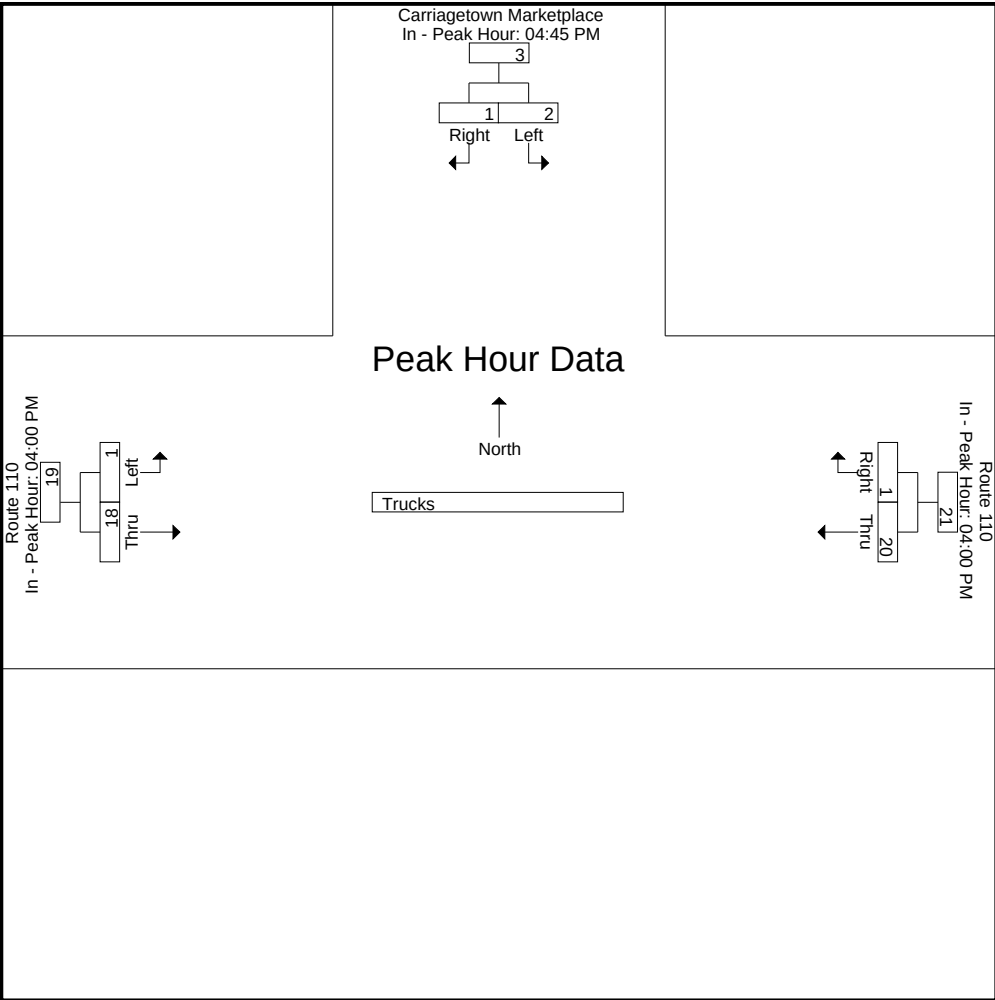
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			04:00 PM		
+0 mins.	0	1	1	4	0	4	0	4	4
+15 mins.	0	0	0	5	0	5	0	5	5
+30 mins.	0	0	0	6	0	6	1	5	6
+45 mins.	2	0	2	5	1	6	0	4	4
Total Volume	2	1	3	20	1	21	1	18	19
% App. Total	66.7	33.3		95.2	4.8		5.3	94.7	
PHF	.250	.250	.375	.833	.250	.875	.250	.900	.792

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
04:00 PM	0	0	0	0	0	0	0	1	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	2	0	0	0	0	0	0	2	0	2
Total	0	0	2	0	0	0	0	1	0	2	1	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	2	0	0	0	0	1	0	2	1	3
05:45 PM	0	0	2	0	0	0	0	0	0	2	0	2
Total	0	0	4	0	0	0	0	1	0	4	1	5
Grand Total	0	0	6	0	0	0	0	2	0	6	2	8
Apprch %	0	0		0	0		0	100				
Total %	0	0		0	0		0	100		75	25	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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	1	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	1	1	1
% App. Total	0	0		0	0		0	100		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250	.250

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

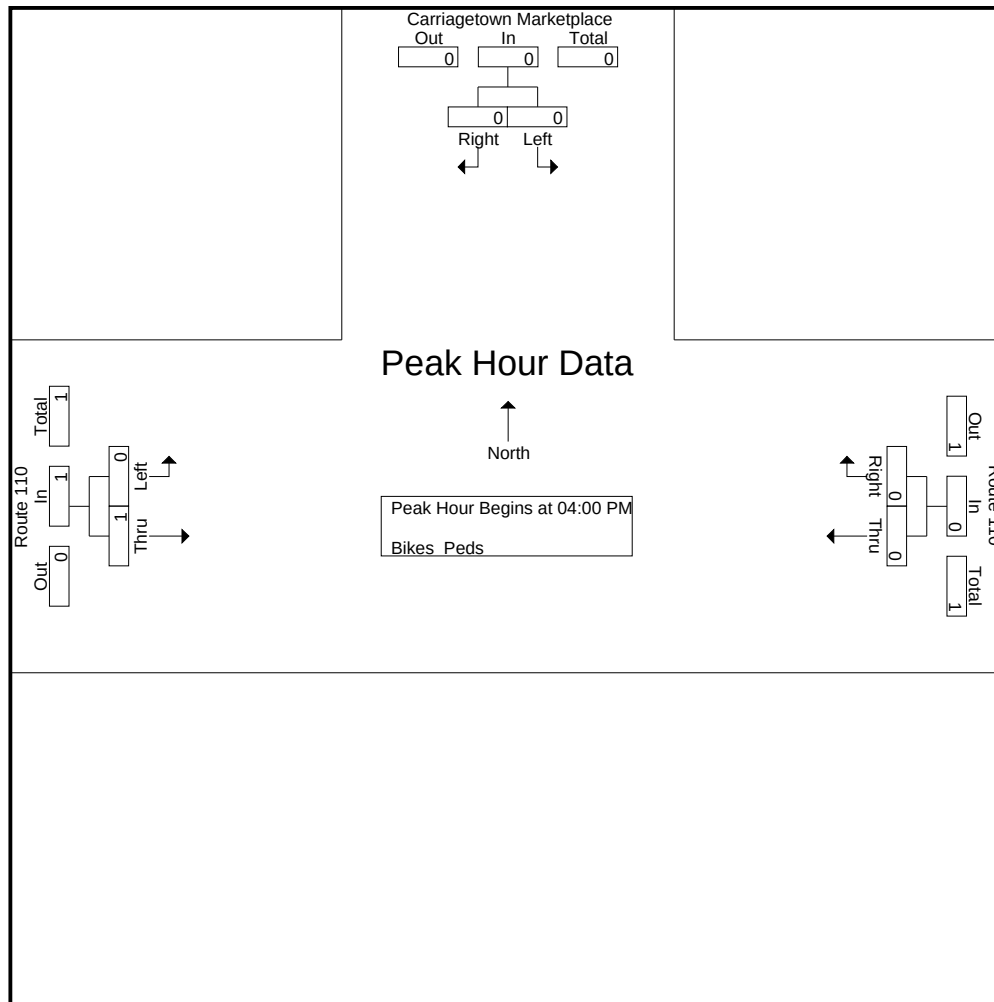
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 11



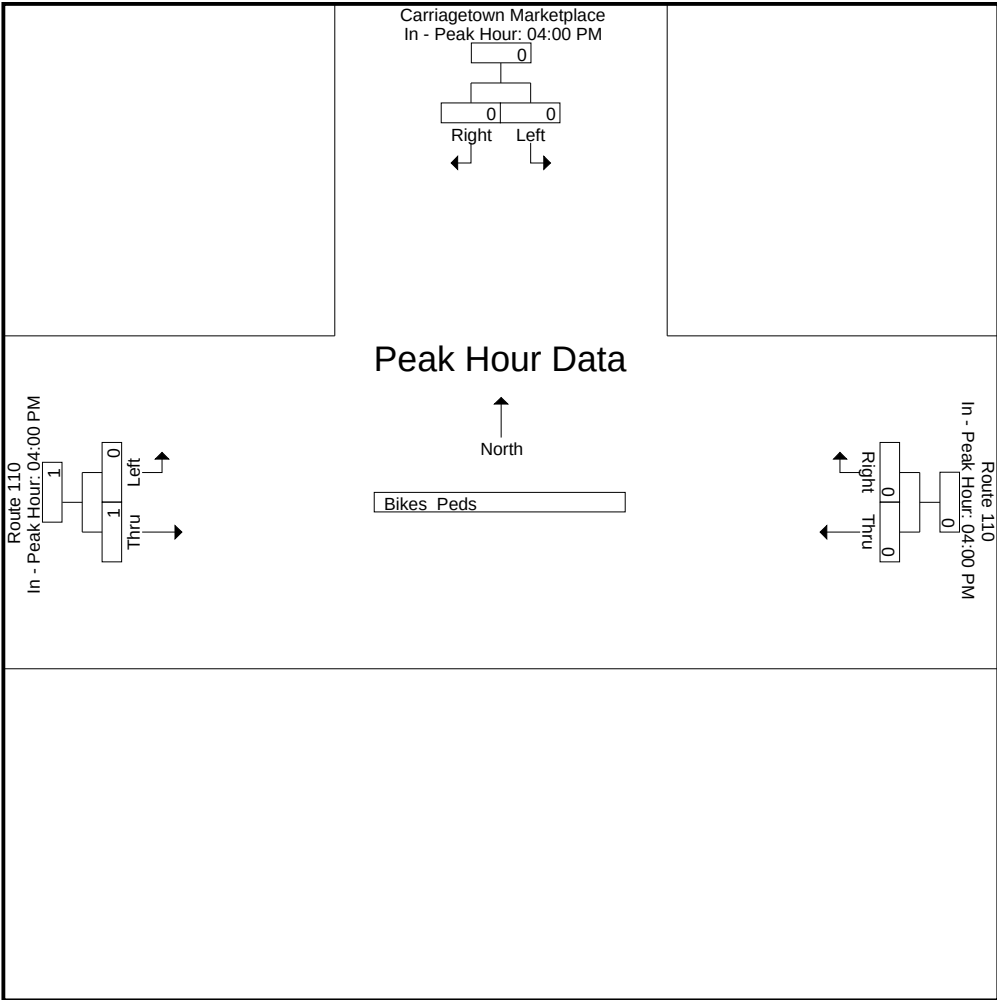
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650002
Site Code : 97650002
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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Groups Printed- Cars - Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	17	18	184	16	29	322	586
11:15 AM	21	25	196	20	19	301	582
11:30 AM	16	19	203	13	32	290	573
11:45 AM	26	34	194	20	41	329	644
Total	80	96	777	69	121	1242	2385
12:00 PM	20	27	205	24	18	250	544
12:15 PM	22	33	237	18	36	281	627
12:30 PM	23	26	207	12	34	311	613
12:45 PM	19	21	208	18	31	293	590
Total	84	107	857	72	119	1135	2374
01:00 PM	20	34	188	12	21	221	496
01:15 PM	13	26	207	17	18	239	520
01:30 PM	19	25	210	17	25	229	525
01:45 PM	14	32	193	16	20	223	498
Total	66	117	798	62	84	912	2039
Grand Total	230	320	2432	203	324	3289	6798
Apprch %	41.8	58.2	92.3	7.7	9	91	
Total %	3.4	4.7	35.8	3	4.8	48.4	
Cars	226	319	2409	201	317	3264	6736
% Cars	98.3	99.7	99.1	99	97.8	99.2	99.1
Trucks	4	1	23	2	7	25	62
% Trucks	1.7	0.3	0.9	1	2.2	0.8	0.9

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
11:45 AM	26	34	60	194	20	214	41	329	370	644
12:00 PM	20	27	47	205	24	229	18	250	268	544
12:15 PM	22	33	55	237	18	255	36	281	317	627
12:30 PM	23	26	49	207	12	219	34	311	345	613
Total Volume	91	120	211	843	74	917	129	1171	1300	2428
% App. Total	43.1	56.9		91.9	8.1		9.9	90.1		
PHF	.875	.882	.879	.889	.771	.899	.787	.890	.878	.943
Cars	90	119	209	833	73	906	125	1161	1286	2401
% Cars	98.9	99.2	99.1	98.8	98.6	98.8	96.9	99.1	98.9	98.9
Trucks	1	1	2	10	1	11	4	10	14	27
% Trucks	1.1	0.8	0.9	1.2	1.4	1.2	3.1	0.9	1.1	1.1

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

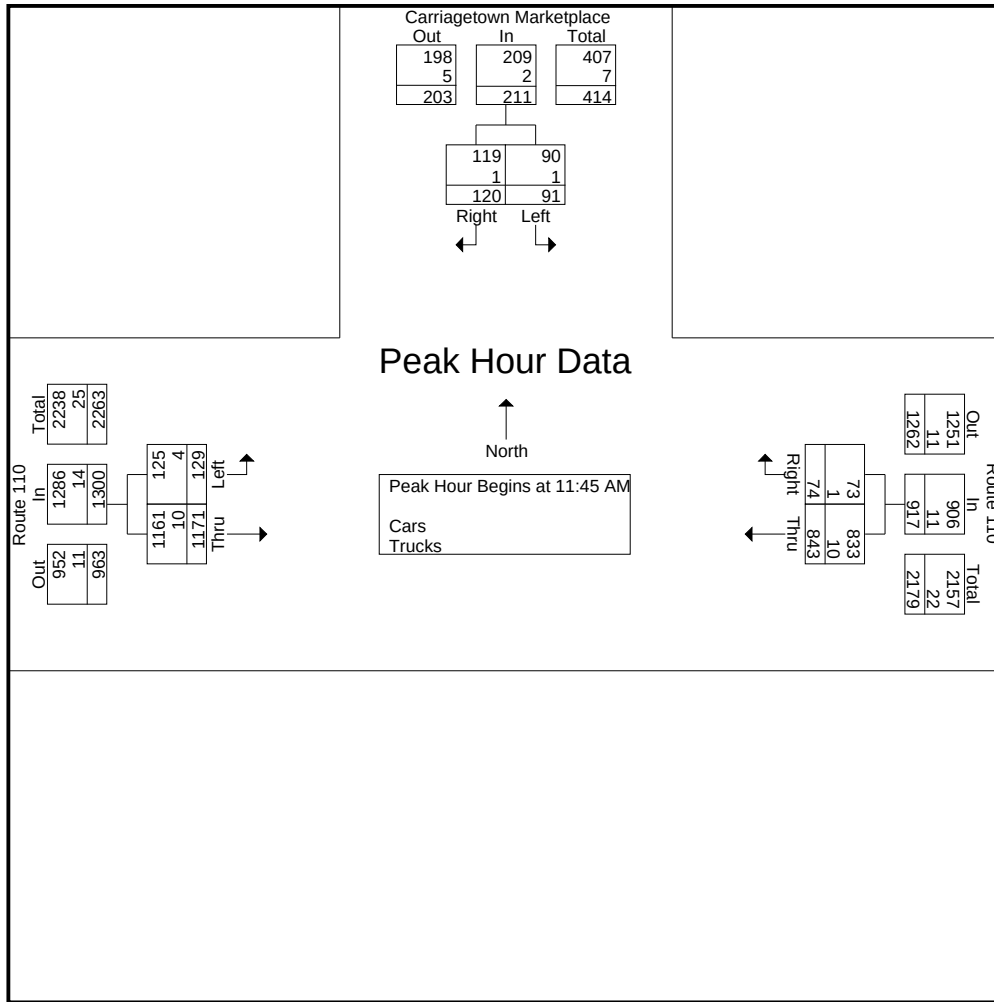
Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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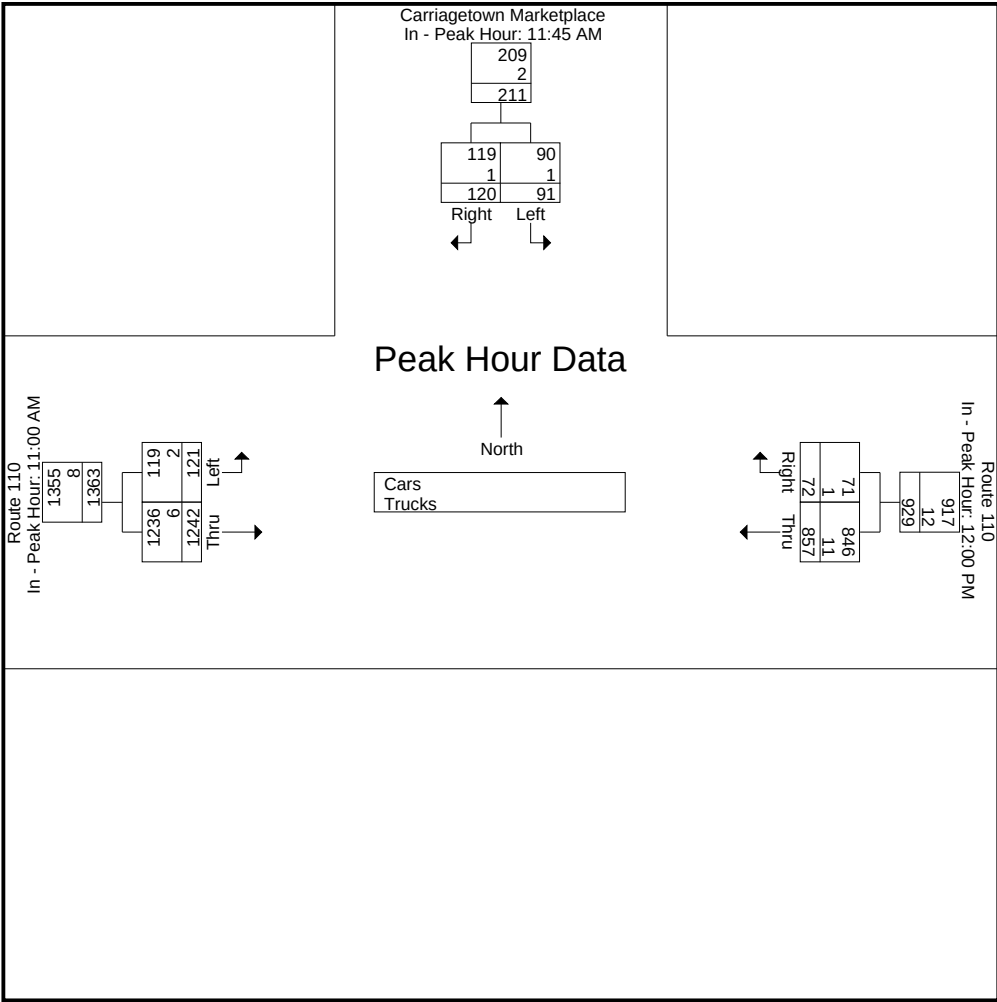
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM			12:00 PM			11:00 AM		
+0 mins.	26	34	60	205	24	229	29	322	351
+15 mins.	20	27	47	237	18	255	19	301	320
+30 mins.	22	33	55	207	12	219	32	290	322
+45 mins.	23	26	49	208	18	226	41	329	370
Total Volume	91	120	211	857	72	929	121	1242	1363
% App. Total	43.1	56.9		92.2	7.8		8.9	91.1	
PHF	.875	.882	.879	.904	.750	.911	.738	.944	.921
Cars	90	119	209	846	71	917	119	1236	1355
% Cars	98.9	99.2	99.1	98.7	98.6	98.7	98.3	99.5	99.4
Trucks	1	1	2	11	1	12	2	6	8
% Trucks	1.1	0.8	0.9	1.3	1.4	1.3	1.7	0.5	0.6

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S2
Site Code : 97650002
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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Groups Printed- Cars

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	17	18	184	16	29	319	583
11:15 AM	20	25	195	20	19	301	580
11:30 AM	15	19	203	13	31	289	570
11:45 AM	26	33	190	19	40	327	635
Total	78	95	772	68	119	1236	2368
12:00 PM	20	27	204	24	17	248	540
12:15 PM	22	33	233	18	36	276	618
12:30 PM	22	26	206	12	32	310	608
12:45 PM	19	21	203	17	30	291	581
Total	83	107	846	71	115	1125	2347
01:00 PM	20	34	183	12	21	219	489
01:15 PM	13	26	207	17	18	236	517
01:30 PM	18	25	210	17	24	227	521
01:45 PM	14	32	191	16	20	221	494
Total	65	117	791	62	83	903	2021
Grand Total	226	319	2409	201	317	3264	6736
Apprch %	41.5	58.5	92.3	7.7	8.9	91.1	
Total %	3.4	4.7	35.8	3	4.7	48.5	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
11:45 AM	26	33	59	190	19	209	40	327	367	635
12:00 PM	20	27	47	204	24	228	17	248	265	540
12:15 PM	22	33	55	233	18	251	36	276	312	618
12:30 PM	22	26	48	206	12	218	32	310	342	608
Total Volume	90	119	209	833	73	906	125	1161	1286	2401
% App. Total	43.1	56.9		91.9	8.1		9.7	90.3		
PHF	.865	.902	.886	.894	.760	.902	.781	.888	.876	.945

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

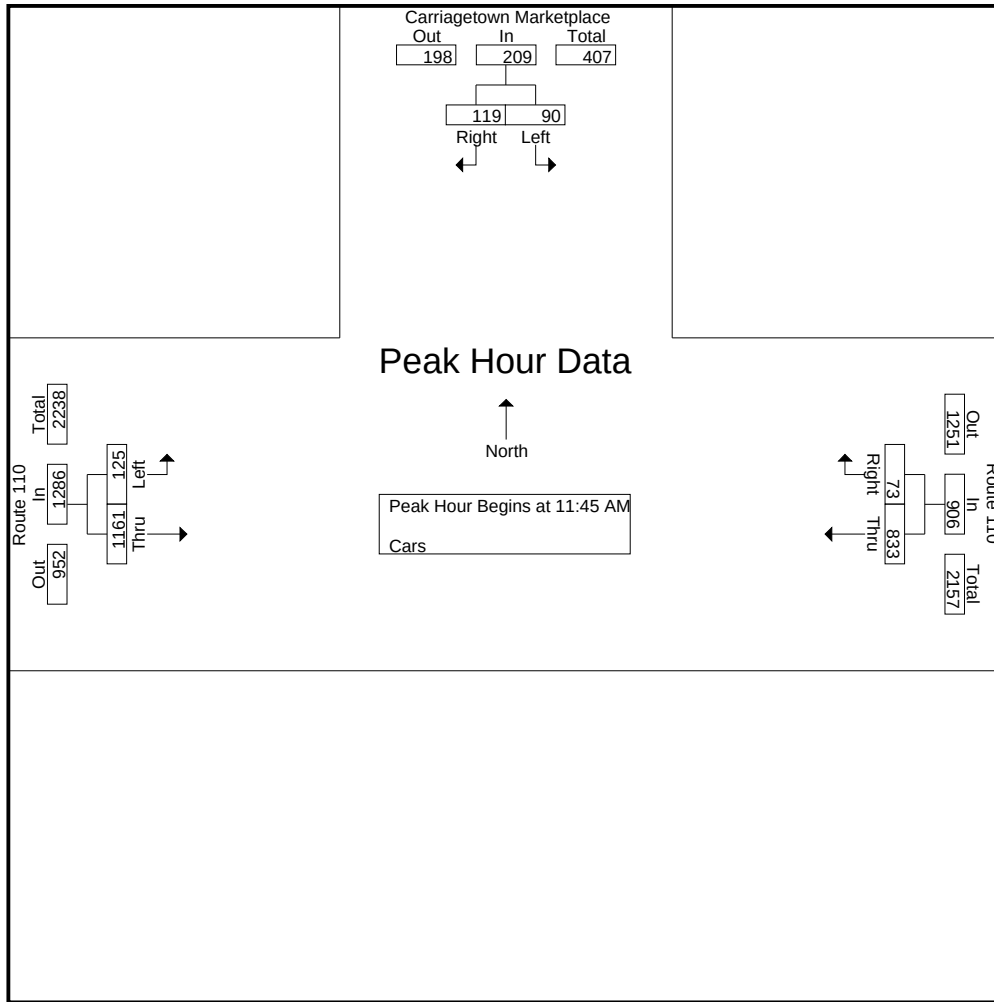
Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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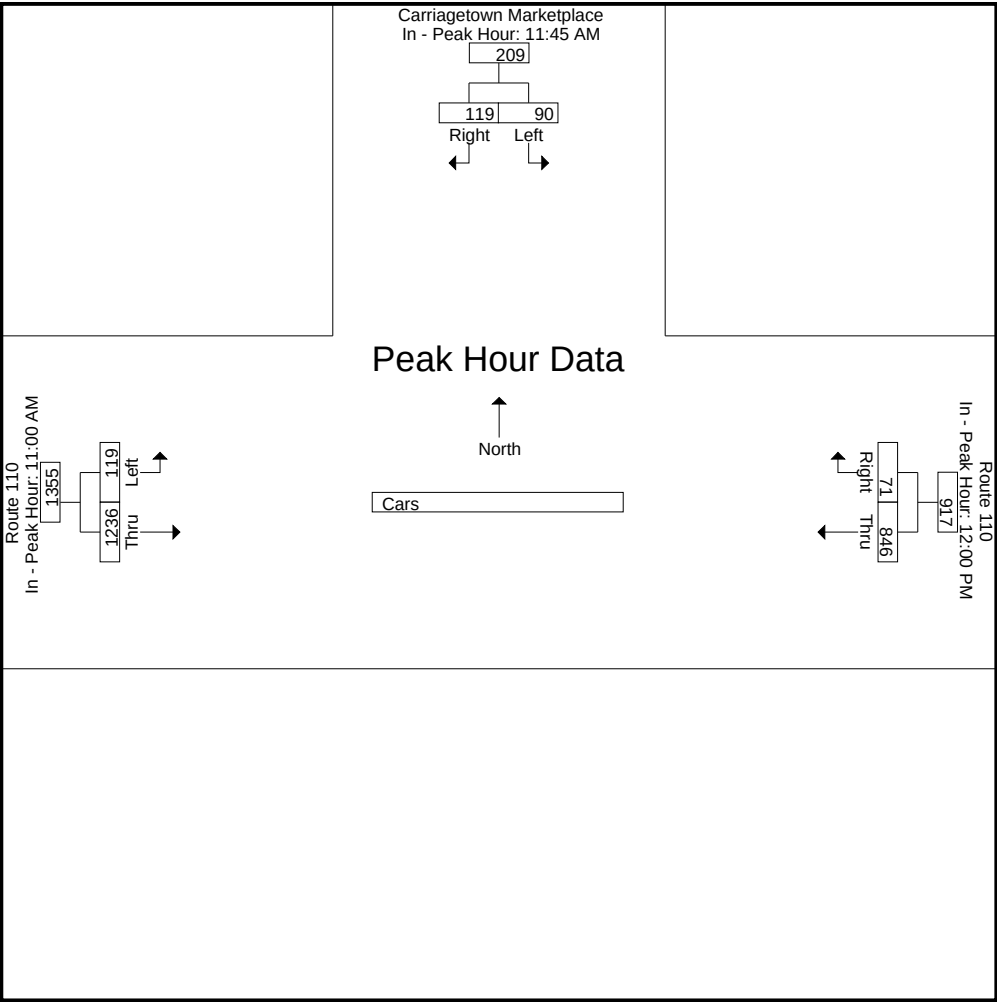
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM			12:00 PM			11:00 AM		
+0 mins.	26	33	59	204	24	228	29	319	348
+15 mins.	20	27	47	233	18	251	19	301	320
+30 mins.	22	33	55	206	12	218	31	289	320
+45 mins.	22	26	48	203	17	220	40	327	367
Total Volume	90	119	209	846	71	917	119	1236	1355
% App. Total	43.1	56.9		92.3	7.7		8.8	91.2	
PHF	.865	.902	.886	.908	.740	.913	.744	.945	.923

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S2
Site Code : 97650002
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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Groups Printed- Trucks

	Carriagetown Marketplace From North		Route 110 From East		Route 110 From West		
Start Time	Left	Right	Thru	Right	Left	Thru	Int. Total
11:00 AM	0	0	0	0	0	3	3
11:15 AM	1	0	1	0	0	0	2
11:30 AM	1	0	0	0	1	1	3
11:45 AM	0	1	4	1	1	2	9
Total	2	1	5	1	2	6	17
12:00 PM	0	0	1	0	1	2	4
12:15 PM	0	0	4	0	0	5	9
12:30 PM	1	0	1	0	2	1	5
12:45 PM	0	0	5	1	1	2	9
Total	1	0	11	1	4	10	27
01:00 PM	0	0	5	0	0	2	7
01:15 PM	0	0	0	0	0	3	3
01:30 PM	1	0	0	0	1	2	4
01:45 PM	0	0	2	0	0	2	4
Total	1	0	7	0	1	9	18
Grand Total	4	1	23	2	7	25	62
Apprch %	80	20	92	8	21.9	78.1	
Total %	6.5	1.6	37.1	3.2	11.3	40.3	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:15 PM										
12:15 PM	0	0	0	4	0	4	0	5	5	9
12:30 PM	1	0	1	1	0	1	2	1	3	5
12:45 PM	0	0	0	5	1	6	1	2	3	9
01:00 PM	0	0	0	5	0	5	0	2	2	7
Total Volume	1	0	1	15	1	16	3	10	13	30
% App. Total	100	0		93.8	6.2		23.1	76.9		
PHF	.250	.000	.250	.750	.250	.667	.375	.500	.650	.833

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

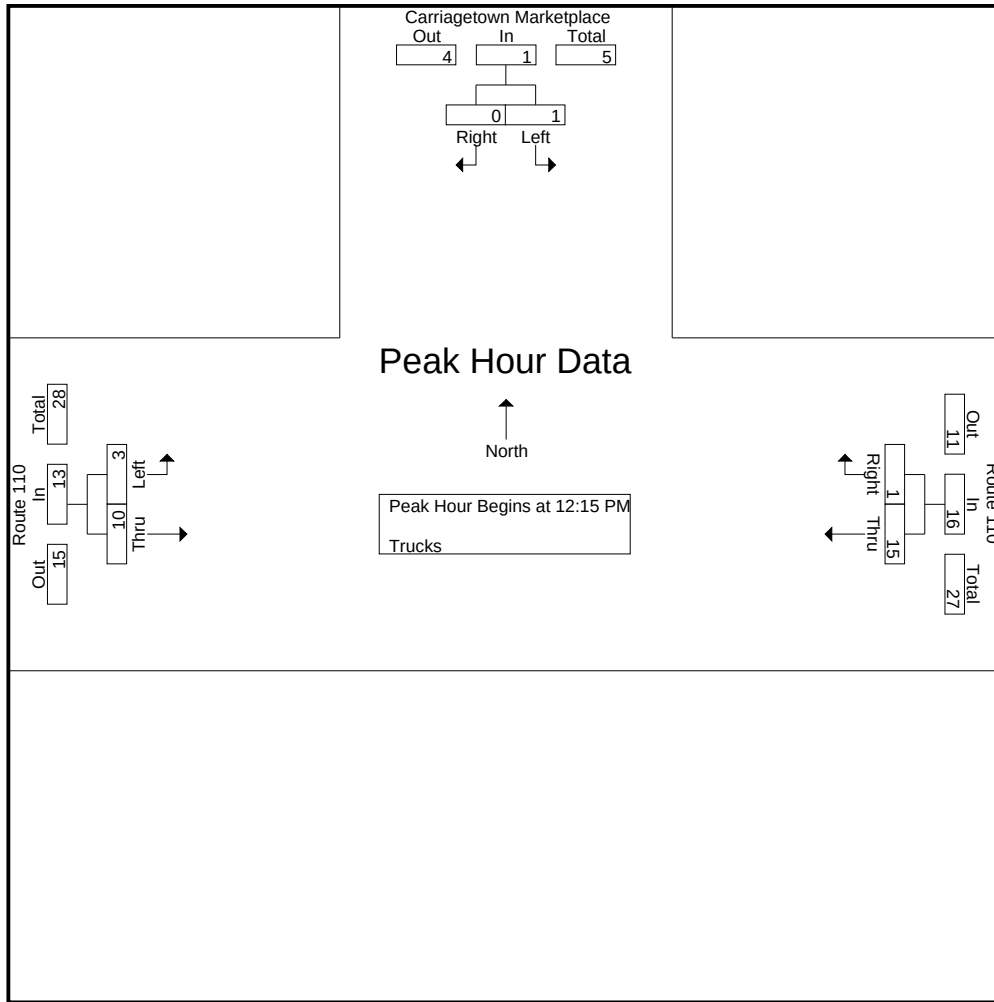
Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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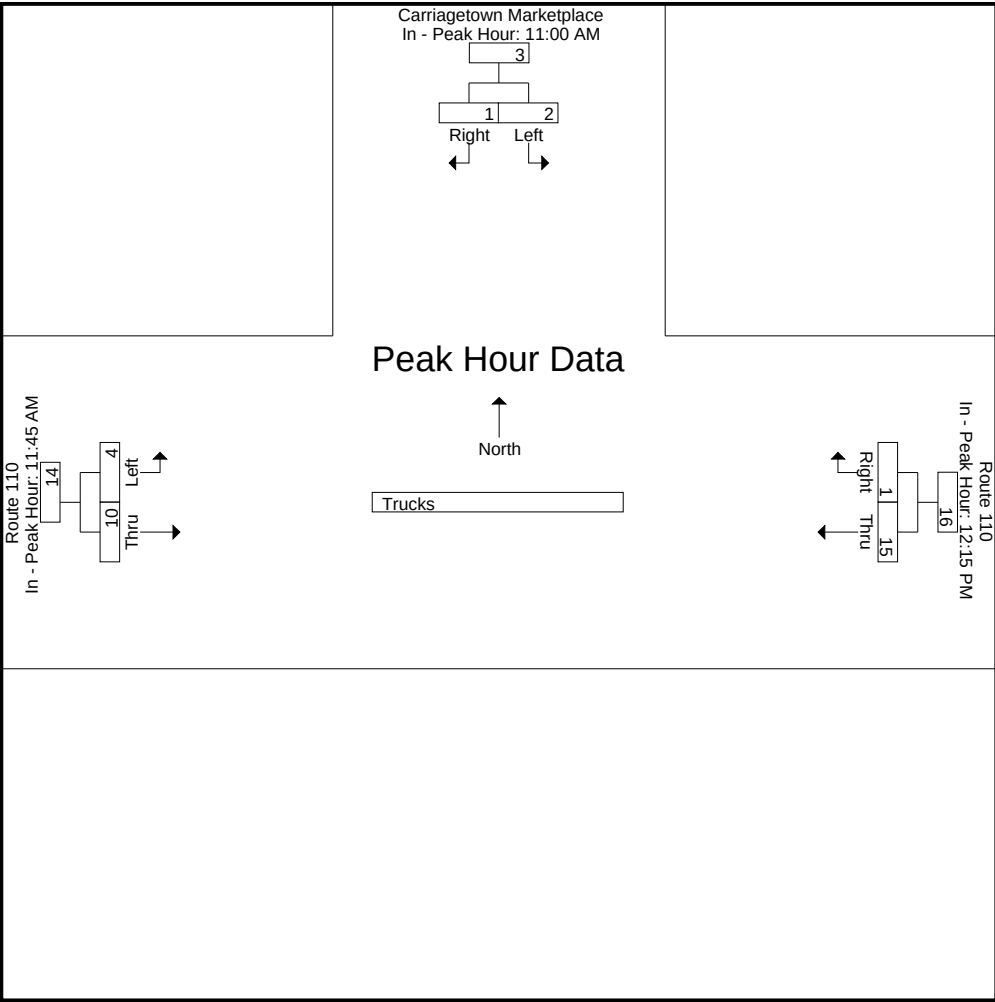
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			12:15 PM			11:45 AM		
+0 mins.	0	0	0	4	0	4	1	2	3
+15 mins.	1	0	1	1	0	1	1	2	3
+30 mins.	1	0	1	5	1	6	0	5	5
+45 mins.	0	1	1	5	0	5	2	1	3
Total Volume	2	1	3	15	1	16	4	10	14
% App. Total	66.7	33.3		93.8	6.2		28.6	71.4	
PHF	.500	.250	.750	.750	.250	.667	.500	.500	.700

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S2
Site Code : 97650002
Start Date : 7/15/2023
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Accurate Counts

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N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
11:00 AM	0	0	0	0	0	1	0	0	0	1	0	1
11:15 AM	0	0	1	1	0	0	0	0	0	1	1	2
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	1	0	1	0	0	0	2	1	3
12:00 PM	0	0	0	1	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	1	1
01:00 PM	0	0	2	0	0	0	0	0	0	2	0	2
01:15 PM	0	0	0	2	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	2	2	0	0	0	0	0	2	2	4
Grand Total	0	0	3	4	0	1	0	0	0	4	4	8
Apprch %	0	0		100	0		0	0				
Total %	0	0		100	0		0	0		50	50	

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:15 AM										
11:15 AM	0	0	0	1	0	1	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	1	0	1	0	0	0	1
Total Volume	0	0	0	2	0	2	0	0	0	2
% App. Total	0	0		100	0		0	0		
PHF	.000	.000	.000	.500	.000	.500	.000	.000	.000	.500

Accurate Counts

978-664-2565

N/S Street : Carriagetown Marketplace

E/W Street : Route 110

City/State : Amesbury, MA

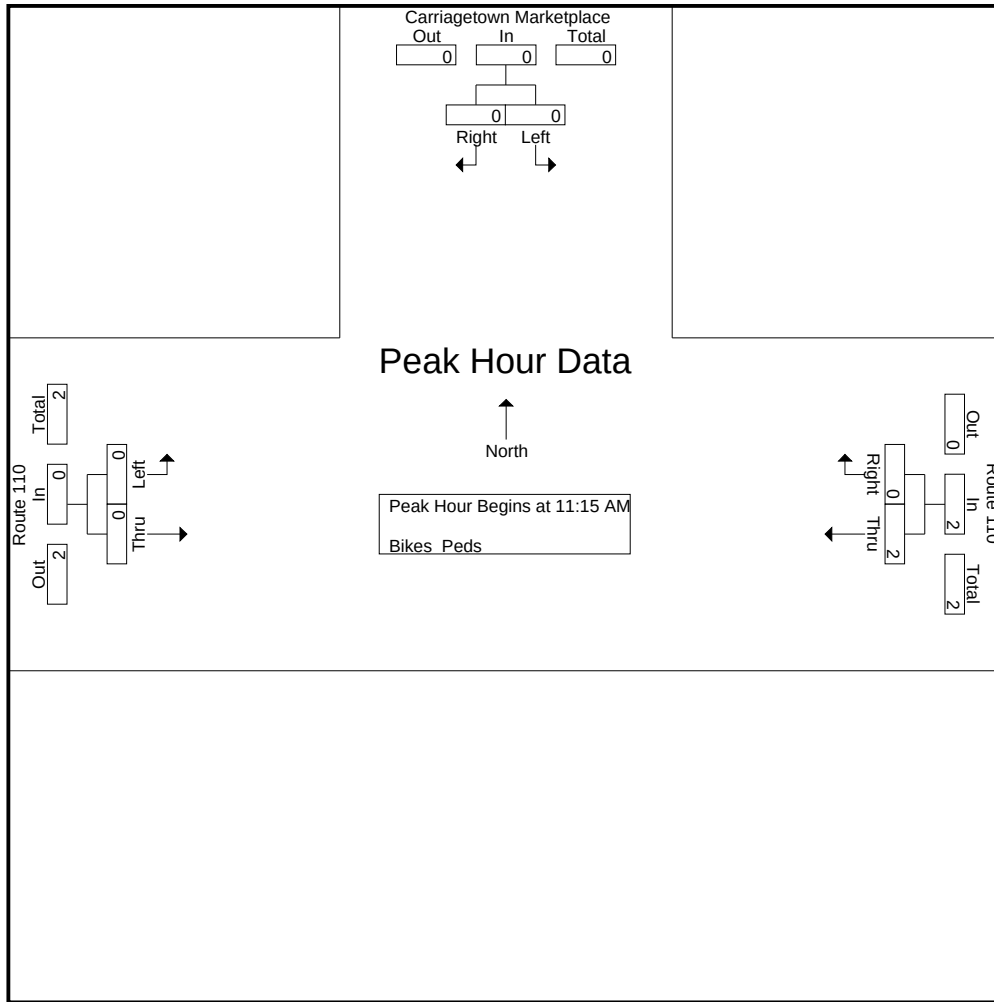
Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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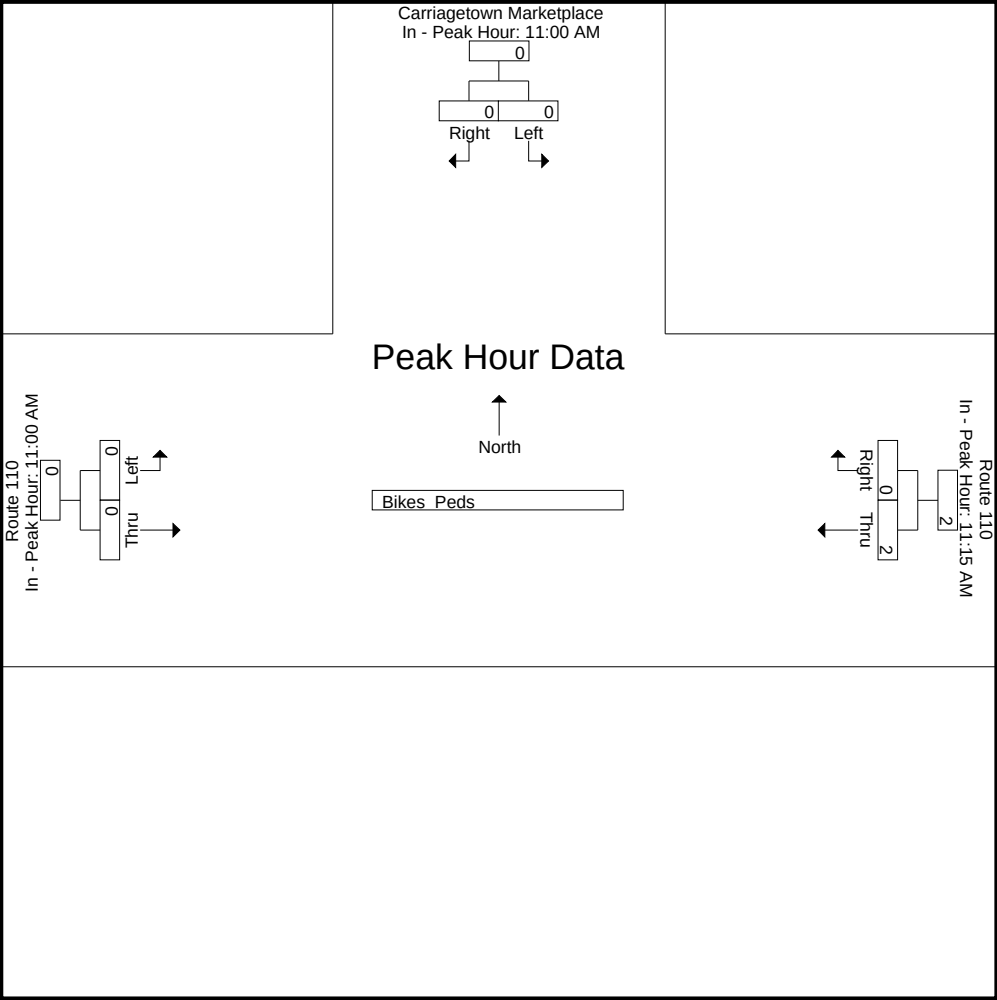
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:15 AM			11:00 AM		
+0 mins.	0	0	0	1	0	1	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	0	0	1	0	1	0	0	0
Total Volume	0	0	0	2	0	2	0	0	0
% App. Total	0	0		100	0		0	0	
PHF	.000	.000	.000	.500	.000	.500	.000	.000	.000

N/S Street : Carriagetown Marketplace
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S2
Site Code : 97650002
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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Groups Printed- Cars - Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 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	191	42	7	0	22	0	138	215	615
07:15 AM	0	0	0	0	227	41	7	0	18	0	153	241	687
07:30 AM	0	0	0	0	215	59	6	0	20	0	169	248	717
07:45 AM	0	0	0	0	263	36	6	0	41	0	182	267	795
Total	0	0	0	0	896	178	26	0	101	0	642	971	2814
08:00 AM	0	0	0	0	240	47	12	0	24	0	177	245	745
08:15 AM	0	0	0	0	277	52	17	0	42	0	178	232	798
08:30 AM	0	0	0	0	246	38	4	0	24	0	179	233	724
08:45 AM	0	0	0	0	271	44	9	0	29	0	201	189	743
Total	0	0	0	0	1034	181	42	0	119	0	735	899	3010
Grand Total	0	0	0	0	1930	359	68	0	220	0	1377	1870	5824
Apprch %	0	0	0	0	84.3	15.7	23.6	0	76.4	0	42.4	57.6	
Total %	0	0	0	0	33.1	6.2	1.2	0	3.8	0	23.6	32.1	
Cars	0	0	0	0	1861	342	66	0	214	0	1338	1832	5653
% Cars	0	0	0	0	96.4	95.3	97.1	0	97.3	0	97.2	98	97.1
Trucks	0	0	0	0	69	17	2	0	6	0	39	38	171
% Trucks	0	0	0	0	3.6	4.7	2.9	0	2.7	0	2.8	2	2.9

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 07:45 AM																	
07:45 AM	0	0	0	0	0	263	36	299	6	0	41	47	0	182	267	449	795
08:00 AM	0	0	0	0	0	240	47	287	12	0	24	36	0	177	245	422	745
08:15 AM	0	0	0	0	0	277	52	329	17	0	42	59	0	178	232	410	798
08:30 AM	0	0	0	0	0	246	38	284	4	0	24	28	0	179	233	412	724
Total Volume	0	0	0	0	0	1026	173	1199	39	0	131	170	0	716	977	1693	3062
% App. Total	0	0	0		0	85.6	14.4		22.9	0	77.1		0	42.3	57.7		
PHF	.000	.000	.000	.000	.000	.926	.832	.911	.574	.000	.780	.720	.000	.984	.915	.943	.959
Cars	0	0	0	0	0	984	166	1150	39	0	128	167	0	695	959	1654	2971
% Cars	0	0	0	0	0	95.9	96.0	95.9	100	0	97.7	98.2	0	97.1	98.2	97.7	97.0
Trucks	0	0	0	0	0	42	7	49	0	0	3	3	0	21	18	39	91
% Trucks	0	0	0	0	0	4.1	4.0	4.1	0	0	2.3	1.8	0	2.9	1.8	2.3	3.0

Accurate Counts

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N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

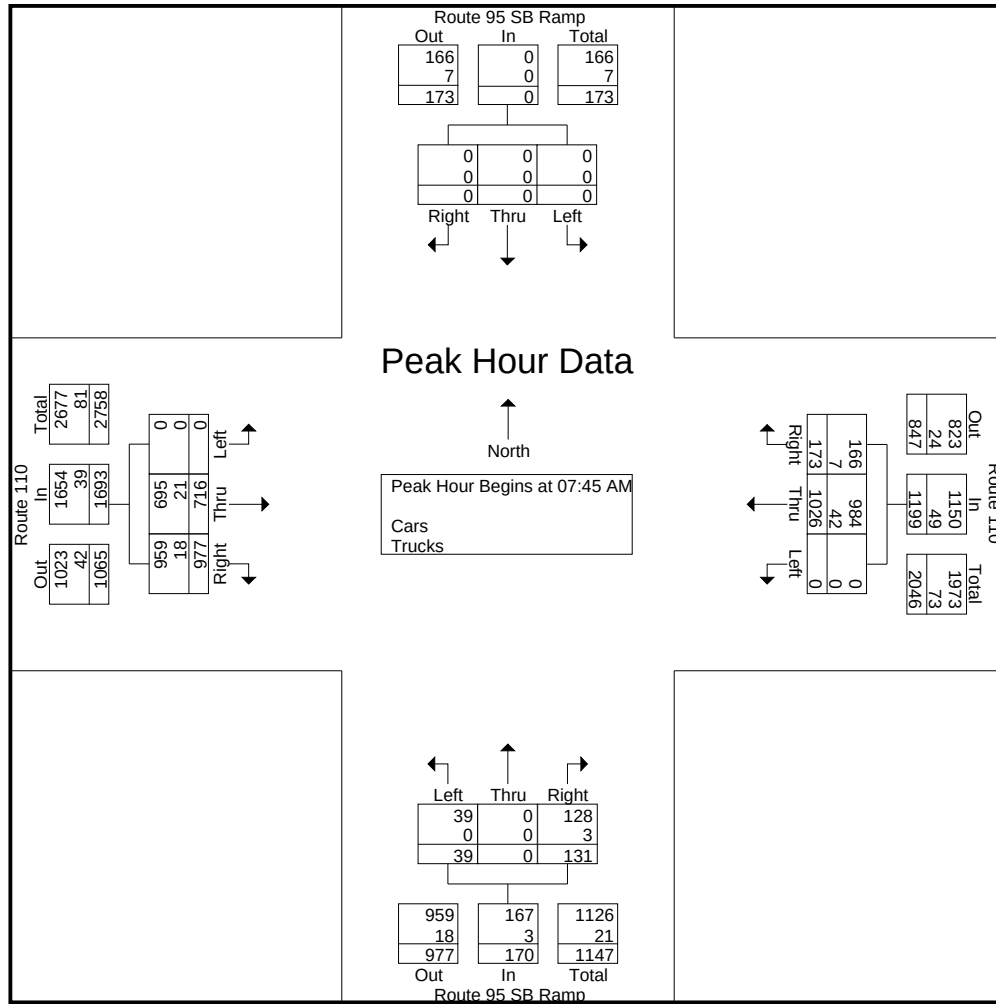
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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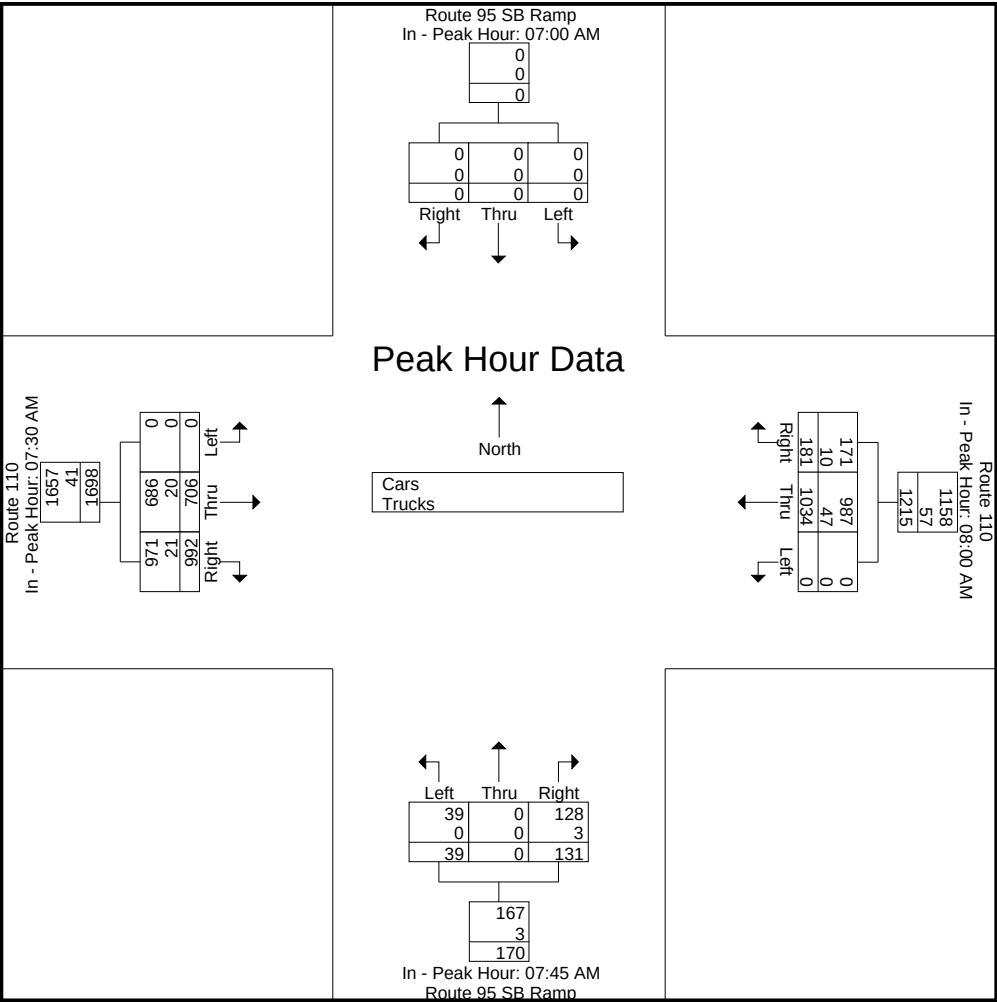
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:45 AM				07:30 AM			
+0 mins.	0	0	0	0	0	240	47	287	6	0	41	47	0	169	248	417
+15 mins.	0	0	0	0	0	277	52	329	12	0	24	36	0	182	267	449
+30 mins.	0	0	0	0	0	246	38	284	17	0	42	59	0	177	245	422
+45 mins.	0	0	0	0	0	271	44	315	4	0	24	28	0	178	232	410
Total Volume	0	0	0	0	0	1034	181	1215	39	0	131	170	0	706	992	1698
% App. Total	0	0	0	0	0	85.1	14.9		22.9	0	77.1		0	41.6	58.4	
PHF	.000	.000	.000	.000	.000	.933	.870	.923	.574	.000	.780	.720	.000	.970	.929	.945
Cars	0	0	0	0	0	987	171	1158	39	0	128	167	0	686	971	1657
% Cars	0	0	0	0	0	95.5	94.5	95.3	100	0	97.7	98.2	0	97.2	97.9	97.6
Trucks	0	0	0	0	0	47	10	57	0	0	3	3	0	20	21	41
% Trucks	0	0	0	0	0	4.5	5.5	4.7	0	0	2.3	1.8	0	2.8	2.1	2.4

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 4

Groups Printed- Cars

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp 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	0	0	0	0	188	42	6	0	22	0	134	210	602
07:15 AM	0	0	0	0	224	38	7	0	18	0	146	236	669
07:30 AM	0	0	0	0	208	55	5	0	19	0	166	239	692
07:45 AM	0	0	0	0	254	36	6	0	41	0	174	265	776
Total	0	0	0	0	874	171	24	0	100	0	620	950	2739
08:00 AM	0	0	0	0	232	44	12	0	23	0	172	239	722
08:15 AM	0	0	0	0	264	49	17	0	40	0	174	228	772
08:30 AM	0	0	0	0	234	37	4	0	24	0	175	227	701
08:45 AM	0	0	0	0	257	41	9	0	27	0	197	188	719
Total	0	0	0	0	987	171	42	0	114	0	718	882	2914
Grand Total	0	0	0	0	1861	342	66	0	214	0	1338	1832	5653
Apprch %	0	0	0	0	84.5	15.5	23.6	0	76.4	0	42.2	57.8	
Total %	0	0	0	0	32.9	6	1.2	0	3.8	0	23.7	32.4	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 07:45 AM																	
07:45 AM	0	0	0	0	0	254	36	290	6	0	41	47	0	174	265	439	776
08:00 AM	0	0	0	0	0	232	44	276	12	0	23	35	0	172	239	411	722
08:15 AM	0	0	0	0	0	264	49	313	17	0	40	57	0	174	228	402	772
08:30 AM	0	0	0	0	0	234	37	271	4	0	24	28	0	175	227	402	701
Total Volume	0	0	0	0	0	984	166	1150	39	0	128	167	0	695	959	1654	2971
% App. Total	0	0	0		0	85.6	14.4		23.4	0	76.6		0	42	58		
PHF	.000	.000	.000	.000	.000	.932	.847	.919	.574	.000	.780	.732	.000	.993	.905	.942	.957

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

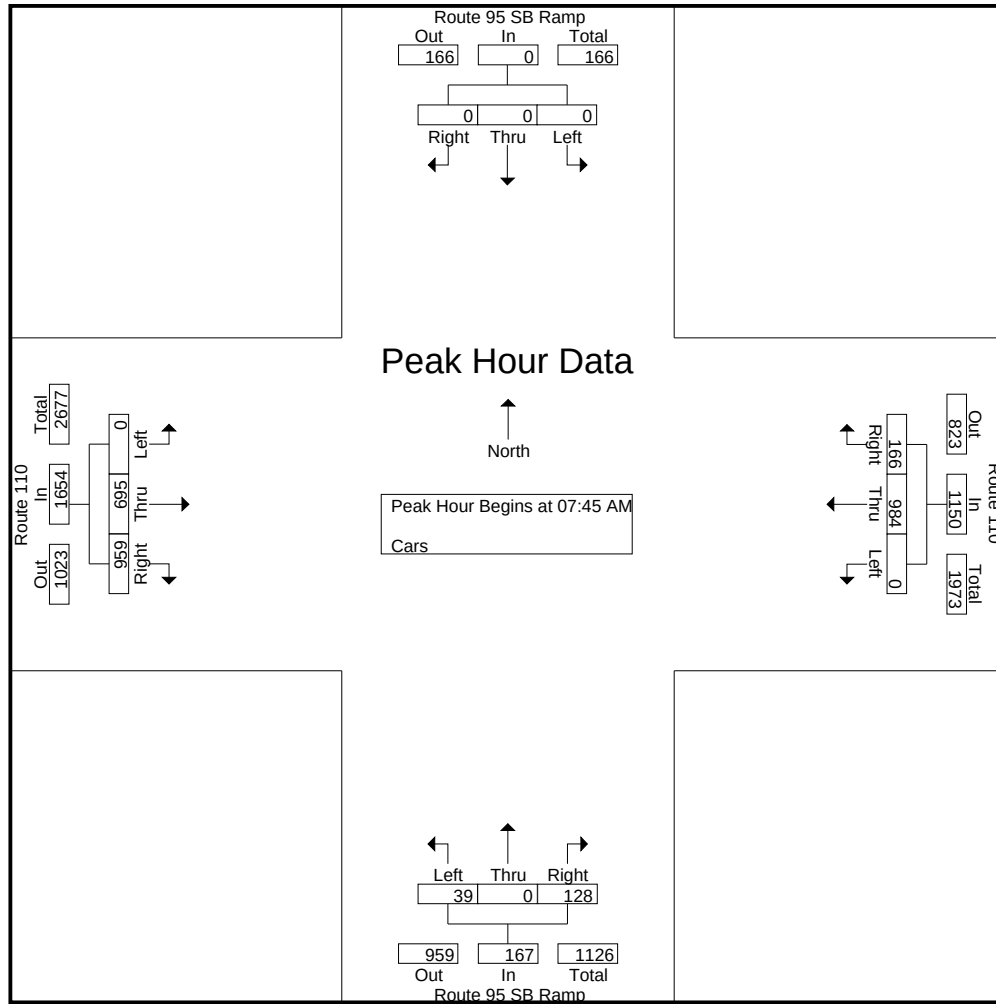
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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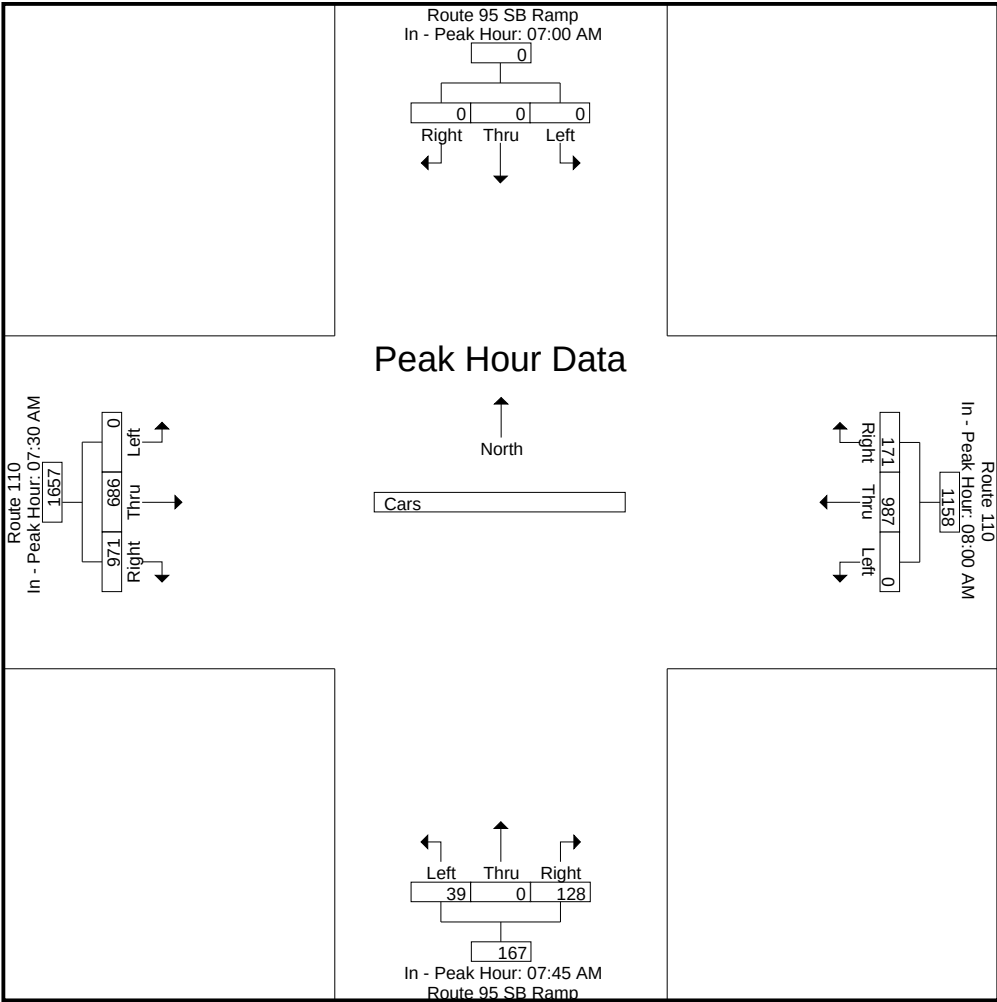
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:45 AM				07:30 AM			
+0 mins.	0	0	0	0	0	232	44	276	6	0	41	47	0	166	239	405
+15 mins.	0	0	0	0	0	264	49	313	12	0	23	35	0	174	265	439
+30 mins.	0	0	0	0	0	234	37	271	17	0	40	57	0	172	239	411
+45 mins.	0	0	0	0	0	257	41	298	4	0	24	28	0	174	228	402
Total Volume	0	0	0	0	0	987	171	1158	39	0	128	167	0	686	971	1657
% App. Total	0	0	0	0	0	85.2	14.8		23.4	0	76.6		0	41.4	58.6	
PHF	.000	.000	.000	.000	.000	.935	.872	.925	.574	.000	.780	.732	.000	.986	.916	.944

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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Groups Printed- Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp 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	0	0	0	0	3	0	1	0	0	0	4	5	13
07:15 AM	0	0	0	0	3	3	0	0	0	0	7	5	18
07:30 AM	0	0	0	0	7	4	1	0	1	0	3	9	25
07:45 AM	0	0	0	0	9	0	0	0	0	0	8	2	19
Total	0	0	0	0	22	7	2	0	1	0	22	21	75
08:00 AM	0	0	0	0	8	3	0	0	1	0	5	6	23
08:15 AM	0	0	0	0	13	3	0	0	2	0	4	4	26
08:30 AM	0	0	0	0	12	1	0	0	0	0	4	6	23
08:45 AM	0	0	0	0	14	3	0	0	2	0	4	1	24
Total	0	0	0	0	47	10	0	0	5	0	17	17	96
Grand Total	0	0	0	0	69	17	2	0	6	0	39	38	171
Apprch %	0	0	0	0	80.2	19.8	25	0	75	0	50.6	49.4	
Total %	0	0	0	0	40.4	9.9	1.2	0	3.5	0	22.8	22.2	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 08:00 AM																	
08:00 AM	0	0	0	0	0	8	3	11	0	0	1	1	0	5	6	11	23
08:15 AM	0	0	0	0	0	13	3	16	0	0	2	2	0	4	4	8	26
08:30 AM	0	0	0	0	0	12	1	13	0	0	0	0	0	4	6	10	23
08:45 AM	0	0	0	0	0	14	3	17	0	0	2	2	0	4	1	5	24
Total Volume	0	0	0	0	0	47	10	57	0	0	5	5	0	17	17	34	96
% App. Total	0	0	0		0	82.5	17.5		0	0	100		0	50	50		
PHF	.000	.000	.000	.000	.000	.839	.833	.838	.000	.000	.625	.625	.000	.850	.708	.773	.923

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

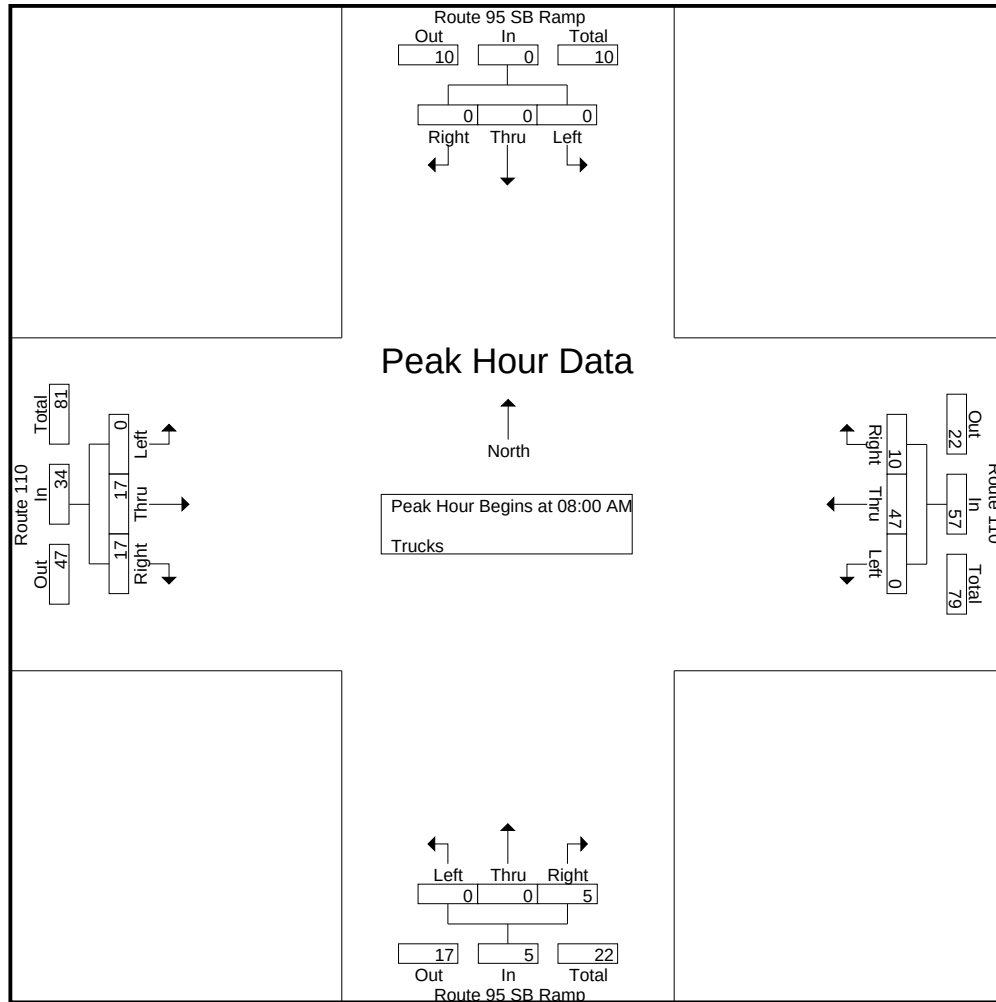
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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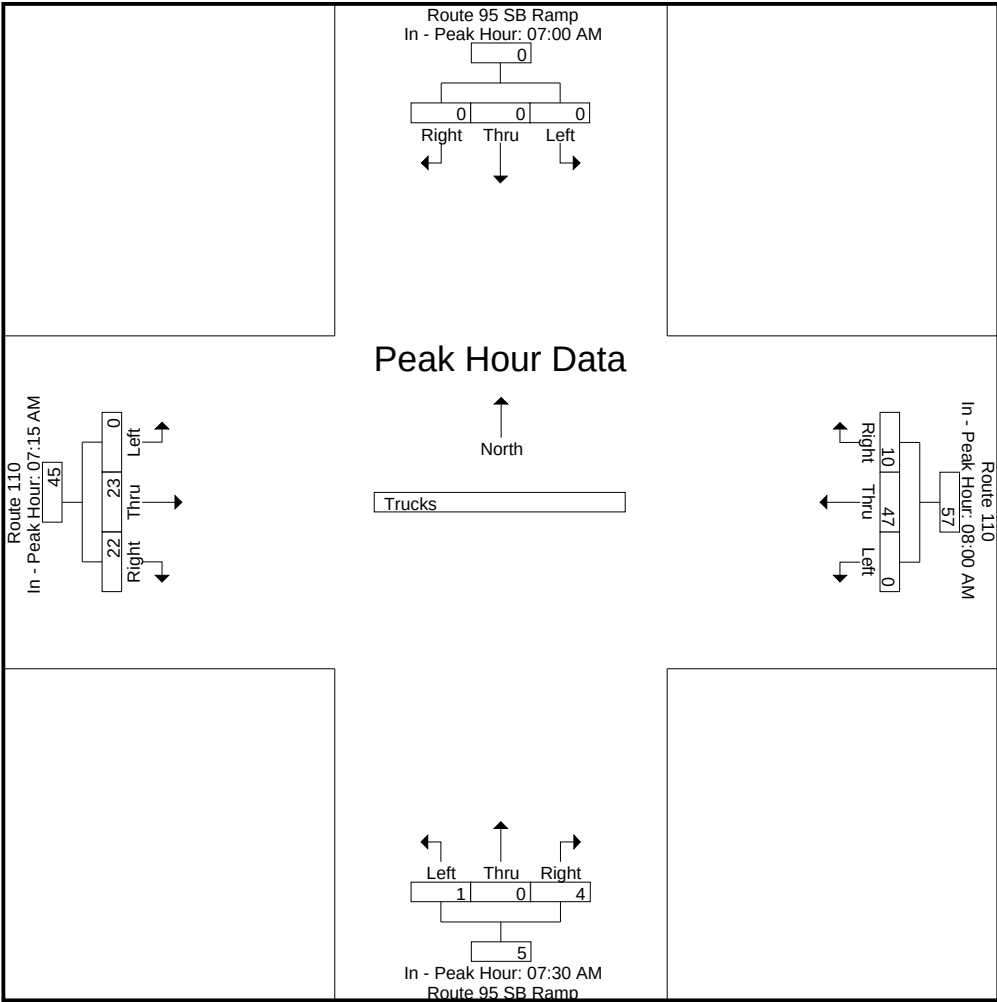
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				07:30 AM				07:15 AM			
+0 mins.	0	0	0	0	0	8	3	11	1	0	1	2	0	7	5	12
+15 mins.	0	0	0	0	0	13	3	16	0	0	0	0	0	3	9	12
+30 mins.	0	0	0	0	0	12	1	13	0	0	1	1	0	8	2	10
+45 mins.	0	0	0	0	0	14	3	17	0	0	2	2	0	5	6	11
Total Volume	0	0	0	0	0	47	10	57	1	0	4	5	0	23	22	45
% App. Total	0	0	0	0	0	82.5	17.5		20	0	80		0	51.1	48.9	
PHF	.000	.000	.000	.000	.000	.839	.833	.838	.250	.000	.500	.625	.000	.719	.611	.938

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
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978-664-2565

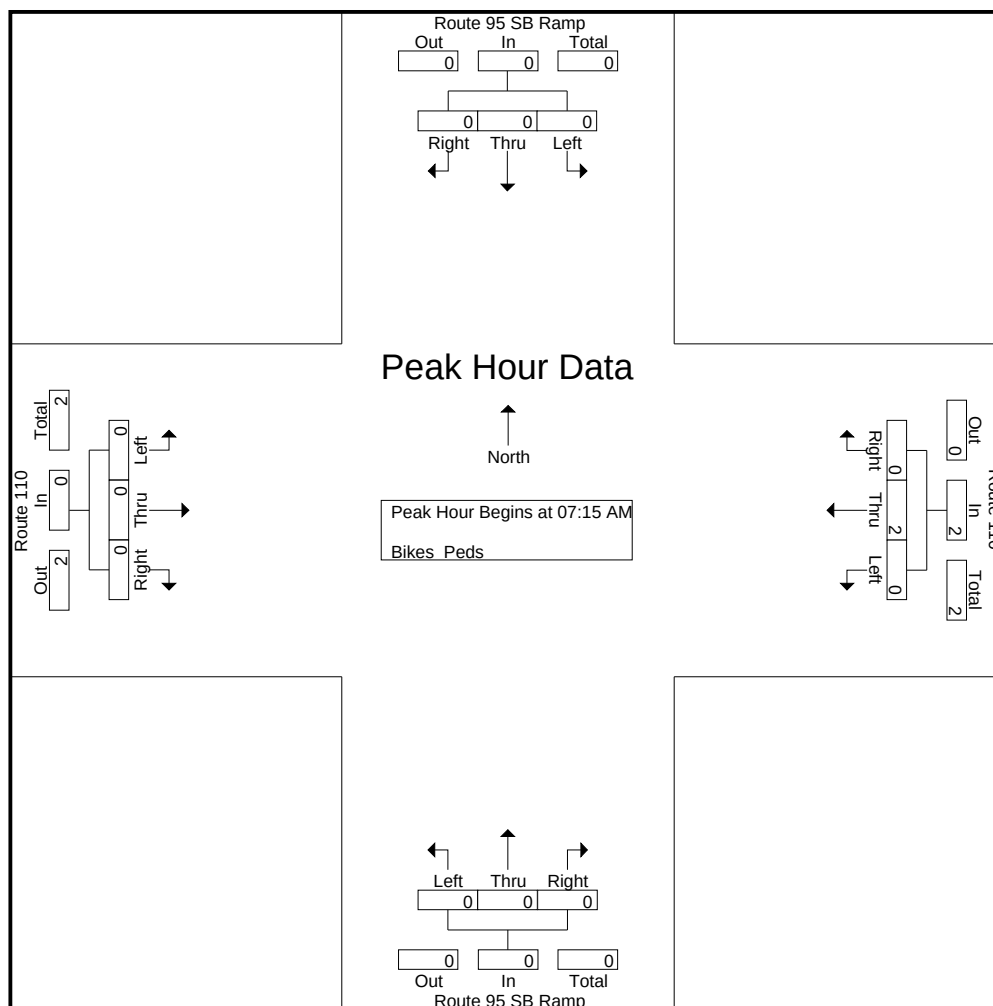
Page No : 10

[illegible]

978-664-2565

Weather : Cloudy

Page No : 11

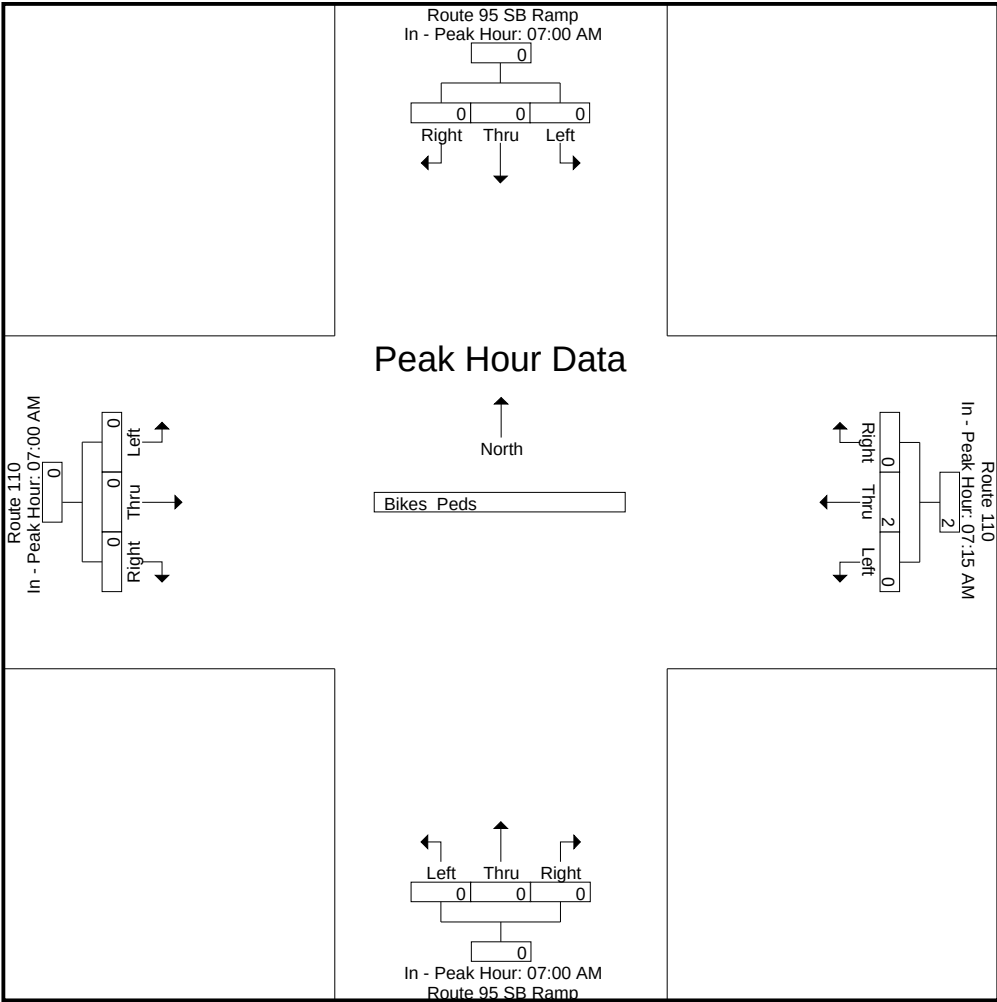


Peak Hour for Each Approach Begins at:

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 : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars - Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 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	431	41	13	0	26	0	204	117	832
04:15 PM	0	0	0	0	451	48	16	0	50	0	208	131	904
04:30 PM	0	0	0	0	413	52	22	0	31	0	229	141	888
04:45 PM	0	0	0	0	424	37	20	0	41	0	198	133	853
Total	0	0	0	0	1719	178	71	0	148	0	839	522	3477
05:00 PM	0	0	0	0	440	47	15	0	41	0	242	144	929
05:15 PM	0	0	0	0	443	45	17	0	42	0	222	134	903
05:30 PM	0	0	0	0	381	43	17	0	41	0	242	128	852
05:45 PM	0	0	0	0	417	43	15	0	38	0	206	118	837
Total	0	0	0	0	1681	178	64	0	162	0	912	524	3521
Grand Total	0	0	0	0	3400	356	135	0	310	0	1751	1046	6998
Apprch %	0	0	0	0	90.5	9.5	30.3	0	69.7	0	62.6	37.4	
Total %	0	0	0	0	48.6	5.1	1.9	0	4.4	0	25	14.9	
Cars	0	0	0	0	3368	350	132	0	307	0	1736	1036	6929
% Cars	0	0	0	0	99.1	98.3	97.8	0	99	0	99.1	99	99
Trucks	0	0	0	0	32	6	3	0	3	0	15	10	69
% Trucks	0	0	0	0	0.9	1.7	2.2	0	1	0	0.9	1	1

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 04:15 PM																	
04:15 PM	0	0	0	0	0	451	48	499	16	0	50	66	0	208	131	339	904
04:30 PM	0	0	0	0	0	413	52	465	22	0	31	53	0	229	141	370	888
04:45 PM	0	0	0	0	0	424	37	461	20	0	41	61	0	198	133	331	853
05:00 PM	0	0	0	0	0	440	47	487	15	0	41	56	0	242	144	386	929
Total Volume	0	0	0	0	0	1728	184	1912	73	0	163	236	0	877	549	1426	3574
% App. Total	0	0	0		0	90.4	9.6		30.9	0	69.1		0	61.5	38.5		
PHF	.000	.000	.000	.000	.000	.958	.885	.958	.830	.000	.815	.894	.000	.906	.953	.924	.962
Cars	0	0	0	0	0	1707	181	1888	72	0	161	233	0	868	543	1411	3532
% Cars	0	0	0	0	0	98.8	98.4	98.7	98.6	0	98.8	98.7	0	99.0	98.9	98.9	98.8
Trucks	0	0	0	0	0	21	3	24	1	0	2	3	0	9	6	15	42
% Trucks	0	0	0	0	0	1.2	1.6	1.3	1.4	0	1.2	1.3	0	1.0	1.1	1.1	1.2

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

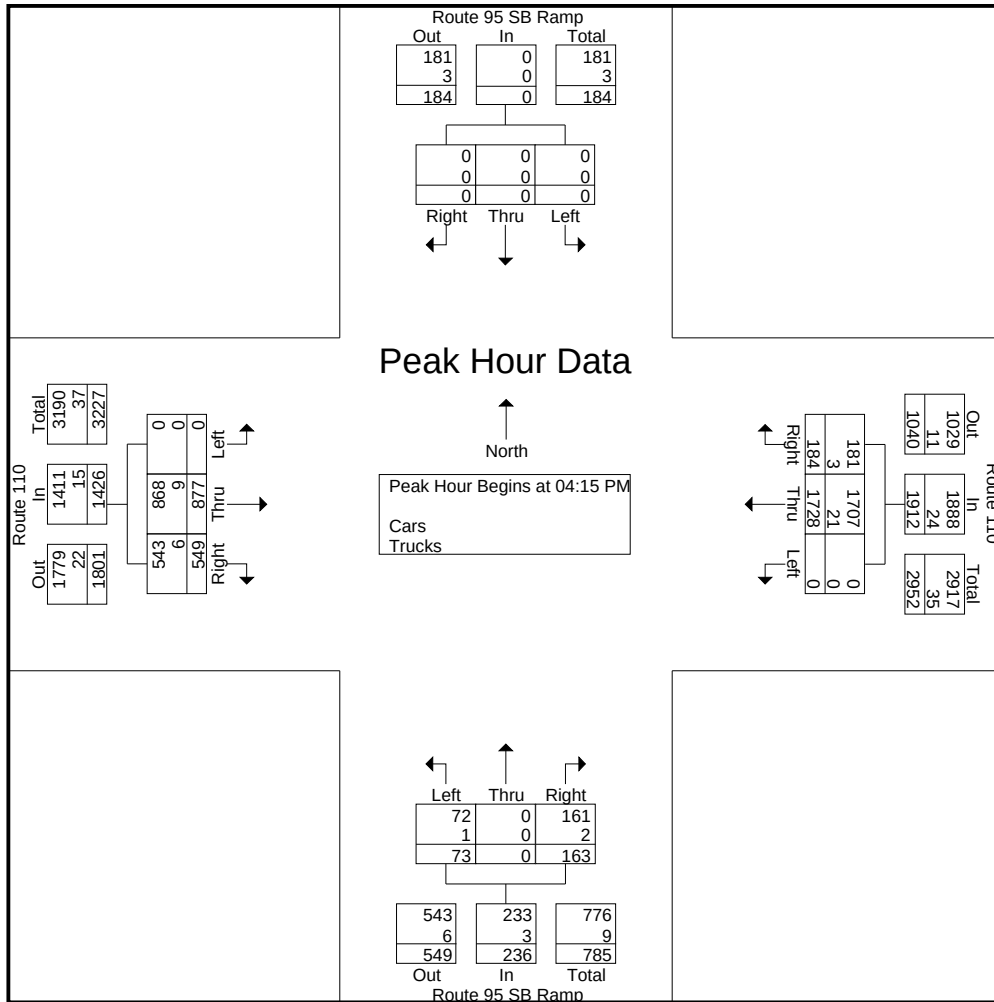
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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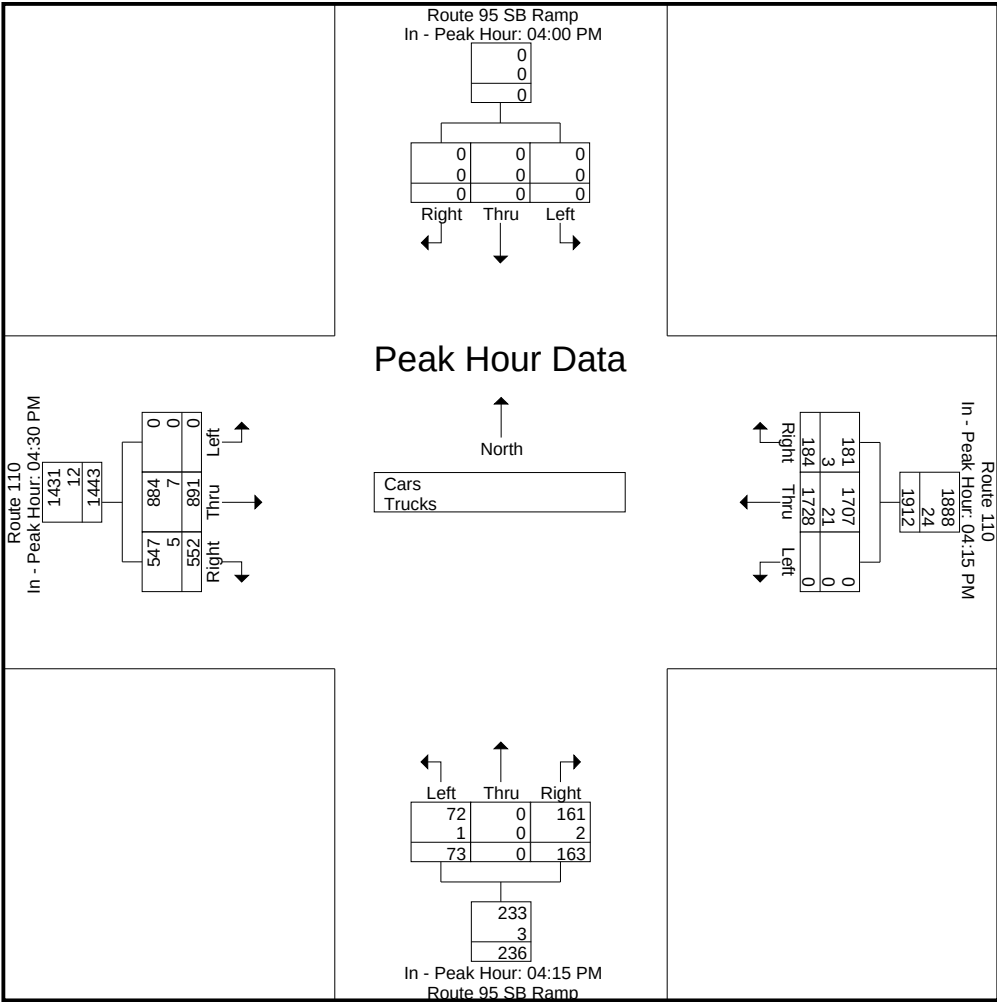
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:15 PM				04:30 PM			
+0 mins.	0	0	0	0	0	451	48	499	16	0	50	66	0	229	141	370
+15 mins.	0	0	0	0	0	413	52	465	22	0	31	53	0	198	133	331
+30 mins.	0	0	0	0	0	424	37	461	20	0	41	61	0	242	144	386
+45 mins.	0	0	0	0	0	440	47	487	15	0	41	56	0	222	134	356
Total Volume	0	0	0	0	0	1728	184	1912	73	0	163	236	0	891	552	1443
% App. Total	0	0	0	0	0	90.4	9.6		30.9	0	69.1		0	61.7	38.3	
PHF	.000	.000	.000	.000	.000	.958	.885	.958	.830	.000	.815	.894	.000	.920	.958	.935
Cars	0	0	0	0	0	1707	181	1888	72	0	161	233	0	884	547	1431
% Cars	0	0	0	0	0	98.8	98.4	98.7	98.6	0	98.8	98.7	0	99.2	99.1	99.2
Trucks	0	0	0	0	0	21	3	24	1	0	2	3	0	7	5	12
% Trucks	0	0	0	0	0	1.2	1.6	1.3	1.4	0	1.2	1.3	0	0.8	0.9	0.8

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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Groups Printed- Cars

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 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	427	40	11	0	26	0	203	116	823
04:15 PM	0	0	0	0	445	48	16	0	50	0	205	128	892
04:30 PM	0	0	0	0	407	50	22	0	31	0	228	138	876
04:45 PM	0	0	0	0	418	36	19	0	40	0	198	133	844
Total	0	0	0	0	1697	174	68	0	147	0	834	515	3435
05:00 PM	0	0	0	0	437	47	15	0	40	0	237	144	920
05:15 PM	0	0	0	0	440	44	17	0	41	0	221	132	895
05:30 PM	0	0	0	0	379	43	17	0	41	0	242	127	849
05:45 PM	0	0	0	0	415	42	15	0	38	0	202	118	830
Total	0	0	0	0	1671	176	64	0	160	0	902	521	3494
Grand Total	0	0	0	0	3368	350	132	0	307	0	1736	1036	6929
Apprch %	0	0	0	0	90.6	9.4	30.1	0	69.9	0	62.6	37.4	
Total %	0	0	0	0	48.6	5.1	1.9	0	4.4	0	25.1	15	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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	0	0	0	0	0	407	50	457	22	0	31	53	0	228	138	366	876
04:45 PM	0	0	0	0	0	418	36	454	19	0	40	59	0	198	133	331	844
05:00 PM	0	0	0	0	0	437	47	484	15	0	40	55	0	237	144	381	920
05:15 PM	0	0	0	0	0	440	44	484	17	0	41	58	0	221	132	353	895
Total Volume	0	0	0	0	0	1702	177	1879	73	0	152	225	0	884	547	1431	3535
% App. Total	0	0	0		0	90.6	9.4		32.4	0	67.6		0	61.8	38.2		
PHF	.000	.000	.000	.000	.000	.967	.885	.971	.830	.000	.927	.953	.000	.932	.950	.939	.961

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

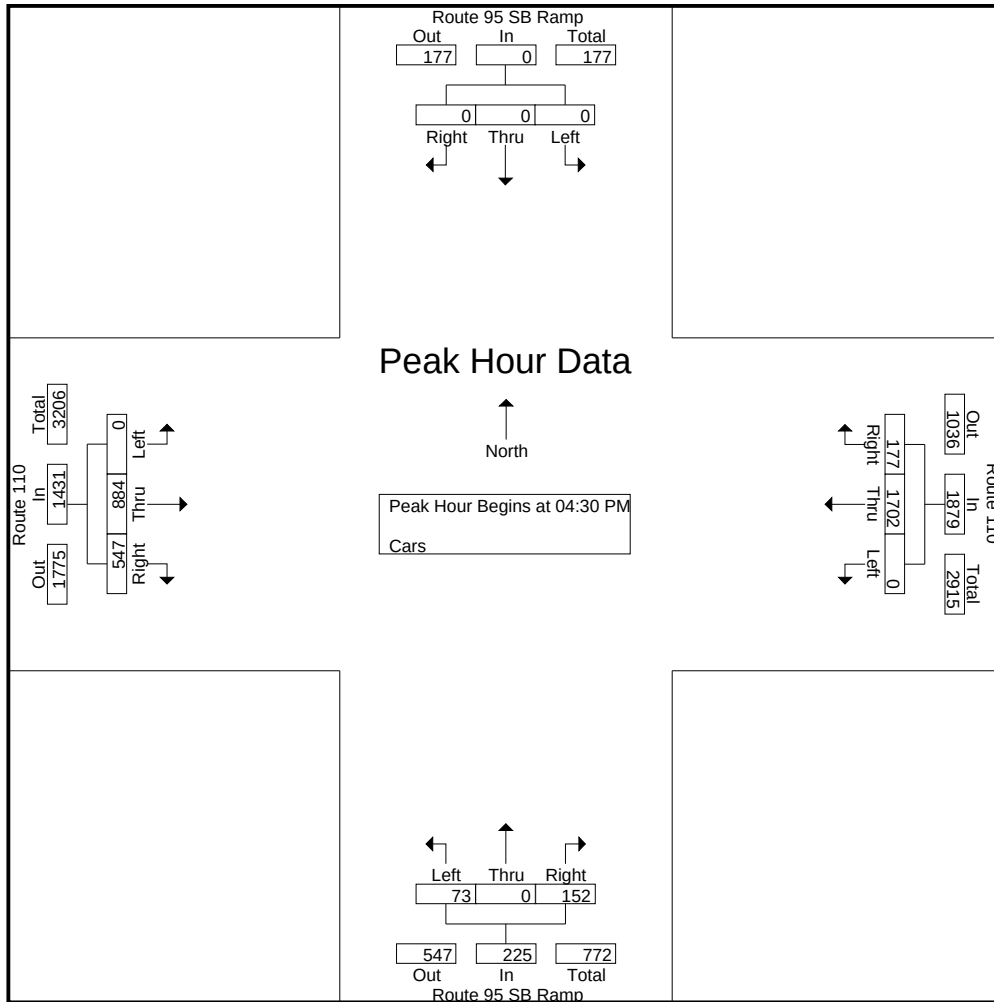
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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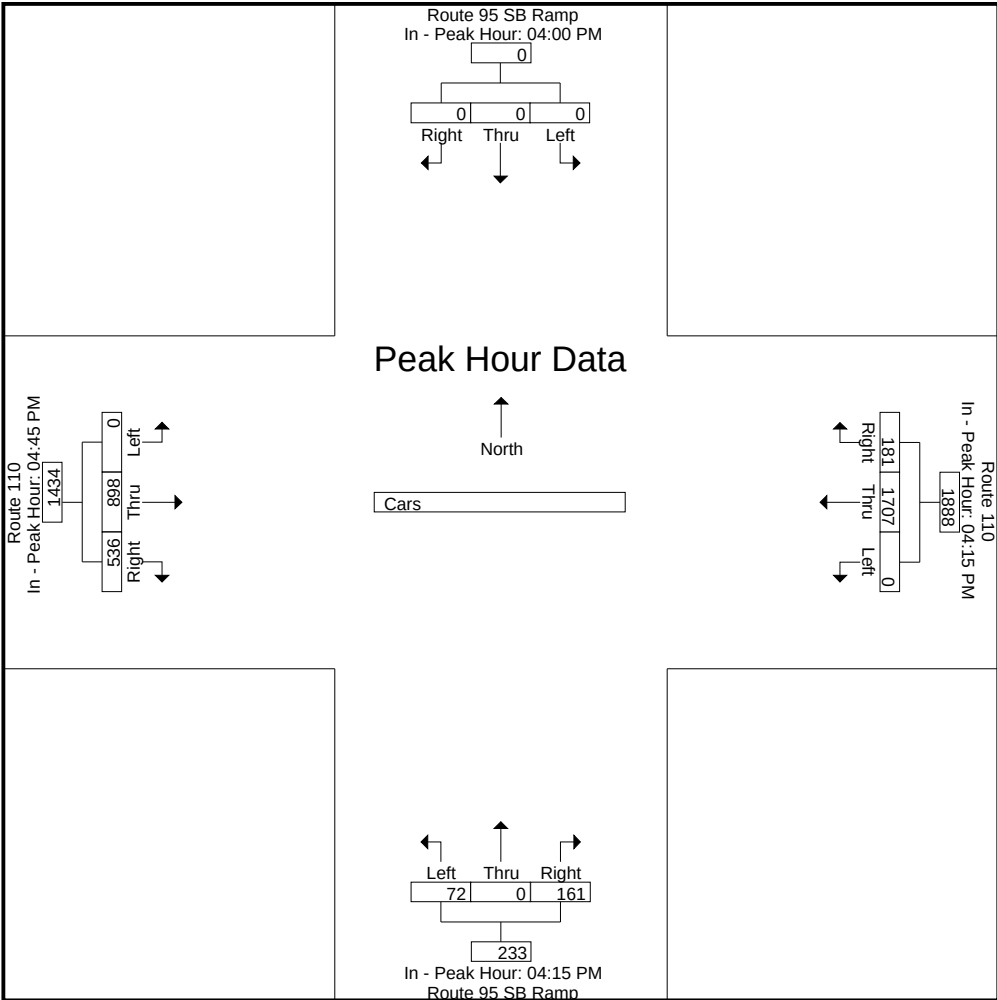
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:15 PM				04:45 PM			
+0 mins.	0	0	0	0	0	445	48	493	16	0	50	66	0	198	133	331
+15 mins.	0	0	0	0	0	407	50	457	22	0	31	53	0	237	144	381
+30 mins.	0	0	0	0	0	418	36	454	19	0	40	59	0	221	132	353
+45 mins.	0	0	0	0	0	437	47	484	15	0	40	55	0	242	127	369
Total Volume	0	0	0	0	0	1707	181	1888	72	0	161	233	0	898	536	1434
% App. Total	0	0	0	0	0	90.4	9.6		30.9	0	69.1		0	62.6	37.4	
PHF	.000	.000	.000	.000	.000	.959	.905	.957	.818	.000	.805	.883	.000	.928	.931	.941

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 7

Groups Printed- Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 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	4	1	2	0	0	0	1	1	9
04:15 PM	0	0	0	0	6	0	0	0	0	0	3	3	12
04:30 PM	0	0	0	0	6	2	0	0	0	0	1	3	12
04:45 PM	0	0	0	0	6	1	1	0	1	0	0	0	9
Total	0	0	0	0	22	4	3	0	1	0	5	7	42
05:00 PM	0	0	0	0	3	0	0	0	1	0	5	0	9
05:15 PM	0	0	0	0	3	1	0	0	1	0	1	2	8
05:30 PM	0	0	0	0	2	0	0	0	0	0	0	1	3
05:45 PM	0	0	0	0	2	1	0	0	0	0	4	0	7
Total	0	0	0	0	10	2	0	0	2	0	10	3	27
Grand Total	0	0	0	0	32	6	3	0	3	0	15	10	69
Apprch %	0	0	0	0	84.2	15.8	50	0	50	0	60	40	
Total %	0	0	0	0	46.4	8.7	4.3	0	4.3	0	21.7	14.5	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 04:00 PM																	
04:00 PM	0	0	0	0	0	4	1	5	2	0	0	2	0	1	1	2	9
04:15 PM	0	0	0	0	0	6	0	6	0	0	0	0	0	3	3	6	12
04:30 PM	0	0	0	0	0	6	2	8	0	0	0	0	0	1	3	4	12
04:45 PM	0	0	0	0	0	6	1	7	1	0	1	2	0	0	0	0	9
Total Volume	0	0	0	0	0	22	4	26	3	0	1	4	0	5	7	12	42
% App. Total	0	0	0		0	84.6	15.4		75	0	25		0	41.7	58.3		
PHF	.000	.000	.000	.000	.000	.917	.500	.813	.375	.000	.250	.500	.000	.417	.583	.500	.875

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

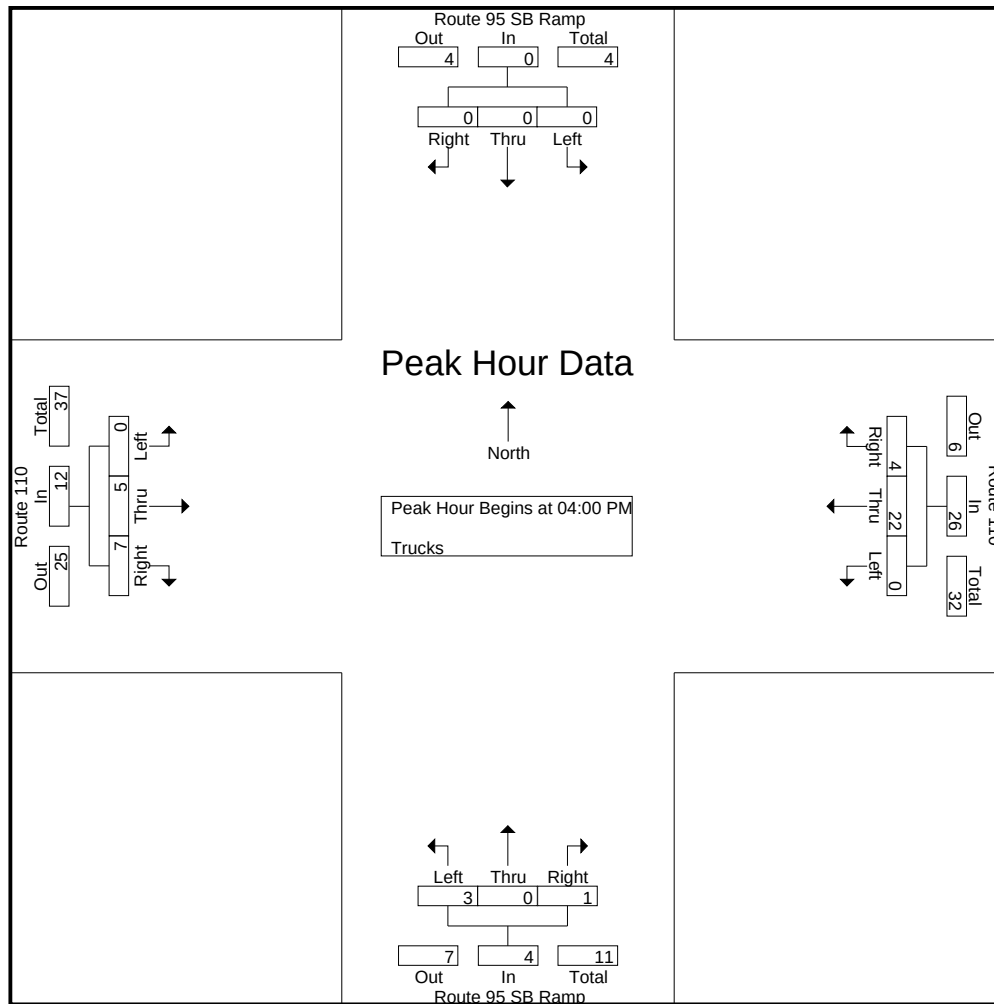
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 8



