

Transportation Impact Assessment

Proposed Residential Development

29 Clark's Road

Amesbury, Massachusetts

Prepared for:

Eagles Crossing LLC

231 Sutton Street, Suite 1B

North Andover, Massachusetts

October 2025

Prepared by:

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

35 New England Business Center Drive
Suite 140
Andover, MA 01810

CONTENTS

EXECUTIVE SUMMARY	1
INTRODUCTION	4
Study Methodology	4
EXISTING CONDITIONS	5
Geometry	5
Existing Traffic Volumes	6
Pedestrian and Bicycle Facilities	7
Public Transportation	7
Motor Vehicle Crash Data	8
Vehicle Speeds	10
FUTURE CONDITIONS	11
Future Traffic Growth	11
Project-Generated Traffic	13
Trip Distribution and Assignment	14
Future Traffic Volumes – Build Condition	15
Parking Generation	16
SIGHT DISTANCE EVALUATION	18
TRAFFIC OPERATIONS ANALYSIS	20
Methodology	20
Analysis Results	23
RECOMMENDATIONS AND CONCLUSIONS	28
Recommendations	28
Conclusions	29

FIGURES

No.	Title
1	Site Location and Study Area Map
2	Existing Intersection Lane Use, Travel Lane Width, and Pedestrian Facilities
3	2025 Baseline Weekday Morning Peak-Hour Traffic Volumes
4	2025 Baseline Weekday Evening Peak-Hour Traffic Volumes
5	2025 Baseline Saturday Midday Peak-Hour Traffic Volumes
6	2032 No-Build Weekday Morning Peak-Hour Traffic Volumes
7	2032 No-Build Weekday Evening Peak-Hour Traffic Volumes
8	2032 No-Build Saturday Midday Peak-Hour Traffic Volumes
9	Trip Distribution Map
10	Site-Generated Weekday Morning Peak-Hour Traffic Volumes
11	Site-Generated Weekday Evening Peak-Hour Traffic Volumes
12	Site-Generated Saturday Midday Peak-Hour Traffic Volumes
13	2032 Build Weekday Morning Peak-Hour Traffic Volumes
14	2032 Build Weekday Evening Peak-Hour Traffic Volumes
15	2032 Build Saturday Midday Peak-Hour Traffic Volumes

TABLES