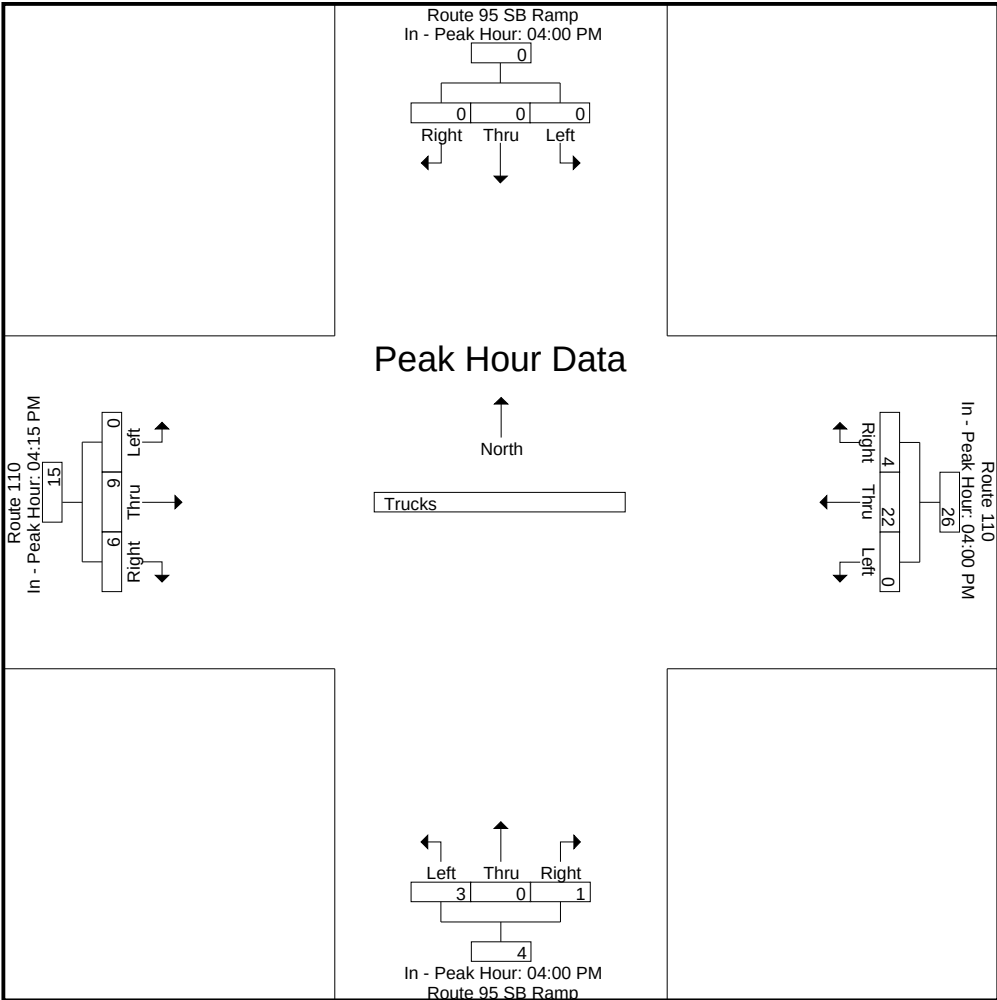
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:15 PM			
+0 mins.	0	0	0	0	0	4	1	5	2	0	0	2	0	3	3	6
+15 mins.	0	0	0	0	0	6	0	6	0	0	0	0	0	1	3	4
+30 mins.	0	0	0	0	0	6	2	8	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	6	1	7	1	0	1	2	0	5	0	5
Total Volume	0	0	0	0	0	22	4	26	3	0	1	4	0	9	6	15
% App. Total	0	0	0	0	0	84.6	15.4		75	0	25		0	60	40	
PHF	.000	.000	.000	.000	.000	.917	.500	.813	.375	.000	.250	.500	.000	.450	.500	.625

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
Page No : 9



Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 10

Groups Printed- Bikes Peds

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 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	1	0	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	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	2	0	0	0	0	0	2	0	0	0	0	2	2	4
Total	0	0	0	0	0	2	0	0	0	0	0	2	0	1	0	0	2	3	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Grand Total	0	0	0	0	0	3	0	0	0	0	0	2	0	1	0	0	2	4	6
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0				
Total %	0	0	0		0	75	0		0	0	0		0	25	0		33.3	66.7	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 04:00 PM																	
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
04:15 PM	0	0	0	0	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	0	0	0	0
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	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 : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

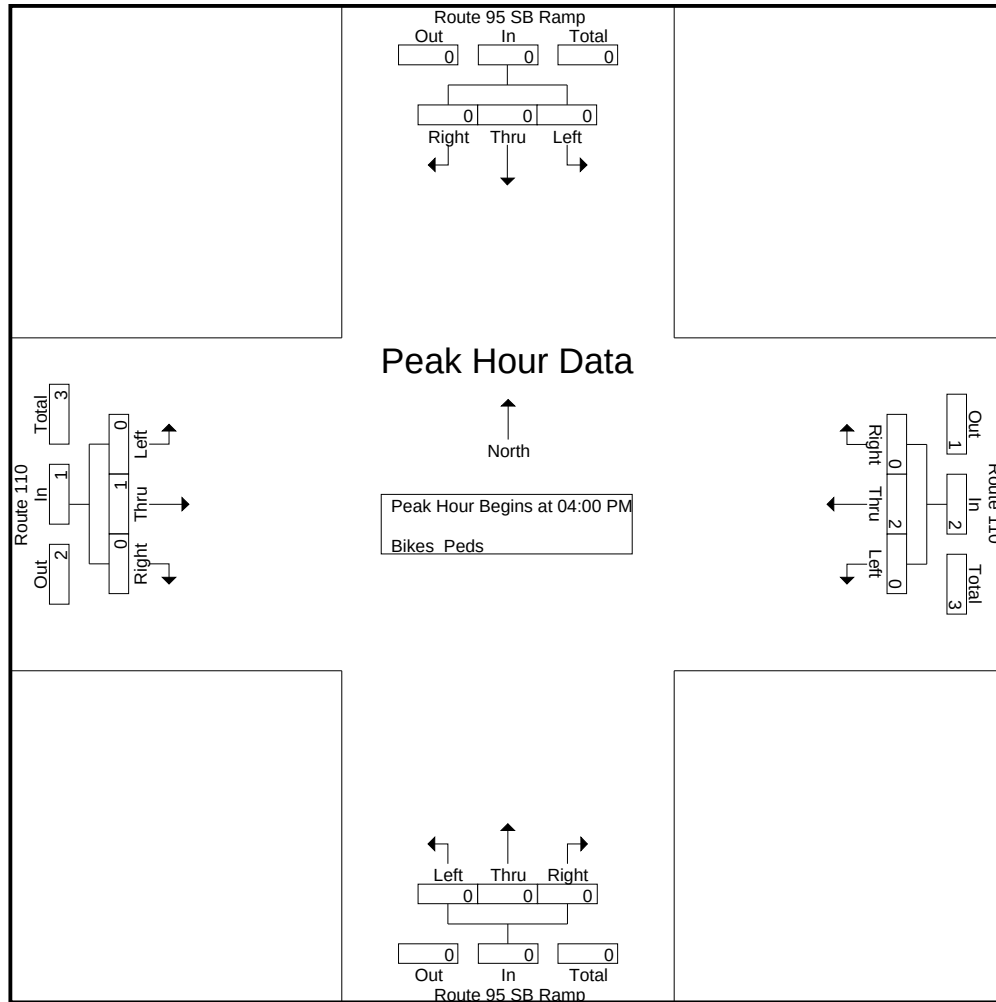
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

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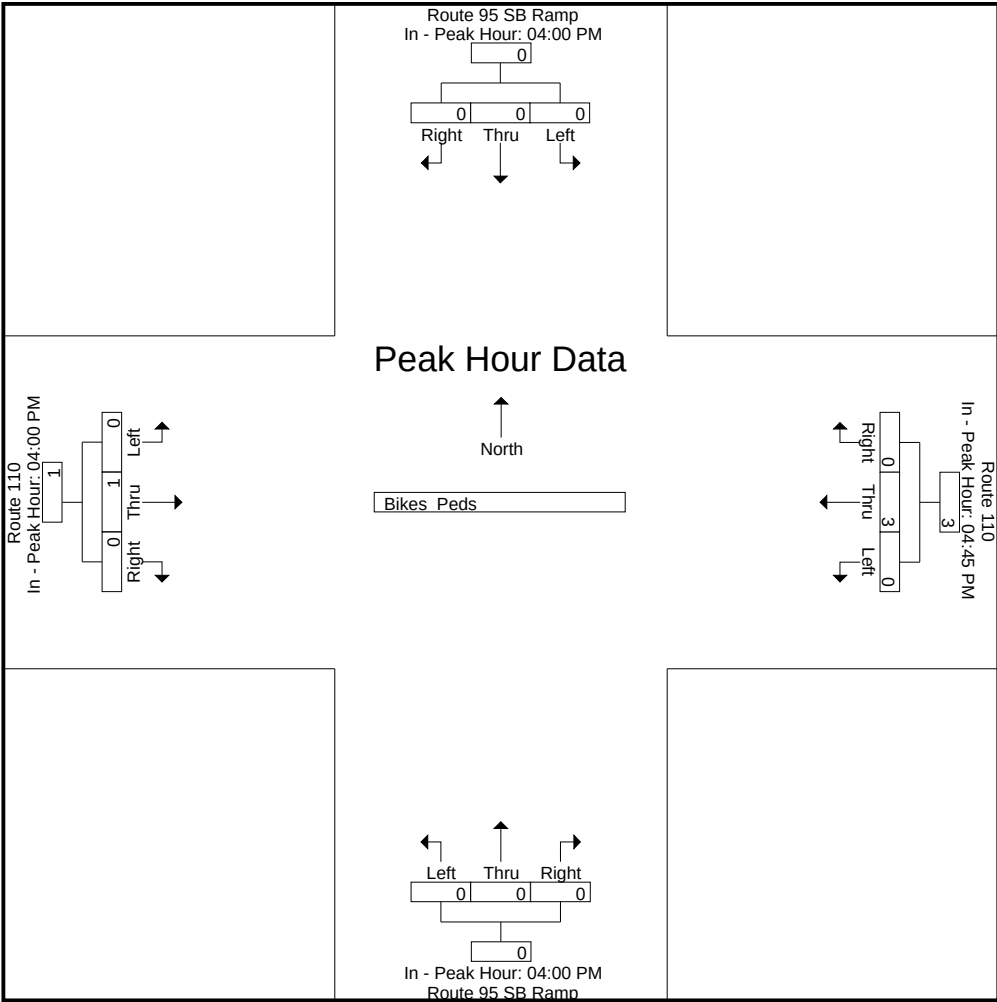
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:45 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1
+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	1	0	1	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1
% App. Total	0	0	0	0	0	100	0		0	0	0	0	0	100	0	
PHF	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.000	.250	.000	.250

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650003
Site Code : 97650003
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 1

Groups Printed- Cars - Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	229	40	16	0	26	0	292	97	700
11:15 AM	0	0	0	0	273	36	20	0	29	0	286	102	746
11:30 AM	0	0	0	0	255	31	19	0	25	0	269	102	701
11:45 AM	0	0	0	0	265	26	14	0	43	0	315	100	763
Total	0	0	0	0	1022	133	69	0	123	0	1162	401	2910
12:00 PM	0	0	0	0	267	19	17	0	34	0	241	99	677
12:15 PM	0	0	0	0	293	51	16	0	32	0	267	107	766
12:30 PM	0	0	0	0	280	48	17	0	28	0	282	112	767
12:45 PM	0	0	0	0	266	44	19	0	30	0	290	92	741
Total	0	0	0	0	1106	162	69	0	124	0	1080	410	2951
01:00 PM	0	0	0	0	264	51	24	0	23	0	191	104	657
01:15 PM	0	0	0	0	256	33	17	0	30	0	204	114	654
01:30 PM	0	0	0	0	281	40	32	0	30	0	203	107	693
01:45 PM	0	0	0	0	266	38	15	0	30	0	215	97	661
Total	0	0	0	0	1067	162	88	0	113	0	813	422	2665
Grand Total	0	0	0	0	3195	457	226	0	360	0	3055	1233	8526
Apprch %	0	0	0	0	87.5	12.5	38.6	0	61.4	0	71.2	28.8	
Total %	0	0	0	0	37.5	5.4	2.7	0	4.2	0	35.8	14.5	
Cars	0	0	0	0	3167	455	224	0	358	0	3041	1226	8471
% Cars	0	0	0	0	99.1	99.6	99.1	0	99.4	0	99.5	99.4	99.4
Trucks	0	0	0	0	28	2	2	0	2	0	14	7	55
% Trucks	0	0	0	0	0.9	0.4	0.9	0	0.6	0	0.5	0.6	0.6

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	0	0	0	0	0	265	26	291	14	0	43	57	0	315	100	415	763
12:00 PM	0	0	0	0	0	267	19	286	17	0	34	51	0	241	99	340	677
12:15 PM	0	0	0	0	0	293	51	344	16	0	32	48	0	267	107	374	766
12:30 PM	0	0	0	0	0	280	48	328	17	0	28	45	0	282	112	394	767
Total Volume	0	0	0	0	0	1105	144	1249	64	0	137	201	0	1105	418	1523	2973
% App. Total	0	0	0		0	88.5	11.5		31.8	0	68.2		0	72.6	27.4		
PHF	.000	.000	.000	.000	.000	.943	.706	.908	.941	.000	.797	.882	.000	.877	.933	.917	.969
Cars	0	0	0	0	0	1092	144	1236	63	0	137	200	0	1099	415	1514	2950
% Cars	0	0	0	0	0	98.8	100	99.0	98.4	0	100	99.5	0	99.5	99.3	99.4	99.2
Trucks	0	0	0	0	0	13	0	13	1	0	0	1	0	6	3	9	23
% Trucks	0	0	0	0	0	1.2	0	1.0	1.6	0	0	0.5	0	0.5	0.7	0.6	0.8

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

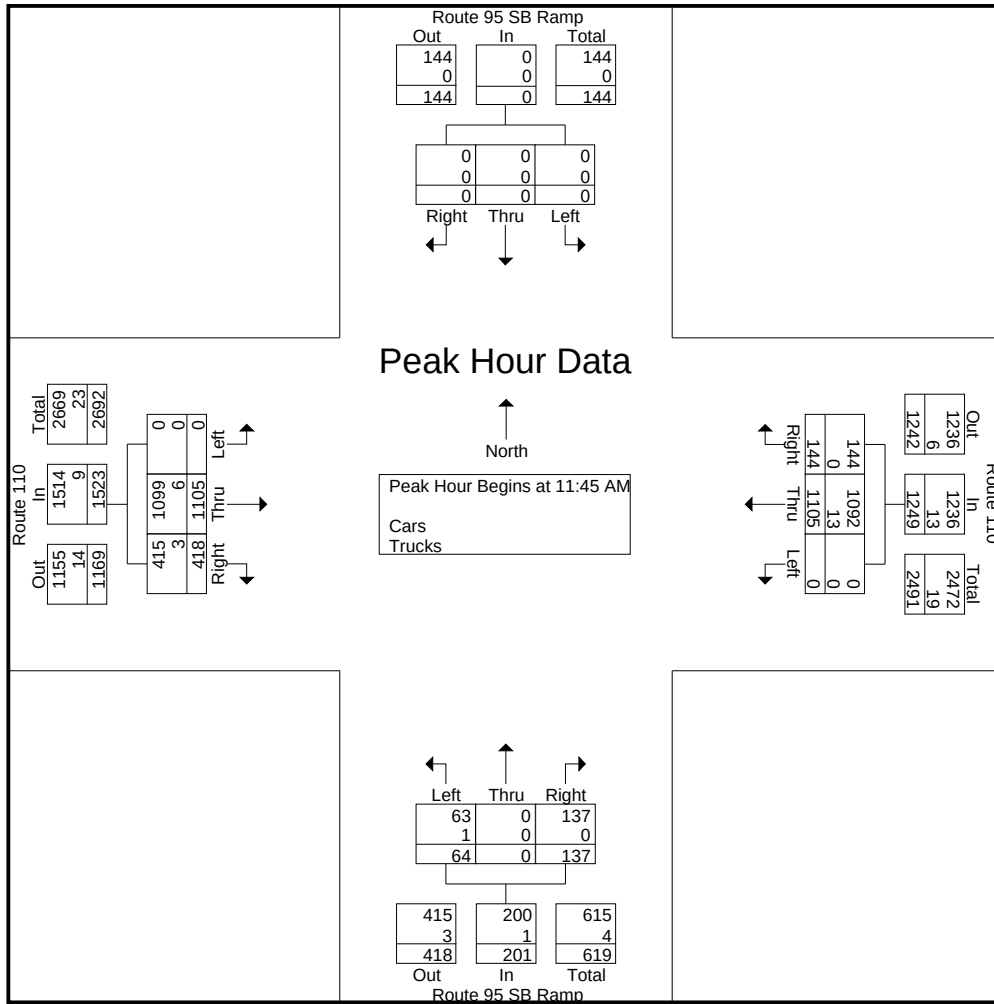
Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				12:15 PM				12:45 PM				11:00 AM			
+0 mins.	0	0	0	0	0	293	51	344	19	0	30	49	0	292	97	389
+15 mins.	0	0	0	0	0	280	48	328	24	0	23	47	0	286	102	388
+30 mins.	0	0	0	0	0	266	44	310	17	0	30	47	0	269	102	371
+45 mins.	0	0	0	0	0	264	51	315	32	0	30	62	0	315	100	415
Total Volume	0	0	0	0	0	1103	194	1297	92	0	113	205	0	1162	401	1563
% App. Total	0	0	0	0	0	85	15		44.9	0	55.1		0	74.3	25.7	
PHF	.000	.000	.000	.000	.000	.941	.951	.943	.719	.000	.942	.827	.000	.922	.983	.942
Cars	0	0	0	0	0	1090	193	1283	91	0	112	203	0	1157	399	1556
% Cars	0	0	0	0	0	98.8	99.5	98.9	98.9	0	99.1	99	0	99.6	99.5	99.6
Trucks	0	0	0	0	0	13	1	14	1	0	1	2	0	5	2	7
% Trucks	0	0	0	0	0	1.2	0.5	1.1	1.1	0	0.9	1	0	0.4	0.5	0.4

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

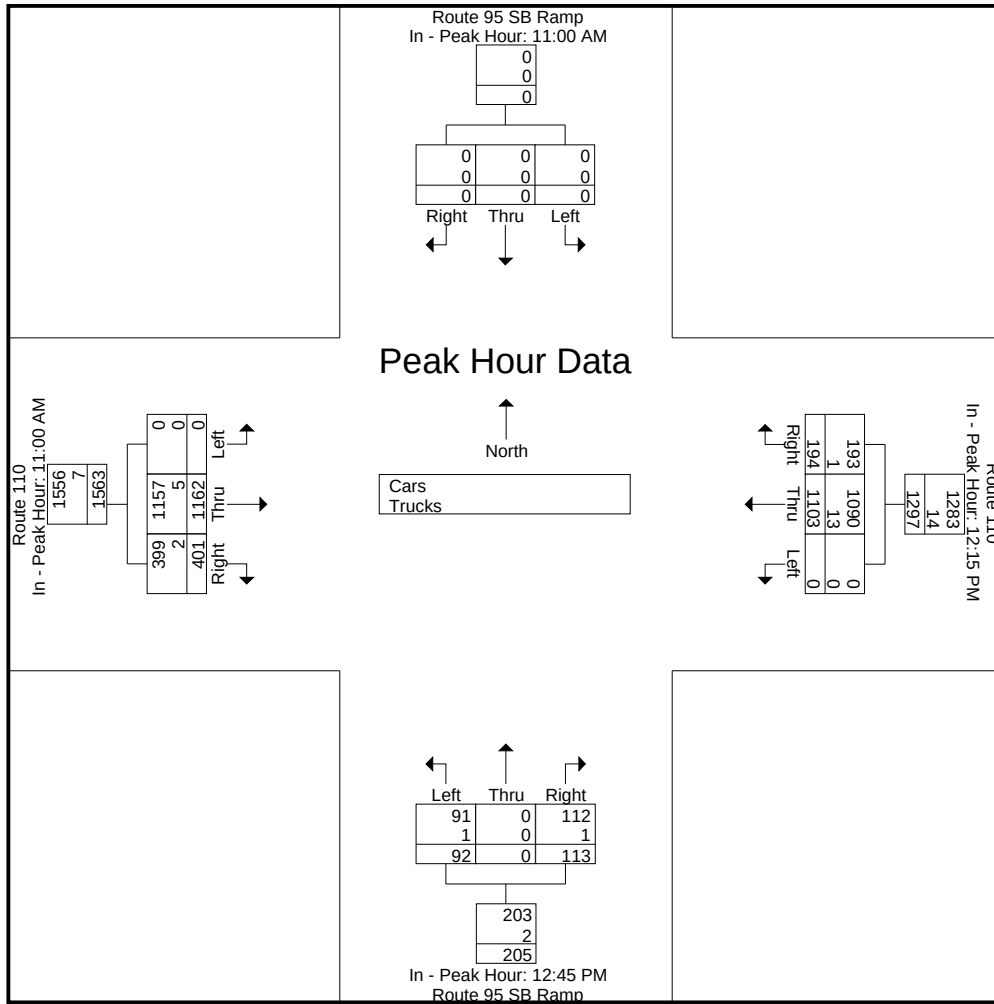
Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 4

Groups Printed- Cars

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 From West			
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
11:00 AM	0	0	0	0	227	40	16	0	25	0	290	97	695
11:15 AM	0	0	0	0	272	36	20	0	29	0	286	102	745
11:30 AM	0	0	0	0	255	30	19	0	25	0	269	100	698
11:45 AM	0	0	0	0	260	26	13	0	43	0	312	100	754
Total	0	0	0	0	1014	132	68	0	122	0	1157	399	2892
12:00 PM	0	0	0	0	263	19	17	0	34	0	241	98	672
12:15 PM	0	0	0	0	291	51	16	0	32	0	264	106	760
12:30 PM	0	0	0	0	278	48	17	0	28	0	282	111	764
12:45 PM	0	0	0	0	260	43	19	0	30	0	288	92	732
Total	0	0	0	0	1092	161	69	0	124	0	1075	407	2928
01:00 PM	0	0	0	0	261	51	23	0	23	0	191	104	653
01:15 PM	0	0	0	0	256	33	17	0	29	0	202	114	651
01:30 PM	0	0	0	0	281	40	32	0	30	0	203	105	691
01:45 PM	0	0	0	0	263	38	15	0	30	0	213	97	656
Total	0	0	0	0	1061	162	87	0	112	0	809	420	2651
Grand Total	0	0	0	0	3167	455	224	0	358	0	3041	1226	8471
Apprch %	0	0	0	0	87.4	12.6	38.5	0	61.5	0	71.3	28.7	
Total %	0	0	0	0	37.4	5.4	2.6	0	4.2	0	35.9	14.5	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	0	0	0	0	0	260	26	286	13	0	43	56	0	312	100	412	754
12:00 PM	0	0	0	0	0	263	19	282	17	0	34	51	0	241	98	339	672
12:15 PM	0	0	0	0	0	291	51	342	16	0	32	48	0	264	106	370	760
12:30 PM	0	0	0	0	0	278	48	326	17	0	28	45	0	282	111	393	764
Total Volume	0	0	0	0	0	1092	144	1236	63	0	137	200	0	1099	415	1514	2950
% App. Total	0	0	0		0	88.3	11.7		31.5	0	68.5		0	72.6	27.4		
PHF	.000	.000	.000	.000	.000	.938	.706	.904	.926	.000	.797	.893	.000	.881	.935	.919	.965

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

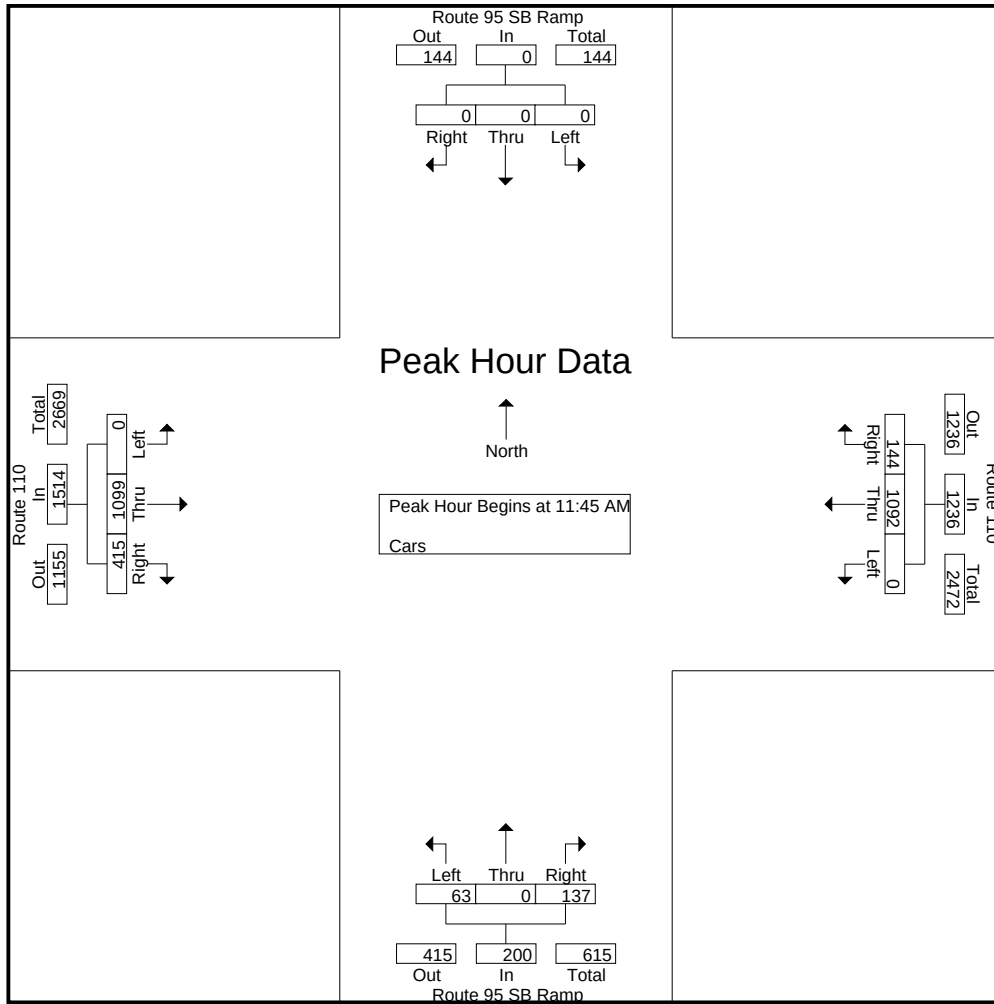
Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

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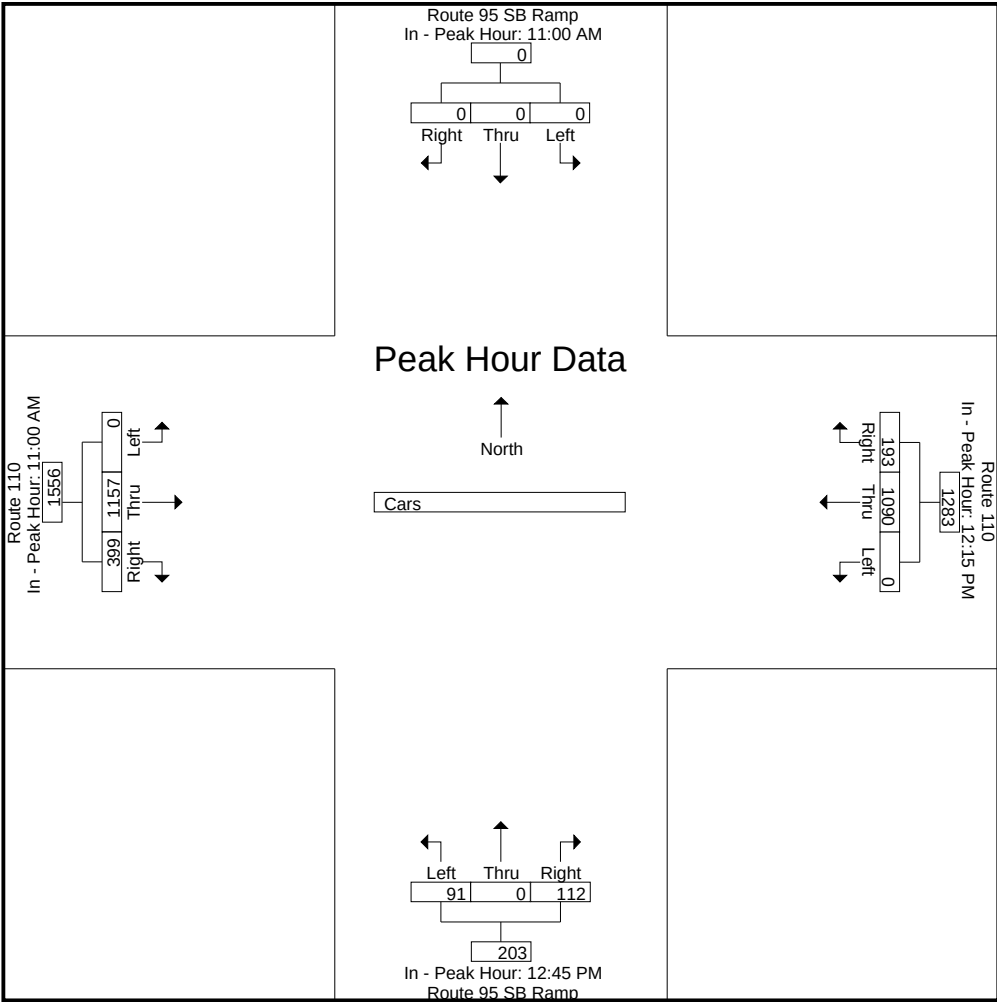
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				12:15 PM				12:45 PM				11:00 AM			
+0 mins.	0	0	0	0	0	291	51	342	19	0	30	49	0	290	97	387
+15 mins.	0	0	0	0	0	278	48	326	23	0	23	46	0	286	102	388
+30 mins.	0	0	0	0	0	260	43	303	17	0	29	46	0	269	100	369
+45 mins.	0	0	0	0	0	261	51	312	32	0	30	62	0	312	100	412
Total Volume	0	0	0	0	0	1090	193	1283	91	0	112	203	0	1157	399	1556
% App. Total	0	0	0	0	0	85	15		44.8	0	55.2		0	74.4	25.6	
PHF	.000	.000	.000	.000	.000	.936	.946	.938	.711	.000	.933	.819	.000	.927	.978	.944

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S3
Site Code : 97650003
Start Date : 7/15/2023
Page No : 6



Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 7

Groups Printed- Trucks

	Route 95 SB Ramp From North			Route 110 From East			Route 95 SB Ramp From South			Route 110 From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	0	0	0	0	2	0	0	0	1	0	2	0	5
11:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	0	1	0	0	0	0	0	2	3
11:45 AM	0	0	0	0	5	0	1	0	0	0	3	0	9
Total	0	0	0	0	8	1	1	0	1	0	5	2	18
12:00 PM	0	0	0	0	4	0	0	0	0	0	0	1	5
12:15 PM	0	0	0	0	2	0	0	0	0	0	3	1	6
12:30 PM	0	0	0	0	2	0	0	0	0	0	0	1	3
12:45 PM	0	0	0	0	6	1	0	0	0	0	2	0	9
Total	0	0	0	0	14	1	0	0	0	0	5	3	23
01:00 PM	0	0	0	0	3	0	1	0	0	0	0	0	4
01:15 PM	0	0	0	0	0	0	0	0	1	0	2	0	3
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2
01:45 PM	0	0	0	0	3	0	0	0	0	0	2	0	5
Total	0	0	0	0	6	0	1	0	1	0	4	2	14
Grand Total	0	0	0	0	28	2	2	0	2	0	14	7	55
Apprch %	0	0	0	0	93.3	6.7	50	0	50	0	66.7	33.3	
Total %	0	0	0	0	50.9	3.6	3.6	0	3.6	0	25.5	12.7	

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp 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 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:30 AM																	
11:30 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2	2	3
11:45 AM	0	0	0	0	0	5	0	5	1	0	0	1	0	3	0	3	9
12:00 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	0	1	1	5
12:15 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	1	4	6
Total Volume	0	0	0	0	0	11	1	12	1	0	0	1	0	6	4	10	23
% App. Total	0	0	0		0	91.7	8.3		100	0	0		0	60	40		
PHF	.000	.000	.000	.000	.000	.550	.250	.600	.250	.000	.000	.250	.000	.500	.500	.625	.639

Accurate Counts

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

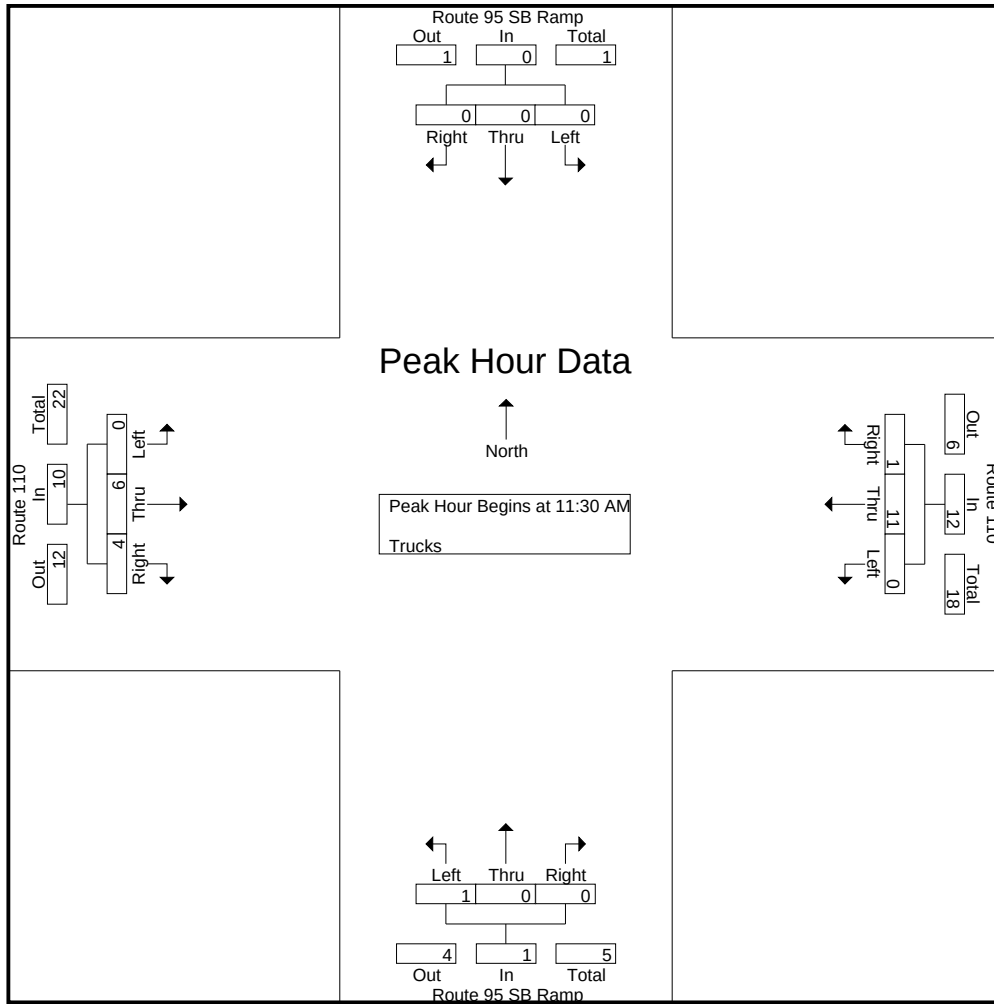
Weather : Cloudy

File Name : 976500S3

Site Code : 97650003

Start Date : 7/15/2023

Page No : 8



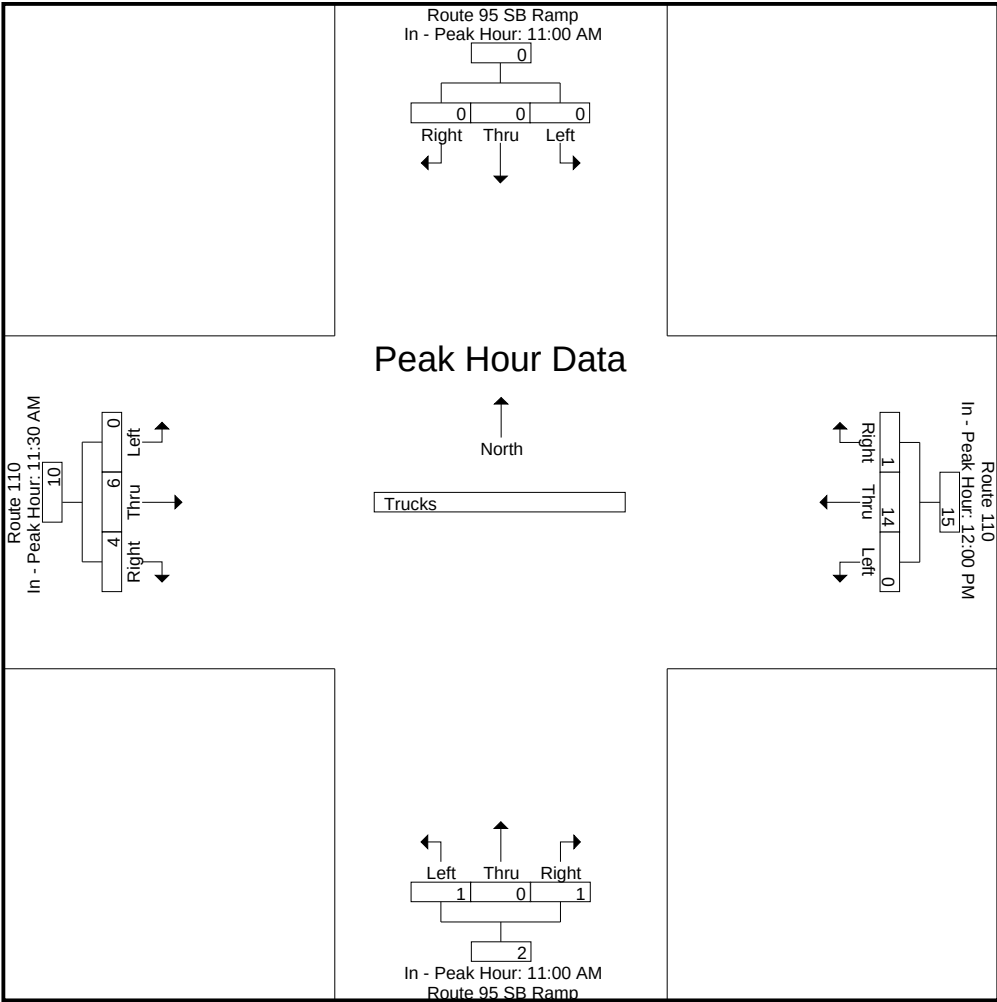
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM				12:00 PM				11:00 AM				11:30 AM			
+0 mins.	0	0	0	0	0	4	0	4	0	0	1	1	0	0	2	2
+15 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	0	0	1	1
+45 mins.	0	0	0	0	0	6	1	7	1	0	0	1	0	3	1	4
Total Volume	0	0	0	0	0	14	1	15	1	0	1	2	0	6	4	10
% App. Total	0	0	0	0	0	93.3	6.7		50	0	50		0	60	40	
PHF	.000	.000	.000	.000	.000	.583	.250	.536	.250	.000	.250	.500	.000	.500	.500	.625

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S3
Site Code : 97650003
Start Date : 7/15/2023
Page No : 9



978-664-2565

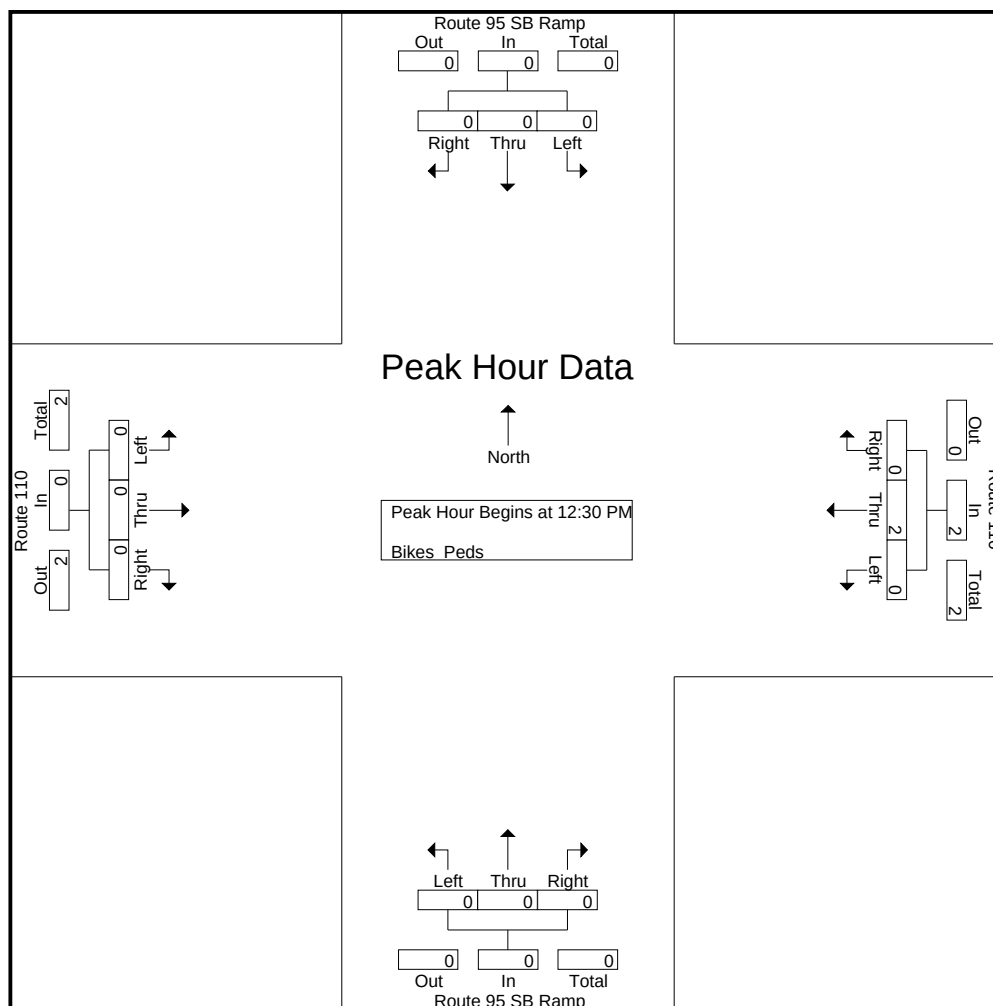
Page No : 10

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 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	1	0	0	0	0	0	0	0	0	0	0	0	1	1
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 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	3	0	0	0	0	0	0	0	0	0	0	0	3	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		0	100	

[illegible]

978-664-2565

File Name : 976500S3
Site Code : 97650003
Start Date : 7/15/2023
Page No : 11

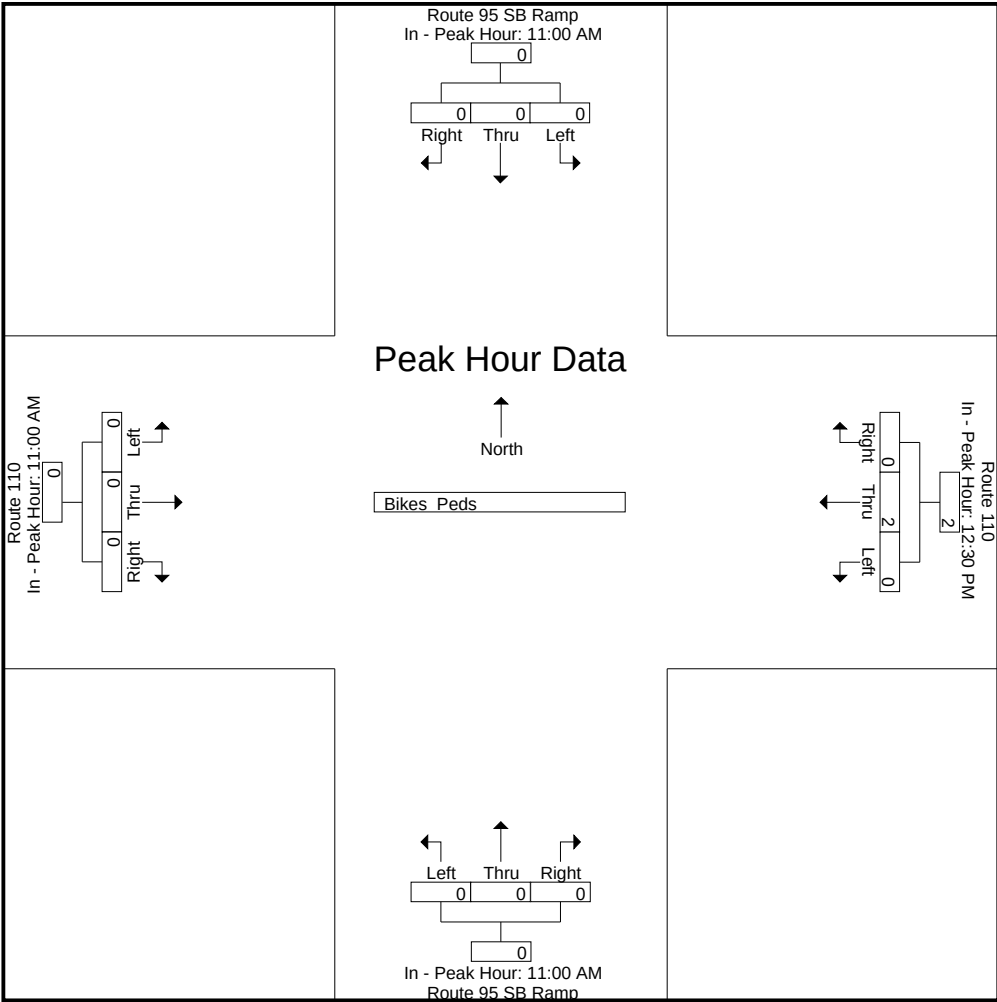


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	11:00 AM				12:30 PM				11:00 AM				11:00 AM			
+0 mins.	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	
+30 mins.	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	
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	100	0		0	0	0	0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	

N/S Street : Route 95 SB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S3
Site Code : 97650003
Start Date : 7/15/2023
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars - Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	0	0	83	0	150	22	0	0	41	19	141	0	0	456
07:15 AM	0	0	114	0	163	30	0	0	39	14	154	0	0	514
07:30 AM	0	0	97	0	169	36	0	0	47	17	174	0	0	540
07:45 AM	0	0	117	0	179	30	0	0	56	23	204	0	1	610
Total	0	0	411	0	661	118	0	0	183	73	673	0	1	2120
08:00 AM	0	0	95	0	195	29	0	0	32	31	169	0	0	551
08:15 AM	0	0	135	0	208	29	1	0	33	27	194	0	0	627
08:30 AM	0	0	108	0	160	36	0	0	47	21	180	0	0	552
08:45 AM	0	0	138	0	179	20	0	0	58	17	213	0	2	627
Total	0	0	476	0	742	114	1	0	170	96	756	0	2	2357
Grand Total	0	0	887	0	1403	232	1	0	353	169	1429	0	3	4477
Apprch %	0	0	100	0	85.8	14.2	0.3	0	99.7	10.6	89.3	0	0.2	
Total %	0	0	19.8	0	31.3	5.2	0	0	7.9	3.8	31.9	0	0.1	
Cars	0	0	847	0	1357	225	1	0	336	166	1389	0	3	4324
% Cars	0	0	95.5	0	96.7	97	100	0	95.2	98.2	97.2	0	100	96.6
Trucks	0	0	40	0	46	7	0	0	17	3	40	0	0	153
% Trucks	0	0	4.5	0	3.3	3	0	0	4.8	1.8	2.8	0	0	3.4

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	95	95	0	195	29	224	0	0	32	32	31	169	0	0	200	551
08:15 AM	0	0	135	135	0	208	29	237	1	0	33	34	27	194	0	0	221	627
08:30 AM	0	0	108	108	0	160	36	196	0	0	47	47	21	180	0	0	201	552
08:45 AM	0	0	138	138	0	179	20	199	0	0	58	58	17	213	0	2	232	627
Total Volume	0	0	476	476	0	742	114	856	1	0	170	171	96	756	0	2	854	2357
% App. Total	0	0	100		0	86.7	13.3		0.6	0	99.4		11.2	88.5	0	0.2		
PHF	.000	.000	.862	.862	.000	.892	.792	.903	.250	.000	.733	.737	.774	.887	.000	.250	.920	.940
Cars	0	0	445	445	0	717	110	827	1	0	167	168	94	738	0	2	834	2274
% Cars	0	0	93.5	93.5	0	96.6	96.5	96.6	100	0	98.2	98.2	97.9	97.6	0	100	97.7	96.5
Trucks	0	0	31	31	0	25	4	29	0	0	3	3	2	18	0	0	20	83
% Trucks	0	0	6.5	6.5	0	3.4	3.5	3.4	0	0	1.8	1.8	2.1	2.4	0	0	2.3	3.5

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

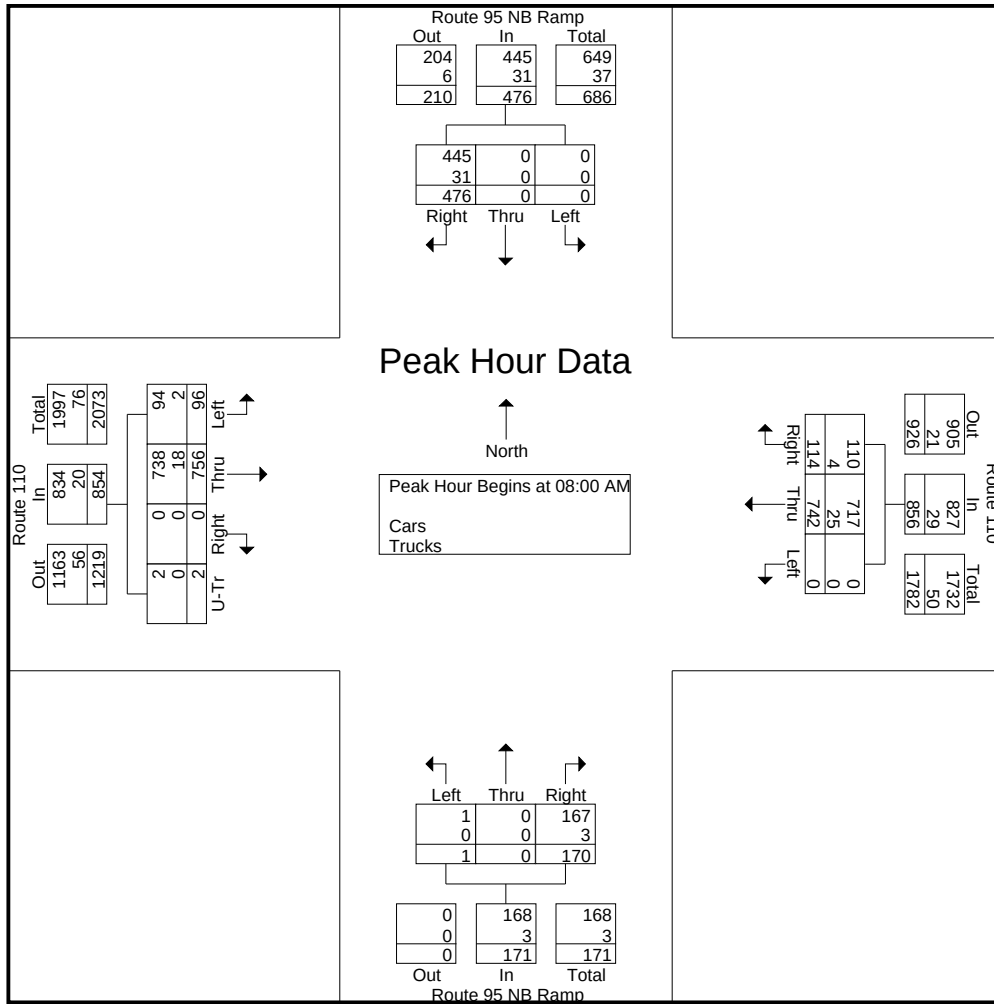
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 2



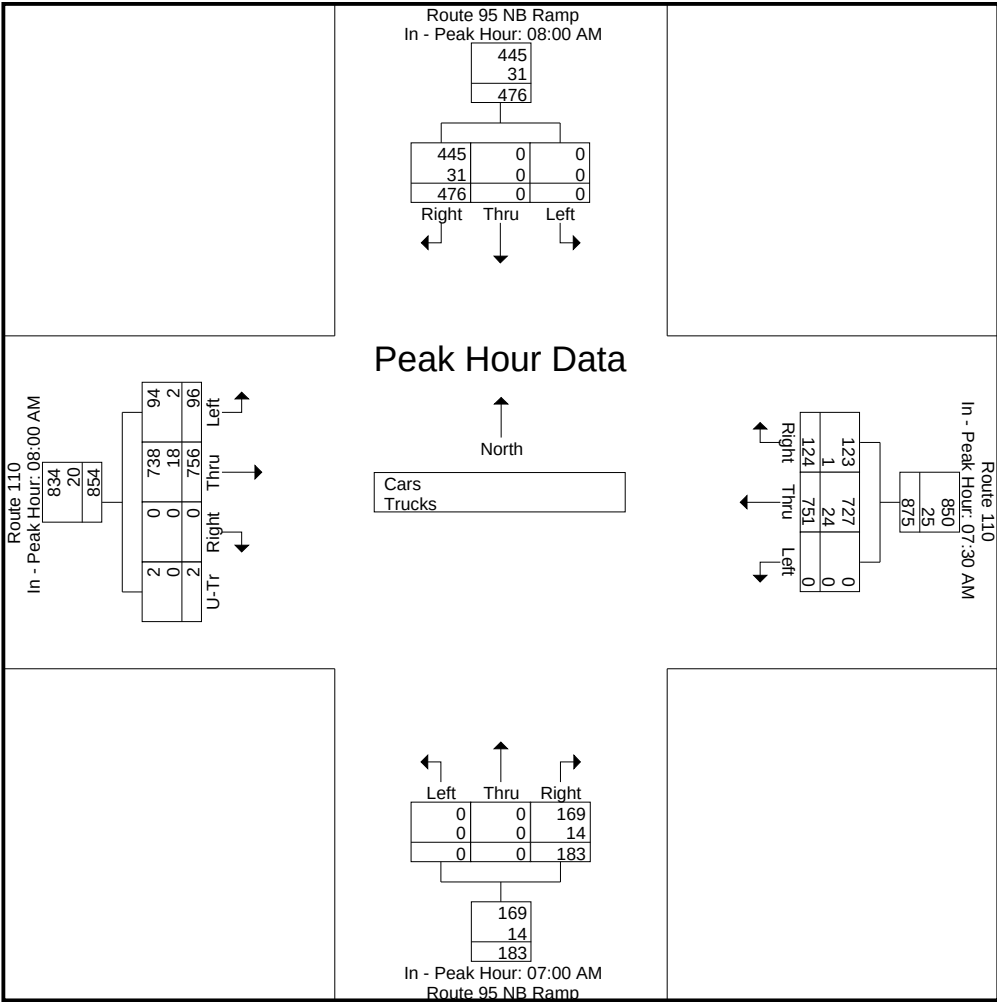
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				08:00 AM				
+0 mins.	0	0	95	95	0	169	36	205	0	0	41	41	31	169	0	0	200
+15 mins.	0	0	135	135	0	179	30	209	0	0	39	39	27	194	0	0	221
+30 mins.	0	0	108	108	0	195	29	224	0	0	47	47	21	180	0	0	201
+45 mins.	0	0	138	138	0	208	29	237	0	0	56	56	17	213	0	2	232
Total Volume	0	0	476	476	0	751	124	875	0	0	183	183	96	756	0	2	854
% App. Total	0	0	100		0	85.8	14.2		0	0	100		11.2	88.5	0	0.2	
PHF	.000	.000	.862	.862	.000	.903	.861	.923	.000	.000	.817	.817	.774	.887	.000	.250	.920
Cars	0	0	445	445	0	727	123	850	0	0	169	169	94	738	0	2	834
% Cars	0	0	93.5	93.5	0	96.8	99.2	97.1	0	0	92.3	92.3	97.9	97.6	0	100	97.7
Trucks	0	0	31	31	0	24	1	25	0	0	14	14	2	18	0	0	20
% Trucks	0	0	6.5	6.5	0	3.2	0.8	2.9	0	0	7.7	7.7	2.1	2.4	0	0	2.3

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	0	0	82	0	147	20	0	0	39	18	137	0	0	443
07:15 AM	0	0	113	0	158	30	0	0	34	14	148	0	0	497
07:30 AM	0	0	93	0	162	36	0	0	46	17	169	0	0	523
07:45 AM	0	0	114	0	173	29	0	0	50	23	197	0	1	587
Total	0	0	402	0	640	115	0	0	169	72	651	0	1	2050
08:00 AM	0	0	90	0	189	29	0	0	32	31	164	0	0	535
08:15 AM	0	0	124	0	203	29	1	0	31	25	190	0	0	603
08:30 AM	0	0	102	0	154	33	0	0	47	21	177	0	0	534
08:45 AM	0	0	129	0	171	19	0	0	57	17	207	0	2	602
Total	0	0	445	0	717	110	1	0	167	94	738	0	2	2274
Grand Total	0	0	847	0	1357	225	1	0	336	166	1389	0	3	4324
Apprch %	0	0	100	0	85.8	14.2	0.3	0	99.7	10.7	89.2	0	0.2	
Total %	0	0	19.6	0	31.4	5.2	0	0	7.8	3.8	32.1	0	0.1	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	90	90	0	189	29	218	0	0	32	32	31	164	0	0	195	535
08:15 AM	0	0	124	124	0	203	29	232	1	0	31	32	25	190	0	0	215	603
08:30 AM	0	0	102	102	0	154	33	187	0	0	47	47	21	177	0	0	198	534
08:45 AM	0	0	129	129	0	171	19	190	0	0	57	57	17	207	0	2	226	602
Total Volume	0	0	445	445	0	717	110	827	1	0	167	168	94	738	0	2	834	2274
% App. Total	0	0	100		0	86.7	13.3		0.6	0	99.4		11.3	88.5	0	0.2		
PHF	.000	.000	.862	.862	.000	.883	.833	.891	.250	.000	.732	.737	.758	.891	.000	.250	.923	.943

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

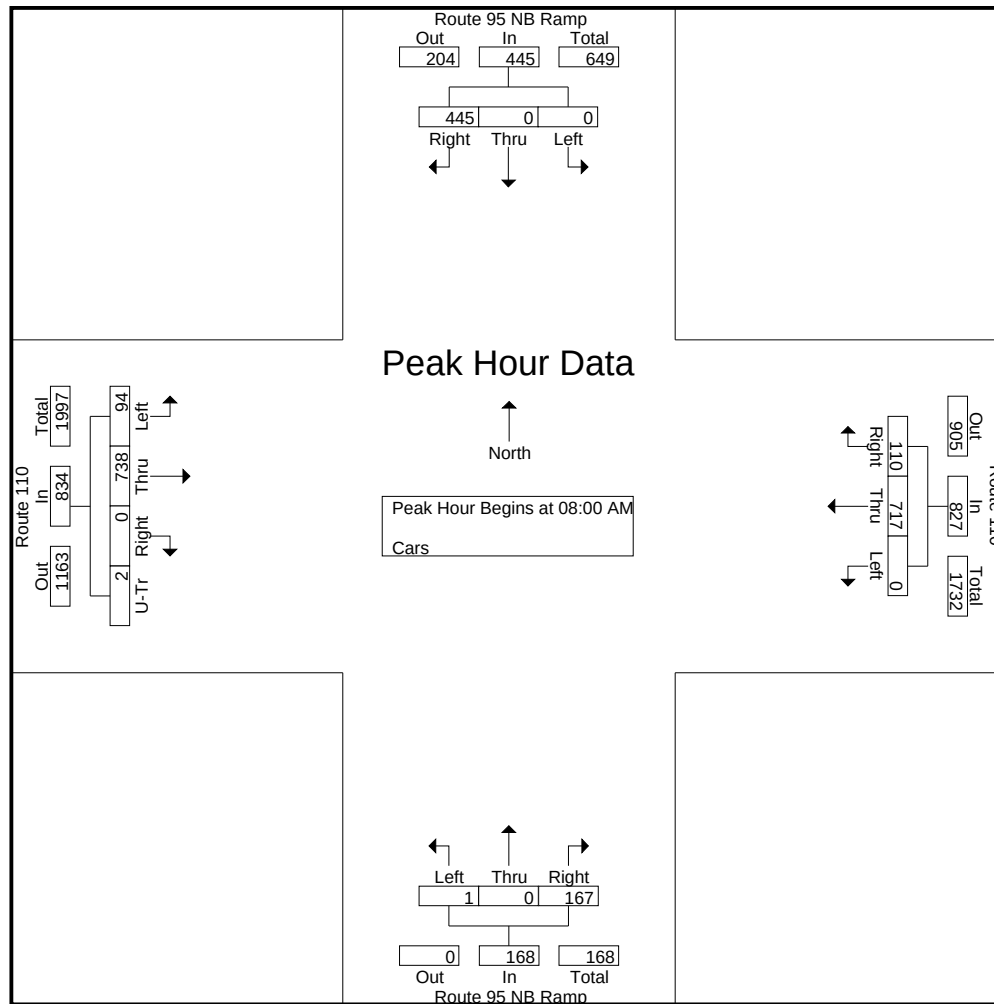
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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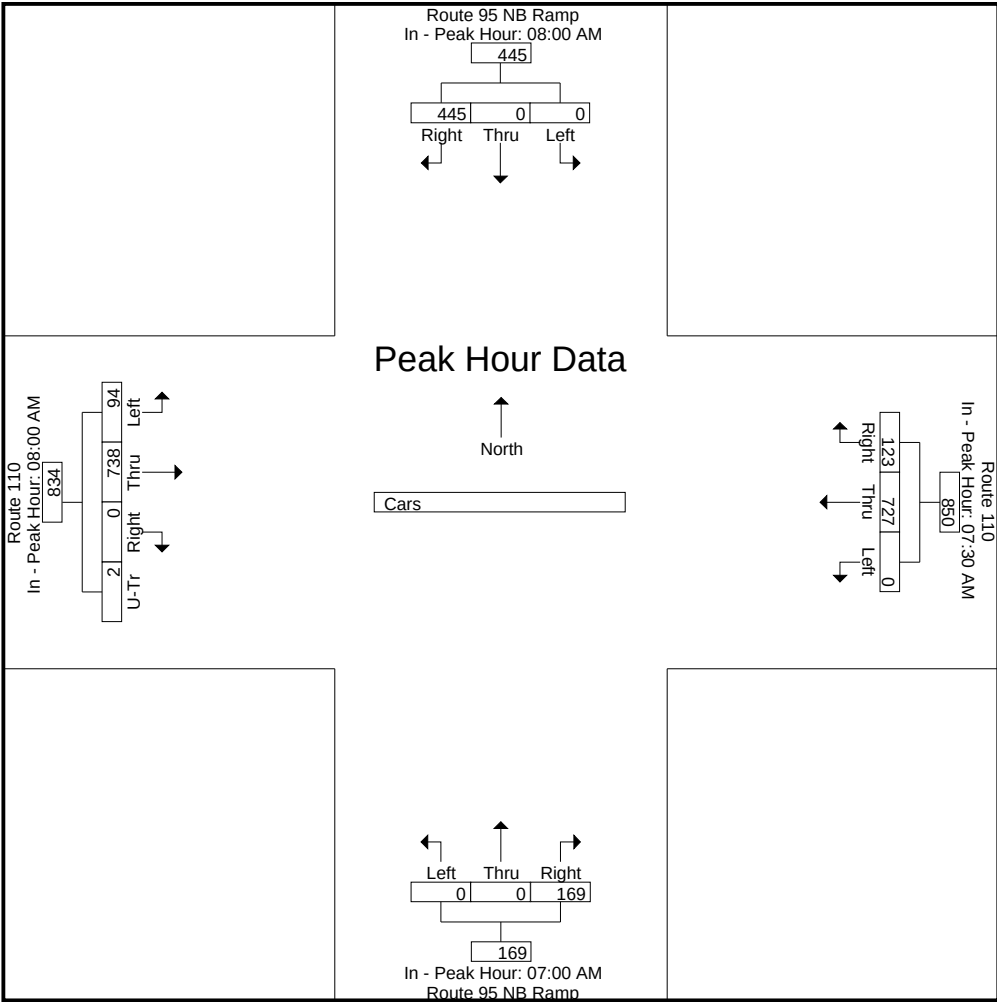
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:30 AM				07:00 AM				08:00 AM				
+0 mins.	0	0	90	90	0	162	36	198	0	0	39	39	31	164	0	0	195
+15 mins.	0	0	124	124	0	173	29	202	0	0	34	34	25	190	0	0	215
+30 mins.	0	0	102	102	0	189	29	218	0	0	46	46	21	177	0	0	198
+45 mins.	0	0	129	129	0	203	29	232	0	0	50	50	17	207	0	2	226
Total Volume	0	0	445	445	0	727	123	850	0	0	169	169	94	738	0	2	834
% App. Total	0	0	100		0	85.5	14.5		0	0	100		11.3	88.5	0	0.2	
PHF	.000	.000	.862	.862	.000	.895	.854	.916	.000	.000	.845	.845	.758	.891	.000	.250	.923

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 1

Groups Printed- Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	0	0	1	0	3	2	0	0	2	1	4	0	0	13
07:15 AM	0	0	1	0	5	0	0	0	5	0	6	0	0	17
07:30 AM	0	0	4	0	7	0	0	0	1	0	5	0	0	17
07:45 AM	0	0	3	0	6	1	0	0	6	0	7	0	0	23
Total	0	0	9	0	21	3	0	0	14	1	22	0	0	70
08:00 AM	0	0	5	0	6	0	0	0	0	0	5	0	0	16
08:15 AM	0	0	11	0	5	0	0	0	2	2	4	0	0	24
08:30 AM	0	0	6	0	6	3	0	0	0	0	3	0	0	18
08:45 AM	0	0	9	0	8	1	0	0	1	0	6	0	0	25
Total	0	0	31	0	25	4	0	0	3	2	18	0	0	83
Grand Total	0	0	40	0	46	7	0	0	17	3	40	0	0	153
Apprch %	0	0	100	0	86.8	13.2	0	0	100	7	93	0	0	
Total %	0	0	26.1	0	30.1	4.6	0	0	11.1	2	26.1	0	0	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	5	5	0	6	0	6	0	0	0	0	0	5	0	0	5	16
08:15 AM	0	0	11	11	0	5	0	5	0	0	2	2	2	4	0	0	6	24
08:30 AM	0	0	6	6	0	6	3	9	0	0	0	0	0	3	0	0	3	18
08:45 AM	0	0	9	9	0	8	1	9	0	0	1	1	0	6	0	0	6	25
Total Volume	0	0	31	31	0	25	4	29	0	0	3	3	2	18	0	0	20	83
% App. Total	0	0	100		0	86.2	13.8		0	0	100		10	90	0	0		
PHF	.000	.000	.705	.705	.000	.781	.333	.806	.000	.000	.375	.375	.250	.750	.000	.000	.833	.830

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

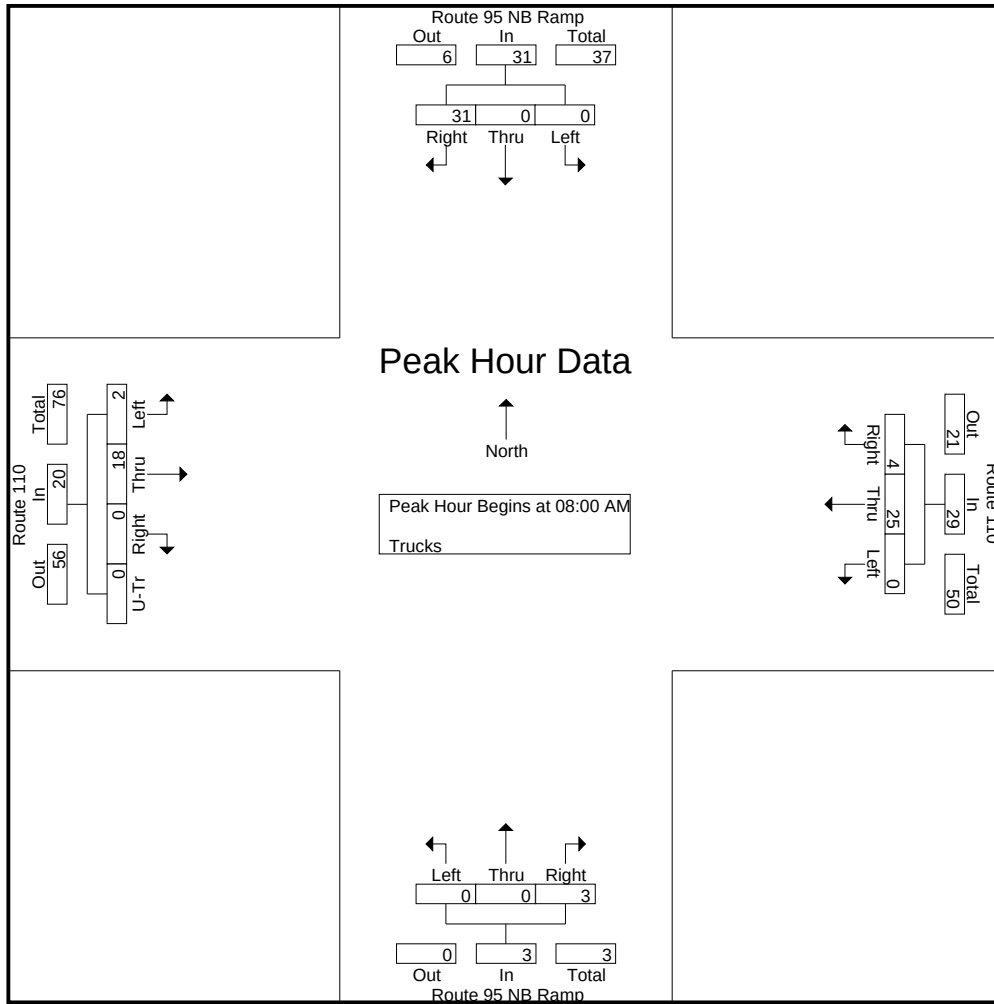
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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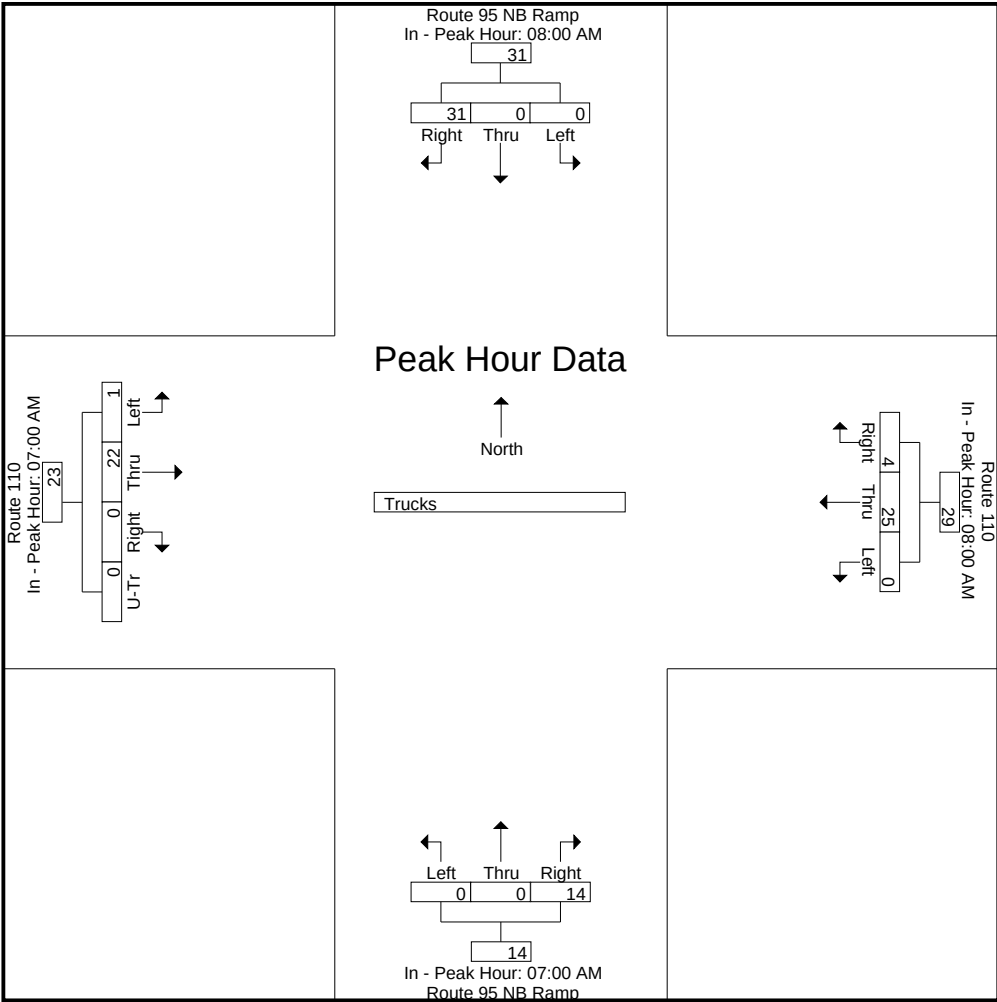
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				07:00 AM				07:00 AM				
+0 mins.	0	0	5	5	0	6	0	6	0	0	2	2	1	4	0	0	5
+15 mins.	0	0	11	11	0	5	0	5	0	0	5	5	0	6	0	0	6
+30 mins.	0	0	6	6	0	6	3	9	0	0	1	1	0	5	0	0	5
+45 mins.	0	0	9	9	0	8	1	9	0	0	6	6	0	7	0	0	7
Total Volume	0	0	31	31	0	25	4	29	0	0	14	14	1	22	0	0	23
% App. Total	0	0	100		0	86.2	13.8		0	0	100		4.3	95.7	0	0	
PHF	.000	.000	.705	.705	.000	.781	.333	.806	.000	.000	.583	.583	.250	.786	.000	.000	.821

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
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[illegible]

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

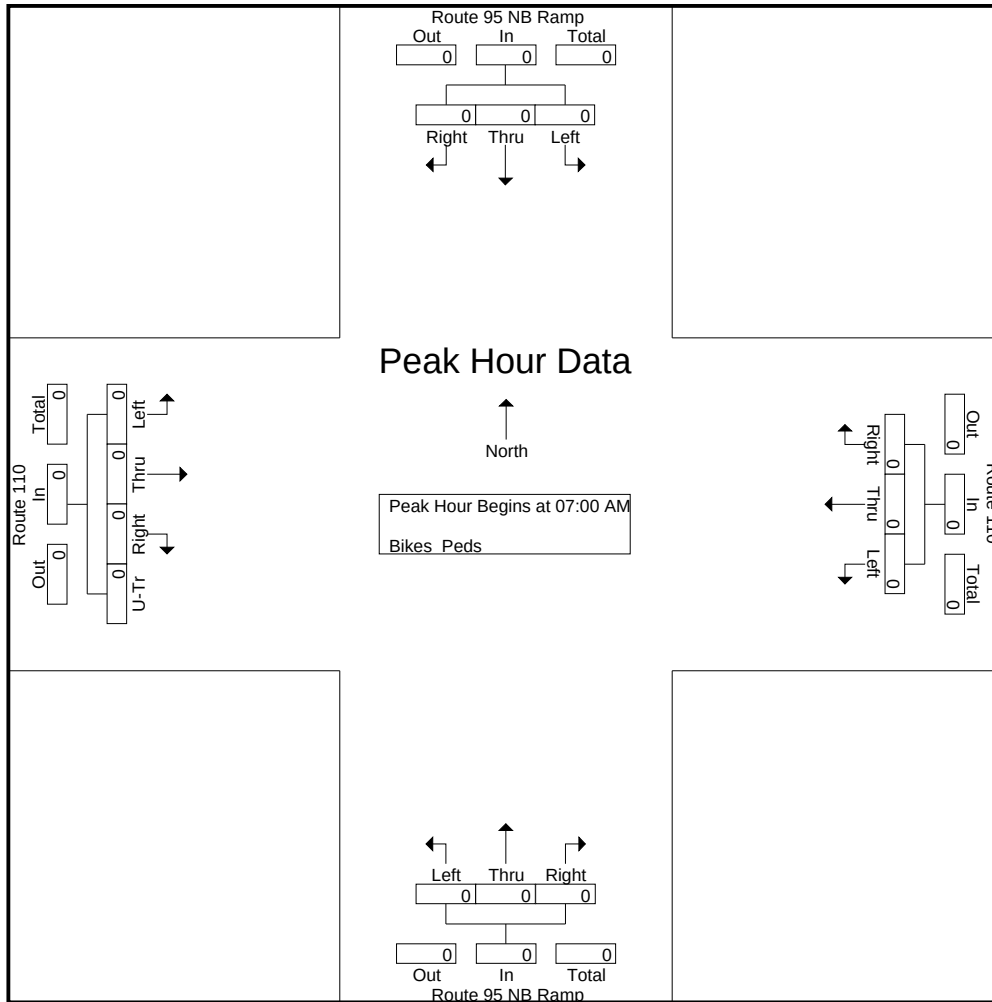
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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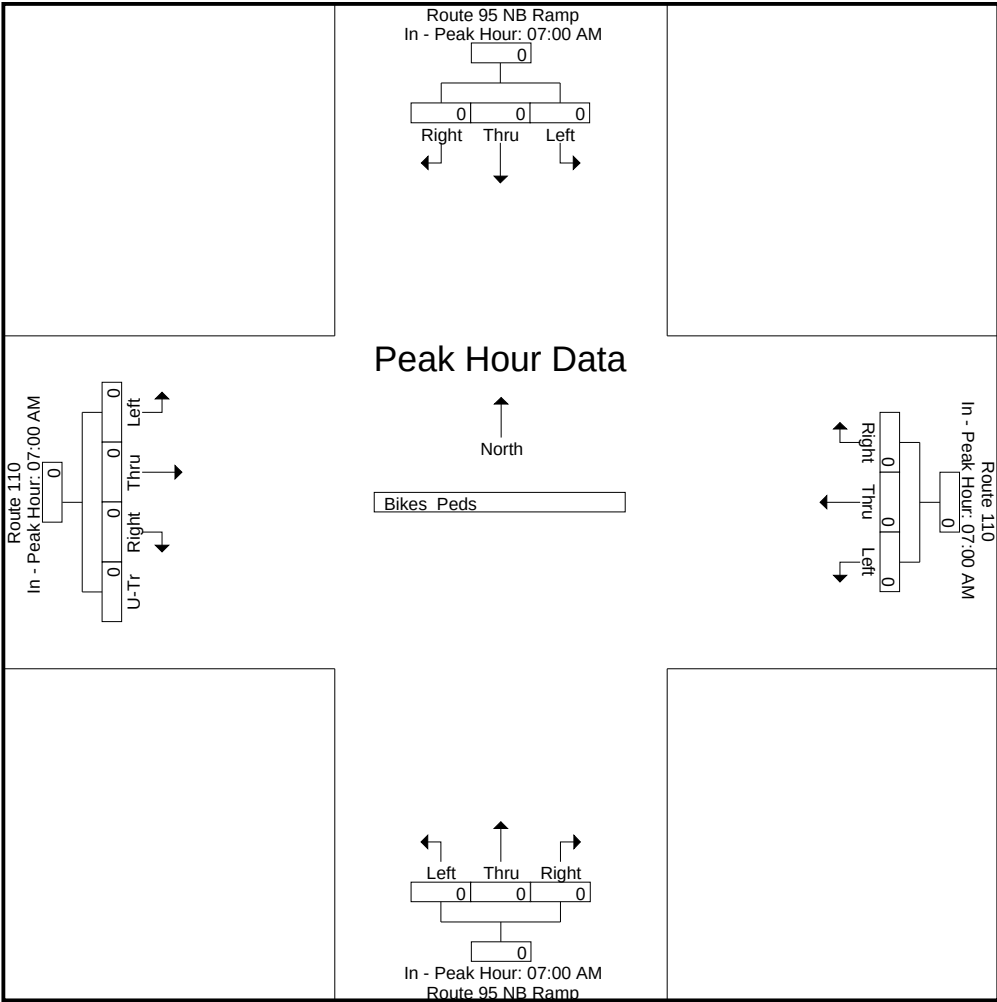
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

Start Time for App. Run	App. Run 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 : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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Groups Printed- Cars - Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	0	0	211	0	264	46	1	0	64	22	215	0	2	825
04:15 PM	0	0	249	0	277	41	0	0	66	28	234	0	1	896
04:30 PM	0	0	213	0	252	67	1	0	69	39	213	0	2	856
04:45 PM	0	0	204	0	239	38	0	0	92	36	204	0	0	813
Total	0	0	877	0	1032	192	2	0	291	125	866	0	5	3390
05:00 PM	0	0	241	0	258	48	0	0	69	40	251	0	0	907
05:15 PM	0	0	237	0	253	49	1	0	72	37	226	0	0	875
05:30 PM	0	0	207	0	240	34	0	0	65	45	234	0	1	826
05:45 PM	0	0	212	0	213	37	0	0	57	25	214	0	1	759
Total	0	0	897	0	964	168	1	0	263	147	925	0	2	3367
Grand Total	0	0	1774	0	1996	360	3	0	554	272	1791	0	7	6757
Apprch %	0	0	100	0	84.7	15.3	0.5	0	99.5	13.1	86.5	0	0.3	
Total %	0	0	26.3	0	29.5	5.3	0	0	8.2	4	26.5	0	0.1	
Cars	0	0	1750	0	1983	356	3	0	553	269	1775	0	7	6696
% Cars	0	0	98.6	0	99.3	98.9	100	0	99.8	98.9	99.1	0	100	99.1
Trucks	0	0	24	0	13	4	0	0	1	3	16	0	0	61
% Trucks	0	0	1.4	0	0.7	1.1	0	0	0.2	1.1	0.9	0	0	0.9

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	249	249	0	277	41	318	0	0	66	66	28	234	0	1	263	896
04:30 PM	0	0	213	213	0	252	67	319	1	0	69	70	39	213	0	2	254	856
04:45 PM	0	0	204	204	0	239	38	277	0	0	92	92	36	204	0	0	240	813
05:00 PM	0	0	241	241	0	258	48	306	0	0	69	69	40	251	0	0	291	907
Total Volume	0	0	907	907	0	1026	194	1220	1	0	296	297	143	902	0	3	1048	3472
% App. Total	0	0	100		0	84.1	15.9		0.3	0	99.7		13.6	86.1	0	0.3		
PHF	.000	.000	.911	.911	.000	.926	.724	.956	.250	.000	.804	.807	.894	.898	.000	.375	.900	.957
Cars	0	0	891	891	0	1019	192	1211	1	0	295	296	141	891	0	3	1035	3433
% Cars	0	0	98.2	98.2	0	99.3	99.0	99.3	100	0	99.7	99.7	98.6	98.8	0	100	98.8	98.9
Trucks	0	0	16	16	0	7	2	9	0	0	1	1	2	11	0	0	13	39
% Trucks	0	0	1.8	1.8	0	0.7	1.0	0.7	0	0	0.3	0.3	1.4	1.2	0	0	1.2	1.1

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

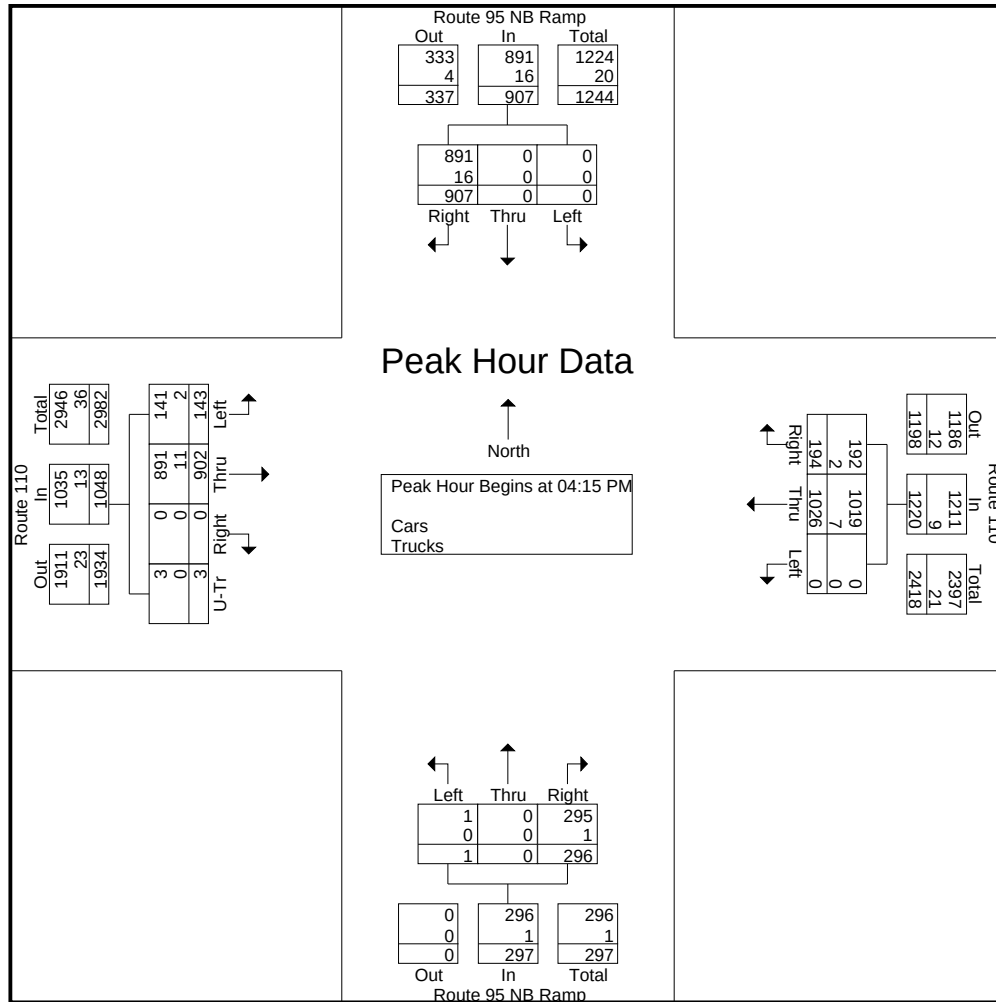
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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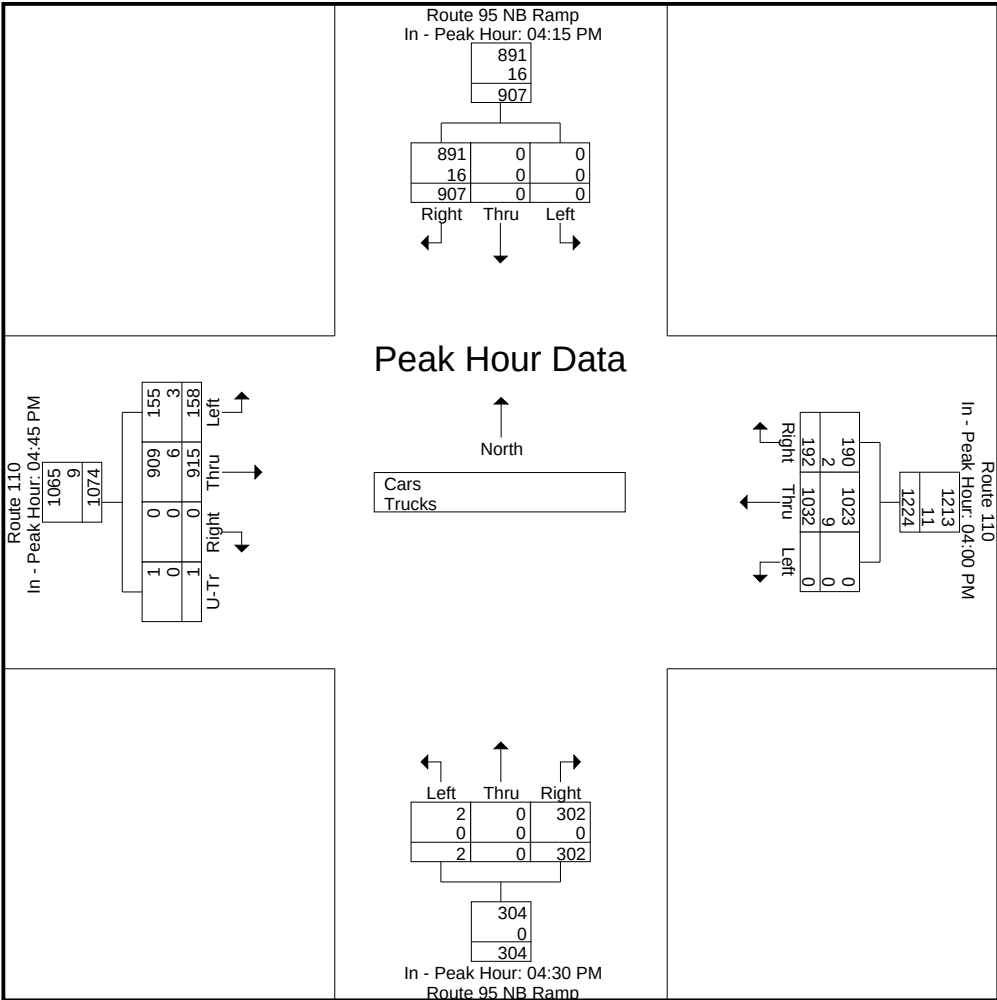
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:45 PM				
+0 mins.	0	0	249	249	0	264	46	310	1	0	69	70	36	204	0	0	240
+15 mins.	0	0	213	213	0	277	41	318	0	0	92	92	40	251	0	0	291
+30 mins.	0	0	204	204	0	252	67	319	0	0	69	69	37	226	0	0	263
+45 mins.	0	0	241	241	0	239	38	277	1	0	72	73	45	234	0	1	280
Total Volume	0	0	907	907	0	1032	192	1224	2	0	302	304	158	915	0	1	1074
% App. Total	0	0	100		0	84.3	15.7		0.7	0	99.3		14.7	85.2	0	0.1	
PHF	.000	.000	.911	.911	.000	.931	.716	.959	.500	.000	.821	.826	.878	.911	.000	.250	.923
Cars	0	0	891	891	0	1023	190	1213	2	0	302	304	155	909	0	1	1065
% Cars	0	0	98.2	98.2	0	99.1	99	99.1	100	0	100	100	98.1	99.3	0	100	99.2
Trucks	0	0	16	16	0	9	2	11	0	0	0	0	3	6	0	0	9
% Trucks	0	0	1.8	1.8	0	0.9	1	0.9	0	0	0	0	1.9	0.7	0	0	0.8

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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Groups Printed- Cars

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	0	0	209	0	260	46	1	0	64	22	214	0	2	818
04:15 PM	0	0	245	0	277	41	0	0	65	28	230	0	1	887
04:30 PM	0	0	206	0	250	67	1	0	69	39	212	0	2	846
04:45 PM	0	0	201	0	236	36	0	0	92	35	202	0	0	802
Total	0	0	861	0	1023	190	2	0	290	124	858	0	5	3353
05:00 PM	0	0	239	0	256	48	0	0	69	39	247	0	0	898
05:15 PM	0	0	235	0	252	47	1	0	72	36	226	0	0	869
05:30 PM	0	0	205	0	240	34	0	0	65	45	234	0	1	824
05:45 PM	0	0	210	0	212	37	0	0	57	25	210	0	1	752
Total	0	0	889	0	960	166	1	0	263	145	917	0	2	3343
Grand Total	0	0	1750	0	1983	356	3	0	553	269	1775	0	7	6696
Apprch %	0	0	100	0	84.8	15.2	0.5	0	99.5	13.1	86.5	0	0.3	
Total %	0	0	26.1	0	29.6	5.3	0	0	8.3	4	26.5	0	0.1	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	245	245	0	277	41	318	0	0	65	65	28	230	0	1	259	887
04:30 PM	0	0	206	206	0	250	67	317	1	0	69	70	39	212	0	2	253	846
04:45 PM	0	0	201	201	0	236	36	272	0	0	92	92	35	202	0	0	237	802
05:00 PM	0	0	239	239	0	256	48	304	0	0	69	69	39	247	0	0	286	898
Total Volume	0	0	891	891	0	1019	192	1211	1	0	295	296	141	891	0	3	1035	3433
% App. Total	0	0	100		0	84.1	15.9		0.3	0	99.7		13.6	86.1	0	0.3		
PHF	.000	.000	.909	.909	.000	.920	.716	.952	.250	.000	.802	.804	.904	.902	.000	.375	.905	.956

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

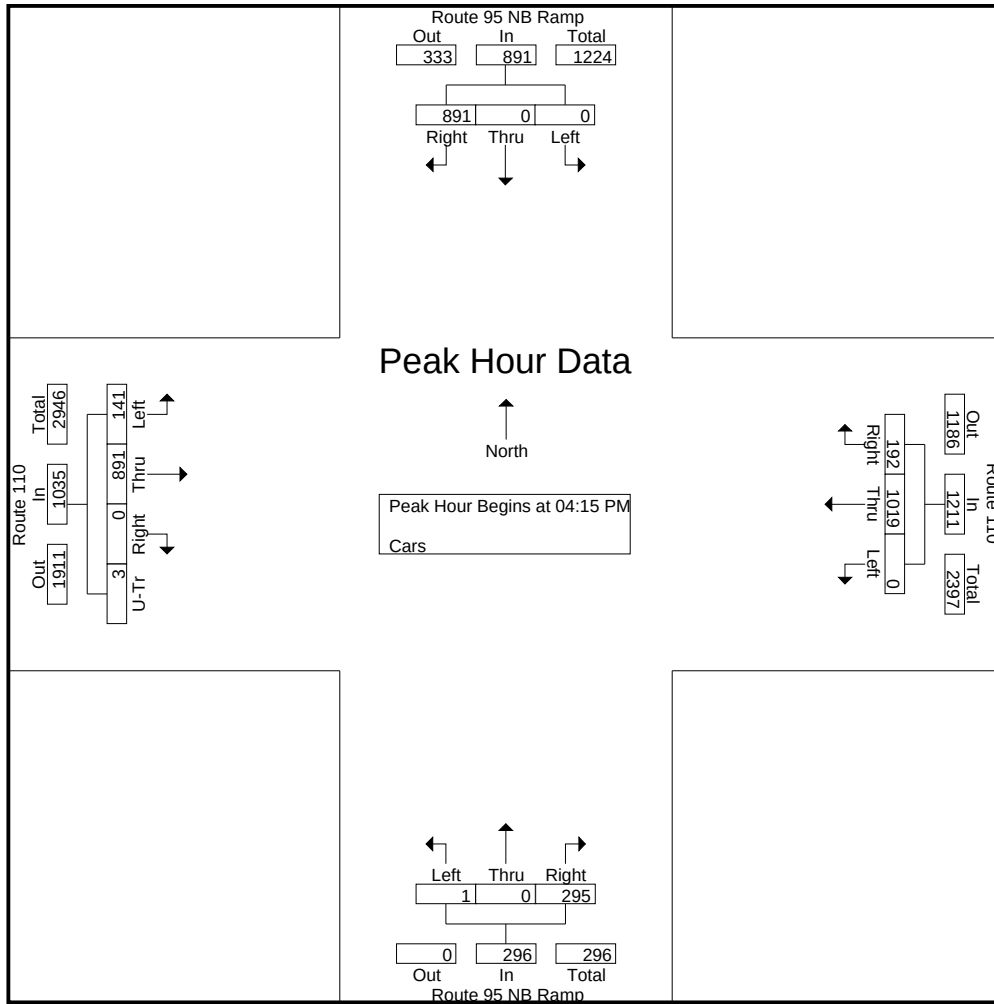
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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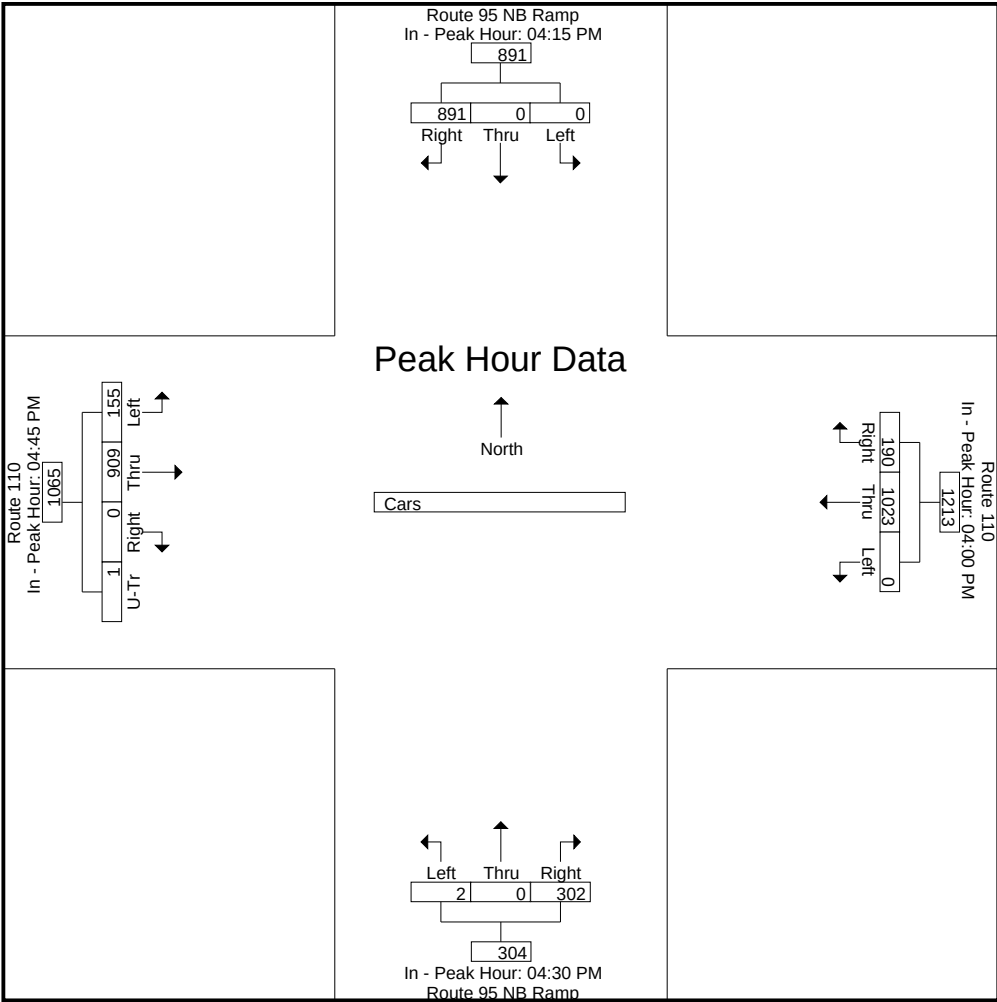
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:45 PM				
+0 mins.	0	0	245	245	0	260	46	306	1	0	69	70	35	202	0	0	237
+15 mins.	0	0	206	206	0	277	41	318	0	0	92	92	39	247	0	0	286
+30 mins.	0	0	201	201	0	250	67	317	0	0	69	69	36	226	0	0	262
+45 mins.	0	0	239	239	0	236	36	272	1	0	72	73	45	234	0	1	280
Total Volume	0	0	891	891	0	1023	190	1213	2	0	302	304	155	909	0	1	1065
% App. Total	0	0	100		0	84.3	15.7		0.7	0	99.3		14.6	85.4	0	0.1	
PHF	.000	.000	.909	.909	.000	.923	.709	.954	.500	.000	.821	.826	.861	.920	.000	.250	.931

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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Groups Printed- Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	0	0	2	0	4	0	0	0	0	0	1	0	0	7
04:15 PM	0	0	4	0	0	0	0	0	1	0	4	0	0	9
04:30 PM	0	0	7	0	2	0	0	0	0	0	1	0	0	10
04:45 PM	0	0	3	0	3	2	0	0	0	1	2	0	0	11
Total	0	0	16	0	9	2	0	0	1	1	8	0	0	37
05:00 PM	0	0	2	0	2	0	0	0	0	1	4	0	0	9
05:15 PM	0	0	2	0	1	2	0	0	0	1	0	0	0	6
05:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	2	0	1	0	0	0	0	0	4	0	0	7
Total	0	0	8	0	4	2	0	0	0	2	8	0	0	24
Grand Total	0	0	24	0	13	4	0	0	1	3	16	0	0	61
Apprch %	0	0	100	0	76.5	23.5	0	0	100	15.8	84.2	0	0	
Total %	0	0	39.3	0	21.3	6.6	0	0	1.6	4.9	26.2	0	0	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	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	4	4	0	0	0	0	0	0	1	1	0	4	0	0	4	9
04:30 PM	0	0	7	7	0	2	0	2	0	0	0	0	0	1	0	0	1	10
04:45 PM	0	0	3	3	0	3	2	5	0	0	0	0	1	2	0	0	3	11
05:00 PM	0	0	2	2	0	2	0	2	0	0	0	0	1	4	0	0	5	9
Total Volume	0	0	16	16	0	7	2	9	0	0	1	1	2	11	0	0	13	39
% App. Total	0	0	100		0	77.8	22.2		0	0	100		15.4	84.6	0	0		
PHF	.000	.000	.571	.571	.000	.583	.250	.450	.000	.000	.250	.250	.500	.688	.000	.000	.650	.886

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

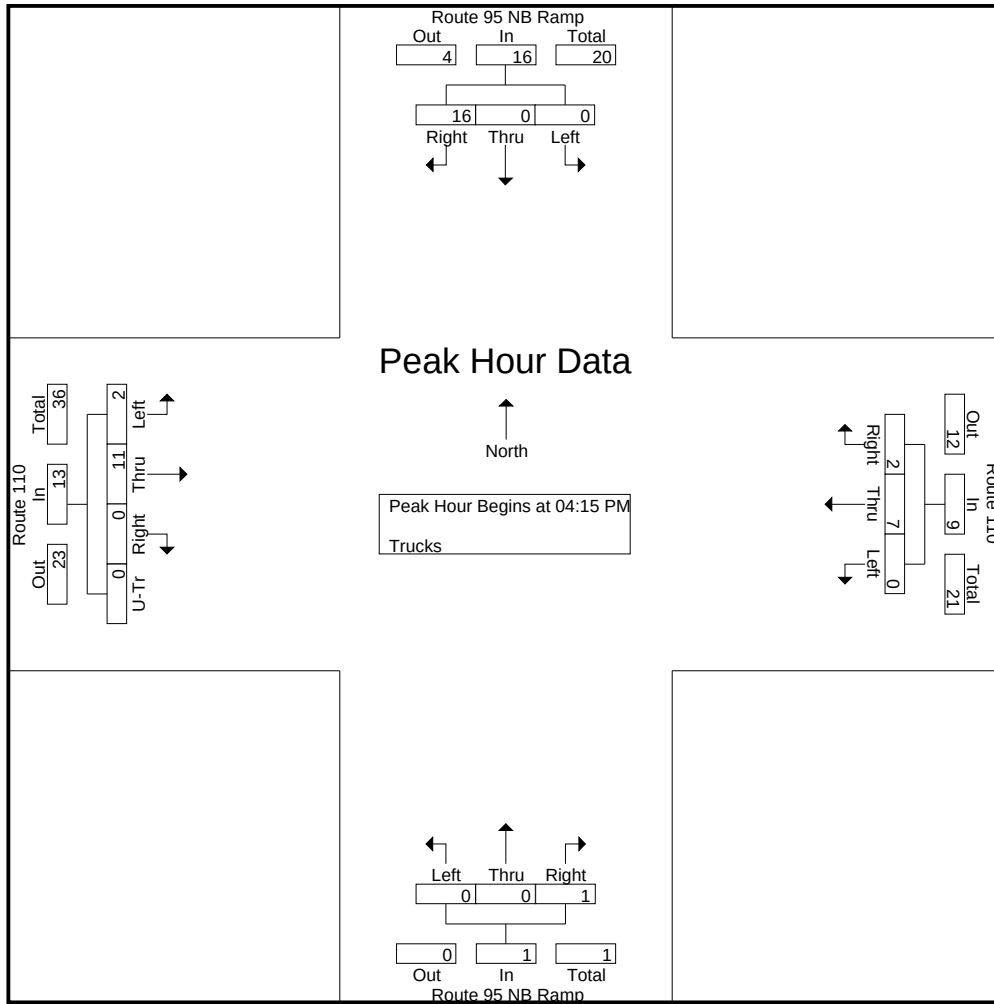
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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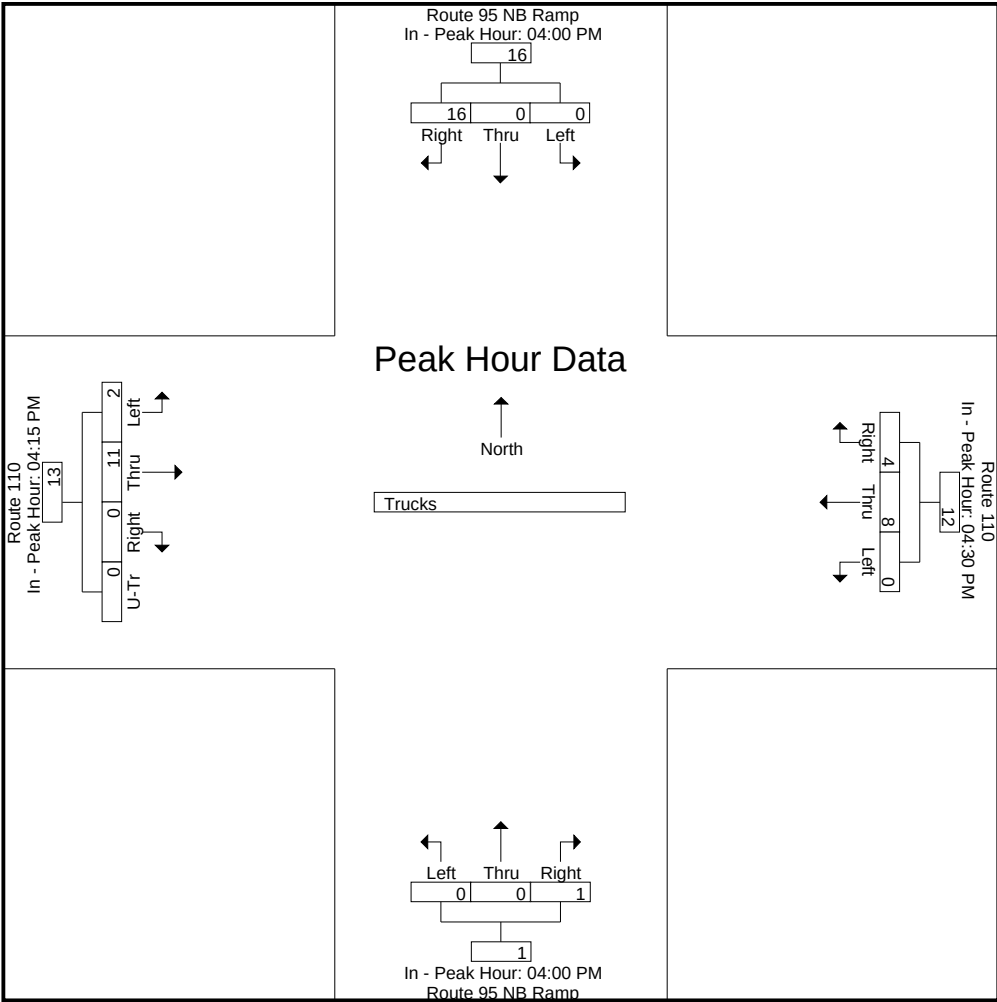
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:00 PM				04:15 PM				
+0 mins.	0	0	2	2	0	2	0	2	0	0	0	0	0	4	0	0	4
+15 mins.	0	0	4	4	0	3	2	5	0	0	1	1	0	1	0	0	1
+30 mins.	0	0	7	7	0	2	0	2	0	0	0	0	1	2	0	0	3
+45 mins.	0	0	3	3	0	1	2	3	0	0	0	0	1	4	0	0	5
Total Volume	0	0	16	16	0	8	4	12	0	0	1	1	2	11	0	0	13
% App. Total	0	0	100		0	66.7	33.3		0	0	100		15.4	84.6	0	0	
PHF	.000	.000	.571	.571	.000	.667	.500	.600	.000	.000	.250	.250	.500	.688	.000	.000	.650

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

Page No : 1

Groups Printed- Bikes Peds

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 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	0	0	0	0	0	0
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	1	0	0	0	0	0	0	0	1	0	0	1	2	3
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2	3
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0	0			
Total %	0	0	0		0	50	0		0	0	0		0	50	0	0	33.3	66.7	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	Peds	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	0
04:15 PM	0	0	0	0	0	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	0	0	0	0	0
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.000	.250	.250

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

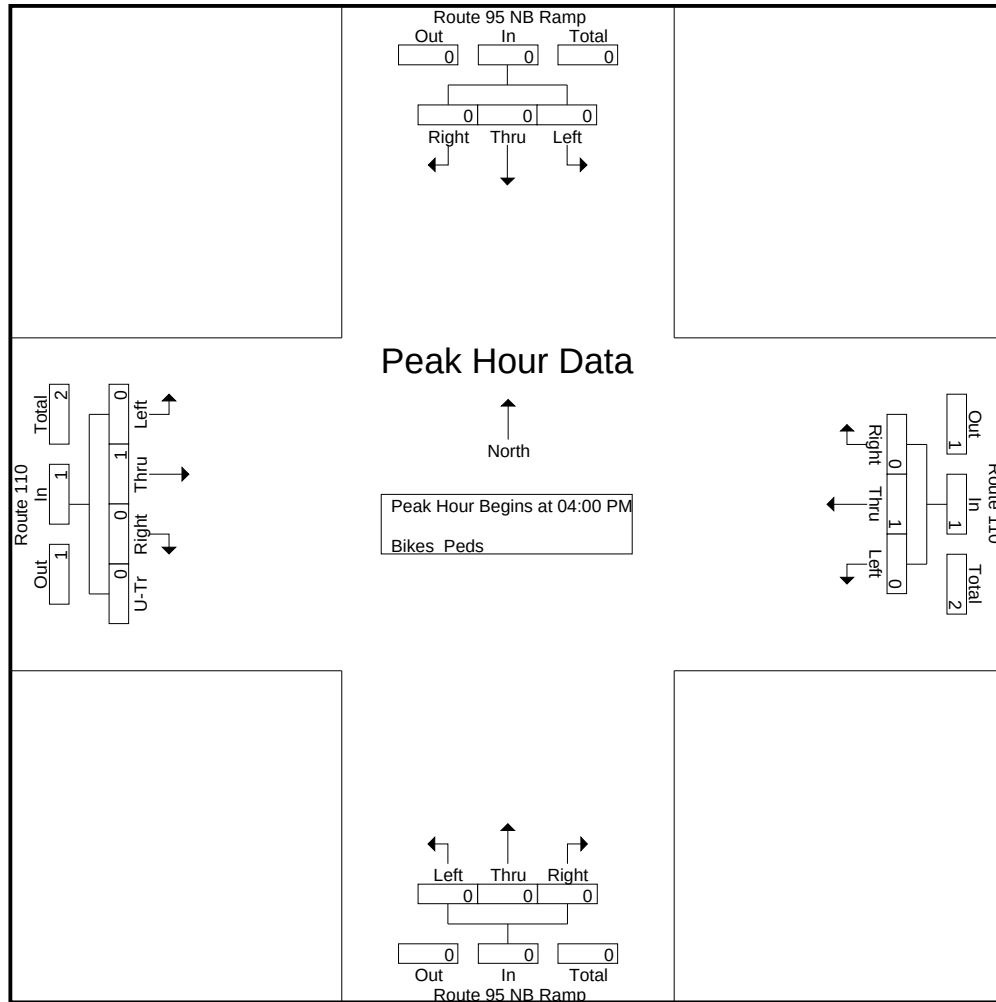
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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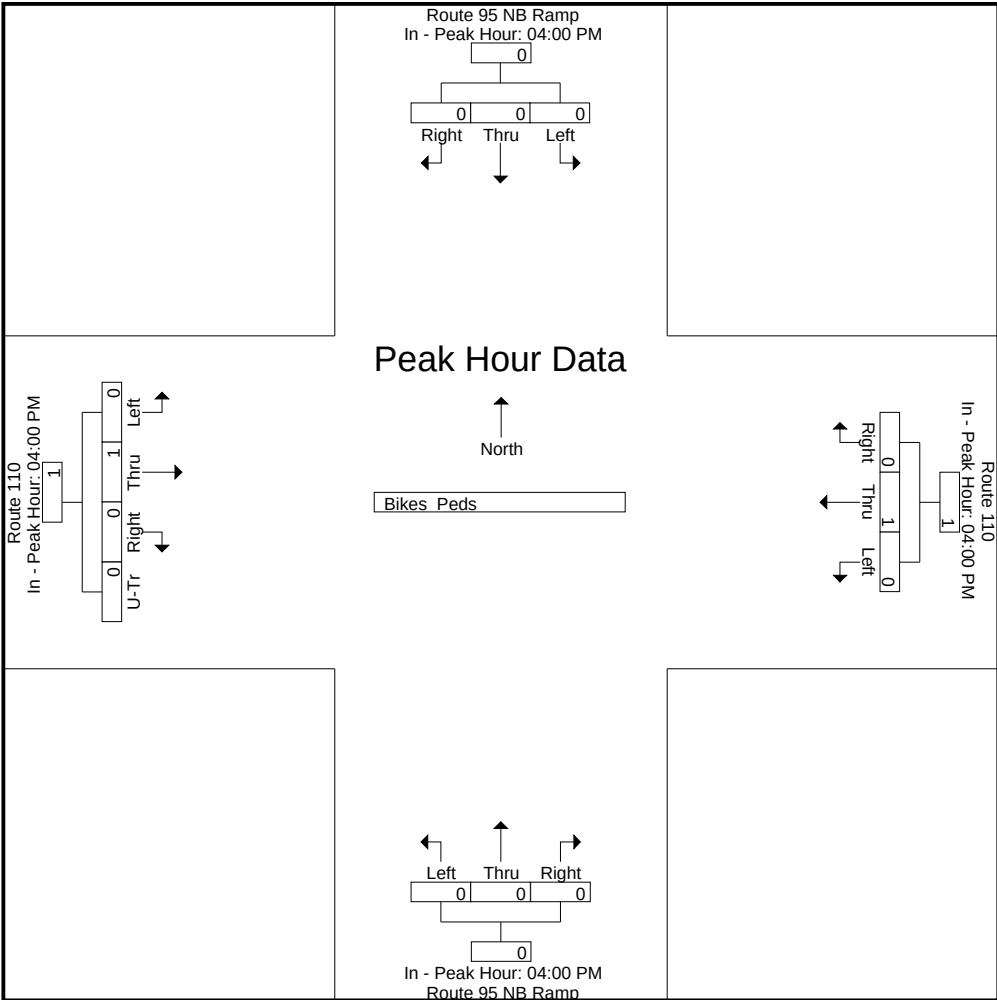
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	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	1	0	1	0	0	0	0	0	1	0	1
Total Volume	0	0	0	0	0	1	0	1	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 : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650004
Site Code : 97650004
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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Groups Printed- Cars - Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	0	0	84	0	192	32	0	0	58	57	264	0	0	687
11:15 AM	0	0	106	0	199	47	0	0	59	49	268	0	0	728
11:30 AM	0	0	92	0	190	47	0	0	57	44	241	0	1	672
11:45 AM	0	0	101	0	197	48	0	0	41	43	312	0	0	742
Total	0	0	383	0	778	174	0	0	215	193	1085	0	1	2829
12:00 PM	0	0	103	0	181	50	0	0	56	39	246	0	0	675
12:15 PM	0	0	93	0	261	56	0	0	59	47	238	0	1	755
12:30 PM	0	0	109	0	235	45	0	0	40	53	268	0	0	750
12:45 PM	0	0	97	0	213	46	0	0	48	39	281	0	1	725
Total	0	0	402	0	890	197	0	0	203	178	1033	0	2	2905
01:00 PM	0	0	106	0	211	58	0	0	48	35	176	0	0	634
01:15 PM	0	0	101	0	191	40	0	0	59	21	205	0	0	617
01:30 PM	0	0	114	0	217	39	1	0	44	29	216	0	0	660
01:45 PM	0	0	112	0	184	43	0	0	53	38	208	0	0	638
Total	0	0	433	0	803	180	1	0	204	123	805	0	0	2549
Grand Total	0	0	1218	0	2471	551	1	0	622	494	2923	0	3	8283
Apprch %	0	0	100	0	81.8	18.2	0.2	0	99.8	14.4	85.5	0	0.1	
Total %	0	0	14.7	0	29.8	6.7	0	0	7.5	6	35.3	0	0	
Cars	0	0	1206	0	2452	550	1	0	617	493	2905	0	3	8227
% Cars	0	0	99	0	99.2	99.8	100	0	99.2	99.8	99.4	0	100	99.3
Trucks	0	0	12	0	19	1	0	0	5	1	18	0	0	56
% Trucks	0	0	1	0	0.8	0.2	0	0	0.8	0.2	0.6	0	0	0.7

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	App. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	0	0	101	101	0	197	48	245	0	0	41	41	43	312	0	0	355
12:00 PM	0	0	103	103	0	181	50	231	0	0	56	56	39	246	0	0	285
12:15 PM	0	0	93	93	0	261	56	317	0	0	59	59	47	238	0	1	286
12:30 PM	0	0	109	109	0	235	45	280	0	0	40	40	53	268	0	0	321
Total Volume	0	0	406	406	0	874	199	1073	0	0	196	196	182	1064	0	1	1247
% App. Total	0	0	100		0	81.5	18.5		0	0	100		14.6	85.3	0	0.1	
PHF	.000	.000	.931	.931	.000	.837	.888	.846	.000	.000	.831	.831	.858	.853	.000	.250	.878
Cars	0	0	399	399	0	867	199	1066	0	0	194	194	182	1058	0	1	1241
% Cars	0	0	98.3	98.3	0	99.2	100	99.3	0	0	99.0	99.0	100	99.4	0	100	99.5
Trucks	0	0	7	7	0	7	0	7	0	0	2	2	0	6	0	0	6
% Trucks	0	0	1.7	1.7	0	0.8	0	0.7	0	0	1.0	1.0	0	0.6	0	0	0.5

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

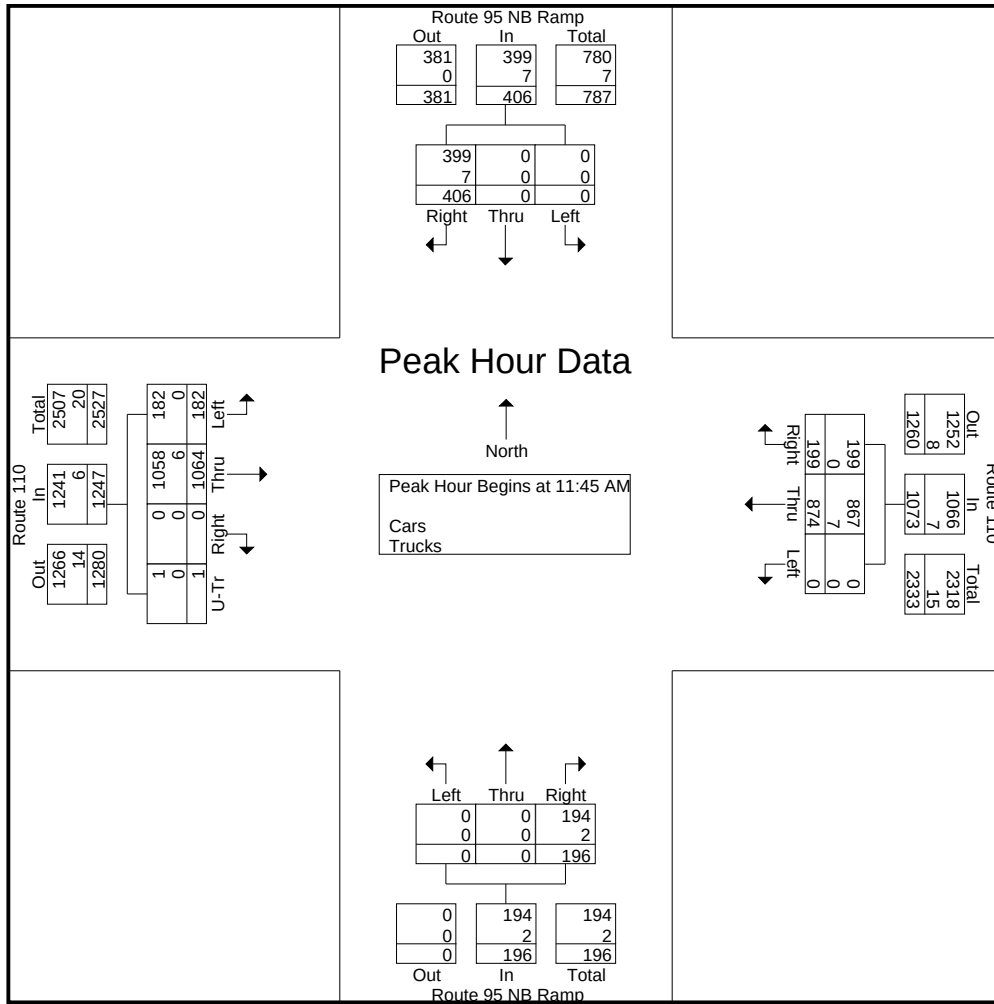
Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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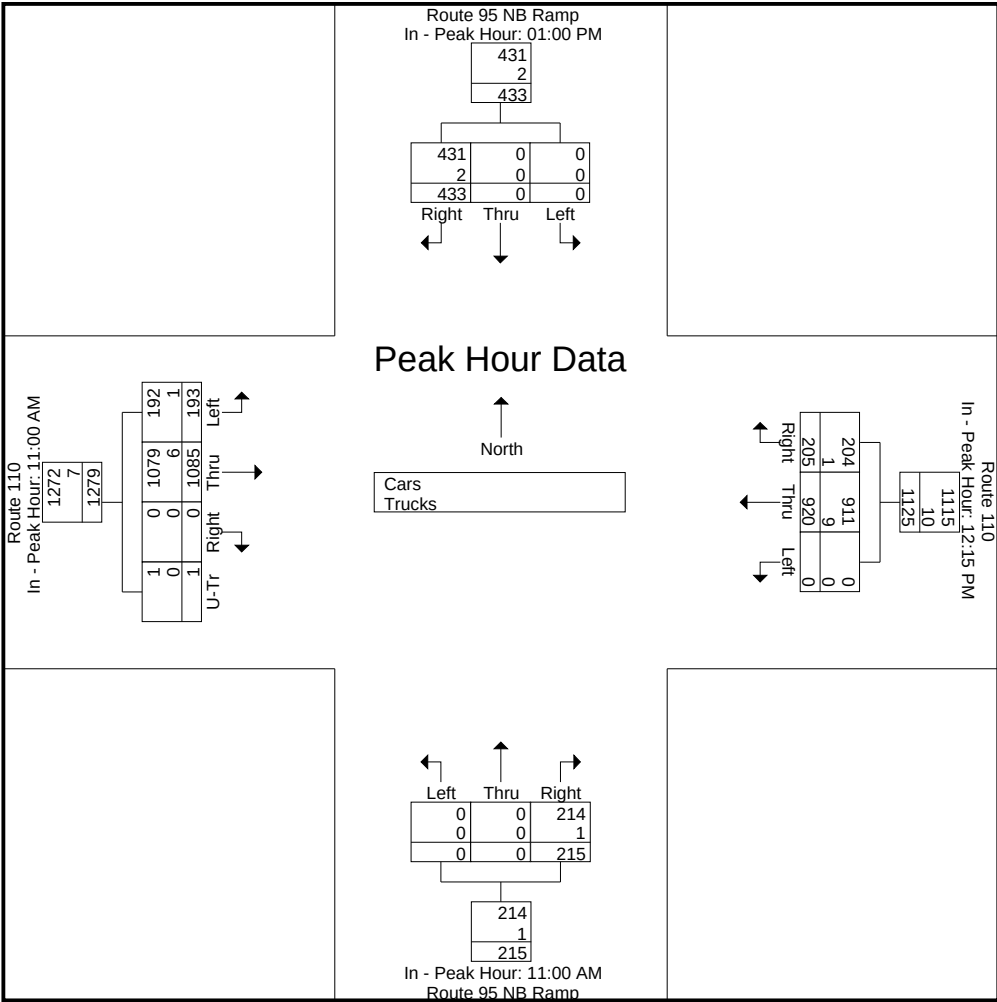
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	01:00 PM				12:15 PM				11:00 AM				11:00 AM				
+0 mins.	0	0	106	106	0	261	56	317	0	0	58	58	57	264	0	0	321
+15 mins.	0	0	101	101	0	235	45	280	0	0	59	59	49	268	0	0	317
+30 mins.	0	0	114	114	0	213	46	259	0	0	57	57	44	241	0	1	286
+45 mins.	0	0	112	112	0	211	58	269	0	0	41	41	43	312	0	0	355
Total Volume	0	0	433	433	0	920	205	1125	0	0	215	215	193	1085	0	1	1279
% App. Total	0	0	100		0	81.8	18.2		0	0	100		15.1	84.8	0	0.1	
PHF	.000	.000	.950	.950	.000	.881	.884	.887	.000	.000	.911	.911	.846	.869	.000	.250	.901
Cars	0	0	431	431	0	911	204	1115	0	0	214	214	192	1079	0	1	1272
% Cars	0	0	99.5	99.5	0	99	99.5	99.1	0	0	99.5	99.5	99.5	99.4	0	100	99.5
Trucks	0	0	2	2	0	9	1	10	0	0	1	1	1	6	0	0	7
% Trucks	0	0	0.5	0.5	0	1	0.5	0.9	0	0	0.5	0.5	0.5	0.6	0	0	0.5

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S4
Site Code : 97650004
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

Page No : 1

Groups Printed- Cars

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	0	0	84	0	190	32	0	0	57	56	261	0	0	680
11:15 AM	0	0	105	0	199	47	0	0	59	49	268	0	0	727
11:30 AM	0	0	92	0	189	47	0	0	57	44	241	0	1	671
11:45 AM	0	0	98	0	195	48	0	0	41	43	309	0	0	734
Total	0	0	379	0	773	174	0	0	214	192	1079	0	1	2812
12:00 PM	0	0	102	0	178	50	0	0	56	39	246	0	0	671
12:15 PM	0	0	92	0	260	56	0	0	58	47	235	0	1	749
12:30 PM	0	0	107	0	234	45	0	0	39	53	268	0	0	746
12:45 PM	0	0	95	0	209	45	0	0	47	39	279	0	1	715
Total	0	0	396	0	881	196	0	0	200	178	1028	0	2	2881
01:00 PM	0	0	106	0	208	58	0	0	48	35	174	0	0	629
01:15 PM	0	0	101	0	190	40	0	0	59	21	202	0	0	613
01:30 PM	0	0	113	0	217	39	1	0	44	29	216	0	0	659
01:45 PM	0	0	111	0	183	43	0	0	52	38	206	0	0	633
Total	0	0	431	0	798	180	1	0	203	123	798	0	0	2534
Grand Total	0	0	1206	0	2452	550	1	0	617	493	2905	0	3	8227
Apprch %	0	0	100	0	81.7	18.3	0.2	0	99.8	14.5	85.4	0	0.1	
Total %	0	0	14.7	0	29.8	6.7	0	0	7.5	6	35.3	0	0	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:45 AM																		
11:45 AM	0	0	98	98	0	195	48	243	0	0	41	41	43	309	0	0	352	734
12:00 PM	0	0	102	102	0	178	50	228	0	0	56	56	39	246	0	0	285	671
12:15 PM	0	0	92	92	0	260	56	316	0	0	58	58	47	235	0	1	283	749
12:30 PM	0	0	107	107	0	234	45	279	0	0	39	39	53	268	0	0	321	746
Total Volume	0	0	399	399	0	867	199	1066	0	0	194	194	182	1058	0	1	1241	2900
% App. Total	0	0	100		0	81.3	18.7		0	0	100		14.7	85.3	0	0.1		
PHF	.000	.000	.932	.932	.000	.834	.888	.843	.000	.000	.836	.836	.858	.856	.000	.250	.881	.968

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

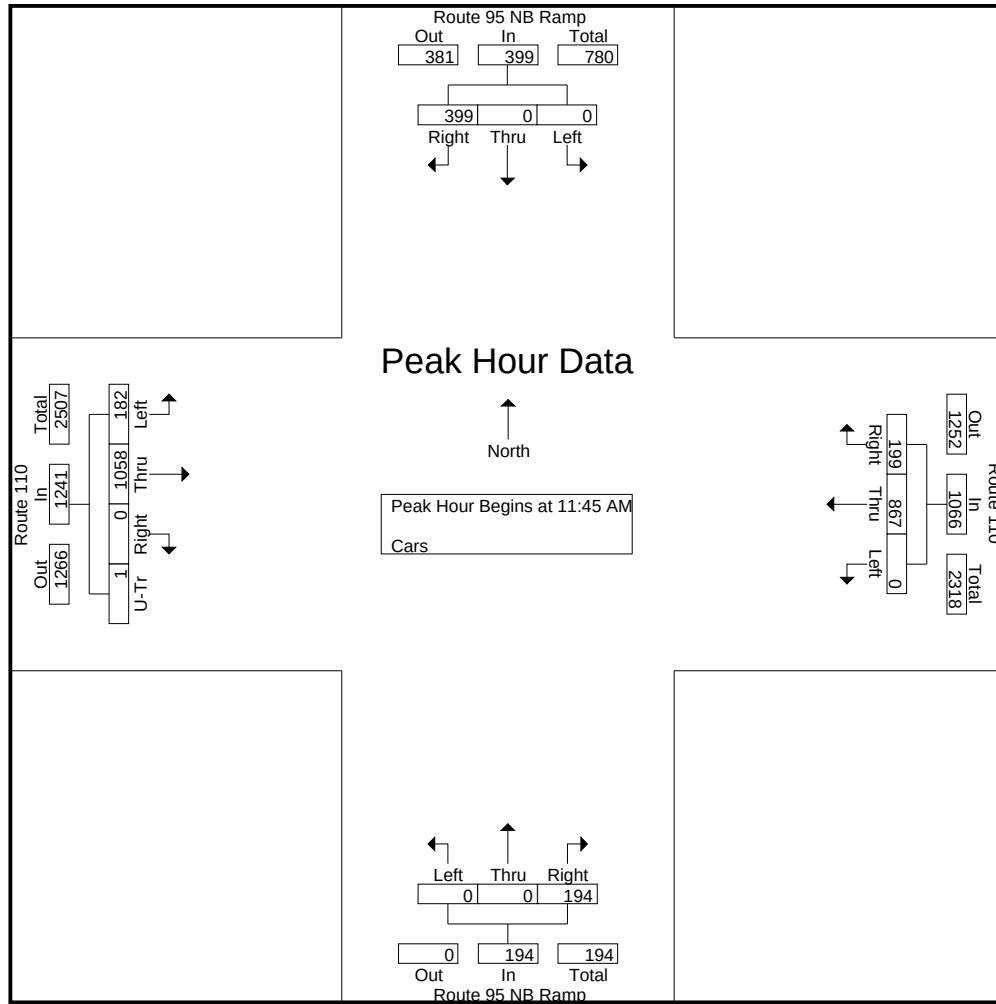
Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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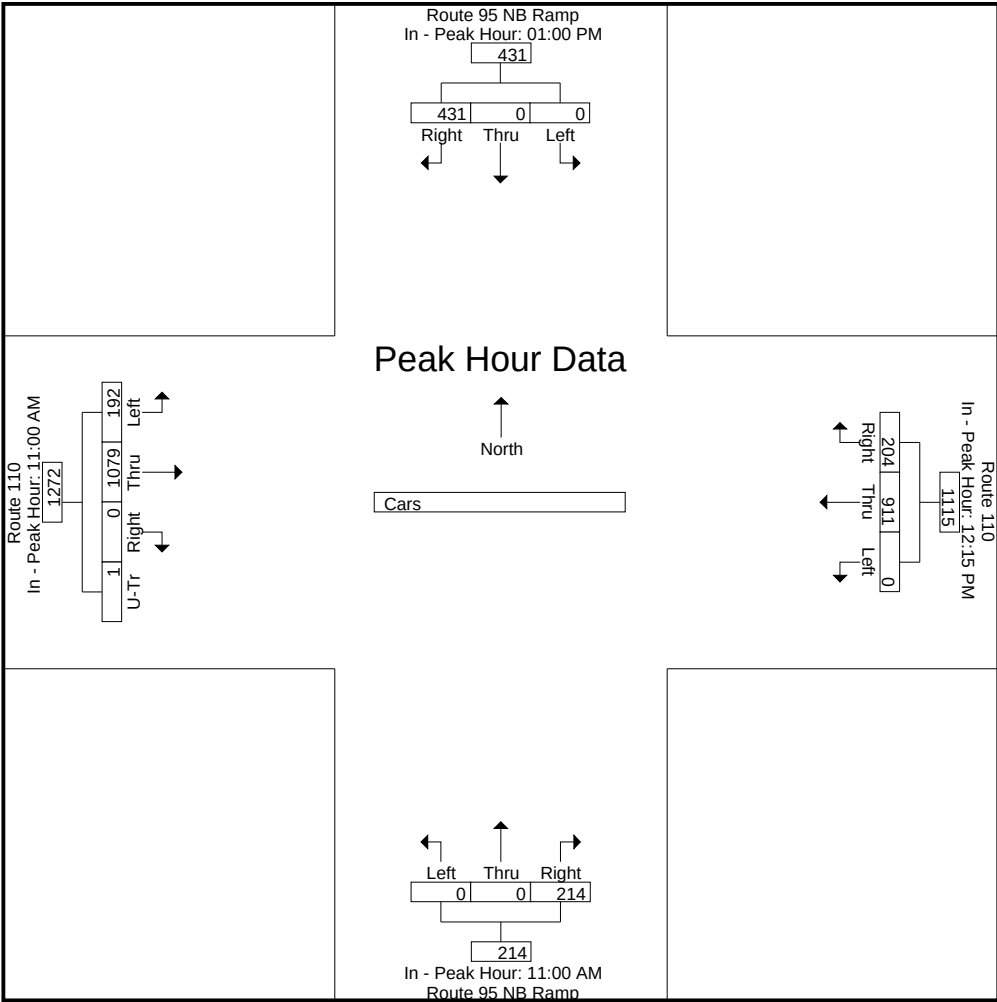
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	01:00 PM				12:15 PM				11:00 AM				11:00 AM				
+0 mins.	0	0	106	106	0	260	56	316	0	0	57	57	56	261	0	0	317
+15 mins.	0	0	101	101	0	234	45	279	0	0	59	59	49	268	0	0	317
+30 mins.	0	0	113	113	0	209	45	254	0	0	57	57	44	241	0	1	286
+45 mins.	0	0	111	111	0	208	58	266	0	0	41	41	43	309	0	0	352
Total Volume	0	0	431	431	0	911	204	1115	0	0	214	214	192	1079	0	1	1272
% App. Total	0	0	100		0	81.7	18.3		0	0	100		15.1	84.8	0	0.1	
PHF	.000	.000	.954	.954	.000	.876	.879	.882	.000	.000	.907	.907	.857	.873	.000	.250	.903

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S4
Site Code : 97650004
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

Page No : 1

Groups Printed- Trucks

	Route 95 NB Ramp From North			Route 110 From East			Route 95 NB Ramp From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	0	0	0	0	2	0	0	0	1	1	3	0	0	7
11:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	3	0	2	0	0	0	0	0	3	0	0	8
Total	0	0	4	0	5	0	0	0	1	1	6	0	0	17
12:00 PM	0	0	1	0	3	0	0	0	0	0	0	0	0	4
12:15 PM	0	0	1	0	1	0	0	0	1	0	3	0	0	6
12:30 PM	0	0	2	0	1	0	0	0	1	0	0	0	0	4
12:45 PM	0	0	2	0	4	1	0	0	1	0	2	0	0	10
Total	0	0	6	0	9	1	0	0	3	0	5	0	0	24
01:00 PM	0	0	0	0	3	0	0	0	0	0	2	0	0	5
01:15 PM	0	0	0	0	1	0	0	0	0	0	3	0	0	4
01:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:45 PM	0	0	1	0	1	0	0	0	1	0	2	0	0	5
Total	0	0	2	0	5	0	0	0	1	0	7	0	0	15
Grand Total	0	0	12	0	19	1	0	0	5	1	18	0	0	56
Apprch %	0	0	100	0	95	5	0	0	100	5.3	94.7	0	0	
Total %	0	0	21.4	0	33.9	1.8	0	0	8.9	1.8	32.1	0	0	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 12:15 PM																		
12:15 PM	0	0	1	1	0	1	0	1	0	0	1	1	0	3	0	0	3	6
12:30 PM	0	0	2	2	0	1	0	1	0	0	1	1	0	0	0	0	0	4
12:45 PM	0	0	2	2	0	4	1	5	0	0	1	1	0	2	0	0	2	10
01:00 PM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	0	2	5
Total Volume	0	0	5	5	0	9	1	10	0	0	3	3	0	7	0	0	7	25
% App. Total	0	0	100		0	90	10		0	0	100		0	100	0	0		
PHF	.000	.000	.625	.625	.000	.563	.250	.500	.000	.000	.750	.750	.000	.583	.000	.000	.583	.625

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

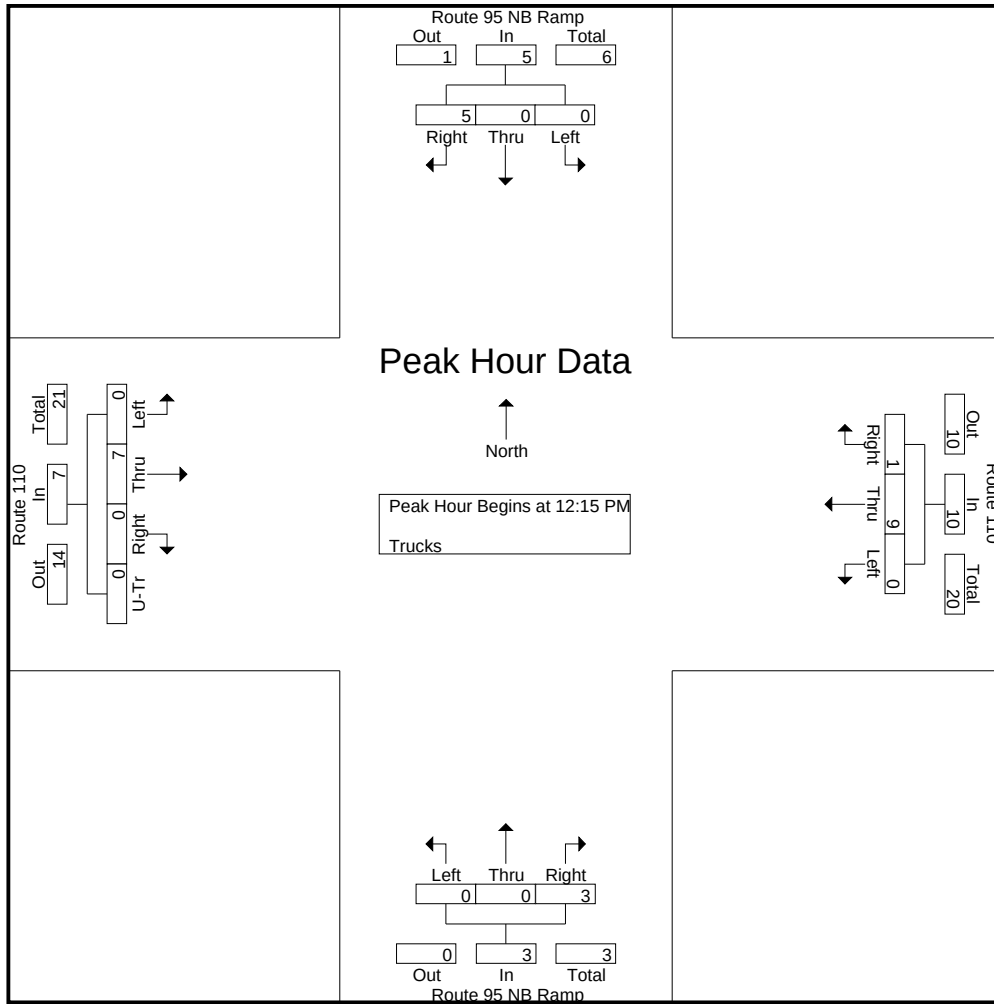
Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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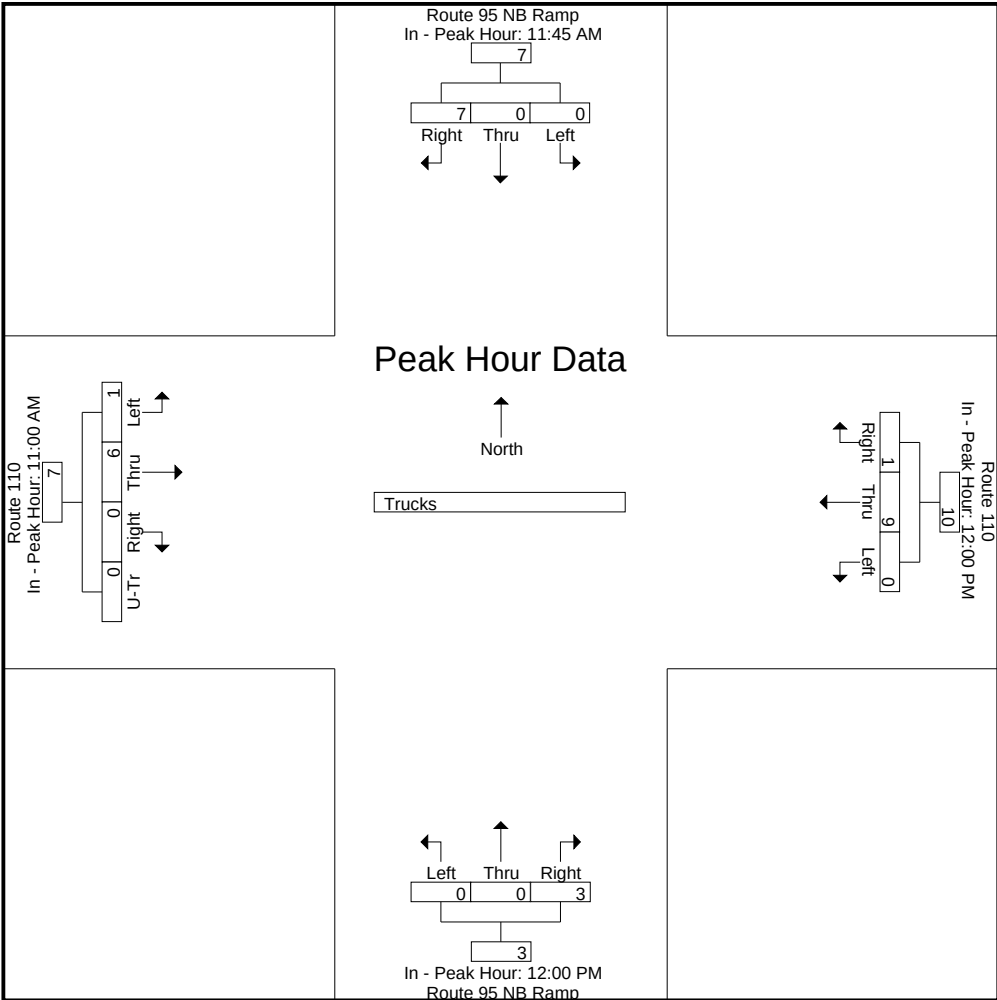
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM				12:00 PM				12:00 PM				11:00 AM				
+0 mins.	0	0	3	3	0	3	0	3	0	0	0	0	1	3	0	0	4
+15 mins.	0	0	1	1	0	1	0	1	0	0	1	1	0	0	0	0	0
+30 mins.	0	0	1	1	0	1	0	1	0	0	1	1	0	0	0	0	0
+45 mins.	0	0	2	2	0	4	1	5	0	0	1	1	0	3	0	0	3
Total Volume	0	0	7	7	0	9	1	10	0	0	3	3	1	6	0	0	7
% App. Total	0	0	100		0	90	10		0	0	100		14.3	85.7	0	0	
PHF	.000	.000	.583	.583	.000	.563	.250	.500	.000	.000	.750	.750	.250	.500	.000	.000	.438

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S4
Site Code : 97650004
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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Groups Printed- Bikes Peds

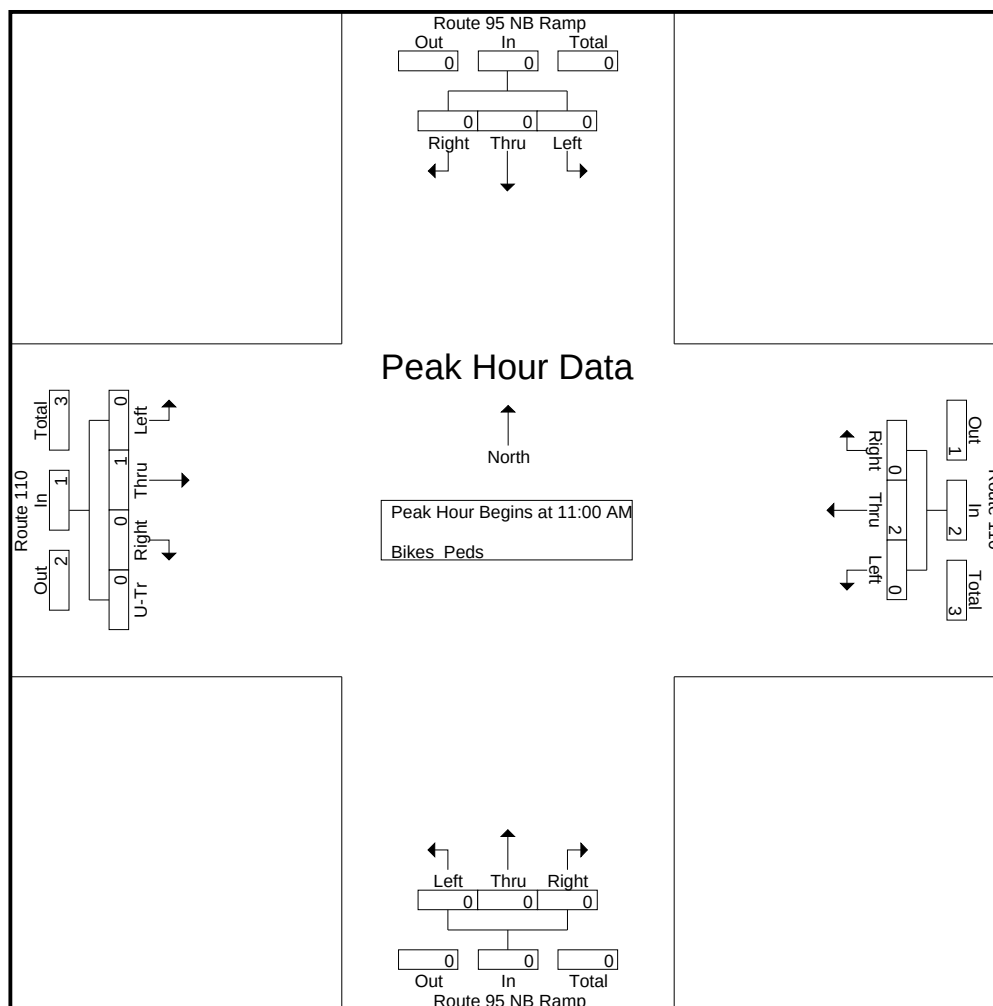
	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West				Exclu. Total	Inclu. Total	Int. Total
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds			
11:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	3	3
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 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	4	0	0	0	0	0	0	0	1	0	0	0	5	5
Apprch %	0	0	0		0	100	0		0	0	0		0	100	0	0			
Total %	0	0	0		0	80	0		0	0	0		0	20	0	0		100	

	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp 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	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 11:00 AM																		
11:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1	2
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	0	1	3
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.000	.250	.375

978-664-2565

Weather : Cloudy

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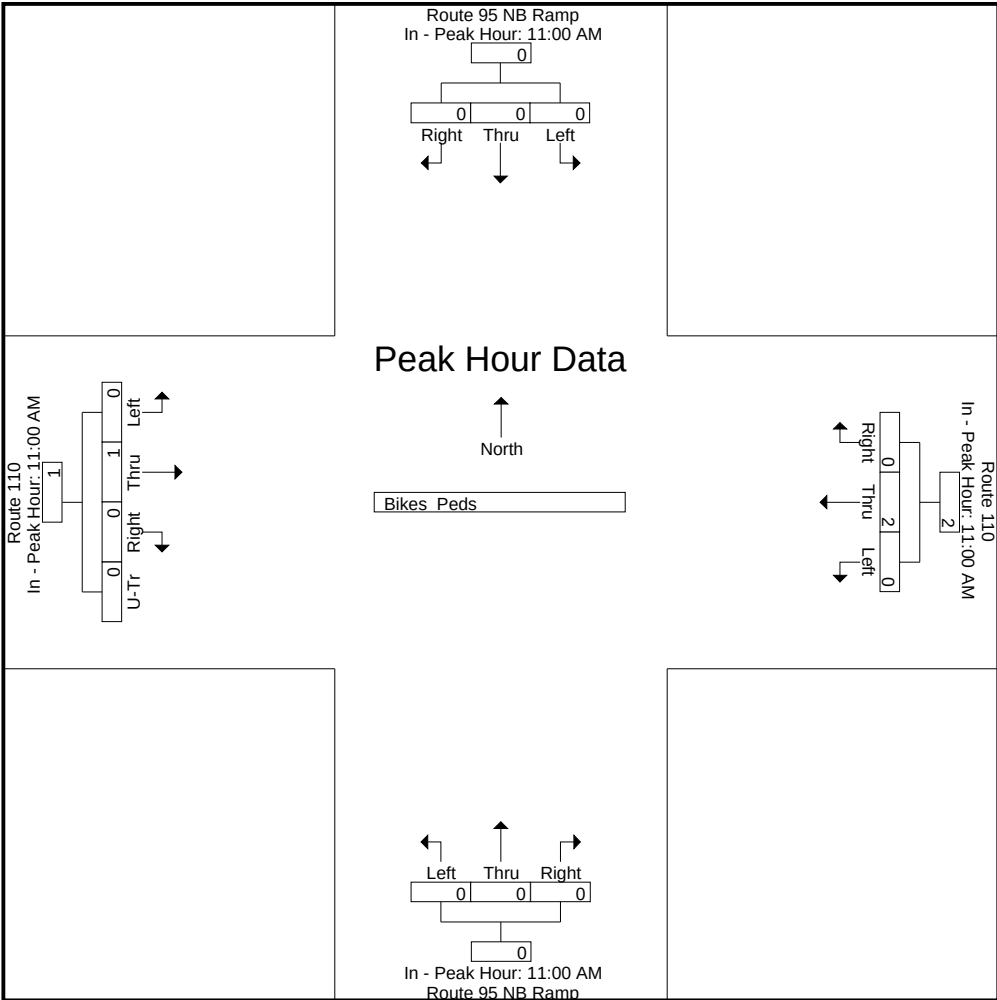


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																	
	11:00 AM				11:00 AM				11:00 AM				11:00 AM				
+0 mins.	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	1
+15 mins.	0	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	0
+45 mins.	0	0	0	0	0	1	0	1	0	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	0	1
% App. Total	0	0	0	0	0	100	0	0	0	0	0	0	0	100	0	0	0
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.250	.000	.000	.250

N/S Street : Route 95 NB Ramps
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S4
Site Code : 97650004
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars - Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	5	13	23	14	101	3	0	48	13	17	21	100	63	1	422
07:15 AM	7	20	21	16	112	3	1	51	10	15	20	112	62	0	450
07:30 AM	5	24	18	10	122	4	1	73	9	20	20	137	65	0	508
07:45 AM	11	16	13	23	119	7	2	71	11	19	24	131	91	0	538
Total	28	73	75	63	454	17	4	243	43	71	85	480	281	1	1918
08:00 AM	14	14	14	21	127	3	0	81	14	29	28	119	57	0	521
08:15 AM	13	19	26	18	135	3	0	71	11	25	14	147	68	0	550
08:30 AM	14	19	21	21	111	8	1	63	20	21	19	133	68	2	521
08:45 AM	8	35	16	35	124	4	1	57	22	29	22	171	69	1	594
Total	49	87	77	95	497	18	2	272	67	104	83	570	262	3	2186
Grand Total	77	160	152	158	951	35	6	515	110	175	168	1050	543	4	4104
Apprch %	19.8	41.1	39.1	13.7	82.7	3	0.5	64.4	13.8	21.9	9.5	59.5	30.8	0.2	
Total %	1.9	3.9	3.7	3.8	23.2	0.9	0.1	12.5	2.7	4.3	4.1	25.6	13.2	0.1	
Cars	77	156	144	157	918	35	6	504	109	173	155	1022	527	4	3987
% Cars	100	97.5	94.7	99.4	96.5	100	100	97.9	99.1	98.9	92.3	97.3	97.1	100	97.1
Trucks	0	4	8	1	33	0	0	11	1	2	13	28	16	0	117
% Trucks	0	2.5	5.3	0.6	3.5	0	0	2.1	0.9	1.1	7.7	2.7	2.9	0	2.9

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	14	14	14	42	21	127	3	0	151	81	14	29	124	28	119	57	0	204	521
08:15 AM	13	19	26	58	18	135	3	0	156	71	11	25	107	14	147	68	0	229	550
08:30 AM	14	19	21	54	21	111	8	1	141	63	20	21	104	19	133	68	2	222	521
08:45 AM	8	35	16	59	35	124	4	1	164	57	22	29	108	22	171	69	1	263	594
Total Volume	49	87	77	213	95	497	18	2	612	272	67	104	443	83	570	262	3	918	2186
% App. Total	23	40.8	36.2		15.5	81.2	2.9	0.3		61.4	15.1	23.5		9	62.1	28.5	0.3		
PHF	.875	.621	.740	.903	.679	.920	.563	.500	.933	.840	.761	.897	.893	.741	.833	.949	.375	.873	.920
Cars	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897	2129
% Cars	100	95.4	89.6	94.4	98.9	97.4	100	100	97.7	96.7	98.5	100	97.7	91.6	98.2	98.5	100	97.7	97.4
Trucks	0	4	8	12	1	13	0	0	14	9	1	0	10	7	10	4	0	21	57
% Trucks	0	4.6	10.4	5.6	1.1	2.6	0	0	2.3	3.3	1.5	0	2.3	8.4	1.8	1.5	0	2.3	2.6

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

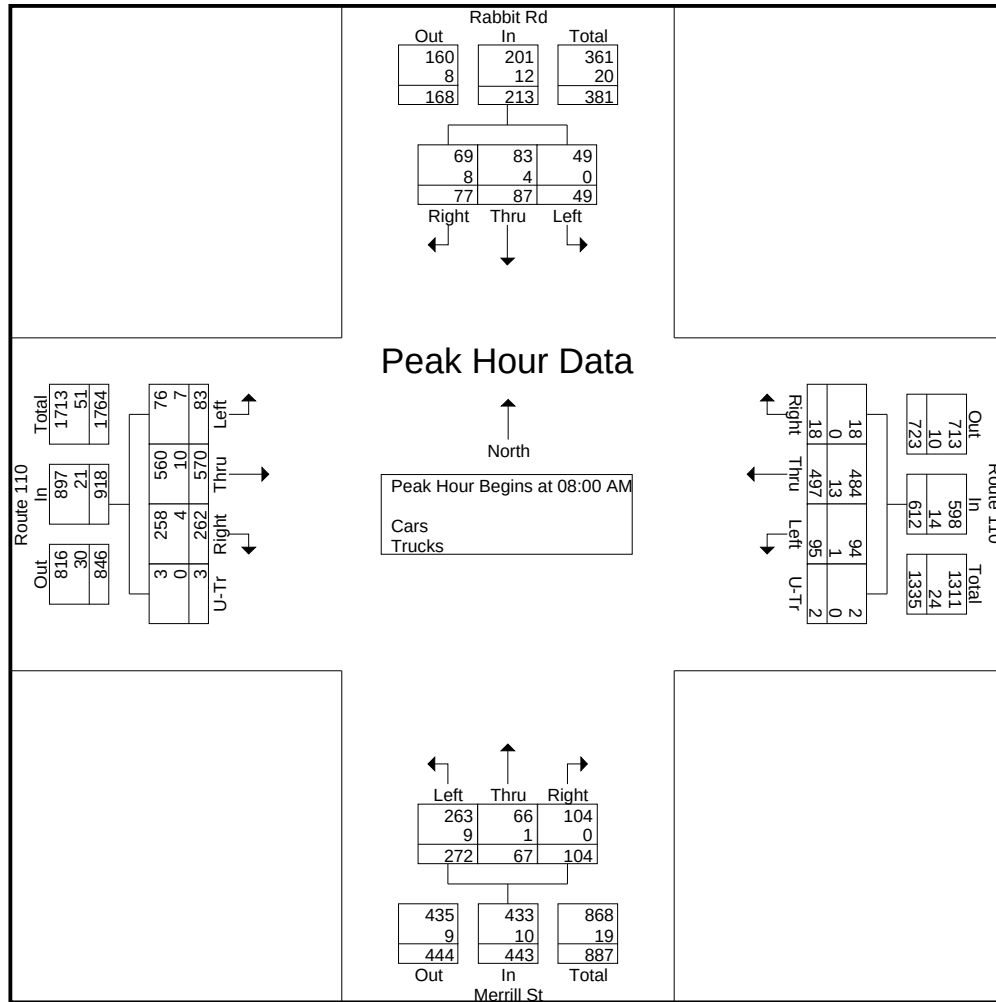
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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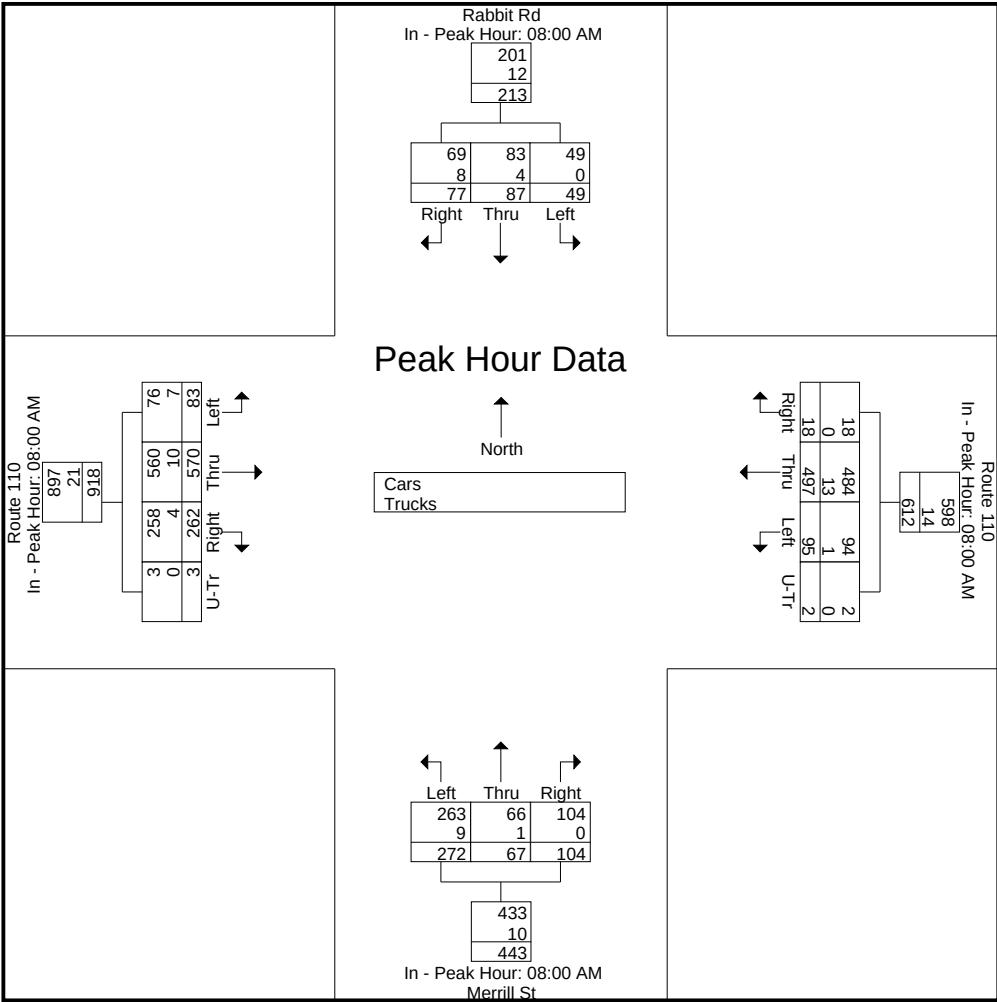
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM					08:00 AM				08:00 AM				
+0 mins.	14	14	14	42	21	127	3	0	151	81	14	29	124	28	119	57	0	204
+15 mins.	13	19	26	58	18	135	3	0	156	71	11	25	107	14	147	68	0	229
+30 mins.	14	19	21	54	21	111	8	1	141	63	20	21	104	19	133	68	2	222
+45 mins.	8	35	16	59	35	124	4	1	164	57	22	29	108	22	171	69	1	263
Total Volume	49	87	77	213	95	497	18	2	612	272	67	104	443	83	570	262	3	918
% App. Total	23	40.8	36.2		15.5	81.2	2.9	0.3		61.4	15.1	23.5		9	62.1	28.5	0.3	
PHF	.875	.621	.740	.903	.679	.920	.563	.500	.933	.840	.761	.897	.893	.741	.833	.949	.375	.873
Cars	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897
% Cars	100	95.4	89.6	94.4	98.9	97.4	100	100	97.7	96.7	98.5	100	97.7	91.6	98.2	98.5	100	97.7
Trucks	0	4	8	12	1	13	0	0	14	9	1	0	10	7	10	4	0	21
% Trucks	0	4.6	10.4	5.6	1.1	2.6	0	0	2.3	3.3	1.5	0	2.3	8.4	1.8	1.5	0	2.3

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

Page No : 1

Groups Printed- Cars

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	5	13	23	14	98	3	0	47	13	17	20	95	63	1	412
07:15 AM	7	20	21	16	107	3	1	51	10	15	18	108	57	0	434
07:30 AM	5	24	18	10	116	4	1	73	9	19	19	135	62	0	495
07:45 AM	11	16	13	23	113	7	2	70	11	18	22	124	87	0	517
Total	28	73	75	63	434	17	4	241	43	69	79	462	269	1	1858
08:00 AM	14	14	12	21	124	3	0	80	14	29	26	118	55	0	510
08:15 AM	13	19	25	17	131	3	0	70	11	25	11	145	67	0	537
08:30 AM	14	16	19	21	109	8	1	58	19	21	18	131	68	2	505
08:45 AM	8	34	13	35	120	4	1	55	22	29	21	166	68	1	577
Total	49	83	69	94	484	18	2	263	66	104	76	560	258	3	2129
Grand Total	77	156	144	157	918	35	6	504	109	173	155	1022	527	4	3987
Apprch %	20.4	41.4	38.2	14.1	82.3	3.1	0.5	64.1	13.9	22	9.1	59.8	30.9	0.2	
Total %	1.9	3.9	3.6	3.9	23	0.9	0.2	12.6	2.7	4.3	3.9	25.6	13.2	0.1	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	14	14	12	40	21	124	3	0	148	80	14	29	123	26	118	55	0	199	510
08:15 AM	13	19	25	57	17	131	3	0	151	70	11	25	106	11	145	67	0	223	537
08:30 AM	14	16	19	49	21	109	8	1	139	58	19	21	98	18	131	68	2	219	505
08:45 AM	8	34	13	55	35	120	4	1	160	55	22	29	106	21	166	68	1	256	577
Total Volume	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897	2129
% App. Total	24.4	41.3	34.3		15.7	80.9	3	0.3		60.7	15.2	24		8.5	62.4	28.8	0.3		
PHF	.875	.610	.690	.882	.671	.924	.563	.500	.934	.822	.750	.897	.880	.731	.843	.949	.375	.876	.922

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

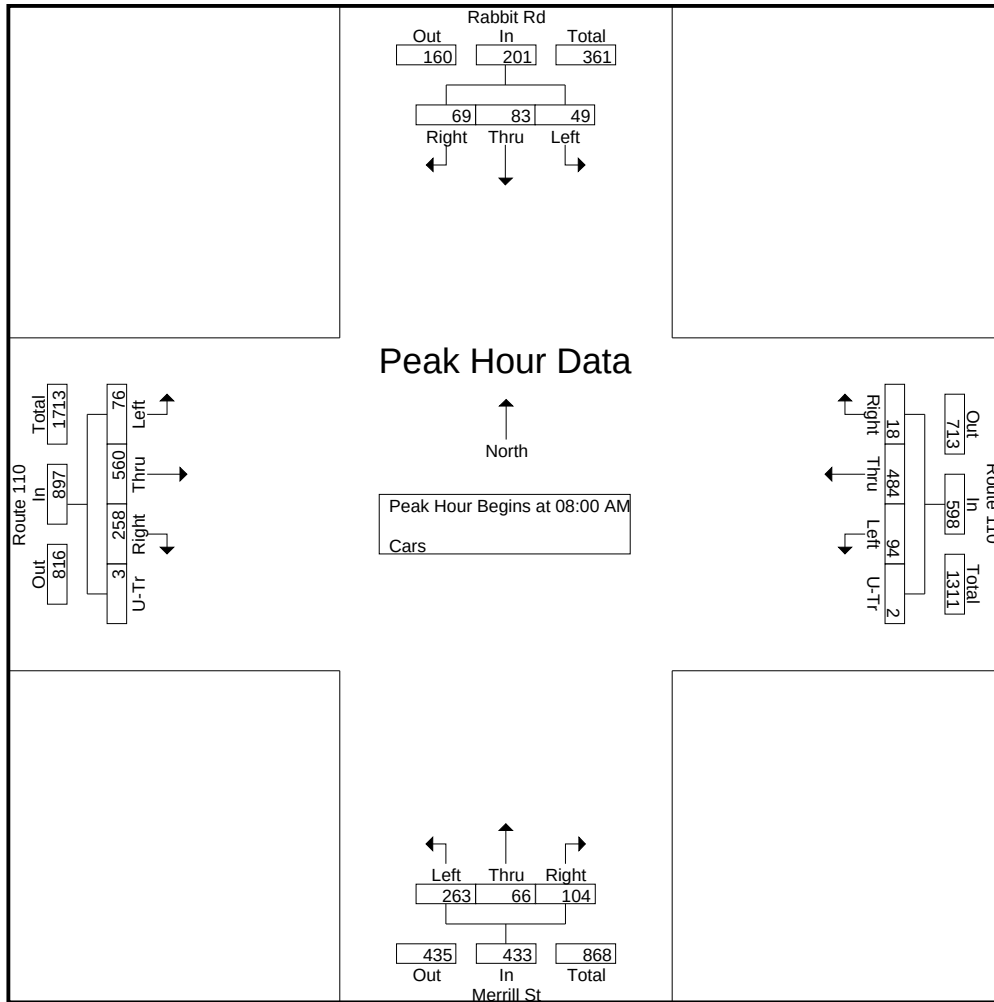
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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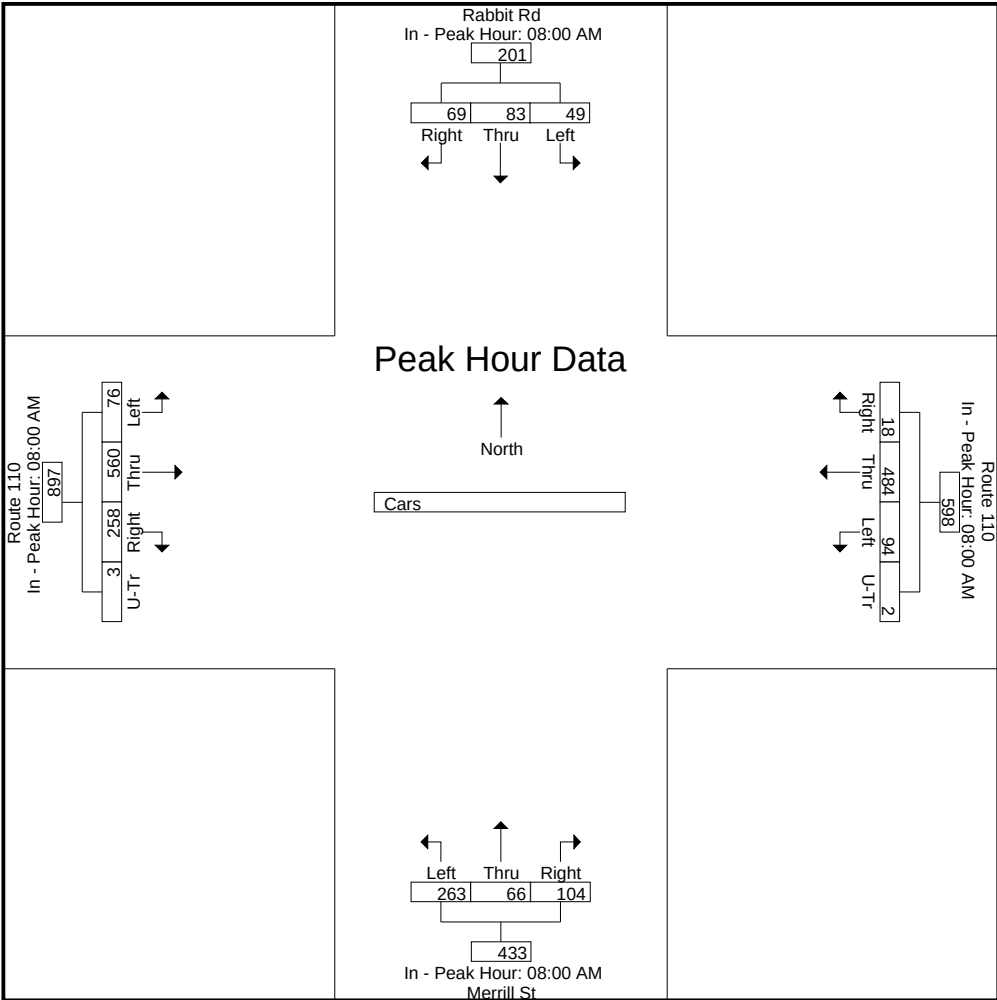
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				08:00 AM				08:00 AM				08:00 AM					
+0 mins.	14	14	12	40	21	124	3	0	148	80	14	29	123	26	118	55	0	199
+15 mins.	13	19	25	57	17	131	3	0	151	70	11	25	106	11	145	67	0	223
+30 mins.	14	16	19	49	21	109	8	1	139	58	19	21	98	18	131	68	2	219
+45 mins.	8	34	13	55	35	120	4	1	160	55	22	29	106	21	166	68	1	256
Total Volume	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897
% App. Total	24.4	41.3	34.3		15.7	80.9	3	0.3		60.7	15.2	24		8.5	62.4	28.8	0.3	
PHF	.875	.610	.690	.882	.671	.924	.563	.500	.934	.822	.750	.897	.880	.731	.843	.949	.375	.876

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Groups Printed- Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
07:00 AM	0	0	0	0	3	0	0	1	0	0	1	5	0	0	10
07:15 AM	0	0	0	0	5	0	0	0	0	0	2	4	5	0	16
07:30 AM	0	0	0	0	6	0	0	0	0	1	1	2	3	0	13
07:45 AM	0	0	0	0	6	0	0	1	0	1	2	7	4	0	21
Total	0	0	0	0	20	0	0	2	0	2	6	18	12	0	60
08:00 AM	0	0	2	0	3	0	0	1	0	0	2	1	2	0	11
08:15 AM	0	0	1	1	4	0	0	1	0	0	3	2	1	0	13
08:30 AM	0	3	2	0	2	0	0	5	1	0	1	2	0	0	16
08:45 AM	0	1	3	0	4	0	0	2	0	0	1	5	1	0	17
Total	0	4	8	1	13	0	0	9	1	0	7	10	4	0	57
Grand Total	0	4	8	1	33	0	0	11	1	2	13	28	16	0	117
Apprch %	0	33.3	66.7	2.9	97.1	0	0	78.6	7.1	14.3	22.8	49.1	28.1	0	
Total %	0	3.4	6.8	0.9	28.2	0	0	9.4	0.9	1.7	11.1	23.9	13.7	0	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:15 AM																			
07:15 AM	0	0	0	0	0	5	0	0	5	0	0	0	0	2	4	5	0	11	16
07:30 AM	0	0	0	0	0	6	0	0	6	0	0	1	1	1	2	3	0	6	13
07:45 AM	0	0	0	0	0	6	0	0	6	1	0	1	2	2	7	4	0	13	21
08:00 AM	0	0	2	2	0	3	0	0	3	1	0	0	1	2	1	2	0	5	11
Total Volume	0	0	2	2	0	20	0	0	20	2	0	2	4	7	14	14	0	35	61
% App. Total	0	0	100		0	100	0	0		50	0	50		20	40	40	0		
PHF	.000	.000	.250	.250	.000	.833	.000	.000	.833	.500	.000	.500	.500	.875	.500	.700	.000	.673	.726

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

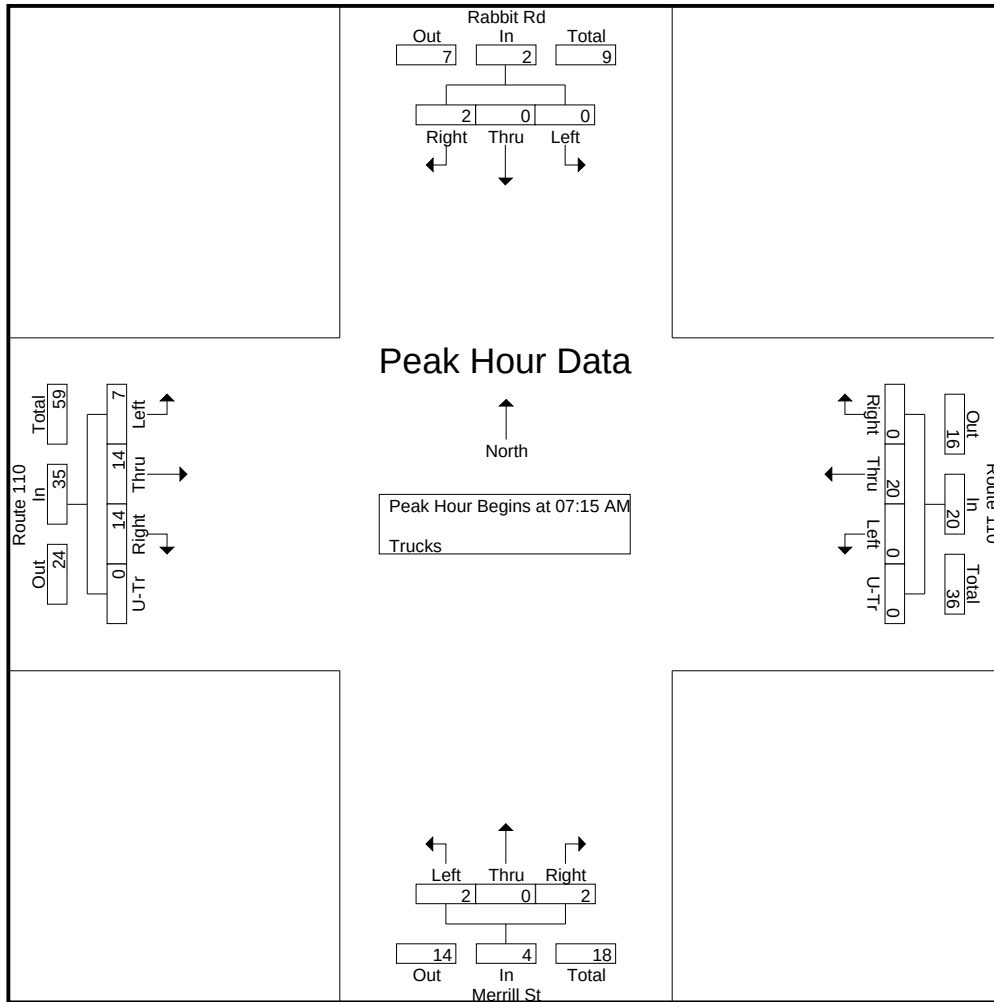
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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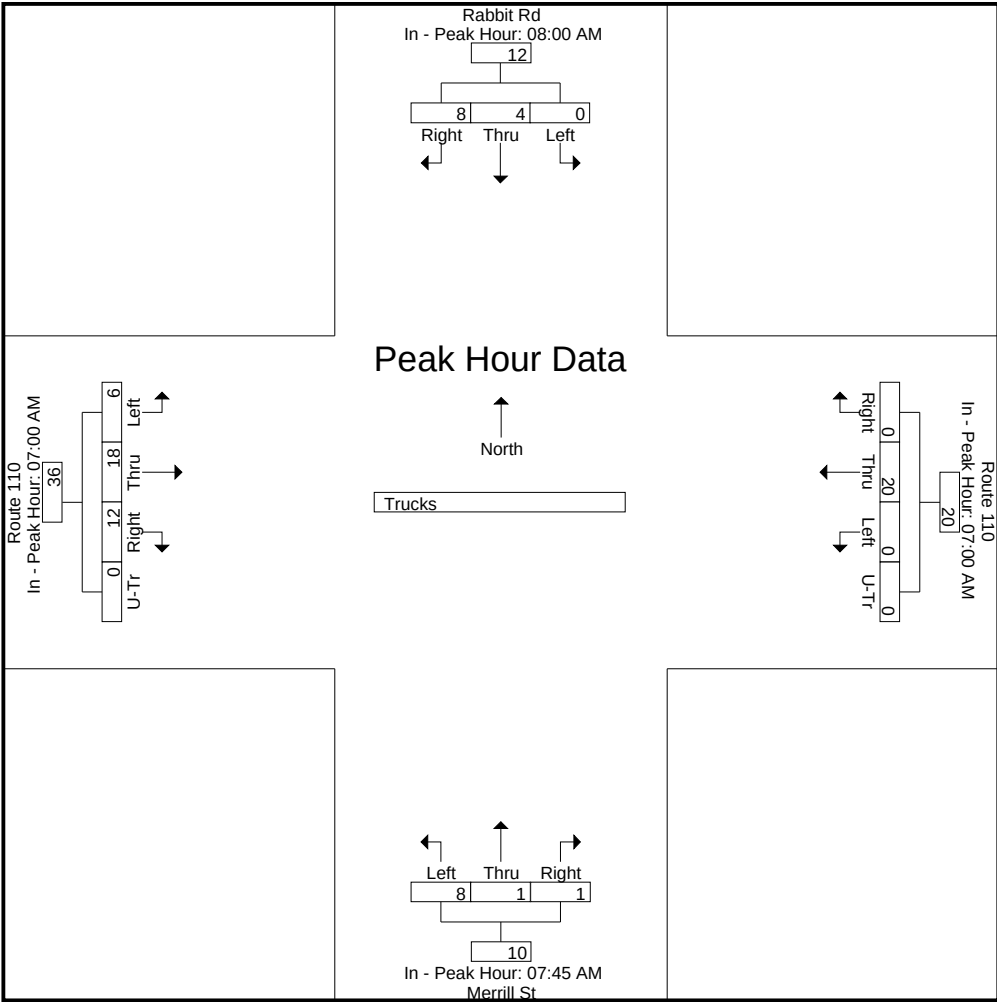
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM				07:00 AM				07:45 AM				07:00 AM					
+0 mins.	0	0	2	2	0	3	0	0	3	1	0	1	2	1	5	0	0	6
+15 mins.	0	0	1	1	0	5	0	0	5	1	0	0	1	2	4	5	0	11
+30 mins.	0	3	2	5	0	6	0	0	6	1	0	0	1	1	2	3	0	6
+45 mins.	0	1	3	4	0	6	0	0	6	5	1	0	6	2	7	4	0	13
Total Volume	0	4	8	12	0	20	0	0	20	8	1	1	10	6	18	12	0	36
% App. Total	0	33.3	66.7		0	100	0	0		80	10	10		16.7	50	33.3	0	
PHF	.000	.333	.667	.600	.000	.833	.000	.000	.833	.400	.250	.250	.417	.750	.643	.600	.000	.692

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Groups Printed- Bikes Peds

	Rabbit Rd From North				Route 110 From East				Merrill St From South				Route 110 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			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
07:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2	2
07:45 AM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	8	8
Total	0	3	0	0	0	1	0	0	0	2	0	0	0	0	0	7	0	13	13
08:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	2
08:15 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	2
Total	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	6	6
Grand Total	0	3	0	0	0	1	0	0	0	5	0	0	0	0	0	10	0	19	19
Apprch %	0	100	0		0	100	0	0	0	100	0		0	0	0	100			
Total %	0	15.8	0		0	5.3	0	0	0	26.3	0		0	0	0	52.6	0	100	

	Rabbit Rd From North				Route 110 From East				Merrill St From South				Route 110 From West						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	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	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
07:45 AM	0	2	0	2	0	0	0	0	0	0	2	0	2	0	0	0	4	4	8
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2
Total Volume	0	3	0	3	0	0	0	0	0	0	4	0	4	0	0	0	7	7	14
% App. Total	0	100	0		0	0	0	0		0	100	0		0	0	0	100		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.438	.438	.438

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

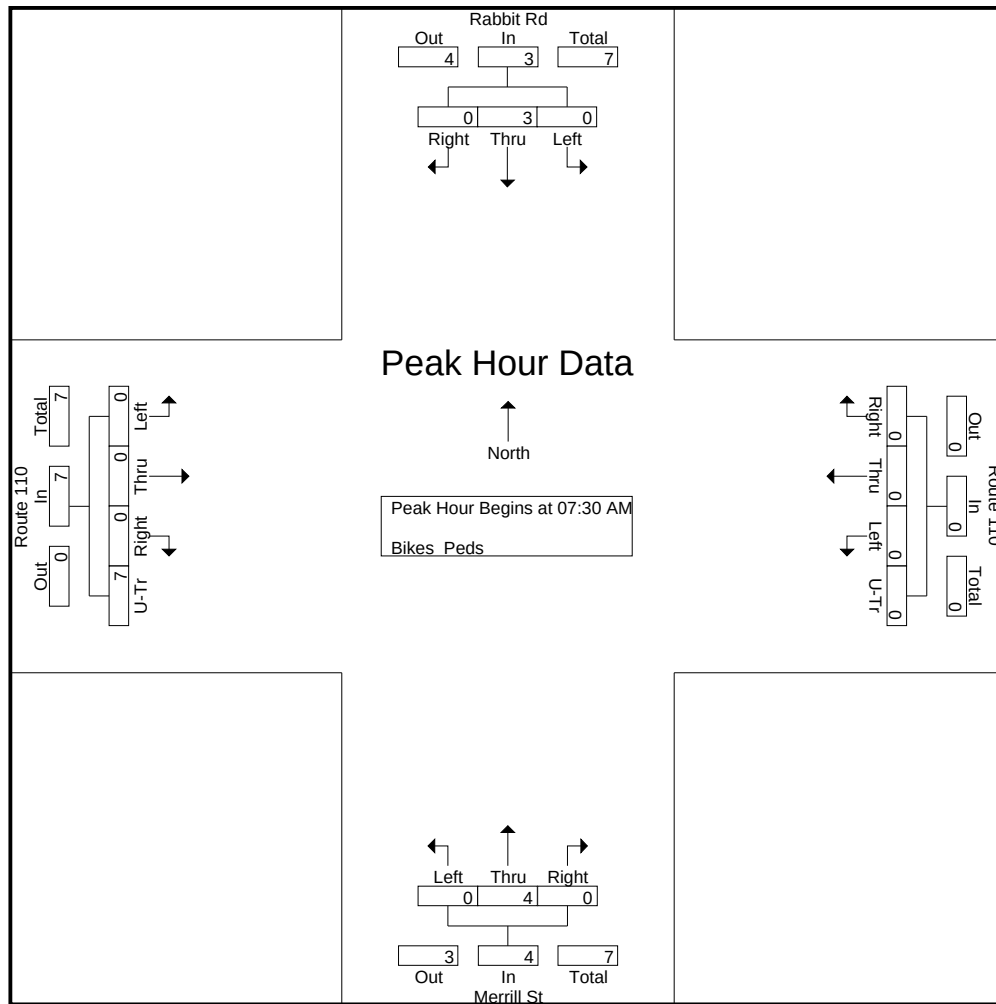
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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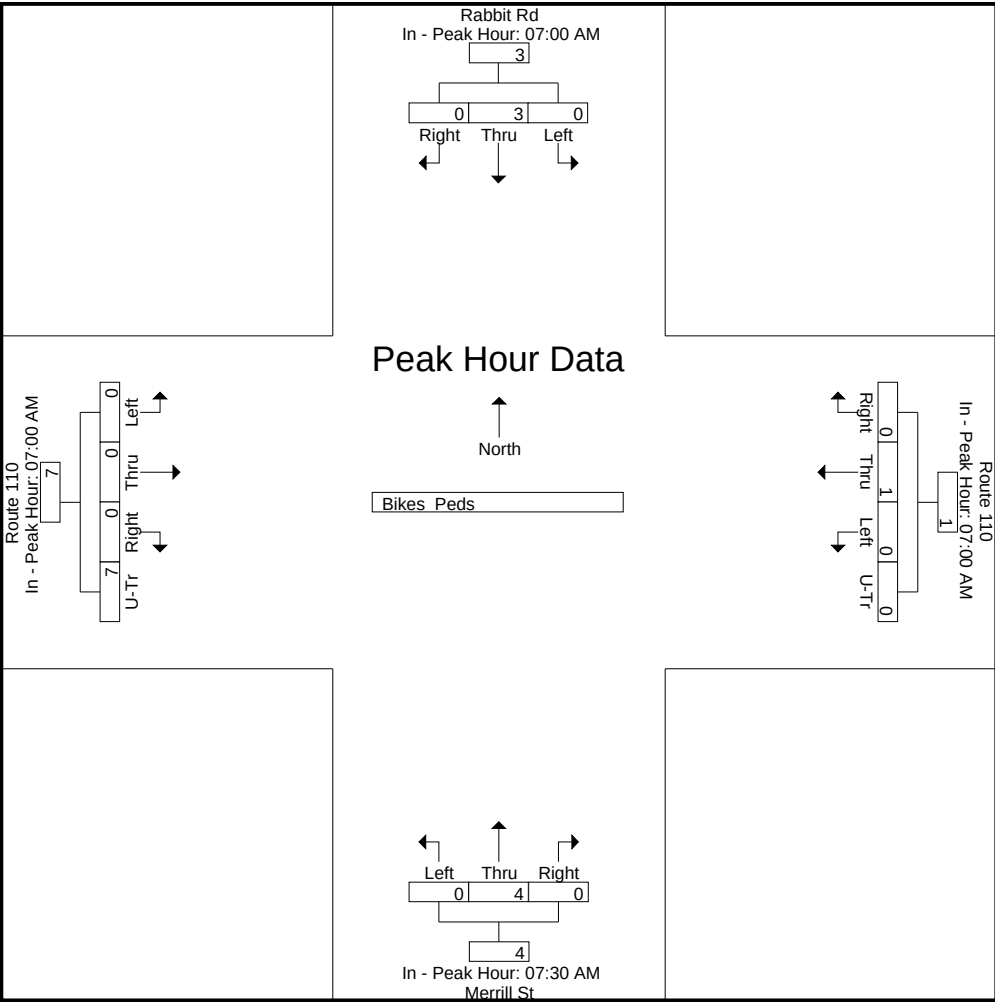
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:00 AM					07:30 AM					07:00 AM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
+15 mins.	0	0	0	0	0	0	1	0	0	1	0	2	0	0	0
+30 mins.	0	1	0	1	0	0	0	0	0	0	0	1	0	1	1
+45 mins.	0	2	0	2	0	0	0	0	0	0	0	1	0	4	4
Total Volume	0	3	0	3	0	1	0	0	1	0	4	0	4	0	7
% App. Total	0	100	0		0	100	0	0		0	100	0		0	100
PHF	.000	.375	.000	.375	.000	.250	.000	.000	.250	.000	.500	.000	.500	.000	.438

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Groups Printed- Cars - Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	14	28	42	31	178	8	0	78	28	30	27	184	64	3	715
04:15 PM	14	32	24	19	189	6	0	100	23	20	21	189	87	0	724
04:30 PM	18	27	33	27	177	7	0	101	30	34	37	175	60	1	727
04:45 PM	30	34	34	26	169	9	1	79	33	27	42	173	84	0	741
Total	76	121	133	103	713	30	1	358	114	111	127	721	295	4	2907
05:00 PM	21	30	39	29	170	11	1	91	33	26	25	178	83	2	739
05:15 PM	19	27	25	17	176	9	1	99	27	21	22	216	68	2	729
05:30 PM	9	31	30	25	158	9	0	82	15	17	31	187	78	3	675
05:45 PM	17	27	48	24	134	9	0	64	10	28	24	178	70	4	637
Total	66	115	142	95	638	38	2	336	85	92	102	759	299	11	2780
Grand Total	142	236	275	198	1351	68	3	694	199	203	229	1480	594	15	5687
Apprch %	21.7	36.1	42.1	12.2	83.4	4.2	0.2	63.3	18.2	18.5	9.9	63.8	25.6	0.6	
Total %	2.5	4.1	4.8	3.5	23.8	1.2	0.1	12.2	3.5	3.6	4	26	10.4	0.3	
Cars	141	236	272	198	1342	68	3	688	199	202	225	1473	588	15	5650
% Cars	99.3	100	98.9	100	99.3	100	100	99.1	100	99.5	98.3	99.5	99	100	99.3
Trucks	1	0	3	0	9	0	0	6	0	1	4	7	6	0	37
% Trucks	0.7	0	1.1	0	0.7	0	0	0.9	0	0.5	1.7	0.5	1	0	0.7

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	18	27	33	78	27	177	7	0	211	101	30	34	165	37	175	60	1	273	727
04:45 PM	30	34	34	98	26	169	9	1	205	79	33	27	139	42	173	84	0	299	741
05:00 PM	21	30	39	90	29	170	11	1	211	91	33	26	150	25	178	83	2	288	739
05:15 PM	19	27	25	71	17	176	9	1	203	99	27	21	147	22	216	68	2	308	729
Total Volume	88	118	131	337	99	692	36	3	830	370	123	108	601	126	742	295	5	1168	2936
% App. Total	26.1	35	38.9		11.9	83.4	4.3	0.4		61.6	20.5	18		10.8	63.5	25.3	0.4		
PHF	.733	.868	.840	.860	.853	.977	.818	.750	.983	.916	.932	.794	.911	.750	.859	.878	.625	.948	.991
Cars	87	118	129	334	99	685	36	3	823	367	123	108	598	126	737	291	5	1159	2914
% Cars	98.9	100	98.5	99.1	100	99.0	100	100	99.2	99.2	100	100	99.5	100	99.3	98.6	100	99.2	99.3
Trucks	1	0	2	3	0	7	0	0	7	3	0	0	3	0	5	4	0	9	22
% Trucks	1.1	0	1.5	0.9	0	1.0	0	0	0.8	0.8	0	0	0.5	0	0.7	1.4	0	0.8	0.7

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

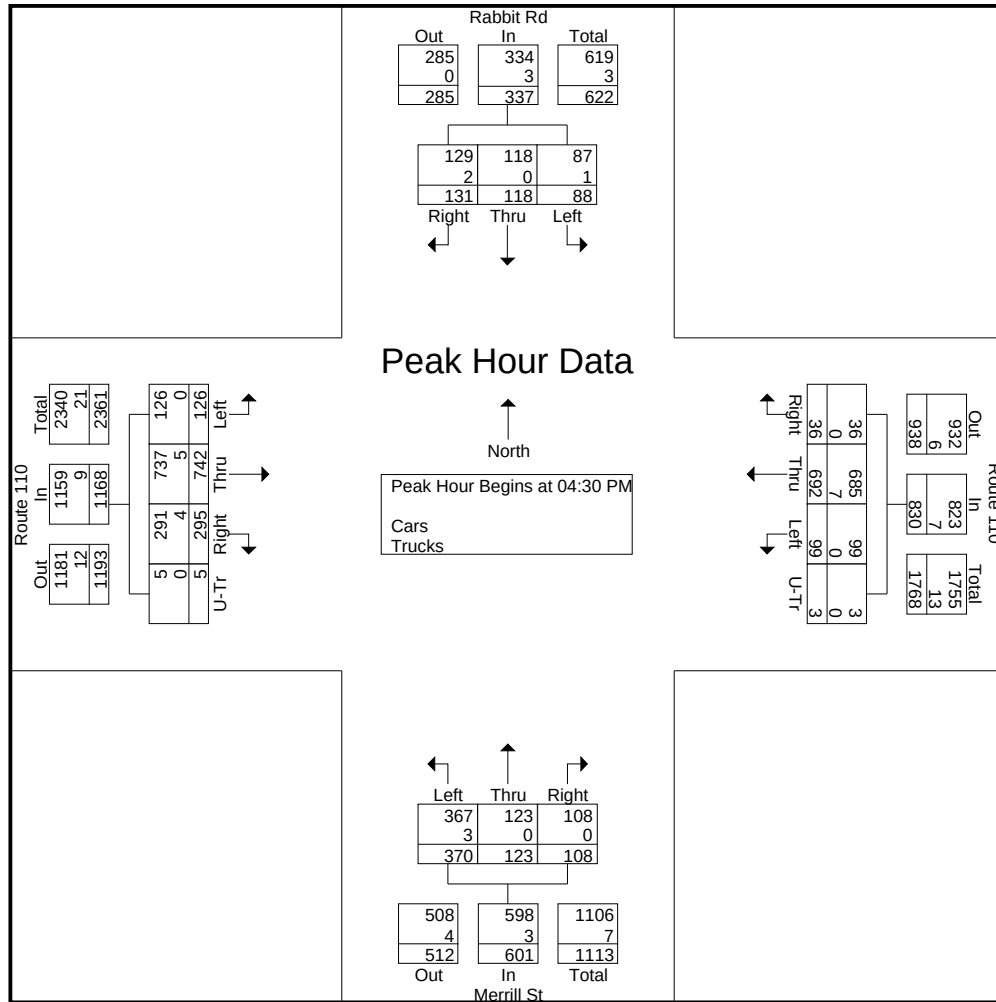
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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

Peak Hour for Each Approach Begins at:

	04:30 PM				04:00 PM					04:30 PM				04:45 PM				
+0 mins.	18	27	33	78	31	178	8	0	217	101	30	34	165	42	173	84	0	299
+15 mins.	30	34	34	98	19	189	6	0	214	79	33	27	139	25	178	83	2	288
+30 mins.	21	30	39	90	27	177	7	0	211	91	33	26	150	22	216	68	2	308
+45 mins.	19	27	25	71	26	169	9	1	205	99	27	21	147	31	187	78	3	299
Total Volume	88	118	131	337	103	713	30	1	847	370	123	108	601	120	754	313	7	1194
% App. Total	26.1	35	38.9		12.2	84.2	3.5	0.1		61.6	20.5	18		10.1	63.1	26.2	0.6	
PHF	.733	.868	.840	.860	.831	.943	.833	.250	.976	.916	.932	.794	.911	.714	.873	.932	.583	.969
Cars	87	118	129	334	103	707	30	1	841	367	123	108	598	120	749	309	7	1185
% Cars	98.9	100	98.5	99.1	100	99.2	100	100	99.3	99.2	100	100	99.5	100	99.3	98.7	100	99.2
Trucks	1	0	2	3	0	6	0	0	6	3	0	0	3	0	5	4	0	9
% Trucks	1.1	0	1.5	0.9	0	0.8	0	0	0.7	0.8	0	0	0.5	0	0.7	1.3	0	0.8

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

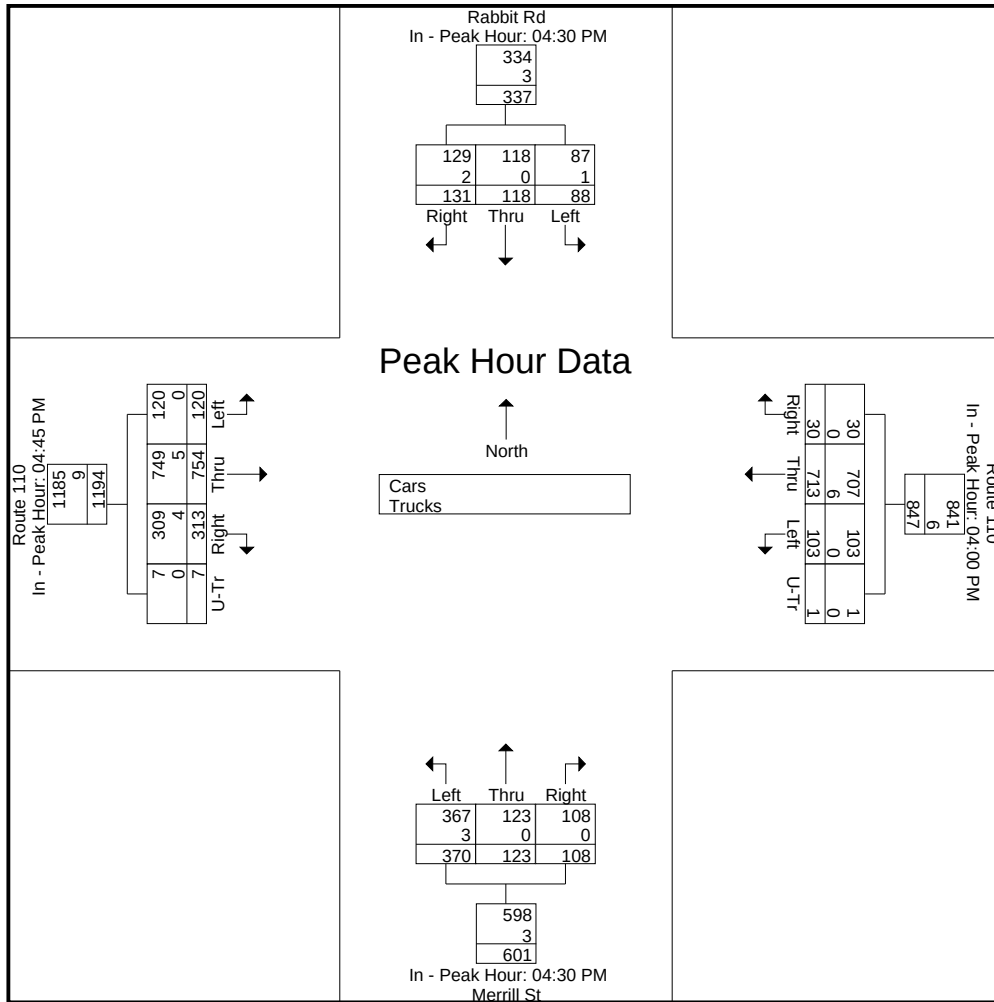
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Groups Printed- Cars

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	14	28	42	31	176	8	0	77	28	29	27	184	63	3	710
04:15 PM	14	32	24	19	189	6	0	98	23	20	18	189	87	0	719
04:30 PM	18	27	33	27	175	7	0	101	30	34	37	175	60	1	725
04:45 PM	30	34	33	26	167	9	1	77	33	27	42	171	83	0	733
Total	76	121	132	103	707	30	1	353	114	110	124	719	293	4	2887
05:00 PM	21	30	38	29	169	11	1	91	33	26	25	176	80	2	732
05:15 PM	18	27	25	17	174	9	1	98	27	21	22	215	68	2	724
05:30 PM	9	31	30	25	158	9	0	82	15	17	31	187	78	3	675
05:45 PM	17	27	47	24	134	9	0	64	10	28	23	176	69	4	632
Total	65	115	140	95	635	38	2	335	85	92	101	754	295	11	2763
Grand Total	141	236	272	198	1342	68	3	688	199	202	225	1473	588	15	5650
Apprch %	21.7	36.4	41.9	12.3	83.3	4.2	0.2	63.2	18.3	18.5	9.8	64	25.6	0.7	
Total %	2.5	4.2	4.8	3.5	23.8	1.2	0.1	12.2	3.5	3.6	4	26.1	10.4	0.3	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	18	27	33	78	27	175	7	0	209	101	30	34	165	37	175	60	1	273	725
04:45 PM	30	34	33	97	26	167	9	1	203	77	33	27	137	42	171	83	0	296	733
05:00 PM	21	30	38	89	29	169	11	1	210	91	33	26	150	25	176	80	2	283	732
05:15 PM	18	27	25	70	17	174	9	1	201	98	27	21	146	22	215	68	2	307	724
Total Volume	87	118	129	334	99	685	36	3	823	367	123	108	598	126	737	291	5	1159	2914
% App. Total	26	35.3	38.6		12	83.2	4.4	0.4		61.4	20.6	18.1		10.9	63.6	25.1	0.4		
PHF	.725	.868	.849	.861	.853	.979	.818	.750	.980	.908	.932	.794	.906	.750	.857	.877	.625	.944	.994

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

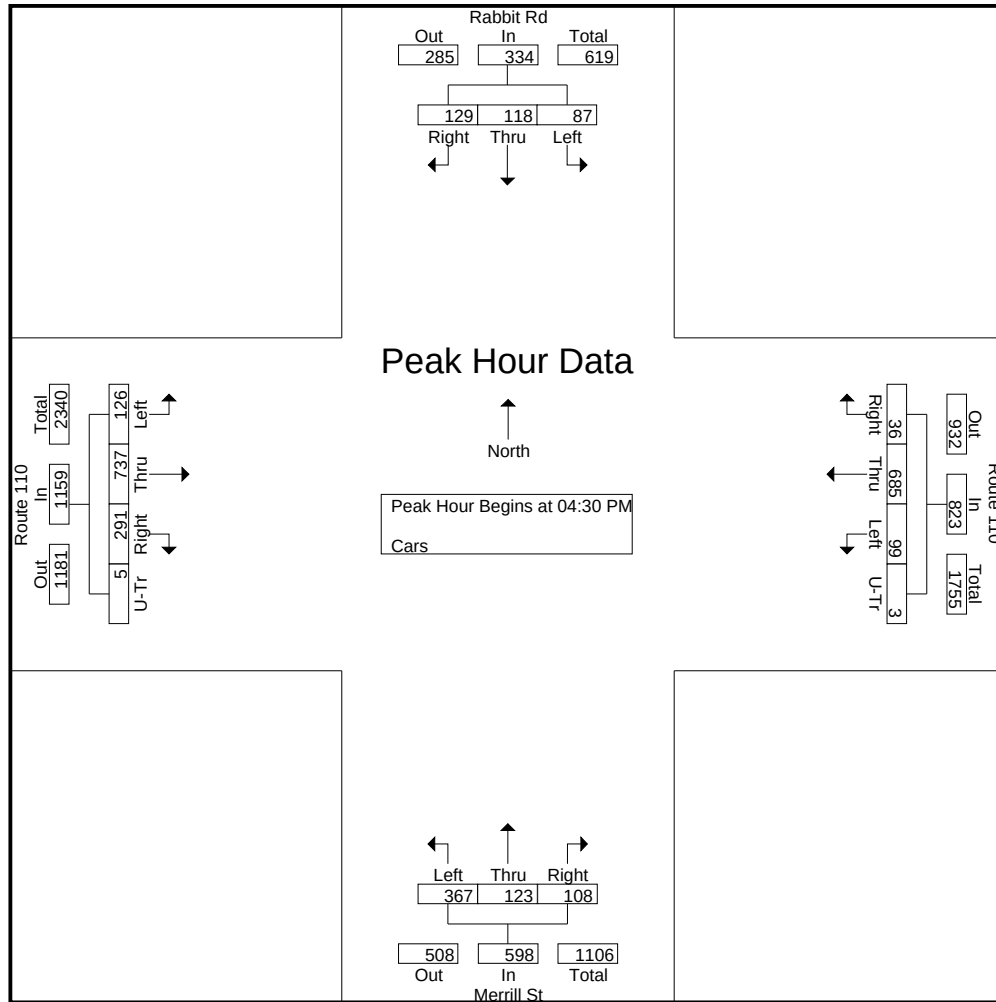
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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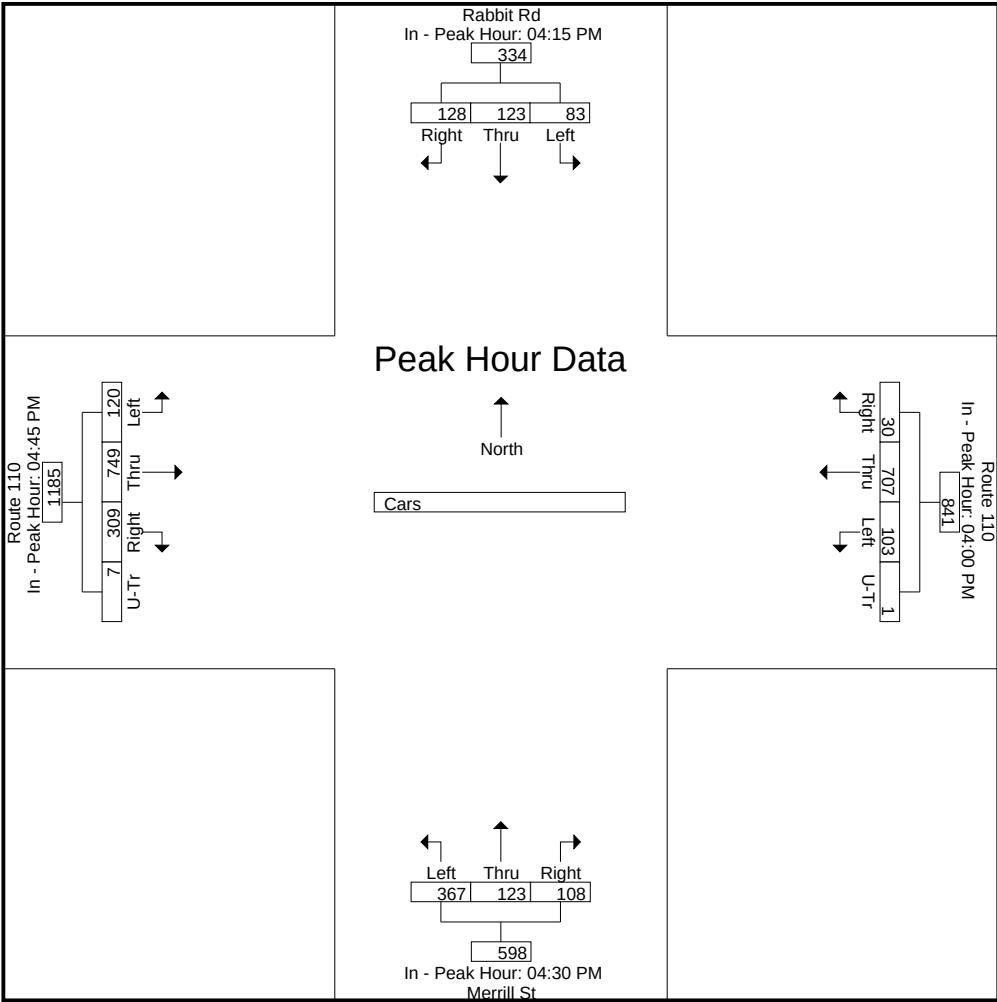
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:15 PM				04:00 PM				04:30 PM				04:45 PM					
+0 mins.	14	32	24	70	31	176	8	0	215	101	30	34	165	42	171	83	0	296
+15 mins.	18	27	33	78	19	189	6	0	214	77	33	27	137	25	176	80	2	283
+30 mins.	30	34	33	97	27	175	7	0	209	91	33	26	150	22	215	68	2	307
+45 mins.	21	30	38	89	26	167	9	1	203	98	27	21	146	31	187	78	3	299
Total Volume	83	123	128	334	103	707	30	1	841	367	123	108	598	120	749	309	7	1185
% App. Total	24.9	36.8	38.3		12.2	84.1	3.6	0.1		61.4	20.6	18.1		10.1	63.2	26.1	0.6	
PHF	.692	.904	.842	.861	.831	.935	.833	.250	.978	.908	.932	.794	.906	.714	.871	.931	.583	.965

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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Groups Printed- Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
04:00 PM	0	0	0	0	2	0	0	1	0	1	0	0	1	0	5
04:15 PM	0	0	0	0	0	0	0	2	0	0	3	0	0	0	5
04:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	1	0	2	0	0	2	0	0	0	2	1	0	8
Total	0	0	1	0	6	0	0	5	0	1	3	2	2	0	20
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	2	3	0	7
05:15 PM	1	0	0	0	2	0	0	1	0	0	0	1	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	1	0	0	0	0	0	0	0	1	2	1	0	5
Total	1	0	2	0	3	0	0	1	0	0	1	5	4	0	17
Grand Total	1	0	3	0	9	0	0	6	0	1	4	7	6	0	37
Apprch %	25	0	75	0	100	0	0	85.7	0	14.3	23.5	41.2	35.3	0	
Total %	2.7	0	8.1	0	24.3	0	0	16.2	0	2.7	10.8	18.9	16.2	0	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	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	2	0	0	2	3	0	0	0	3	5
04:30 PM	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	1	1	0	2	0	0	2	2	0	0	2	0	2	1	0	3	8
05:00 PM	0	0	1	1	0	1	0	0	1	0	0	0	0	0	2	3	0	5	7
Total Volume	0	0	2	2	0	5	0	0	5	4	0	0	4	3	4	4	0	11	22
% App. Total	0	0	100		0	100	0	0		100	0	0		27.3	36.4	36.4	0		
PHF	.000	.000	.500	.500	.000	.625	.000	.000	.625	.500	.000	.000	.500	.250	.500	.333	.000	.550	.688

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

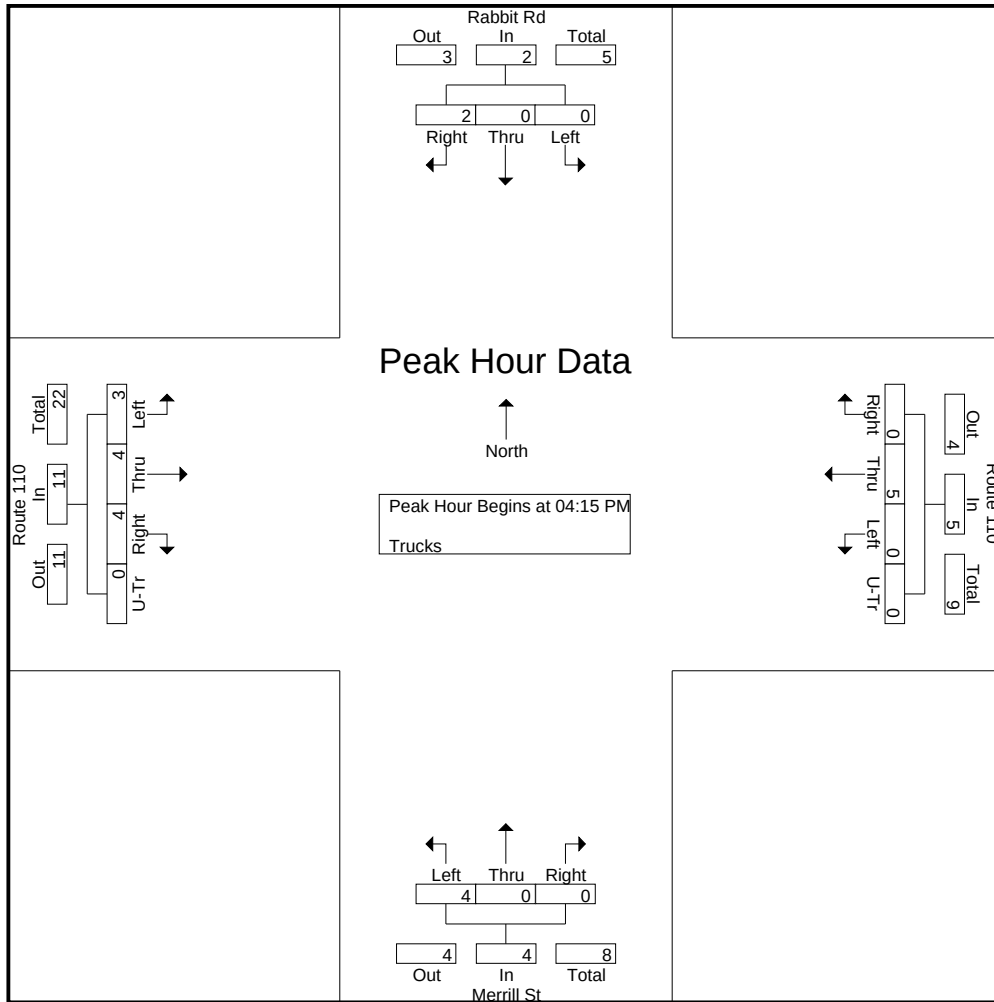
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

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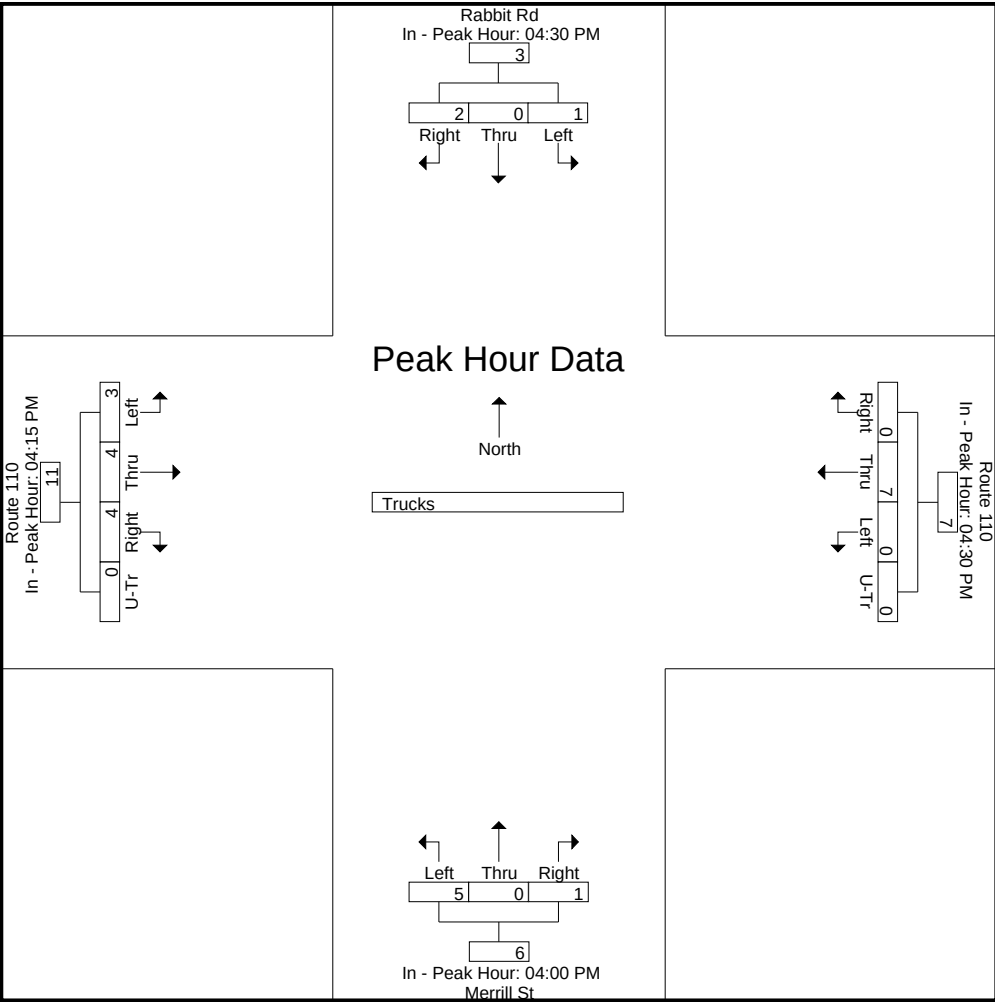
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM					04:00 PM					04:15 PM				
+0 mins.	0	0	0	0	0	1	0	1	2	3	0	0	0	0	3
+15 mins.	0	0	1	1	0	2	0	0	2	2	0	0	0	0	0
+30 mins.	0	0	1	1	0	1	0	0	1	0	0	0	1	0	3
+45 mins.	1	0	0	1	0	2	0	0	2	2	0	2	3	0	5
Total Volume	1	0	2	3	0	7	0	0	7	5	0	1	6	3	11
% App. Total	33.3	0	66.7		0	100	0	0		83.3	0	16.7		27.3	
PHF	.250	.000	.500	.750	.000	.875	.000	.000	.875	.625	.000	.250	.750	.250	.550

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

Page No : 1

Groups Printed- Bikes Peds

	Rabbit Rd From North				Route 110 From East				Merrill St From South				Route 110 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	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	3	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	3	4
05:00 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	1	3	4
05:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	4	4
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	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	4	4
Total	0	1	0	1	0	0	0	0	0	3	0	0	0	1	0	6	1	11	12
Grand Total	0	2	0	1	0	0	0	1	0	3	0	1	0	2	0	6	2	14	16
Apprch %	0	100	0		0	0	0	100	0	100	0		0	25	0	75			
Total %	0	14.3	0		0	0	0	7.1	0	21.4	0		0	14.3	0	42.9	12.5	87.5	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	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	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	2	2	4
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	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	3	3	4
Total Volume	0	1	0	1	0	0	0	0	0	0	3	0	3	0	1	0	6	7	11
% App. Total	0	100	0		0	0	0	0		0	100	0		0	14.3	0	85.7		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.375	.000	.375	.000	.250	.000	.500	.583	.688

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

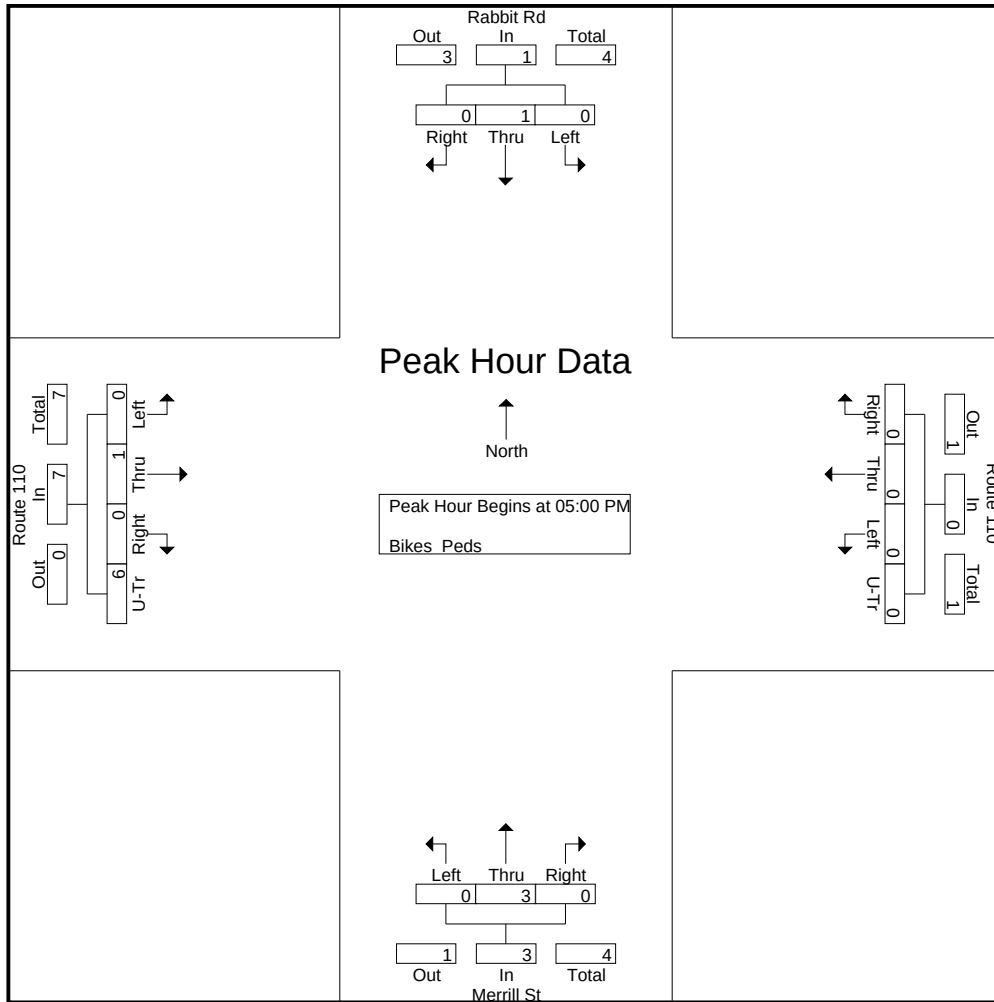
Weather : Cloudy

File Name : 97650005

Site Code : 97650005

Start Date : 7/13/2023

Page No : 2



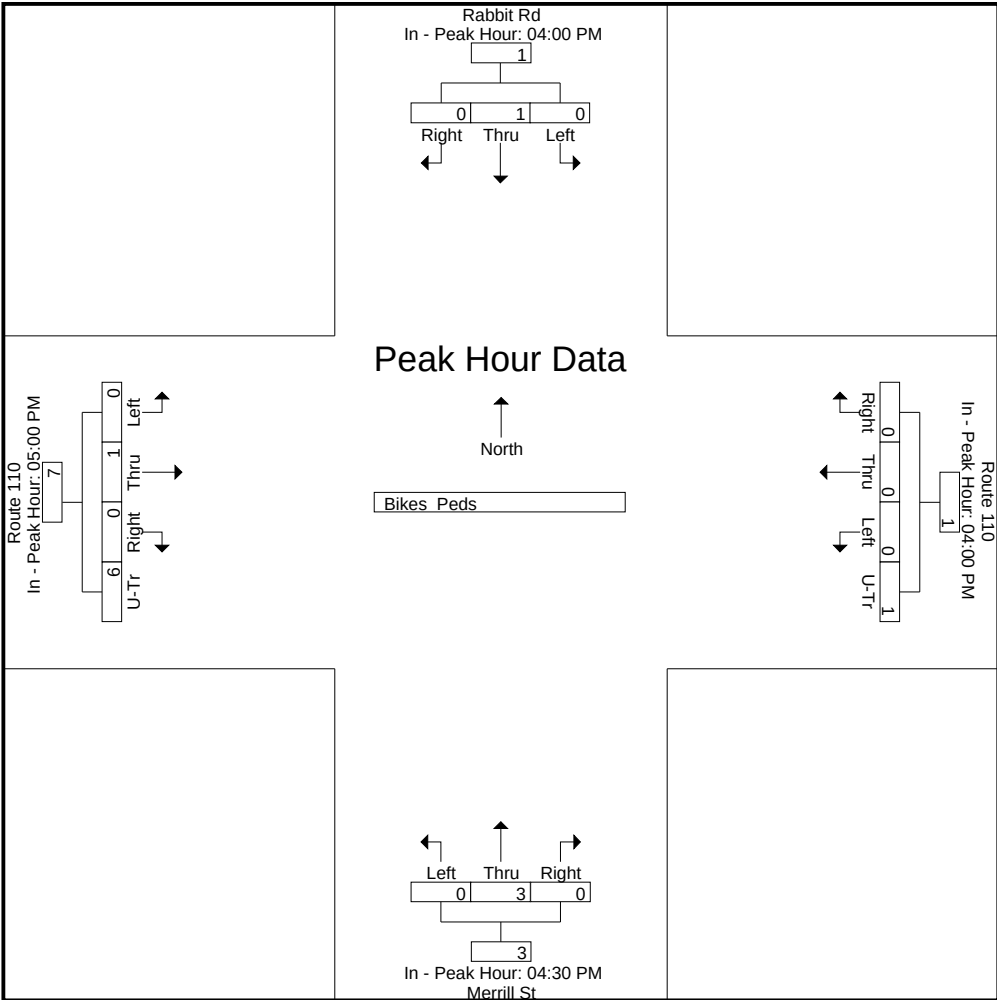
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM					04:00 PM					04:30 PM					05:00 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
+30 mins.	0	1	0	1	0	0	0	0	1	1	0	1	0	1	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	3	3
Total Volume	0	1	0	1	0	0	0	0	1	1	0	3	0	3	0	1	0	0	6	7
% App. Total	0	100	0	0	0	0	0	0	100	0	0	100	0	0	0	14.3	0	0	85.7	0
PHF	.000	.250	.000	.250	.000	.000	.000	.250	.250	.000	.375	.000	.375	.000	.250	.000	.500	.500	.583	.583

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 1

Groups Printed- Cars - Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	10	31	18	25	132	9	1	60	27	28	49	198	66	1	655
11:15 AM	13	34	25	25	122	4	0	90	49	18	43	216	64	2	705
11:30 AM	14	30	24	33	130	12	1	68	30	34	46	182	61	2	667
11:45 AM	14	38	27	25	139	9	2	67	29	28	46	246	76	1	747
Total	51	133	94	108	523	34	4	285	135	108	184	842	267	6	2774
12:00 PM	7	23	32	23	121	4	2	76	52	32	44	188	57	4	665
12:15 PM	13	24	20	27	193	10	0	77	28	23	39	163	58	3	678
12:30 PM	13	34	20	16	174	5	0	72	32	21	56	202	67	0	712
12:45 PM	23	40	28	24	156	5	1	67	29	22	57	214	47	2	715
Total	56	121	100	90	644	24	3	292	141	98	196	767	229	9	2770
01:00 PM	12	30	30	15	167	10	0	62	38	20	29	167	41	4	625
01:15 PM	15	18	23	17	137	10	1	61	27	20	32	168	58	0	587
01:30 PM	12	28	15	18	142	15	0	85	28	29	35	165	51	3	626
01:45 PM	22	31	14	12	128	12	1	74	29	26	18	162	56	1	586
Total	61	107	82	62	574	47	2	282	122	95	114	662	206	8	2424
Grand Total	168	361	276	260	1741	105	9	859	398	301	494	2271	702	23	7968
Apprch %	20.9	44.8	34.3	12.3	82.3	5	0.4	55.1	25.5	19.3	14.2	65.1	20.1	0.7	
Total %	2.1	4.5	3.5	3.3	21.8	1.3	0.1	10.8	5	3.8	6.2	28.5	8.8	0.3	
Cars	165	359	274	260	1727	102	9	857	395	301	488	2259	697	23	7916
% Cars	98.2	99.4	99.3	100	99.2	97.1	100	99.8	99.2	100	98.8	99.5	99.3	100	99.3
Trucks	3	2	2	0	14	3	0	2	3	0	6	12	5	0	52
% Trucks	1.8	0.6	0.7	0	0.8	2.9	0	0.2	0.8	0	1.2	0.5	0.7	0	0.7

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:45 AM																			
11:45 AM	14	38	27	79	25	139	9	2	175	67	29	28	124	46	246	76	1	369	747
12:00 PM	7	23	32	62	23	121	4	2	150	76	52	32	160	44	188	57	4	293	665
12:15 PM	13	24	20	57	27	193	10	0	230	77	28	23	128	39	163	58	3	263	678
12:30 PM	13	34	20	67	16	174	5	0	195	72	32	21	125	56	202	67	0	325	712
Total Volume	47	119	99	265	91	627	28	4	750	292	141	104	537	185	799	258	8	1250	2802
% App. Total	17.7	44.9	37.4		12.1	83.6	3.7	0.5		54.4	26.3	19.4		14.8	63.9	20.6	0.6		
PHF	.839	.783	.773	.839	.843	.812	.700	.500	.815	.948	.678	.813	.839	.826	.812	.849	.500	.847	.938
Cars	46	117	98	261	91	622	26	4	743	292	140	104	536	184	795	255	8	1242	2782
% Cars	97.9	98.3	99.0	98.5	100	99.2	92.9	100	99.1	100	99.3	100	99.8	99.5	99.5	98.8	100	99.4	99.3
Trucks	1	2	1	4	0	5	2	0	7	0	1	0	1	1	4	3	0	8	20
% Trucks	2.1	1.7	1.0	1.5	0	0.8	7.1	0	0.9	0	0.7	0	0.2	0.5	0.5	1.2	0	0.6	0.7

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

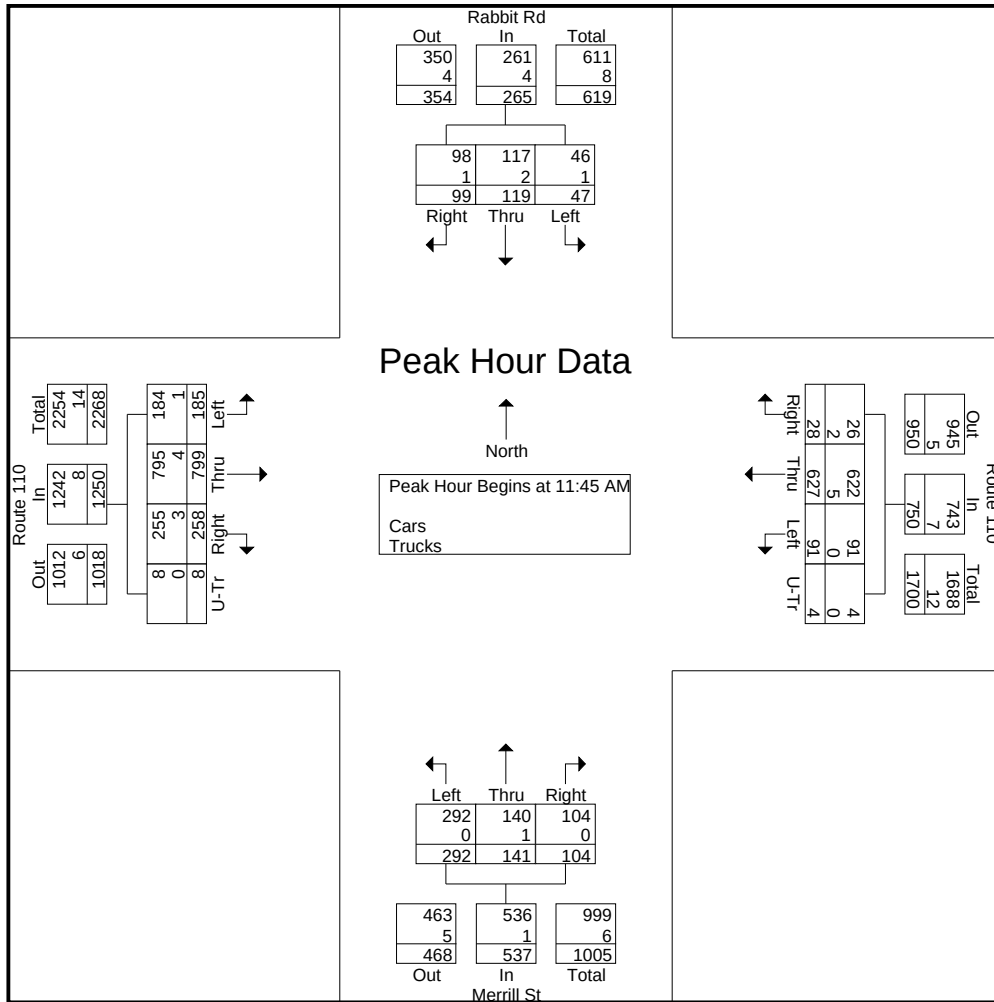
Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 2



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:15 PM				12:15 PM				11:15 AM				11:00 AM					
+0 mins.	13	24	20	57	27	193	10	0	230	90	49	18	157	49	198	66	1	314
+15 mins.	13	34	20	67	16	174	5	0	195	68	30	34	132	43	216	64	2	325
+30 mins.	23	40	28	91	24	156	5	1	186	67	29	28	124	46	182	61	2	291
+45 mins.	12	30	30	72	15	167	10	0	192	76	52	32	160	46	246	76	1	369
Total Volume	61	128	98	287	82	690	30	1	803	301	160	112	573	184	842	267	6	1299
% App. Total	21.3	44.6	34.1		10.2	85.9	3.7	0.1		52.5	27.9	19.5		14.2	64.8	20.6	0.5	
PHF	.663	.800	.817	.788	.759	.894	.750	.250	.873	.836	.769	.824	.895	.939	.856	.878	.750	.880
Cars	60	126	97	283	82	683	30	1	796	301	158	112	571	182	838	266	6	1292
% Cars	98.4	98.4	99	98.6	100	99	100	100	99.1	100	98.8	100	99.7	98.9	99.5	99.6	100	99.5
Trucks	1	2	1	4	0	7	0	0	7	0	2	0	2	2	4	1	0	7
% Trucks	1.6	1.6	1	1.4	0	1	0	0	0.9	0	1.2	0	0.3	1.1	0.5	0.4	0	0.5

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

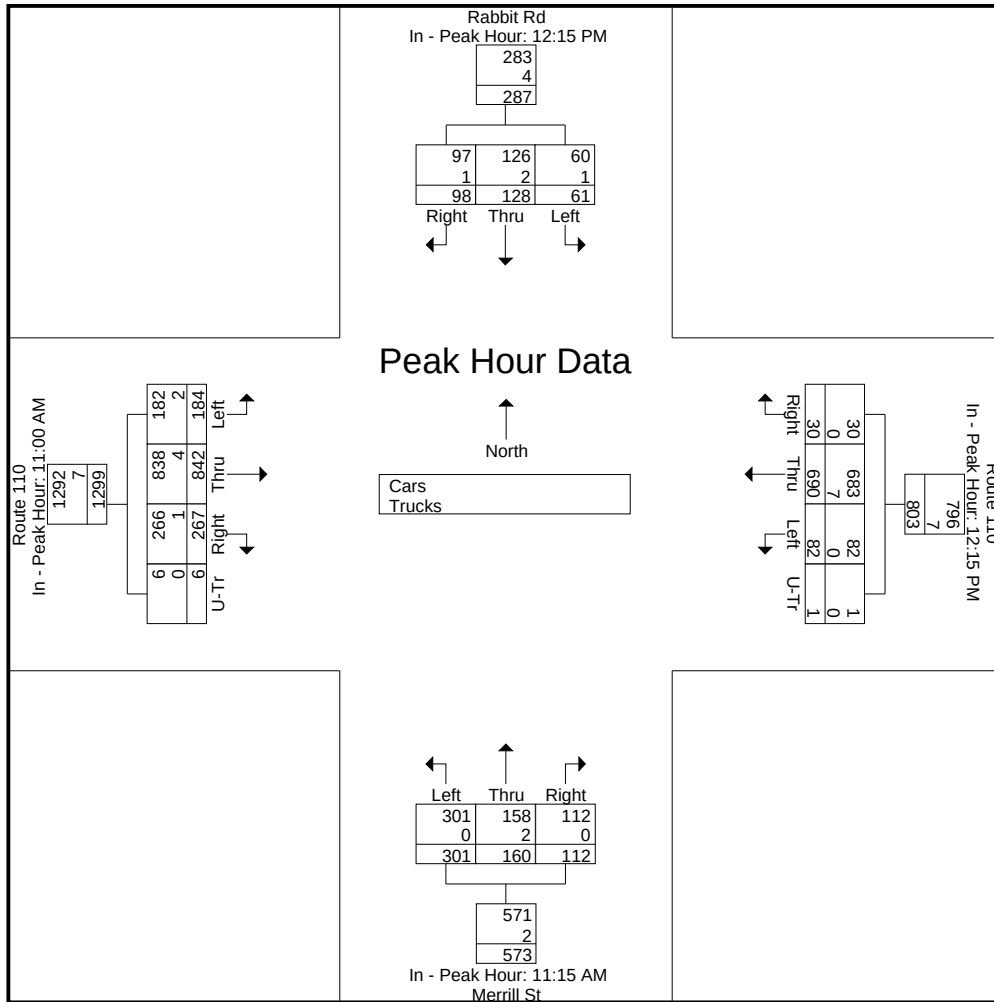
Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 1

Groups Printed- Cars

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
11:00 AM	10	31	18	25	130	9	1	60	27	28	47	196	66	1	649
11:15 AM	12	34	25	25	122	4	0	90	48	18	43	216	64	2	703
11:30 AM	14	30	24	33	129	12	1	68	30	34	46	182	61	2	666
11:45 AM	14	38	27	25	137	8	2	67	28	28	46	244	75	1	740
Total	50	133	94	108	518	33	4	285	133	108	182	838	266	6	2758
12:00 PM	7	23	31	23	120	3	2	76	52	32	44	188	57	4	662
12:15 PM	13	24	20	27	192	10	0	77	28	23	38	162	57	3	674
12:30 PM	12	32	20	16	173	5	0	72	32	21	56	201	66	0	706
12:45 PM	23	40	27	24	154	5	1	65	28	22	56	212	47	2	706
Total	55	119	98	90	639	23	3	290	140	98	194	763	227	9	2748
01:00 PM	12	30	30	15	164	10	0	62	38	20	28	166	41	4	620
01:15 PM	14	18	23	17	137	10	1	61	27	20	32	167	56	0	583
01:30 PM	12	28	15	18	142	14	0	85	28	29	35	165	51	3	625
01:45 PM	22	31	14	12	127	12	1	74	29	26	17	160	56	1	582
Total	60	107	82	62	570	46	2	282	122	95	112	658	204	8	2410
Grand Total	165	359	274	260	1727	102	9	857	395	301	488	2259	697	23	7916
Apprch %	20.7	45	34.3	12.4	82.3	4.9	0.4	55.2	25.4	19.4	14.1	65.2	20.1	0.7	
Total %	2.1	4.5	3.5	3.3	21.8	1.3	0.1	10.8	5	3.8	6.2	28.5	8.8	0.3	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:45 AM																			
11:45 AM	14	38	27	79	25	137	8	2	172	67	28	28	123	46	244	75	1	366	740
12:00 PM	7	23	31	61	23	120	3	2	148	76	52	32	160	44	188	57	4	293	662
12:15 PM	13	24	20	57	27	192	10	0	229	77	28	23	128	38	162	57	3	260	674
12:30 PM	12	32	20	64	16	173	5	0	194	72	32	21	125	56	201	66	0	323	706
Total Volume	46	117	98	261	91	622	26	4	743	292	140	104	536	184	795	255	8	1242	2782
% App. Total	17.6	44.8	37.5		12.2	83.7	3.5	0.5		54.5	26.1	19.4		14.8	64	20.5	0.6		
PHF	.821	.770	.790	.826	.843	.810	.650	.500	.811	.948	.673	.813	.838	.821	.815	.850	.500	.848	.940

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

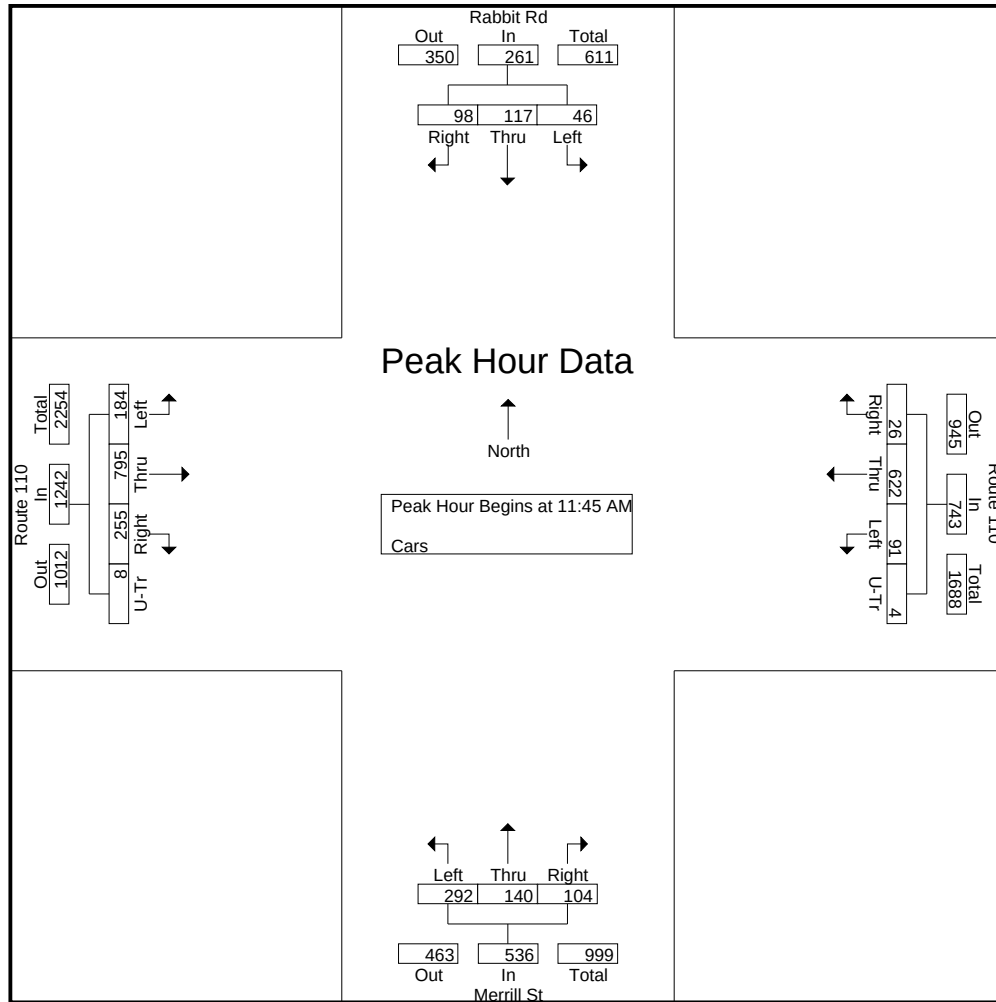
Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 2



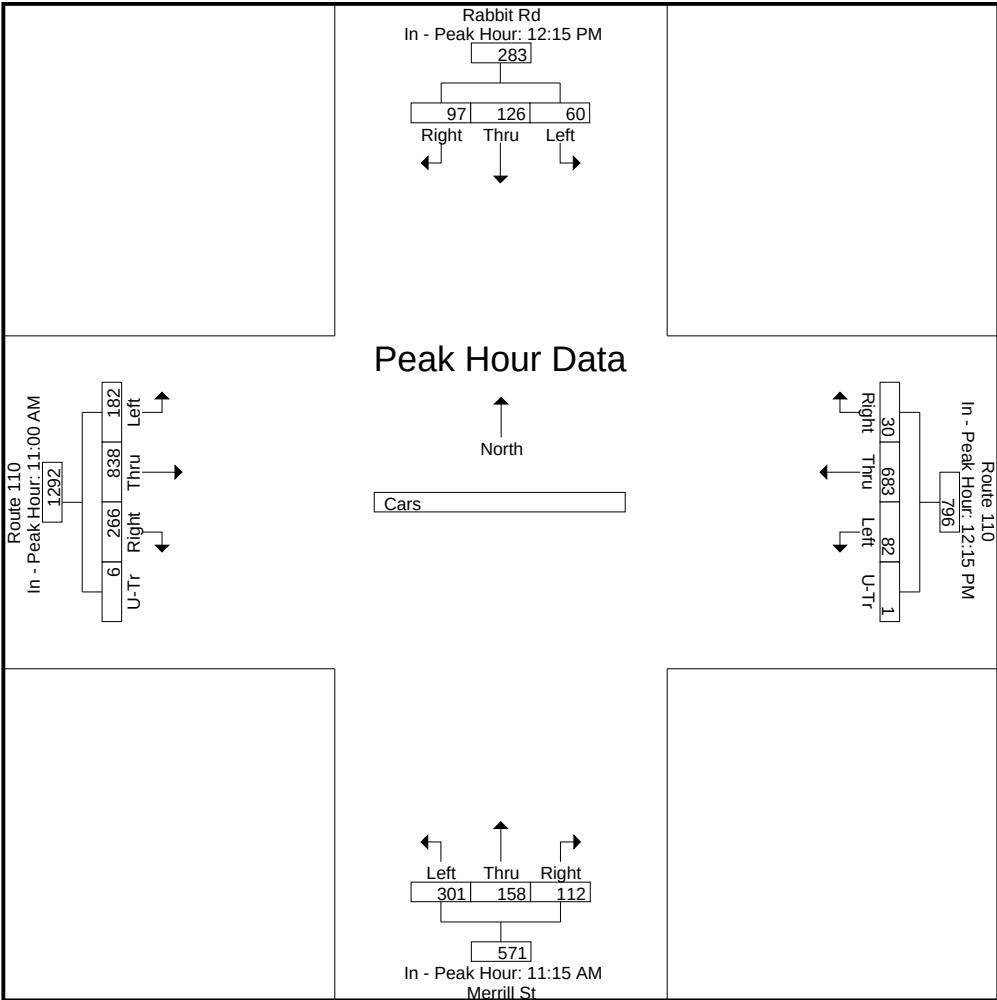
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:15 PM					12:15 PM					11:15 AM					11:00 AM				
+0 mins.	13	24	20	57		27	192	10	0	229	90	48	18	156		47	196	66	1	310
+15 mins.	12	32	20	64		16	173	5	0	194	68	30	34	132		43	216	64	2	325
+30 mins.	23	40	27	90		24	154	5	1	184	67	28	28	123		46	182	61	2	291
+45 mins.	12	30	30	72		15	164	10	0	189	76	52	32	160		46	244	75	1	366
Total Volume	60	126	97	283		82	683	30	1	796	301	158	112	571		182	838	266	6	1292
% App. Total	21.2	44.5	34.3			10.3	85.8	3.8	0.1		52.7	27.7	19.6			14.1	64.9	20.6	0.5	
PHF	.652	.788	.808	.786		.759	.889	.750	.250	.869	.836	.760	.824	.892		.968	.859	.887	.750	.883

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 1

Groups Printed- Trucks

	Rabbit Rd From North			Route 110 From East				Merrill St From South			Route 110 From West				Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	
11:00 AM	0	0	0	0	2	0	0	0	0	0	2	2	0	0	6
11:15 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2
11:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
11:45 AM	0	0	0	0	2	1	0	0	1	0	0	2	1	0	7
Total	1	0	0	0	5	1	0	0	2	0	2	4	1	0	16
12:00 PM	0	0	1	0	1	1	0	0	0	0	0	0	0	0	3
12:15 PM	0	0	0	0	1	0	0	0	0	0	1	1	1	0	4
12:30 PM	1	2	0	0	1	0	0	0	0	0	0	1	1	0	6
12:45 PM	0	0	1	0	2	0	0	2	1	0	1	2	0	0	9
Total	1	2	2	0	5	1	0	2	1	0	2	4	2	0	22
01:00 PM	0	0	0	0	3	0	0	0	0	0	1	1	0	0	5
01:15 PM	1	0	0	0	0	0	0	0	0	0	0	1	2	0	4
01:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
01:45 PM	0	0	0	0	1	0	0	0	0	0	1	2	0	0	4
Total	1	0	0	0	4	1	0	0	0	0	2	4	2	0	14
Grand Total	3	2	2	0	14	3	0	2	3	0	6	12	5	0	52
Apprch %	42.9	28.6	28.6	0	82.4	17.6	0	40	60	0	26.1	52.2	21.7	0	
Total %	5.8	3.8	3.8	0	26.9	5.8	0	3.8	5.8	0	11.5	23.1	9.6	0	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 12:15 PM																			
12:15 PM	0	0	0	0	0	1	0	0	1	0	0	0	0	1	1	1	0	3	4
12:30 PM	1	2	0	3	0	1	0	0	1	0	0	0	0	0	1	1	0	2	6
12:45 PM	0	0	1	1	0	2	0	0	2	2	1	0	3	1	2	0	0	3	9
01:00 PM	0	0	0	0	0	3	0	0	3	0	0	0	0	1	1	0	0	2	5
Total Volume	1	2	1	4	0	7	0	0	7	2	1	0	3	3	5	2	0	10	24
% App. Total	25	50	25		0	100	0	0		66.7	33.3	0		30	50	20	0		
PHF	.250	.250	.250	.333	.000	.583	.000	.000	.583	.250	.250	.000	.250	.750	.625	.500	.000	.833	.667

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

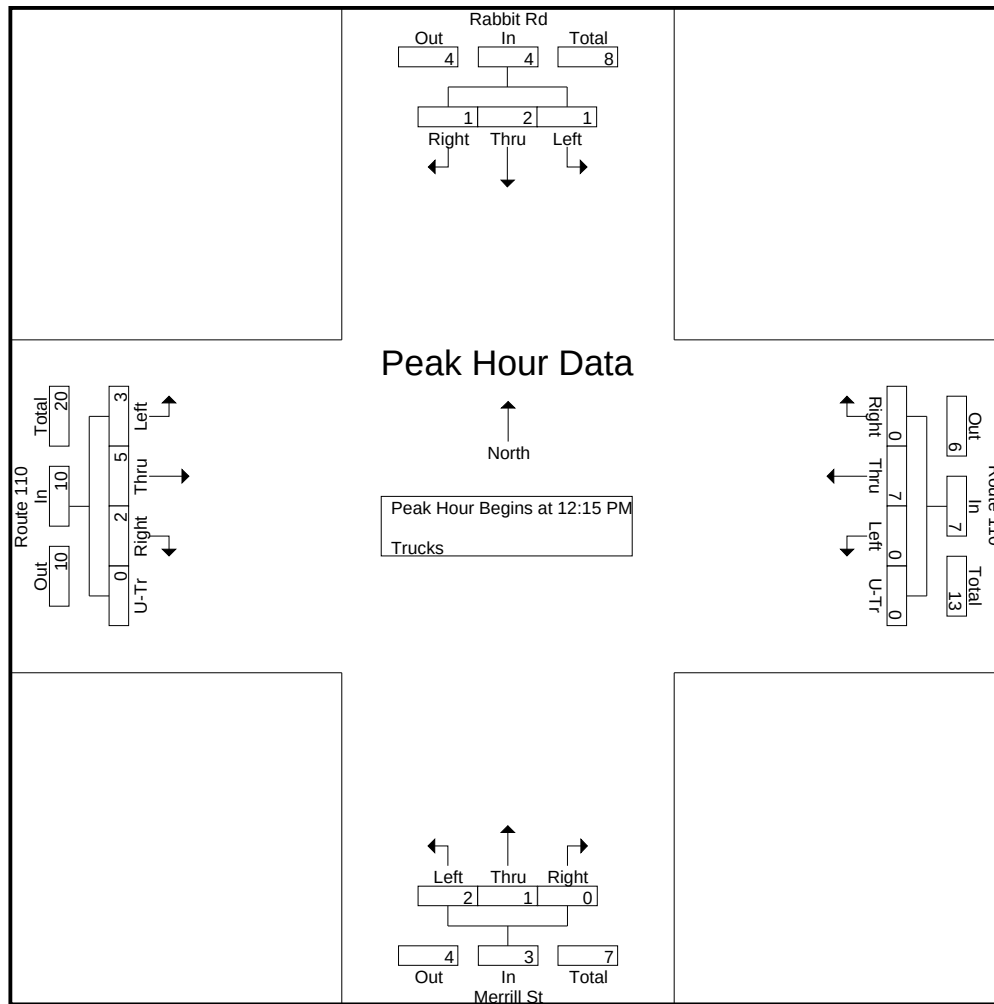
Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 2



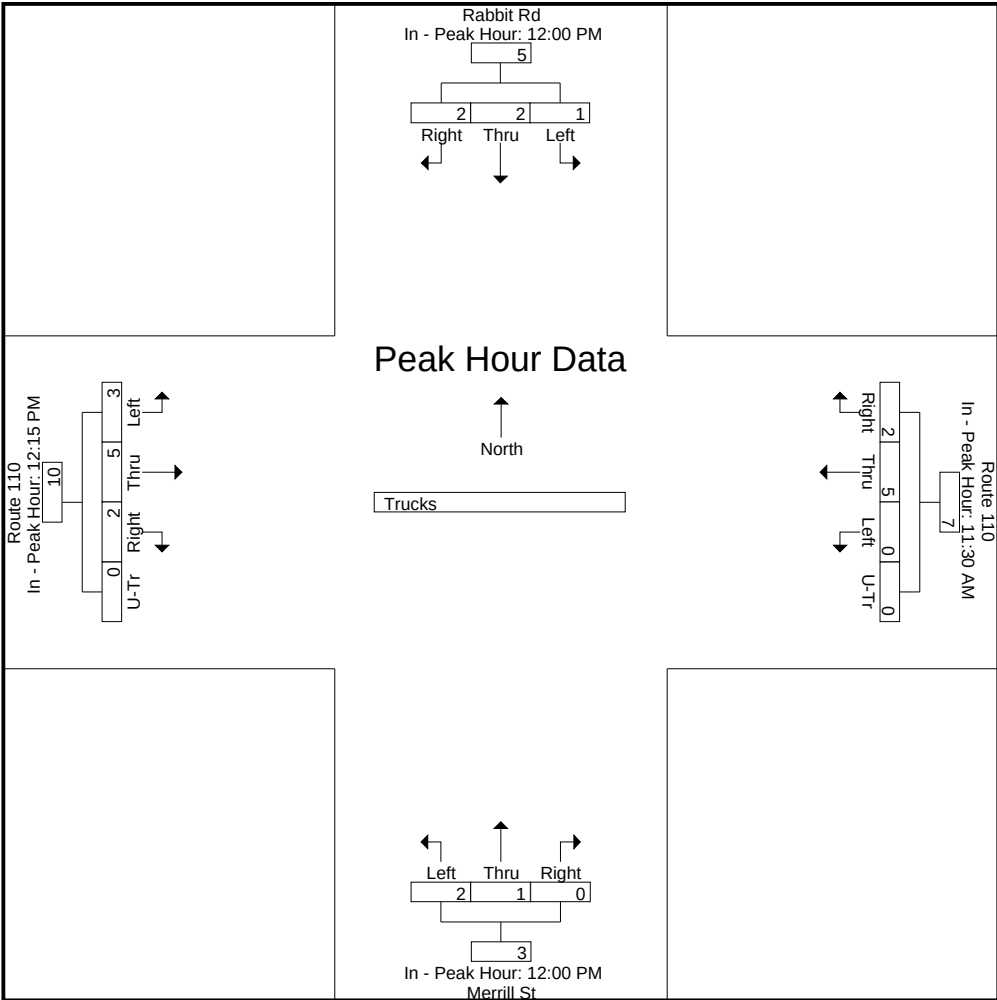
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	12:00 PM					11:30 AM					12:00 PM					12:15 PM				
+0 mins.	0	0	1	1		0	1	0	0	1	0	0	0	0		1	1	1	0	3
+15 mins.	0	0	0	0		0	2	1	0	3	0	0	0	0		0	1	1	0	2
+30 mins.	1	2	0	3		0	1	1	0	2	0	0	0	0		1	2	0	0	3
+45 mins.	0	0	1	1		0	1	0	0	1	2	1	0	3		1	1	0	0	2
Total Volume	1	2	2	5		0	5	2	0	7	2	1	0	3		3	5	2	0	10
% App. Total	20	40	40			0	71.4	28.6	0		66.7	33.3	0			30	50	20	0	
PHF	.250	.250	.500	.417		.000	.625	.500	.000	.583	.250	.250	.000	.250		.750	.625	.500	.000	.833

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

Page No : 1

Groups Printed- Bikes Peds

	Rabbit Rd From North				Route 110 From East				Merrill St From South				Route 110 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			
11:00 AM	0	3	0	0	0	0	0	0	0	4	0	0	0	0	0	7	0	14	14
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	5	0	0	0	0	0	0	0	0	0	1	0	0	0	5	1	10	11
11:45 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	2	0	5	5
Total	0	10	0	0	0	1	0	0	0	4	0	1	0	0	0	14	1	29	30
12:00 PM	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	4	0	8	8
12:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	2	2
12:30 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	4	4
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	0	0	0	0	0	5	0	0	0	0	0	7	0	14	14
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4	4
01:15 PM	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0	1	1	4	5
01:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	4
01:45 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	4	0	7	7
Total	0	2	0	0	0	2	0	0	0	4	0	1	0	0	0	11	1	19	20
Grand Total	0	14	0	0	0	3	0	0	0	13	0	2	0	0	0	32	2	62	64
Apprch %	0	100	0		0	100	0	0	0	100	0		0	0	0	100			
Total %	0	22.6	0		0	4.8	0	0	0	21	0		0	0	0	51.6	3.1	96.9	

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:00 AM																			
11:00 AM	0	3	0	3	0	0	0	0	0	0	4	0	4	0	0	0	7	7	14
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	5	10
11:45 AM	0	2	0	2	0	1	0	0	1	0	0	0	0	0	0	0	2	2	5
Total Volume	0	10	0	10	0	1	0	0	1	0	4	0	4	0	0	0	14	14	29
% App. Total	0	100	0		0	100	0	0		0	100	0		0	0	0	100		
PHF	.000	.500	.000	.500	.000	.250	.000	.000	.250	.000	.250	.000	.250	.000	.000	.000	.500	.500	.518

Accurate Counts

978-664-2565

N/S Street : Rabbit Rd / Merrill St

E/W Street : Route 110

City/State : Amesbury, MA

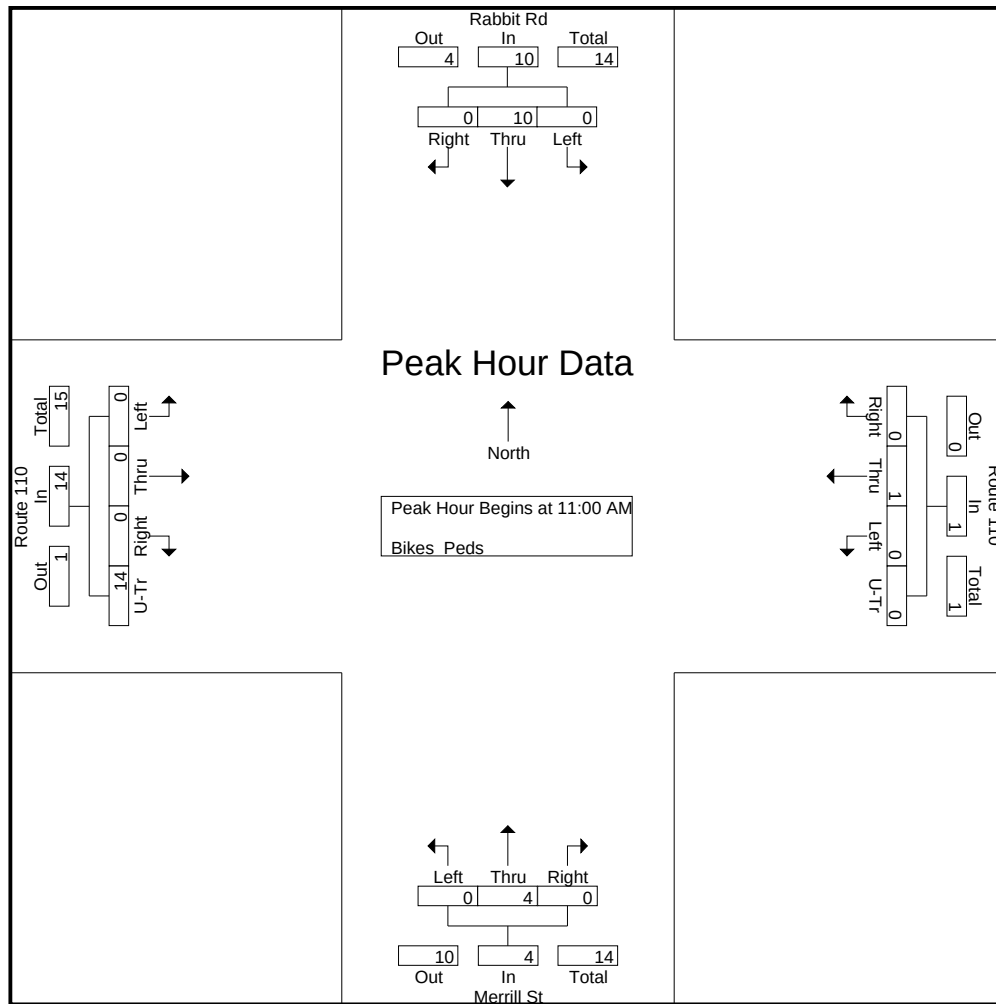
Weather : Cloudy

File Name : 976500S5

Site Code : 97650005

Start Date : 7/15/2023

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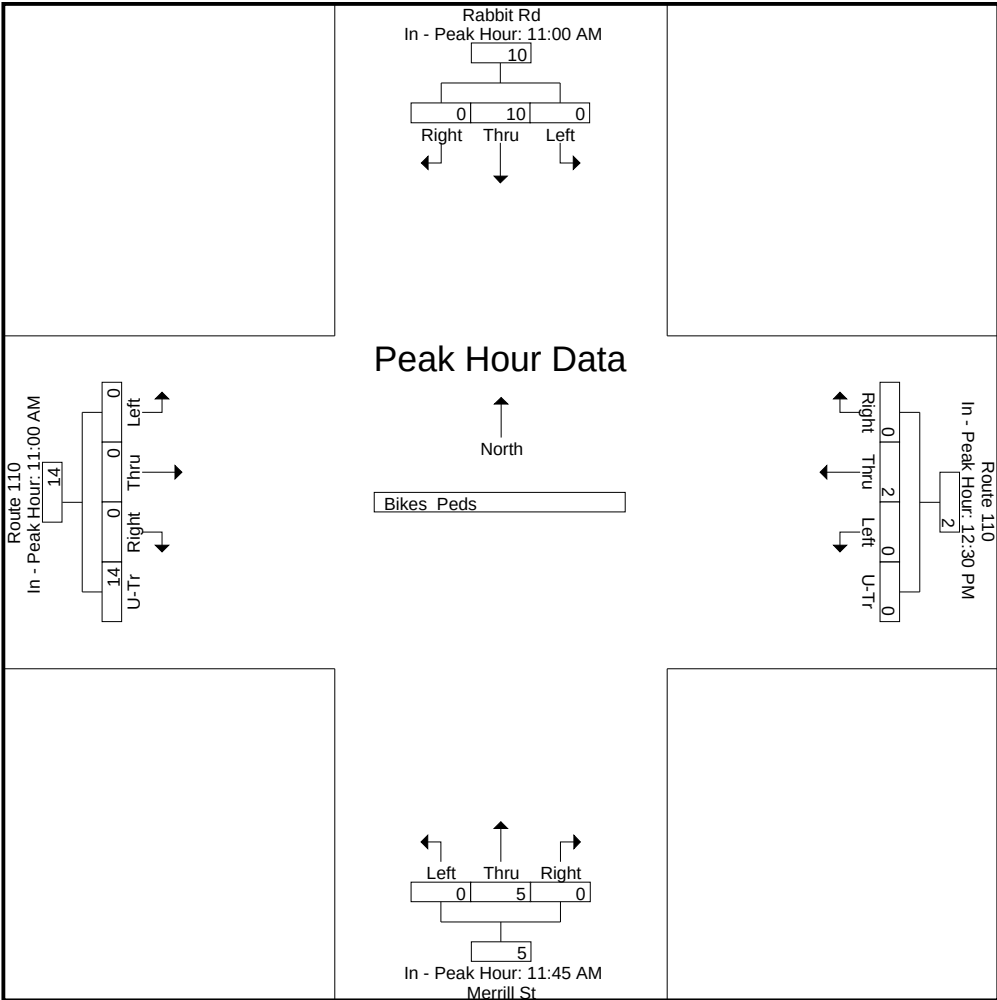
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM					12:30 PM					11:45 AM					11:00 AM				
+0 mins.	0	3	0	3		0	0	0	0	0	0	0	0	0		0	0	0	7	7
+15 mins.	0	0	0	0		0	0	0	0	0	0	2	0	2		0	0	0	0	0
+30 mins.	0	5	0	5		0	0	0	0	0	0	1	0	1		0	0	0	5	5
+45 mins.	0	2	0	2		0	2	0	0	2	0	2	0	2		0	0	0	2	2
Total Volume	0	10	0	10		0	2	0	0	2	0	5	0	5		0	0	0	14	14
% App. Total	0	100	0			0	100	0	0		0	100	0			0	0	0	100	
PHF	.000	.500	.000	.500		.000	.250	.000	.000	.250	.000	.625	.000	.625		.000	.000	.000	.500	.500

N/S Street : Rabbit Rd / Merrill St
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 3



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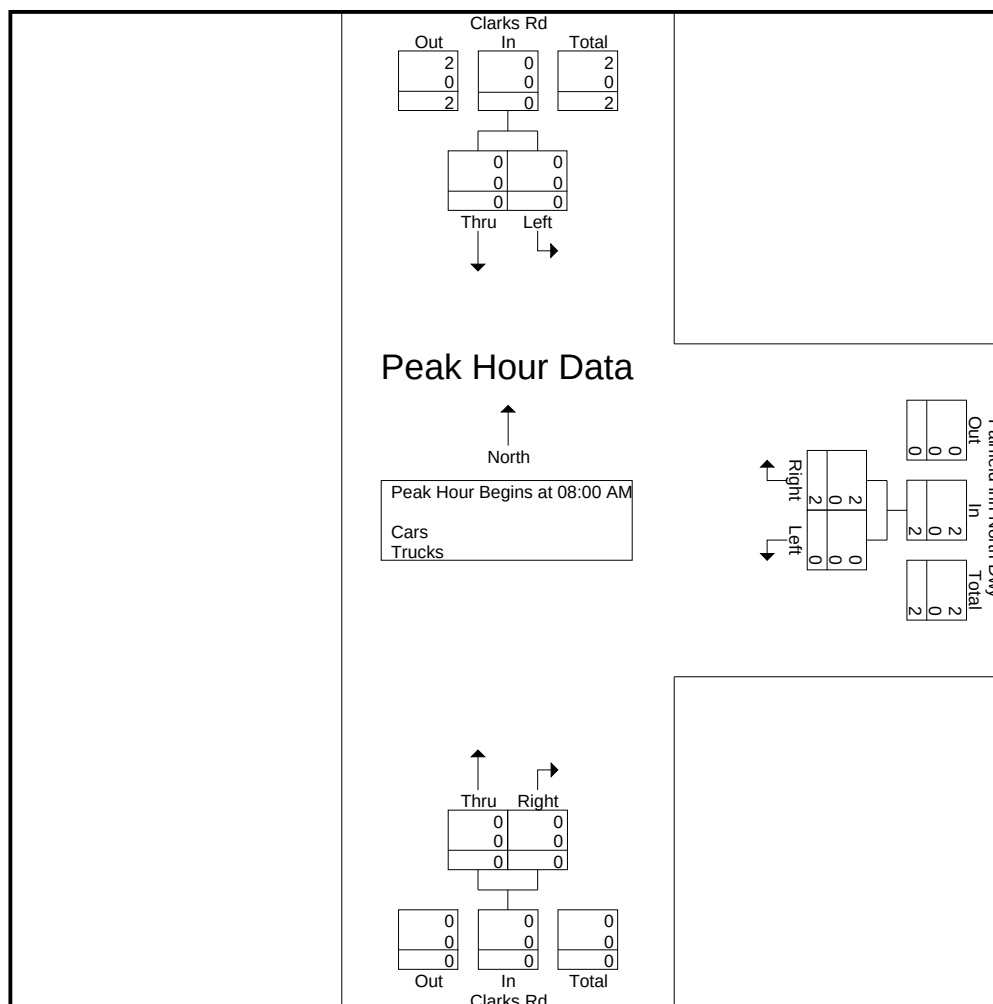
File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 1

	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South		
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	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	1	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	0	0	1	0	0	1
Total	0	0	0	2	0	0	2
Grand Total	0	0	0	2	0	0	2
Apprch %	0	0	0	100	0	0	
Total %	0	0	0	100	0	0	
Cars	0	0	0	2	0	0	2
% Cars	0	0	0	100	0	0	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

[illegible]

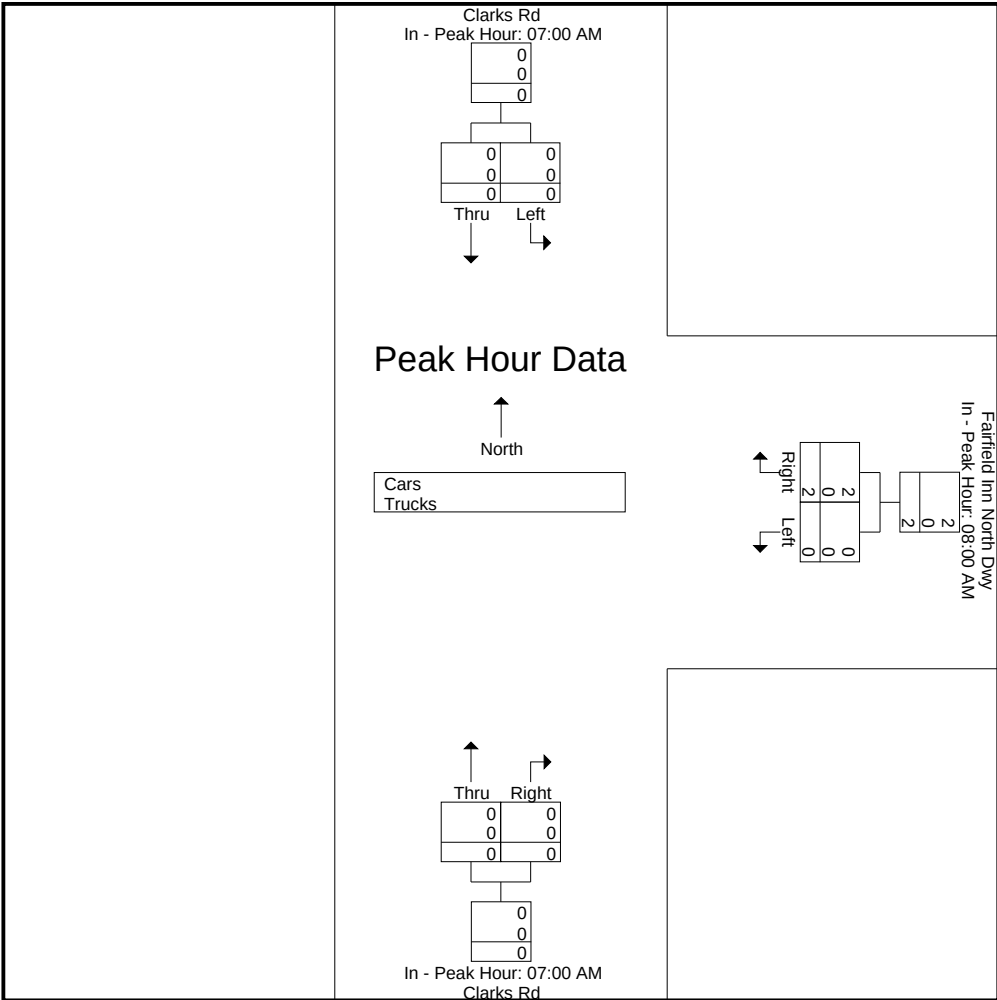
978-664-2565

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 2

Peak Hour for Each Approach Begins at:[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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Accurate Counts

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N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South		
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	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
08:00 AM	0	0	0	1	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	0	0	1	0	0	1
Total	0	0	0	2	0	0	2
Grand Total	0	0	0	2	0	0	2
Apprch %	0	0	0	100	0	0	
Total %	0	0	0	100	0	0	

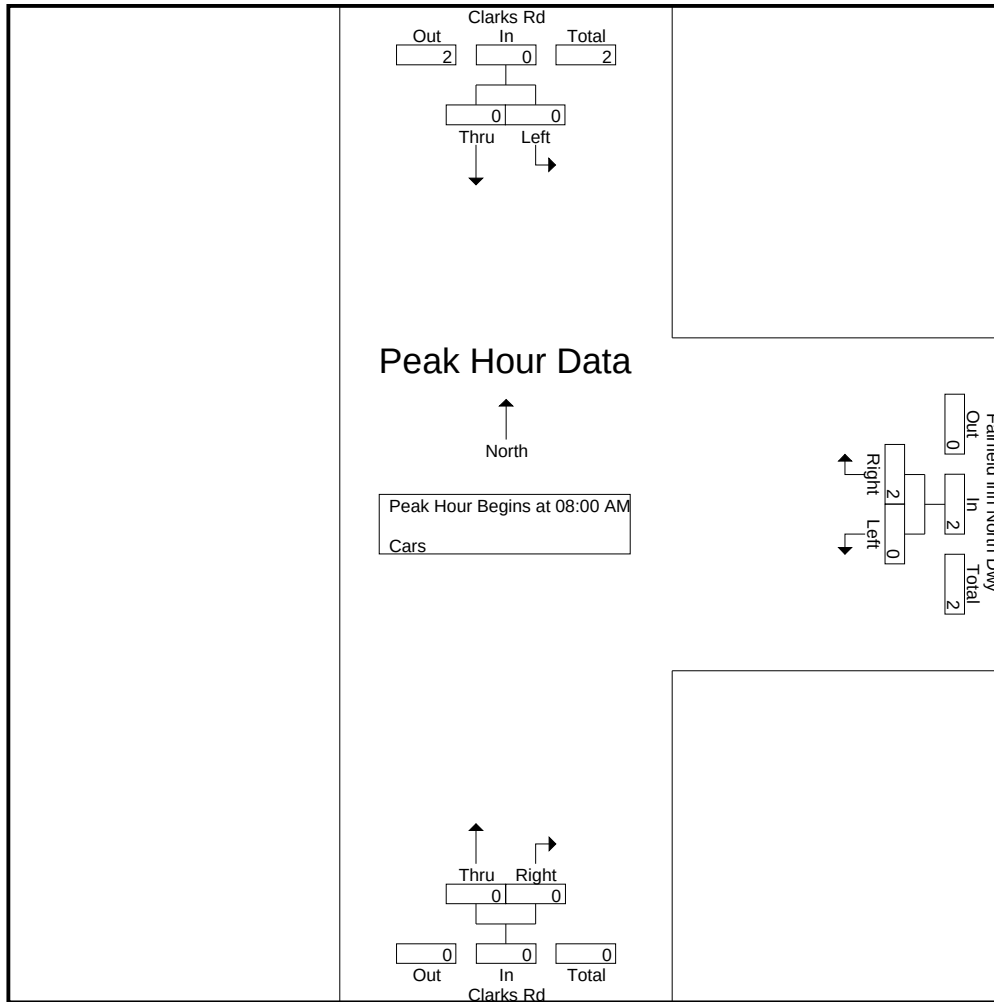
	Clarks Rd From North			Fairfield Inn North Dwy From East			Clarks Rd From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	0	0	0	0	1	1	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	1	1	0	0	0	1
Total Volume	0	0	0	0	2	2	0	0	0	2
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.500	.500	.000	.000	.000	.500

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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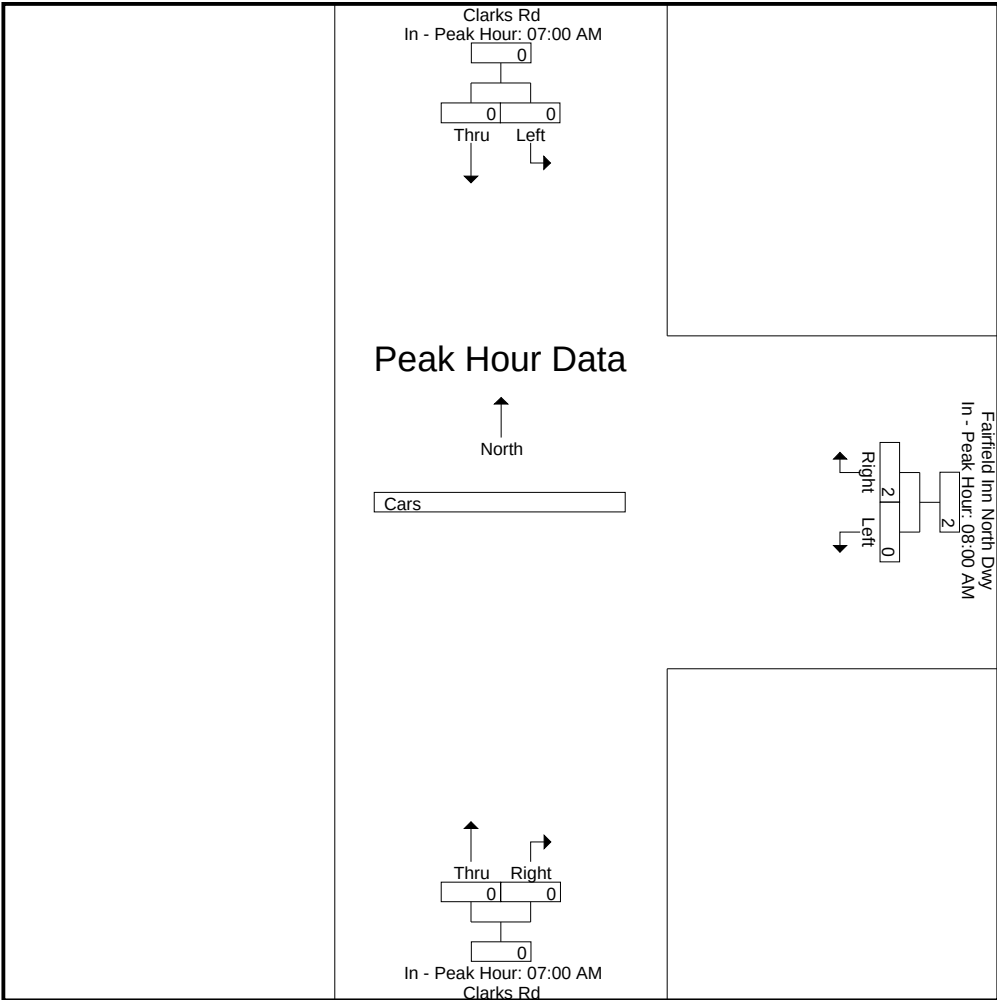
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 7

	Groups Timed- Trucks							
	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South			
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	0	0	0	0	0	
07:30 AM	0	0	0	0	0	0	0	
07:45 AM	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	
08:00 AM	0	0	0	0	0	0	0	
08:15 AM	0	0	0	0	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	0	0	0	0	0	0	0	
Apprch %	0	0	0	0	0	0		
Total %								

[illegible]

978-664-2565

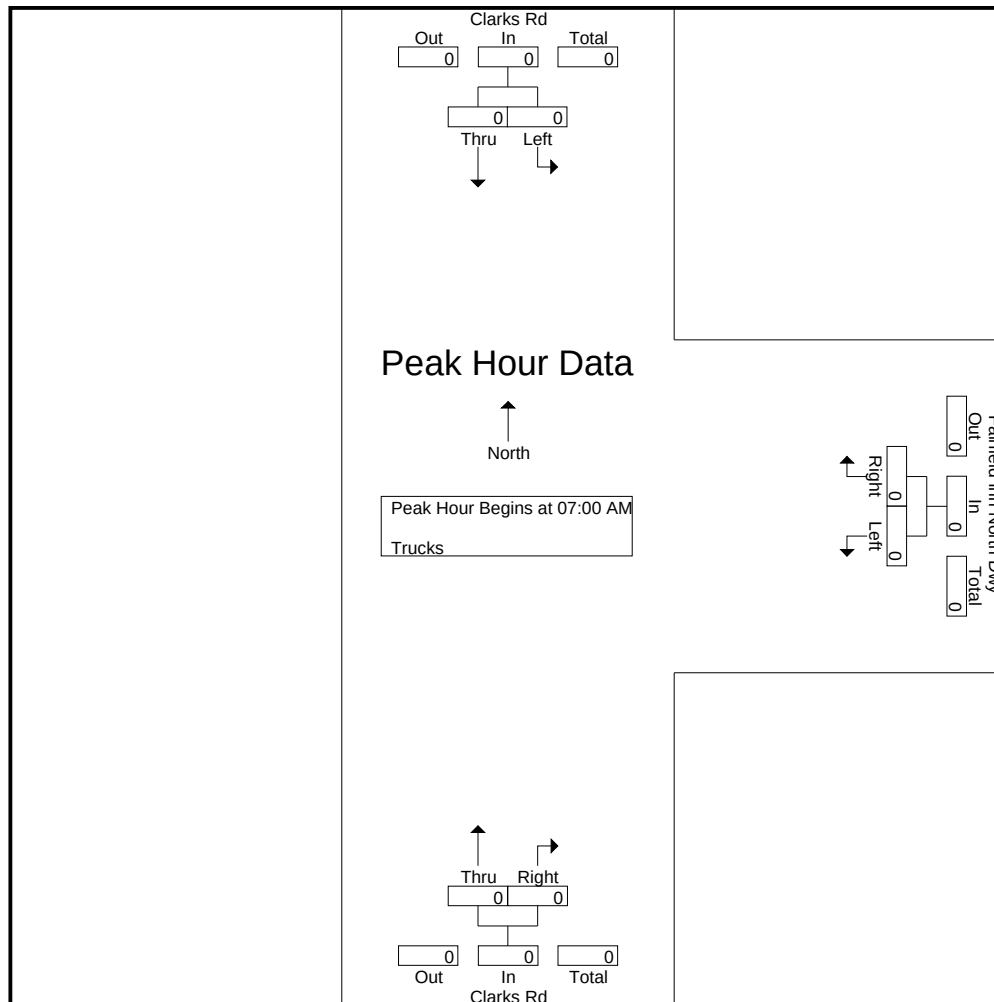
N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006

Site Code : 97650006

Start Date : 7/13/2023

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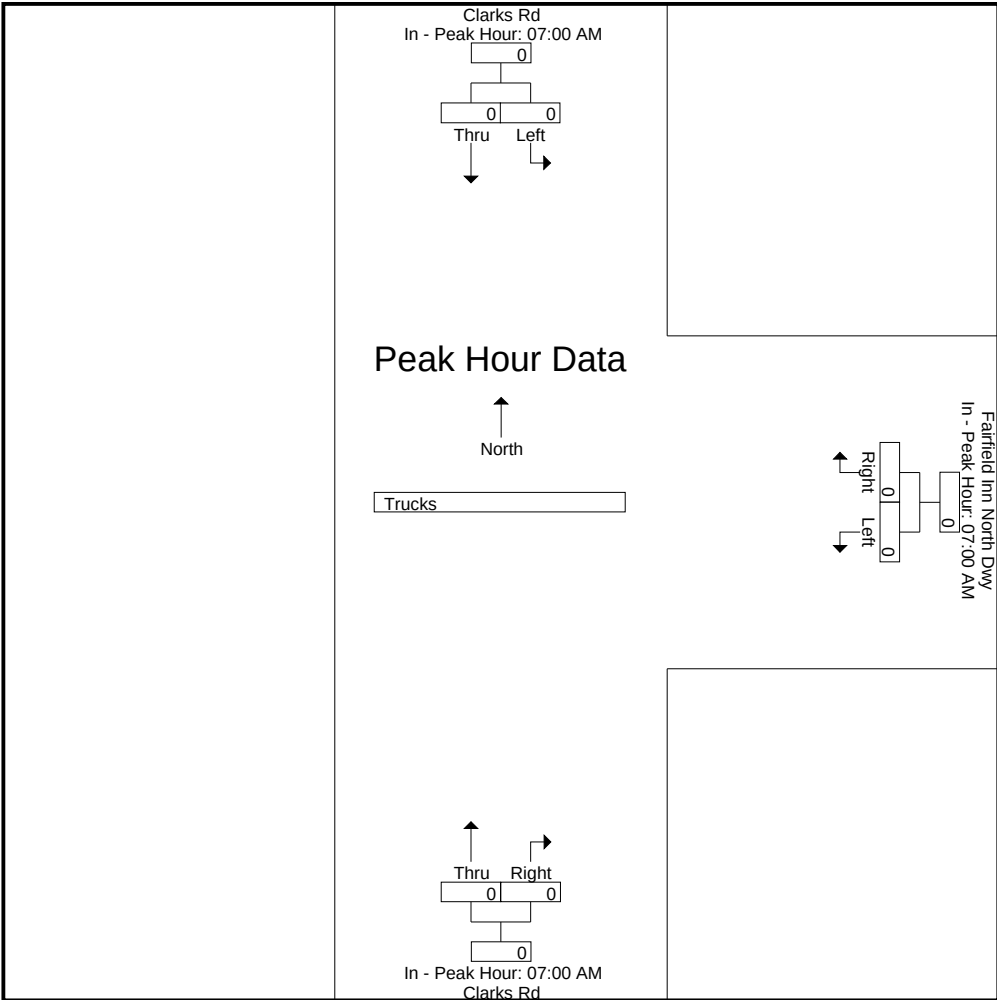
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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[illegible][illegible]

978-664-2565

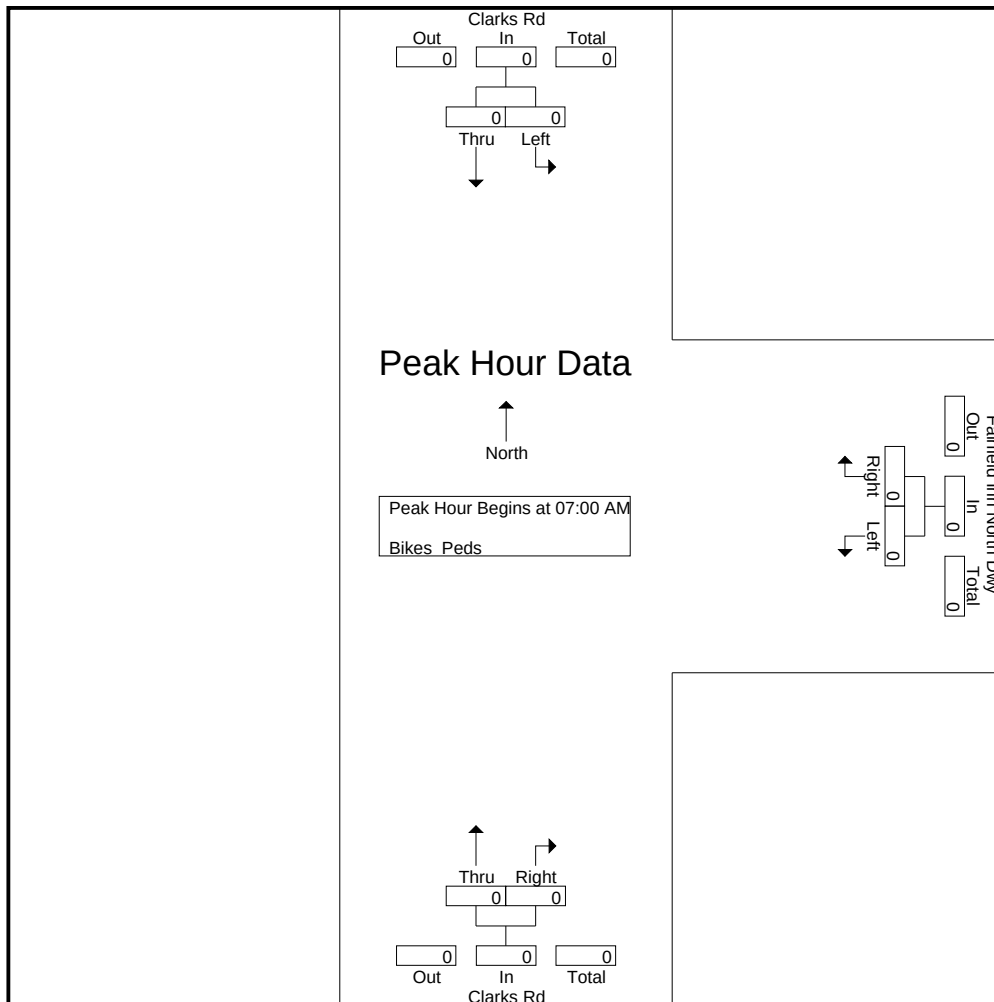
N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006

Site Code : 97650006

Start Date : 7/13/2023

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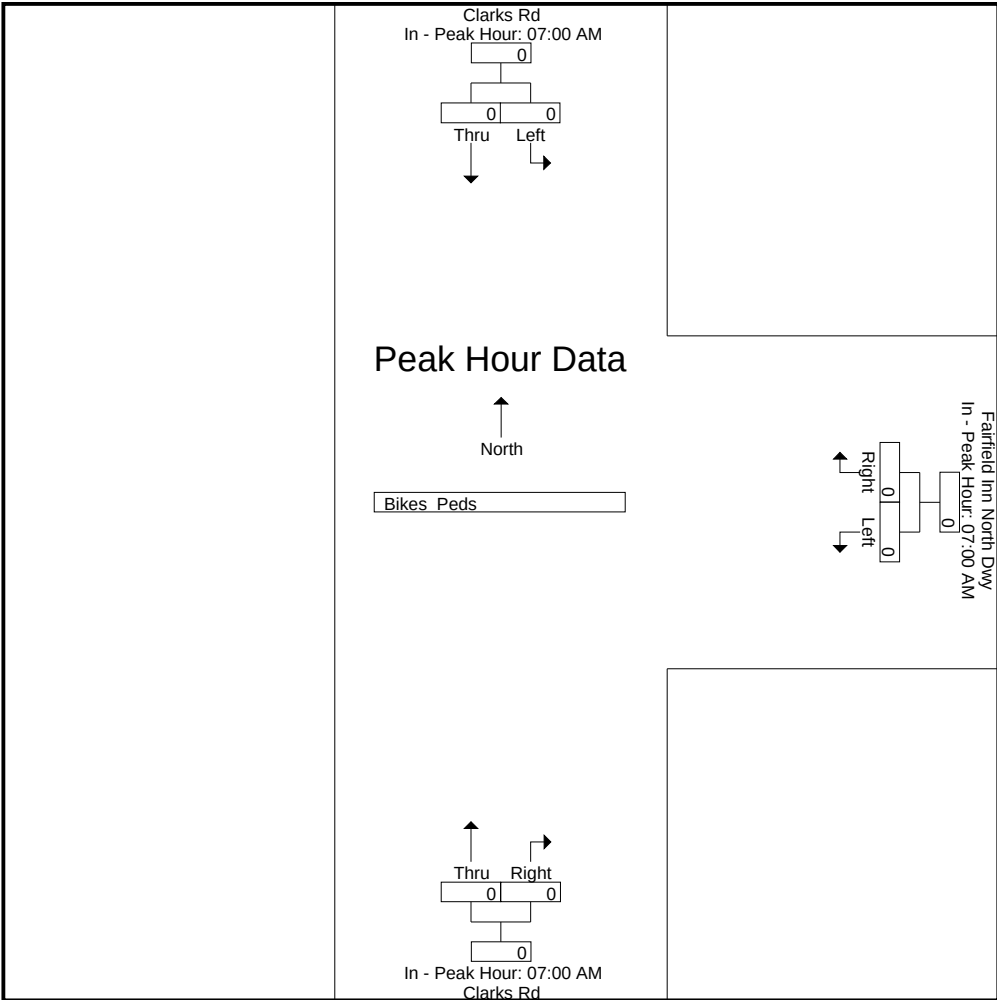
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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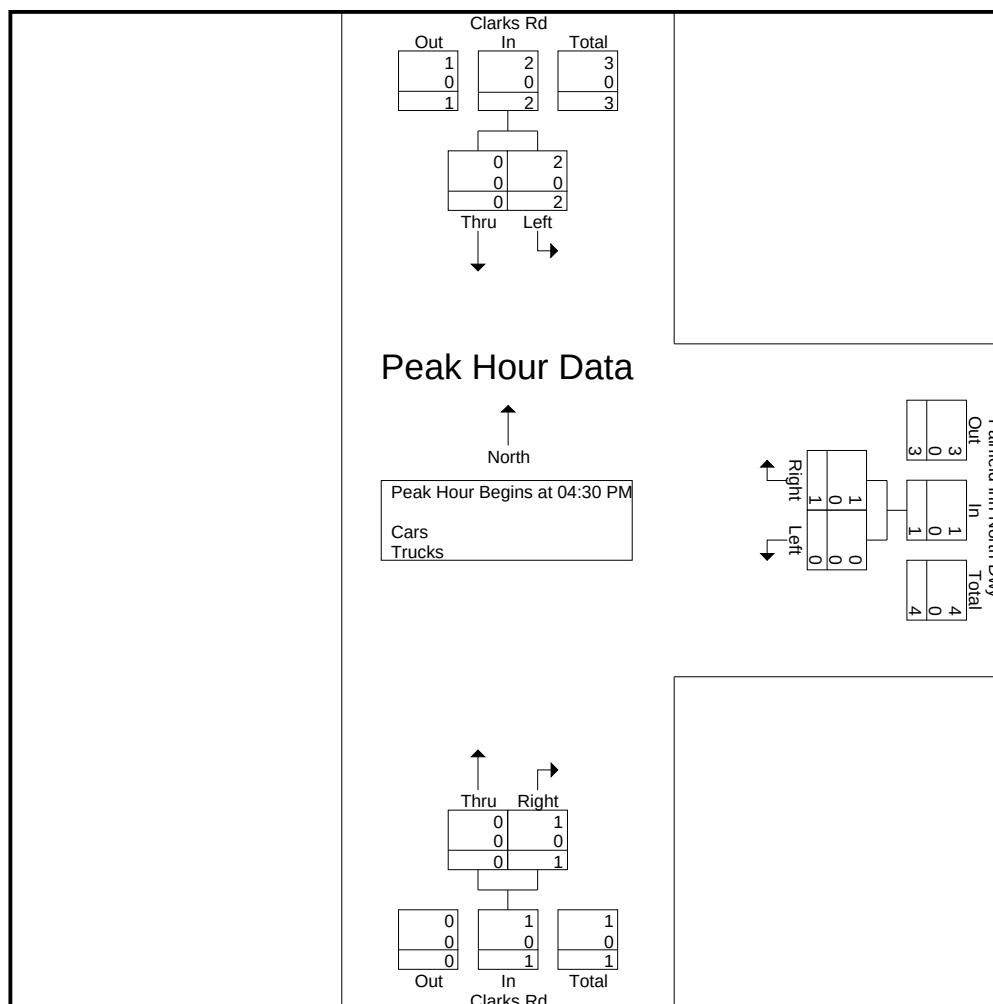
File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 1

	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South		
Start Time	Left	Thru	Left	Right	Thru	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	1	0	0	0	0	0	1
04:45 PM	0	0	0	1	0	1	2
Total	1	0	0	1	0	1	3
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	1	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	2
Grand Total	2	0	0	2	0	1	5
Apprch %	100	0	0	100	0	100	
Total %	40	0	0	40	0	20	
Cars	2	0	0	2	0	1	5
% Cars	100	0	0	100	0	100	100
Trucks	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0

[illegible]

978-664-2565

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 2

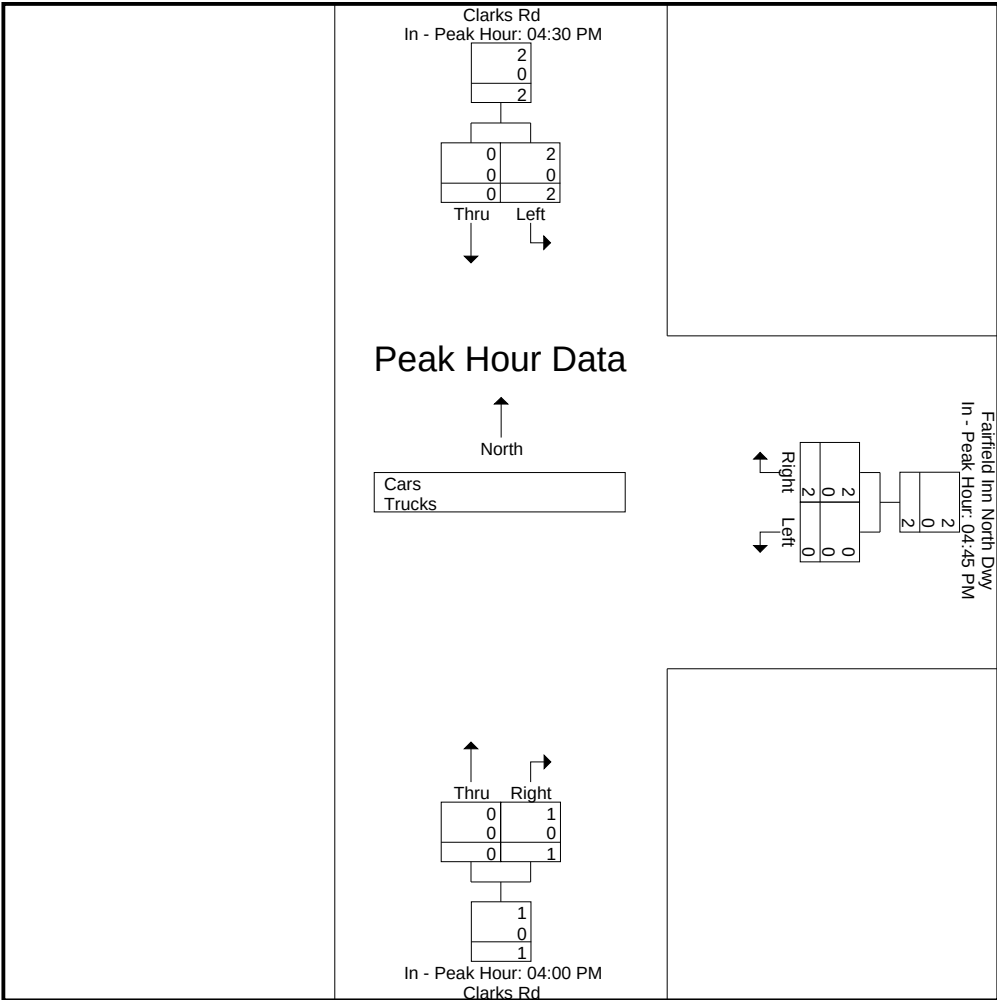


Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South		
Start Time	Left	Thru	Left	Right	Thru	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	1	0	0	0	0	0	1
04:45 PM	0	0	0	1	0	1	2
Total	1	0	0	1	0	1	3
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	1	0	0	1
05:45 PM	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	2
Grand Total	2	0	0	2	0	1	5
Apprch %	100	0	0	100	0	100	
Total %	40	0	0	40	0	20	

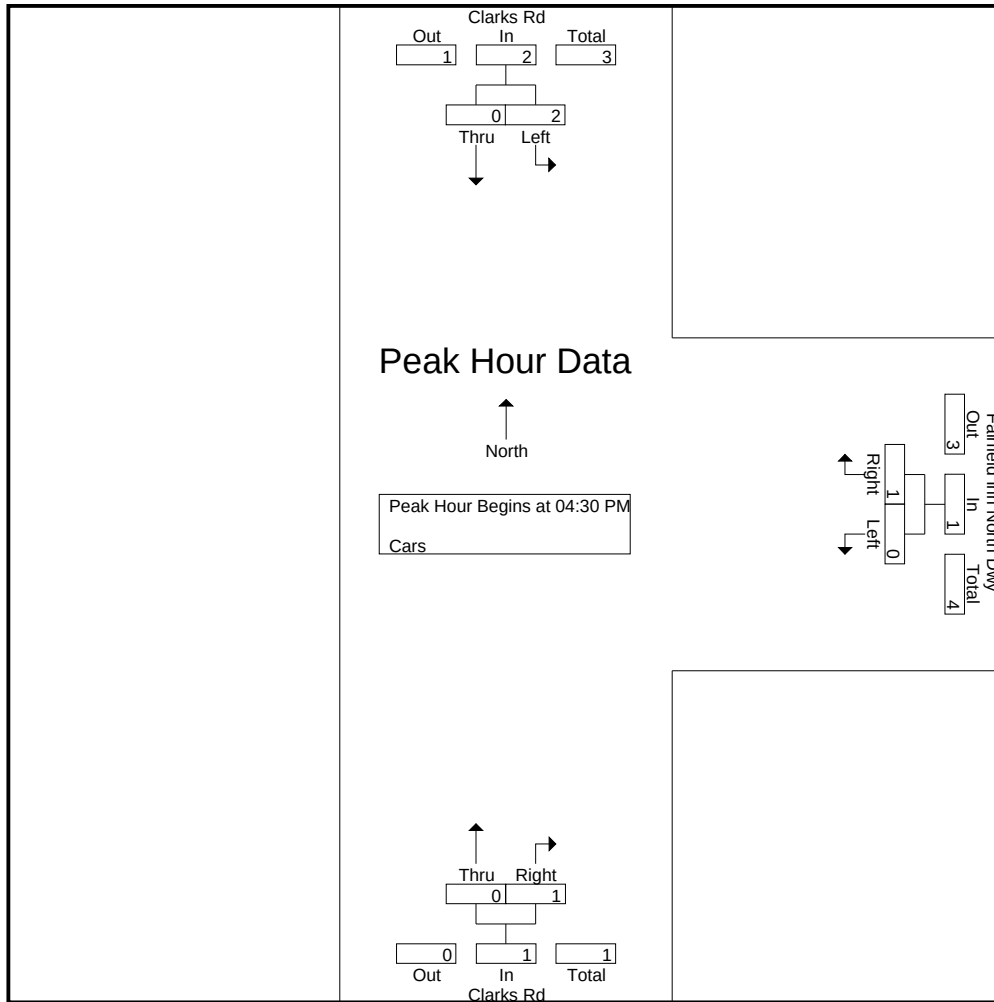
	Clarks Rd From North			Fairfield Inn North Dwy From East			Clarks Rd From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	1	0	1	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	1	1	0	1	1	2
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	2	0	2	0	1	1	0	1	1	4
% App. Total	100	0		0	100		0	100		
PHF	.500	.000	.500	.000	.250	.250	.000	.250	.250	.500

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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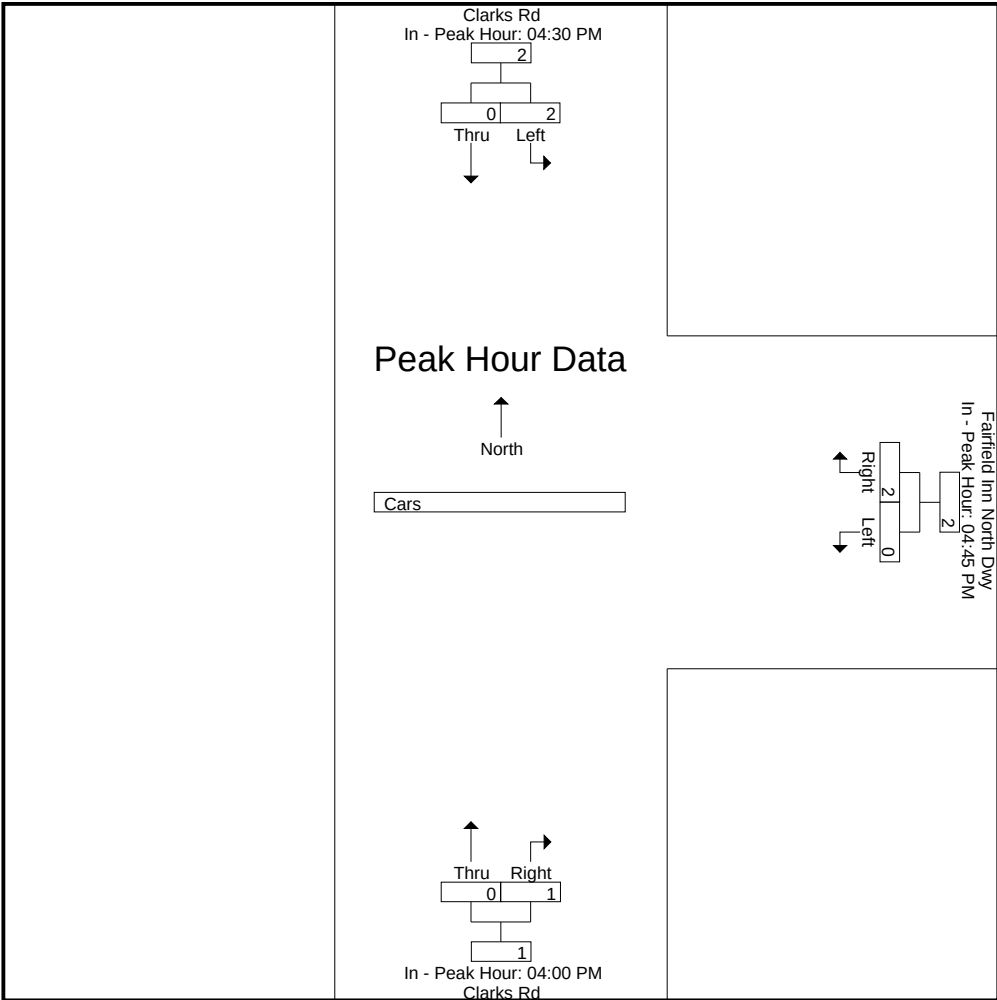
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

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

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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	Groups Timed - Trucks							
	Clarks Rd From North		Fairfield Inn North Dwy From East		Clarks Rd From South			
Start Time	Left	Thru	Left	Right	Thru	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	0	0	0	0	0	0	0	
05:30 PM	0	0	0	0	0	0	0	
05:45 PM	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	
Apprch %	0	0	0	0	0	0		
Total %								

[illegible]

978-664-2565

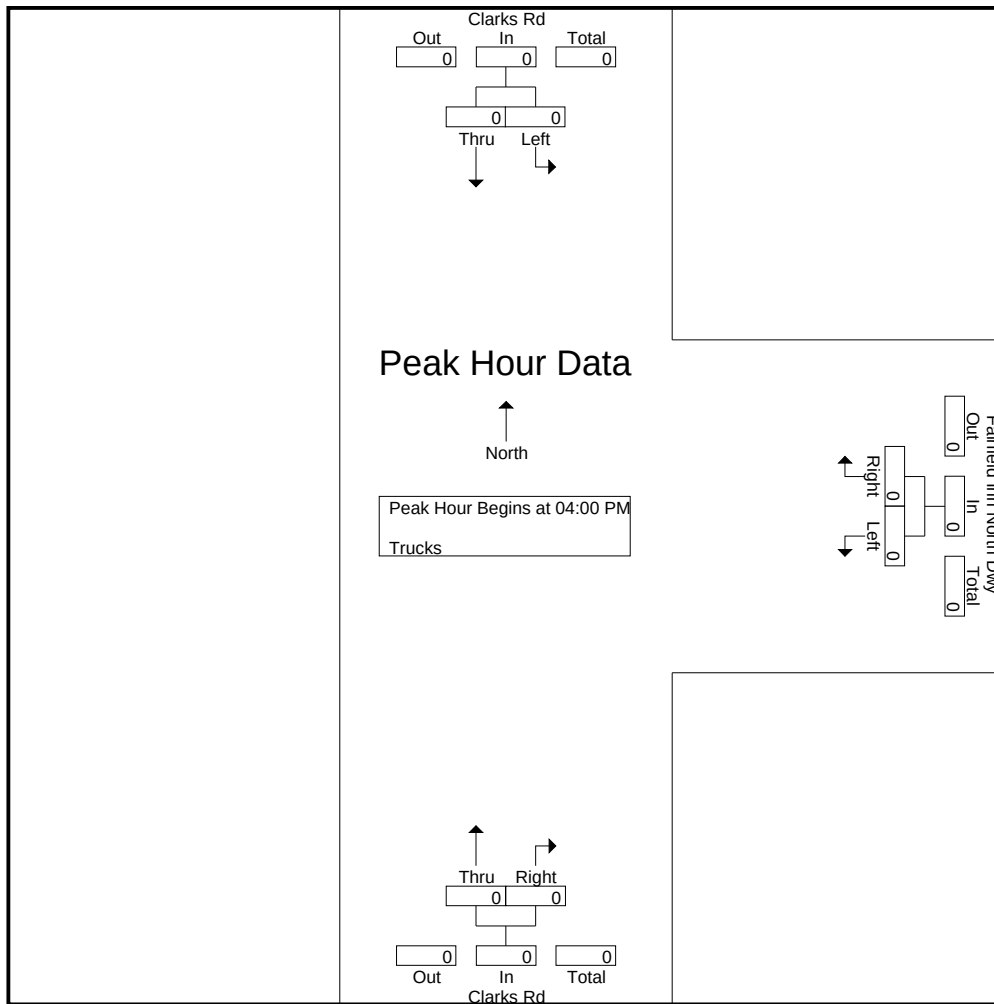
N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006

Site Code : 97650006

Start Date : 7/13/2023

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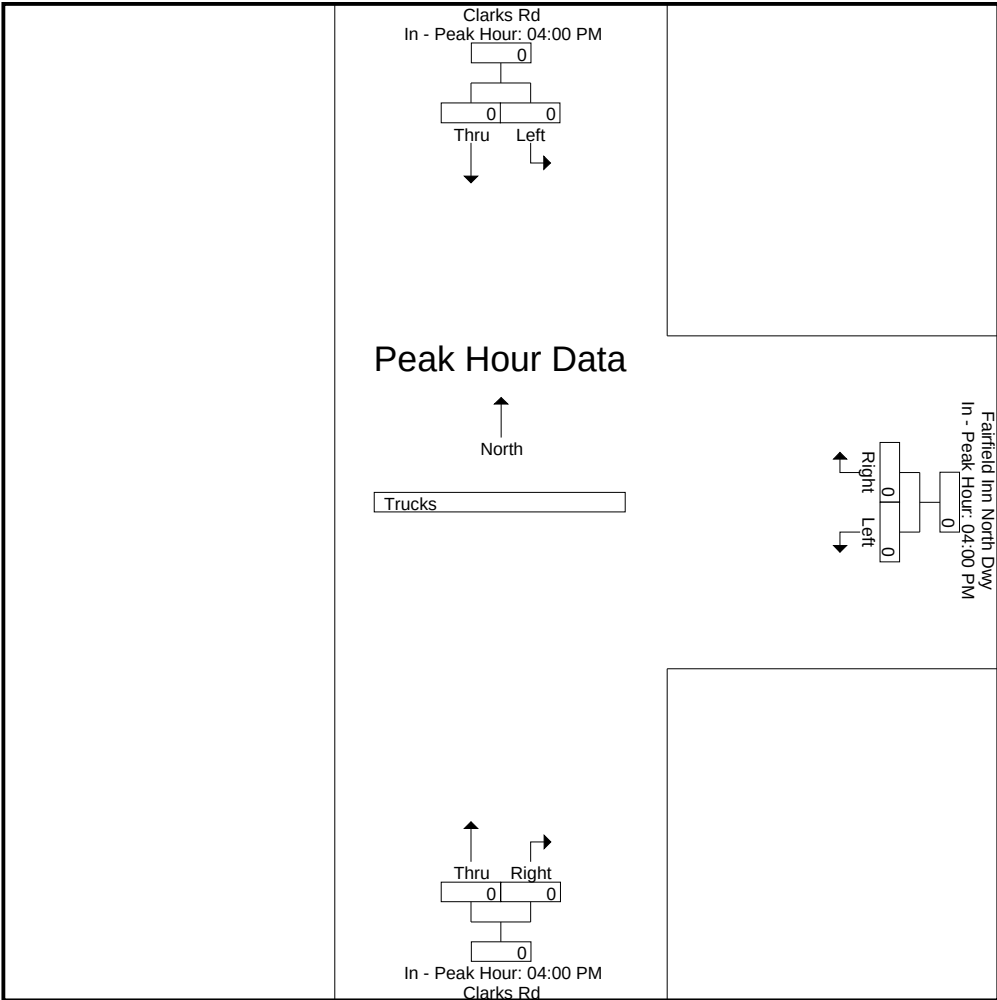
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
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File Name : 97650006
Site Code : 97650006
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[illegible][illegible]

978-664-2565

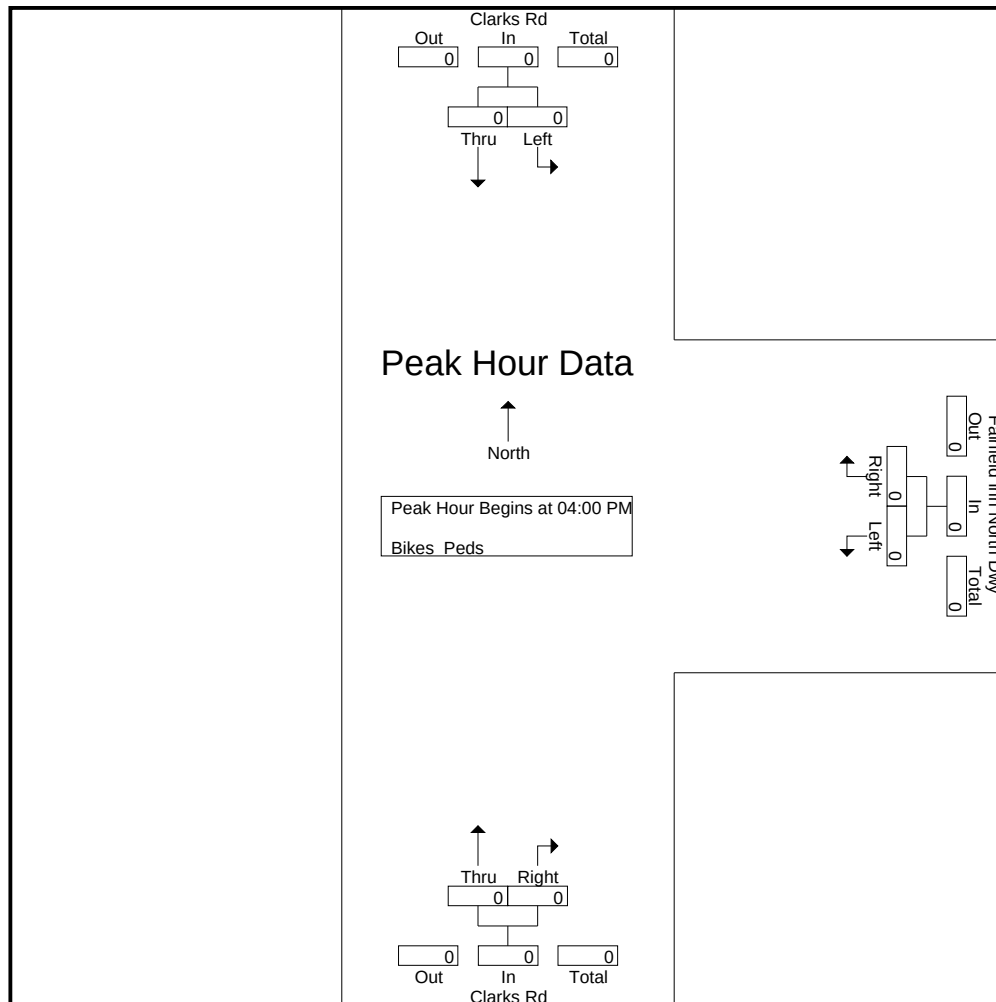
N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006

Site Code : 97650006

Start Date : 7/13/2023

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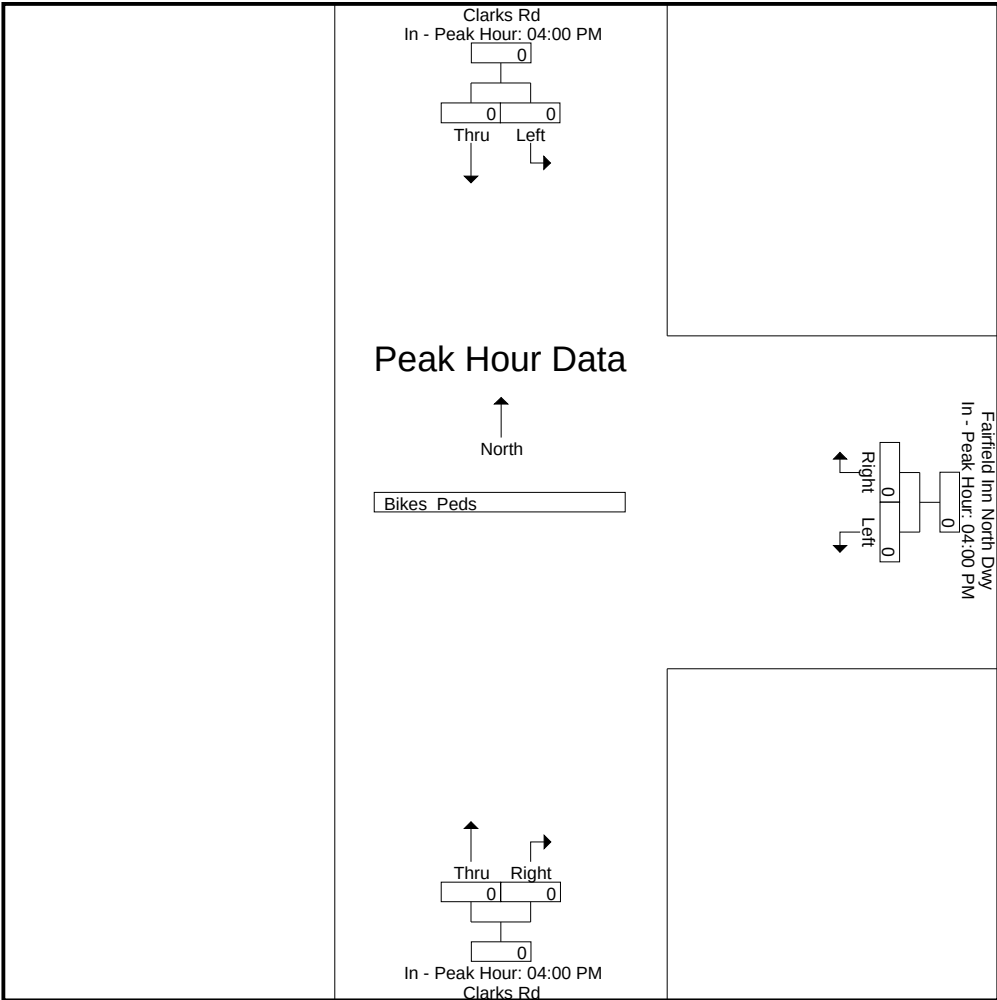
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650006
Site Code : 97650006
Start Date : 7/13/2023
Page No : 12



978-664-2565

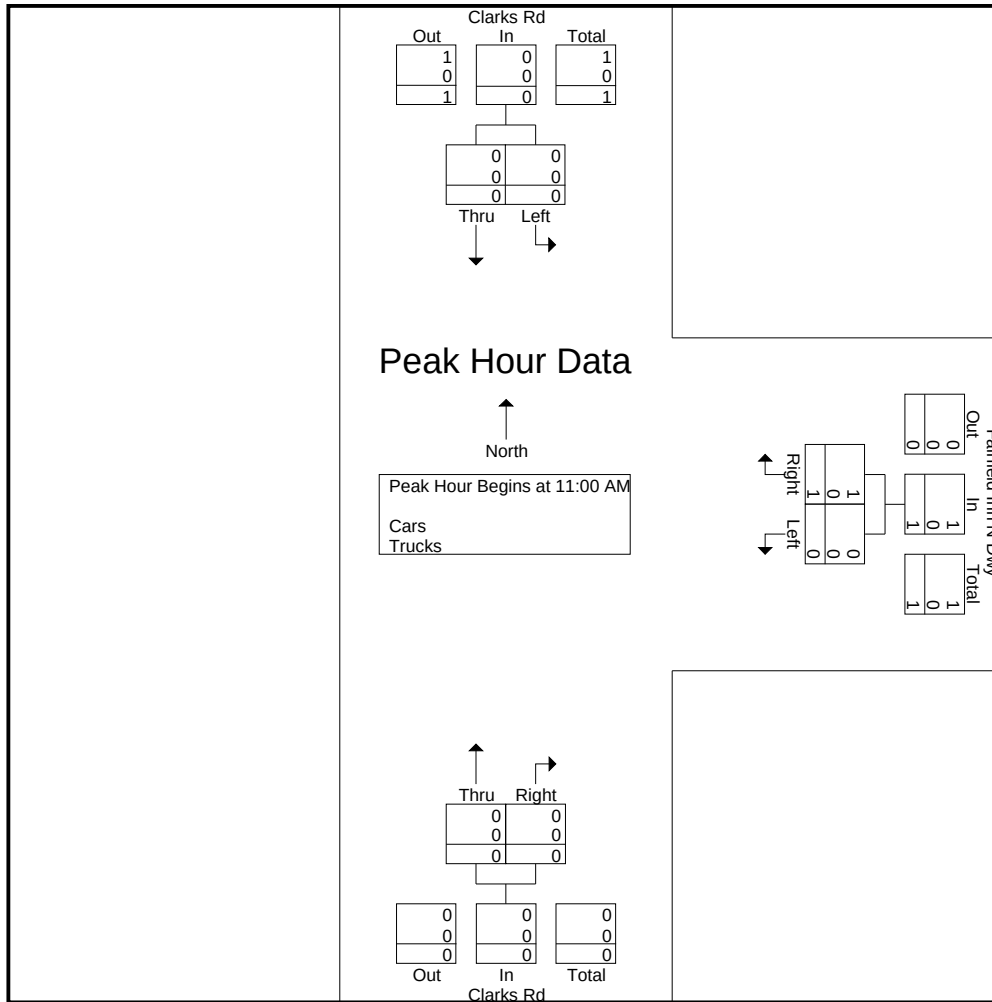
File Name : 976500S6

Site Code : 97650006

Start Date : 7/15/2023

Page No : 2

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy



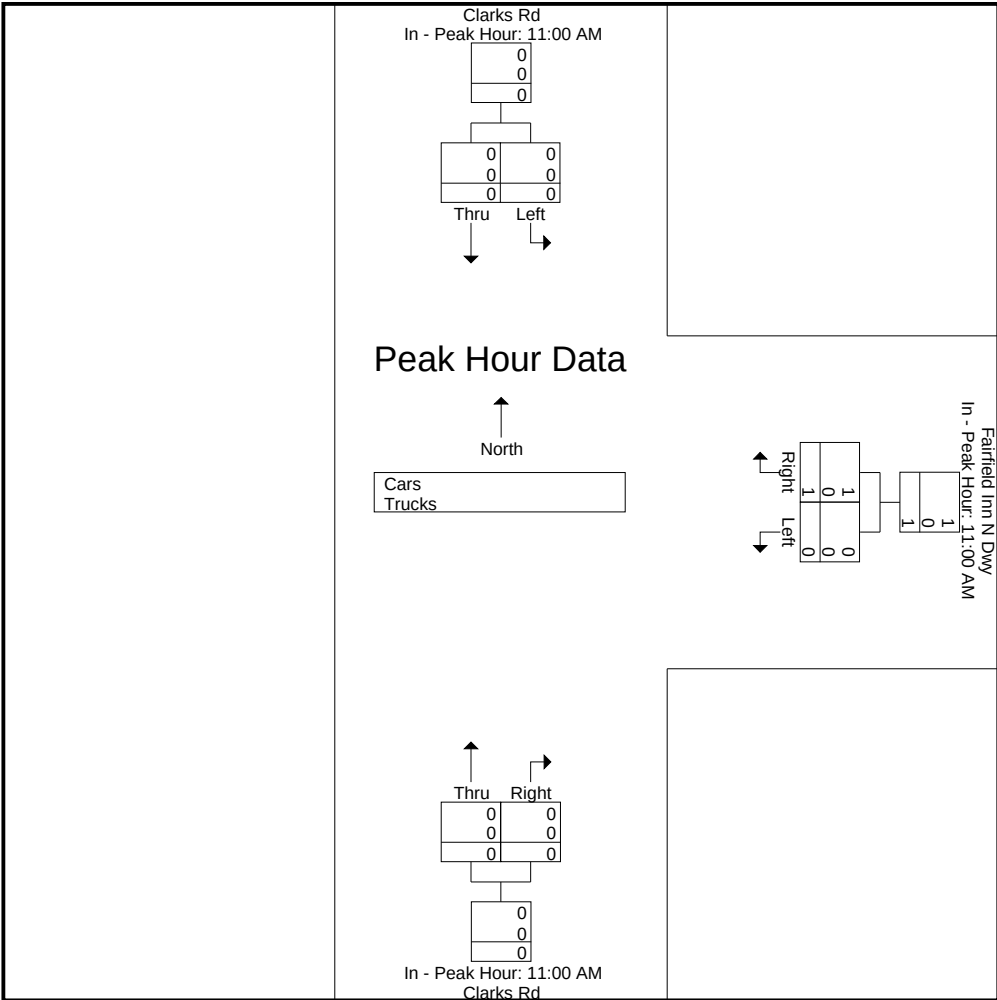
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
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Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North		Fairfield Inn N Dwy From East		Clarks Rd From South		
Start Time	Left	Thru	Left	Right	Thru	Right	Int. Total
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	1
11:30 AM	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	1
12:00 PM	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	0	0	1	0	0	1
Total	0	0	0	1	0	0	1
Grand Total	0	0	0	2	0	0	2
Apprch %	0	0	0	100	0	0	
Total %	0	0	0	100	0	0	

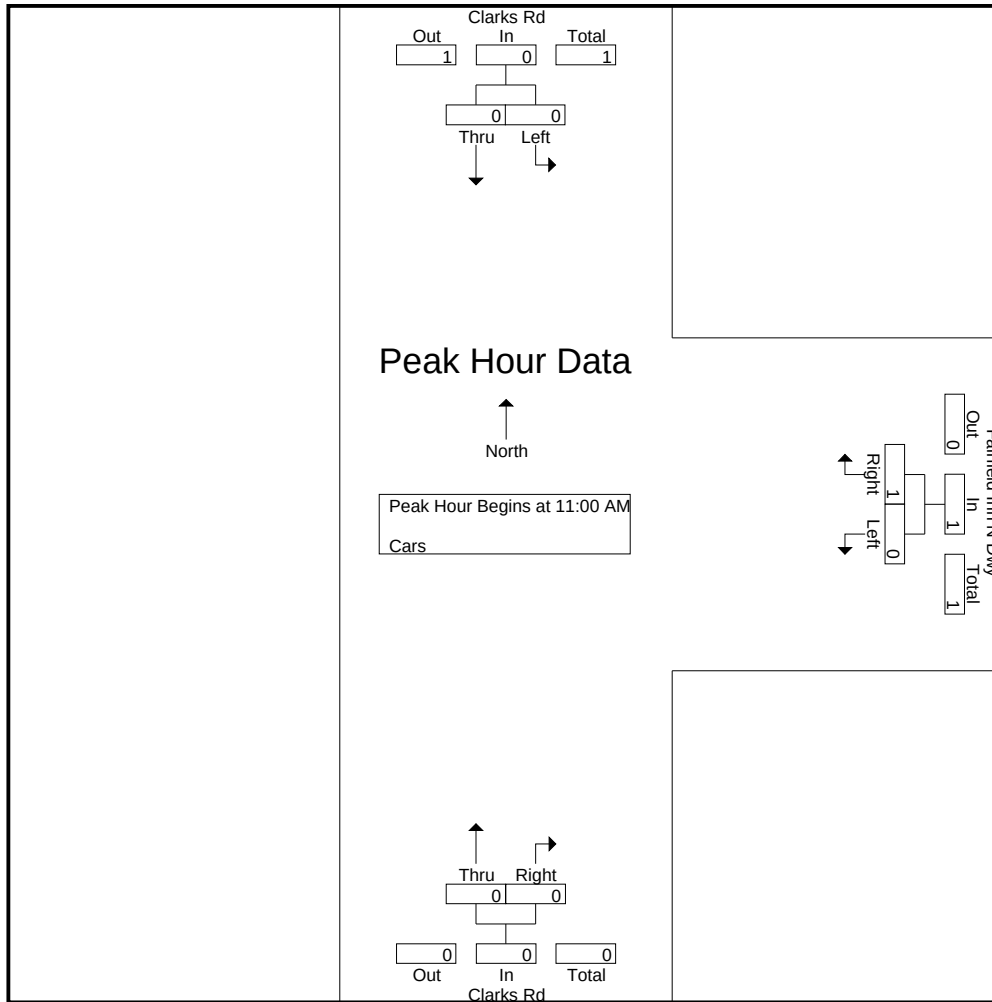
	Clarks Rd From North			Fairfield Inn N Dwy From East			Clarks Rd From South			
Start Time	Left	Thru	App. Total	Left	Right	App. Total	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:00 AM										
11:00 AM	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	1	1	0	0	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	1	1	0	0	0	1
% App. Total	0	0		0	100		0	0		
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
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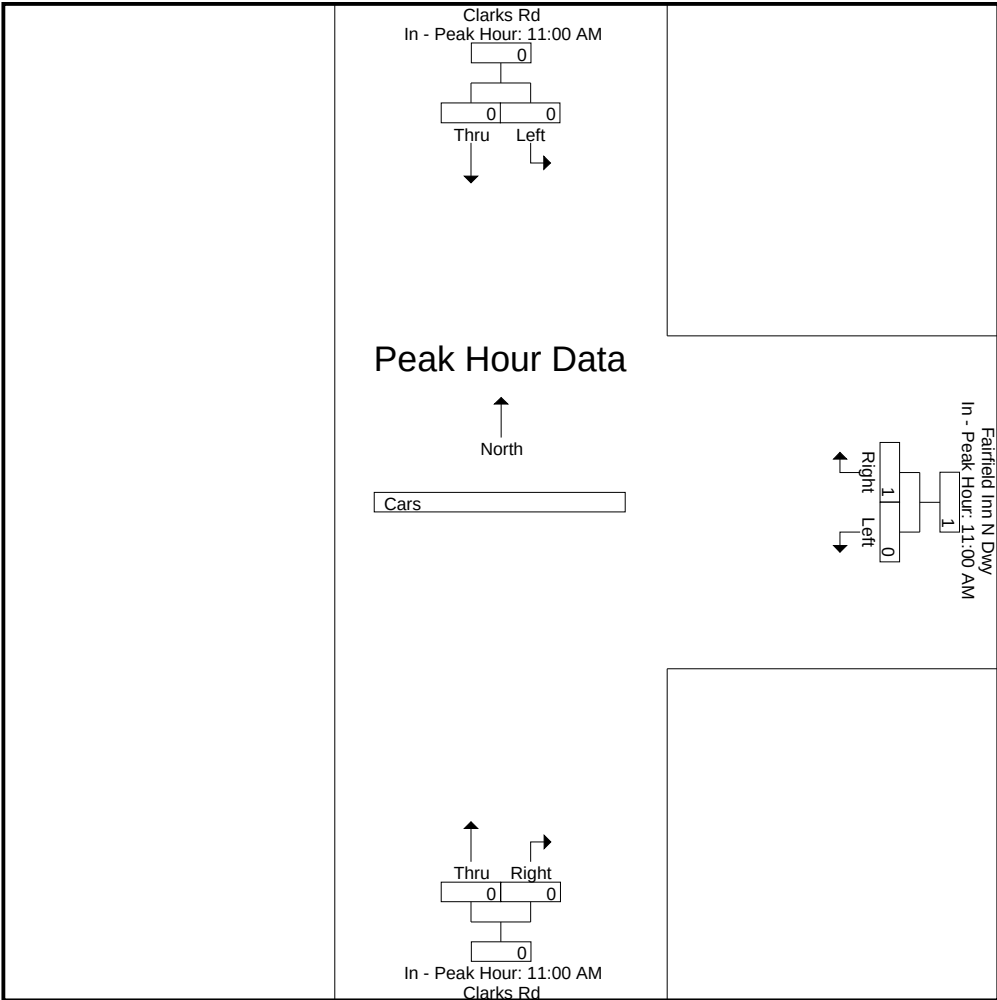
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:00 AM			11:00 AM			11:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	1	1	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	0	0	0	1	1	0	0	0
% App. Total	0	0		0	100		0	0	
PHF	.000	.000	.000	.000	.250	.250	.000	.000	.000

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
Page No : 6



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File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
Page No : 7

[illegible]

978-664-2565

File Name : 976500S6

Site Code : 97650006

Start Date : 7/15/2023

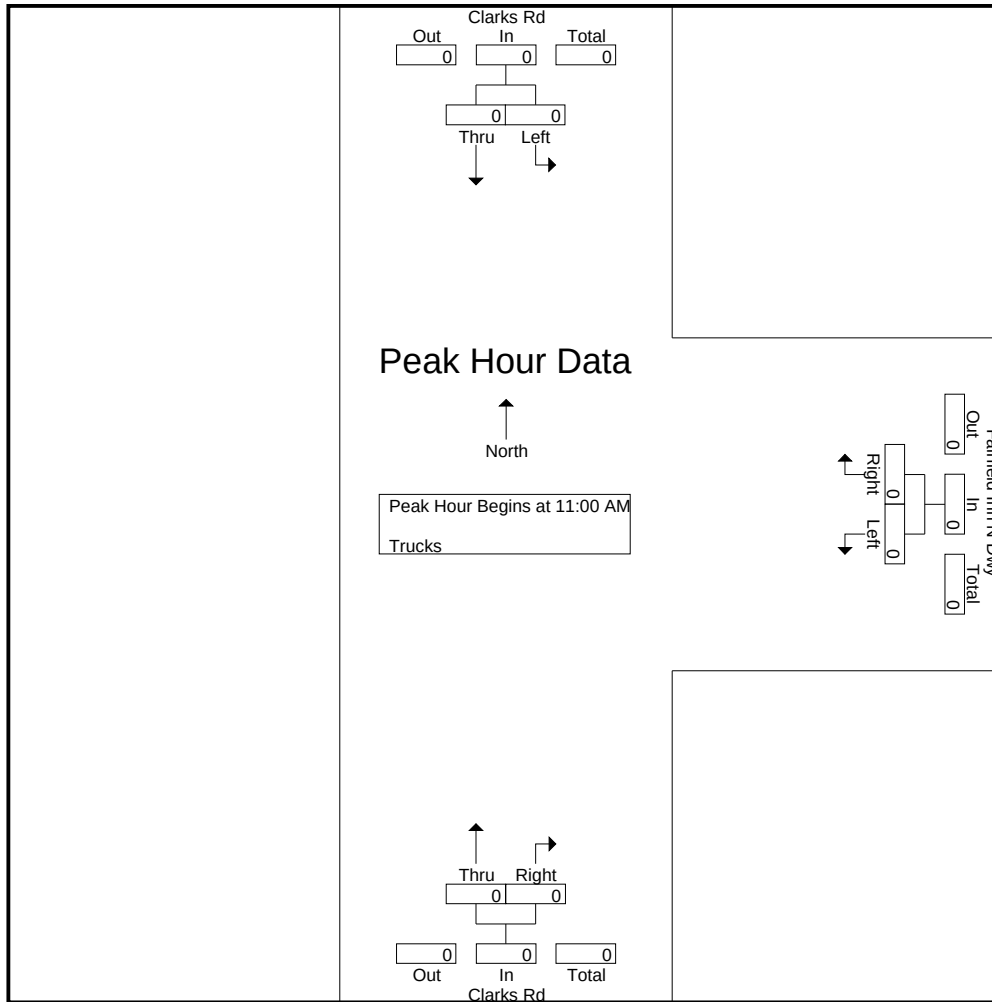
Page No : 8

N/S Street : Clarks Road

E/W Street : Fairfield Inn North Dwy

City/State : Amesbury, MA

Weather : Cloudy



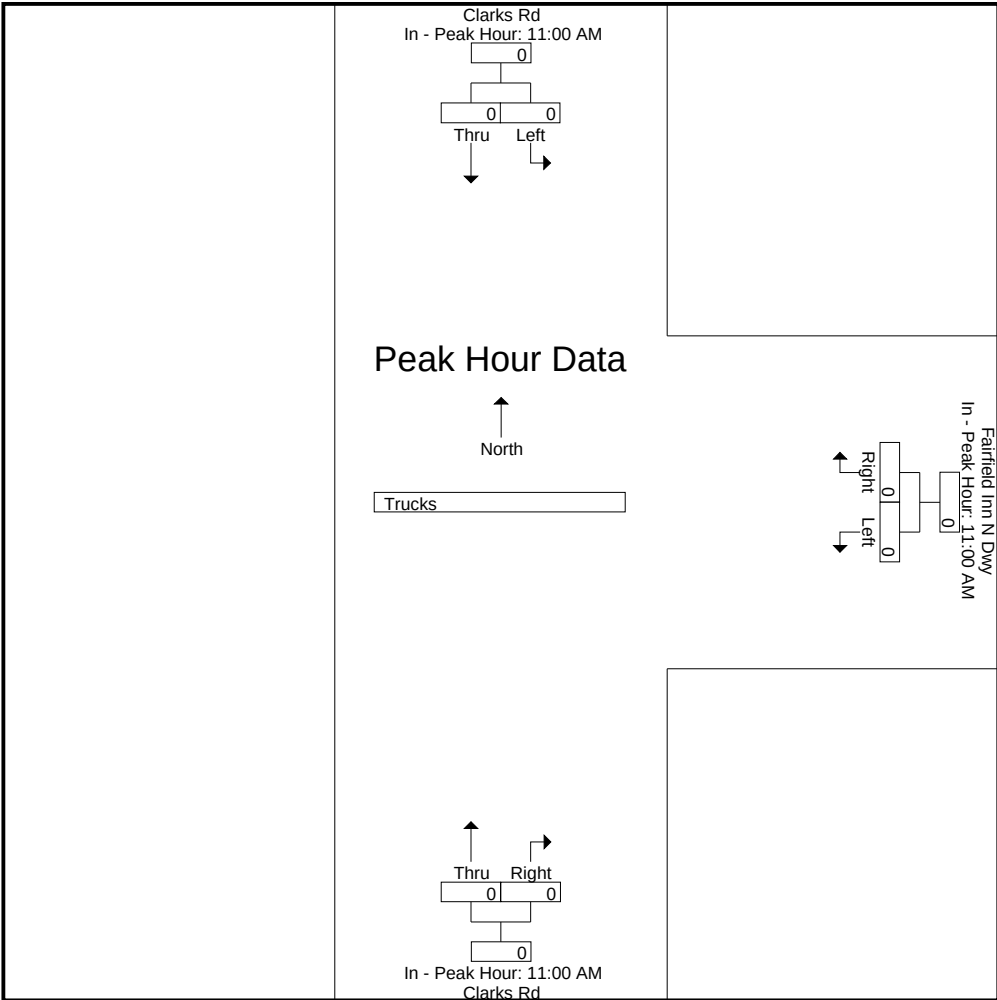
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
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File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
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[illegible][illegible]

978-664-2565

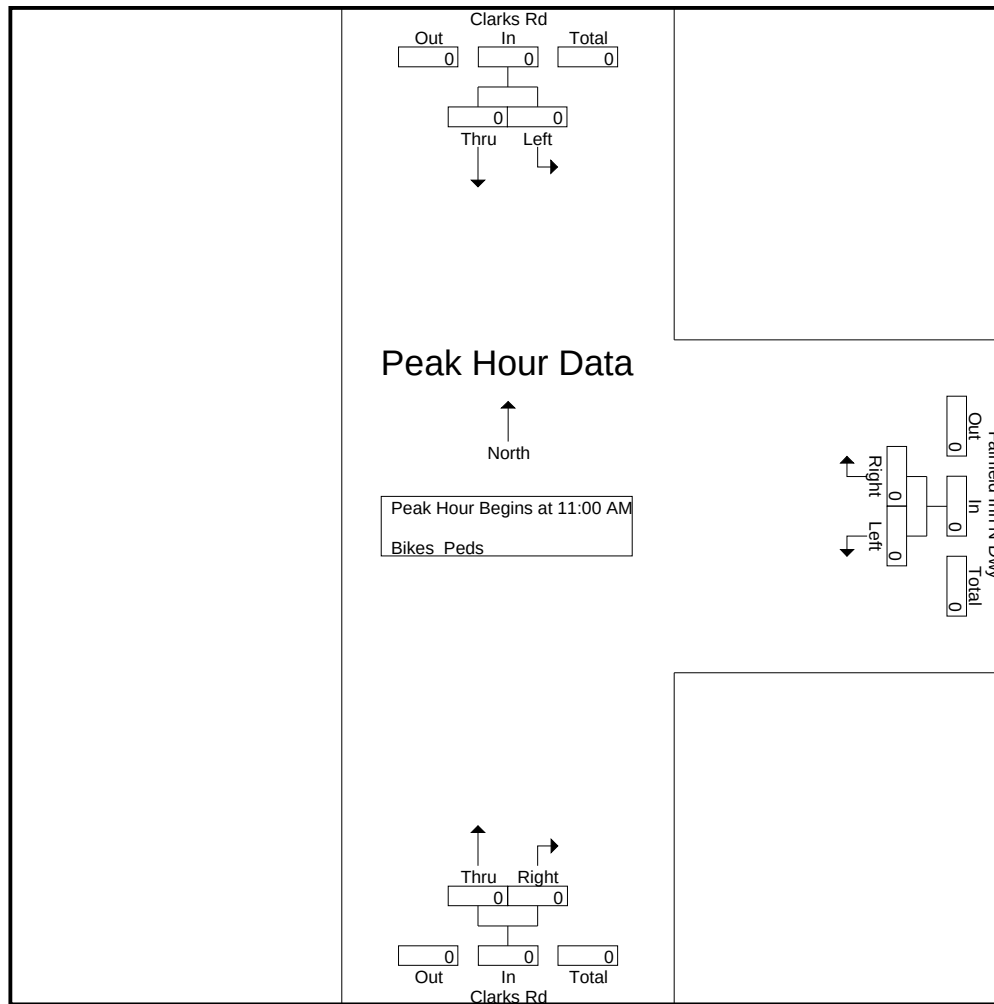
N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6

Site Code : 97650006

Start Date : 7/15/2023

Page No : 11



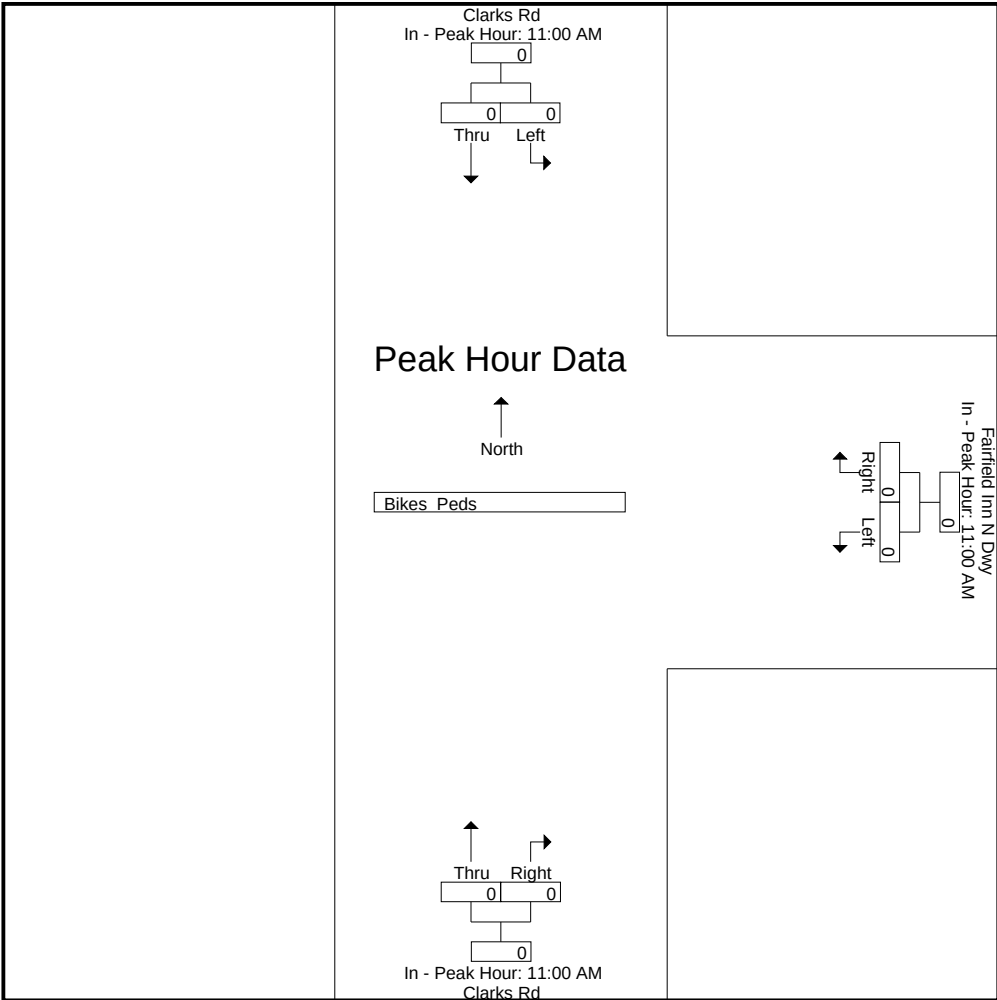
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn North Dwy
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S6
Site Code : 97650006
Start Date : 7/15/2023
Page No : 12



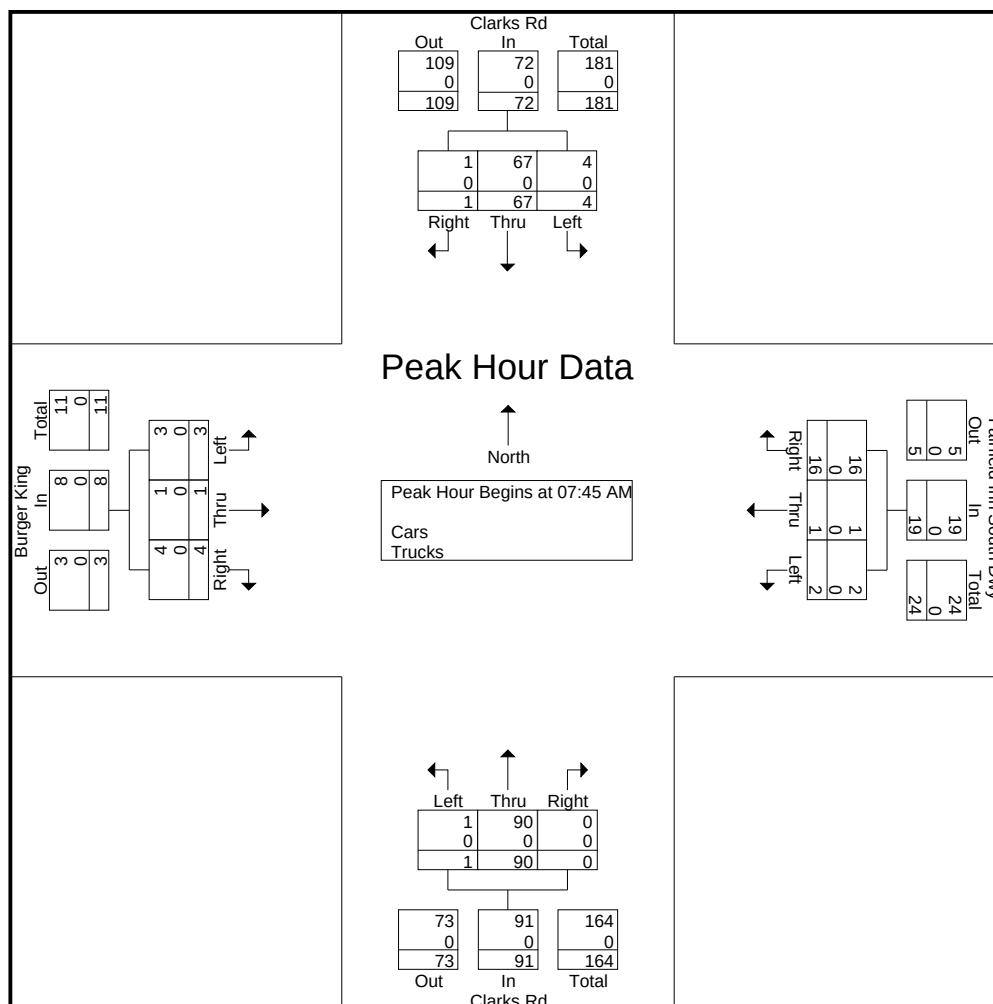
978-664-2565

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 1

[illegible]

978-664-2565

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 2

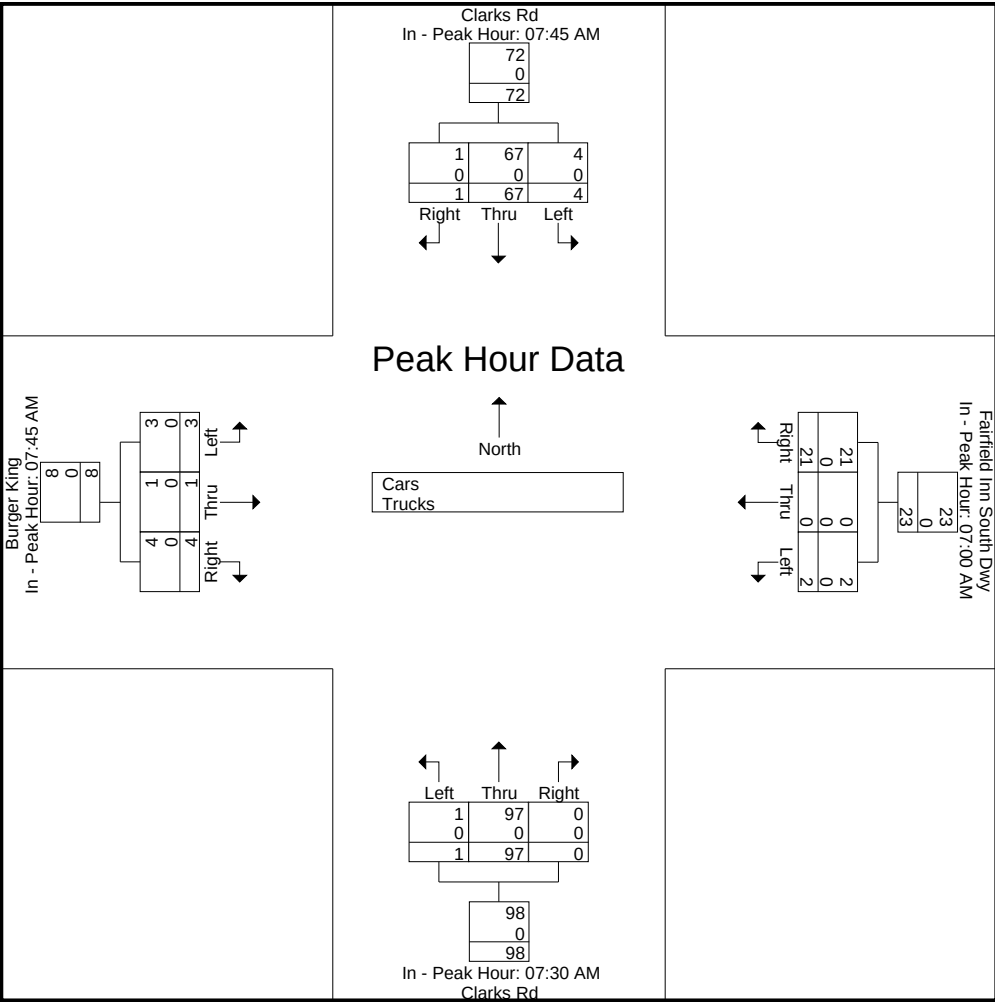


Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:	07:45 AM				07:00 AM				07:30 AM				07:45 AM			
+0 mins.	0	22	0	22	1	0	6	7	0	24	0	24	0	0	1	1
+15 mins.	0	11	1	12	0	0	3	3	0	25	0	25	0	0	2	2
+30 mins.	2	18	0	20	1	0	6	7	0	20	0	20	2	1	1	4
+45 mins.	2	16	0	18	0	0	6	6	1	28	0	29	1	0	0	1
Total Volume	4	67	1	72	2	0	21	23	1	97	0	98	3	1	4	8
% App. Total	5.6	93.1	1.4		8.7	0	91.3		1	99	0		37.5	12.5	50	
PHF	.500	.761	.250	.818	.500	.000	.875	.821	.250	.866	.000	.845	.375	.250	.500	.500
Cars	4	67	1	72	2	0	21	23	1	97	0	98	3	1	4	8
% Cars	100	100	100	100	100	0	100	100	100	100	0	100	100	100	100	100
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North			Fairfield Inn South Dwy From East			Clarks Rd From South			Burger King From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	8	2	1	0	6	0	17	0	0	0	0	34
07:15 AM	1	10	0	0	0	3	1	21	1	2	0	0	39
07:30 AM	2	7	0	1	0	6	0	24	0	0	0	0	40
07:45 AM	0	22	0	0	0	6	0	25	0	0	0	1	54
Total	3	47	2	2	0	21	1	87	1	2	0	1	167
08:00 AM	0	11	1	1	1	0	0	20	0	0	0	2	36
08:15 AM	2	18	0	0	0	6	1	28	0	2	1	1	59
08:30 AM	2	16	0	1	0	4	0	17	0	1	0	0	41
08:45 AM	1	19	1	0	0	3	0	21	0	1	0	0	46
Total	5	64	2	2	1	13	1	86	0	4	1	3	182
Grand Total	8	111	4	4	1	34	2	173	1	6	1	4	349
Apprch %	6.5	90.2	3.3	10.3	2.6	87.2	1.1	98.3	0.6	54.5	9.1	36.4	
Total %	2.3	31.8	1.1	1.1	0.3	9.7	0.6	49.6	0.3	1.7	0.3	1.1	

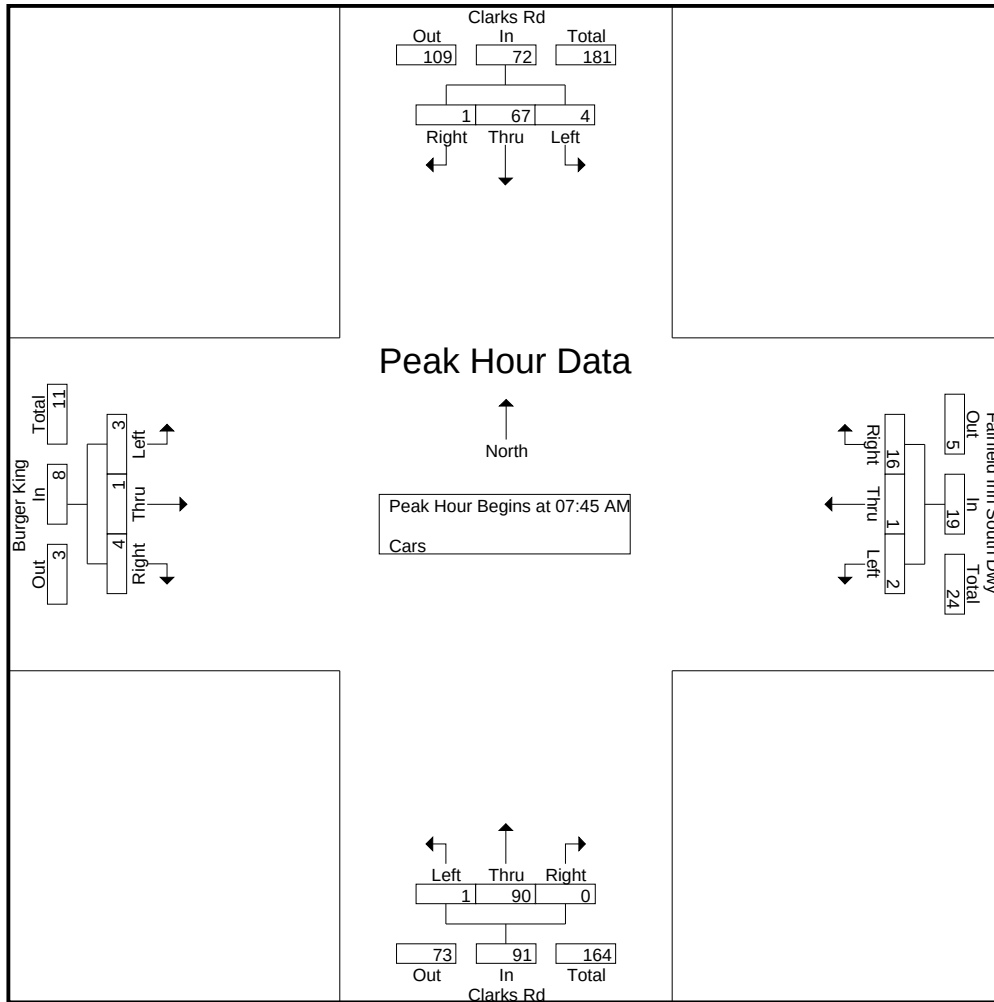
	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	22	0	22	0	0	6	6	0	25	0	25	0	0	1	1	54
08:00 AM	0	11	1	12	1	1	0	2	0	20	0	20	0	0	2	2	36
08:15 AM	2	18	0	20	0	0	6	6	1	28	0	29	2	1	1	4	59
08:30 AM	2	16	0	18	1	0	4	5	0	17	0	17	1	0	0	1	41
Total Volume	4	67	1	72	2	1	16	19	1	90	0	91	3	1	4	8	190
% App. Total	5.6	93.1	1.4		10.5	5.3	84.2		1.1	98.9	0		37.5	12.5	50		
PHF	.500	.761	.250	.818	.500	.250	.667	.792	.250	.804	.000	.784	.375	.250	.500	.500	.805

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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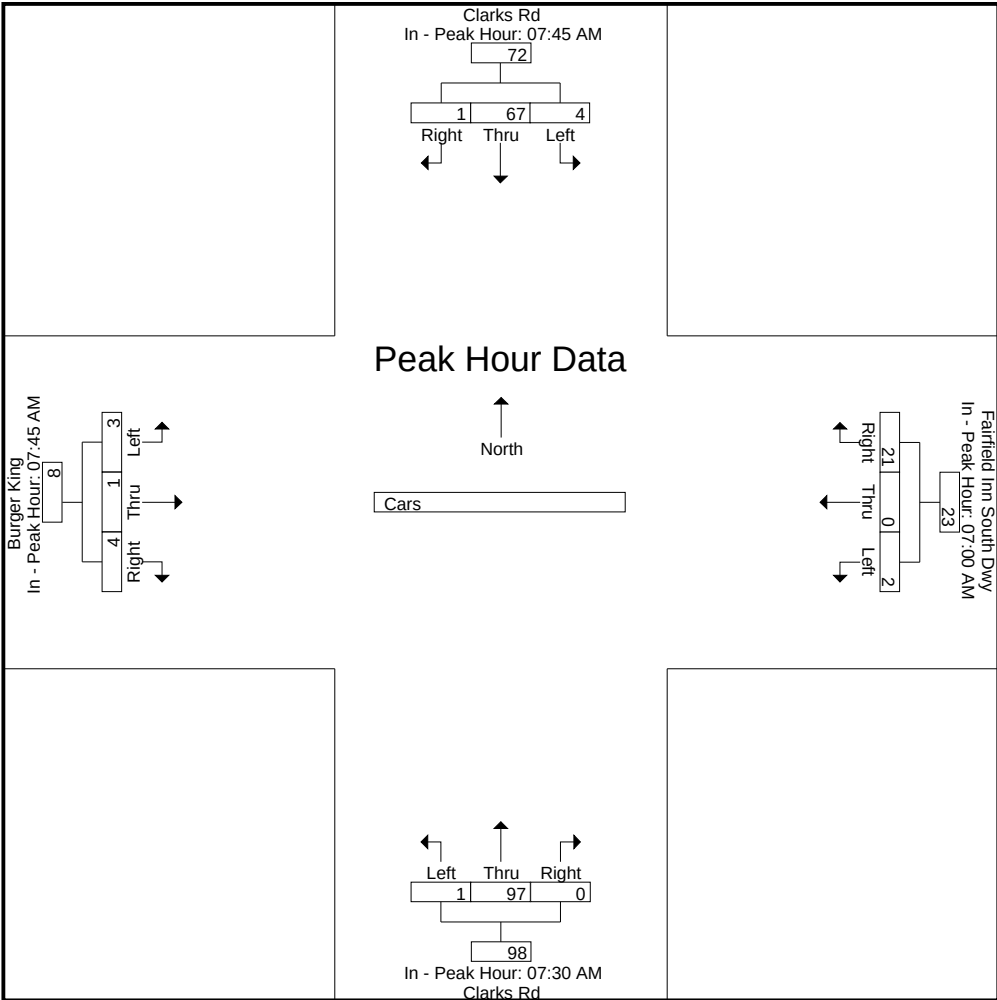
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM				07:00 AM				07:30 AM				07:45 AM			
+0 mins.	0	22	0	22	1	0	6	7	0	24	0	24	0	0	1	1
+15 mins.	0	11	1	12	0	0	3	3	0	25	0	25	0	0	2	2
+30 mins.	2	18	0	20	1	0	6	7	0	20	0	20	2	1	1	4
+45 mins.	2	16	0	18	0	0	6	6	1	28	0	29	1	0	0	1
Total Volume	4	67	1	72	2	0	21	23	1	97	0	98	3	1	4	8
% App. Total	5.6	93.1	1.4		8.7	0	91.3		1	99	0		37.5	12.5	50	
PHF	.500	.761	.250	.818	.500	.000	.875	.821	.250	.866	.000	.845	.375	.250	.500	.500

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 7

Groups Printed- Trucks

	Clarks Rd From North			Fairfield Inn South Dwy From East			Clarks Rd From South			Burger King 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	0	0	0	0	0	1	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	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
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
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	

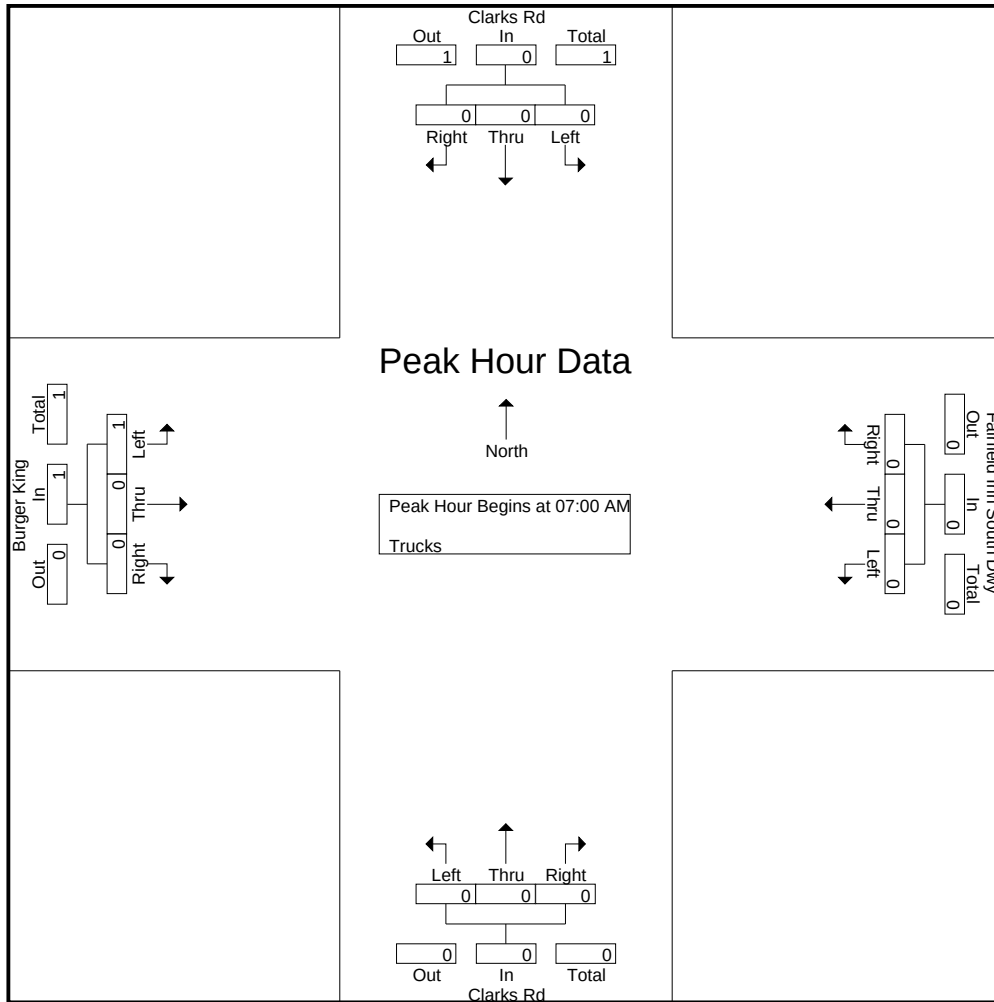
	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	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 : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

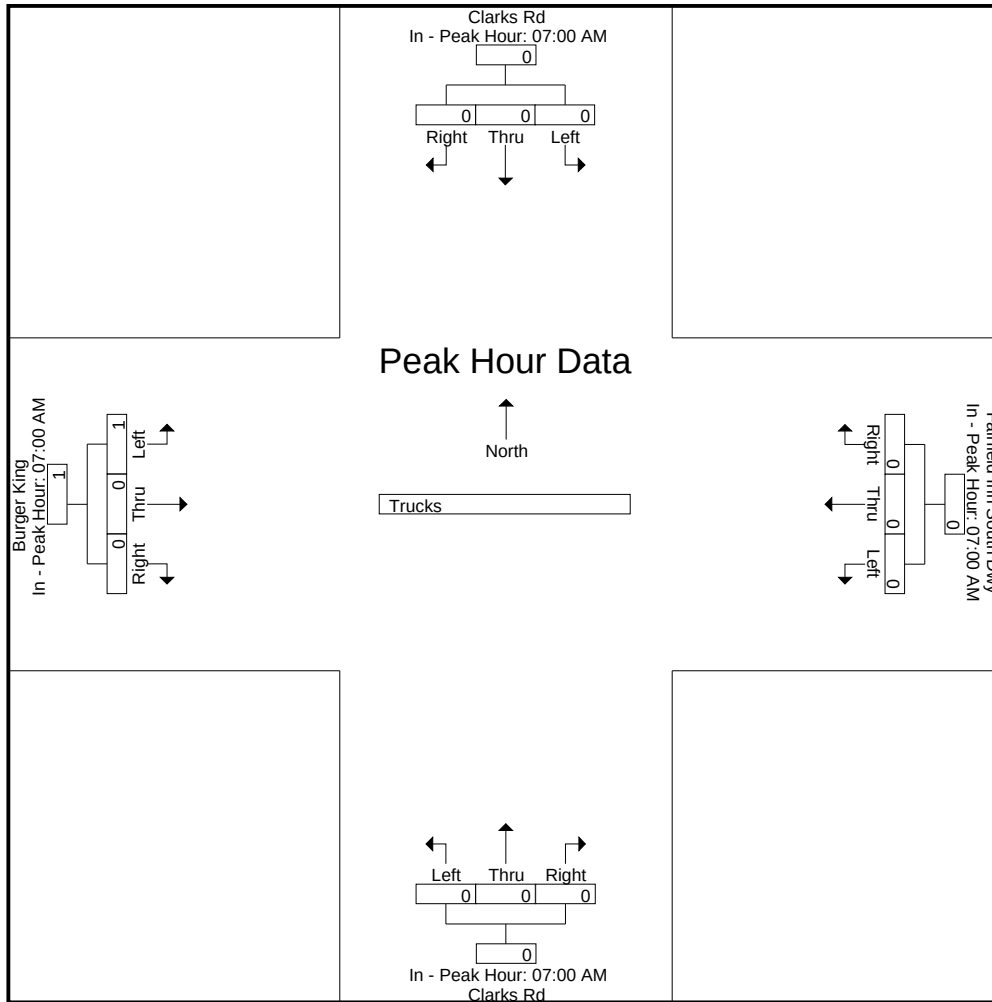
	07:00 AM				07:00 AM				07:00 AM				07:00 AM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
% App. Total	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	100
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.250

978-664-2565

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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Groups Printed- Bikes Peds

	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King 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			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2
Grand Total	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	2
Apprch %	0	100	0		0	0	0		0	100	0		0	0	0		0		
Total %	0	50	0		0	0	0		0	50	0		0	0	0		0	100	

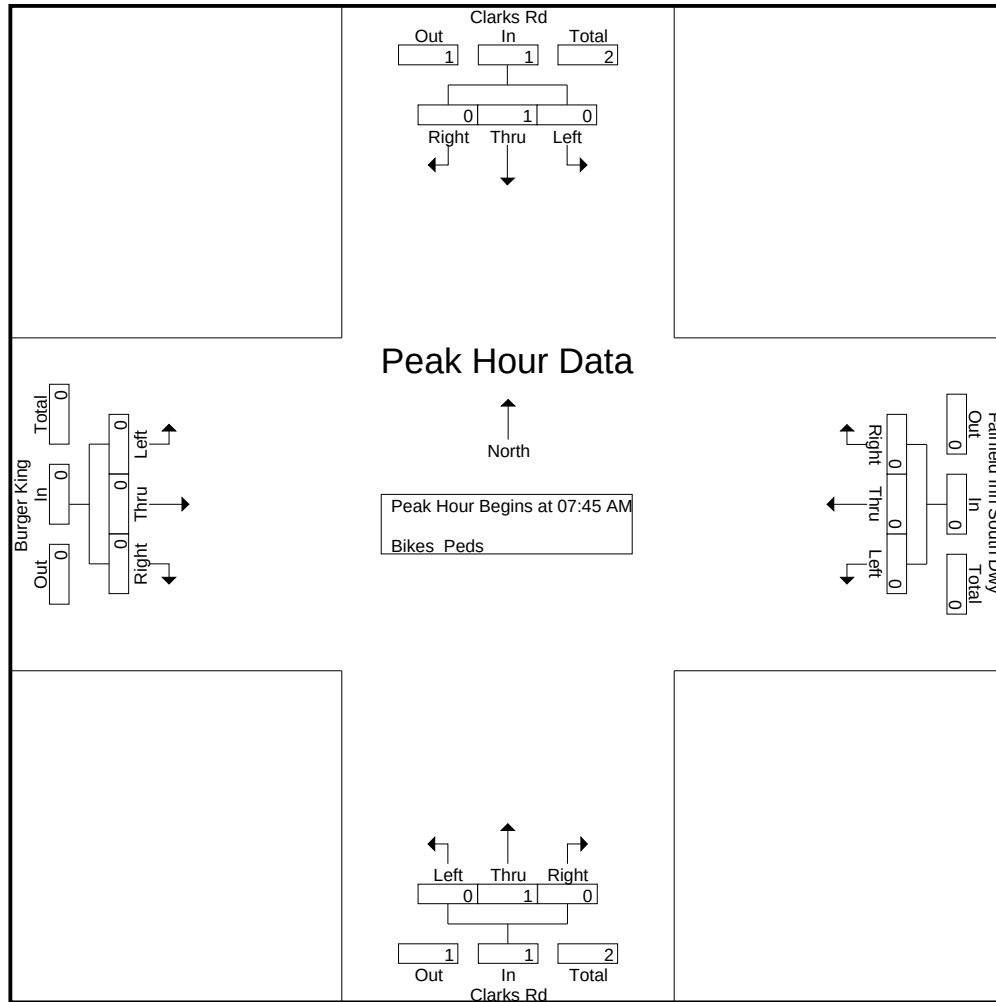
	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 11



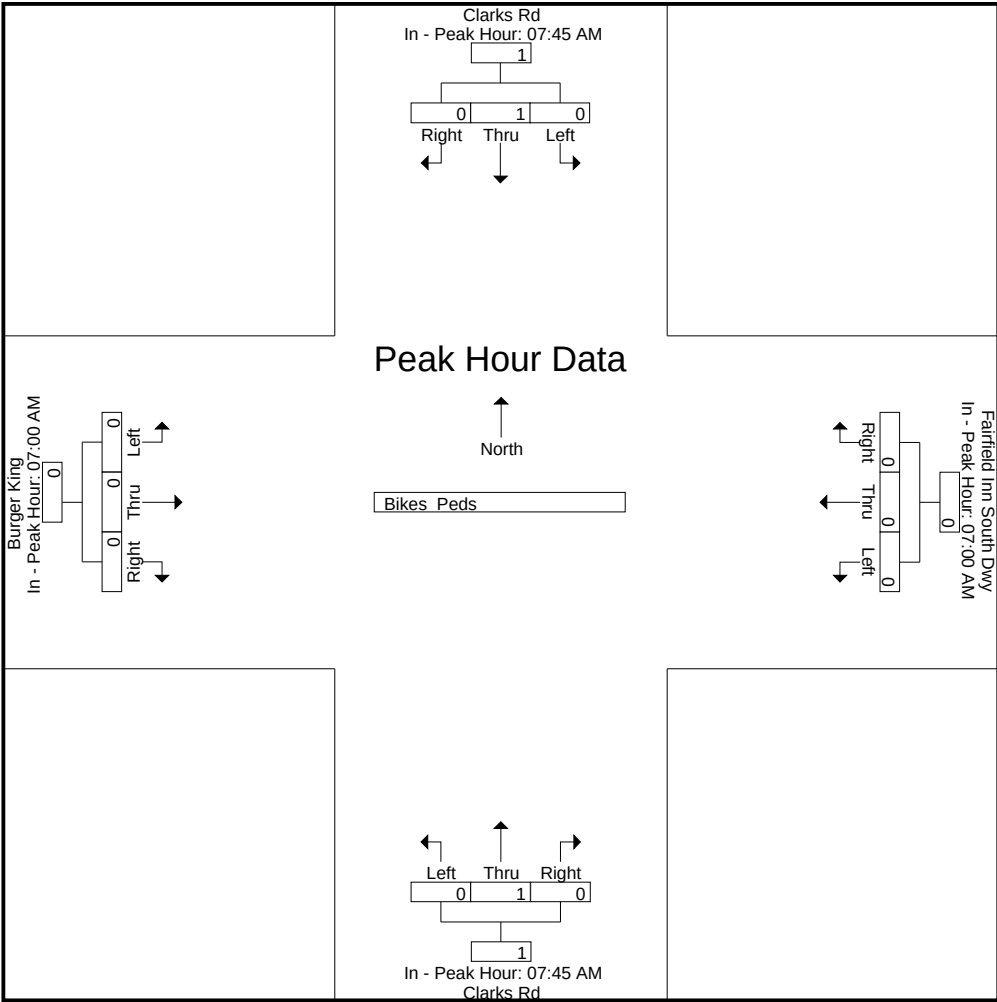
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	07:45 AM				07:00 AM				07:45 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	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 12



978-664-2565

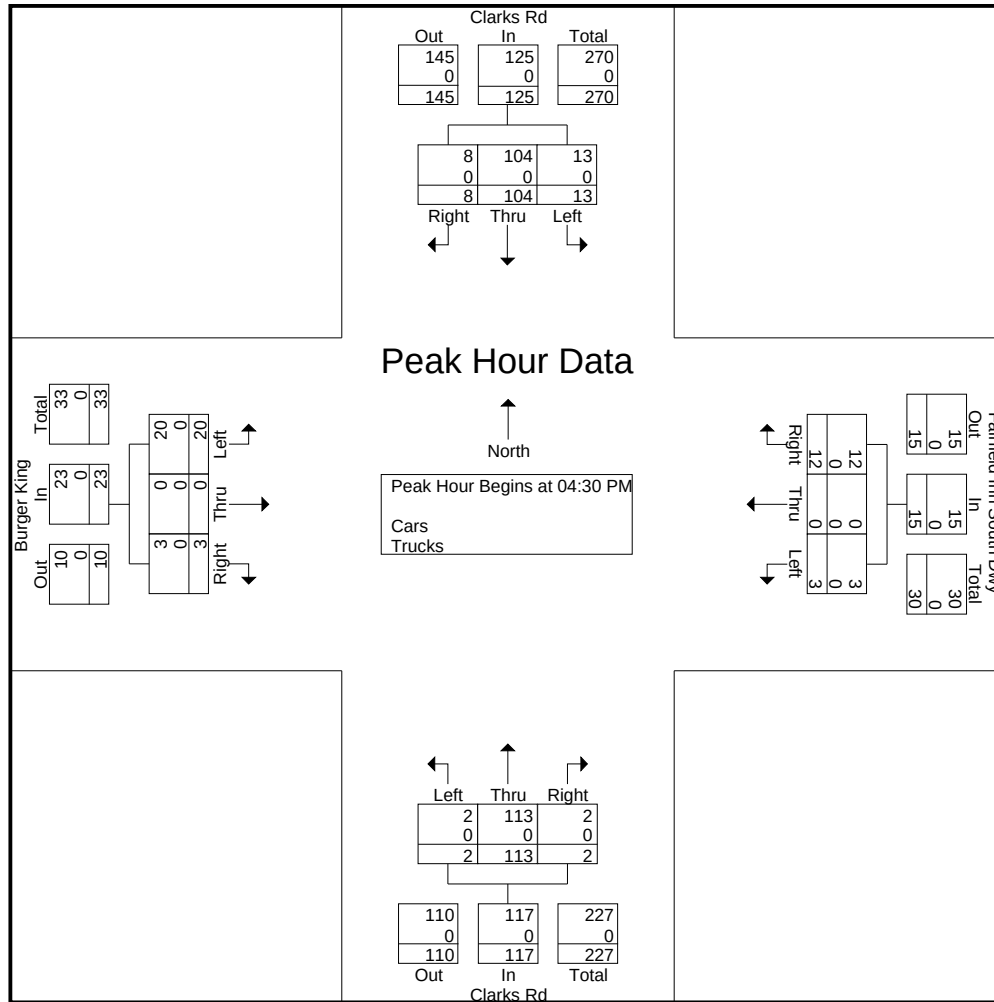
File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 1

[illegible][illegible]

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 2



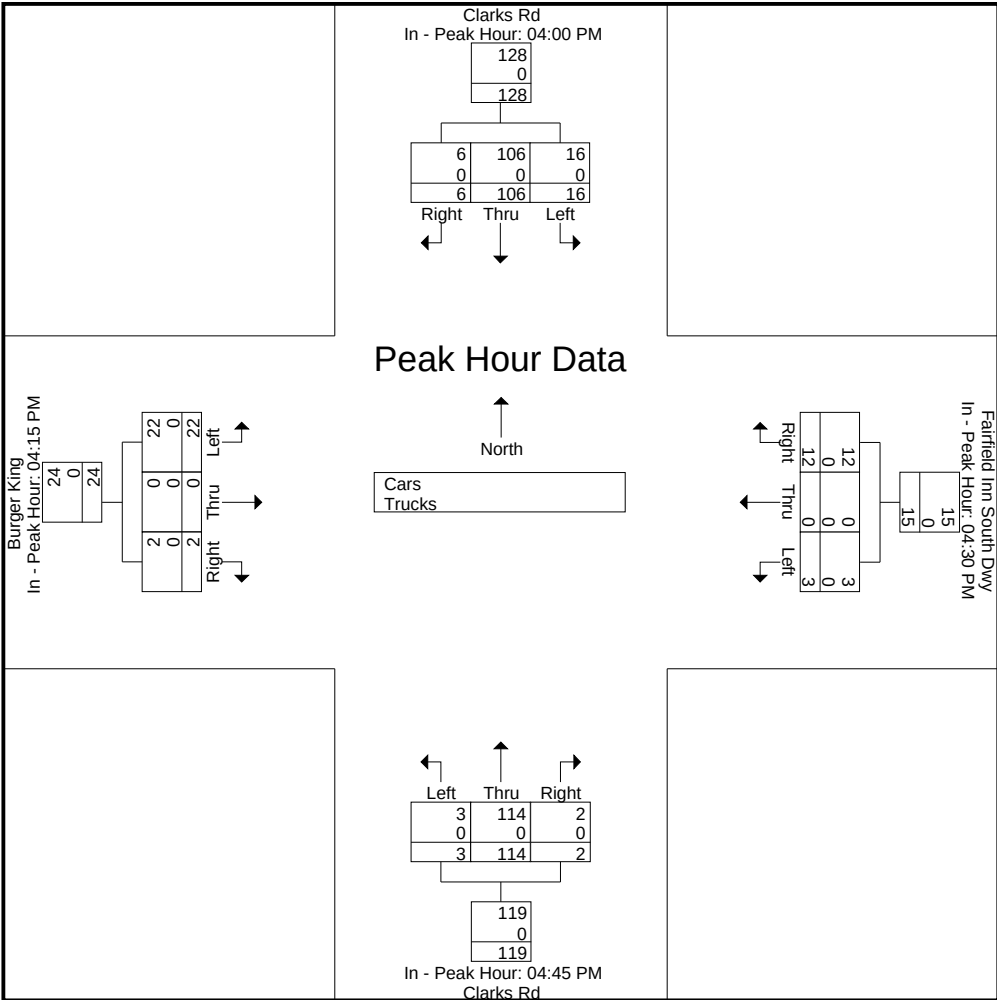
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North			Fairfield Inn South Dwy From East			Clarks Rd From South			Burger King From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	4	32	0	0	0	3	0	26	0	4	0	0	69
04:15 PM	4	17	1	0	0	3	0	33	0	5	0	0	63
04:30 PM	6	33	3	1	0	1	1	26	0	4	0	1	76
04:45 PM	2	24	2	0	0	5	0	24	1	7	0	1	66
Total	16	106	6	1	0	12	1	109	1	20	0	2	274
05:00 PM	1	24	3	1	0	3	0	33	0	6	0	0	71
05:15 PM	4	23	0	1	0	3	1	30	1	3	0	1	67
05:30 PM	0	23	2	2	0	0	2	27	0	5	0	1	62
05:45 PM	3	18	1	1	0	1	0	14	2	2	1	1	44
Total	8	88	6	5	0	7	3	104	3	16	1	3	244
Grand Total	24	194	12	6	0	19	4	213	4	36	1	5	518
Apprch %	10.4	84.3	5.2	24	0	76	1.8	96.4	1.8	85.7	2.4	11.9	
Total %	4.6	37.5	2.3	1.2	0	3.7	0.8	41.1	0.8	6.9	0.2	1	

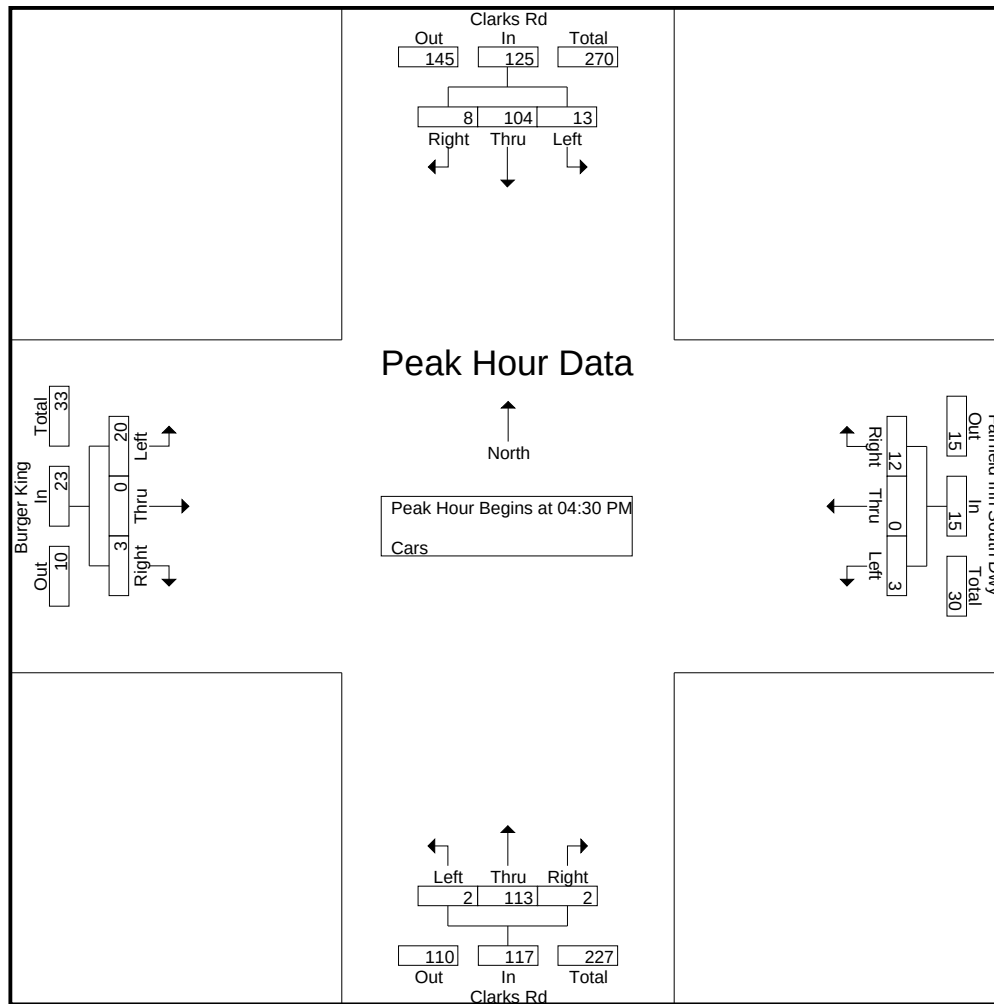
	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	6	33	3	42	1	0	1	2	1	26	0	27	4	0	1	5	76
04:45 PM	2	24	2	28	0	0	5	5	0	24	1	25	7	0	1	8	66
05:00 PM	1	24	3	28	1	0	3	4	0	33	0	33	6	0	0	6	71
05:15 PM	4	23	0	27	1	0	3	4	1	30	1	32	3	0	1	4	67
Total Volume	13	104	8	125	3	0	12	15	2	113	2	117	20	0	3	23	280
% App. Total	10.4	83.2	6.4		20	0	80		1.7	96.6	1.7		87	0	13		
PHF	.542	.788	.667	.744	.750	.000	.600	.750	.500	.856	.500	.886	.714	.000	.750	.719	.921

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 5



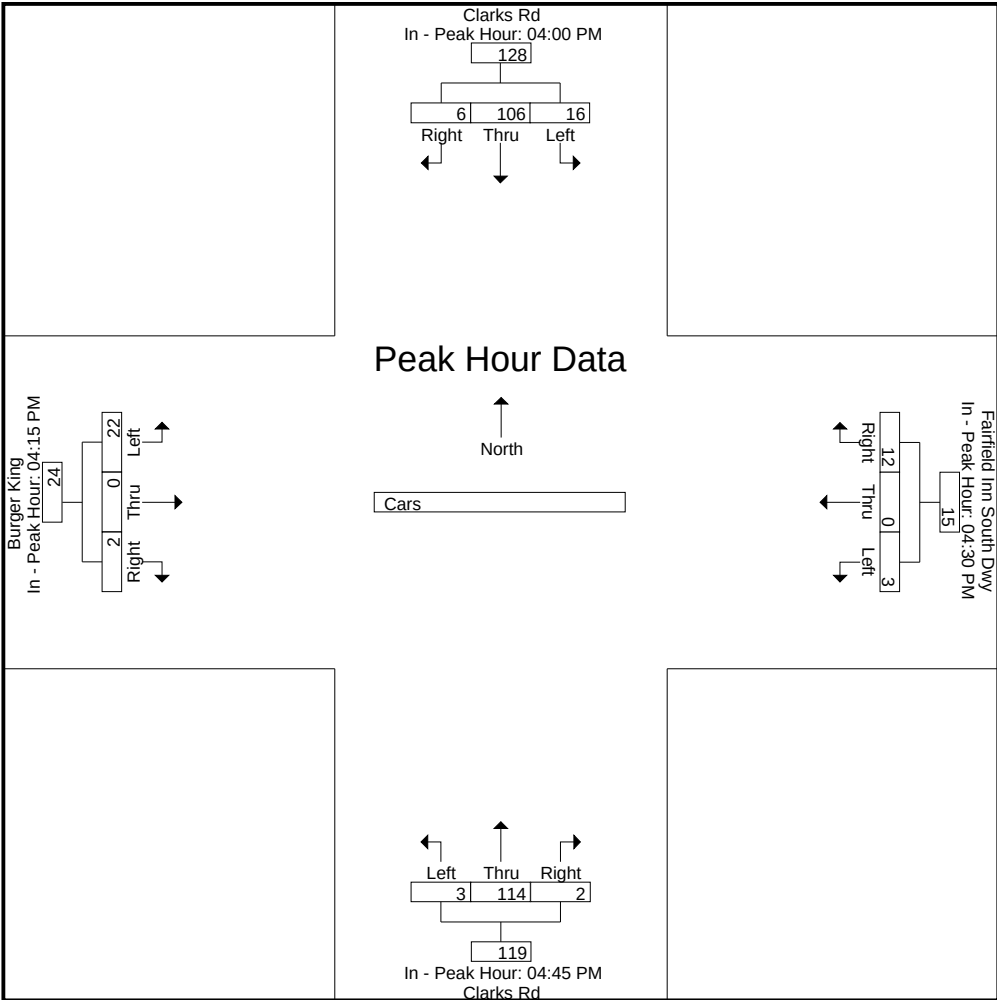
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:00 PM				04:30 PM				04:45 PM				04:15 PM			
+0 mins.	4	32	0	36	1	0	1	2	0	24	1	25	5	0	0	5
+15 mins.	4	17	1	22	0	0	5	5	0	33	0	33	4	0	1	5
+30 mins.	6	33	3	42	1	0	3	4	1	30	1	32	7	0	1	8
+45 mins.	2	24	2	28	1	0	3	4	2	27	0	29	6	0	0	6
Total Volume	16	106	6	128	3	0	12	15	3	114	2	119	22	0	2	24
% App. Total	12.5	82.8	4.7		20	0	80		2.5	95.8	1.7		91.7	0	8.3	
PHF	.667	.803	.500	.762	.750	.000	.600	.750	.375	.864	.500	.902	.786	.000	.500	.750

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 6



978-664-2565

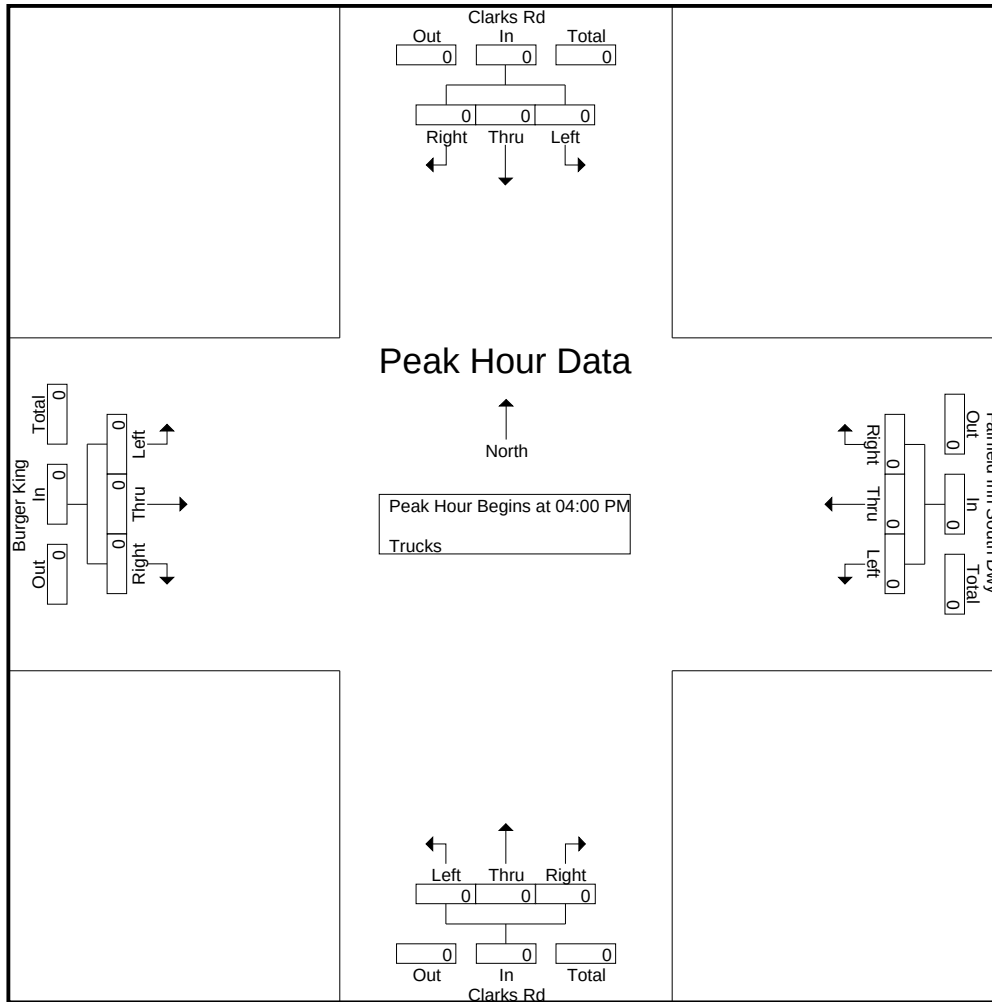
File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 7

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978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
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:

Can. Hour Ref.	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

978-664-2565

978-664-2565

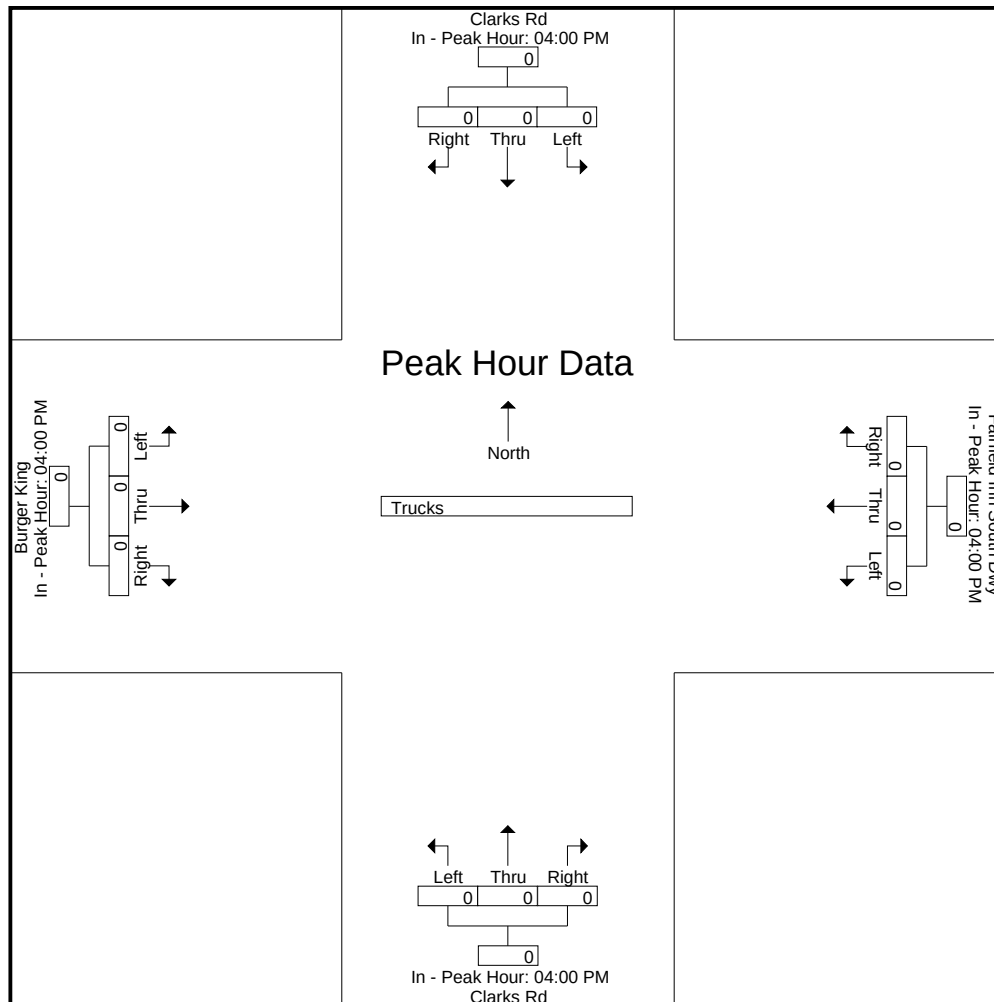
File Name : 97650007

Site Code : 97650007

Start Date : 7/13/2023

Page No : 9

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy



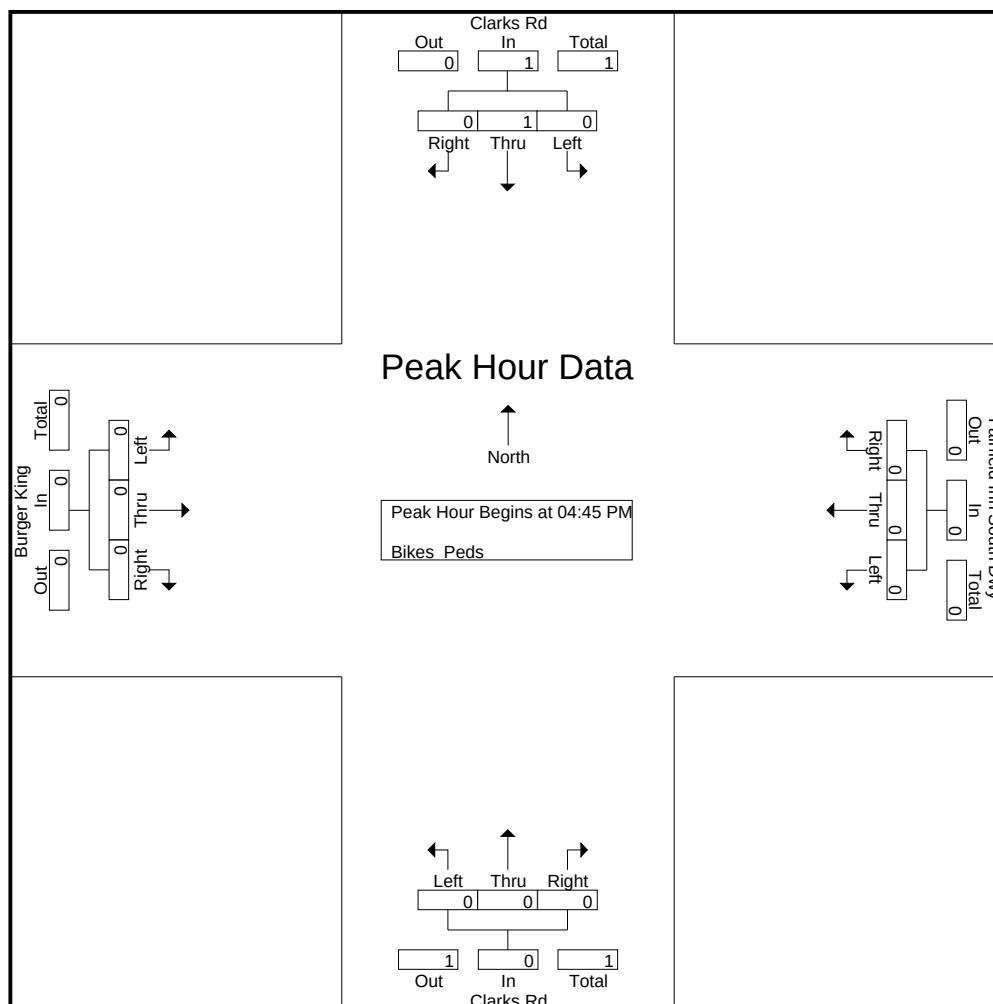
978-664-2565

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 10

[illegible]

978-664-2565

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 11



Peak Hour for Each Approach Begins at:

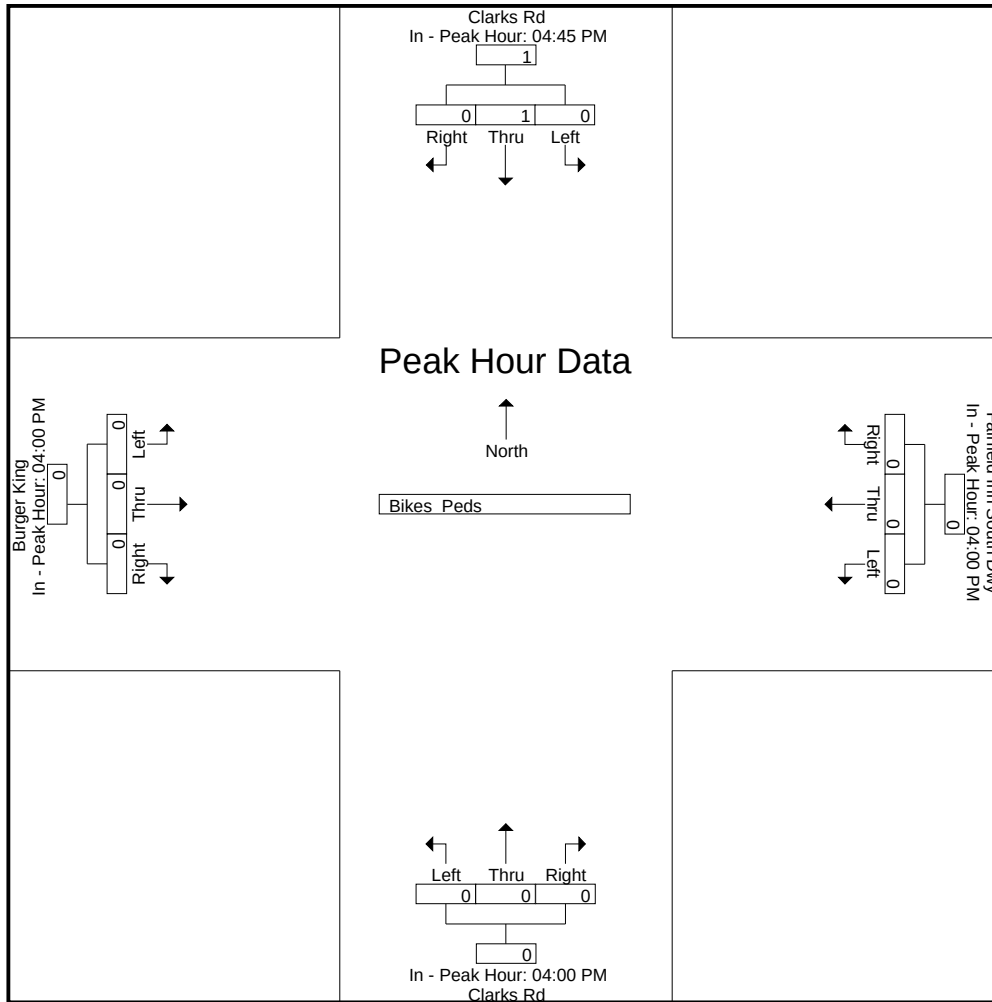
Peak Hour for Each Approach Begins at:																
	04:45 PM				04:00 PM				04:00 PM				04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

978-664-2565

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 97650007
Site Code : 97650007
Start Date : 7/13/2023
Page No : 12



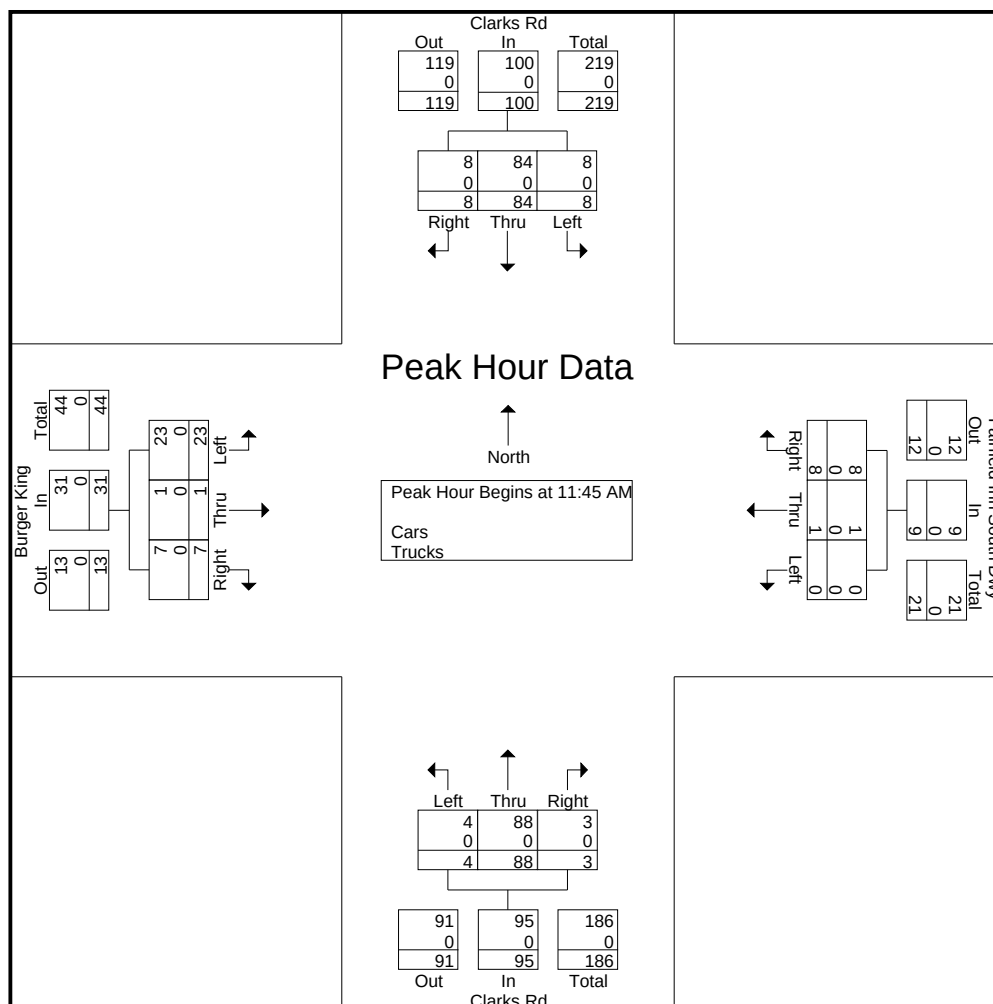
978-664-2565

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
Page No : 1

[illegible][illegible]

978-664-2565

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
Page No : 2

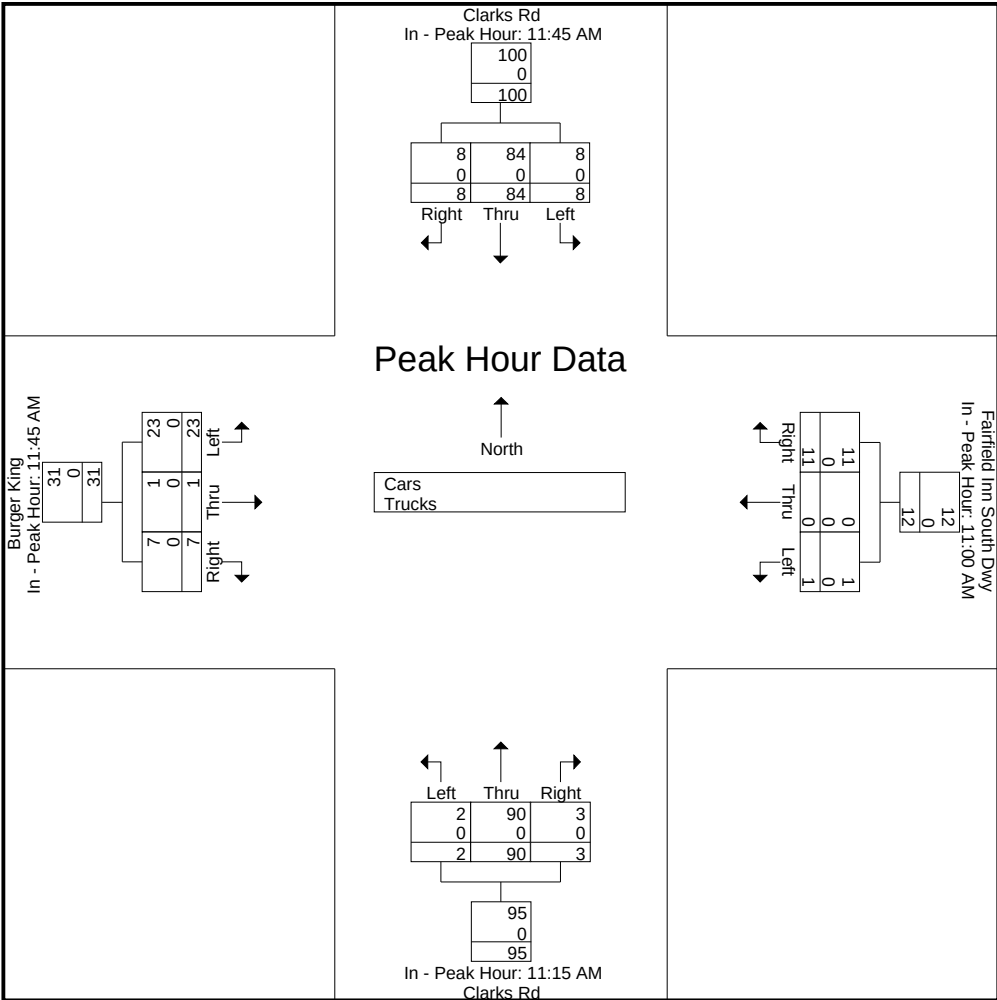


Peak Hour for Each Approach Begins at:

[illegible]

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
Page No : 3



Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
Page No : 4

Groups Printed- Cars

	Clarks Rd From North			Fairfield Inn South Dwy From East			Clarks Rd From South			Burger King From West			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
11:00 AM	1	18	0	1	0	3	1	17	1	4	1	0	47
11:15 AM	3	22	0	0	0	3	0	19	1	1	0	2	51
11:30 AM	1	20	0	0	0	2	0	19	0	1	0	0	43
11:45 AM	4	18	2	0	0	3	2	31	1	5	0	0	66
Total	9	78	2	1	0	11	3	86	3	11	1	2	207
12:00 PM	0	21	0	0	0	1	0	21	1	2	1	2	49
12:15 PM	0	19	5	0	0	3	1	19	0	12	0	4	63
12:30 PM	4	26	1	0	1	1	1	17	1	4	0	1	57
12:45 PM	0	19	0	0	0	0	2	23	2	2	0	1	49
Total	4	85	6	0	1	5	4	80	4	20	1	8	218
01:00 PM	2	20	2	2	0	4	0	19	1	6	0	1	57
01:15 PM	2	15	1	0	0	0	2	14	1	2	0	0	37
01:30 PM	1	18	0	0	0	0	0	18	0	5	0	1	43
01:45 PM	0	12	1	0	0	1	2	12	0	1	1	0	30
Total	5	65	4	2	0	5	4	63	2	14	1	2	167
Grand Total	18	228	12	3	1	21	11	229	9	45	3	12	592
Apprch %	7	88.4	4.7	12	4	84	4.4	92	3.6	75	5	20	
Total %	3	38.5	2	0.5	0.2	3.5	1.9	38.7	1.5	7.6	0.5	2	

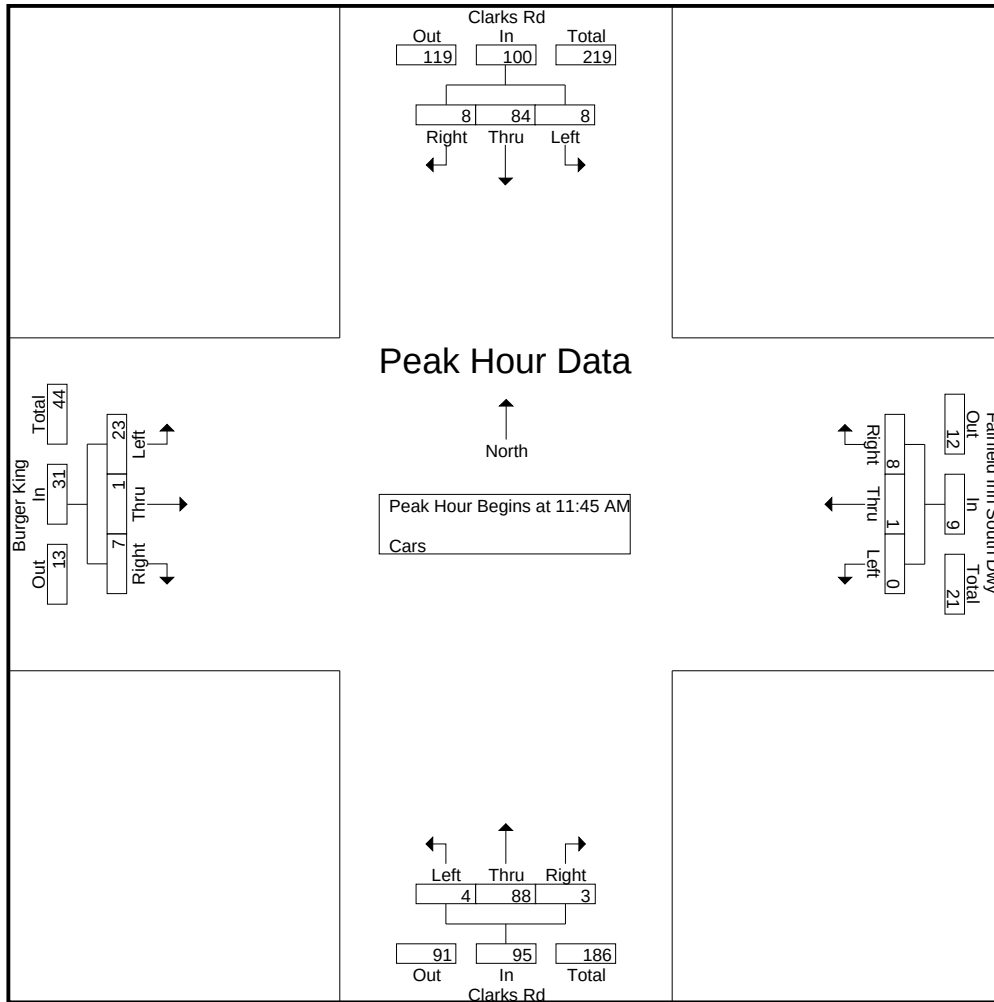
	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West				Int. Total
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:45 AM																	
11:45 AM	4	18	2	24	0	0	3	3	2	31	1	34	5	0	0	5	66
12:00 PM	0	21	0	21	0	0	1	1	0	21	1	22	2	1	2	5	49
12:15 PM	0	19	5	24	0	0	3	3	1	19	0	20	12	0	4	16	63
12:30 PM	4	26	1	31	0	1	1	2	1	17	1	19	4	0	1	5	57
Total Volume	8	84	8	100	0	1	8	9	4	88	3	95	23	1	7	31	235
% App. Total	8	84	8		0	11.1	88.9		4.2	92.6	3.2		74.2	3.2	22.6		
PHF	.500	.808	.400	.806	.000	.250	.667	.750	.500	.710	.750	.699	.479	.250	.438	.484	.890

Accurate Counts

978-664-2565

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
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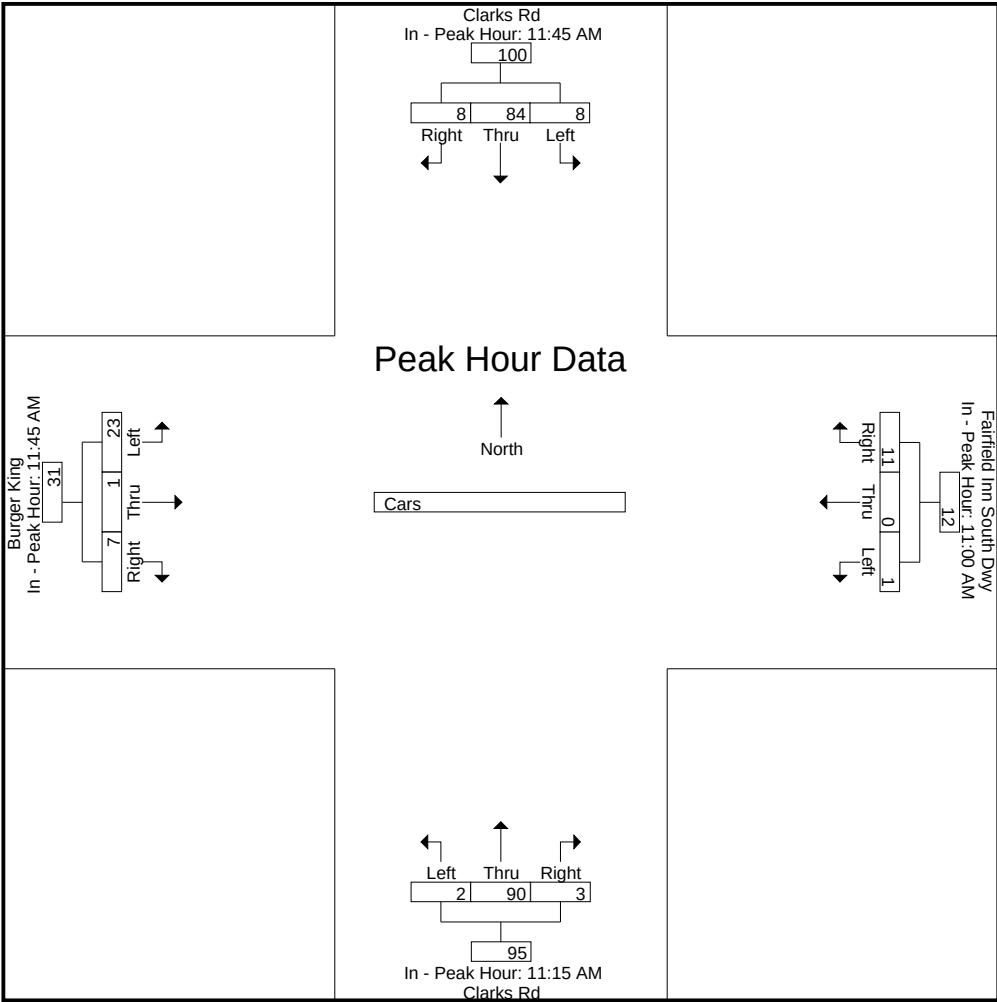
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	11:45 AM				11:00 AM				11:15 AM				11:45 AM			
+0 mins.	4	18	2	24	1	0	3	4	0	19	1	20	5	0	0	5
+15 mins.	0	21	0	21	0	0	3	3	0	19	0	19	2	1	2	5
+30 mins.	0	19	5	24	0	0	2	2	2	31	1	34	12	0	4	16
+45 mins.	4	26	1	31	0	0	3	3	0	21	1	22	4	0	1	5
Total Volume	8	84	8	100	1	0	11	12	2	90	3	95	23	1	7	31
% App. Total	8	84	8		8.3	0	91.7		2.1	94.7	3.2		74.2	3.2	22.6	
PHF	.500	.808	.400	.806	.250	.000	.917	.750	.250	.726	.750	.699	.479	.250	.438	.484

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
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Start Date : 7/15/2023
Page No : 7

[illegible][illegible]

978-664-2565

File Name : 976500S7

Site Code : 97650007

Start Date : 7/15/2023

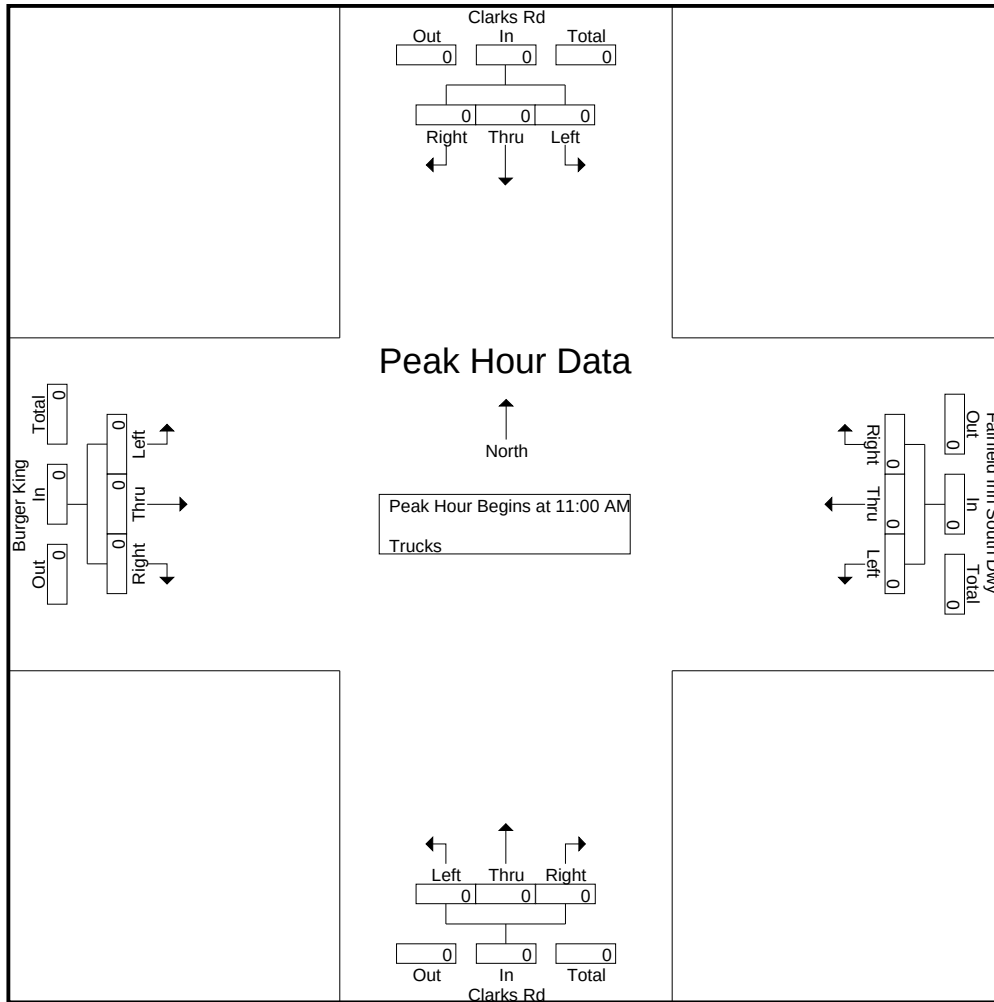
Page No : 8

N/S Street : Clarks Road

E/W Street : Fairfield Inn South/Burger King

City/State : Amesbury, MA

Weather : Cloudy



Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

[illegible]

978-664-2565

978-664-2565

File Name : 976500S7

Site Code : 97650007

Start Date : 7/15/2023

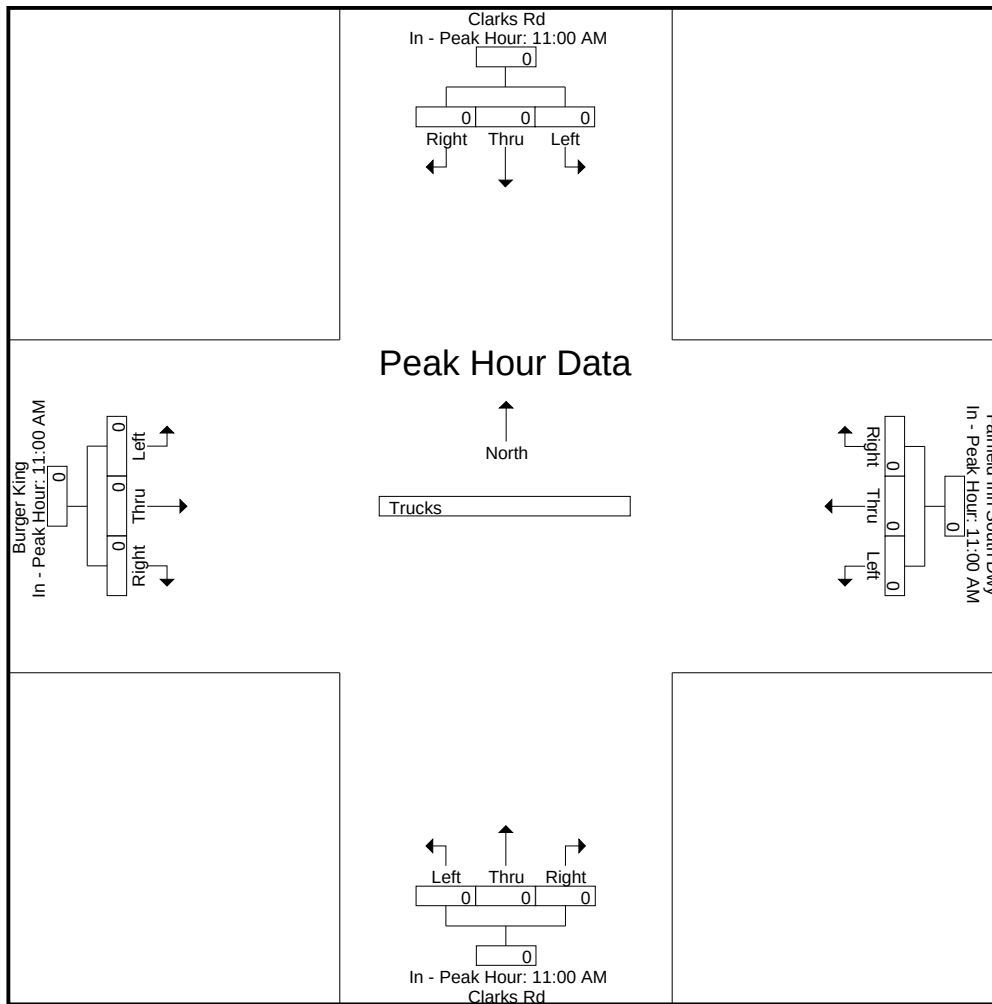
Page No : 9

N/S Street : Clarks Road

E/W Street : Fairfield Inn South/Burger King

City/State : Amesbury, MA

Weather : Cloudy



978-664-2565

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
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	Clarks Rd From North				Fairfield Inn South Dwy From East				Clarks Rd From South				Burger King From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
Grand Total	0	2	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5	2	7
Apprch %	0	100	0		0	0	0		0	0	0		0	0	0				
Total %	0	100	0		0	0	0		0	0	0		0	0	0		71.4	28.6	

[illegible]

978-664-2565

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
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North

Peak Hour Begins at 11:45 AM

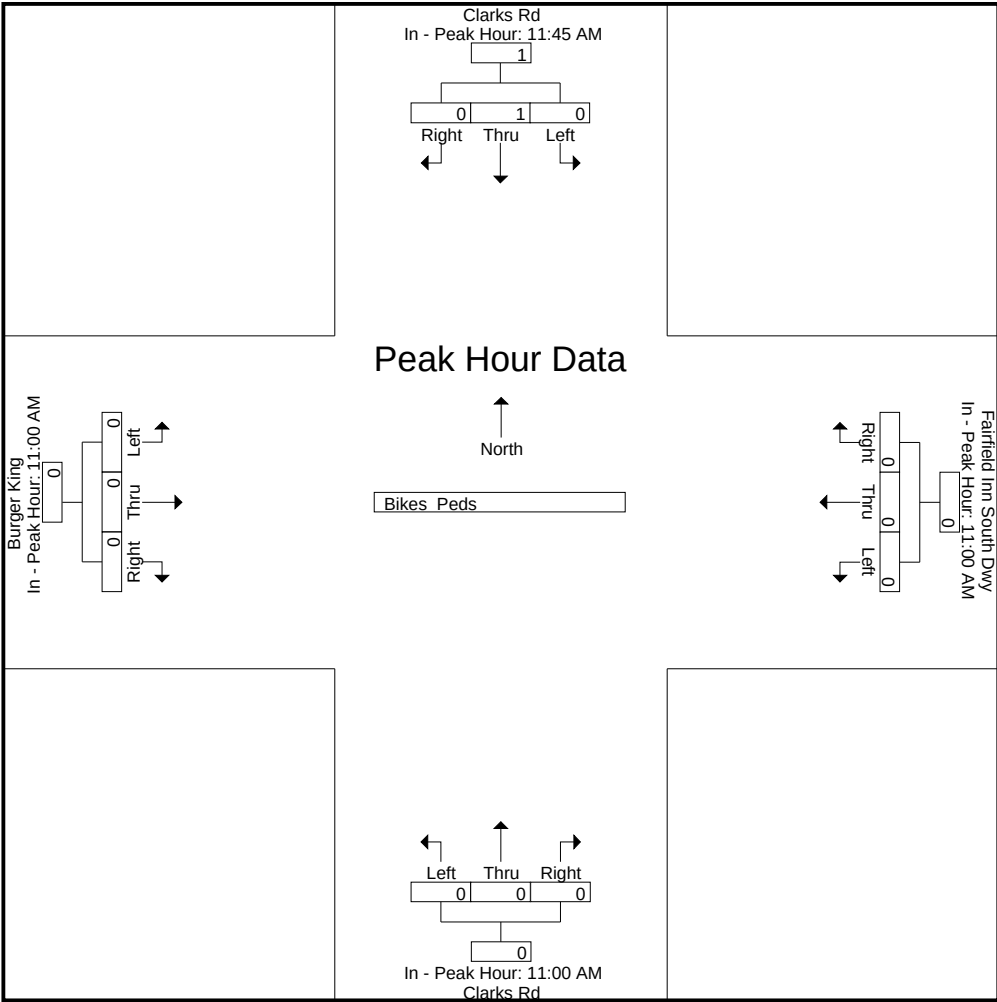
Bikes Peds

Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:																
	11:45 AM				11:00 AM				11:00 AM				11:00 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	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	100	0		0	0	0		0	0	0		0	0	0	
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

N/S Street : Clarks Road
E/W Street : Fairfield Inn South/Burger King
City/State : Amesbury, MA
Weather : Cloudy

File Name : 976500S7
Site Code : 97650007
Start Date : 7/15/2023
Page No : 12



SEASONAL ADJUSTMENT DATA



Massachusetts Highway Department
Statewide Traffic Data Collection
2019 Weekday Seasonal Factors

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

Round off:

0-999 = 10

>1000 = 100

U = Urban

R = Rural

1 - Interstate

2 - Freeway and Expressway

3 - Other Principal Arterial

4 - Minor Arterial

5 - Major Collector

6 - Minor Collector

7 - Local Road and Street

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

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

VEHICLE TRAVEL SPEED DATA



Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: NB

97650001

7/13/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	0	0	2
1:00	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
2:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2
4:00	0	0	0	1	0	2	1	5	3	0	0	0	0	0	12
5:00	0	0	0	0	0	0	2	3	7	2	1	0	0	0	15
6:00	0	0	0	0	1	2	8	10	12	6	3	0	0	0	42
7:00	0	0	0	0	3	6	15	21	31	9	5	0	0	1	91
8:00	0	0	3	0	2	6	16	18	27	10	5	0	0	0	87
9:00	0	0	0	1	1	1	8	19	15	10	0	0	0	0	55
10:00	0	0	3	0	0	3	10	18	24	7	1	0	0	0	66
11:00	0	0	0	0	0	2	11	21	16	10	4	1	0	0	65
12:00 PM	0	0	1	3	2	3	15	28	26	4	2	0	0	0	84
1:00	0	0	1	0	2	1	8	30	26	8	1	1	0	0	78
2:00	0	0	2	1	1	1	6	21	29	13	0	1	0	0	75
3:00	0	0	0	0	3	1	7	22	27	16	4	0	0	0	80
4:00	0	0	0	0	0	3	11	22	35	15	2	0	0	0	88
5:00	0	0	0	0	3	2	11	28	28	18	2	0	0	0	92
6:00	0	0	0	0	1	1	7	15	22	8	1	1	0	0	56
7:00	0	0	0	1	2	2	2	13	8	5	1	0	1	1	36
8:00	0	0	0	0	1	1	2	19	9	4	2	0	0	0	38
9:00	0	0	0	0	1	0	7	1	11	5	0	0	0	0	25
10:00	0	0	0	0	0	1	2	3	3	1	1	0	0	0	11
11:00	0	0	0	0	0	0	1	2	0	2	0	0	0	0	5
Total	0	0	10	7	23	39	151	323	359	154	35	4	1	2	1108

Percentile	15th
Speed	20
	24
Mean Speed (Average)	23.9
10 MPH Pace Speed	20-29
Number in Pace	886
Percent in Pace	80.0%
Number > 24 MPH	555
Percent > 24 MPH	50.1%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: NB

97650001

7/14/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	0	0	0	1	2	1	0	1	0	0	0	6
1:00	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0	2
4:00	0	0	0	0	0	0	1	1	3	1	0	0	0	0	6
5:00	0	0	0	0	1	1	1	7	2	1	0	0	0	0	13
6:00	0	0	0	1	1	1	12	12	10	5	0	0	0	0	42
7:00	0	0	0	0	0	2	8	11	11	8	3	0	0	0	43
8:00	0	0	0	1	4	3	17	16	15	7	1	0	0	0	64
9:00	0	0	0	1	3	2	12	25	10	4	0	0	0	0	57
10:00	0	0	1	1	1	3	8	16	14	6	0	0	0	0	50
11:00	0	0	0	1	4	0	5	19	20	7	0	0	0	0	56
12:00 PM	0	0	0	0	3	4	12	18	20	8	6	0	1	0	72
1:00	0	0	0	0	4	3	11	19	19	4	0	0	0	0	60
2:00	0	0	0	2	1	4	9	31	16	8	2	0	0	0	73
3:00	0	0	1	2	1	8	13	24	24	11	6	2	1	0	93
4:00	0	0	0	1	0	1	6	18	27	6	2	0	0	0	61
5:00	0	0	0	0	1	3	6	22	17	14	1	0	1	0	65
6:00	0	0	0	0	1	1	13	12	13	1	0	0	0	0	41
7:00	0	0	0	0	2	0	7	19	14	5	1	0	0	0	48
8:00	0	0	0	1	0	6	6	13	5	2	0	0	0	1	34
9:00	0	0	0	0	0	3	8	8	4	4	1	0	0	0	28
10:00	0	0	0	1	0	0	3	2	0	0	1	0	0	0	7
11:00	0	0	0	0	0	2	3	3	3	0	0	1	0	0	12
Total	0	0	3	12	27	47	162	302	249	102	25	3	3	1	936

Percentile	15th
Speed	19
	50th
	23
	85th
	27
	95th
	29
Mean Speed (Average)	23.2
10 MPH Pace Speed	18-27
Number in Pace	745
Percent in Pace	79.6%
Number > 24 MPH	383
Percent > 24 MPH	40.9%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: NB

97650001

7/15/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	2	2	2	1	1	0	0	0	8
1:00	0	0	0	1	0	0	0	2	1	1	0	0	0	0	5
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3
4:00	0	0	0	0	1	1	1	2	0	0	0	0	0	0	5
5:00	0	0	1	0	1	2	1	1	2	0	0	0	0	0	8
6:00	0	0	0	0	0	3	3	6	4	0	0	0	0	0	16
7:00	0	0	0	0	0	0	5	5	6	6	0	0	0	0	22
8:00	0	0	0	1	1	3	5	15	13	6	2	0	0	1	47
9:00	0	0	0	0	0	2	11	26	13	7	2	0	0	1	62
10:00	0	0	0	0	2	2	9	13	25	8	1	0	0	0	60
11:00	0	0	0	1	0	0	12	27	23	7	2	0	0	0	72
12:00 PM	0	0	0	0	1	5	10	24	26	4	3	0	0	0	73
1:00	0	0	0	1	0	3	9	21	22	8	0	0	0	1	65
2:00	0	0	1	0	2	1	9	14	14	11	1	0	0	1	54
3:00	0	0	0	0	2	3	8	13	15	7	1	0	0	0	49
4:00	0	0	1	1	1	0	7	18	17	8	1	0	0	0	54
5:00	0	0	0	0	1	1	4	8	20	12	1	0	0	0	47
6:00	0	0	0	1	1	2	5	11	11	9	0	0	0	0	40
7:00	0	0	0	0	1	3	5	11	15	6	4	0	0	0	45
8:00	0	0	0	0	0	2	4	14	15	8	0	0	0	0	43
9:00	0	0	0	0	0	2	5	5	9	2	1	0	0	0	24
10:00	0	0	0	0	0	2	1	2	1	1	0	1	0	0	8
11:00	0	0	0	0	0	0	1	3	0	0	0	0	0	0	4
Total	0	0	3	6	14	37	118	244	254	113	20	1	0	4	814
Percentile															
Speed				15th	50th	85th	95th								
				20	24	27	29								
Mean Speed (Average)				24.2											
10 MPH Pace Speed				19-28											
Number in Pace				652											
Percent in Pace				80.1%											
Number > 24 MPH				392											
Percent > 24 MPH				48.2%											
Grand Total	0	0	16	25	64	123	431	869	862	369	80	8	4	7	2858
Stats															
Percentile				15th	50th	85th	95th								
Speed				19	24	27	30								
Mean Speed (Average)				23.7											
10 MPH Pace Speed				18-27											
Number in Pace				2277											
Percent in Pace				79.7%											
Number > 24 MPH				1330											
Percent > 24 MPH				46.5%											

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: SB

97650001

7/13/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3
1:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
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	0	0	0	0	3	2	0	0	0	0	5
5:00	0	0	0	0	0	0	3	0	7	1	0	0	1	0	12
6:00	0	0	0	0	0	0	3	9	12	5	2	0	0	0	31
7:00	0	0	0	0	0	3	3	13	19	11	2	0	0	0	51
8:00	0	0	0	0	0	1	10	20	31	7	1	0	0	0	70
9:00	0	0	0	0	0	1	3	22	19	17	2	0	0	0	64
10:00	0	0	1	0	1	4	4	9	25	8	2	1	0	0	55
11:00	0	0	0	0	1	3	6	17	35	13	7	0	0	0	82
12:00 PM	0	0	0	0	1	4	7	22	30	24	6	1	0	0	95
1:00	0	0	0	2	2	2	13	12	27	14	3	0	0	0	75
2:00	0	0	2	2	2	3	8	14	34	19	3	0	0	0	87
3:00	0	0	2	0	0	0	9	14	32	26	8	1	0	0	92
4:00	0	0	0	1	0	3	13	14	46	24	5	1	0	0	107
5:00	0	0	0	0	0	0	10	13	43	18	7	2	1	1	95
6:00	0	0	0	0	3	5	8	25	29	19	3	0	0	0	92
7:00	0	0	0	0	1	3	6	9	25	13	4	1	0	0	62
8:00	0	0	0	0	0	0	10	15	16	7	3	0	0	0	51
9:00	0	0	0	0	0	1	1	6	13	4	1	0	0	0	26
10:00	0	0	0	0	0	1	6	3	2	4	1	0	0	0	17
11:00	0	0	0	0	0	0	1	0	4	5	0	0	0	0	10
Total	0	0	5	5	11	36	124	239	453	241	60	7	2	1	1184

Percentile	15th
Speed	20
	50th
	25
	85th
	29
	95th
	30
Mean Speed (Average)	24.9
10 MPH Pace Speed	20-29
Number in Pace	970
Percent in Pace	81.9%
Number > 24 MPH	764
Percent > 24 MPH	64.5%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: SB

97650001

7/14/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	0	1	1	3	0	0	0	1	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	0	0	0	0	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	1	1	2	6	4	0	0	0	0	14
6:00	0	0	0	0	2	0	2	7	12	2	0	0	0	0	25
7:00	0	0	0	2	0	0	3	12	15	12	3	1	0	0	48
8:00	0	0	0	0	0	3	7	19	22	14	5	0	0	0	70
9:00	0	0	0	0	0	1	3	14	31	26	4	0	0	0	79
10:00	0	0	0	0	3	1	11	16	29	10	4	0	0	0	74
11:00	0	0	0	2	0	0	9	10	31	32	5	1	1	0	91
12:00 PM	0	0	0	0	1	3	6	17	42	28	6	0	1	0	104
1:00	0	0	0	0	1	5	9	12	34	19	6	1	1	0	88
2:00	0	0	0	2	1	1	3	16	22	16	6	0	0	0	67
3:00	0	0	0	1	0	2	3	13	37	24	4	0	1	0	85
4:00	0	0	1	1	1	1	14	18	32	18	9	1	0	0	96
5:00	0	0	0	0	2	6	10	29	39	19	3	1	0	0	109
6:00	0	0	0	0	0	3	6	22	43	21	1	0	0	0	96
7:00	0	0	0	0	0	1	6	16	25	14	7	2	0	0	71
8:00	0	0	1	0	0	2	4	14	14	11	3	1	2	0	52
9:00	0	0	0	0	0	0	2	9	8	4	0	0	0	0	23
10:00	0	0	0	0	0	0	2	2	6	0	1	0	0	0	11
11:00	0	0	0	0	0	0	3	6	7	3	1	0	0	0	20
Total	0	0	2	8	11	30	105	256	459	277	68	8	7	0	1231

Percentile	15th
Speed	21
	50th
	25
	85th
	29
	95th
	30
Mean Speed (Average)	25.1
10 MPH Pace Speed	20-29
Number in Pace	1021
Percent in Pace	82.9%
Number > 24 MPH	819
Percent > 24 MPH	66.5%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: SB

97650001

7/15/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	0	0	2	0	1	1	0	0	0	0	0	5
1:00	0	0	0	0	0	0	0	1	3	2	0	0	0	0	6
2:00	0	0	1	0	0	1	0	1	1	1	0	0	0	0	5
3:00	0	0	0	0	0	0	1	0	1	1	0	0	0	0	3
4:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00	0	0	0	0	0	0	3	1	1	0	0	0	0	0	5
6:00	0	0	0	0	0	0	0	2	1	3	0	0	0	0	6
7:00	0	0	1	0	0	0	3	3	13	6	2	0	0	0	28
8:00	0	0	0	0	0	0	4	6	19	9	2	1	0	0	41
9:00	0	0	0	0	2	1	3	10	24	15	0	0	0	0	55
10:00	0	0	0	0	2	3	6	22	26	21	5	0	0	0	85
11:00	0	0	0	1	2	1	3	10	36	19	8	0	0	1	81
12:00 PM	0	0	0	0	0	1	10	18	37	14	9	1	0	0	90
1:00	0	0	1	0	1	2	8	19	25	21	0	0	0	0	77
2:00	0	0	0	1	0	1	16	19	26	21	7	1	0	0	92
3:00	0	0	1	0	1	0	4	21	36	16	11	0	0	0	90
4:00	0	0	1	0	0	0	5	16	35	20	10	1	1	0	89
5:00	0	0	0	0	0	0	2	15	35	17	2	0	0	0	71
6:00	0	0	0	1	0	3	5	17	30	11	0	0	0	0	67
7:00	0	0	0	0	0	1	3	6	21	13	3	0	0	0	47
8:00	0	0	0	0	0	0	6	12	22	3	2	0	1	0	46
9:00	0	0	0	0	0	2	3	5	14	4	3	0	0	0	31
10:00	0	0	0	0	0	0	3	6	5	6	3	0	0	0	23
11:00	0	0	0	0	0	0	1	2	3	1	0	0	0	0	7
Total	0	0	6	3	8	18	89	213	415	224	67	4	2	1	1050
Percentile															
Speed				15th	50th	85th	95th								
				22	25	29	30								
Mean Speed (Average)				25.2											
10 MPH Pace Speed				20-29											
Number in Pace				877											
Percent in Pace				83.5%											
Number > 24 MPH				713											
Percent > 24 MPH				67.9%											
Grand Total	0	0	13	16	30	84	318	708	1327	742	195	19	11	2	3465
Stats															
Percentile				15th	50th	85th	95th								
Speed				21	25	29	30								
Mean Speed (Average)				25.1											
10 MPH Pace Speed				20-29											
Number in Pace				2869											
Percent in Pace				82.8%											
Number > 24 MPH				2296											
Percent > 24 MPH				66.3%											

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: Combined

97650001

7/13/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	0	0	0	1	1	3	0	0	0	0	0	0	5
1:00	0	0	0	0	0	1	0	0	1	1	0	0	0	0	3
2:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
3:00	0	0	0	0	0	1	0	2	0	0	0	0	0	0	3
4:00	0	0	0	1	0	2	1	5	6	2	0	0	0	0	17
5:00	0	0	0	0	0	0	5	3	14	3	1	0	1	0	27
6:00	0	0	0	0	1	2	11	19	24	11	5	0	0	0	73
7:00	0	0	0	0	3	9	18	34	50	20	7	0	0	1	142
8:00	0	0	3	0	2	7	26	38	58	17	6	0	0	0	157
9:00	0	0	0	1	1	2	11	41	34	27	2	0	0	0	119
10:00	0	0	4	0	1	7	14	27	49	15	3	1	0	0	121
11:00	0	0	0	0	1	5	17	38	51	23	11	1	0	0	147
12:00 PM	0	0	1	3	3	7	22	50	56	28	8	1	0	0	179
1:00	0	0	1	2	4	3	21	42	53	22	4	1	0	0	153
2:00	0	0	4	3	3	4	14	35	63	32	3	1	0	0	162
3:00	0	0	2	0	3	1	16	36	59	42	12	1	0	0	172
4:00	0	0	0	1	0	6	24	36	81	39	7	1	0	0	195
5:00	0	0	0	0	3	2	21	41	71	36	9	2	1	1	187
6:00	0	0	0	0	4	6	15	40	51	27	4	1	0	0	148
7:00	0	0	0	1	3	5	8	22	33	18	5	1	1	1	98
8:00	0	0	0	0	1	1	12	34	25	11	5	0	0	0	89
9:00	0	0	0	0	1	1	8	7	24	9	1	0	0	0	51
10:00	0	0	0	0	0	2	8	6	5	5	2	0	0	0	28
11:00	0	0	0	0	0	0	2	2	4	7	0	0	0	0	15
Total	0	0	15	12	34	75	275	562	812	395	95	11	3	3	2292

Percentile	15th
Speed	20
	50th
	25
	85th
	28
	95th
	30
Mean Speed (Average)	24.4
10 MPH Pace Speed	20-29
Number in Pace	1857
Percent in Pace	81.0%
Number > 24 MPH	1319
Percent > 24 MPH	57.5%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: Combined

97650001

7/14/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	0	0	0	2	3	4	0	1	0	1	0	12
1:00	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3
2:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
3:00	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3
4:00	0	0	0	0	0	0	1	1	3	1	0	0	0	0	6
5:00	0	0	0	0	1	2	2	9	8	5	0	0	0	0	27
6:00	0	0	0	1	3	1	14	19	22	7	0	0	0	0	67
7:00	0	0	0	2	0	2	11	23	26	20	6	1	0	0	91
8:00	0	0	0	1	4	6	24	35	37	21	6	0	0	0	134
9:00	0	0	0	1	3	3	15	39	41	30	4	0	0	0	136
10:00	0	0	1	1	4	4	19	32	43	16	4	0	0	0	124
11:00	0	0	0	3	4	0	14	29	51	39	5	1	1	0	147
12:00 PM	0	0	0	0	4	7	18	35	62	36	12	0	2	0	176
1:00	0	0	0	0	5	8	20	31	53	23	6	1	1	0	148
2:00	0	0	0	4	2	5	12	47	38	24	8	0	0	0	140
3:00	0	0	1	3	1	10	16	37	61	35	10	2	2	0	178
4:00	0	0	1	2	1	2	20	36	59	24	11	1	0	0	157
5:00	0	0	0	0	3	9	16	51	56	33	4	1	1	0	174
6:00	0	0	0	0	1	4	19	34	56	22	1	0	0	0	137
7:00	0	0	0	0	2	1	13	35	39	19	8	2	0	0	119
8:00	0	0	1	1	0	8	10	27	19	13	3	1	2	1	86
9:00	0	0	0	0	0	3	10	17	12	8	1	0	0	0	51
10:00	0	0	0	1	0	0	5	4	6	0	2	0	0	0	18
11:00	0	0	0	0	0	2	6	9	10	3	1	1	0	0	32
Total	0	0	5	20	38	77	267	558	708	379	93	11	10	1	2167

Percentile	15th
Speed	20
	24
Mean Speed (Average)	24.3
10 MPH Pace Speed	20-29
Number in Pace	1730
Percent in Pace	79.8%
Number > 24 MPH	1202
Percent > 24 MPH	55.5%

Accurate Counts
978-664-2565

Location : Clarks Road
Location : South of Route 110
City/State: Amesbury, MA
Direction: Combined

97650001

7/15/2023	0 - 3	> 3 - 6	> 6 - 9	> 9 - 12	> 12 - 15	> 15 - 18	> 18 - 21	> 21 - 24	> 24 - 27	> 27 - 30	> 30 - 33	> 33 - 36	> 36 - 39	> 39	Total
Time	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	MPH	
12:00 AM	0	0	1	0	0	2	2	3	3	1	1	0	0	0	13
1:00	0	0	0	1	0	0	0	3	4	3	0	0	0	0	11
2:00	0	0	1	0	0	1	0	1	1	1	0	0	0	0	5
3:00	0	0	0	0	0	0	2	1	1	2	0	0	0	0	6
4:00	0	0	0	0	1	1	1	2	0	0	0	0	0	0	5
5:00	0	0	1	0	1	2	4	2	3	0	0	0	0	0	13
6:00	0	0	0	0	0	3	3	8	5	3	0	0	0	0	22
7:00	0	0	1	0	0	0	8	8	19	12	2	0	0	0	50
8:00	0	0	0	1	1	3	9	21	32	15	4	1	0	1	88
9:00	0	0	0	0	2	3	14	36	37	22	2	0	0	1	117
10:00	0	0	0	0	4	5	15	35	51	29	6	0	0	0	145
11:00	0	0	0	2	2	1	15	37	59	26	10	0	0	1	153
12:00 PM	0	0	0	0	1	6	20	42	63	18	12	1	0	0	163
1:00	0	0	1	1	1	5	17	40	47	29	0	0	0	1	142
2:00	0	0	1	1	2	2	25	33	40	32	8	1	0	1	146
3:00	0	0	1	0	3	3	12	34	51	23	12	0	0	0	139
4:00	0	0	2	1	1	0	12	34	52	28	11	1	1	0	143
5:00	0	0	0	0	1	1	6	23	55	29	3	0	0	0	118
6:00	0	0	0	2	1	5	10	28	41	20	0	0	0	0	107
7:00	0	0	0	0	1	4	8	17	36	19	7	0	0	0	92
8:00	0	0	0	0	0	2	10	26	37	11	2	0	1	0	89
9:00	0	0	0	0	0	4	8	10	23	6	4	0	0	0	55
10:00	0	0	0	0	0	2	4	8	6	7	3	1	0	0	31
11:00	0	0	0	0	0	0	2	5	3	1	0	0	0	0	11
Total	0	0	9	9	22	55	207	457	669	337	87	5	2	5	1864
Percentile															
Speed				15th	50th	85th	95th								
				20	25	28	30								
Mean Speed (Average)				24.8											
10 MPH Pace Speed				20-29											
Number in Pace				1528											
Percent in Pace				82.0%											
Number > 24 MPH				1105											
Percent > 24 MPH				59.3%											
Grand Total	0	0	29	41	94	207	749	1577	2189	1111	275	27	15	9	6323
Stats															
Percentile				15th	50th	85th	95th								
Speed				20	25	28	30								
Mean Speed (Average)				24.5											
10 MPH Pace Speed				20-29											
Number in Pace				5115											
Percent in Pace				80.9%											
Number > 24 MPH				3626											
Percent > 24 MPH				57.4%											

TRANSIT SCHEUDLES



ROUTE 17 OUTBOUND

Haverhill - Salisbury Beach via Amesbury

WEEKDAYS

1	2	3	4	5	6	7	
Bus starts Washington Square	Bus leaves NECC	Bus leaves Merrivillage Apartments	Bus leaves Route 110 & Main St.	Bus leaves Nicholas Costello Transportation Center	Bus leaves Elm St & Lafayette St	Bus ends Salisbury Beach	Bus continues on as
5:00	-	-	5:30	5:40	5:45	5:55	20
6:00	6:10	6:20	6:30	6:40	6:45	6:55	20
7:00	7:10	7:20	7:30	7:40	7:45	7:55	20
8:00	8:10	8:20	8:30	8:40	8:45	8:55	20
9:00	9:10	9:20	9:30	9:40	9:45	9:55	20
10:00	10:10	10:20	10:30	10:40	10:45	10:55	20
11:00	11:10	11:20	11:30	11:40	11:45	11:55	20
12:00	12:10	12:20	12:30	12:40	12:45	12:55	20
1:00	1:10	1:20	1:30	1:40	1:45	1:55	20
2:00	2:10	2:20	2:30	2:40	2:45	2:55	20
3:00	3:10	3:20	3:30	3:40	3:45	3:55	20
4:00	4:10	4:20	4:30	4:40	4:45	4:55	20
5:00	5:10	5:20	5:30	5:40	5:45	5:55	20
6:00	6:10	6:20	6:30	6:40	6:45	6:55	20
7:00	7:10	7:20	7:30	7:40	-	-	-

SATURDAYS

7:00	7:10	7:20	7:30	7:40	7:45	7:55	20
8:00	8:10	8:20	8:30	8:40	8:45	8:55	20
9:00	9:10	9:20	9:30	9:40	9:45	9:55	20
10:00	10:10	10:20	10:30	10:40	10:45	10:55	20
11:00	11:10	11:20	11:30	11:40	11:45	11:55	20
12:00	12:10	12:20	12:30	12:40	12:45	12:55	20
1:00	1:10	1:20	1:30	1:40	1:45	1:55	20
2:00	2:10	2:20	2:30	2:40	2:45	2:55	20
3:00	3:10	3:20	3:30	3:40	3:45	3:55	20
4:00	4:10	4:20	4:30	4:40	4:45	4:55	20
5:00	5:10	5:20	5:30	5:40	5:45	5:55	20
6:00	6:10	6:20	6:30	6:40	6:45	6:55	-

Updated 08.18.2023

ROUTE 17 INBOUND

Haverhill - Salisbury Beach via Amesbury

WEEKDAYS

7	8	9	10	10	11	12	13	
Bus starts Salisbury Beach	Bus leaves Salisbury Center	Bus leaves Elm St & Lafayette St	Bus leaves Nicholas Costello Transportation Center	Bus leaves Route 110 & Main St.	Bus leaves Merrivillage Apartments	Bus leaves NECC	Bus ends Washington Square	Bus continues on as
5:00	5:05	5:15	5:20	5:25	-	-	5:50	17
5:50	5:55	6:05	6:10	6:15	6:25	6:35	6:45	17
6:50	6:55	7:05	7:10	7:15	7:25	7:35	7:45	17
7:50	7:55	8:05	8:10	8:15	8:25	8:35	8:45	17
8:50	8:55	9:05	9:10	9:15	9:25	9:35	9:45	17
9:50	9:55	10:05	10:10	10:15	10:25	10:35	10:45	17
10:50	10:55	11:05	11:10	11:15	11:25	11:35	11:45	17
11:50	11:55	12:05	12:10	12:15	12:25	12:35	12:45	17
12:50	12:55	1:05	1:10	1:15	1:25	1:35	1:45	17
1:50	1:55	2:05	2:10	2:15	2:25	2:35	2:45	17
2:50	2:55	3:05	3:10	3:15	3:25	3:35	3:45	17
3:50	3:55	4:05	4:10	4:15	4:25	4:35	4:45	17
4:50	4:55	5:05	5:10	5:15	5:25	5:35	5:45	17
5:50	5:55	6:05	6:10	6:15	6:25	6:35	6:45	17
6:50	6:55	7:05	7:10	7:15	7:25	7:35	7:45	17
7:50	7:55	8:05	8:10	8:15	8:25	8:35	8:45	-

IB-2P

SATURDAYS

6:50	6:55	7:05	7:10	7:15	7:25	7:35	7:45	17
7:50	7:55	8:05	8:10	8:15	8:25	8:35	8:45	17
8:50	8:55	9:05	9:10	9:15	9:25	9:35	9:45	17
9:50	9:55	10:05	10:10	10:15	10:25	10:35	10:45	17
10:50	10:55	11:05	11:10	11:15	11:25	11:35	11:45	17
11:50	11:55	12:05	12:10	12:15	12:25	12:35	12:45	17
12:50	12:55	1:05	1:10	1:15	1:25	1:35	1:45	17
1:50	1:55	2:05	2:10	2:15	2:25	2:35	2:45	17
2:50	2:55	3:05	3:10	3:15	3:25	3:35	3:45	17
3:50	3:55	4:05	4:10	4:15	4:25	4:35	4:45	17
4:50	4:55	5:05	5:10	5:15	5:25	5:35	5:45	17
5:50	5:55	6:05	6:10	6:15	6:25	6:35	6:45	17
6:50	6:55	7:05	7:10	-	-	-	-	-

Updated 08.18.2023

MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Carriagetown Marketplace Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	SB	EB	WB			
PEAK HOURLY VOLUMES (PM) :	219	1,223	1,382			2,824

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

31,378

TOTAL # OF CRASHES :

3

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.60

CRASH RATE CALCULATION :

0.05

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

Comments : Below Statewide (0.78) and District (0.73) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Elm Street

Clarks 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 (PM) :	151	392	1,220	1,823		3,586

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

39,844

TOTAL # OF CRASHES :

36

OF
YEARS :

5

AVERAGE # OF
CRASHES PER YEAR (A) :

7.20

CRASH RATE CALCULATION :

0.50

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

Comments : Below Statewide (0.78) and District (0.73) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Interstate 95 Southbound Ramps

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	EB	WB			
PEAK HOURLY VOLUMES (PM) :	236	1,456	1,936			3,628

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

40,311

TOTAL # OF CRASHES :

4

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.80

CRASH RATE CALCULATION :

0.05

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

Comments : Below Statewide (0.57) and District (0.57) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Interstate 95 Northbound Ramps

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 (PM) :	296	907	1,058	1,220		3,481

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY
 APPROACH VOLUME :

38,678

TOTAL # OF CRASHES :

7

OF
 YEARS :

5

AVERAGE # OF
 CRASHES PER YEAR (A) :

1.40

CRASH RATE CALCULATION :

0.10

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

Comments : Below Statewide (0.57) and District (0.57) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Salisbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Merrill Street

Rabbitt 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 (PM) :	613	339	1,207	843		3,002

" K " FACTOR : **0.090** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **33,356**

TOTAL # OF CRASHES : **47** # OF YEARS : **5** AVERAGE # OF CRASHES PER YEAR (A) : **9.40**

CRASH RATE CALCULATION :

0.77

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

Comments : Below Statewide (0.78) and Above District (0.73) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Clarks Road

MINOR STREET(S) : North Project Site Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	WB			
PEAK HOURLY VOLUMES (PM) :	145	127	1			273

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

3,033

TOTAL # OF CRASHES :

1

OF YEARS :

5

AVERAGE # OF CRASHES PER YEAR (A) :

0.20

CRASH RATE CALCULATION :

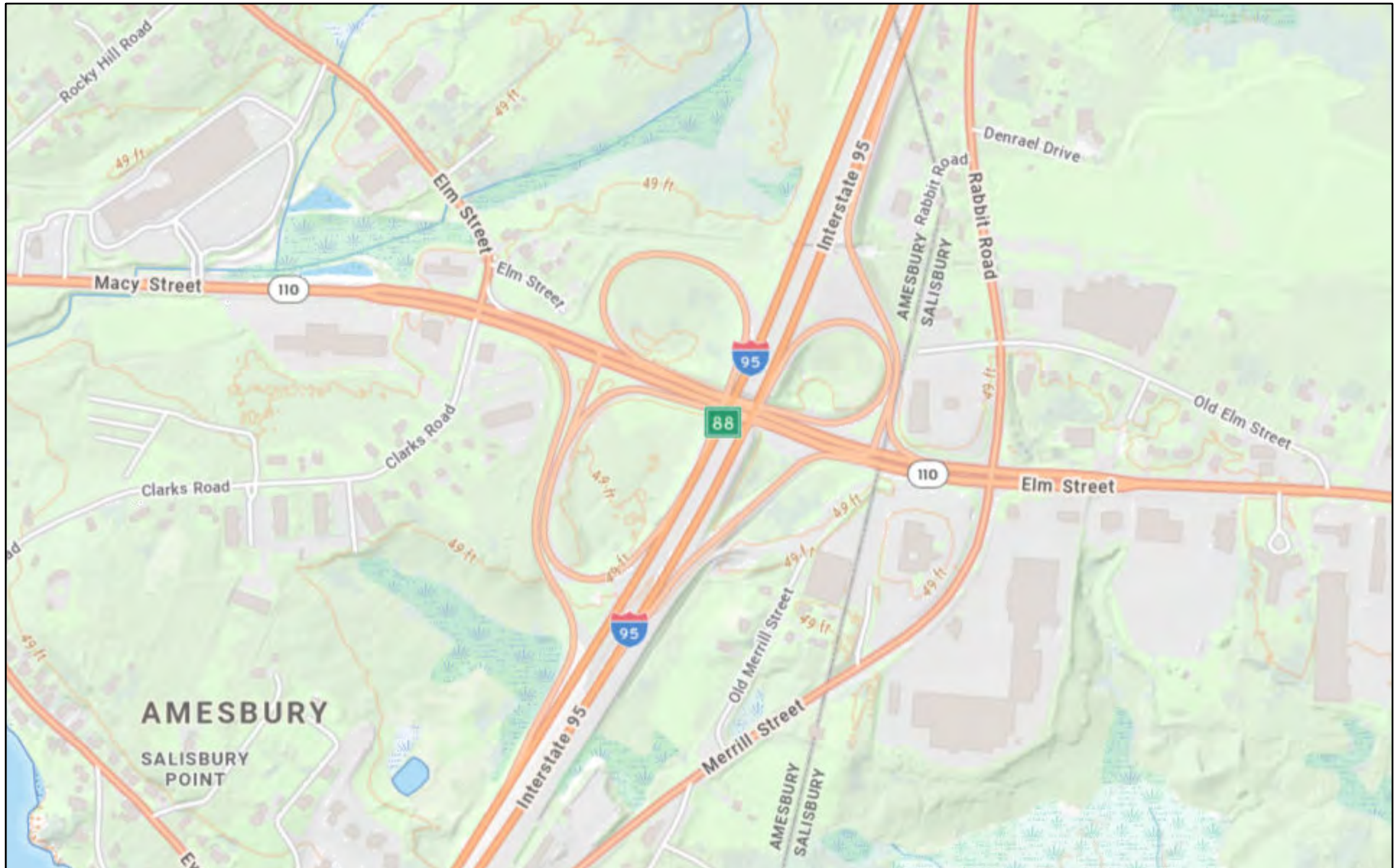
0.18

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

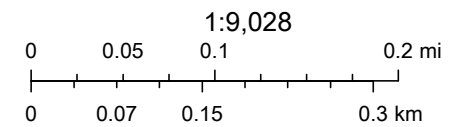
Comments : Below Statewide (0.57) and District (0.57) Crash Rates

Project Title & Date: Proposed Starbucks Coffee Shop

MassDOT Top Crash Locations



9/13/2023, 5:39:25 PM



GENERAL BACKGROUND TRAFFIC GROWTH



General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Annual Growth Rate
Amesbury	Elm Street	East of Water Street								11,121	11,310	11,344	11,299	0.51%
Amesbury	Merrill Street	Southwest of Old Merrill Street						9,942	10,051	10,182	10,294	10,438	10,480	1.11%
Amesbury	Monroe Street	Northeast of Elm Street								2,711	2,757	2,765	2,754	0.51%
Newburyport	Merrimac Street	East of Mosely Avenue									8,823	8,849	8,814	-0.05%
Salisbury	Macy Street	East of Merrill Avenue					17,265	17,800	18,209	19,338	19,667	19,726	19,647	2.39%
Amesbury	Haverhill Road	West of Main Street								11,684	12,408	12,619	12,657	1.78%
Amesbury	Friend Street	West of Main Street							6,031	6,405	6,514	6,534	6,508	1.79%
Amesbury	Main Street	North of Lincoln Court						8,265	8,455	8,979	9,132	9,159	9,122	2.15%
Amesbury	Main Street	East of Clarks Road							8,205	8,344	8,369	8,369	8,336	0.51%
Amesbury	Main Street	South of Friend Street								5,975	6,077	6,095	6,071	0.52%
Newburyport	Main Street	at the Amesbury Town Line	15,440	15,609	16,894	16,084	16,052	15,846	16,020	16,228	17,399	17,643	17,714	1.24%
Amesbury	Elm Street	North of Macy Street					10,597	10,926	11,177	11,870	12,072	12,108	11,629	1.97%
Amesbury	Greenleaf Street	North of Haverhill Road					2,773	2,859	2,925	3,106	3,159	3,168	3,155	2.39%
Amesbury	Market Street	North of Elm Street					7,711	7,950	8,133	8,637	8,784	8,810	8,775	2.39%
														1.37%

PROPOSED TRIP-GENERATION CALCULATIONS



QueryFilter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

937

LAND USE GROUP:

(900-999) Services

LAND USE :

937 - Coffee/Donut Shop with Drive-Through Wi

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Weekday

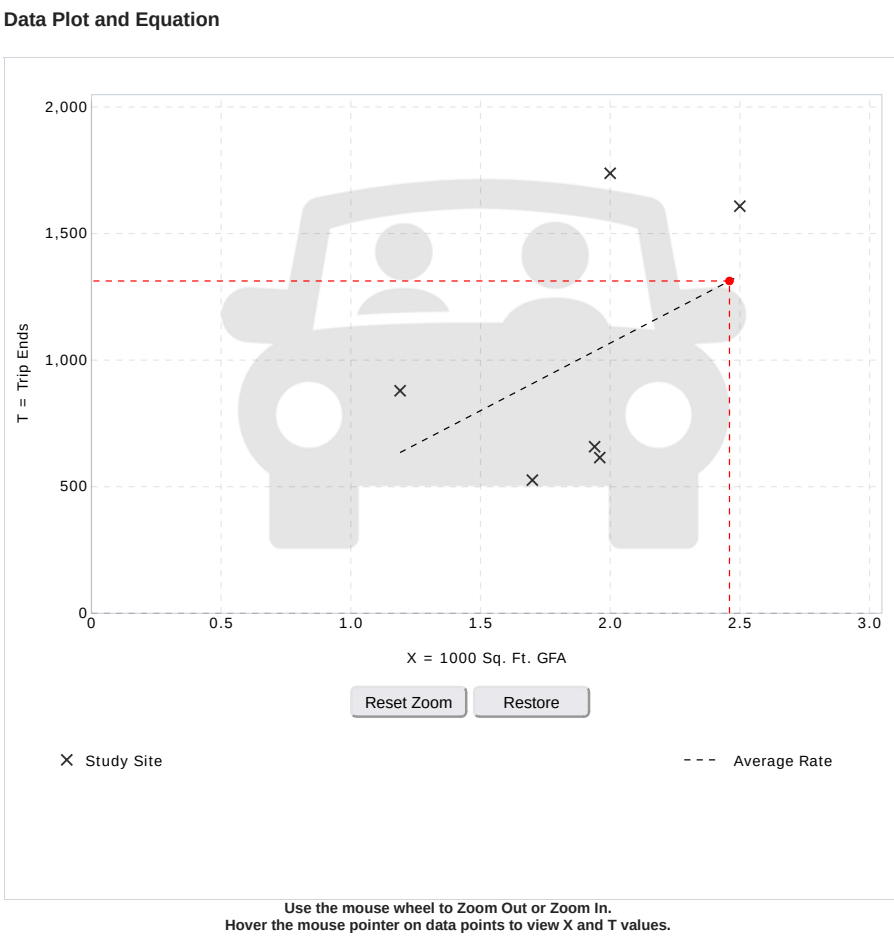
TRIP TYPE:

Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

2.46

Calculate



DATA STATISTICS
Land Use: Coffee/Donut Shop with Drive-Through Window (937) Click for Description and Data Plots
Independent Variable: 1000 Sq. Ft. GFA
Time Period: Weekday
Setting/Location: General Urban/Suburban
Trip Type: Vehicle
Number of Studies: 6
Avg. 1000 Sq. Ft. GFA: 2
Average Rate: 533.57
Range of Rates: 309.41 - 869.00
Standard Deviation: 243.65
Fitted Curve Equation: Not Given
R ² : ****
Directional Distribution: 50% entering, 50% exiting
Calculated Trip Ends: Average Rate: 1313 (Total), 656 (Entry), 657 (Exit)

QueryFilter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
937

LAND USE GROUP:
(900-999) Services

LAND USE :
937 - Coffee/Donut Shop with Drive-Through Wi

LAND USE SUBCATEGORY:
All Sites

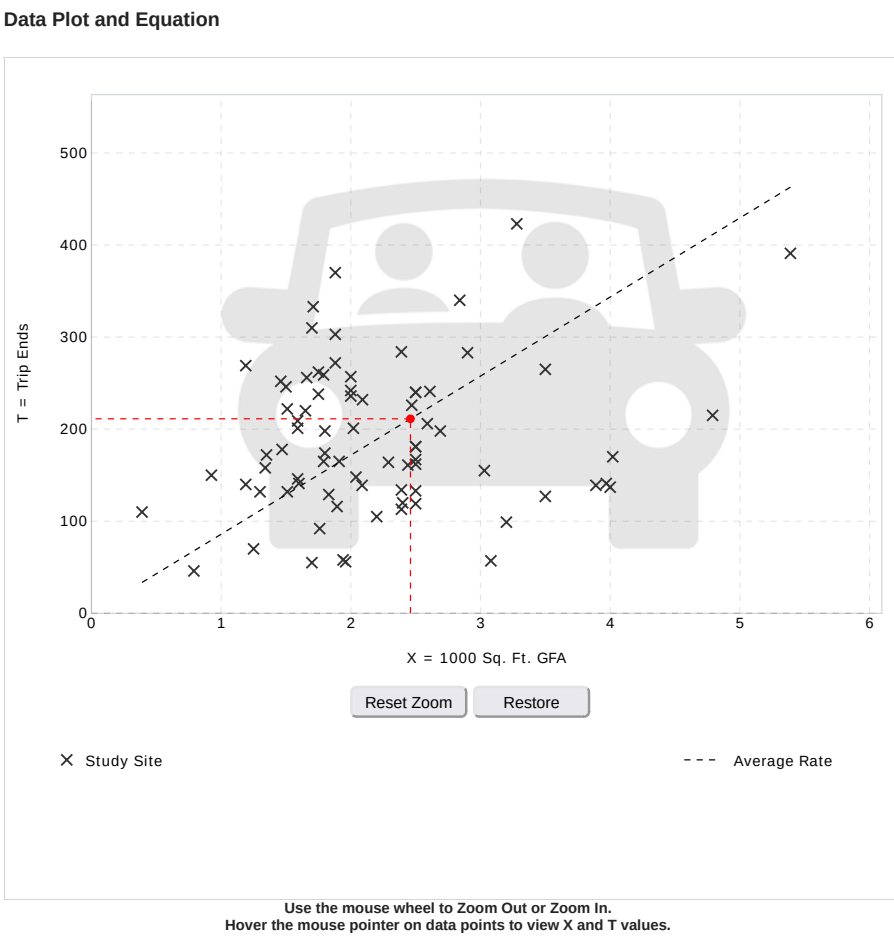
SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday, Peak Hour of Adjacent Street Traffic, 1

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
2.46Calculate



DATA STATISTICS
Land Use: Coffee/Donut Shop with Drive-Through Window (937) Click for Description and Data Plots
Independent Variable: 1000 Sq. Ft. GFA
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: 78
Avg. 1000 Sq. Ft. GFA: 2
Average Rate: 85.88
Range of Rates: 18.51 - 282.05
Standard Deviation: 44.92
Fitted Curve Equation: Not Given
R²: ****
Directional Distribution: 51% entering, 49% exiting
Calculated Trip Ends: Average Rate: 211 (Total), 108 (Entry), 103 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Query

Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

937

LAND USE GROUP:

(900-999) Services

LAND USE :

937 - Coffee/Donut Shop with Drive-Through Wi

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic,

TRIP TYPE:

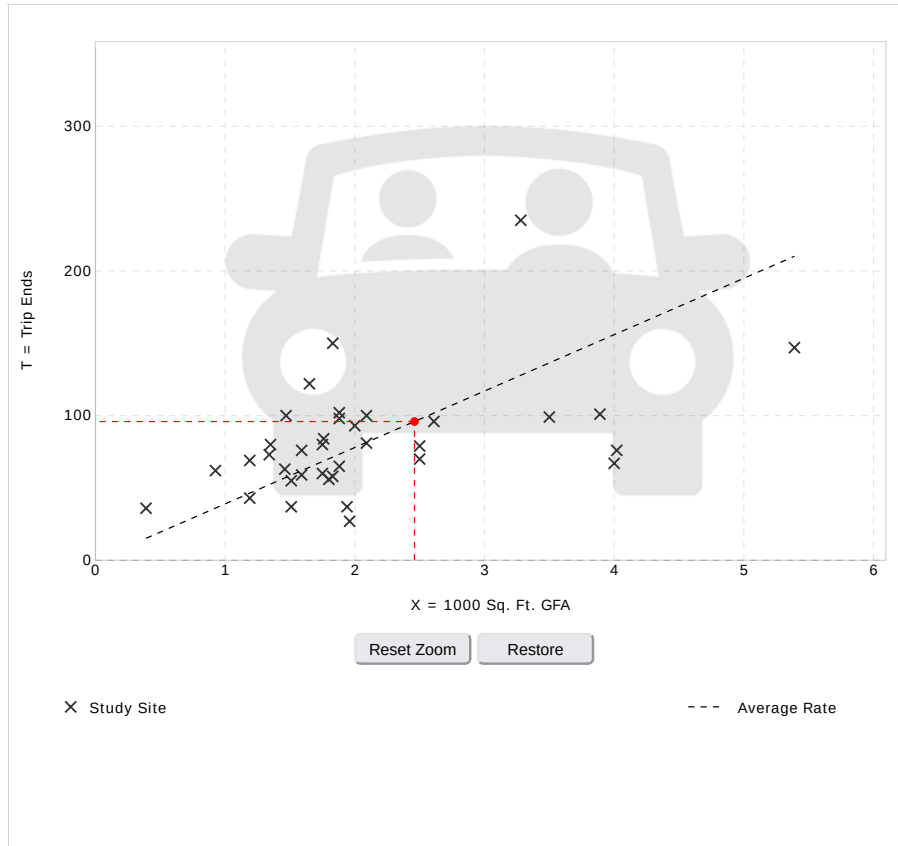
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

2.46

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:

Coffee/Donut Shop with Drive-Through Window (937) [Click for Description and Data Plots](#)

Independent Variable:

1000 Sq. Ft. GFA

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:

36

Avg. 1000 Sq. Ft. GFA:

2

Average Rate:

38.99

Range of Rates:

13.78 - 92.31

Standard Deviation:

17.79

Fitted Curve Equation:

Not Given

R²:

Directional Distribution:

50% entering, 50% exiting

Calculated Trip Ends:

Average Rate: 96 (Total), 48 (Entry), 48 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

- Add-ons to do more
- Try OTISS Pro

Query Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

937

LAND USE GROUP:

(900-999) Services

LAND USE :

937 - Coffee/Donut Shop with Drive-Through Wi

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Saturday, Peak Hour of Generator

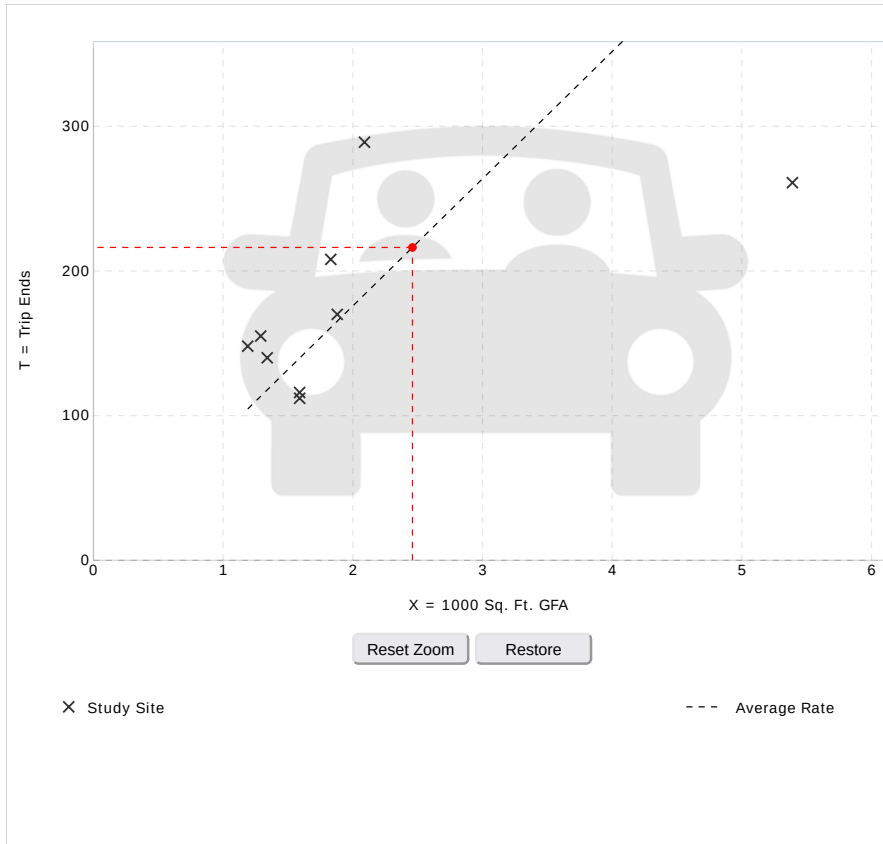
TRIP TYPE:

Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

2.46 Calculate

Data Plot and Equation



Reset Zoom Restore

X Study Site --- Average Rate

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:
Coffee/Donut Shop with Drive-Through Window (937) [Click for Description and Data Plots](#)

Independent Variable:
1000 Sq. Ft. GFA

Time Period:
Saturday
Peak Hour of Generator

Setting/Location:
General Urban/Suburban

Trip Type:
Vehicle

Number of Studies:
9

Avg. 1000 Sq. Ft. GFA:
2

Average Rate:
87.91

Range of Rates:
48.42 - 138.28

Standard Deviation:
34.34

Fitted Curve Equation:
Not Given

R²:

Directional Distribution:
50% entering, 50% exiting

Calculated Trip Ends:
Average Rate: 216 (Total), 108 (Entry), 108 (Exit)

Theoretical Saturday Rate

ITE LUC 937 Average Weekday Rate = 533.57

ITE LUC 937 Weekday Morning Peak Hour Rate = 85.88

ITE LUC 937 Saturday Midday Peak Hour Rate = 87.91

ITE LUC 937 Sat. Midday $\times \frac{\text{ITE LUC 937 Avg Weekday}}{\text{ITE LUC 937 AM}} = \text{Theoretical Sat. Rate}$

$$87.91 \times \frac{533.57}{85.88} = 546.18$$

$$T = 2.460 \times 546.18 = 1,343.60$$

$$T \approx 1,344 \text{ [672 Enter - 672 Exit]}$$

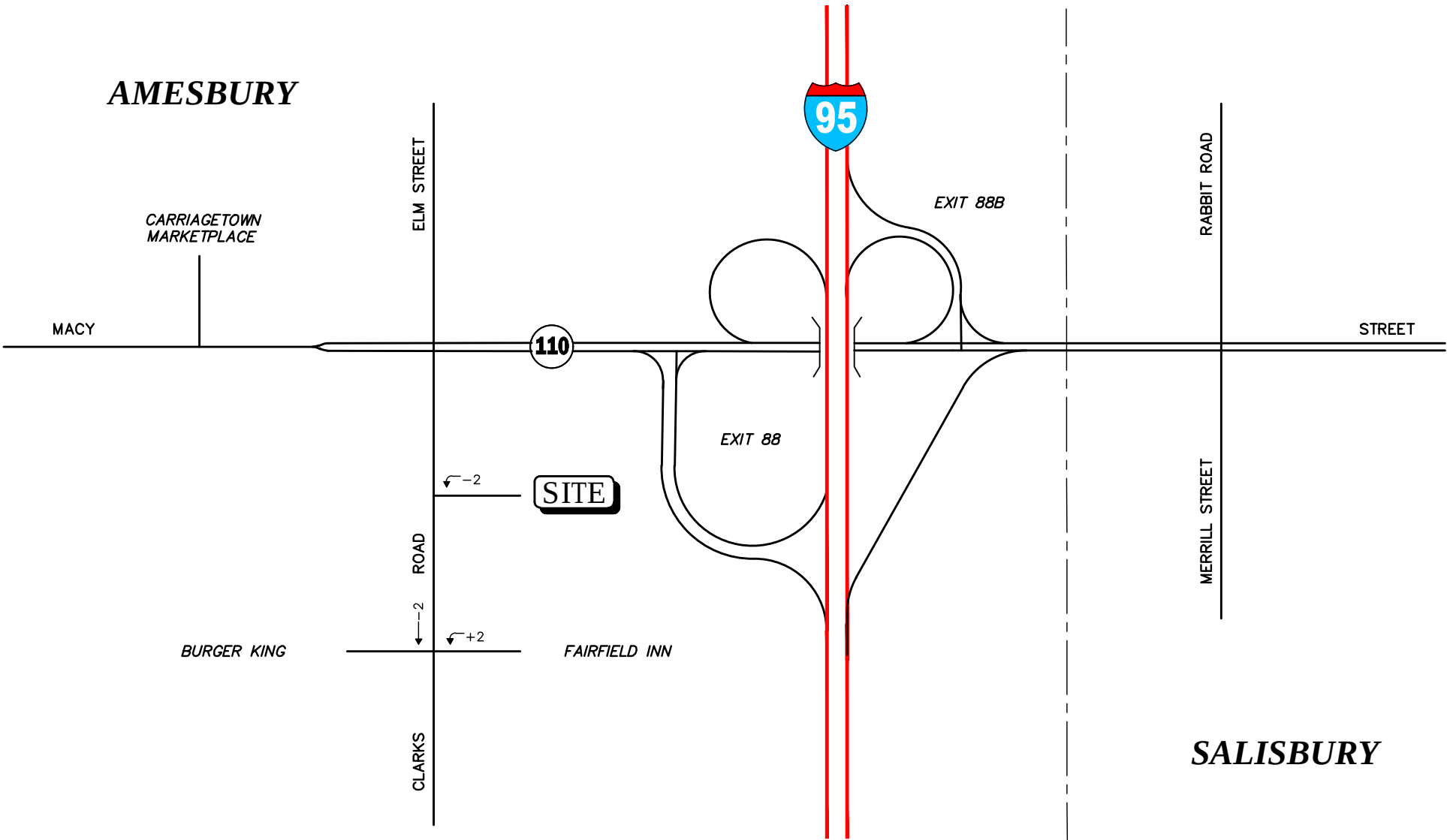


Figure A-1

Existing Site Trips Reassigned Weekday Morning Peak-Hour Traffic Volumes

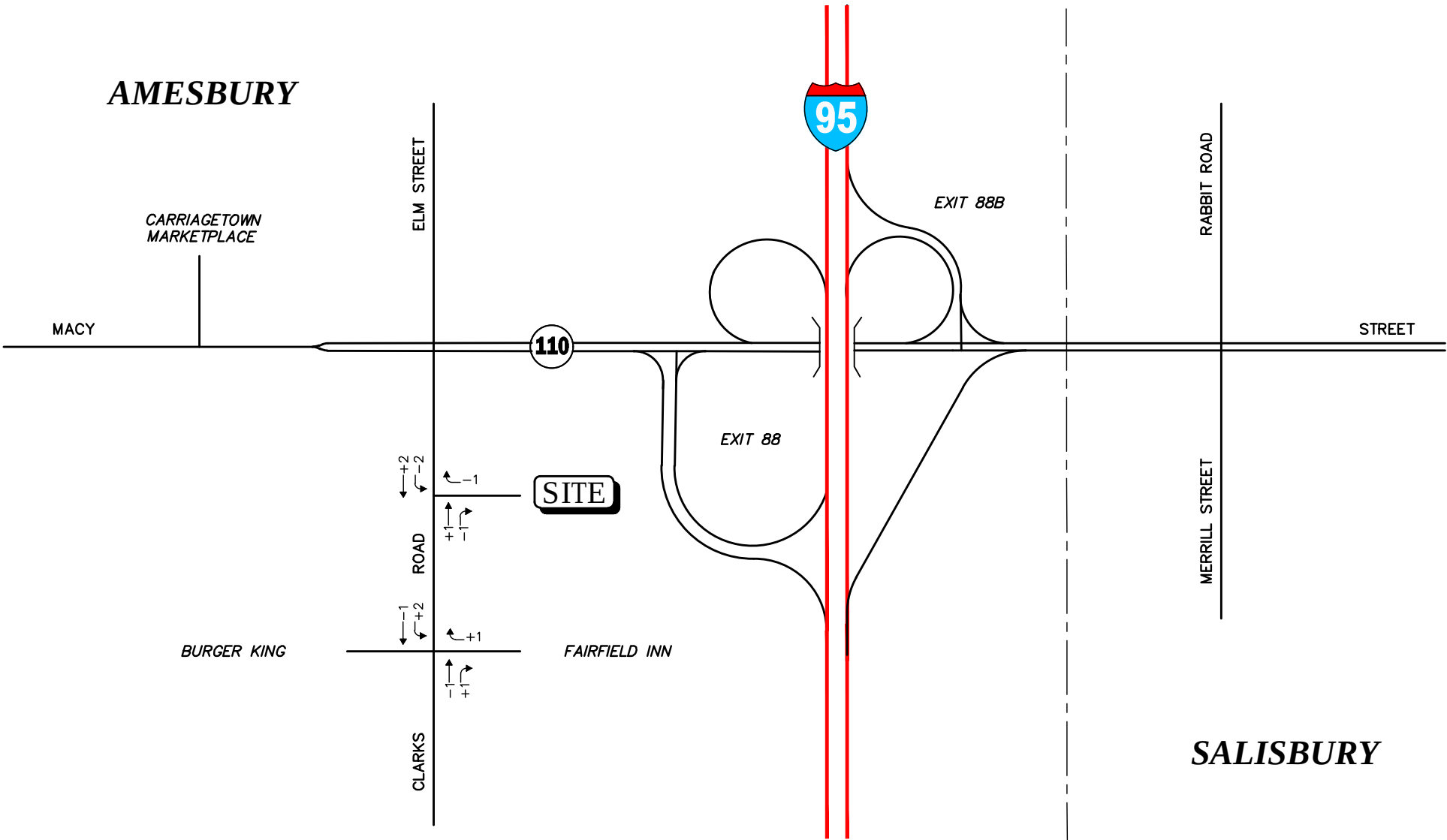


Figure A-2

Existing Site Trips Reassigned Weekday Evening Peak-Hour Traffic Volumes

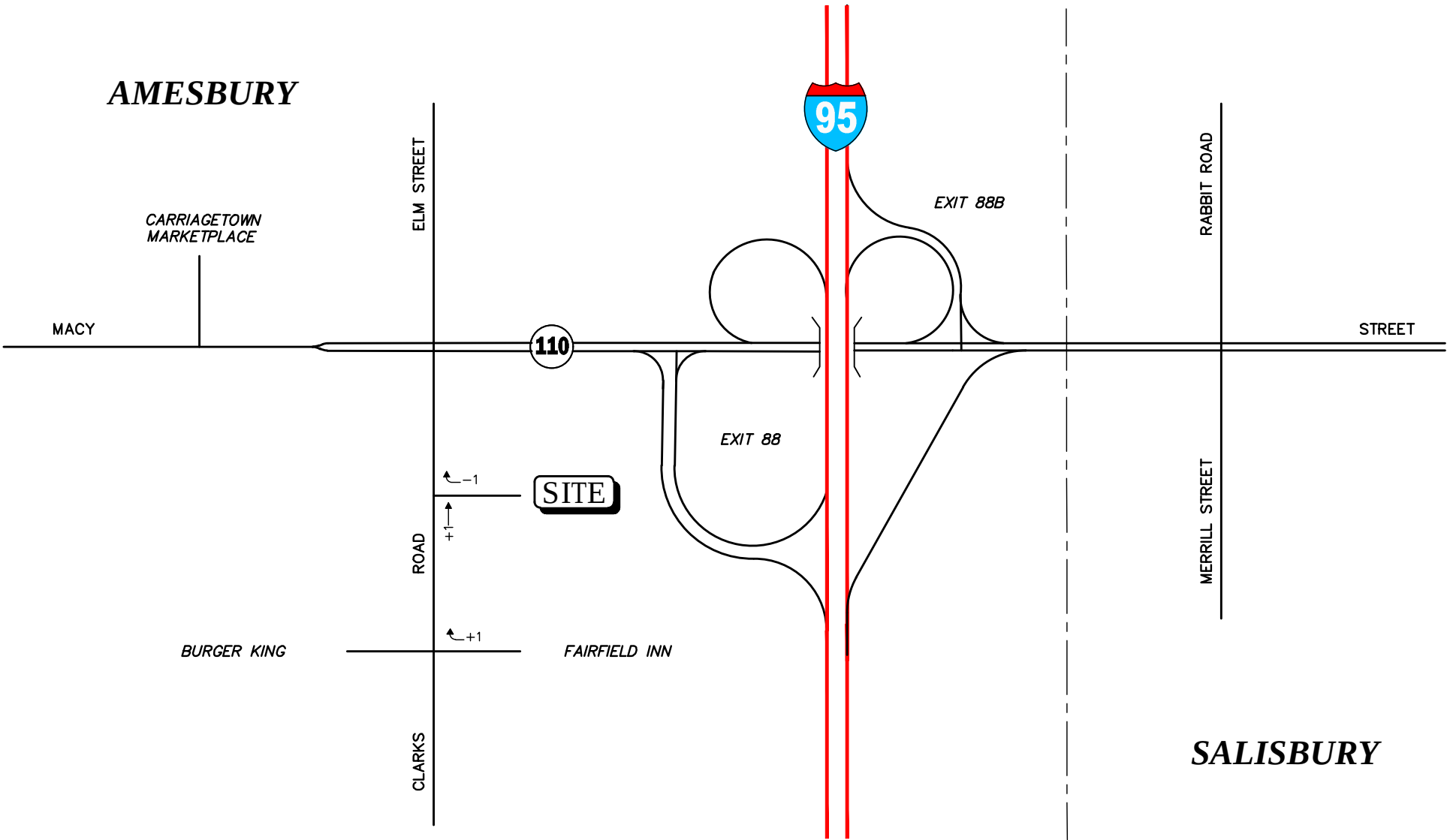


Figure A-3

Existing Site Trips Reassigned Saturday Midday Peak-Hour Traffic Volumes

EXISTING TRIP-GENERATION CALCULATIONS



- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

- Add-ons to do more
- Try OTISS Pro

QueryFilter

DATA SOURCE:
Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:
932

LAND USE GROUP:
(900-999) Services

LAND USE :
932 - High-Turnover (Sit-Down) Restaurant

LAND USE SUBCATEGORY:
All Sites

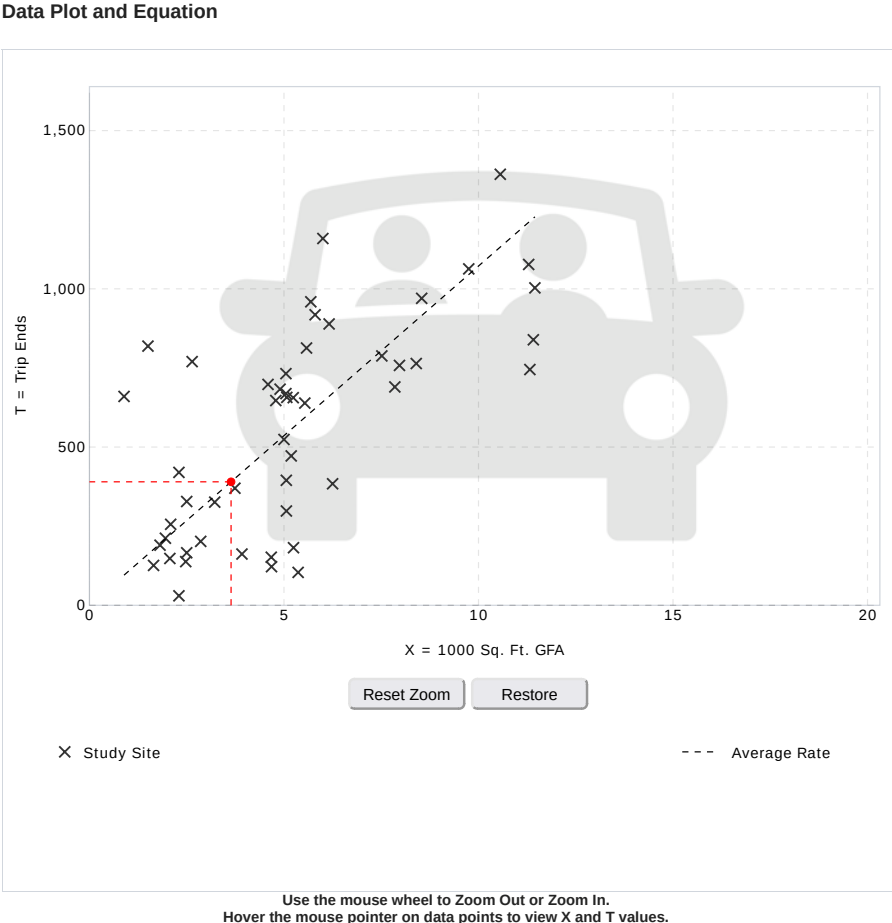
SETTING/LOCATION:
General Urban/Suburban

INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GFA

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:
3.64Calculate



DATA STATISTICS
Land Use: High-Turnover (Sit-Down) Restaurant (932) Click for Description and Data Plots
Independent Variable: 1000 Sq. Ft. GFA
Time Period: Weekday
Setting/Location: General Urban/Suburban
Trip Type: Vehicle
Number of Studies: 50
Avg. 1000 Sq. Ft. GFA: 5
Average Rate: 107.20
Range of Rates: 13.04 - 742.41
Standard Deviation: 66.72
Fitted Curve Equation: Not Given
R ² : ****
Directional Distribution: 50% entering, 50% exiting
Calculated Trip Ends: Average Rate: 390 (Total), 195 (Entry), 195 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Query

Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

932

LAND USE GROUP:

(900-999) Services

LAND USE :

932 - High-Turnover (Sit-Down) Restaurant

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic,

TRIP TYPE:

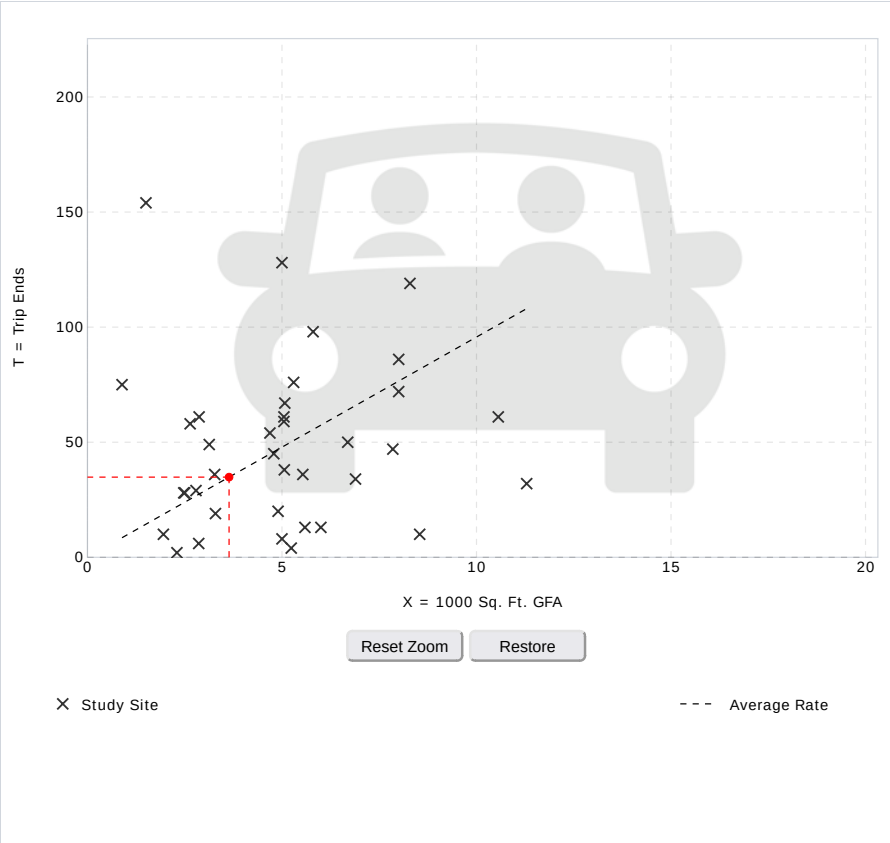
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

3.64

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:	High-Turnover (Sit-Down) Restaurant (932) Click for Description and Data Plots
Independent Variable:	1000 Sq. Ft. GFA
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:	37
Avg. 1000 Sq. Ft. GFA:	5
Average Rate:	9.57
Range of Rates:	0.76 - 102.39
Standard Deviation:	11.61
Fitted Curve Equation:	Not Given
R ² :	****
Directional Distribution:	55% entering, 45% exiting
Calculated Trip Ends:	Average Rate: 35 (Total), 19 (Entry), 16 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Query

Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

932

LAND USE GROUP:

(900-999) Services

LAND USE :

932 - High-Turnover (Sit-Down) Restaurant

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Weekday, Peak Hour of Adjacent Street Traffic, 1

TRIP TYPE:

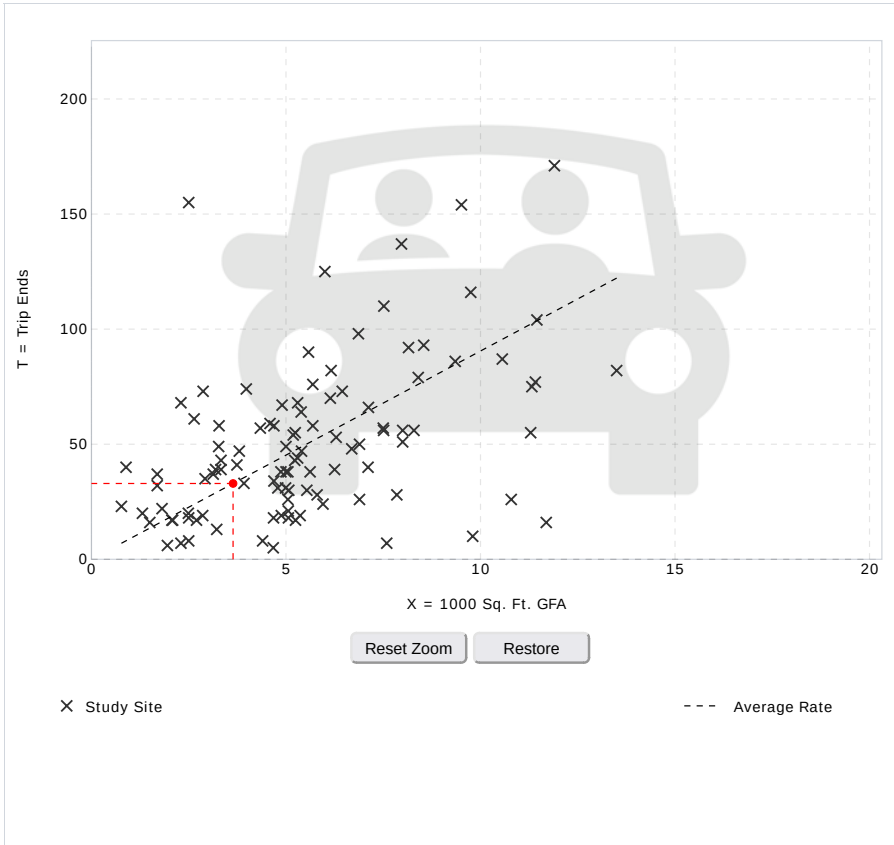
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

3.64

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:
High-Turnover (Sit-Down) Restaurant (932) [Click for Description and Data Plots](#)

Independent Variable:
1000 Sq. Ft. GFA

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:
104

Avg. 1000 Sq. Ft. GFA:
6

Average Rate:
9.05

Range of Rates:
0.92 - 62.00

Standard Deviation:
6.18

Fitted Curve Equation:
Not Given

R²:

Directional Distribution:
61% entering, 39% exiting

Calculated Trip Ends:
Average Rate: 33 (Total), 20 (Entry), 13 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Query

Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

932

LAND USE GROUP:

(900-999) Services

LAND USE :

932 - High-Turnover (Sit-Down) Restaurant

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Saturday

TRIP TYPE:

Vehicle

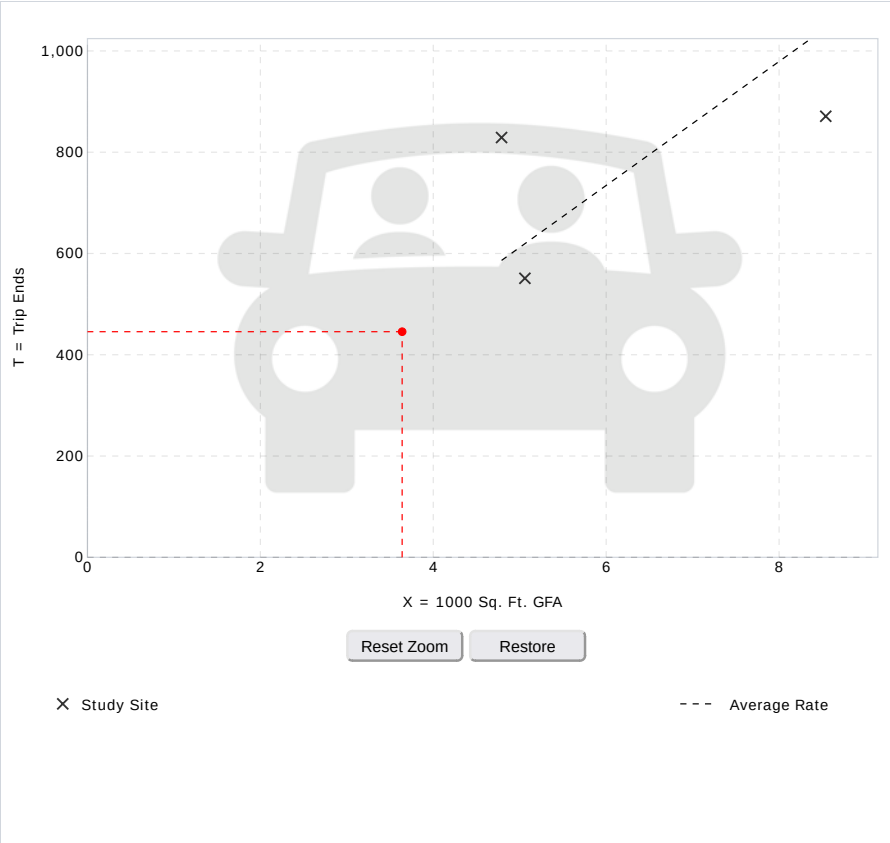
ENTER IV VALUE TO CALCULATE TRIPS:

3.64

Calculate

Data Plot and Equation

Caution – Small Sample Size



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:	High-Turnover (Sit-Down) Restaurant (932) Click for Description and Data Plots
Independent Variable:	1000 Sq. Ft. GFA
Time Period:	Saturday
Setting/Location:	General Urban/Suburban
Trip Type:	Vehicle
Number of Studies:	3
Avg. 1000 Sq. Ft. GFA:	6
Average Rate:	122.40
Range of Rates:	101.99 - 173.07
Standard Deviation:	36.99
Fitted Curve Equation:	Not Given
R ² :	****
Directional Distribution:	50% entering, 50% exiting
Calculated Trip Ends:	Average Rate: 446 (Total), 223 (Entry), 223 (Exit)

- Graph Look Up
- How to Use ITETripGen
- TGM Desk Reference
- TGM Appendices
- Support Documents
- Add Users
- Comments

Query

Filter

DATA SOURCE:

Trip Generation Manual, 11th Ed

SEARCH BY LAND USE CODE:

932

LAND USE GROUP:

(900-999) Services

LAND USE :

932 - High-Turnover (Sit-Down) Restaurant

LAND USE SUBCATEGORY:

All Sites

SETTING/LOCATION:

General Urban/Suburban

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Saturday, Peak Hour of Generator

TRIP TYPE:

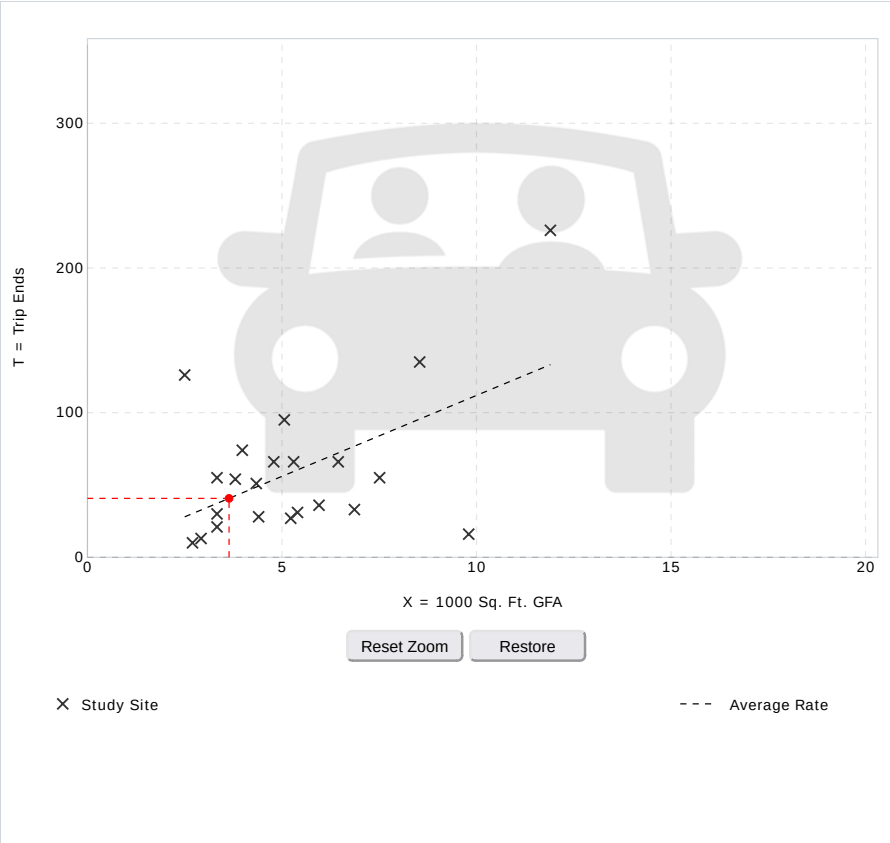
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

3.64

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:

High-Turnover (Sit-Down) Restaurant (932) [Click for Description and Data Plots](#)

Independent Variable:

1000 Sq. Ft. GFA

Time Period:

Saturday
Peak Hour of Generator

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

22

Avg. 1000 Sq. Ft. GFA:

5

Average Rate:

11.19

Range of Rates:

1.63 - 50.40

Standard Deviation:

8.30

Fitted Curve Equation:

Not Given

R²:

Directional Distribution:

51% entering, 49% exiting

Calculated Trip Ends:

Average Rate: 41 (Total), 21 (Entry), 20 (Exit)

37 CLARKS RD

Location 37 CLARKS RD

Mblu 80/ / 18/ /

Acct#

Owner AMESBURY LODGING VENTURES LLC

Assessment \$7,008,100

PID 2673

Building Count 2

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	\$5,710,300	\$1,297,800	\$7,008,100

Owner of Record

Owner	AMESBURY LODGING VENTURES LLC	Sale Price	\$8,333,375
Co-Owner		Certificate	
Address	11751 EAST CORNING ROAD CORNING, NY 14830	Book & Page	40569/0277
		Sale Date	12/13/2021
		Instrument	1U

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
AMESBURY LODGING VENTURES LLC	\$8,333,375		40569/0277	1U	12/13/2021
CREFIII-WARAMAUG AMESBURY LLC	\$8,125,542		34071/0431	1C	05/21/2015
CSMC 2007-C5 FFI HOTEL PORTFOLIO LLC	\$100		33588/0511	1B	10/03/2014
AMESBURY FFI LLC	\$9,000,000		26834/0287	00	05/14/2007
LS ONE MORTGAGE BORROWER LLC	\$10		25543/0498	1A	04/07/2006

Building Information

Building 1 : Section 1

Year Built:	1987
Living Area:	45,360
Replacement Cost:	\$6,740,235
Building Percent Good:	74

Replacement Cost
Less Depreciation: \$4,987,800

Building Attributes	
Field	Description
Style:	Hotel
Model	Commercial
Grade	Average +20
Stories:	4
Occupancy	99.00
Exterior Wall 1	Stucco/Masonry
Exterior Wall 2	
Roof Structure	Flat
Roof Cover	Tar & Gravel
Interior Wall 1	Plastered
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Hot Water
AC Type	Central
Struct Class	
Bldg Use	Hotel
Total Rooms	
Total Bedrms	105
Total Baths	105
1st Floor Use:	3010
Heat/AC	HEAT/AC PKGS
Frame Type	FIREPRF STEEL
Baths/Plumbing	ABOVE AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	ABOVE AVERAGE
Wall Height	8.00
% Comn Wall	0.00

Building 2 : Section 1

Year Built: 1987
Living Area: 3,640
Replacement Cost: \$691,491
Building Percent Good: 65
Replacement Cost
Less Depreciation: \$449,500

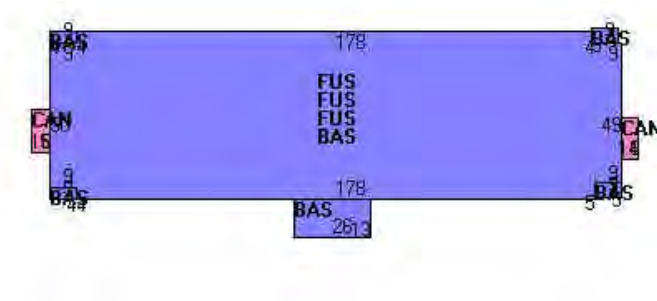
Building Attributes : Bldg 2 of 2	
Field	Description

Building Photo



(https://images.vgsi.com/photos/AmesburyMAPhotos//00\01\45\00.jpg)

Building Layout



(https://images.vgsi.com/photos/AmesburyMAPhotos//Sketches/2673_2438.jpg)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
FUS	Upper Story, Finished	33,645	33,645
BAS	First Floor	11,715	11,715
CAN	Canopy	564	0
		45,924	45,360

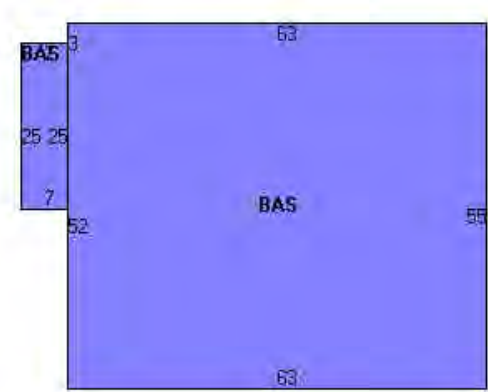
Style:	Restaurant
Model	Commercial
Grade	Average +20
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	Brick/Masonry
Roof Structure	Gable/Hip
Roof Cover	Asph/F Gls/Cmp
Interior Wall 1	Drywall/Sheet
Interior Wall 2	
Interior Floor 1	Vinyl/Asphalt
Interior Floor 2	Carpet
Heating Fuel	Gas
Heating Type	Forced Air-Duc
AC Type	Central
Struct Class	
Bldg Use	Restaurant/Club
Total Rooms	
Total Bedrms	00
Total Baths	2
1st Floor Use:	3260
Heat/AC	HEAT/AC SPLIT
Frame Type	FIREPRF STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00

Building Photo



(https://images.vgsi.com/photos/AmesburyMAPPhotos//A00\01\52\67.jpg)

Building Layout



(https://images.vgsi.com/photos/AmesburyMAPPhotos//Sketches/2673_2439.jpg)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	3,640	3,640
		3,640	3,640

Extra Features

Extra Features				Legend
Code	Description	Size	Value	Bldg #
SPR2	WET CONCEALED	45472.00 S.F.	\$117,800	1
CLR1	COOLER	128.00 S.F.	\$1,700	2
CLR2	FREEZER	128.00 S.F.	\$2,300	2
ELV3	COMM/GOOD	1.00 UNIT	\$44,400	1

Land

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
PAV1	PAV ASPH			40000.00 S.F.	\$74,000	1
PAT2	PATIO GOOD			640.00 S.F.	\$1,600	1
SPL3	POOL GUNITE			1200.00 S.F.	\$18,000	1
SHD1	SHED FRAME			128.00 S.F.	\$1,900	1
LT1	LIGHTS INC 1			4.00 UNITS	\$2,800	1
SGN3	SIGN W/INT LTS			68.00 SF+HT	\$3,100	2
LT10	LIGHTS SOD 2			2.00 UNITS	\$4,200	1
SGN3	SIGN W/INT LTS			25.00 SF+HT	\$1,200	2

Valuation History

Assessment			
Valuation Year	Improvements	Land	Total
2022	\$5,941,600	\$1,297,800	\$7,239,400
2021	\$5,963,400	\$1,297,800	\$7,261,200
2020	\$5,963,400	\$1,297,800	\$7,261,200

CAPACITY ANALYSIS WORKSHEETS

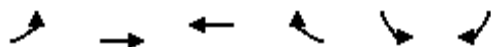
2023 Existing Weekday Morning Peak-Hour
2023 Existing Weekday Evening Peak-Hour
2023 Existing Saturday Midday Peak-Hour
2030 No-Build Weekday Morning Peak-Hour
2030 No-Build Weekday Evening Peak-Hour
2030 No-Build Saturday Midday Peak-Hour
2030 Build Weekday Morning Peak-Hour
2030 Build Weekday Evening Peak-Hour
2030 Build Saturday Midday Peak-Hour
2030 Mitigated Weekday Morning Peak-Hour
2030 Mitigated Weekday Evening Peak-Hour
2030 Mitigated Saturday Midday Peak-Hour



2023 Existing Weekday Morning Peak-Hour



2023 Existing Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

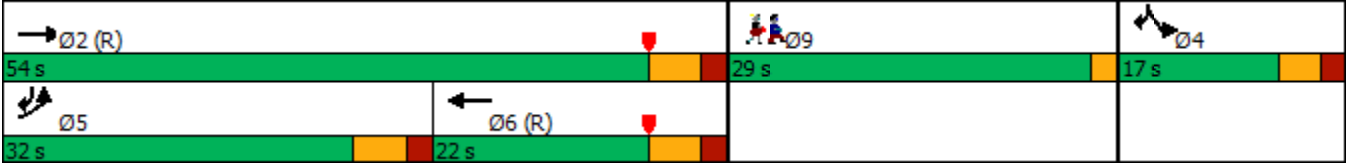


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1210	789	29	39	38	
Future Volume (vph)	40	1210	789	29	39	38	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3471	3455	0	1752	1568	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1685	3471	3455	0	1752	1568	
Satd. Flow (RTOR)			3			45	
Adj. Flow (vph)	45	1360	839	31	46	45	
Lane Group Flow (vph)	45	1360	870	0	46	45	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	32.0	54.0	22.0		17.0		29.0
Total Split (%)	32.0%	54.0%	22.0%		17.0%		29%
Maximum Green (s)	26.0	48.0	16.0		12.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.26	0.49	0.37		0.29	0.12	
Control Delay	44.5	7.3	15.2		46.4	9.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.5	7.3	15.2		46.4	9.1	
Queue Length 50th (ft)	27	90	25		28	0	
Queue Length 95th (ft)	59	421	282		57	22	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	471	2784	2362		227	626	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.49	0.37		0.20	0.07	
Intersection Summary							
Cycle Length: 100							

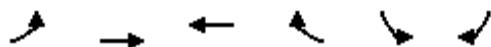
2023 Existing Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 70
Control Type: Actuated-Coordinated

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2023 Existing Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	1210	789	29	39	38
Future Volume (vph)	40	1210	789	29	39	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1685	3471	3454		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1685	3471	3454		1752	1568
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.84	0.84
Adj. Flow (vph)	45	1360	839	31	46	45
RTOR Reduction (vph)	0	0	1	0	0	36
Lane Group Flow (vph)	45	1360	869	0	46	9
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	7.1	74.8	61.7		7.0	19.1
Effective Green, g (s)	9.1	76.8	63.7		8.0	20.1
Actuated g/C Ratio	0.09	0.77	0.64		0.08	0.20
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	153	2665	2200		140	315
v/s Ratio Prot	0.03	c0.39	0.25		c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.29	0.51	0.39		0.33	0.03
Uniform Delay, d1	42.5	4.4	8.8		43.5	32.1
Progression Factor	1.00	1.00	1.27		1.00	1.00
Incremental Delay, d2	1.1	0.7	0.5		1.4	0.0
Delay (s)	43.5	5.1	11.6		44.8	32.1
Level of Service	D	A	B		D	C
Approach Delay (s)		6.4	11.6		38.6	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			9.5		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.49			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			44.3%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2023 Existing Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	41	1193	15	2	22	799	260	26	19	73	431
Future Volume (vph)	1	41	1193	15	2	22	799	260	26	19	73	431
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.998					0.850		0.881		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1689	3466	0	0	1805	3471	1531	1745	1605	0	3319
Flt Permitted		0.197				0.099			0.950			0.950
Satd. Flow (perm)	0	350	3466	0	0	188	3471	1531	1745	1605	0	3319
Satd. Flow (RTOR)			1					277		90		
Adj. Flow (vph)	1	44	1269	16	2	23	850	277	32	23	90	459
Lane Group Flow (vph)	0	45	1285	0	0	25	850	277	32	113	0	459
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	19.0		13.0	13.0	19.0	28.0	12.0	12.0		28.0
Total Split (%)	13.0%	13.0%	19.0%		13.0%	13.0%	19.0%	28.0%	12.0%	12.0%		28.0%
Maximum Green (s)	7.0	7.0	13.0		7.0	7.0	13.0	22.0	7.0	7.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.15	0.78			0.11	0.55	0.24	0.23	0.54		0.62
Control Delay		25.7	30.1			19.2	27.3	1.6	47.0	23.8		38.6
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		25.7	30.1			19.2	27.3	1.6	47.0	23.8		38.6
Queue Length 50th (ft)		12	220			7	206	0	19	14		134
Queue Length 95th (ft)		m53	#845			32	#536	23	44	55		181
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		299	1637			239	1546	1184	147	218		817
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.15	0.78			0.10	0.55	0.23	0.22	0.52		0.56
Intersection Summary												
Cycle Length: 100												

2023 Existing Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	38	18	
Future Volume (vph)	38	18	
Lane Util. Factor	1.00	1.00	
Frt	0.952		
Flt Protected			
Satd. Flow (prot)	1749	0	
Flt Permitted			
Satd. Flow (perm)	1749	0	
Satd. Flow (RTOR)	19		
Adj. Flow (vph)	40	19	
Lane Group Flow (vph)	59	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.15		
Control Delay	22.7		
Queue Delay	0.0		
Total Delay	22.7		
Queue Length 50th (ft)	20		
Queue Length 95th (ft)	52		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	445		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.13		
Intersection Summary			

2023 Existing Weekday Morning Peak-Hour
 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
 Natural Cycle: 110
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
13 s	19 s	28 s	28 s	12 s
 Ø5	 Ø6 (R)			
13 s	19 s			

2023 Existing Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	41	1193	15	2	22	799	260	26	19	73	431
Future Volume (vph)	1	41	1193	15	2	22	799	260	26	19	73	431
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.88		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1689	3466			1805	3471	1531	1745	1604		3319
Flt Permitted		0.20	1.00			0.10	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		349	3466			188	3471	1531	1745	1604		3319
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.81	0.81	0.81	0.94
Adj. Flow (vph)	1	44	1269	16	2	23	850	277	32	23	90	459
RTOR Reduction (vph)	0	0	1	0	0	0	0	103	0	83	0	0
Lane Group Flow (vph)	0	45	1284	0	0	25	850	174	32	30	0	459
Heavy Vehicles (%)	0%	7%	4%	0%	0%	0%	4%	2%	0%	0%	1%	2%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		44.2	40.0			41.2	38.5	58.8	7.0	7.0		20.3
Effective Green, g (s)		48.2	42.0			45.2	40.5	62.8	8.0	8.0		22.3
Actuated g/C Ratio		0.48	0.42			0.45	0.40	0.63	0.08	0.08		0.22
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		251	1455			160	1405	961	139	128		740
v/s Ratio Prot		c0.01	c0.37			0.01	0.24	0.04	0.02	c0.02		c0.14
v/s Ratio Perm		0.08				0.06		0.07				
v/c Ratio		0.18	0.88			0.16	0.60	0.18	0.23	0.24		0.62
Uniform Delay, d1		15.4	26.7			19.7	23.4	7.8	43.1	43.1		35.0
Progression Factor		1.40	1.01			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.3	7.3			0.5	1.9	0.1	0.8	1.0		1.6
Delay (s)		21.8	34.3			20.2	25.4	7.9	44.0	44.1		36.7
Level of Service		C	C			C	C	A	D	D		D
Approach Delay (s)			33.9				21.1			44.1		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay			30.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			60.5%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	38	18
Future Volume (vph)	38	18
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1748	
Flt Permitted	1.00	
Satd. Flow (perm)	1748	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	40	19
RTOR Reduction (vph)	15	0
Lane Group Flow (vph)	44	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	20.3	
Effective Green, g (s)	22.3	
Actuated g/C Ratio	0.22	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	389	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.11	
Uniform Delay, d1	31.0	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	31.1	
Level of Service	C	
Approach Delay (s)	36.0	
Approach LOS	D	
Intersection Summary		

2023 Existing Weekday Morning Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↘		↗			
Traffic Vol, veh/h	0	722	977	0	1044	176	39	0	132	0	0	0
Future Vol, veh/h	0	722	977	0	1044	176	39	0	132	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	91	91	91	72	72	72	25	25	25
Heavy Vehicles, %	0	3	2	0	4	4	0	0	2	0	0	0
Mvmt Flow	0	768	1039	0	1147	193	54	0	183	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	-	0	1342	-	-		
Stage 1	-	-	-	-	-	-	-	768	-	-		
Stage 2	-	-	-	-	-	-	-	574	-	-		
Critical Hdwy	-	-	-	-	-	-	-	6.8	-	-		
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.8	-	-		
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.8	-	-		
Follow-up Hdwy	-	-	-	-	-	-	-	3.5	-	-		
Pot Cap-1 Maneuver	0	-	0	0	-	0	146	0	0			
Stage 1	0	-	0	0	-	0	424	0	0			
Stage 2	0	-	0	0	-	0	532	0	0			
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	146	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	146	0	-			
Stage 1	-	-	-	-	-	-	424	0	-			
Stage 2	-	-	-	-	-	-	532	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			43.5					
HCM LOS							E					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	146		-	-								
HCM Lane V/C Ratio	0.371		-	-								
HCM Control Delay (s)	43.5		0	-								
HCM Lane LOS	E		A	-								
HCM 95th %tile Q(veh)	1.6		-	-								

2023 Existing Weekday Morning Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	13.7												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	2	96	756	0	0	742	114	0	0	170	0	0	476
Future Vol, veh/h	2	96	756	0	0	742	114	0	0	170	0	0	476
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	90	90	90	74	74	74	86	86	86
Heavy Vehicles, %	0	2	2	0	0	3	4	0	0	2	0	0	6
Mvmt Flow	2	104	822	0	0	824	127	0	0	230	0	0	553
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	824	824	0	-	-	-	0	-	-	411	-	-	412
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	-	-	-	-	-	6.94	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	-	-	-	-	-	3.32	-	-	3.36
Pot Cap-1 Maneuver	437	802	-	0	0	-	0	0	0	590	0	0	578
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver	673	673	-	-	-	-	-	-	-	590	-	-	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	1.3			0			14.9			54.4			
HCM LOS							B			F			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1								
Capacity (veh/h)	590	673	-	-	578								
HCM Lane V/C Ratio	0.389	0.158	-	-	0.958								
HCM Control Delay (s)	14.9	11.4	-	-	54.4								
HCM Lane LOS	B	B	-	-	F								
HCM 95th %tile Q(veh)	1.8	0.6	-	-	13								

2023 Existing Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	84	575	264	2	95	501	18	274	67	104	49
Future Volume (vph)	3	84	575	264	2	95	501	18	274	67	104	49
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.995			0.909		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1619	3421	1531	0	1787	3491	0	1752	1714	0	0
Flt Permitted		0.950				0.950			0.473			
Satd. Flow (perm)	0	1619	3421	1531	0	1787	3491	0	873	1714	0	0
Satd. Flow (RTOR)				303			3			73		
Adj. Flow (vph)	3	97	661	303	2	102	539	19	308	75	117	54
Lane Group Flow (vph)	0	100	661	303	0	104	558	0	308	192	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	32.0	10.0	9.0	9.0	32.0		10.0	27.0		17.0
Total Split (%)	9.0%	9.0%	32.0%	10.0%	9.0%	9.0%	32.0%		10.0%	27.0%		17.0%
Maximum Green (s)	3.0	3.0	26.0	4.0	3.0	3.0	26.0		4.0	21.0		11.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.78	0.62	0.35		0.74	0.52		0.78	0.29		
Control Delay		74.8	24.0	2.6		65.6	22.1		38.0	14.5		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		74.8	24.0	2.6		65.6	22.1		38.0	14.5		
Queue Length 50th (ft)		36	102	0		38	82		81	28		
Queue Length 95th (ft)		#177	250	25		#187	214		#402	127		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		128	1521	868		141	1554		394	672		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.78	0.43	0.35		0.74	0.36		0.78	0.29		
Intersection Summary												
Cycle Length: 100												

2023 Existing Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	87	78	
Future Volume (vph)	87	78	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.982		
Satd. Flow (prot)	1808	1419	
Flt Permitted	0.815		
Satd. Flow (perm)	1500	1419	
Satd. Flow (RTOR)		120	
Adj. Flow (vph)	97	87	
Lane Group Flow (vph)	151	87	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	17.0		32.0
Total Split (%)	17.0%		32%
Maximum Green (s)	11.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.51	0.15	
Control Delay	35.8	3.6	
Queue Delay	0.0	0.0	
Total Delay	35.8	3.6	
Queue Length 50th (ft)	48	0	
Queue Length 95th (ft)	#197	21	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	310	554	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.49	0.16	
Intersection Summary			

2023 Existing Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 66.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	32 s	32 s	10 s	17 s
 Ø5	 Ø6		 Ø8	
9 s	32 s		27 s	

2023 Existing Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	84	575	264	2	95	501	18	274	67	104	49
Future Volume (vph)	3	84	575	264	2	95	501	18	274	67	104	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.91		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1619	3421	1531		1787	3490		1752	1713		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.47	1.00		
Satd. Flow (perm)		1619	3421	1531		1787	3490		872	1713		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.89	0.89	0.89	0.90
Adj. Flow (vph)	3	97	661	303	2	102	539	19	308	75	117	54
RTOR Reduction (vph)	0	0	0	183	0	0	2	0	0	47	0	0
Lane Group Flow (vph)	0	100	661	120	0	104	556	0	308	145	0	0
Heavy Vehicles (%)	0%	8%	2%	2%	0%	1%	3%	0%	3%	2%	0%	0%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.2	18.4	22.6		3.2	18.4		21.5	21.5		
Effective Green, g (s)		5.2	20.4	26.6		5.2	20.4		23.5	23.5		
Actuated g/C Ratio		0.08	0.30	0.40		0.08	0.30		0.35	0.35		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		125	1040	606		138	1061		386	599		
v/s Ratio Prot		c0.06	c0.19	0.02		0.06	0.16		c0.07	0.08		
v/s Ratio Perm				0.06					c0.21			
v/c Ratio		0.80	0.64	0.20		0.75	0.52		0.80	0.24		
Uniform Delay, d1		30.4	20.1	13.3		30.3	19.3		19.1	15.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		29.5	1.3	0.2		20.5	0.5		10.9	0.2		
Delay (s)		59.9	21.4	13.4		50.9	19.8		30.0	15.7		
Level of Service		E	C	B		D	B		C	B		
Approach Delay (s)			22.8				24.7			24.5		
Approach LOS			C				C			C		
Intersection Summary												
HCM 2000 Control Delay			23.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			67.1				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			57.1%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	87	78
Future Volume (vph)	87	78
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1809	1419
Flt Permitted	0.81	1.00
Satd. Flow (perm)	1500	1419
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	97	87
RTOR Reduction (vph)	0	58
Lane Group Flow (vph)	151	29
Heavy Vehicles (%)	5%	10%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	11.3	20.5
Effective Green, g (s)	13.3	22.5
Actuated g/C Ratio	0.20	0.34
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	297	475
v/s Ratio Prot		
v/s Ratio Perm	0.10	0.02
v/c Ratio	0.51	0.06
Uniform Delay, d1	24.0	15.1
Progression Factor	1.00	1.00
Incremental Delay, d2	1.4	0.1
Delay (s)	25.4	15.2
Level of Service	C	B
Approach Delay (s)	21.6	
Approach LOS	C	
Intersection Summary		

2023 Existing Weekday Morning Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	109	0	0	72
Future Vol, veh/h	0	2	109	0	0	72
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	78	78	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	140	0	0	88
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	228	140	0	0	140	0
Stage 1	140	-	-	-	-	-
Stage 2	88	-	-	-	-	-
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	765	913	-	-	1456	-
Stage 1	892	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	765	913	-	-	1456	-
Mov Cap-2 Maneuver	765	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	940	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 913		1456	-	
HCM Lane V/C Ratio	-	- 0.004		-	-	
HCM Control Delay (s)	-	- 9		0	-	
HCM Lane LOS	-	- A		A	-	
HCM 95th %tile Q(veh)	-	- 0		0	-	

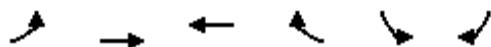
2023 Existing Weekday Morning Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	2	1	16	1	90	0	4	67	1
Future Vol, veh/h	3	1	4	2	1	16	1	90	0	4	67	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	4	2	1	17	1	98	0	4	73	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	191	182	74	184	182	98	74	0	0	98	0	0
Stage 1	82	82	-	100	100	-	-	-	-	-	-	-
Stage 2	109	100	-	84	82	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	769	712	988	777	712	958	1526	-	-	1495	-	-
Stage 1	926	827	-	906	812	-	-	-	-	-	-	-
Stage 2	896	812	-	924	827	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	752	709	988	770	709	958	1526	-	-	1495	-	-
Mov Cap-2 Maneuver	752	709	-	770	709	-	-	-	-	-	-	-
Stage 1	925	825	-	905	811	-	-	-	-	-	-	-
Stage 2	878	811	-	916	825	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.3		9		0.1		0.4					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1526	-	-	847	917	1495	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.01	0.023	0.003	-	-				
HCM Control Delay (s)	7.4	0	-	9.3	9	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

2023 Existing Weekday Evening Peak-Hour



2023 Existing Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1098	1303	79	83	136	
Future Volume (vph)	125	1098	1303	79	83	136	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.991			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3574	3542	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3574	3542	0	1787	1599	
Satd. Flow (RTOR)			7			158	
Adj. Flow (vph)	139	1220	1357	82	97	158	
Lane Group Flow (vph)	139	1220	1439	0	97	158	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	19.0	56.0	37.0		15.0		29.0
Total Split (%)	19.0%	56.0%	37.0%		15.0%		29%
Maximum Green (s)	13.0	50.0	31.0		10.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.58	0.45	0.71		0.50	0.27	
Control Delay	49.9	7.4	10.9		50.6	5.4	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	49.9	7.4	10.9		50.6	5.4	
Queue Length 50th (ft)	83	93	24		59	0	
Queue Length 95th (ft)	146	357	m#708		105	39	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	261	2696	2025		211	588	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.53	0.45	0.71		0.46	0.27	

Intersection Summary

Cycle Length: 100

2023 Existing Weekday Evening Peak-Hour 1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100

Offset: 44 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

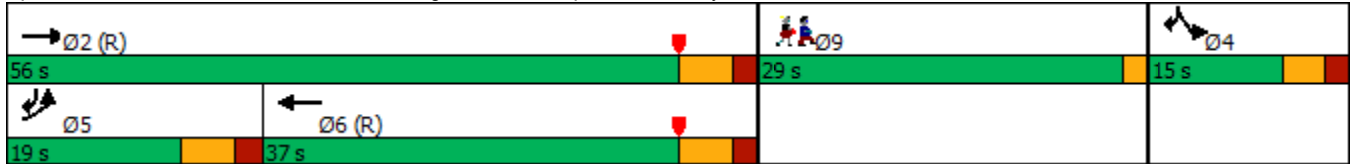
Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

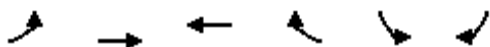
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2023 Existing Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	1098	1303	79	83	136
Future Volume (vph)	125	1098	1303	79	83	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	3574	3544		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1668	3574	3544		1787	1599
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.86	0.86
Adj. Flow (vph)	139	1220	1357	82	97	158
RTOR Reduction (vph)	0	0	3	0	0	113
Lane Group Flow (vph)	139	1220	1436	0	97	45
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	12.4	71.9	53.5		9.9	27.3
Effective Green, g (s)	14.4	73.9	55.5		10.9	28.3
Actuated g/C Ratio	0.14	0.74	0.56		0.11	0.28
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	240	2641	1966		194	452
v/s Ratio Prot	c0.08	0.34	c0.41		c0.05	0.03
v/s Ratio Perm						
v/c Ratio	0.58	0.46	0.73		0.50	0.10
Uniform Delay, d1	40.0	5.2	16.7		42.0	26.4
Progression Factor	1.00	1.00	0.37		1.00	1.00
Incremental Delay, d2	3.4	0.6	1.1		2.0	0.1
Delay (s)	43.3	5.8	7.2		44.0	26.5
Level of Service	D	A	A		D	C
Approach Delay (s)		9.6	7.2		33.2	
Approach LOS		A	A		C	

Intersection Summary

HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	60.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

2023 Existing Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1117	21	1	56	1317	449	53	56	42	296
Future Volume (vph)	1	81	1117	21	1	56	1317	449	53	56	42	296
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.997					0.850		0.935		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1805	3530	0	0	1805	3574	1546	1711	1717	0	3351
Flt Permitted		0.103				0.104			0.950			0.950
Satd. Flow (perm)	0	196	3530	0	0	198	3574	1546	1711	1717	0	3351
Satd. Flow (RTOR)			1					311		30		
Adj. Flow (vph)	1	86	1188	22	1	58	1372	468	66	70	53	322
Lane Group Flow (vph)	0	87	1210	0	0	59	1372	468	66	123	0	322
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	17.0		13.0	13.0	17.0	28.0	14.0	14.0		28.0
Total Split (%)	13.0%	13.0%	17.0%		13.0%	13.0%	17.0%	28.0%	14.0%	14.0%		28.0%
Maximum Green (s)	7.0	7.0	11.0		7.0	7.0	11.0	22.0	9.0	9.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.36	0.82			0.25	0.93	0.42	0.37	0.59		0.48
Control Delay		27.3	34.6			20.9	43.1	4.4	47.2	44.2		37.4
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		27.3	34.6			20.9	43.1	4.4	47.2	44.2		37.4
Queue Length 50th (ft)		26	287			16	423	34	39	56		93
Queue Length 95th (ft)		112	#854			62	#935	66	73	101		128
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		249	1477			243	1478	1160	191	218		811
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.35	0.82			0.24	0.93	0.40	0.35	0.56		0.40
Intersection Summary												
Cycle Length: 100												

2023 Existing Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	61	35	
Future Volume (vph)	61	35	
Lane Util. Factor	1.00	1.00	
Frt	0.945		
Flt Protected			
Satd. Flow (prot)	1736	0	
Flt Permitted			
Satd. Flow (perm)	1736	0	
Satd. Flow (RTOR)	27		
Adj. Flow (vph)	66	38	
Lane Group Flow (vph)	104	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.28		
Control Delay	25.8		
Queue Delay	0.0		
Total Delay	25.8		
Queue Length 50th (ft)	41		
Queue Length 95th (ft)	84		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	440		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.24		
Intersection Summary			

2023 Existing Weekday Evening Peak-Hour

2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 100

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R) 	 Ø9	 Ø4	 Ø8
13 s	17 s	28 s	28 s	14 s
 Ø5	 Ø6 (R) 			
13 s	17 s			

2023 Existing Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	81	1117	21	1	56	1317	449	53	56	42	296
Future Volume (vph)	1	81	1117	21	1	56	1317	449	53	56	42	296
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.94		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1805	3531			1805	3574	1546	1711	1718		3351
Flt Permitted		0.10	1.00			0.10	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		195	3531			197	3574	1546	1711	1718		3351
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.96	0.96	0.96	0.96	0.80	0.80	0.80	0.92
Adj. Flow (vph)	1	86	1188	22	1	58	1372	468	66	70	52	322
RTOR Reduction (vph)	0	0	1	0	0	0	0	129	0	27	0	0
Lane Group Flow (vph)	0	87	1209	0	0	59	1372	339	66	96	0	322
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	1%	2%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		43.0	37.0			42.2	36.6	54.4	9.6	9.6		17.8
Effective Green, g (s)		47.0	39.0			46.2	38.6	58.4	10.6	10.6		19.8
Actuated g/C Ratio		0.47	0.39			0.46	0.39	0.58	0.11	0.11		0.20
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		220	1377			213	1379	902	181	182		663
v/s Ratio Prot		c0.03	0.34			0.02	c0.38	0.07	0.04	c0.06		c0.10
v/s Ratio Perm		0.15				0.11		0.14				
v/c Ratio		0.40	0.88			0.28	0.99	0.38	0.36	0.53		0.49
Uniform Delay, d1		21.2	28.3			19.5	30.6	11.1	41.6	42.3		35.6
Progression Factor		1.30	1.01			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		1.1	7.5			0.7	23.1	0.3	1.3	2.8		0.6
Delay (s)		28.6	36.0			20.2	53.7	11.3	42.8	45.1		36.1
Level of Service		C	D			C	D	B	D	D		D
Approach Delay (s)			35.5				42.2			44.3		
Approach LOS			D				D			D		
Intersection Summary												
HCM 2000 Control Delay			39.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			66.1%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	61	35
Future Volume (vph)	61	35
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1736	
Flt Permitted	1.00	
Satd. Flow (perm)	1736	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	66	38
RTOR Reduction (vph)	22	0
Lane Group Flow (vph)	82	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	17.8	
Effective Green, g (s)	19.8	
Actuated g/C Ratio	0.20	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	343	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.24	
Uniform Delay, d1	33.8	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	34.1	
Level of Service	C	
Approach Delay (s)	35.7	
Approach LOS	D	
Intersection Summary		

2023 Existing Weekday Evening Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	9.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	895	561	0	1750	186	73	0	163	0	0	0
Future Vol, veh/h	0	895	561	0	1750	186	73	0	163	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	96	96	96	89	89	89	25	25	25
Heavy Vehicles, %	0	1	1	0	1	2	1	0	1	0	0	0
Mvmt Flow	0	973	610	0	1823	194	82	0	183	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	-	0	1885	-	-		
Stage 1	-	-	-	-	-	-	-	973	-	-		
Stage 2	-	-	-	-	-	-	-	912	-	-		
Critical Hdwy	-	-	-	-	-	-	-	6.82	-	-		
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.82	-	-		
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.82	-	-		
Follow-up Hdwy	-	-	-	-	-	-	-	3.51	-	-		
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 63	0	0			
Stage 1	0	-	0	0	-	0	329	0	0			
Stage 2	0	-	0	0	-	0	354	0	0			
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 63	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 63	0	-			
Stage 1	-	-	-	-	-	-	329	0	-			
Stage 2	-	-	-	-	-	-	354	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			\$ 325.3					
HCM LOS							F					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	63		-	-								
HCM Lane V/C Ratio	1.302		-	-								
HCM Control Delay (s)	\$ 325.3		0	-								
HCM Lane LOS	F		A	-								
HCM 95th %tile Q(veh)	6.9		-	-								
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

2023 Existing Weekday Evening Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	138.6												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	3	144	911	0	0	1026	194	0	0	296	0	0	907
Future Vol, veh/h	3	144	911	0	0	1026	194	0	0	296	0	0	907
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	96	96	96	81	81	81	91	91	91
Heavy Vehicles, %	0	1	1	0	0	1	1	0	0	0	0	0	2
Mvmt Flow	3	160	1012	0	0	1069	202	0	0	365	0	0	997
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1069	1069	0	-	-	-	0	-	-	506	-	-	535
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.12	-	-	-	-	-	-	-	6.9	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.21	-	-	-	-	-	-	-	3.3	-	-	3.32
Pot Cap-1 Maneuver	305	654	-	0	0	-	0	0	0	517	0	0	~ 490
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver ~ -115 ~ -115			-	-	-	-	-	-	-	517	-	-	~ 490
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s				0			27			\$ 491.7			
HCM LOS							D			F			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1								
Capacity (veh/h)	517	+	-	-	490								
HCM Lane V/C Ratio	0.707	-	-	-	2.034								
HCM Control Delay (s)	27	-	-	-	\$ 491.7								
HCM Lane LOS	D	-	-	-	F								
HCM 95th %tile Q(veh)	5.6	-	-	-	68.8								
Notes													
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined			*: All major volume in platoon					

2023 Existing Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	5	130	767	305	3	99	705	36	377	128	108	88
Future Volume (vph)	5	130	767	305	3	99	705	36	377	128	108	88
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.993			0.931		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1745	3455	1546	0	1805	3551	0	1787	1769	0	0
Flt Permitted		0.950				0.950			0.301			
Satd. Flow (perm)	0	1745	3455	1546	0	1805	3551	0	566	1769	0	0
Satd. Flow (RTOR)				321			5			43		
Adj. Flow (vph)	5	137	807	321	3	101	719	37	414	141	119	102
Lane Group Flow (vph)	0	142	807	321	0	104	756	0	414	260	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	26.0	15.0	9.0	9.0	26.0		15.0	33.0		18.0
Total Split (%)	9.0%	9.0%	26.0%	15.0%	9.0%	9.0%	26.0%		15.0%	33.0%		18.0%
Maximum Green (s)	3.0	3.0	20.0	9.0	3.0	3.0	20.0		9.0	27.0		12.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.18	0.77	0.34		0.84	0.70		1.01	0.36		
Control Delay		176.3	31.8	2.4		86.6	29.2		70.9	16.9		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		176.3	31.8	2.4		86.6	29.2		70.9	16.9		
Queue Length 50th (ft)		~69	154	0		44	139		124	57		
Queue Length 95th (ft)		#254	#420	29		#187	#373		#468	189		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		120	1046	935		124	1079		410	732		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		1.18	0.77	0.34		0.84	0.70		1.01	0.36		
Intersection Summary												
Cycle Length: 100												

2023 Existing Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	118	133	
Future Volume (vph)	118	133	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.979		
Satd. Flow (prot)	1852	1531	
Flt Permitted	0.744		
Satd. Flow (perm)	1408	1531	
Satd. Flow (RTOR)		155	
Adj. Flow (vph)	137	155	
Lane Group Flow (vph)	239	155	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	18.0		32.0
Total Split (%)	18.0%		32%
Maximum Green (s)	12.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.88	0.26	
Control Delay	65.0	6.1	
Queue Delay	0.0	0.0	
Total Delay	65.0	6.1	
Queue Length 50th (ft)	96	0	
Queue Length 95th (ft)	#318	44	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	271	590	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.88	0.26	
Intersection Summary			

2023 Existing Weekday Evening Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 74.4

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	26 s	32 s	15 s	18 s
 Ø5	 Ø6		 Ø8	
9 s	26 s		33 s	

2023 Existing Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	5	130	767	305	3	99	705	36	377	128	108	88
Future Volume (vph)	5	130	767	305	3	99	705	36	377	128	108	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.93		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1745	3455	1546		1805	3550		1787	1770		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.30	1.00		
Satd. Flow (perm)		1745	3455	1546		1805	3550		565	1770		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98	0.91	0.91	0.91	0.86
Adj. Flow (vph)	5	137	807	321	3	101	719	37	414	141	119	102
RTOR Reduction (vph)	0	0	0	178	0	0	4	0	0	26	0	0
Lane Group Flow (vph)	0	142	807	143	0	104	752	0	414	234	0	0
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	0%	0%	1%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.1	20.5	29.7		3.1	20.5		27.7	27.7		
Effective Green, g (s)		5.1	22.5	33.7		5.1	22.5		29.7	29.7		
Actuated g/C Ratio		0.07	0.30	0.44		0.07	0.30		0.39	0.39		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		117	1025	687		121	1053		401	693		
v/s Ratio Prot		c0.08	c0.23	0.03		0.06	0.21		c0.15	0.13		
v/s Ratio Perm				0.06					c0.25			
v/c Ratio		1.21	0.79	0.21		0.86	0.71		1.03	0.34		
Uniform Delay, d1		35.4	24.5	12.9		35.0	23.8		20.5	16.2		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		151.6	4.1	0.2		41.7	2.3		53.5	0.3		
Delay (s)		186.9	28.5	13.0		76.7	26.1		74.0	16.4		
Level of Service		F	C	B		E	C		E	B		
Approach Delay (s)			42.3				32.2			51.8		
Approach LOS			D				C			D		
Intersection Summary												
HCM 2000 Control Delay			41.6				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			75.8				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			73.4%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	118	133
Future Volume (vph)	118	133
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1852	1531
Flt Permitted	0.74	1.00
Satd. Flow (perm)	1408	1531
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	137	155
RTOR Reduction (vph)	0	107
Lane Group Flow (vph)	239	48
Heavy Vehicles (%)	0%	2%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	12.5	21.6
Effective Green, g (s)	14.5	23.6
Actuated g/C Ratio	0.19	0.31
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	269	476
v/s Ratio Prot		
v/s Ratio Perm	0.17	0.03
v/c Ratio	0.89	0.10
Uniform Delay, d1	29.9	18.6
Progression Factor	1.00	1.00
Incremental Delay, d2	27.7	0.1
Delay (s)	57.6	18.7
Level of Service	E	B
Approach Delay (s)	42.3	
Approach LOS	D	
Intersection Summary		

2023 Existing Weekday Evening Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection

Int Delay, s/veh 0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	144	1	2	125
Future Vol, veh/h	0	1	144	1	2	125
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	25	25	89	89	74	74
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	162	1	3	169

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	338	163	0
Stage 1	163	-	-
Stage 2	175	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	662	887	-
Stage 1	871	-	-
Stage 2	860	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	661	887	-
Mov Cap-2 Maneuver	661	-	-
Stage 1	871	-	-
Stage 2	858	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	887	1428
HCM Lane V/C Ratio	-	-	0.005	0.002
HCM Control Delay (s)	-	-	9.1	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

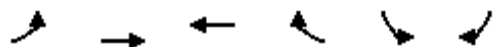
2023 Existing Weekday Evening Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	0	3	3	0	12	2	113	2	13	104	8
Future Vol, veh/h	20	0	3	3	0	12	2	113	2	13	104	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	3	3	0	13	2	123	2	14	113	9
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	281	275	118	275	278	124	122	0	0	125	0	0
Stage 1	146	146	-	128	128	-	-	-	-	-	-	-
Stage 2	135	129	-	147	150	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	671	632	934	677	630	927	1465	-	-	1462	-	-
Stage 1	857	776	-	876	790	-	-	-	-	-	-	-
Stage 2	868	789	-	856	773	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	656	625	934	669	623	927	1465	-	-	1462	-	-
Mov Cap-2 Maneuver	656	625	-	669	623	-	-	-	-	-	-	-
Stage 1	856	768	-	875	789	-	-	-	-	-	-	-
Stage 2	855	788	-	844	765	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.5		9.3		0.1		0.8					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1465	-	-	682	861	1462	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.037	0.019	0.01	-	-				
HCM Control Delay (s)	7.5	0	-	10.5	9.3	7.5	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-				

2023 Existing Saturday Midday Peak-Hour



2023 Existing Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1171	843	74	91	120	
Future Volume (vph)	129	1171	843	74	91	120	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.988			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3531	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3531	0	1787	1599	
Satd. Flow (RTOR)			8			136	
Adj. Flow (vph)	147	1331	937	82	103	136	
Lane Group Flow (vph)	147	1331	1019	0	103	136	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	27.0	45.0	18.0		26.0		29.0
Total Split (%)	27.0%	45.0%	18.0%		26.0%		29%
Maximum Green (s)	21.0	39.0	12.0		21.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.55	0.50	0.53		0.48	0.22	
Control Delay	45.9	9.0	9.0		47.7	4.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.9	9.0	9.0		47.7	4.3	
Queue Length 50th (ft)	87	109	21		62	0	
Queue Length 95th (ft)	138	432	#591		107	32	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	376	2656	1914		393	707	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.50	0.53		0.26	0.19	
Intersection Summary							
Cycle Length: 100							

2023 Existing Saturday Midday Peak-Hour 1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100

Offset: 30 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

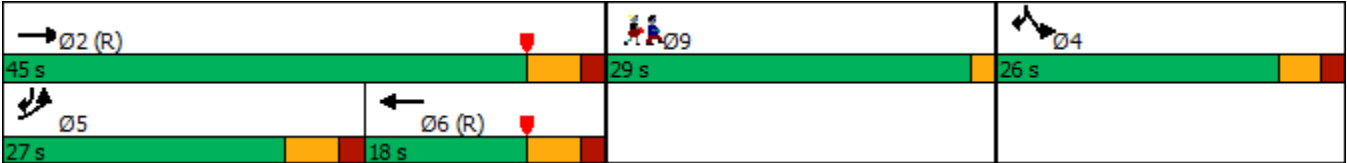
Natural Cycle: 75

Control Type: Actuated-Coordinated

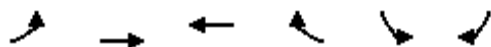
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2023 Existing Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↱↱	↰↱		↰	↱
Traffic Volume (vph)	129	1171	843	74	91	120
Future Volume (vph)	129	1171	843	74	91	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1636	3574	3531		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1636	3574	3531		1787	1599
Peak-hour factor, PHF	0.88	0.88	0.90	0.90	0.88	0.88
Adj. Flow (vph)	147	1331	937	82	103	136
RTOR Reduction (vph)	0	0	4	0	0	93
Lane Group Flow (vph)	147	1331	1015	0	103	43
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	14.2	70.7	50.5		11.1	30.3
Effective Green, g (s)	16.2	72.7	52.5		12.1	31.3
Actuated g/C Ratio	0.16	0.73	0.52		0.12	0.31
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	265	2598	1853		216	500
v/s Ratio Prot	0.09	c0.37	c0.29		c0.06	0.03
v/s Ratio Perm						
v/c Ratio	0.55	0.51	0.55		0.48	0.09
Uniform Delay, d1	38.6	5.9	15.8		41.0	24.2
Progression Factor	1.00	1.00	0.17		1.00	1.00
Incremental Delay, d2	2.5	0.7	1.0		1.7	0.1
Delay (s)	41.1	6.7	3.7		42.7	24.3
Level of Service	D	A	A		D	C
Approach Delay (s)		10.1	3.7		32.2	
Approach LOS		B	A		C	
Intersection Summary						
HCM 2000 Control Delay			9.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.51			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			47.8%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2023 Existing Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	5	63	1164	18	6	49	884	258	29	37	65	292
Future Volume (vph)	5	63	1164	18	6	49	884	258	29	37	65	292
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.998					0.850		0.905		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1772	3568	0	0	1805	3574	1546	1745	1662	0	3351
Flt Permitted		0.167				0.094			0.950			0.950
Satd. Flow (perm)	0	312	3568	0	0	179	3574	1546	1745	1662	0	3351
Satd. Flow (RTOR)			1					226		70		
Adj. Flow (vph)	6	71	1308	20	7	53	961	280	31	40	70	311
Lane Group Flow (vph)	0	77	1328	0	0	60	961	280	31	110	0	311
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	16.0	16.0	17.0		16.0	16.0	17.0	17.0	22.0	22.0		17.0
Total Split (%)	16.0%	16.0%	17.0%		16.0%	16.0%	17.0%	17.0%	22.0%	22.0%		17.0%
Maximum Green (s)	10.0	10.0	11.0		10.0	10.0	11.0	11.0	17.0	17.0		11.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.25	0.81			0.24	0.59	0.26	0.19	0.50		0.57
Control Delay		20.5	30.5			17.3	27.0	3.1	42.8	25.8		43.1
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		20.5	30.5			17.3	27.0	3.1	42.8	25.8		43.1
Queue Length 50th (ft)		17	286			14	222	9	19	24		92
Queue Length 95th (ft)		95	#840			55	#603	46	45	74		143
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		353	1637			294	1622	1083	314	356		548
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.22	0.81			0.20	0.59	0.26	0.10	0.31		0.57
Intersection Summary												
Cycle Length: 100												

2023 Existing Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	46	33	
Future Volume (vph)	46	33	
Lane Util. Factor	1.00	1.00	
Frt	0.937		
Flt Protected			
Satd. Flow (prot)	1679	0	
Flt Permitted			
Satd. Flow (perm)	1679	0	
Satd. Flow (RTOR)	30		
Adj. Flow (vph)	49	35	
Lane Group Flow (vph)	84	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	17.0		28.0
Total Split (%)	17.0%		28%
Maximum Green (s)	11.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.28		
Control Delay	27.3		
Queue Delay	0.0		
Total Delay	27.3		
Queue Length 50th (ft)	29		
Queue Length 95th (ft)	76		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	299		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.28		
Intersection Summary			

2023 Existing Saturday Midday Peak-Hour 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
 Natural Cycle: 100
 Control Type: Actuated-Coordinated
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1 16 s	 Ø2 (R)  17 s	 Ø9 28 s	 Ø4 17 s	 Ø8 22 s
 Ø5 16 s	 Ø6 (R)  17 s			

2023 Existing Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	5	63	1164	18	6	49	884	258	29	37	65	292
Future Volume (vph)	5	63	1164	18	6	49	884	258	29	37	65	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1772	3567			1805	3574	1546	1745	1661		3351
Flt Permitted		0.17	1.00			0.09	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		312	3567			178	3574	1546	1745	1661		3351
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.94
Adj. Flow (vph)	6	71	1308	20	7	53	961	280	31	40	70	311
RTOR Reduction (vph)	0	0	1	0	0	0	0	93	0	63	0	0
Lane Group Flow (vph)	0	77	1327	0	0	60	961	187	31	47	0	311
Heavy Vehicles (%)	0%	2%	1%	0%	0%	0%	1%	1%	0%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		47.6	41.0			46.8	40.6	54.9	8.5	8.5		14.3
Effective Green, g (s)		51.6	43.0			50.8	42.6	58.9	9.5	9.5		16.3
Actuated g/C Ratio		0.52	0.43			0.51	0.43	0.59	0.10	0.10		0.16
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		286	1533			223	1522	910	165	157		546
v/s Ratio Prot		c0.02	c0.37			0.02	0.27	0.03	0.02	c0.03		c0.09
v/s Ratio Perm		0.12				0.11		0.09				
v/c Ratio		0.27	0.87			0.27	0.63	0.21	0.19	0.30		0.57
Uniform Delay, d1		14.3	25.9			18.0	22.5	9.6	41.7	42.1		38.6
Progression Factor		1.30	0.96			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.5	6.1			0.7	2.0	0.1	0.6	1.1		1.4
Delay (s)		19.1	30.8			18.7	24.5	9.7	42.2	43.2		40.0
Level of Service		B	C			B	C	A	D	D		D
Approach Delay (s)			30.2				21.1			43.0		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay			28.2				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			61.9%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	46	33
Future Volume (vph)	46	33
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.94	
Flt Protected	1.00	
Satd. Flow (prot)	1680	
Flt Permitted	1.00	
Satd. Flow (perm)	1680	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	49	35
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	59	0
Heavy Vehicles (%)	0%	6%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	14.3	
Effective Green, g (s)	16.3	
Actuated g/C Ratio	0.16	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	273	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.22	
Uniform Delay, d1	36.3	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	36.7	
Level of Service	D	
Approach Delay (s)	39.3	
Approach LOS	D	
Intersection Summary		

2023 Existing Saturday Midday Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↘		↗			
Traffic Vol, veh/h	0	1109	418	0	1133	148	64	0	138	0	0	0
Future Vol, veh/h	0	1109	418	0	1133	148	64	0	138	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	88	88	88	25	25	25
Heavy Vehicles, %	0	1	0	0	1	1	2	0	0	0	0	0
Mvmt Flow	0	1205	454	0	1245	163	73	0	157	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	0	1828	-	-			
Stage 1	-	-	-	-	-	-	1205	-	-			
Stage 2	-	-	-	-	-	-	623	-	-			
Critical Hdwy	-	-	-	-	-	-	6.84	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-			
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	-			
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 68	0	0			
Stage 1	0	-	0	0	-	0	247	0	0			
Stage 2	0	-	0	0	-	0	497	0	0			
Platoon blocked, %	-			-								
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 68	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 68	0	-			
Stage 1	-	-	-	-	-	-	247	0	-			
Stage 2	-	-	-	-	-	-	497	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			234					
HCM LOS							F					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	68		-	-								
HCM Lane V/C Ratio	1.07		-	-								
HCM Control Delay (s)	234		0	-								
HCM Lane LOS	F		A	-								
HCM 95th %tile Q(veh)	5.5		-	-								
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

2023 Existing Saturday Midday Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	8.5												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕↕			↕↕	↗			↗			↗
Traffic Vol, veh/h	1	182	1064	0	0	874	199	0	0	196	0	0	406
Future Vol, veh/h	1	182	1064	0	0	874	199	0	0	196	0	0	406
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	85	85	85	83	83	83	93	93	93
Heavy Vehicles, %	0	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	1	207	1209	0	0	1028	234	0	0	236	0	0	437

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1028	1028	0	-	-	-	0	-	-	605	-	-	514
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.1	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.2	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	324	683	-	0	0	-	0	0	0	443	0	0	505
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver	649	649	-	-	-	-	-	-	-	443	-	-	505
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.9	0	22	42.5
HCM LOS			C	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	443	649	-	-	505
HCM Lane V/C Ratio	0.533	0.32	-	-	0.864
HCM Control Delay (s)	22	13.1	-	-	42.5
HCM Lane LOS	C	B	-	-	E
HCM 95th %tile Q(veh)	3.1	1.4	-	-	9.2

2023 Existing Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	187	805	260	4	91	656	28	305	141	104	47
Future Volume (vph)	8	187	805	260	4	91	656	28	305	141	104	47
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.994			0.936		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1728	3455	1546	0	1805	3544	0	1805	1768	0	0
Flt Permitted		0.950				0.950			0.414			
Satd. Flow (perm)	0	1728	3455	1546	0	1805	3544	0	787	1768	0	0
Satd. Flow (RTOR)				306			5			44		
Adj. Flow (vph)	9	220	947	306	5	111	800	34	363	168	124	56
Lane Group Flow (vph)	0	229	947	306	0	116	834	0	363	292	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	7.0	7.0	18.0	8.0	7.0	7.0	18.0		8.0	23.0		15.0
Total Split (%)	8.8%	8.8%	22.5%	10.0%	8.8%	8.8%	22.5%		10.0%	28.8%		18.8%
Maximum Green (s)	1.0	1.0	12.0	2.0	1.0	1.0	12.0		2.0	17.0		9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.31	1.02	0.38		1.13	0.87		1.00	0.44		
Control Delay		639.0	59.6	3.4		160.2	34.0		69.7	16.3		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		639.0	59.6	3.4		160.2	34.0		69.7	16.3		
Queue Length 50th (ft)		~107	133	0		~35	111		73	46		
Queue Length 95th (ft)		#322	#440	27		#168	#355		#382	176		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		99	926	816		103	954		364	671		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		2.31	1.02	0.38		1.13	0.87		1.00	0.44		
Intersection Summary												
Cycle Length: 80												

2023 Existing Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	119	104	
Future Volume (vph)	119	104	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.986		
Satd. Flow (prot)	1837	1546	
Flt Permitted	0.810		
Satd. Flow (perm)	1509	1546	
Satd. Flow (RTOR)		150	
Adj. Flow (vph)	142	124	
Lane Group Flow (vph)	198	124	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	15.0		32.0
Total Split (%)	18.8%		40%
Maximum Green (s)	9.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.62	0.20	
Control Delay	34.4	4.1	
Queue Delay	0.0	0.0	
Total Delay	34.4	4.1	
Queue Length 50th (ft)	49	0	
Queue Length 95th (ft)	#204	23	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	317	631	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.62	0.20	
Intersection Summary			

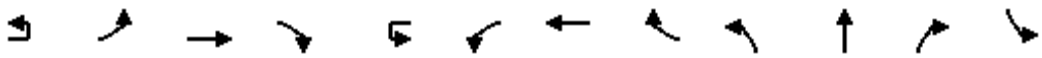
2023 Existing Saturday Midday Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 54.4
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
7 s	18 s	32 s	8 s	15 s
 Ø5	 Ø6		 Ø8	
7 s	18 s		23 s	

2023 Existing Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	187	805	260	4	91	656	28	305	141	104	47
Future Volume (vph)	8	187	805	260	4	91	656	28	305	141	104	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.94		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1728	3455	1546		1805	3544		1805	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.41	1.00		
Satd. Flow (perm)		1728	3455	1546		1805	3544		787	1769		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.82	0.82	0.82	0.82	0.84	0.84	0.84	0.84
Adj. Flow (vph)	9	220	947	306	5	111	800	34	363	168	124	56
RTOR Reduction (vph)	0	0	0	203	0	0	4	0	0	28	0	0
Lane Group Flow (vph)	0	229	947	103	0	116	830	0	363	264	0	0
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%	1%	7%	0%	1%	0%	2%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		1.0	12.5	14.6		1.0	12.5		17.7	17.7		
Effective Green, g (s)		3.0	14.5	18.6		3.0	14.5		19.7	19.7		
Actuated g/C Ratio		0.05	0.26	0.34		0.05	0.26		0.36	0.36		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		93	905	519		97	929		355	630		
v/s Ratio Prot		c0.13	c0.27	0.01		0.06	0.23		c0.08	0.15		
v/s Ratio Perm				0.05					c0.29			
v/c Ratio		2.46	1.05	0.20		1.20	0.89		1.02	0.42		
Uniform Delay, d1		26.1	20.4	13.0		26.1	19.7		17.8	13.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		689.2	42.8	0.2		153.3	10.9		53.6	0.5		
Delay (s)		715.3	63.2	13.2		179.4	30.6		71.4	13.9		
Level of Service		F	E	B		F	C		E	B		
Approach Delay (s)			153.6				48.8			45.8		
Approach LOS			F				D			D		
Intersection Summary												
HCM 2000 Control Delay			91.0				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			55.3				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			68.9%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

2023 Existing Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	119	104
Future Volume (vph)	119	104
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.99	1.00
Satd. Flow (prot)	1837	1546
Flt Permitted	0.81	1.00
Satd. Flow (perm)	1508	1546
Peak-hour factor, PHF	0.84	0.84
Adj. Flow (vph)	142	124
RTOR Reduction (vph)	0	82
Lane Group Flow (vph)	198	42
Heavy Vehicles (%)	2%	1%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	9.6	16.6
Effective Green, g (s)	11.6	18.6
Actuated g/C Ratio	0.21	0.34
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	316	519
v/s Ratio Prot		
v/s Ratio Perm	0.13	0.03
v/c Ratio	0.63	0.08
Uniform Delay, d1	19.9	12.5
Progression Factor	1.00	1.00
Incremental Delay, d2	3.8	0.1
Delay (s)	23.7	12.6
Level of Service	C	B
Approach Delay (s)	19.4	
Approach LOS	B	
Intersection Summary		

2023 Existing Saturday Midday Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	119	0	0	100
Future Vol, veh/h	0	1	119	0	0	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	25	25	70	70	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	170	0	0	123

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	293	170	0
Stage 1	170	-	-
Stage 2	123	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	702	879	-
Stage 1	865	-	-
Stage 2	907	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	702	879	-
Mov Cap-2 Maneuver	702	-	-
Stage 1	865	-	-
Stage 2	907	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	879	1420
HCM Lane V/C Ratio	-	-	0.005	-
HCM Control Delay (s)	-	-	9.1	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

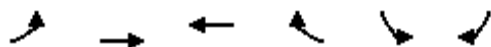
2023 Existing Saturday Midday Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	1	7	0	1	8	4	88	3	8	84	8
Future Vol, veh/h	23	1	7	0	1	8	4	88	3	8	84	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	48	48	48	75	75	75	70	70	70	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	2	15	0	1	11	6	126	4	10	104	10
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	275	271	109	278	274	128	114	0	0	130	0	0
Stage 1	129	129	-	140	140	-	-	-	-	-	-	-
Stage 2	146	142	-	138	134	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	681	639	950	678	637	927	1488	-	-	1468	-	-
Stage 1	880	793	-	868	785	-	-	-	-	-	-	-
Stage 2	861	783	-	870	789	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	667	632	950	660	630	927	1488	-	-	1468	-	-
Mov Cap-2 Maneuver	667	632	-	660	630	-	-	-	-	-	-	-
Stage 1	876	787	-	865	782	-	-	-	-	-	-	-
Stage 2	846	780	-	848	783	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.5		9.1			0.3			0.6			
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1488	-	-	714	881	1468	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.09	0.014	0.007	-	-				
HCM Control Delay (s)	7.4	0	-	10.5	9.1	7.5	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0	-	-				

2030 No-Build Weekday Morning Peak-Hour



2030 No Build Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1343	876	29	39	38	
Future Volume (vph)	40	1343	876	29	39	38	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3471	3455	0	1752	1568	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1685	3471	3455	0	1752	1568	
Satd. Flow (RTOR)			3			45	
Adj. Flow (vph)	45	1509	932	31	46	45	
Lane Group Flow (vph)	45	1509	963	0	46	45	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	32.0	54.0	22.0		17.0		29.0
Total Split (%)	32.0%	54.0%	22.0%		17.0%		29%
Maximum Green (s)	26.0	48.0	16.0		12.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.26	0.54	0.41		0.29	0.12	
Control Delay	44.5	8.1	15.8		46.4	9.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.5	8.1	15.8		46.4	9.1	
Queue Length 50th (ft)	27	107	28		28	0	
Queue Length 95th (ft)	59	501	317		57	22	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	471	2784	2362		227	626	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.54	0.41		0.20	0.07	
Intersection Summary							
Cycle Length: 100							

2030 No Build Weekday Morning Peak-Hour

1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100

Offset: 19 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

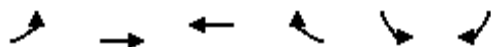
Natural Cycle: 75

Control Type: Actuated-Coordinated

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway

 Ø2 (R)		 Ø9		 Ø4	
54 s		29 s		17 s	
 Ø5		 Ø6 (R)			
32 s		22 s			

2030 No Build Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	1343	876	29	39	38
Future Volume (vph)	40	1343	876	29	39	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1685	3471	3455		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1685	3471	3455		1752	1568
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.84	0.84
Adj. Flow (vph)	45	1509	932	31	46	45
RTOR Reduction (vph)	0	0	1	0	0	36
Lane Group Flow (vph)	45	1509	962	0	46	9
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	7.1	74.8	61.7		7.0	19.1
Effective Green, g (s)	9.1	76.8	63.7		8.0	20.1
Actuated g/C Ratio	0.09	0.77	0.64		0.08	0.20
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	153	2665	2200		140	315
v/s Ratio Prot	0.03	c0.43	0.28		c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.29	0.57	0.44		0.33	0.03
Uniform Delay, d1	42.5	4.8	9.1		43.5	32.1
Progression Factor	1.00	1.00	1.27		1.00	1.00
Incremental Delay, d2	1.1	0.9	0.5		1.4	0.0
Delay (s)	43.5	5.6	12.1		44.8	32.1
Level of Service	D	A	B		D	C
Approach Delay (s)		6.7	12.1		38.6	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			9.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			48.0%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2030 No Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1325	17	2	24	887	289	29	21	81	478
Future Volume (vph)	1	46	1325	17	2	24	887	289	29	21	81	478
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.998					0.850		0.881		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1689	3466	0	0	1805	3471	1531	1745	1605	0	3319
Flt Permitted		0.138				0.106			0.950			0.950
Satd. Flow (perm)	0	245	3466	0	0	201	3471	1531	1745	1605	0	3319
Satd. Flow (RTOR)			1					306		100		
Adj. Flow (vph)	1	49	1410	18	2	26	944	307	36	26	100	509
Lane Group Flow (vph)	0	50	1428	0	0	28	944	307	36	126	0	509
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	19.0		13.0	13.0	19.0	28.0	12.0	12.0		28.0
Total Split (%)	13.0%	13.0%	19.0%		13.0%	13.0%	19.0%	28.0%	12.0%	12.0%		28.0%
Maximum Green (s)	7.0	7.0	13.0		7.0	7.0	13.0	22.0	7.0	7.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.21	0.95			0.12	0.67	0.27	0.25	0.57		0.65
Control Delay		26.3	43.8			19.8	31.5	1.7	47.4	24.0		38.3
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		26.3	43.8			19.8	31.5	1.7	47.4	24.0		38.3
Queue Length 50th (ft)		14	244			8	247	0	22	16		148
Queue Length 95th (ft)		m54	#951			34	#605	24	48	58		203
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		251	1497			240	1403	1149	149	229		837
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.20	0.95			0.12	0.67	0.27	0.24	0.55		0.61
Intersection Summary												
Cycle Length: 100												

2030 No Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	42	20	
Future Volume (vph)	42	20	
Lane Util. Factor	1.00	1.00	
Frt	0.952		
Flt Protected			
Satd. Flow (prot)	1749	0	
Flt Permitted			
Satd. Flow (perm)	1749	0	
Satd. Flow (RTOR)	21		
Adj. Flow (vph)	45	21	
Lane Group Flow (vph)	66	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.15		
Control Delay	22.0		
Queue Delay	0.0		
Total Delay	22.0		
Queue Length 50th (ft)	22		
Queue Length 95th (ft)	56		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	457		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.14		
Intersection Summary			

2030 No Build Weekday Morning Peak-Hour

2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
13 s	19 s	28 s	28 s	12 s
 Ø5	 Ø6 (R)			
13 s	19 s			

2030 No Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1325	17	2	24	887	289	29	21	81	478
Future Volume (vph)	1	46	1325	17	2	24	887	289	29	21	81	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.88		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1689	3466			1805	3471	1531	1745	1605		3319
Flt Permitted		0.14	1.00			0.11	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		245	3466			202	3471	1531	1745	1605		3319
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.81	0.81	0.81	0.94
Adj. Flow (vph)	1	49	1410	18	2	26	944	307	36	26	100	509
RTOR Reduction (vph)	0	0	1	0	0	0	0	118	0	92	0	0
Lane Group Flow (vph)	0	50	1427	0	0	28	944	189	36	34	0	509
Heavy Vehicles (%)	0%	7%	4%	0%	0%	0%	4%	2%	0%	0%	1%	2%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		42.6	37.1			39.6	35.6	57.3	7.2	7.2		21.7
Effective Green, g (s)		46.6	39.1			43.6	37.6	61.3	8.2	8.2		23.7
Actuated g/C Ratio		0.47	0.39			0.44	0.38	0.61	0.08	0.08		0.24
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		222	1355			184	1305	938	143	131		786
v/s Ratio Prot		c0.02	c0.41			0.01	0.27	0.05	0.02	c0.02		c0.15
v/s Ratio Perm		0.09				0.06		0.08				
v/c Ratio		0.23	1.05			0.15	0.72	0.20	0.25	0.26		0.65
Uniform Delay, d1		17.2	30.4			21.9	26.7	8.5	43.0	43.1		34.4
Progression Factor		1.35	0.99			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.4	38.2			0.4	3.5	0.1	0.9	1.1		1.8
Delay (s)		23.6	68.4			22.3	30.3	8.6	44.0	44.1		36.2
Level of Service		C	E			C	C	A	D	D		D
Approach Delay (s)			66.9				24.9			44.1		
Approach LOS			E				C			D		
Intersection Summary												
HCM 2000 Control Delay			45.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			66.0%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	42	20
Future Volume (vph)	42	20
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1749	
Flt Permitted	1.00	
Satd. Flow (perm)	1749	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	45	21
RTOR Reduction (vph)	16	0
Lane Group Flow (vph)	50	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	21.7	
Effective Green, g (s)	23.7	
Actuated g/C Ratio	0.24	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	414	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.12	
Uniform Delay, d1	30.0	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	30.1	
Level of Service	C	
Approach Delay (s)	35.5	
Approach LOS	D	
Intersection Summary		

2030 No Build Weekday Morning Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	1.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	802	1084	0	1159	195	43	0	146	0	0	0
Future Vol, veh/h	0	802	1084	0	1159	195	43	0	146	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	91	91	91	72	72	72	25	25	25
Heavy Vehicles, %	0	3	2	0	4	4	0	0	2	0	0	0
Mvmt Flow	0	853	1153	0	1274	214	60	0	203	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	-	0	-	-	0	1490
Stage 1	-	-	-	-	-	853
Stage 2	-	-	-	-	-	637
Critical Hdwy	-	-	-	-	-	6.8
Critical Hdwy Stg 1	-	-	-	-	-	5.8
Critical Hdwy Stg 2	-	-	-	-	-	5.8
Follow-up Hdwy	-	-	-	-	-	3.5
Pot Cap-1 Maneuver	0	-	0	0	-	0
Stage 1	0	-	0	0	-	0
Stage 2	0	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	117
Mov Cap-2 Maneuver	-	-	-	-	-	117
Stage 1	-	-	-	-	-	383
Stage 2	-	-	-	-	-	494

Approach	EB	WB	NB
HCM Control Delay, s	0	0	64.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	117	-	-	-
HCM Lane V/C Ratio	0.51	-	-	-
HCM Control Delay (s)	64.2	0	-	-
HCM Lane LOS	F	A	-	-
HCM 95th %tile Q(veh)	2.4	-	-	-

2030 No Build Weekday Morning Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	26.6												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕↕			↕↕	↗			↗			↗
Traffic Vol, veh/h	2	107	839	0	0	824	127	0	0	189	0	0	528
Future Vol, veh/h	2	107	839	0	0	824	127	0	0	189	0	0	528
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	90	90	90	74	74	74	86	86	86
Heavy Vehicles, %	0	2	2	0	0	3	4	0	0	2	0	0	6
Mvmt Flow	2	116	912	0	0	916	141	0	0	255	0	0	614

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	916	916	0	-	-	-	0	-	-	456	-	-	458
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	-	-	-	-	-	6.94	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	-	-	-	-	-	3.32	-	-	3.36
Pot Cap-1 Maneuver	382	740	-	0	0	-	0	0	0	551	0	0	~ 539
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver	276	276	-	-	-	-	-	-	-	551	-	-	~ 539
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.2	0	17.1	109.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	551	276	-	-	539
HCM Lane V/C Ratio	0.464	0.429	-	-	1.139
HCM Control Delay (s)	17.1	27.5	-	-	109.3
HCM Lane LOS	C	D	-	-	F
HCM 95th %tile Q(veh)	2.4	2	-	-	20.6

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

2030 No Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	93	639	293	2	105	557	20	304	74	115	57
Future Volume (vph)	3	93	639	293	2	105	557	20	304	74	115	57
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.995			0.909		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1619	3421	1531	0	1787	3491	0	1752	1714	0	0
Flt Permitted		0.950				0.950			0.435			
Satd. Flow (perm)	0	1619	3421	1531	0	1787	3491	0	802	1714	0	0
Satd. Flow (RTOR)				337			4			73		
Adj. Flow (vph)	3	107	734	337	2	113	599	22	342	83	129	63
Lane Group Flow (vph)	0	110	734	337	0	115	621	0	342	212	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	32.0	10.0	9.0	9.0	32.0		10.0	27.0		17.0
Total Split (%)	9.0%	9.0%	32.0%	10.0%	9.0%	9.0%	32.0%		10.0%	27.0%		17.0%
Maximum Green (s)	3.0	3.0	26.0	4.0	3.0	3.0	26.0		4.0	21.0		11.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.89	0.66	0.37		0.85	0.54		0.93	0.33		
Control Delay		96.4	24.5	2.6		83.3	22.2		58.6	15.6		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		96.4	24.5	2.6		83.3	22.2		58.6	15.6		
Queue Length 50th (ft)		42	116	0		43	93		96	34		
Queue Length 95th (ft)		#194	282	26		#206	241		#462	144		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		123	1458	899		136	1490		367	647		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.89	0.50	0.37		0.85	0.42		0.93	0.33		
Intersection Summary												
Cycle Length: 100												

2030 No Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	97	87	
Future Volume (vph)	97	87	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.982		
Satd. Flow (prot)	1809	1419	
Flt Permitted	0.797		
Satd. Flow (perm)	1468	1419	
Satd. Flow (RTOR)		120	
Adj. Flow (vph)	108	97	
Lane Group Flow (vph)	171	97	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	17.0		32.0
Total Split (%)	17.0%		32%
Maximum Green (s)	11.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.59	0.17	
Control Delay	39.3	4.8	
Queue Delay	0.0	0.0	
Total Delay	39.3	4.8	
Queue Length 50th (ft)	57	0	
Queue Length 95th (ft)	#233	29	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	290	555	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.59	0.17	
Intersection Summary			

2030 No Build Weekday Morning Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 68.5

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	32 s	32 s	10 s	17 s
 Ø5	 Ø6		 Ø8	
9 s	32 s		27 s	

2030 No Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	93	639	293	2	105	557	20	304	74	115	57
Future Volume (vph)	3	93	639	293	2	105	557	20	304	74	115	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.91		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1619	3421	1531		1787	3490		1752	1713		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.43	1.00		
Satd. Flow (perm)		1619	3421	1531		1787	3490		802	1713		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.89	0.89	0.89	0.90
Adj. Flow (vph)	3	107	734	337	2	113	599	22	342	83	129	63
RTOR Reduction (vph)	0	0	0	199	0	0	3	0	0	48	0	0
Lane Group Flow (vph)	0	110	734	138	0	115	618	0	342	164	0	0
Heavy Vehicles (%)	0%	8%	2%	2%	0%	1%	3%	0%	3%	2%	0%	0%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.1	20.3	24.5		3.1	20.3		21.9	21.9		
Effective Green, g (s)		5.1	22.3	28.5		5.1	22.3		23.9	23.9		
Actuated g/C Ratio		0.07	0.32	0.41		0.07	0.32		0.34	0.34		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		118	1099	628		131	1121		361	589		
v/s Ratio Prot		c0.07	c0.21	0.02		0.06	0.18		c0.08	0.10		
v/s Ratio Perm				0.07					c0.24			
v/c Ratio		0.93	0.67	0.22		0.88	0.55		0.95	0.28		
Uniform Delay, d1		32.0	20.4	13.3		31.8	19.4		21.7	16.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		61.7	1.6	0.2		43.6	0.6		33.6	0.3		
Delay (s)		93.6	21.9	13.4		75.5	20.0		55.2	16.8		
Level of Service		F	C	B		E	C		E	B		
Approach Delay (s)			26.2				28.7			40.5		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay			29.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			69.4				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			62.0%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	97	87
Future Volume (vph)	97	87
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1809	1419
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1468	1419
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	108	97
RTOR Reduction (vph)	0	65
Lane Group Flow (vph)	171	32
Heavy Vehicles (%)	5%	10%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	11.7	20.8
Effective Green, g (s)	13.7	22.8
Actuated g/C Ratio	0.20	0.33
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	289	466
v/s Ratio Prot		
v/s Ratio Perm	0.12	0.02
v/c Ratio	0.59	0.07
Uniform Delay, d1	25.3	16.0
Progression Factor	1.00	1.00
Incremental Delay, d2	3.2	0.1
Delay (s)	28.5	16.1
Level of Service	C	B
Approach Delay (s)	24.0	
Approach LOS	C	
Intersection Summary		

2030 No Build Weekday Morning Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	121	0	0	80
Future Vol, veh/h	0	2	121	0	0	80
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	78	78	82	82
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	155	0	0	98
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	253	155	0	0	155	0
Stage 1	155	-	-	-	-	-
Stage 2	98	-	-	-	-	-
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	740	896	-	-	1438	-
Stage 1	878	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	740	896	-	-	1438	-
Mov Cap-2 Maneuver	740	-	-	-	-	-
Stage 1	878	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	896	1438	-	
HCM Lane V/C Ratio	-	-	0.004	-	-	
HCM Control Delay (s)	-	-	9	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

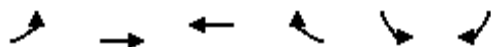
2030 No Build Weekday Morning Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	2	1	16	1	102	0	4	75	1
Future Vol, veh/h	3	1	4	2	1	16	1	102	0	4	75	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	4	2	1	17	1	111	0	4	82	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	213	204	83	206	204	111	83	0	0	111	0	0
Stage 1	91	91	-	113	113	-	-	-	-	-	-	-
Stage 2	122	113	-	93	91	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	744	692	976	752	692	942	1514	-	-	1479	-	-
Stage 1	916	820	-	892	802	-	-	-	-	-	-	-
Stage 2	882	802	-	914	820	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	689	976	745	689	942	1514	-	-	1479	-	-
Mov Cap-2 Maneuver	727	689	-	745	689	-	-	-	-	-	-	-
Stage 1	915	818	-	891	801	-	-	-	-	-	-	-
Stage 2	864	801	-	906	818	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	9.4		9.1		0.1		0.4					
HCM LOS	A		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1514	-	-	827	900	1479	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.011	0.023	0.003	-	-				
HCM Control Delay (s)	7.4	0	-	9.4	9.1	7.4	0	-				
HCM Lane LOS	A	A	-	A	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-				

2030 No-Build Weekday Evening Peak-Hour



2030 No Build Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1219	1446	79	83	136	
Future Volume (vph)	125	1219	1446	79	83	136	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.992			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3574	3546	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3574	3546	0	1787	1599	
Satd. Flow (RTOR)			6			158	
Adj. Flow (vph)	139	1354	1506	82	97	158	
Lane Group Flow (vph)	139	1354	1588	0	97	158	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	19.0	56.0	37.0		15.0		29.0
Total Split (%)	19.0%	56.0%	37.0%		15.0%		29%
Maximum Green (s)	13.0	50.0	31.0		10.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.58	0.50	0.78		0.50	0.27	
Control Delay	49.9	8.0	11.2		50.6	5.4	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	49.9	8.0	11.2		50.6	5.4	
Queue Length 50th (ft)	83	109	27		59	0	
Queue Length 95th (ft)	146	418	m#654		105	39	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	261	2696	2027		211	588	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.53	0.50	0.78		0.46	0.27	

Intersection Summary

Cycle Length: 100

2030 No Build Weekday Evening Peak-Hour

1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100

Offset: 44 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

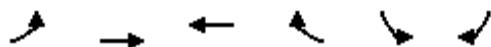
Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway

 Ø2 (R)		 Ø9		 Ø4	
56 s		29 s		15 s	
 Ø5	 Ø6 (R)				
19 s	37 s				

2030 No Build Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	1219	1446	79	83	136
Future Volume (vph)	125	1219	1446	79	83	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	3574	3547		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1668	3574	3547		1787	1599
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.86	0.86
Adj. Flow (vph)	139	1354	1506	82	97	158
RTOR Reduction (vph)	0	0	3	0	0	113
Lane Group Flow (vph)	139	1354	1585	0	97	45
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	12.4	71.9	53.5		9.9	27.3
Effective Green, g (s)	14.4	73.9	55.5		10.9	28.3
Actuated g/C Ratio	0.14	0.74	0.56		0.11	0.28
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	240	2641	1968		194	452
v/s Ratio Prot	c0.08	0.38	c0.45		c0.05	0.03
v/s Ratio Perm						
v/c Ratio	0.58	0.51	0.81		0.50	0.10
Uniform Delay, d1	40.0	5.5	17.9		42.0	26.4
Progression Factor	1.00	1.00	0.37		1.00	1.00
Incremental Delay, d2	3.4	0.7	0.3		2.0	0.1
Delay (s)	43.3	6.2	7.0		44.0	26.5
Level of Service	D	A	A		D	C
Approach Delay (s)		9.7	7.0		33.2	
Approach LOS		A	A		C	

Intersection Summary

HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

2030 No Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1240	23	1	62	1463	498	59	62	47	329
Future Volume (vph)	1	90	1240	23	1	62	1463	498	59	62	47	329
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.997					0.850		0.935		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1805	3530	0	0	1805	3574	1546	1711	1717	0	3351
Flt Permitted		0.108				0.110			0.950			0.950
Satd. Flow (perm)	0	205	3530	0	0	209	3574	1546	1711	1717	0	3351
Satd. Flow (RTOR)			1					311		30		
Adj. Flow (vph)	1	96	1319	24	1	65	1524	519	74	78	59	358
Lane Group Flow (vph)	0	97	1343	0	0	66	1524	519	74	137	0	358
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	17.0		13.0	13.0	17.0	28.0	14.0	14.0		28.0
Total Split (%)	13.0%	13.0%	17.0%		13.0%	13.0%	17.0%	28.0%	14.0%	14.0%		28.0%
Maximum Green (s)	7.0	7.0	11.0		7.0	7.0	11.0	22.0	9.0	9.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.39	0.96			0.28	1.09	0.47	0.38	0.62		0.51
Control Delay		28.2	47.8			21.8	84.0	5.6	46.7	45.8		37.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		28.2	47.8			21.8	84.0	5.6	46.7	45.8		37.0
Queue Length 50th (ft)		31	366			19	~574	49	44	64		104
Queue Length 95th (ft)		122	#954			67	#1043	87	80	#115		142
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		253	1402			245	1400	1135	202	228		816
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.38	0.96			0.27	1.09	0.46	0.37	0.60		0.44
Intersection Summary												
Cycle Length: 100												

2030 No Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	68	39	
Future Volume (vph)	68	39	
Lane Util. Factor	1.00	1.00	
Frt	0.946		
Flt Protected			
Satd. Flow (prot)	1737	0	
Flt Permitted			
Satd. Flow (perm)	1737	0	
Satd. Flow (RTOR)	27		
Adj. Flow (vph)	74	42	
Lane Group Flow (vph)	116	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.30		
Control Delay	26.3		
Queue Delay	0.0		
Total Delay	26.3		
Queue Length 50th (ft)	47		
Queue Length 95th (ft)	92		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	443		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.26		
Intersection Summary			

2030 No Build Weekday Evening Peak-Hour

2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R) 	 Ø9	 Ø4	 Ø8
13 s	17 s	28 s	28 s	14 s
 Ø5	 Ø6 (R) 			
13 s	17 s			

2030 No Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1240	23	1	62	1463	498	59	62	47	329
Future Volume (vph)	1	90	1240	23	1	62	1463	498	59	62	47	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.94		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1805	3531			1805	3574	1546	1711	1718		3351
Flt Permitted		0.11	1.00			0.11	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		206	3531			209	3574	1546	1711	1718		3351
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.96	0.96	0.96	0.96	0.80	0.80	0.80	0.92
Adj. Flow (vph)	1	96	1319	24	1	65	1524	519	74	78	59	358
RTOR Reduction (vph)	0	0	1	0	0	0	0	133	0	27	0	0
Lane Group Flow (vph)	0	97	1342	0	0	66	1524	386	74	110	0	358
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	1%	2%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		41.2	34.9			40.2	34.4	53.3	10.4	10.4		18.9
Effective Green, g (s)		45.2	36.9			44.2	36.4	57.3	11.4	11.4		20.9
Actuated g/C Ratio		0.45	0.37			0.44	0.36	0.57	0.11	0.11		0.21
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		225	1302			216	1300	885	195	195		700
v/s Ratio Prot		c0.04	0.38			0.02	c0.43	0.09	0.04	c0.06		c0.11
v/s Ratio Perm		0.16				0.11		0.16				
v/c Ratio		0.43	1.03			0.31	1.17	0.44	0.38	0.57		0.51
Uniform Delay, d1		21.6	31.6			21.6	31.8	12.2	41.0	42.0		35.0
Progression Factor		1.27	1.02			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		1.2	31.7			0.8	86.0	0.3	1.2	3.7		0.6
Delay (s)		28.6	64.0			22.4	117.8	12.5	42.3	45.7		35.7
Level of Service		C	E			C	F	B	D	D		D
Approach Delay (s)			61.6				88.9			44.5		
Approach LOS			E				F			D		
Intersection Summary												
HCM 2000 Control Delay			71.4				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			71.5%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	68	39
Future Volume (vph)	68	39
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1737	
Flt Permitted	1.00	
Satd. Flow (perm)	1737	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	74	42
RTOR Reduction (vph)	21	0
Lane Group Flow (vph)	95	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	18.9	
Effective Green, g (s)	20.9	
Actuated g/C Ratio	0.21	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	363	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.26	
Uniform Delay, d1	33.1	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	33.5	
Level of Service	C	
Approach Delay (s)	35.1	
Approach LOS	D	
Intersection Summary		

2030 No Build Weekday Evening Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	994	623	0	1943	206	81	0	181	0	0	0
Future Vol, veh/h	0	994	623	0	1943	206	81	0	181	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	96	96	96	89	89	89	25	25	25
Heavy Vehicles, %	0	1	1	0	1	2	1	0	1	0	0	0
Mvmt Flow	0	1080	677	0	2024	215	91	0	203	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	-	0	-	-	0	2092
Stage 1	-	-	-	-	-	1080
Stage 2	-	-	-	-	-	1012
Critical Hdwy	-	-	-	-	-	6.82
Critical Hdwy Stg 1	-	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	-	5.82
Follow-up Hdwy	-	-	-	-	-	3.51
Pot Cap-1 Maneuver	0	-	0	0	-	0 ~ 46
Stage 1	0	-	0	0	-	0 289
Stage 2	0	-	0	0	-	0 314
Platoon blocked, %	-		-		-	
Mov Cap-1 Maneuver	-	-	-	-	-	~ 46 0
Mov Cap-2 Maneuver	-	-	-	-	-	~ 46 0
Stage 1	-	-	-	-	-	289 0
Stage 2	-	-	-	-	-	314 0

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 647.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	46	-	-	-
HCM Lane V/C Ratio	1.979	-	-	-
HCM Control Delay (s)	\$ 647.2	0	-	-
HCM Lane LOS	F	A	-	-
HCM 95th %tile Q(veh)	9.3	-	-	-

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

2030 No Build Weekday Evening Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	193.7												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕↕			↕↕	↗			↗			↗
Traffic Vol, veh/h	3	160	1012	0	0	1139	215	0	0	329	0	0	1007
Future Vol, veh/h	3	160	1012	0	0	1139	215	0	0	329	0	0	1007
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	96	96	96	81	81	81	91	91	91
Heavy Vehicles, %	0	1	1	0	0	1	1	0	0	0	0	0	2
Mvmt Flow	3	178	1124	0	0	1186	224	0	0	406	0	0	1107
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1186	1186	0	-	-	-	0	-	-	562	-	-	593
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.12	-	-	-	-	-	-	-	6.9	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.21	-	-	-	-	-	-	-	3.3	-	-	3.32
Pot Cap-1 Maneuver	257	590	-	0	0	-	0	0	0	475	0	0	~ 449
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver ~ -133 ~ -133			-	-	-	-	-	-	-	475	-	-	~ 449
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s				0			43.1			\$ 685.3			
HCM LOS							E			F			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1								
Capacity (veh/h)	475	+	-	-	449								
HCM Lane V/C Ratio	0.855	-	-	-	2.465								
HCM Control Delay (s)	43.1	-	-	-	\$ 685.3								
HCM Lane LOS	E	-	-	-	F								
HCM 95th %tile Q(veh)	8.8	-	-	-	87								
Notes													
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined				*: All major volume in platoon					

2030 No Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	144	852	339	3	110	782	40	418	142	120	98
Future Volume (vph)	6	144	852	339	3	110	782	40	418	142	120	98
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.993			0.931		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1745	3455	1546	0	1805	3551	0	1787	1769	0	0
Flt Permitted		0.950				0.950			0.253			
Satd. Flow (perm)	0	1745	3455	1546	0	1805	3551	0	476	1769	0	0
Satd. Flow (RTOR)				357			5			43		
Adj. Flow (vph)	6	152	897	357	3	112	798	41	459	156	132	114
Lane Group Flow (vph)	0	158	897	357	0	115	839	0	459	288	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	26.0	15.0	9.0	9.0	26.0		15.0	33.0		18.0
Total Split (%)	9.0%	9.0%	26.0%	15.0%	9.0%	9.0%	26.0%		15.0%	33.0%		18.0%
Maximum Green (s)	3.0	3.0	20.0	9.0	3.0	3.0	20.0		9.0	27.0		12.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.32	0.86	0.38		0.93	0.78		1.18	0.39		
Control Delay		223.2	36.2	2.5		104.5	31.7		127.9	17.7		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		223.2	36.2	2.5		104.5	31.7		127.9	17.7		
Queue Length 50th (ft)		~83	177	0		49	159		~164	65		
Queue Length 95th (ft)		#281	#487	30		#205	#437		#565	213		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		120	1046	952		124	1079		388	732		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		1.32	0.86	0.38		0.93	0.78		1.18	0.39		
Intersection Summary												
Cycle Length: 100												

2030 No Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	131	148	
Future Volume (vph)	131	148	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.979		
Satd. Flow (prot)	1852	1531	
Flt Permitted	0.731		
Satd. Flow (perm)	1383	1531	
Satd. Flow (RTOR)		172	
Adj. Flow (vph)	152	172	
Lane Group Flow (vph)	266	172	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	18.0		32.0
Total Split (%)	18.0%		32%
Maximum Green (s)	12.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	1.00	0.29	
Control Delay	90.1	6.0	
Queue Delay	0.0	0.0	
Total Delay	90.1	6.0	
Queue Length 50th (ft)	110	0	
Queue Length 95th (ft)	#360	46	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	266	602	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.00	0.29	
Intersection Summary			

2030 No Build Weekday Evening Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 74.4

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	26 s	32 s	15 s	18 s
 Ø5	 Ø6		 Ø8	
9 s	26 s		33 s	

2030 No Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	144	852	339	3	110	782	40	418	142	120	98
Future Volume (vph)	6	144	852	339	3	110	782	40	418	142	120	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.93		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1745	3455	1546		1805	3550		1787	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.25	1.00		
Satd. Flow (perm)		1745	3455	1546		1805	3550		476	1769		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98	0.91	0.91	0.91	0.86
Adj. Flow (vph)	6	152	897	357	3	112	798	41	459	156	132	114
RTOR Reduction (vph)	0	0	0	198	0	0	4	0	0	26	0	0
Lane Group Flow (vph)	0	158	897	159	0	115	835	0	459	262	0	0
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	0%	0%	1%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.1	20.5	29.7		3.1	20.5		27.7	27.7		
Effective Green, g (s)		5.1	22.5	33.7		5.1	22.5		29.7	29.7		
Actuated g/C Ratio		0.07	0.30	0.44		0.07	0.30		0.39	0.39		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		117	1025	687		121	1053		380	693		
v/s Ratio Prot		c0.09	c0.26	0.03		0.06	0.24		c0.18	0.15		
v/s Ratio Perm				0.07					c0.29			
v/c Ratio		1.35	0.88	0.23		0.95	0.79		1.21	0.38		
Uniform Delay, d1		35.4	25.3	13.0		35.2	24.5		19.9	16.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		203.6	8.5	0.2		66.2	4.2		115.8	0.3		
Delay (s)		239.0	33.8	13.2		101.4	28.7		135.7	16.8		
Level of Service		F	C	B		F	C		F	B		
Approach Delay (s)			51.5				37.5			89.9		
Approach LOS			D				D			F		
Intersection Summary												
HCM 2000 Control Delay			57.0				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.09									
Actuated Cycle Length (s)			75.8				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			80.0%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	131	148
Future Volume (vph)	131	148
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1852	1531
Flt Permitted	0.73	1.00
Satd. Flow (perm)	1383	1531
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	152	172
RTOR Reduction (vph)	0	118
Lane Group Flow (vph)	266	54
Heavy Vehicles (%)	0%	2%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	12.5	21.6
Effective Green, g (s)	14.5	23.6
Actuated g/C Ratio	0.19	0.31
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	264	476
v/s Ratio Prot		
v/s Ratio Perm	0.19	0.03
v/c Ratio	1.01	0.11
Uniform Delay, d1	30.6	18.6
Progression Factor	1.00	1.00
Incremental Delay, d2	57.3	0.1
Delay (s)	88.0	18.7
Level of Service	F	B
Approach Delay (s)	60.8	
Approach LOS	E	
Intersection Summary		

2030 No Build Weekday Evening Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	160	1	2	139
Future Vol, veh/h	0	1	160	1	2	139
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	25	25	89	89	74	74
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	180	1	3	188
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	375	181	0	0	181	0
Stage 1	181	-	-	-	-	-
Stage 2	194	-	-	-	-	-
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	630	867	-	-	1407	-
Stage 1	855	-	-	-	-	-
Stage 2	844	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	629	867	-	-	1407	-
Mov Cap-2 Maneuver	629	-	-	-	-	-
Stage 1	855	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		867	1407	
HCM Lane V/C Ratio	-	-		0.005	0.002	
HCM Control Delay (s)	-	-		9.2	7.6	
HCM Lane LOS	-	-		A	A	
HCM 95th %tile Q(veh)	-	-		0	0	

2030 No Build Weekday Evening Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

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	20	0	3	3	0	12	2	129	2	13	118	8
Future Vol, veh/h	20	0	3	3	0	12	2	129	2	13	118	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	3	3	0	13	2	140	2	14	128	9

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	313	307	133	307	310	141	137	0	0	142	0	0
Stage 1	161	161	-	145	145	-	-	-	-	-	-	-
Stage 2	152	146	-	162	165	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	640	607	916	645	605	907	1447	-	-	1441	-	-
Stage 1	841	765	-	858	777	-	-	-	-	-	-	-
Stage 2	850	776	-	840	762	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	625	599	916	637	597	907	1447	-	-	1441	-	-
Mov Cap-2 Maneuver	625	599	-	637	597	-	-	-	-	-	-	-
Stage 1	839	757	-	856	775	-	-	-	-	-	-	-
Stage 2	836	774	-	828	754	-	-	-	-	-	-	-

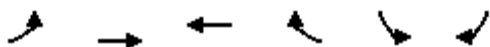
Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		9.4		0.1		0.7	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	652	836	1441	-
HCM Lane V/C Ratio	0.002	-	-	0.038	0.02	0.01	-
HCM Control Delay (s)	7.5	0	-	10.7	9.4	7.5	0
HCM Lane LOS	A	A	-	B	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-

2030 No-Build Saturday Midday Peak-Hour



2030 No-Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1300	936	74	91	120	
Future Volume (vph)	129	1300	936	74	91	120	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.989			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3535	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3535	0	1787	1599	
Satd. Flow (RTOR)			7			136	
Adj. Flow (vph)	147	1477	1040	82	103	136	
Lane Group Flow (vph)	147	1477	1122	0	103	136	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	27.0	45.0	18.0		26.0		29.0
Total Split (%)	27.0%	45.0%	18.0%		26.0%		29%
Maximum Green (s)	21.0	39.0	12.0		21.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.55	0.56	0.59		0.48	0.22	
Control Delay	45.9	9.9	10.3		47.7	4.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.9	9.9	10.3		47.7	4.3	
Queue Length 50th (ft)	87	130	23		62	0	
Queue Length 95th (ft)	138	510	#668		107	32	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	376	2656	1915		393	707	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.56	0.59		0.26	0.19	

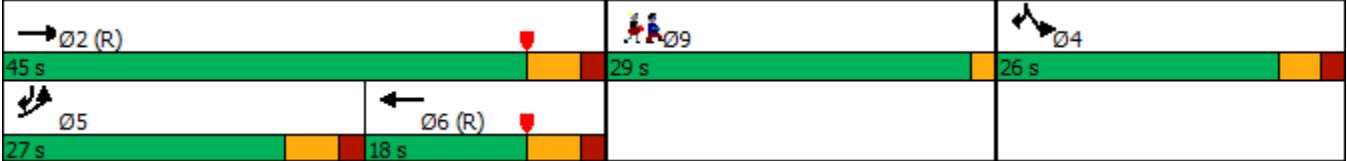
Intersection Summary

Cycle Length: 100

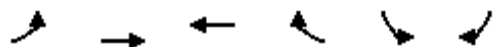
2030 No-Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2030 No-Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	1300	936	74	91	120
Future Volume (vph)	129	1300	936	74	91	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1636	3574	3535		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1636	3574	3535		1787	1599
Peak-hour factor, PHF	0.88	0.88	0.90	0.90	0.88	0.88
Adj. Flow (vph)	147	1477	1040	82	103	136
RTOR Reduction (vph)	0	0	3	0	0	93
Lane Group Flow (vph)	147	1477	1119	0	103	43
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	14.2	70.7	50.5		11.1	30.3
Effective Green, g (s)	16.2	72.7	52.5		12.1	31.3
Actuated g/C Ratio	0.16	0.73	0.52		0.12	0.31
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	265	2598	1855		216	500
v/s Ratio Prot	0.09	c0.41	c0.32		c0.06	0.03
v/s Ratio Perm						
v/c Ratio	0.55	0.57	0.60		0.48	0.09
Uniform Delay, d1	38.6	6.4	16.5		41.0	24.2
Progression Factor	1.00	1.00	0.21		1.00	1.00
Incremental Delay, d2	2.5	0.9	1.1		1.7	0.1
Delay (s)	41.1	7.3	4.5		42.7	24.3
Level of Service	D	A	A		D	C
Approach Delay (s)		10.3	4.5		32.2	
Approach LOS		B	A		C	
Intersection Summary						
HCM 2000 Control Delay			9.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			50.4%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2030 No-Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1292	20	7	54	982	286	32	41	72	324
Future Volume (vph)	6	70	1292	20	7	54	982	286	32	41	72	324
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.998					0.850		0.905		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1772	3568	0	0	1805	3574	1546	1745	1662	0	3351
Flt Permitted		0.117				0.098			0.950			0.950
Satd. Flow (perm)	0	218	3568	0	0	186	3574	1546	1745	1662	0	3351
Satd. Flow (RTOR)			1					226		77		
Adj. Flow (vph)	7	79	1452	22	8	59	1067	311	34	44	77	345
Lane Group Flow (vph)	0	86	1474	0	0	67	1067	311	34	121	0	345
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	16.0	16.0	17.0		16.0	16.0	17.0	17.0	22.0	22.0		17.0
Total Split (%)	16.0%	16.0%	17.0%		16.0%	16.0%	17.0%	17.0%	22.0%	22.0%		17.0%
Maximum Green (s)	10.0	10.0	11.0		10.0	10.0	11.0	11.0	17.0	17.0		11.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.32	0.93			0.27	0.68	0.29	0.20	0.52		0.59
Control Delay		21.7	38.8			18.1	29.8	3.8	42.8	25.9		42.7
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		21.7	38.8			18.1	29.8	3.8	42.8	25.9		42.7
Queue Length 50th (ft)		20	317			17	267	16	20	27		102
Queue Length 95th (ft)		m101	#960			61	#694	58	48	79		#160
Internal Link Dist (ft)			1070				420			120		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		310	1579			295	1560	1074	314	362		583
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.28	0.93			0.23	0.68	0.29	0.11	0.33		0.59
Intersection Summary												
Cycle Length: 100												

2030 No-Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	51	37	
Future Volume (vph)	51	37	
Lane Util. Factor	1.00	1.00	
Frt	0.937		
Flt Protected			
Satd. Flow (prot)	1679	0	
Flt Permitted			
Satd. Flow (perm)	1679	0	
Satd. Flow (RTOR)	30		
Adj. Flow (vph)	54	39	
Lane Group Flow (vph)	93	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	17.0		28.0
Total Split (%)	17.0%		28%
Maximum Green (s)	11.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.29		
Control Delay	27.6		
Queue Delay	0.0		
Total Delay	27.6		
Queue Length 50th (ft)	34		
Queue Length 95th (ft)	85		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	317		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.29		
Intersection Summary			

2030 No-Build Saturday Midday Peak-Hour 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R) 	 Ø9	 Ø4	 Ø8
16 s	17 s	28 s	17 s	22 s
 Ø5	 Ø6 (R) 			
16 s	17 s			

2030 No-Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1292	20	7	54	982	286	32	41	72	324
Future Volume (vph)	6	70	1292	20	7	54	982	286	32	41	72	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	1.00			1.00	1.00	0.85	1.00	0.90		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1772	3567			1805	3574	1546	1745	1661		3351
Flt Permitted		0.12	1.00			0.10	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		218	3567			186	3574	1546	1745	1661		3351
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.94
Adj. Flow (vph)	7	79	1452	22	8	59	1067	311	34	44	77	345
RTOR Reduction (vph)	0	0	1	0	0	0	0	94	0	70	0	0
Lane Group Flow (vph)	0	86	1473	0	0	67	1067	217	34	51	0	345
Heavy Vehicles (%)	0%	2%	1%	0%	0%	0%	1%	1%	0%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		46.5	39.5			45.3	38.9	54.3	8.7	8.7		15.4
Effective Green, g (s)		50.5	41.5			49.3	40.9	58.3	9.7	9.7		17.4
Actuated g/C Ratio		0.50	0.42			0.49	0.41	0.58	0.10	0.10		0.17
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		249	1480			227	1461	901	169	161		583
v/s Ratio Prot		c0.03	c0.41			0.02	0.30	0.04	0.02	c0.03		c0.10
v/s Ratio Perm		0.14				0.12		0.10				
v/c Ratio		0.35	1.00			0.30	0.73	0.24	0.20	0.32		0.59
Uniform Delay, d1		16.2	29.2			20.4	24.9	10.1	41.6	42.1		38.0
Progression Factor		1.27	0.93			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.7	20.6			0.7	3.2	0.1	0.6	1.2		1.6
Delay (s)		21.3	47.8			21.1	28.2	10.3	42.2	43.2		39.6
Level of Service		C	D			C	C	B	D	D		D
Approach Delay (s)			46.3				24.0			43.0		
Approach LOS			D				C			D		
Intersection Summary												
HCM 2000 Control Delay			36.3				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			66.4%				ICU Level of Service			C		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No-Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	51	37
Future Volume (vph)	51	37
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.94	
Flt Protected	1.00	
Satd. Flow (prot)	1679	
Flt Permitted	1.00	
Satd. Flow (perm)	1679	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	54	39
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	68	0
Heavy Vehicles (%)	0%	6%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	15.4	
Effective Green, g (s)	17.4	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	292	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.23	
Uniform Delay, d1	35.6	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	36.0	
Level of Service	D	
Approach Delay (s)	38.9	
Approach LOS	D	
Intersection Summary		

2030 No-Build Saturday Midday Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	13.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↘		↗			
Traffic Vol, veh/h	0	1231	464	0	1258	164	71	0	153	0	0	0
Future Vol, veh/h	0	1231	464	0	1258	164	71	0	153	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	88	88	88	25	25	25
Heavy Vehicles, %	0	1	0	0	1	1	2	0	0	0	0	0
Mvmt Flow	0	1338	504	0	1382	180	81	0	174	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	0	2029	-	-			
Stage 1	-	-	-	-	-	-	1338	-	-			
Stage 2	-	-	-	-	-	-	691	-	-			
Critical Hdwy	-	-	-	-	-	-	6.84	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-			
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	-			
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 50	0	0			
Stage 1	0	-	0	0	-	0	209	0	0			
Stage 2	0	-	0	0	-	0	459	0	0			
Platoon blocked, %	-			-								
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 50	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 50	0	-			
Stage 1	-	-	-	-	-	-	209	0	-			
Stage 2	-	-	-	-	-	-	459	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			\$ 482.2					
HCM LOS							F					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	50		-	-								
HCM Lane V/C Ratio	1.614		-	-								
HCM Control Delay (s)	\$ 482.2		0	-								
HCM Lane LOS	F		A	-								
HCM 95th %tile Q(veh)	7.7		-	-								
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon						

2030 No-Build Saturday Midday Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	15.4												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕↕			↕↕	↗			↗			↗
Traffic Vol, veh/h	1	202	1181	0	0	970	221	0	0	218	0	0	451
Future Vol, veh/h	1	202	1181	0	0	970	221	0	0	218	0	0	451
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	85	85	85	83	83	83	93	93	93
Heavy Vehicles, %	0	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	1	230	1342	0	0	1141	260	0	0	263	0	0	485

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1141	1141	0	-	-	-	0	-	-	671	-	-	571
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.1	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.2	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	274	620	-	0	0	-	0	0	0	401	0	0	~ 464
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver	450	450	-	-	-	-	-	-	-	401	-	-	~ 464
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0	29.5	84.2
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	401	450	-	-	464
HCM Lane V/C Ratio	0.655	0.513	-	-	1.045
HCM Control Delay (s)	29.5	21.1	-	-	84.2
HCM Lane LOS	D	C	-	-	F
HCM 95th %tile Q(veh)	4.5	2.9	-	-	14.9

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

2030 No-Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	208	893	289	4	101	728	31	339	156	115	52
Future Volume (vph)	9	208	893	289	4	101	728	31	339	156	115	52
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.994			0.936		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1728	3455	1546	0	1805	3544	0	1805	1768	0	0
Flt Permitted		0.950				0.950			0.380			
Satd. Flow (perm)	0	1728	3455	1546	0	1805	3544	0	722	1768	0	0
Satd. Flow (RTOR)				340			5			43		
Adj. Flow (vph)	11	245	1051	340	5	123	888	38	404	186	137	62
Lane Group Flow (vph)	0	256	1051	340	0	128	926	0	404	323	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	7.0	7.0	18.0	8.0	7.0	7.0	18.0		8.0	23.0		15.0
Total Split (%)	8.8%	8.8%	22.5%	10.0%	8.8%	8.8%	22.5%		10.0%	28.8%		18.8%
Maximum Green (s)	1.0	1.0	12.0	2.0	1.0	1.0	12.0		2.0	17.0		9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.59	1.13	0.41		1.24	0.97		1.17	0.48		
Control Delay		757.9	97.3	3.6		198.9	46.7		124.7	17.5		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		757.9	97.3	3.6		198.9	46.7		124.7	17.5		
Queue Length 50th (ft)		~124	~164	0		~44	127		~93	53		
Queue Length 95th (ft)		#354	#497	28		#183	#406		#436	198		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		99	926	836		103	954		346	670		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		2.59	1.13	0.41		1.24	0.97		1.17	0.48		
Intersection Summary												
Cycle Length: 80												

2030 No-Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	132	115	
Future Volume (vph)	132	115	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.986		
Satd. Flow (prot)	1837	1546	
Flt Permitted	0.795		
Satd. Flow (perm)	1481	1546	
Satd. Flow (RTOR)		150	
Adj. Flow (vph)	157	137	
Lane Group Flow (vph)	219	137	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	15.0		32.0
Total Split (%)	18.8%		40%
Maximum Green (s)	9.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.70	0.22	
Control Delay	38.5	4.8	
Queue Delay	0.0	0.0	
Total Delay	38.5	4.8	
Queue Length 50th (ft)	55	0	
Queue Length 95th (ft)	#232	30	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	312	631	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.70	0.22	
Intersection Summary			

2030 No-Build Saturday Midday Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 54.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
7 s	18 s	32 s	8 s	15 s
 Ø5	 Ø6		 Ø8	
7 s	18 s		23 s	

2030 No-Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	208	893	289	4	101	728	31	339	156	115	52
Future Volume (vph)	9	208	893	289	4	101	728	31	339	156	115	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.94		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1728	3455	1546		1805	3544		1805	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.38	1.00		
Satd. Flow (perm)		1728	3455	1546		1805	3544		722	1769		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.82	0.82	0.82	0.82	0.84	0.84	0.84	0.84
Adj. Flow (vph)	11	245	1051	340	5	123	888	38	404	186	137	62
RTOR Reduction (vph)	0	0	0	226	0	0	4	0	0	28	0	0
Lane Group Flow (vph)	0	256	1051	114	0	128	922	0	404	295	0	0
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%	1%	7%	0%	1%	0%	2%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		1.0	12.5	14.6		1.0	12.5		17.7	17.7		
Effective Green, g (s)		3.0	14.5	18.6		3.0	14.5		19.7	19.7		
Actuated g/C Ratio		0.05	0.26	0.34		0.05	0.26		0.36	0.36		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		93	905	519		97	929		337	630		
v/s Ratio Prot		c0.15	c0.30	0.02		0.07	0.26		c0.09	0.17		
v/s Ratio Perm				0.06					c0.34			
v/c Ratio		2.75	1.16	0.22		1.32	0.99		1.20	0.47		
Uniform Delay, d1		26.1	20.4	13.2		26.1	20.3		17.8	13.8		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		818.0	84.8	0.2		199.1	27.6		114.6	0.6		
Delay (s)		844.2	105.2	13.4		225.3	48.0		132.4	14.3		
Level of Service		F	F	B		F	D		F	B		
Approach Delay (s)			201.1				69.5			79.9		
Approach LOS			F				E			E		
Intersection Summary												
HCM 2000 Control Delay			124.3				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.35									
Actuated Cycle Length (s)			55.3				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			75.1%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 No-Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	132	115
Future Volume (vph)	132	115
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.99	1.00
Satd. Flow (prot)	1837	1546
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1481	1546
Peak-hour factor, PHF	0.84	0.84
Adj. Flow (vph)	157	137
RTOR Reduction (vph)	0	91
Lane Group Flow (vph)	219	46
Heavy Vehicles (%)	2%	1%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	9.6	16.6
Effective Green, g (s)	11.6	18.6
Actuated g/C Ratio	0.21	0.34
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	310	519
v/s Ratio Prot		
v/s Ratio Perm	0.15	0.03
v/c Ratio	0.71	0.09
Uniform Delay, d1	20.3	12.6
Progression Factor	1.00	1.00
Incremental Delay, d2	7.2	0.1
Delay (s)	27.4	12.6
Level of Service	C	B
Approach Delay (s)	21.7	
Approach LOS	C	
Intersection Summary		

2030 No-Build Saturday Midday Peak-Hour
6: Clarks Road & North Project Site Driveway

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	132	0	0	111
Future Vol, veh/h	0	1	132	0	0	111
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	25	25	70	70	81	81
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	4	189	0	0	137
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	326	189	0	0	189	0
Stage 1	189	-	-	-	-	-
Stage 2	137	-	-	-	-	-
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	672	858	-	-	1397	-
Stage 1	848	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	672	858	-	-	1397	-
Mov Cap-2 Maneuver	672	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	895	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.2	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		858	1397	-
HCM Lane V/C Ratio	-	-		0.005	-	-
HCM Control Delay (s)	-	-		9.2	0	-
HCM Lane LOS	-	-		A	A	-
HCM 95th %tile Q(veh)	-	-		0	0	-

2030 No-Build Saturday Midday Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	1	7	0	1	8	4	101	3	8	95	8
Future Vol, veh/h	23	1	7	0	1	8	4	101	3	8	95	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	48	48	48	75	75	75	70	70	70	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	2	15	0	1	11	6	144	4	10	117	10

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	306	302	122	309	305	146	127	0	0	148	0	0
Stage 1	142	142	-	158	158	-	-	-	-	-	-	-
Stage 2	164	160	-	151	147	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	650	614	935	647	612	906	1472	-	-	1446	-	-
Stage 1	866	783	-	849	771	-	-	-	-	-	-	-
Stage 2	843	769	-	856	779	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	636	607	935	630	605	906	1472	-	-	1446	-	-
Mov Cap-2 Maneuver	636	607	-	630	605	-	-	-	-	-	-	-
Stage 1	863	778	-	846	768	-	-	-	-	-	-	-
Stage 2	828	766	-	835	774	-	-	-	-	-	-	-

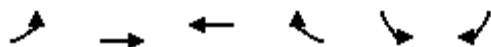
Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.8		9.3		0.3		0.5	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1472	-	-	684 859	1446	-	-
HCM Lane V/C Ratio	0.004	-	-	0.094 0.014	0.007	-	-
HCM Control Delay (s)	7.5	0	-	10.8 9.3	7.5	0	-
HCM Lane LOS	A	A	-	B A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3 0	0	-	-

2030 Build Weekday Morning Peak-Hour



2030 Build Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

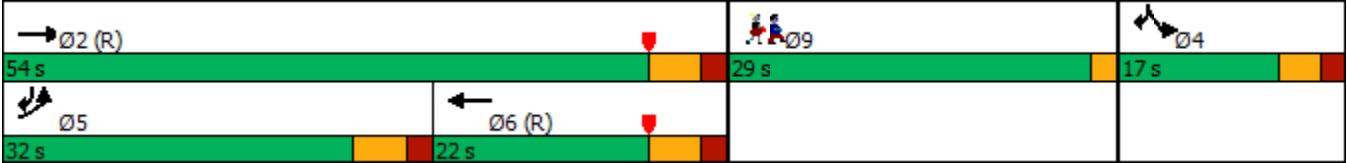


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1356	888	29	39	38	
Future Volume (vph)	40	1356	888	29	39	38	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3471	3455	0	1752	1568	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1685	3471	3455	0	1752	1568	
Satd. Flow (RTOR)			3			45	
Adj. Flow (vph)	45	1524	945	31	46	45	
Lane Group Flow (vph)	45	1524	976	0	46	45	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	32.0	54.0	22.0		17.0		29.0
Total Split (%)	32.0%	54.0%	22.0%		17.0%		29%
Maximum Green (s)	26.0	48.0	16.0		12.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.26	0.55	0.41		0.29	0.12	
Control Delay	44.5	8.2	15.3		46.4	9.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.5	8.2	15.3		46.4	9.1	
Queue Length 50th (ft)	27	109	27		28	0	
Queue Length 95th (ft)	59	510	322		57	22	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	471	2784	2362		227	626	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.10	0.55	0.41		0.20	0.07	
Intersection Summary							
Cycle Length: 100							

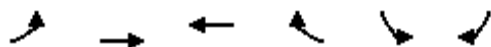
2030 Build Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100
Offset: 19 (19%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2030 Build Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	1356	888	29	39	38
Future Volume (vph)	40	1356	888	29	39	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1685	3471	3456		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1685	3471	3456		1752	1568
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.84	0.84
Adj. Flow (vph)	45	1524	945	31	46	45
RTOR Reduction (vph)	0	0	1	0	0	36
Lane Group Flow (vph)	45	1524	975	0	46	9
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	7.1	74.8	61.7		7.0	19.1
Effective Green, g (s)	9.1	76.8	63.7		8.0	20.1
Actuated g/C Ratio	0.09	0.77	0.64		0.08	0.20
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	153	2665	2201		140	315
v/s Ratio Prot	0.03	c0.44	0.28		c0.03	0.01
v/s Ratio Perm						
v/c Ratio	0.29	0.57	0.44		0.33	0.03
Uniform Delay, d1	42.5	4.8	9.2		43.5	32.1
Progression Factor	1.00	1.00	1.22		1.00	1.00
Incremental Delay, d2	1.1	0.9	0.5		1.4	0.0
Delay (s)	43.5	5.7	11.7		44.8	32.1
Level of Service	D	A	B		D	C
Approach Delay (s)		6.8	11.7		38.6	
Approach LOS		A	B		D	
Intersection Summary						
HCM 2000 Control Delay			9.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			48.3%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2030 Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Future Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Fr't			0.993					0.850		0.873		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1689	3453	0	0	1805	3471	1531	1745	1590	0	3319
Flt Permitted		0.145				0.112			0.950			0.950
Satd. Flow (perm)	0	258	3453	0	0	213	3471	1531	1745	1590	0	3319
Satd. Flow (RTOR)			4					307		170		
Adj. Flow (vph)	1	49	1379	63	2	89	913	307	86	31	170	509
Lane Group Flow (vph)	0	50	1442	0	0	91	913	307	86	201	0	509
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	19.0		13.0	13.0	19.0	28.0	12.0	12.0		28.0
Total Split (%)	13.0%	13.0%	19.0%		13.0%	13.0%	19.0%	28.0%	12.0%	12.0%		28.0%
Maximum Green (s)	7.0	7.0	13.0		7.0	7.0	13.0	22.0	7.0	7.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.21	1.10			0.37	0.68	0.28	0.49	0.64		0.65
Control Delay		27.2	88.2			22.7	33.0	1.7	53.2	20.9		38.3
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		27.2	88.2			22.7	33.0	1.7	53.2	20.9		38.3
Queue Length 50th (ft)		0	~397			28	250	0	52	18		148
Queue Length 95th (ft)		m54	#960			84	#582	24	#99	68		203
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		247	1309			252	1337	1126	176	313		837
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.20	1.10			0.36	0.68	0.27	0.49	0.64		0.61
Intersection Summary												
Cycle Length: 100												

2030 Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	47	20	
Future Volume (vph)	47	20	
Lane Util. Factor	1.00	1.00	
Frt	0.956		
Flt Protected			
Satd. Flow (prot)	1756	0	
Flt Permitted			
Satd. Flow (perm)	1756	0	
Satd. Flow (RTOR)	20		
Adj. Flow (vph)	50	21	
Lane Group Flow (vph)	71	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.16		
Control Delay	22.8		
Queue Delay	0.0		
Total Delay	22.8		
Queue Length 50th (ft)	25		
Queue Length 95th (ft)	61		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	458		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.16		
Intersection Summary			

2030 Build Weekday Morning Peak-Hour

2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
13 s	19 s	28 s	28 s	12 s
 Ø5	 Ø6 (R)			
13 s	19 s			

2030 Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Future Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1689	3454			1805	3471	1531	1745	1590		3319
Flt Permitted		0.15	1.00			0.11	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		258	3454			213	3471	1531	1745	1590		3319
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.81	0.81	0.81	0.94
Adj. Flow (vph)	1	49	1379	63	2	89	913	307	86	31	170	509
RTOR Reduction (vph)	0	0	3	0	0	0	0	125	0	153	0	0
Lane Group Flow (vph)	0	50	1439	0	0	91	913	182	86	48	0	509
Heavy Vehicles (%)	0%	7%	4%	0%	0%	0%	4%	2%	0%	0%	1%	2%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		38.6	33.0			40.0	33.7	55.4	9.0	9.0		21.7
Effective Green, g (s)		42.6	35.0			44.0	35.7	59.4	10.0	10.0		23.7
Actuated g/C Ratio		0.43	0.35			0.44	0.36	0.59	0.10	0.10		0.24
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		218	1208			225	1239	909	174	159		786
v/s Ratio Prot		0.02	c0.42			c0.03	0.26	0.05	c0.05	0.03		c0.15
v/s Ratio Perm		0.08				0.14		0.07				
v/c Ratio		0.23	1.19			0.40	0.74	0.20	0.49	0.30		0.65
Uniform Delay, d1		18.9	32.5			21.8	28.1	9.4	42.6	41.8		34.4
Progression Factor		1.34	0.99			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.5	93.5			1.2	3.9	0.1	2.2	1.1		1.8
Delay (s)		25.7	125.8			23.0	32.0	9.5	44.8	42.8		36.2
Level of Service		C	F			C	C	A	D	D		D
Approach Delay (s)			122.5				26.1			43.4		
Approach LOS			F				C			D		
Intersection Summary												
HCM 2000 Control Delay			68.1				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			79.3%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	47	20
Future Volume (vph)	47	20
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.96	
Flt Protected	1.00	
Satd. Flow (prot)	1755	
Flt Permitted	1.00	
Satd. Flow (perm)	1755	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	50	21
RTOR Reduction (vph)	15	0
Lane Group Flow (vph)	56	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	21.7	
Effective Green, g (s)	23.7	
Actuated g/C Ratio	0.24	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	415	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.13	
Uniform Delay, d1	30.1	
Progression Factor	1.00	
Incremental Delay, d2	0.1	
Delay (s)	30.2	
Level of Service	C	
Approach Delay (s)	35.5	
Approach LOS	D	
Intersection Summary		

2030 Build Weekday Morning Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↘		↗			
Traffic Vol, veh/h	0	822	1092	0	1186	195	47	0	146	0	0	0
Future Vol, veh/h	0	822	1092	0	1186	195	47	0	146	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	91	91	91	72	72	72	25	25	25
Heavy Vehicles, %	0	3	2	0	4	4	0	0	2	0	0	0
Mvmt Flow	0	874	1162	0	1303	214	65	0	203	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	-	0	1526	-	-		
Stage 1	-	-	-	-	-	-	-	874	-	-		
Stage 2	-	-	-	-	-	-	-	652	-	-		
Critical Hdwy	-	-	-	-	-	-	-	6.8	-	-		
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.8	-	-		
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.8	-	-		
Follow-up Hdwy	-	-	-	-	-	-	-	3.5	-	-		
Pot Cap-1 Maneuver	0	-	0	0	-	0	111	0	0			
Stage 1	0	-	0	0	-	0	373	0	0			
Stage 2	0	-	0	0	-	0	486	0	0			
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	111	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	111	0	-			
Stage 1	-	-	-	-	-	-	373	0	-			
Stage 2	-	-	-	-	-	-	486	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			75.8					
HCM LOS							F					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	111		-	-								
HCM Lane V/C Ratio	0.588		-	-								
HCM Control Delay (s)	75.8		0	-								
HCM Lane LOS	F		A	-								
HCM 95th %tile Q(veh)	2.9		-	-								

2030 Build Weekday Morning Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	28.4												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕			↕	↕			↕			↕
Traffic Vol, veh/h	2	111	855	0	0	842	127	0	0	189	0	0	537
Future Vol, veh/h	2	111	855	0	0	842	127	0	0	189	0	0	537
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	90	90	90	74	74	74	86	86	86
Heavy Vehicles, %	0	2	2	0	0	3	4	0	0	2	0	0	6
Mvmt Flow	2	121	929	0	0	936	141	0	0	255	0	0	624

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	936	936	0	-	-	-	0	-	-	465	-	-	468
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.14	-	-	-	-	-	-	-	6.94	-	-	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.22	-	-	-	-	-	-	-	3.32	-	-	3.36
Pot Cap-1 Maneuver	371	727	-	0	0	-	0	0	0	544	0	0	~ 531
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver ~ -133 ~ -133			-	-	-	-	-	-	-	544	-	-	~ 531
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	17.3	123.2
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	544	+	-	-	531
HCM Lane V/C Ratio	0.469	-	-	-	1.176
HCM Control Delay (s)	17.3	-	-	-	123.2
HCM Lane LOS	C	-	-	-	F
HCM 95th %tile Q(veh)	2.5	-	-	-	22.2

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

2030 Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Future Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.995			0.909		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1619	3421	1531	0	1787	3491	0	1752	1714	0	0
Flt Permitted		0.950				0.950			0.438			
Satd. Flow (perm)	0	1619	3421	1531	0	1787	3491	0	808	1714	0	0
Satd. Flow (RTOR)				343			4			73		
Adj. Flow (vph)	3	110	744	343	2	113	609	22	348	83	129	60
Lane Group Flow (vph)	0	113	744	343	0	115	631	0	348	212	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	32.0	10.0	9.0	9.0	32.0		10.0	27.0		17.0
Total Split (%)	9.0%	9.0%	32.0%	10.0%	9.0%	9.0%	32.0%		10.0%	27.0%		17.0%
Maximum Green (s)	3.0	3.0	26.0	4.0	3.0	3.0	26.0		4.0	21.0		11.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.93	0.66	0.38		0.85	0.55		0.95	0.33		
Control Delay		102.5	24.6	2.6		83.8	22.3		61.7	15.6		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		102.5	24.6	2.6		83.8	22.3		61.7	15.6		
Queue Length 50th (ft)		43	118	0		43	95		99	34		
Queue Length 95th (ft)		#199	286	26		#206	245		#469	144		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		122	1455	904		135	1488		368	646		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.93	0.51	0.38		0.85	0.42		0.95	0.33		
Intersection Summary												
Cycle Length: 100												

2030 Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	97	90	
Future Volume (vph)	97	90	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.982		
Satd. Flow (prot)	1808	1419	
Flt Permitted	0.803		
Satd. Flow (perm)	1478	1419	
Satd. Flow (RTOR)		120	
Adj. Flow (vph)	108	100	
Lane Group Flow (vph)	168	100	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	17.0		32.0
Total Split (%)	17.0%		32%
Maximum Green (s)	11.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.58	0.18	
Control Delay	38.9	5.1	
Queue Delay	0.0	0.0	
Total Delay	38.9	5.1	
Queue Length 50th (ft)	56	0	
Queue Length 95th (ft)	#227	31	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	292	535	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.58	0.19	
Intersection Summary			

2030 Build Weekday Morning Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 68.6

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	32 s	32 s	10 s	17 s
 Ø5	 Ø6		 Ø8	
9 s	32 s		27 s	

2030 Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Future Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.91		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1619	3421	1531		1787	3490		1752	1713		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.44	1.00		
Satd. Flow (perm)		1619	3421	1531		1787	3490		808	1713		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.89	0.89	0.89	0.90
Adj. Flow (vph)	3	110	744	343	2	113	609	22	348	83	129	60
RTOR Reduction (vph)	0	0	0	201	0	0	3	0	0	48	0	0
Lane Group Flow (vph)	0	113	744	142	0	115	628	0	348	164	0	0
Heavy Vehicles (%)	0%	8%	2%	2%	0%	1%	3%	0%	3%	2%	0%	0%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.1	20.5	24.7		3.1	20.5		21.8	21.8		
Effective Green, g (s)		5.1	22.5	28.7		5.1	22.5		23.8	23.8		
Actuated g/C Ratio		0.07	0.32	0.41		0.07	0.32		0.34	0.34		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		118	1107	632		131	1129		360	586		
v/s Ratio Prot		c0.07	c0.22	0.02		0.06	0.18		c0.09	0.10		
v/s Ratio Perm				0.07					c0.24			
v/c Ratio		0.96	0.67	0.22		0.88	0.56		0.97	0.28		
Uniform Delay, d1		32.1	20.3	13.2		31.9	19.4		22.0	16.6		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		68.8	1.6	0.2		43.6	0.6		38.2	0.3		
Delay (s)		100.9	21.9	13.4		75.5	20.0		60.2	16.9		
Level of Service		F	C	B		E	B		E	B		
Approach Delay (s)			26.9				28.5			43.8		
Approach LOS			C				C			D		
Intersection Summary												
HCM 2000 Control Delay			30.5				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			69.5				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			62.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	97	90
Future Volume (vph)	97	90
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1809	1419
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1479	1419
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	108	100
RTOR Reduction (vph)	0	67
Lane Group Flow (vph)	168	33
Heavy Vehicles (%)	5%	10%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	11.6	20.7
Effective Green, g (s)	13.6	22.7
Actuated g/C Ratio	0.20	0.33
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	289	463
v/s Ratio Prot		
v/s Ratio Perm	0.11	0.02
v/c Ratio	0.58	0.07
Uniform Delay, d1	25.4	16.1
Progression Factor	1.00	1.00
Incremental Delay, d2	3.0	0.1
Delay (s)	28.3	16.2
Level of Service	C	B
Approach Delay (s)	23.8	
Approach LOS	C	
Intersection Summary		

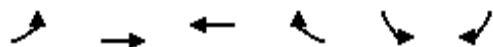
2030 Build Weekday Morning Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	1	4	3	1	120	1	102	1	111	73	1
Future Vol, veh/h	3	1	4	3	1	120	1	102	1	111	73	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	4	3	1	130	1	111	1	121	79	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	501	436	80	438	436	112	80	0	0	112	0	0
Stage 1	322	322	-	114	114	-	-	-	-	-	-	-
Stage 2	179	114	-	324	322	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	480	514	980	529	514	941	1518	-	-	1478	-	-
Stage 1	690	651	-	891	801	-	-	-	-	-	-	-
Stage 2	823	801	-	688	651	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	385	469	980	491	469	941	1518	-	-	1478	-	-
Mov Cap-2 Maneuver	385	469	-	491	469	-	-	-	-	-	-	-
Stage 1	689	595	-	890	800	-	-	-	-	-	-	-
Stage 2	707	800	-	625	595	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	11.4		9.6		0.1		4.6					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1518	-	-	571	913	1478	-	-				
HCM Lane V/C Ratio	0.001	-	-	0.015	0.148	0.082	-	-				
HCM Control Delay (s)	7.4	0	-	11.4	9.6	7.7	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.5	0.3	-	-				

2030 Build Weekday Evening Peak-Hour



2030 Build Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1225	1452	79	83	136	
Future Volume (vph)	125	1225	1452	79	83	136	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.992			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3574	3546	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3574	3546	0	1787	1599	
Satd. Flow (RTOR)			6			158	
Adj. Flow (vph)	139	1361	1513	82	97	158	
Lane Group Flow (vph)	139	1361	1595	0	97	158	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	19.0	56.0	37.0		15.0		29.0
Total Split (%)	19.0%	56.0%	37.0%		15.0%		29%
Maximum Green (s)	13.0	50.0	31.0		10.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.58	0.50	0.79		0.50	0.27	
Control Delay	49.9	8.0	11.7		50.6	5.4	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	49.9	8.0	11.7		50.6	5.4	
Queue Length 50th (ft)	83	110	51		59	0	
Queue Length 95th (ft)	146	422	m#627		105	39	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	261	2696	2027		211	588	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.53	0.50	0.79		0.46	0.27	

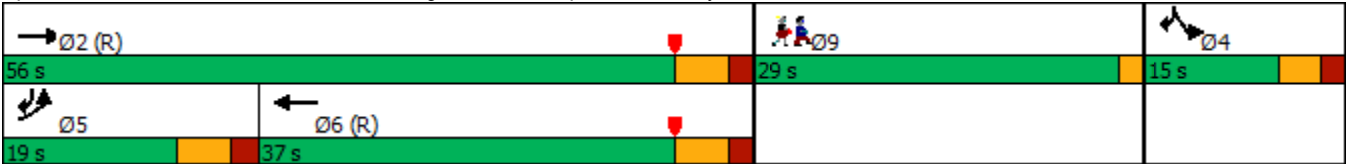
Intersection Summary

Cycle Length: 100

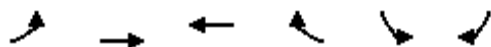
2030 Build Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2030 Build Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	1225	1452	79	83	136
Future Volume (vph)	125	1225	1452	79	83	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	3574	3547		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1668	3574	3547		1787	1599
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.86	0.86
Adj. Flow (vph)	139	1361	1512	82	97	158
RTOR Reduction (vph)	0	0	3	0	0	113
Lane Group Flow (vph)	139	1361	1592	0	97	45
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	12.4	71.9	53.5		9.9	27.3
Effective Green, g (s)	14.4	73.9	55.5		10.9	28.3
Actuated g/C Ratio	0.14	0.74	0.56		0.11	0.28
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	240	2641	1968		194	452
v/s Ratio Prot	c0.08	0.38	c0.45		c0.05	0.03
v/s Ratio Perm						
v/c Ratio	0.58	0.52	0.81		0.50	0.10
Uniform Delay, d1	40.0	5.5	18.0		42.0	26.4
Progression Factor	1.00	1.00	0.41		1.00	1.00
Incremental Delay, d2	3.4	0.7	0.3		2.0	0.1
Delay (s)	43.3	6.2	7.7		44.0	26.5
Level of Service	D	A	A		D	C
Approach Delay (s)		9.7	7.7		33.2	
Approach LOS		A	A		C	
Intersection Summary						
HCM 2000 Control Delay			10.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.69			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

2030 Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Future Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.995					0.850		0.919		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1805	3524	0	0	1805	3574	1546	1711	1688	0	3351
Flt Permitted		0.115				0.115			0.950			0.950
Satd. Flow (perm)	0	218	3524	0	0	218	3574	1546	1711	1688	0	3351
Satd. Flow (RTOR)			3					313		46		
Adj. Flow (vph)	1	96	1305	45	1	93	1510	519	98	80	93	358
Lane Group Flow (vph)	0	97	1350	0	0	94	1510	519	98	173	0	358
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	13.0	13.0	17.0		13.0	13.0	17.0	28.0	14.0	14.0		28.0
Total Split (%)	13.0%	13.0%	17.0%		13.0%	13.0%	17.0%	28.0%	14.0%	14.0%		28.0%
Maximum Green (s)	7.0	7.0	11.0		7.0	7.0	11.0	22.0	9.0	9.0		22.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.39	1.02			0.38	1.13	0.48	0.44	0.67		0.51
Control Delay		28.6	62.4			23.7	99.4	5.9	46.9	44.2		37.0
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		28.6	62.4			23.7	99.4	5.9	46.9	44.2		37.0
Queue Length 50th (ft)		32	~383			29	~594	52	57	75		104
Queue Length 95th (ft)		122	#958			90	#1034	86	101	#155		142
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		254	1325			253	1340	1115	224	261		816
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.38	1.02			0.37	1.13	0.47	0.44	0.66		0.44
Intersection Summary												
Cycle Length: 100												

2030 Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	70	39	
Future Volume (vph)	70	39	
Lane Util. Factor	1.00	1.00	
Frt	0.947		
Flt Protected			
Satd. Flow (prot)	1739	0	
Flt Permitted			
Satd. Flow (perm)	1739	0	
Satd. Flow (RTOR)	26		
Adj. Flow (vph)	76	42	
Lane Group Flow (vph)	118	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	28.0		28.0
Total Split (%)	28.0%		28%
Maximum Green (s)	22.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.31		
Control Delay	26.8		
Queue Delay	0.0		
Total Delay	26.8		
Queue Length 50th (ft)	49		
Queue Length 95th (ft)	95		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	443		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.27		
Intersection Summary			

2030 Build Weekday Evening Peak-Hour

2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R) 	 Ø9	 Ø4	 Ø8
13 s	17 s	28 s	28 s	14 s
 Ø5	 Ø6 (R) 			
13 s	17 s			

2030 Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Future Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.92		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1805	3524			1805	3574	1546	1711	1689		3351
Flt Permitted		0.11	1.00			0.12	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		218	3524			219	3574	1546	1711	1689		3351
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.96	0.96	0.96	0.96	0.80	0.80	0.80	0.92
Adj. Flow (vph)	1	96	1305	45	1	93	1510	519	98	80	92	358
RTOR Reduction (vph)	0	0	2	0	0	0	0	139	0	40	0	0
Lane Group Flow (vph)	0	97	1348	0	0	94	1510	380	98	133	0	358
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	1%	2%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		39.2	32.8			39.0	32.7	51.6	12.0	12.0		18.9
Effective Green, g (s)		43.2	34.8			43.0	34.7	55.6	13.0	13.0		20.9
Actuated g/C Ratio		0.43	0.35			0.43	0.35	0.56	0.13	0.13		0.21
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		227	1226			225	1240	859	222	219		700
v/s Ratio Prot		c0.04	0.38			0.03	c0.42	0.09	0.06	c0.08		c0.11
v/s Ratio Perm		0.15				0.14		0.15				
v/c Ratio		0.43	1.10			0.42	1.22	0.44	0.44	0.61		0.51
Uniform Delay, d1		22.0	32.6			22.1	32.6	13.1	40.1	41.1		35.0
Progression Factor		1.27	1.01			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		1.1	56.2			1.3	105.5	0.4	1.4	4.7		0.6
Delay (s)		29.0	89.2			23.4	138.2	13.4	41.6	45.8		35.7
Level of Service		C	F			C	F	B	D	D		D
Approach Delay (s)			85.2				102.6			44.3		
Approach LOS			F				F			D		
Intersection Summary												
HCM 2000 Control Delay			85.7				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			75.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	70	39
Future Volume (vph)	70	39
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1739	
Flt Permitted	1.00	
Satd. Flow (perm)	1739	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	76	42
RTOR Reduction (vph)	21	0
Lane Group Flow (vph)	97	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	18.9	
Effective Green, g (s)	20.9	
Actuated g/C Ratio	0.21	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	363	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.27	
Uniform Delay, d1	33.1	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	33.5	
Level of Service	C	
Approach Delay (s)	35.1	
Approach LOS	D	
Intersection Summary		

2030 Build Weekday Evening Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	20.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	1004	627	0	1955	206	83	0	181	0	0	0
Future Vol, veh/h	0	1004	627	0	1955	206	83	0	181	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	96	96	96	89	89	89	25	25	25
Heavy Vehicles, %	0	1	1	0	1	2	1	0	1	0	0	0
Mvmt Flow	0	1091	682	0	2036	215	93	0	203	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	-	0	-	-	0	2109
Stage 1	-	-	-	-	-	1091
Stage 2	-	-	-	-	-	1018
Critical Hdwy	-	-	-	-	-	6.82
Critical Hdwy Stg 1	-	-	-	-	-	5.82
Critical Hdwy Stg 2	-	-	-	-	-	5.82
Follow-up Hdwy	-	-	-	-	-	3.51
Pot Cap-1 Maneuver	0	-	0	0	-	0 ~ 44
Stage 1	0	-	0	0	-	0 286
Stage 2	0	-	0	0	-	0 312
Platoon blocked, %	-		-		-	
Mov Cap-1 Maneuver	-	-	-	-	-	~ 44 0
Mov Cap-2 Maneuver	-	-	-	-	-	~ 44 0
Stage 1	-	-	-	-	-	286 0
Stage 2	-	-	-	-	-	312 0

Approach	EB	WB	NB
HCM Control Delay, s	0	0	\$ 714.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	44	-	-	-
HCM Lane V/C Ratio	2.12	-	-	-
HCM Control Delay (s)	\$ 714.9	0	-	-
HCM Lane LOS	F	A	-	-
HCM 95th %tile Q(veh)	9.7	-	-	-

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

2030 Build Weekday Evening Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	197.4												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔	↕↕			↕↕	↗			↗			↗
Traffic Vol, veh/h	3	162	1020	0	0	1147	215	0	0	329	0	0	1011
Future Vol, veh/h	3	162	1020	0	0	1147	215	0	0	329	0	0	1011
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	96	96	96	81	81	81	91	91	91
Heavy Vehicles, %	0	1	1	0	0	1	1	0	0	0	0	0	2
Mvmt Flow	3	180	1133	0	0	1195	224	0	0	406	0	0	1111

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1195	1195	0	-	-	-	0	-	-	567	-	- 598
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.12	-	-	-	-	-	-	-	6.9	-	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.21	-	-	-	-	-	-	-	3.3	-	- 3.32
Pot Cap-1 Maneuver	253	586	-	0	0	-	0	0	0	472	0	0 ~ 445
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0 -
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0 -
Platoon blocked, %			-			-						
Mov Cap-1 Maneuver ~ -135 ~ -135			-	-	-	-	-	-	-	472	-	- ~ 445
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s		0	44	\$ 699.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	472	+	-	-	445
HCM Lane V/C Ratio	0.861	-	-	-	2.497
HCM Control Delay (s)	44	-	-	-	\$ 699.8
HCM Lane LOS	E	-	-	-	F
HCM 95th %tile Q(veh)	8.9	-	-	-	88

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

2030 Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Future Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.993			0.931		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1745	3455	1546	0	1805	3551	0	1787	1769	0	0
Flt Permitted		0.950				0.950			0.253			
Satd. Flow (perm)	0	1745	3455	1546	0	1805	3551	0	476	1769	0	0
Satd. Flow (RTOR)				360			5			43		
Adj. Flow (vph)	6	153	901	360	3	112	802	41	463	156	132	114
Lane Group Flow (vph)	0	159	901	360	0	115	843	0	463	288	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	9.0	9.0	26.0	15.0	9.0	9.0	26.0		15.0	33.0		18.0
Total Split (%)	9.0%	9.0%	26.0%	15.0%	9.0%	9.0%	26.0%		15.0%	33.0%		18.0%
Maximum Green (s)	3.0	3.0	20.0	9.0	3.0	3.0	20.0		9.0	27.0		12.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		1.32	0.86	0.38		0.93	0.78		1.19	0.39		
Control Delay		226.3	36.4	2.5		104.5	31.8		131.8	17.7		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		226.3	36.4	2.5		104.5	31.8		131.8	17.7		
Queue Length 50th (ft)		~84	178	0		49	160		~167	65		
Queue Length 95th (ft)		#282	#489	30		#205	#440		#572	213		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		120	1046	954		124	1079		388	732		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		1.32	0.86	0.38		0.93	0.78		1.19	0.39		
Intersection Summary												
Cycle Length: 100												

2030 Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	131	149	
Future Volume (vph)	131	149	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.979		
Satd. Flow (prot)	1852	1531	
Flt Permitted	0.731		
Satd. Flow (perm)	1383	1531	
Satd. Flow (RTOR)		173	
Adj. Flow (vph)	152	173	
Lane Group Flow (vph)	266	173	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	18.0		32.0
Total Split (%)	18.0%		32%
Maximum Green (s)	12.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	1.00	0.29	
Control Delay	90.1	5.9	
Queue Delay	0.0	0.0	
Total Delay	90.1	5.9	
Queue Length 50th (ft)	110	0	
Queue Length 95th (ft)	#360	46	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	266	603	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	1.00	0.29	
Intersection Summary			

2030 Build Weekday Evening Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 74.4

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

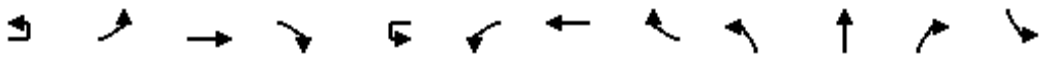
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
9 s	26 s	32 s	15 s	18 s
 Ø5	 Ø6		 Ø8	
9 s	26 s		33 s	

2030 Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Future Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.93		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1745	3455	1546		1805	3550		1787	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.25	1.00		
Satd. Flow (perm)		1745	3455	1546		1805	3550		476	1769		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98	0.91	0.91	0.91	0.86
Adj. Flow (vph)	6	153	901	360	3	112	802	41	463	156	132	114
RTOR Reduction (vph)	0	0	0	200	0	0	4	0	0	26	0	0
Lane Group Flow (vph)	0	159	901	160	0	115	839	0	463	262	0	0
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	0%	0%	1%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		3.1	20.5	29.7		3.1	20.5		27.7	27.7		
Effective Green, g (s)		5.1	22.5	33.7		5.1	22.5		29.7	29.7		
Actuated g/C Ratio		0.07	0.30	0.44		0.07	0.30		0.39	0.39		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		117	1025	687		121	1053		380	693		
v/s Ratio Prot		c0.09	c0.26	0.03		0.06	0.24		c0.18	0.15		
v/s Ratio Perm				0.07					c0.30			
v/c Ratio		1.36	0.88	0.23		0.95	0.80		1.22	0.38		
Uniform Delay, d1		35.4	25.4	13.0		35.2	24.5		19.9	16.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		207.0	8.7	0.2		66.2	4.3		119.9	0.3		
Delay (s)		242.3	34.1	13.2		101.4	28.8		139.9	16.8		
Level of Service		F	C	B		F	C		F	B		
Approach Delay (s)			52.1				37.5			92.7		
Approach LOS			D				D			F		
Intersection Summary												
HCM 2000 Control Delay			57.8				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			75.8				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			80.3%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	131	149
Future Volume (vph)	131	149
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1852	1531
Flt Permitted	0.73	1.00
Satd. Flow (perm)	1383	1531
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	152	173
RTOR Reduction (vph)	0	119
Lane Group Flow (vph)	266	54
Heavy Vehicles (%)	0%	2%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	12.5	21.6
Effective Green, g (s)	14.5	23.6
Actuated g/C Ratio	0.19	0.31
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	264	476
v/s Ratio Prot		
v/s Ratio Perm	0.19	0.04
v/c Ratio	1.01	0.11
Uniform Delay, d1	30.6	18.6
Progression Factor	1.00	1.00
Incremental Delay, d2	57.3	0.1
Delay (s)	88.0	18.7
Level of Service	F	B
Approach Delay (s)	60.7	
Approach LOS	E	
Intersection Summary		

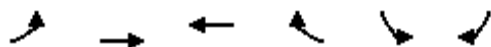
2030 Build Weekday Evening Peak-Hour
7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	20	0	3	3	0	61	2	128	3	63	117	8
Future Vol, veh/h	20	0	3	3	0	61	2	128	3	63	117	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	0	3	3	0	66	2	139	3	68	127	9
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	446	414	132	414	417	141	136	0	0	142	0	0
Stage 1	268	268	-	145	145	-	-	-	-	-	-	-
Stage 2	178	146	-	269	272	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	523	529	917	549	527	907	1448	-	-	1441	-	-
Stage 1	738	687	-	858	777	-	-	-	-	-	-	-
Stage 2	824	776	-	737	685	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	465	501	917	525	499	907	1448	-	-	1441	-	-
Mov Cap-2 Maneuver	465	501	-	525	499	-	-	-	-	-	-	-
Stage 1	737	652	-	856	775	-	-	-	-	-	-	-
Stage 2	762	774	-	697	650	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	12.6		9.5		0.1		2.6					
HCM LOS	B		A									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1448	-	-	497	877	1441	-	-				
HCM Lane V/C Ratio	0.002	-	-	0.05	0.079	0.048	-	-				
HCM Control Delay (s)	7.5	0	-	12.6	9.5	7.6	0	-				
HCM Lane LOS	A	A	-	B	A	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.3	0.1	-	-				

2030 Build Saturday Midday Peak-Hour



2030 Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1313	949	74	91	120	
Future Volume (vph)	129	1313	949	74	91	120	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.989			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3535	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3535	0	1787	1599	
Satd. Flow (RTOR)			7			136	
Adj. Flow (vph)	147	1492	1054	82	103	136	
Lane Group Flow (vph)	147	1492	1136	0	103	136	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	27.0	45.0	18.0		26.0		29.0
Total Split (%)	27.0%	45.0%	18.0%		26.0%		29%
Maximum Green (s)	21.0	39.0	12.0		21.0		27.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.55	0.56	0.59		0.48	0.22	
Control Delay	45.9	10.0	11.5		47.7	4.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	45.9	10.0	11.5		47.7	4.3	
Queue Length 50th (ft)	87	132	40		62	0	
Queue Length 95th (ft)	138	518	#679		107	32	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	376	2656	1915		393	707	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.39	0.56	0.59		0.26	0.19	

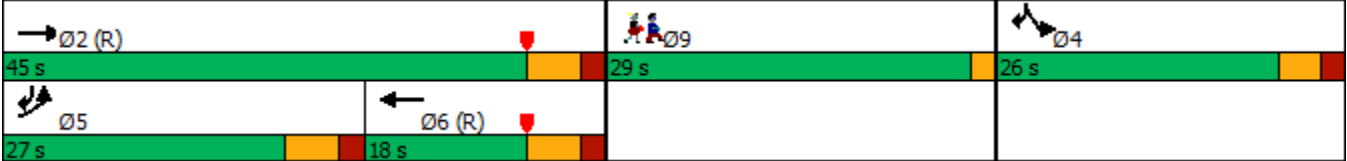
Intersection Summary

Cycle Length: 100

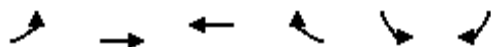
2030 Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 100
Offset: 30 (30%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2030 Build Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	1313	949	74	91	120
Future Volume (vph)	129	1313	949	74	91	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1636	3574	3536		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1636	3574	3536		1787	1599
Peak-hour factor, PHF	0.88	0.88	0.90	0.90	0.88	0.88
Adj. Flow (vph)	147	1492	1054	82	103	136
RTOR Reduction (vph)	0	0	3	0	0	93
Lane Group Flow (vph)	147	1492	1133	0	103	43
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	14.2	70.7	50.5		11.1	30.3
Effective Green, g (s)	16.2	72.7	52.5		12.1	31.3
Actuated g/C Ratio	0.16	0.73	0.52		0.12	0.31
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	265	2598	1856		216	500
v/s Ratio Prot	0.09	c0.42	c0.32		c0.06	0.03
v/s Ratio Perm						
v/c Ratio	0.55	0.57	0.61		0.48	0.09
Uniform Delay, d1	38.6	6.4	16.6		41.0	24.2
Progression Factor	1.00	1.00	0.29		1.00	1.00
Incremental Delay, d2	2.5	0.9	1.1		1.7	0.1
Delay (s)	41.1	7.3	6.0		42.7	24.3
Level of Service	D	A	A		D	C
Approach Delay (s)		10.4	6.0		32.2	
Approach LOS		B	A		C	
Intersection Summary						
HCM 2000 Control Delay			10.4		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.56			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			50.8%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2030 Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Future Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.993					0.850		0.888		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1772	3551	0	0	1805	3574	1546	1745	1631	0	3351
Flt Permitted		0.125				0.102			0.950			0.950
Satd. Flow (perm)	0	233	3551	0	0	194	3574	1546	1745	1631	0	3351
Satd. Flow (RTOR)			4					233		127		
Adj. Flow (vph)	7	79	1418	71	8	123	1036	311	80	49	142	345
Lane Group Flow (vph)	0	86	1489	0	0	131	1036	311	80	191	0	345
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	16.0	16.0	17.0		16.0	16.0	17.0	17.0	22.0	22.0		17.0
Total Split (%)	16.0%	16.0%	17.0%		16.0%	16.0%	17.0%	17.0%	22.0%	22.0%		17.0%
Maximum Green (s)	10.0	10.0	11.0		10.0	10.0	11.0	11.0	17.0	17.0		11.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.32	1.08			0.48	0.69	0.29	0.40	0.63		0.59
Control Delay		23.5	76.5			23.9	31.1	3.9	45.4	24.9		42.7
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		23.5	76.5			23.9	31.1	3.9	45.4	24.9		42.7
Queue Length 50th (ft)		21	320			36	266	15	48	38		102
Queue Length 95th (ft)		m100	#1008			122	#692	59	88	102		#160
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		305	1381			296	1501	1055	314	397		583
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.28	1.08			0.44	0.69	0.29	0.25	0.48		0.59
Intersection Summary												
Cycle Length: 100												

2030 Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	56	37	
Future Volume (vph)	56	37	
Lane Util. Factor	1.00	1.00	
Frt	0.941		
Flt Protected			
Satd. Flow (prot)	1688	0	
Flt Permitted			
Satd. Flow (perm)	1688	0	
Satd. Flow (RTOR)	27		
Adj. Flow (vph)	60	39	
Lane Group Flow (vph)	99	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	17.0		28.0
Total Split (%)	17.0%		28%
Maximum Green (s)	11.0		26.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.31		
Control Delay	29.2		
Queue Delay	0.0		
Total Delay	29.2		
Queue Length 50th (ft)	39		
Queue Length 95th (ft)	92		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	316		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.31		
Intersection Summary			

2030 Build Saturday Midday Peak-Hour 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R) 	 Ø9	 Ø4	 Ø8
16 s	17 s	28 s	17 s	22 s
 Ø5	 Ø6 (R) 			
16 s	17 s			

2030 Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Future Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.89		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1772	3550			1805	3574	1546	1745	1632		3351
Flt Permitted		0.13	1.00			0.10	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		234	3550			193	3574	1546	1745	1632		3351
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.94
Adj. Flow (vph)	7	79	1418	71	8	123	1036	311	80	49	142	345
RTOR Reduction (vph)	0	0	3	0	0	0	0	101	0	112	0	0
Lane Group Flow (vph)	0	86	1486	0	0	131	1036	210	80	79	0	345
Heavy Vehicles (%)	0%	2%	1%	0%	0%	0%	1%	1%	0%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		42.0	35.3			46.0	37.3	52.7	10.6	10.6		15.4
Effective Green, g (s)		46.0	37.3			50.0	39.3	56.7	11.6	11.6		17.4
Actuated g/C Ratio		0.46	0.37			0.50	0.39	0.57	0.12	0.12		0.17
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		241	1324			268	1404	876	202	189		583
v/s Ratio Prot		0.03	c0.42			c0.05	0.29	0.04	0.05	c0.05		c0.10
v/s Ratio Perm		0.13				0.19		0.09				
v/c Ratio		0.36	1.12			0.49	0.74	0.24	0.40	0.42		0.59
Uniform Delay, d1		17.8	31.4			20.2	25.9	10.9	41.0	41.1		38.0
Progression Factor		1.25	0.92			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.8	64.3			1.4	3.5	0.1	1.3	1.5		1.6
Delay (s)		23.0	93.2			21.6	29.5	11.0	42.2	42.5		39.6
Level of Service		C	F			C	C	B	D	D		D
Approach Delay (s)			89.3				24.9			42.5		
Approach LOS			F				C			D		
Intersection Summary												
HCM 2000 Control Delay			54.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			100.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			76.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	56	37
Future Volume (vph)	56	37
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.94	
Flt Protected	1.00	
Satd. Flow (prot)	1688	
Flt Permitted	1.00	
Satd. Flow (perm)	1688	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	60	39
RTOR Reduction (vph)	22	0
Lane Group Flow (vph)	77	0
Heavy Vehicles (%)	0%	6%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	15.4	
Effective Green, g (s)	17.4	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	293	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.26	
Uniform Delay, d1	35.7	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	36.2	
Level of Service	D	
Approach Delay (s)	38.9	
Approach LOS	D	
Intersection Summary		

2030 Build Saturday Midday Peak-Hour
3: I-95 SB Ramps & Route 110

Intersection												
Int Delay, s/veh	17.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↘		↗			
Traffic Vol, veh/h	0	1252	473	0	1284	164	75	0	153	0	0	0
Future Vol, veh/h	0	1252	473	0	1284	164	75	0	153	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	-	-	Free	-	-	Free	-	-	Free	-	-	None
Storage Length	-	-	0	-	-	0	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	91	91	91	88	88	88	25	25	25
Heavy Vehicles, %	0	1	0	0	1	1	2	0	0	0	0	0
Mvmt Flow	0	1361	514	0	1411	180	85	0	174	0	0	0
Major/Minor	Major1			Major2			Minor1					
Conflicting Flow All	-	0	-	-	-	0	2067	-	-			
Stage 1	-	-	-	-	-	-	1361	-	-			
Stage 2	-	-	-	-	-	-	706	-	-			
Critical Hdwy	-	-	-	-	-	-	6.84	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-			
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-			
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	-			
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 47	0	0			
Stage 1	0	-	0	0	-	0	203	0	0			
Stage 2	0	-	0	0	-	0	450	0	0			
Platoon blocked, %		-			-							
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 47	0	-			
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 47	0	-			
Stage 1	-	-	-	-	-	-	203	0	-			
Stage 2	-	-	-	-	-	-	450	0	-			
Approach	EB			WB			NB					
HCM Control Delay, s	0			0			\$ 574.4					
HCM LOS							F					
Minor Lane/Major Mvmt	NBLn1 NBLn2		EBT	WBT								
Capacity (veh/h)	47		-	-								
HCM Lane V/C Ratio	1.813		-	-								
HCM Control Delay (s)	\$ 574.4		0	-								
HCM Lane LOS	F		A	-								
HCM 95th %tile Q(veh)	8.5		-	-								
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

2030 Build Saturday Midday Peak-Hour
4: I-95 NB Ramps & Route 110

Intersection													
Int Delay, s/veh	16												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	1	206	1198	0	0	987	221	0	0	218	0	0	460
Future Vol, veh/h	1	206	1198	0	0	987	221	0	0	218	0	0	460
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	-	None	-	-	Free	-	-	Yield	-	-	Yield
Storage Length	-	75	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	85	85	85	83	83	83	93	93	93
Heavy Vehicles, %	0	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	1	234	1361	0	0	1161	260	0	0	263	0	0	495

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1161	1161	0	-	-	-	0	-	-	681	-	-	581
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	6.4	4.1	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.5	2.2	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	266	609	-	0	0	-	0	0	0	395	0	0	~ 457
Stage 1	-	-	-	0	0	-	0	0	0	-	0	0	-
Stage 2	-	-	-	0	0	-	0	0	0	-	0	0	-
Platoon blocked, %			-			-							
Mov Cap-1 Maneuver~ -1280~ -1280			-	-	-	-	-	-	-	395	-	-	~ 457
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	30.4	96.1
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	SBLn1
Capacity (veh/h)	395	+	-	-	457
HCM Lane V/C Ratio	0.665	-	-	-	1.082
HCM Control Delay (s)	30.4	2.6	-	-	96.1
HCM Lane LOS	D	A	-	-	F
HCM 95th %tile Q(veh)	4.6	-	-	-	16.2

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

2030 Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Future Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.994			0.936		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1728	3455	1546	0	1805	3544	0	1805	1768	0	0
Flt Permitted		0.950				0.950			0.380			
Satd. Flow (perm)	0	1728	3455	1546	0	1805	3544	0	722	1768	0	0
Satd. Flow (RTOR)				346			5			43		
Adj. Flow (vph)	11	248	1061	346	5	123	899	38	410	186	137	62
Lane Group Flow (vph)	0	259	1061	346	0	128	937	0	410	323	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	7.0	7.0	18.0	8.0	7.0	7.0	18.0		8.0	23.0		15.0
Total Split (%)	8.8%	8.8%	22.5%	10.0%	8.8%	8.8%	22.5%		10.0%	28.8%		18.8%
Maximum Green (s)	1.0	1.0	12.0	2.0	1.0	1.0	12.0		2.0	17.0		9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		2.62	1.15	0.41		1.24	0.98		1.18	0.48		
Control Delay		771.1	101.4	3.6		198.9	49.1		131.2	17.5		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		771.1	101.4	3.6		198.9	49.1		131.2	17.5		
Queue Length 50th (ft)		~125	~179	0		~44	129		~97	53		
Queue Length 95th (ft)		#358	#503	28		#183	#412		#443	198		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		99	926	840		103	954		346	670		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		2.62	1.15	0.41		1.24	0.98		1.18	0.48		
Intersection Summary												
Cycle Length: 80												

2030 Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	132	118	
Future Volume (vph)	132	118	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.986		
Satd. Flow (prot)	1837	1546	
Flt Permitted	0.795		
Satd. Flow (perm)	1481	1546	
Satd. Flow (RTOR)		150	
Adj. Flow (vph)	157	140	
Lane Group Flow (vph)	219	140	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	15.0		32.0
Total Split (%)	18.8%		40%
Maximum Green (s)	9.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.70	0.22	
Control Delay	38.5	5.0	
Queue Delay	0.0	0.0	
Total Delay	38.5	5.0	
Queue Length 50th (ft)	55	0	
Queue Length 95th (ft)	#232	32	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	312	631	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.70	0.22	
Intersection Summary			

2030 Build Saturday Midday Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 54.4

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
7 s	18 s	32 s	8 s	15 s
 Ø5	 Ø6		 Ø8	
7 s	18 s		23 s	

2030 Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Future Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.94		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1728	3455	1546		1805	3544		1805	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.38	1.00		
Satd. Flow (perm)		1728	3455	1546		1805	3544		722	1769		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.82	0.82	0.82	0.82	0.84	0.84	0.84	0.84
Adj. Flow (vph)	11	248	1061	346	5	123	899	38	410	186	137	62
RTOR Reduction (vph)	0	0	0	230	0	0	4	0	0	28	0	0
Lane Group Flow (vph)	0	259	1061	116	0	128	933	0	410	295	0	0
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%	1%	7%	0%	1%	0%	2%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		1.0	12.5	14.6		1.0	12.5		17.7	17.7		
Effective Green, g (s)		3.0	14.5	18.6		3.0	14.5		19.7	19.7		
Actuated g/C Ratio		0.05	0.26	0.34		0.05	0.26		0.36	0.36		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		93	905	519		97	929		337	630		
v/s Ratio Prot		c0.15	c0.31	0.02		0.07	0.26		c0.09	0.17		
v/s Ratio Perm				0.06					c0.34			
v/c Ratio		2.78	1.17	0.22		1.32	1.00		1.22	0.47		
Uniform Delay, d1		26.1	20.4	13.2		26.1	20.4		17.8	13.8		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		832.4	89.3	0.2		199.1	30.7		121.5	0.6		
Delay (s)		858.5	109.7	13.4		225.3	51.1		139.3	14.3		
Level of Service		F	F	B		F	D		F	B		
Approach Delay (s)			206.1				72.0			84.2		
Approach LOS			F				E			F		
Intersection Summary												
HCM 2000 Control Delay			128.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.36									
Actuated Cycle Length (s)			55.3				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			75.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Build Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	132	118
Future Volume (vph)	132	118
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.99	1.00
Satd. Flow (prot)	1837	1546
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1481	1546
Peak-hour factor, PHF	0.84	0.84
Adj. Flow (vph)	157	140
RTOR Reduction (vph)	0	93
Lane Group Flow (vph)	219	47
Heavy Vehicles (%)	2%	1%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	9.6	16.6
Effective Green, g (s)	11.6	18.6
Actuated g/C Ratio	0.21	0.34
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	310	519
v/s Ratio Prot		
v/s Ratio Perm	0.15	0.03
v/c Ratio	0.71	0.09
Uniform Delay, d1	20.3	12.6
Progression Factor	1.00	1.00
Incremental Delay, d2	7.2	0.1
Delay (s)	27.4	12.6
Level of Service	C	B
Approach Delay (s)	21.7	
Approach LOS	C	
Intersection Summary		

2030 Build Saturday Midday Peak-Hour

7: Clarks Road & Burger King Driveway/South Project Site Driveway

Intersection

Int Delay, s/veh 5.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	23	1	7	1	1	116	4	101	4	115	95	8
Future Vol, veh/h	23	1	7	1	1	116	4	101	4	115	95	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	48	48	48	75	75	75	70	70	70	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	2	15	1	1	155	6	144	6	142	117	10

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	643	568	122	574	570	147	127	0	0	150	0	0
Stage 1	406	406	-	159	159	-	-	-	-	-	-	-
Stage 2	237	162	-	415	411	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
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	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	389	435	935	433	434	905	1472	-	-	1444	-	-
Stage 1	626	601	-	848	770	-	-	-	-	-	-	-
Stage 2	771	768	-	619	598	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	295	387	935	389	386	905	1472	-	-	1444	-	-
Mov Cap-2 Maneuver	295	387	-	389	386	-	-	-	-	-	-	-
Stage 1	623	537	-	845	767	-	-	-	-	-	-	-
Stage 2	636	765	-	543	535	-	-	-	-	-	-	-

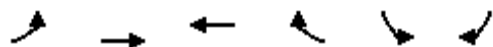
Approach	EB		WB		NB		SB	
HCM Control Delay, s	17.5		9.9		0.3		4.1	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1472	-	-	352 885	1444	-	-
HCM Lane V/C Ratio	0.004	-	-	0.183 0.178	0.098	-	-
HCM Control Delay (s)	7.5	0	-	17.5 9.9	7.8	0	-
HCM Lane LOS	A	A	-	C A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7 0.6	0.3	-	-

2030 Mitigated Weekday Morning Peak-Hour



2030 Mitigated Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1356	888	29	39	38	
Future Volume (vph)	40	1356	888	29	39	38	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.995			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3471	3455	0	1752	1568	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1685	3471	3455	0	1752	1568	
Satd. Flow (RTOR)			4			45	
Adj. Flow (vph)	45	1524	945	31	46	45	
Lane Group Flow (vph)	45	1524	976	0	46	45	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	15.0	87.0	72.0		15.0		28.0
Total Split (%)	11.5%	66.9%	55.4%		11.5%		22%
Maximum Green (s)	9.0	81.0	66.0		10.0		26.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.34	0.52	0.37		0.37	0.15	
Control Delay	63.5	6.1	4.5		65.1	13.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	63.5	6.1	4.5		65.1	13.1	
Queue Length 50th (ft)	36	117	107		37	0	
Queue Length 95th (ft)	76	475	55		73	29	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	145	2935	2606		148	299	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.31	0.52	0.37		0.31	0.15	
Intersection Summary							
Cycle Length: 130							

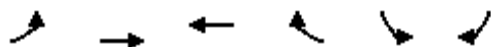
2030 Mitigated Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 130
Offset: 35 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 75
Control Type: Actuated-Coordinated

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway

 Ø2 (R)		 Ø9		 Ø4	
87 s		28 s		15 s	
 Ø5	 Ø6 (R)				
15 s	72 s				

2030 Mitigated Weekday Morning Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	40	1356	888	29	39	38
Future Volume (vph)	40	1356	888	29	39	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	1.00		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1685	3471	3456		1752	1568
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1685	3471	3456		1752	1568
Peak-hour factor, PHF	0.89	0.89	0.94	0.94	0.84	0.84
Adj. Flow (vph)	45	1524	945	31	46	45
RTOR Reduction (vph)	0	0	1	0	0	38
Lane Group Flow (vph)	45	1524	975	0	46	7
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	7.1	104.5	91.4		7.3	19.4
Effective Green, g (s)	9.1	106.5	93.4		8.3	20.4
Actuated g/C Ratio	0.07	0.82	0.72		0.06	0.16
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	117	2843	2483		111	246
v/s Ratio Prot	0.03	c0.44	0.28		c0.03	0.00
v/s Ratio Perm						
v/c Ratio	0.38	0.54	0.39		0.41	0.03
Uniform Delay, d1	57.8	3.8	7.2		58.5	46.4
Progression Factor	1.00	1.00	0.47		1.00	1.00
Incremental Delay, d2	2.1	0.7	0.4		2.5	0.0
Delay (s)	59.9	4.5	3.7		61.0	46.5
Level of Service	E	A	A		E	D
Approach Delay (s)		6.1	3.7		53.8	
Approach LOS		A	A		D	
Intersection Summary						
HCM 2000 Control Delay			6.9		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.53			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			48.3%		ICU Level of Service	A
Analysis Period (min)			15			

c Critical Lane Group

2030 Mitigated Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Future Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.993					0.850		0.873		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1689	3453	0	0	1805	3471	1531	1745	1590	0	3319
Flt Permitted		0.202				0.068			0.950			0.950
Satd. Flow (perm)	0	359	3453	0	0	129	3471	1531	1745	1590	0	3319
Satd. Flow (RTOR)			4					307		161		
Adj. Flow (vph)	1	49	1379	63	2	89	913	307	86	31	170	509
Lane Group Flow (vph)	0	50	1442	0	0	91	913	307	86	201	0	509
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	11.0	11.0	57.0		11.0	11.0	57.0	24.0	11.0	11.0		24.0
Total Split (%)	8.5%	8.5%	43.8%		8.5%	8.5%	43.8%	18.5%	8.5%	8.5%		18.5%
Maximum Green (s)	5.0	5.0	51.0		5.0	5.0	51.0	18.0	6.0	6.0		18.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.19	0.93			0.48	0.56	0.26	0.52	0.68		0.69
Control Delay		20.0	46.0			27.8	27.9	1.2	68.0	26.6		52.3
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		20.0	46.0			27.8	27.9	1.2	68.0	26.6		52.3
Queue Length 50th (ft)		20	608			35	297	0	69	31		198
Queue Length 95th (ft)		m56	#603			#96	395	20	#152	#114		#341
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		270	1550			188	1639	1186	164	295		735
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.19	0.93			0.48	0.56	0.26	0.52	0.68		0.69
Intersection Summary												
Cycle Length: 130												

2030 Mitigated Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	47	20	
Future Volume (vph)	47	20	
Lane Util. Factor	1.00	1.00	
Frt	0.956		
Flt Protected			
Satd. Flow (prot)	1756	0	
Flt Permitted			
Satd. Flow (perm)	1756	0	
Satd. Flow (RTOR)	14		
Adj. Flow (vph)	50	21	
Lane Group Flow (vph)	71	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	24.0		27.0
Total Split (%)	18.5%		21%
Maximum Green (s)	18.0		25.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.18		
Control Delay	35.2		
Queue Delay	0.0		
Total Delay	35.2		
Queue Length 50th (ft)	38		
Queue Length 95th (ft)	90		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	400		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.18		
Intersection Summary			

2030 Mitigated Weekday Morning Peak-Hour 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
11 s	57 s	27 s	24 s	11 s
 Ø5	 Ø6 (R)			
11 s	57 s			

2030 Mitigated Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Future Volume (vph)	1	46	1296	59	2	84	858	289	70	25	138	478
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.87		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1689	3454			1805	3471	1531	1745	1590		3319
Flt Permitted		0.20	1.00			0.07	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		359	3454			130	3471	1531	1745	1590		3319
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.81	0.81	0.81	0.94
Adj. Flow (vph)	1	49	1379	63	2	89	913	307	86	31	170	509
RTOR Reduction (vph)	0	0	2	0	0	0	0	101	0	146	0	0
Lane Group Flow (vph)	0	50	1440	0	0	91	913	206	86	55	0	509
Heavy Vehicles (%)	0%	7%	4%	0%	0%	0%	4%	2%	0%	0%	1%	2%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		60.1	54.7			63.9	56.6	83.4	11.2	11.2		26.8
Effective Green, g (s)		64.1	56.7			67.9	58.6	87.4	12.2	12.2		28.8
Actuated g/C Ratio		0.49	0.44			0.52	0.45	0.67	0.09	0.09		0.22
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		252	1506			187	1564	1029	163	149		735
v/s Ratio Prot		0.01	c0.42			c0.03	0.26	0.04	c0.05	0.03		c0.15
v/s Ratio Perm		0.09				0.22		0.09				
v/c Ratio		0.20	0.96			0.49	0.58	0.20	0.53	0.37		0.69
Uniform Delay, d1		18.9	35.4			26.7	26.6	8.1	56.2	55.3		46.5
Progression Factor		1.20	1.03			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.3	13.5			2.0	1.6	0.1	3.1	1.6		2.8
Delay (s)		23.0	50.0			28.7	28.2	8.2	59.2	56.8		49.4
Level of Service		C	D			C	C	A	E	E		D
Approach Delay (s)			49.1				23.6			57.6		
Approach LOS			D				C			E		
Intersection Summary												
HCM 2000 Control Delay			40.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			79.3%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Weekday Morning Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	47	20
Future Volume (vph)	47	20
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.96	
Flt Protected	1.00	
Satd. Flow (prot)	1755	
Flt Permitted	1.00	
Satd. Flow (perm)	1755	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	50	21
RTOR Reduction (vph)	11	0
Lane Group Flow (vph)	60	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	26.8	
Effective Green, g (s)	28.8	
Actuated g/C Ratio	0.22	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	388	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.15	
Uniform Delay, d1	40.8	
Progression Factor	1.00	
Incremental Delay, d2	0.2	
Delay (s)	41.0	
Level of Service	D	
Approach Delay (s)	48.3	
Approach LOS	D	
Intersection Summary		

2030 Mitigated Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Future Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.995			0.909		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1619	3421	1531	0	1787	3491	0	1752	1714	0	0
Flt Permitted		0.950				0.950			0.371			
Satd. Flow (perm)	0	1619	3421	1531	0	1787	3491	0	684	1714	0	0
Satd. Flow (RTOR)				343			3			79		
Adj. Flow (vph)	3	110	744	343	2	113	609	22	348	83	129	60
Lane Group Flow (vph)	0	113	744	343	0	115	631	0	348	212	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	12.0	12.0	24.0	18.0	11.0	11.0	23.0		18.0	33.0		15.0
Total Split (%)	12.0%	12.0%	24.0%	18.0%	11.0%	11.0%	23.0%		18.0%	33.0%		15.0%
Maximum Green (s)	6.0	6.0	18.0	12.0	5.0	5.0	17.0		12.0	27.0		9.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.63	0.79	0.36		0.67	0.69		0.73	0.29		
Control Delay		52.5	34.4	2.4		56.1	31.5		30.8	12.7		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		52.5	34.4	2.4		56.1	31.5		30.8	12.7		
Queue Length 50th (ft)		46	146	0		47	120		99	33		
Queue Length 95th (ft)		#167	#378	26		#182	#322		#328	128		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		178	942	954		171	915		478	731		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.63	0.79	0.36		0.67	0.69		0.73	0.29		
Intersection Summary												
Cycle Length: 100												

2030 Mitigated Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	97	90	
Future Volume (vph)	97	90	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.982		
Satd. Flow (prot)	1808	1419	
Flt Permitted	0.796		
Satd. Flow (perm)	1465	1419	
Satd. Flow (RTOR)		120	
Adj. Flow (vph)	108	100	
Lane Group Flow (vph)	168	100	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	15.0		32.0
Total Split (%)	15.0%		32%
Maximum Green (s)	9.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.76	0.19	
Control Delay	56.2	5.0	
Queue Delay	0.0	0.0	
Total Delay	56.2	5.0	
Queue Length 50th (ft)	67	0	
Queue Length 95th (ft)	#247	30	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	221	531	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.76	0.19	
Intersection Summary			

2030 Mitigated Weekday Morning Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 74.4

Natural Cycle: 100

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
11 s	24 s	32 s	18 s	15 s
 Ø5	 Ø6		 Ø8	
12 s	23 s		33 s	

2030 Mitigated Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Future Volume (vph)	3	96	647	298	2	105	566	20	310	74	115	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.91		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1619	3421	1531		1787	3490		1752	1713		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.37	1.00		
Satd. Flow (perm)		1619	3421	1531		1787	3490		685	1713		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.93	0.93	0.93	0.93	0.89	0.89	0.89	0.90
Adj. Flow (vph)	3	110	744	343	2	113	609	22	348	83	129	60
RTOR Reduction (vph)	0	0	0	186	0	0	2	0	0	48	0	0
Lane Group Flow (vph)	0	113	744	157	0	115	629	0	348	164	0	0
Heavy Vehicles (%)	0%	8%	2%	2%	0%	1%	3%	0%	3%	2%	0%	0%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		6.1	18.4	30.7		5.1	17.4		27.7	27.7		
Effective Green, g (s)		8.1	20.4	34.7		7.1	19.4		29.7	29.7		
Actuated g/C Ratio		0.11	0.27	0.46		0.09	0.26		0.39	0.39		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		173	921	701		167	894		470	672		
v/s Ratio Prot		c0.07	c0.22	0.04		0.06	0.18		c0.14	0.10		
v/s Ratio Perm				0.06					c0.15			
v/c Ratio		0.65	0.81	0.22		0.69	0.70		0.74	0.24		
Uniform Delay, d1		32.5	25.8	12.4		33.2	25.5		17.8	15.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		8.5	5.3	0.2		11.2	2.5		6.2	0.2		
Delay (s)		41.0	31.1	12.5		44.4	28.1		24.0	15.6		
Level of Service		D	C	B		D	C		C	B		
Approach Delay (s)			26.7				30.6			20.9		
Approach LOS			C				C			C		
Intersection Summary												
HCM 2000 Control Delay			27.4				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			75.7				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			62.4%				ICU Level of Service			B		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Weekday Morning Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

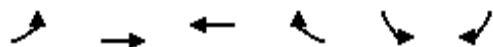


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	97	90
Future Volume (vph)	97	90
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1809	1419
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1465	1419
Peak-hour factor, PHF	0.90	0.90
Adj. Flow (vph)	108	100
RTOR Reduction (vph)	0	69
Lane Group Flow (vph)	168	31
Heavy Vehicles (%)	5%	10%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	9.4	21.5
Effective Green, g (s)	11.4	23.5
Actuated g/C Ratio	0.15	0.31
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	220	440
v/s Ratio Prot		
v/s Ratio Perm	0.11	0.02
v/c Ratio	0.76	0.07
Uniform Delay, d1	30.9	18.4
Progression Factor	1.00	1.00
Incremental Delay, d2	14.5	0.1
Delay (s)	45.4	18.5
Level of Service	D	B
Approach Delay (s)	35.3	
Approach LOS	D	
Intersection Summary		

2030 Mitigated Weekday Evening Peak-Hour



2030 Mitigated Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1225	1452	79	83	136	
Future Volume (vph)	125	1225	1452	79	83	136	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.992			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3574	3546	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3574	3546	0	1787	1599	
Satd. Flow (RTOR)			6			158	
Adj. Flow (vph)	139	1361	1513	82	97	158	
Lane Group Flow (vph)	139	1361	1595	0	97	158	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	21.0	96.0	75.0		16.0		28.0
Total Split (%)	15.0%	68.6%	53.6%		11.4%		20%
Maximum Green (s)	15.0	90.0	69.0		11.0		26.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.67	0.47	0.68		0.60	0.31	
Control Delay	74.4	6.0	4.3		76.9	7.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	74.4	6.0	4.3		76.9	7.6	
Queue Length 50th (ft)	121	128	71		86	0	
Queue Length 95th (ft)	#211	397	69		#144	50	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	218	2904	2340		168	515	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.64	0.47	0.68		0.58	0.31	
Intersection Summary							
Cycle Length: 140							

2030 Mitigated Weekday Evening Peak-Hour 1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 140

Offset: 28 (20%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

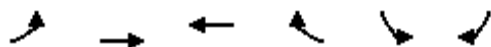
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway

→ Ø2 (R) 96 s		 Ø9 28 s		 Ø4 16 s
 Ø5 21 s	← Ø6 (R) 75 s			

2030 Mitigated Weekday Evening Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	125	1225	1452	79	83	136
Future Volume (vph)	125	1225	1452	79	83	136
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1668	3574	3547		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1668	3574	3547		1787	1599
Peak-hour factor, PHF	0.90	0.90	0.96	0.96	0.86	0.86
Adj. Flow (vph)	139	1361	1512	82	97	158
RTOR Reduction (vph)	0	0	2	0	0	121
Lane Group Flow (vph)	139	1361	1593	0	97	37
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	15.4	110.2	88.8		11.6	32.0
Effective Green, g (s)	17.4	112.2	90.8		12.6	33.0
Actuated g/C Ratio	0.12	0.80	0.65		0.09	0.24
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	207	2864	2300		160	376
v/s Ratio Prot	c0.08	0.38	c0.45		c0.05	0.02
v/s Ratio Perm						
v/c Ratio	0.67	0.48	0.69		0.61	0.10
Uniform Delay, d1	58.6	4.5	15.7		61.3	41.9
Progression Factor	1.00	1.00	0.18		1.00	1.00
Incremental Delay, d2	8.3	0.6	0.9		6.4	0.1
Delay (s)	66.9	5.0	3.7		67.7	42.0
Level of Service	E	A	A		E	D
Approach Delay (s)		10.8	3.7		51.8	
Approach LOS		B	A		D	
Intersection Summary						
HCM 2000 Control Delay			10.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			64.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

2030 Mitigated Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Future Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.995					0.850		0.919		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1805	3524	0	0	1805	3574	1546	1711	1688	0	3351
Flt Permitted		0.062				0.062			0.950			0.950
Satd. Flow (perm)	0	118	3524	0	0	118	3574	1546	1711	1688	0	3351
Satd. Flow (RTOR)			3					324		32		
Adj. Flow (vph)	1	96	1305	45	1	93	1510	519	98	80	93	358
Lane Group Flow (vph)	0	97	1350	0	0	94	1510	519	98	173	0	358
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	11.0	11.0	67.0		11.0	11.0	67.0	20.0	15.0	15.0		20.0
Total Split (%)	7.9%	7.9%	47.9%		7.9%	7.9%	47.9%	14.3%	10.7%	10.7%		14.3%
Maximum Green (s)	5.0	5.0	61.0		5.0	5.0	61.0	14.0	10.0	10.0		14.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.57	0.81			0.55	0.90	0.46	0.40	0.65		0.63
Control Delay		42.2	32.6			33.9	43.1	4.6	60.9	57.5		59.2
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		42.2	32.6			33.9	43.1	4.6	60.9	57.5		59.2
Queue Length 50th (ft)		35	575			38	674	61	81	121		153
Queue Length 95th (ft)		#122	281			#112	#842	70	#147	#247		#265
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		171	1659			170	1679	1134	244	268		570
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.57	0.81			0.55	0.90	0.46	0.40	0.65		0.63
Intersection Summary												
Cycle Length: 140												

2030 Mitigated Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	70	39	
Future Volume (vph)	70	39	
Lane Util. Factor	1.00	1.00	
Frt	0.947		
Flt Protected			
Satd. Flow (prot)	1739	0	
Flt Permitted			
Satd. Flow (perm)	1739	0	
Satd. Flow (RTOR)	16		
Adj. Flow (vph)	76	42	
Lane Group Flow (vph)	118	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	20.0		27.0
Total Split (%)	14.3%		19%
Maximum Green (s)	14.0		25.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.38		
Control Delay	49.0		
Queue Delay	0.0		
Total Delay	49.0		
Queue Length 50th (ft)	80		
Queue Length 95th (ft)	157		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	309		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.38		
Intersection Summary			

2030 Mitigated Weekday Evening Peak-Hour 2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
11 s	67 s	27 s	20 s	15 s
 Ø5	 Ø6 (R)			
11 s	67 s			

2030 Mitigated Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Future Volume (vph)	1	90	1227	42	1	89	1450	498	78	64	74	329
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.92		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1805	3524			1805	3574	1546	1711	1689		3351
Flt Permitted		0.06	1.00			0.06	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		118	3524			118	3574	1546	1711	1689		3351
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.96	0.96	0.96	0.96	0.80	0.80	0.80	0.92
Adj. Flow (vph)	1	96	1305	45	1	93	1510	519	98	80	92	358
RTOR Reduction (vph)	0	0	2	0	0	0	0	120	0	27	0	0
Lane Group Flow (vph)	0	97	1348	0	0	94	1510	399	98	146	0	358
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	1%	1%	2%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		69.3	62.3			69.1	62.2	84.0	19.0	19.0		21.8
Effective Green, g (s)		73.3	64.3			73.1	64.2	88.0	20.0	20.0		23.8
Actuated g/C Ratio		0.52	0.46			0.52	0.46	0.63	0.14	0.14		0.17
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		170	1618			168	1638	971	244	241		569
v/s Ratio Prot		c0.04	0.38			0.04	c0.42	0.07	0.06	c0.09		c0.11
v/s Ratio Perm		0.26				0.25		0.19				
v/c Ratio		0.57	0.83			0.56	0.92	0.41	0.40	0.60		0.63
Uniform Delay, d1		29.3	33.2			26.4	35.5	13.0	54.6	56.3		54.0
Progression Factor		1.44	0.87			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		4.1	4.7			4.0	10.1	0.3	1.1	4.2		2.2
Delay (s)		46.4	33.6			30.4	45.6	13.3	55.6	60.5		56.2
Level of Service		D	C			C	D	B	E	E		E
Approach Delay (s)			34.4				37.0			58.8		
Approach LOS			C				D			E		
Intersection Summary												
HCM 2000 Control Delay			39.5				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			75.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Weekday Evening Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	70	39
Future Volume (vph)	70	39
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1739	
Flt Permitted	1.00	
Satd. Flow (perm)	1739	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	76	42
RTOR Reduction (vph)	13	0
Lane Group Flow (vph)	105	0
Heavy Vehicles (%)	0%	0%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	21.8	
Effective Green, g (s)	23.8	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	295	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.35	
Uniform Delay, d1	51.3	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	52.1	
Level of Service	D	
Approach Delay (s)	55.2	
Approach LOS	E	
Intersection Summary		

2030 Mitigated Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Future Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.993			0.931		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1745	3455	1546	0	1805	3551	0	1787	1769	0	0
Flt Permitted		0.950				0.950			0.313			
Satd. Flow (perm)	0	1745	3455	1546	0	1805	3551	0	589	1769	0	0
Satd. Flow (RTOR)				350			3			35		
Adj. Flow (vph)	6	153	901	360	3	112	802	41	463	156	132	114
Lane Group Flow (vph)	0	159	901	360	0	115	843	0	463	288	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	17.0	17.0	37.0	25.0	14.0	14.0	34.0		25.0	57.0		32.0
Total Split (%)	12.1%	12.1%	26.4%	17.9%	10.0%	10.0%	24.3%		17.9%	40.7%		22.9%
Maximum Green (s)	11.0	11.0	31.0	19.0	8.0	8.0	28.0		19.0	51.0		26.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.79	0.89	0.38		0.72	0.89		0.93	0.34		
Control Delay		77.3	51.4	2.8		76.9	53.4		52.1	20.0		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		77.3	51.4	2.8		76.9	53.4		52.1	20.0		
Queue Length 50th (ft)		108	307	3		78	289		213	101		
Queue Length 95th (ft)		#297	#625	38		#226	#594		#580	252		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		201	1011	958		160	947		497	849		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.79	0.89	0.38		0.72	0.89		0.93	0.34		
Intersection Summary												
Cycle Length: 140												

2030 Mitigated Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	131	149	
Future Volume (vph)	131	149	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.979		
Satd. Flow (prot)	1852	1531	
Flt Permitted	0.731		
Satd. Flow (perm)	1383	1531	
Satd. Flow (RTOR)		173	
Adj. Flow (vph)	152	173	
Lane Group Flow (vph)	266	173	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	32.0		32.0
Total Split (%)	22.9%		23%
Maximum Green (s)	26.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.79	0.24	
Control Delay	59.0	5.2	
Queue Delay	0.0	0.0	
Total Delay	59.0	5.2	
Queue Length 50th (ft)	169	0	
Queue Length 95th (ft)	#392	45	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	343	704	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.78	0.25	
Intersection Summary			

2030 Mitigated Weekday Evening Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 114

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
14 s	37 s	32 s	25 s	32 s
 Ø5	 Ø6		 Ø8	
17 s	34 s		57 s	

2030 Mitigated Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Future Volume (vph)	6	145	856	342	3	110	786	40	421	142	120	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.93		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1745	3455	1546		1805	3550		1787	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.31	1.00		
Satd. Flow (perm)		1745	3455	1546		1805	3550		589	1769		
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.98	0.98	0.98	0.98	0.91	0.91	0.91	0.86
Adj. Flow (vph)	6	153	901	360	3	112	802	41	463	156	132	114
RTOR Reduction (vph)	0	0	0	185	0	0	2	0	0	19	0	0
Lane Group Flow (vph)	0	159	901	175	0	115	841	0	463	269	0	0
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	1%	0%	1%	0%	0%	1%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		11.1	31.3	50.5		8.1	28.3		51.2	51.2		
Effective Green, g (s)		13.1	33.3	54.5		10.1	30.3		53.2	53.2		
Actuated g/C Ratio		0.11	0.29	0.47		0.09	0.26		0.46	0.46		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		197	996	729		157	931		491	814		
v/s Ratio Prot		c0.09	c0.26	0.04		0.06	0.24		c0.17	0.15		
v/s Ratio Perm				0.07					c0.26			
v/c Ratio		0.81	0.90	0.24		0.73	0.90		0.94	0.33		
Uniform Delay, d1		50.0	39.6	18.2		51.4	41.2		24.8	19.8		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		20.9	11.4	0.2		16.1	11.9		26.8	0.2		
Delay (s)		70.9	51.0	18.3		67.5	53.1		51.6	20.1		
Level of Service		E	D	B		E	D		D	C		
Approach Delay (s)			44.9				54.8			39.5		
Approach LOS			D				D			D		
Intersection Summary												
HCM 2000 Control Delay			46.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			115.5				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			80.3%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Weekday Evening Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

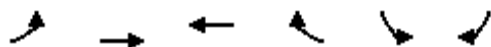


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	131	149
Future Volume (vph)	131	149
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.98	1.00
Satd. Flow (prot)	1852	1531
Flt Permitted	0.73	1.00
Satd. Flow (perm)	1383	1531
Peak-hour factor, PHF	0.86	0.86
Adj. Flow (vph)	152	173
RTOR Reduction (vph)	0	105
Lane Group Flow (vph)	266	68
Heavy Vehicles (%)	0%	2%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	26.0	43.1
Effective Green, g (s)	28.0	45.1
Actuated g/C Ratio	0.24	0.39
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	335	597
v/s Ratio Prot		
v/s Ratio Perm	0.19	0.04
v/c Ratio	0.79	0.11
Uniform Delay, d1	41.0	22.4
Progression Factor	1.00	1.00
Incremental Delay, d2	12.2	0.1
Delay (s)	53.2	22.5
Level of Service	D	C
Approach Delay (s)	41.1	
Approach LOS	D	
Intersection Summary		

2030 Mitigated Saturday Midday Peak-Hour



2030 Mitigated Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1313	949	74	91	120	
Future Volume (vph)	129	1313	949	74	91	120	
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.989			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3535	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3535	0	1787	1599	
Satd. Flow (RTOR)			7			136	
Adj. Flow (vph)	147	1492	1054	82	103	136	
Lane Group Flow (vph)	147	1492	1136	0	103	136	
Turn Type	Prot	NA	NA		Prot	pt+ov	
Protected Phases	5	2	6		4	4 5	9
Permitted Phases							
Detector Phase	5	2	6		4	4 5	
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0		5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		10.0		28.0
Total Split (s)	26.0	93.0	67.0		19.0		28.0
Total Split (%)	18.6%	66.4%	47.9%		13.6%		20%
Maximum Green (s)	20.0	87.0	61.0		14.0		26.0
Yellow Time (s)	4.0	4.0	4.0		3.0		2.0
All-Red Time (s)	2.0	2.0	2.0		2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0		
Total Lost Time (s)	4.0	4.0	4.0		4.0		
Lead/Lag	Lead		Lag				
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0
Recall Mode	None	C-Min	C-Min		None		None
Walk Time (s)							6.0
Flash Dont Walk (s)							20.0
Pedestrian Calls (#/hr)							3
v/c Ratio	0.67	0.52	0.50		0.60	0.26	
Control Delay	72.1	7.1	8.1		75.0	6.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay	72.1	7.1	8.1		75.0	6.9	
Queue Length 50th (ft)	128	154	153		91	0	
Queue Length 95th (ft)	196	474	112		150	47	
Internal Link Dist (ft)		220	1070		120		
Turn Bay Length (ft)	125						
Base Capacity (vph)	258	2882	2275		195	539	
Starvation Cap Reductn	0	0	0		0	0	
Spillback Cap Reductn	0	0	0		0	0	
Storage Cap Reductn	0	0	0		0	0	
Reduced v/c Ratio	0.57	0.52	0.50		0.53	0.25	
Intersection Summary							
Cycle Length: 140							

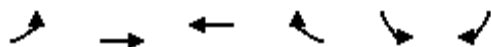
2030 Mitigated Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway

Actuated Cycle Length: 140
Offset: 15 (11%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 80
Control Type: Actuated-Coordinated

Splits and Phases: 1: Route 110 & Carriagetown Marketplace Driveway



2030 Mitigated Saturday Midday Peak-Hour
1: Route 110 & Carriagetown Marketplace Driveway



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	129	1313	949	74	91	120
Future Volume (vph)	129	1313	949	74	91	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	10	12	12	12	12	12
Total Lost time (s)	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.99		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1636	3574	3536		1787	1599
Flt Permitted	0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1636	3574	3536		1787	1599
Peak-hour factor, PHF	0.88	0.88	0.90	0.90	0.88	0.88
Adj. Flow (vph)	147	1492	1054	82	103	136
RTOR Reduction (vph)	0	0	3	0	0	102
Lane Group Flow (vph)	147	1492	1133	0	103	34
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	NA		Prot	pt+ov
Protected Phases	5	2	6		4	4 5
Permitted Phases						
Actuated Green, G (s)	16.9	109.3	86.4		12.5	34.4
Effective Green, g (s)	18.9	111.3	88.4		13.5	35.4
Actuated g/C Ratio	0.13	0.79	0.63		0.10	0.25
Clearance Time (s)	6.0	6.0	6.0		5.0	
Vehicle Extension (s)	3.0	3.0	3.0		3.0	
Lane Grp Cap (vph)	220	2841	2232		172	404
v/s Ratio Prot	c0.09	c0.42	0.32		c0.06	0.02
v/s Ratio Perm						
v/c Ratio	0.67	0.53	0.51		0.60	0.09
Uniform Delay, d1	57.6	5.1	14.0		60.7	39.9
Progression Factor	1.00	1.00	0.47		1.00	1.00
Incremental Delay, d2	7.5	0.7	0.7		5.5	0.1
Delay (s)	65.0	5.7	7.2		66.2	40.0
Level of Service	E	A	A		E	D
Approach Delay (s)		11.1	7.2		51.3	
Approach LOS		B	A		D	
Intersection Summary						
HCM 2000 Control Delay			12.8		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			140.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			50.8%		ICU Level of Service	A
Analysis Period (min)			15			
c Critical Lane Group						

2030 Mitigated Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Future Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Lane Util. Factor	0.95	1.00	0.95	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97
Frt			0.993					0.850		0.888		
Flt Protected		0.950				0.950			0.950			0.950
Satd. Flow (prot)	0	1772	3551	0	0	1805	3574	1546	1745	1631	0	3351
Flt Permitted		0.179				0.057			0.950			0.950
Satd. Flow (perm)	0	334	3551	0	0	108	3574	1546	1745	1631	0	3351
Satd. Flow (RTOR)			5					274		82		
Adj. Flow (vph)	7	79	1418	71	8	123	1036	311	80	49	142	345
Lane Group Flow (vph)	0	86	1489	0	0	131	1036	311	80	191	0	345
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Detector Phase	5	5	2		1	1	6	4	8	8		4
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0		5.0
Minimum Split (s)	11.0	11.0	11.0		11.0	11.0	11.0	11.0	10.0	10.0		11.0
Total Split (s)	12.0	12.0	67.0		11.0	11.0	66.0	19.0	16.0	16.0		19.0
Total Split (%)	8.6%	8.6%	47.9%		7.9%	7.9%	47.1%	13.6%	11.4%	11.4%		13.6%
Maximum Green (s)	6.0	6.0	61.0		5.0	5.0	60.0	13.0	11.0	11.0		13.0
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0	4.0	3.0	3.0		4.0
All-Red Time (s)	2.0	2.0	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	-2.0	-1.0	-1.0		-2.0
Total Lost Time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag					
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	None	None	C-Min		None	None	C-Min	None	None	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.30	0.85			0.63	0.57	0.27	0.41	0.75		0.65
Control Delay		13.7	33.7			40.1	26.5	1.9	64.8	52.4		61.4
Queue Delay		0.0	0.0			0.0	0.0	0.0	0.0	0.0		0.0
Total Delay		13.7	33.7			40.1	26.5	1.9	64.8	52.4		61.4
Queue Length 50th (ft)		34	655			61	341	9	67	95		150
Queue Length 95th (ft)		39	#393			#208	460	27	129	#246		#263
Internal Link Dist (ft)			1070				420			270		
Turn Bay Length (ft)		310				80		185	70			180
Base Capacity (vph)		284	1753			209	1826	1154	196	256		529
Starvation Cap Reductn		0	0			0	0	0	0	0		0
Spillback Cap Reductn		0	0			0	0	0	0	0		0
Storage Cap Reductn		0	0			0	0	0	0	0		0
Reduced v/c Ratio		0.30	0.85			0.63	0.57	0.27	0.41	0.75		0.65
Intersection Summary												
Cycle Length: 140												

2030 Mitigated Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	PT		
Traffic Volume (vph)	56	37	
Future Volume (vph)	56	37	
Lane Util. Factor	1.00	1.00	
Frt	0.941		
Flt Protected			
Satd. Flow (prot)	1688	0	
Flt Permitted			
Satd. Flow (perm)	1688	0	
Satd. Flow (RTOR)	19		
Adj. Flow (vph)	60	39	
Lane Group Flow (vph)	99	0	
Turn Type	NA		
Protected Phases	4		9
Permitted Phases			
Detector Phase	4		
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		27.0
Total Split (s)	19.0		27.0
Total Split (%)	13.6%		19%
Maximum Green (s)	13.0		25.0
Yellow Time (s)	4.0		2.0
All-Red Time (s)	2.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag			
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			18.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.35		
Control Delay	46.7		
Queue Delay	0.0		
Total Delay	46.7		
Queue Length 50th (ft)	63		
Queue Length 95th (ft)	132		
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	282		
Starvation Cap Reductn	0		
Spillback Cap Reductn	0		
Storage Cap Reductn	0		
Reduced v/c Ratio	0.35		
Intersection Summary			

2030 Mitigated Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow, Master Intersection
Natural Cycle: 110
Control Type: Actuated-Coordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Clarks Road/Elm Street & Route 110

 Ø1	 Ø2 (R)	 Ø9	 Ø4	 Ø8
11 s	67 s	27 s	19 s	16 s
 Ø5	 Ø6 (R)			
12 s	66 s			

2030 Mitigated Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Future Volume (vph)	6	70	1262	63	7	113	953	286	74	46	132	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	11	11	11	11	11
Total Lost time (s)		4.0	4.0			4.0	4.0	4.0	4.0	4.0		4.0
Lane Util. Factor		1.00	0.95			1.00	0.95	1.00	1.00	1.00		0.97
Frt		1.00	0.99			1.00	1.00	0.85	1.00	0.89		1.00
Flt Protected		0.95	1.00			0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1772	3550			1805	3574	1546	1745	1632		3351
Flt Permitted		0.18	1.00			0.06	1.00	1.00	0.95	1.00		0.95
Satd. Flow (perm)		333	3550			109	3574	1546	1745	1632		3351
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.94
Adj. Flow (vph)	7	79	1418	71	8	123	1036	311	80	49	142	345
RTOR Reduction (vph)	0	0	3	0	0	0	0	94	0	73	0	0
Lane Group Flow (vph)	0	86	1486	0	0	131	1036	217	80	118	0	345
Heavy Vehicles (%)	0%	2%	1%	0%	0%	0%	1%	1%	0%	0%	0%	1%
Turn Type	Prot	pm+pt	NA		Prot	pm+pt	NA	pm+ov	Split	NA		Split
Protected Phases	5	5	2		1	1	6	4	8	8		4
Permitted Phases		2				6		6				
Actuated Green, G (s)		72.9	65.5			77.9	68.0	88.1	14.5	14.5		20.1
Effective Green, g (s)		76.9	67.5			81.9	70.0	92.1	15.5	15.5		22.1
Actuated g/C Ratio		0.55	0.48			0.59	0.50	0.66	0.11	0.11		0.16
Clearance Time (s)		6.0	6.0			6.0	6.0	6.0	5.0	5.0		6.0
Vehicle Extension (s)		3.0	3.0			3.0	3.0	3.0	3.0	3.0		3.0
Lane Grp Cap (vph)		279	1711			207	1787	1017	193	180		528
v/s Ratio Prot		0.02	c0.42			c0.05	0.29	0.03	0.05	c0.07		c0.10
v/s Ratio Perm		0.15				0.32		0.11				
v/c Ratio		0.31	0.87			0.63	0.58	0.21	0.41	0.66		0.65
Uniform Delay, d1		17.4	32.3			32.7	24.6	9.5	58.0	59.7		55.4
Progression Factor		0.84	0.89			1.00	1.00	1.00	1.00	1.00		1.00
Incremental Delay, d2		0.5	5.5			6.2	1.4	0.1	1.4	8.3		2.9
Delay (s)		15.1	34.2			38.9	26.0	9.6	59.5	68.0		58.3
Level of Service		B	C			D	C	A	E	E		E
Approach Delay (s)			33.2				23.7			65.5		
Approach LOS			C				C			E		
Intersection Summary												
HCM 2000 Control Delay			34.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			76.7%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Saturday Midday Peak-Hour
2: Clarks Road/Elm Street & Route 110



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	56	37
Future Volume (vph)	56	37
Ideal Flow (vphpl)	1900	1900
Lane Width	11	12
Total Lost time (s)	4.0	
Lane Util. Factor	1.00	
Frt	0.94	
Flt Protected	1.00	
Satd. Flow (prot)	1688	
Flt Permitted	1.00	
Satd. Flow (perm)	1688	
Peak-hour factor, PHF	0.94	0.94
Adj. Flow (vph)	60	39
RTOR Reduction (vph)	16	0
Lane Group Flow (vph)	83	0
Heavy Vehicles (%)	0%	6%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	20.1	
Effective Green, g (s)	22.1	
Actuated g/C Ratio	0.16	
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	266	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.31	
Uniform Delay, d1	52.2	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	52.9	
Level of Service	D	
Approach Delay (s)	57.1	
Approach LOS	E	
Intersection Summary		

2030 Mitigated Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Future Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Lane Util. Factor	0.95	1.00	0.95	1.00	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt				0.850			0.994			0.936		
Flt Protected		0.950				0.950			0.950			
Satd. Flow (prot)	0	1728	3455	1546	0	1805	3544	0	1805	1768	0	0
Flt Permitted		0.950				0.950			0.281			
Satd. Flow (perm)	0	1728	3455	1546	0	1805	3544	0	534	1768	0	0
Satd. Flow (RTOR)				303			3			27		
Adj. Flow (vph)	11	248	1061	346	5	123	899	38	410	186	137	62
Lane Group Flow (vph)	0	259	1061	346	0	128	937	0	410	323	0	0
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Detector Phase	5	5	2	3	1	1	6		3	8		4
Switch Phase												
Minimum Initial (s)	1.0	1.0	5.0	1.0	1.0	1.0	5.0		1.0	5.0		5.0
Minimum Split (s)	7.0	7.0	11.0	7.0	7.0	7.0	11.0		7.0	11.0		11.0
Total Split (s)	24.0	24.0	48.0	24.0	16.0	16.0	40.0		24.0	49.0		25.0
Total Split (%)	16.6%	16.6%	33.1%	16.6%	11.0%	11.0%	27.6%		16.6%	33.8%		17.2%
Maximum Green (s)	18.0	18.0	42.0	18.0	10.0	10.0	34.0		18.0	43.0		19.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	3.0		3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	3.0		3.0
Lost Time Adjust (s)		-2.0	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0		
Total Lost Time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lead	Lag		Lead			Lag
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	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	None		None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
v/c Ratio		0.89	0.83	0.34		0.70	0.87		0.98	0.47		
Control Delay		80.0	41.4	3.0		73.8	49.4		72.5	30.0		
Queue Delay		0.0	0.0	0.0		0.0	0.0		0.0	0.0		
Total Delay		80.0	41.4	3.0		73.8	49.4		72.5	30.0		
Queue Length 50th (ft)		184	352	12		91	329		229	155		
Queue Length 95th (ft)		#417	#623	35		#208	#549		#521	308		
Internal Link Dist (ft)			420				220			220		
Turn Bay Length (ft)												
Base Capacity (vph)		292	1286	1011		183	1081		418	689		
Starvation Cap Reductn		0	0	0		0	0		0	0		
Spillback Cap Reductn		0	0	0		0	0		0	0		
Storage Cap Reductn		0	0	0		0	0		0	0		
Reduced v/c Ratio		0.89	0.83	0.34		0.70	0.87		0.98	0.47		
Intersection Summary												
Cycle Length: 145												

2030 Mitigated Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Lane Group	SBT	SBR	Ø9
Lane Configurations	↕	↗	
Traffic Volume (vph)	132	118	
Future Volume (vph)	132	118	
Lane Util. Factor	1.00	1.00	
Frt		0.850	
Flt Protected	0.986		
Satd. Flow (prot)	1837	1546	
Flt Permitted	0.801		
Satd. Flow (perm)	1492	1546	
Satd. Flow (RTOR)		140	
Adj. Flow (vph)	157	140	
Lane Group Flow (vph)	219	140	
Turn Type	NA	custom	
Protected Phases	4		9
Permitted Phases		4 5	
Detector Phase	4	4 5	
Switch Phase			
Minimum Initial (s)	5.0		5.0
Minimum Split (s)	11.0		32.0
Total Split (s)	25.0		32.0
Total Split (%)	17.2%		22%
Maximum Green (s)	19.0		30.0
Yellow Time (s)	3.0		2.0
All-Red Time (s)	3.0		0.0
Lost Time Adjust (s)	-2.0		
Total Lost Time (s)	4.0		
Lead/Lag	Lag		
Lead-Lag Optimize?			
Vehicle Extension (s)	3.0		3.0
Recall Mode	None		None
Walk Time (s)			7.0
Flash Dont Walk (s)			23.0
Pedestrian Calls (#/hr)			3
v/c Ratio	0.83	0.21	
Control Delay	73.4	5.8	
Queue Delay	0.0	0.0	
Total Delay	73.4	5.8	
Queue Length 50th (ft)	153	0	
Queue Length 95th (ft)	#349	40	
Internal Link Dist (ft)	220		
Turn Bay Length (ft)			
Base Capacity (vph)	265	674	
Starvation Cap Reductn	0	0	
Spillback Cap Reductn	0	0	
Storage Cap Reductn	0	0	
Reduced v/c Ratio	0.83	0.21	
Intersection Summary			

2030 Mitigated Saturday Midday Peak-Hour 5: Merrill Street/Rabbit Road & Route 110

Actuated Cycle Length: 119.4

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: Merrill Street/Rabbit Road & Route 110

 Ø1	 Ø2	 Ø9	 Ø3	 Ø4
16 s	48 s	32 s	24 s	25 s
 Ø5	 Ø6		 Ø8	
24 s	40 s		49 s	

2030 Mitigated Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Future Volume (vph)	9	211	902	294	4	101	737	31	344	156	115	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	11	11	11	12	12	12	12	12	12	12	12
Total Lost time (s)		4.0	4.0	4.0		4.0	4.0		4.0	4.0		
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		1.00	1.00		
Frt		1.00	1.00	0.85		1.00	0.99		1.00	0.94		
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	1.00		
Satd. Flow (prot)		1728	3455	1546		1805	3544		1805	1769		
Flt Permitted		0.95	1.00	1.00		0.95	1.00		0.28	1.00		
Satd. Flow (perm)		1728	3455	1546		1805	3544		534	1769		
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.82	0.82	0.82	0.82	0.84	0.84	0.84	0.84
Adj. Flow (vph)	11	248	1061	346	5	123	899	38	410	186	137	62
RTOR Reduction (vph)	0	0	0	141	0	0	2	0	0	17	0	0
Lane Group Flow (vph)	0	259	1061	205	0	128	935	0	410	306	0	0
Heavy Vehicles (%)	0%	1%	1%	1%	0%	0%	1%	7%	0%	1%	0%	2%
Turn Type	Prot	Prot	NA	pm+ov	Prot	Prot	NA		pm+pt	NA		Perm
Protected Phases	5	5	2	3	1	1	6		3	8		
Permitted Phases				2					8			4
Actuated Green, G (s)		18.2	42.4	60.6		10.1	34.3		43.4	43.4		
Effective Green, g (s)		20.2	44.4	64.6		12.1	36.3		45.4	45.4		
Actuated g/C Ratio		0.17	0.37	0.53		0.10	0.30		0.38	0.38		
Clearance Time (s)		6.0	6.0	6.0		6.0	6.0		6.0	6.0		
Vehicle Extension (s)		3.0	3.0	3.0		3.0	3.0		3.0	3.0		
Lane Grp Cap (vph)		288	1269	826		180	1064		413	664		
v/s Ratio Prot		c0.15	c0.31	0.04		0.07	0.26		c0.17	0.17		
v/s Ratio Perm				0.09					c0.21			
v/c Ratio		0.90	0.84	0.25		0.71	0.88		0.99	0.46		
Uniform Delay, d1		49.3	34.9	15.1		52.7	40.2		32.9	28.5		
Progression Factor		1.00	1.00	1.00		1.00	1.00		1.00	1.00		
Incremental Delay, d2		28.3	4.9	0.2		12.4	8.4		42.2	0.5		
Delay (s)		77.6	39.8	15.2		65.1	48.6		75.0	29.0		
Level of Service		E	D	B		E	D		E	C		
Approach Delay (s)			40.6				50.6			54.7		
Approach LOS			D				D			D		
Intersection Summary												
HCM 2000 Control Delay			47.1				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			120.8				Sum of lost time (s)			20.0		
Intersection Capacity Utilization			75.8%				ICU Level of Service			D		
Analysis Period (min)			15									
c Critical Lane Group												

2030 Mitigated Saturday Midday Peak-Hour
5: Merrill Street/Rabbit Road & Route 110



Movement	SBT	SBR
Lane Configurations	 	 
Traffic Volume (vph)	132	118
Future Volume (vph)	132	118
Ideal Flow (vphpl)	1900	1900
Lane Width	12	11
Total Lost time (s)	4.0	4.0
Lane Util. Factor	1.00	1.00
Frt	1.00	0.85
Flt Protected	0.99	1.00
Satd. Flow (prot)	1837	1546
Flt Permitted	0.80	1.00
Satd. Flow (perm)	1492	1546
Peak-hour factor, PHF	0.84	0.84
Adj. Flow (vph)	157	140
RTOR Reduction (vph)	0	87
Lane Group Flow (vph)	219	53
Heavy Vehicles (%)	2%	1%
Turn Type	NA	custom
Protected Phases	4	
Permitted Phases		4 5
Actuated Green, G (s)	19.2	43.4
Effective Green, g (s)	21.2	45.4
Actuated g/C Ratio	0.18	0.38
Clearance Time (s)	6.0	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	261	581
v/s Ratio Prot		
v/s Ratio Perm	0.15	0.03
v/c Ratio	0.84	0.09
Uniform Delay, d1	48.2	24.4
Progression Factor	1.00	1.00
Incremental Delay, d2	20.4	0.1
Delay (s)	68.6	24.4
Level of Service	E	C
Approach Delay (s)	51.4	
Approach LOS	D	
Intersection Summary		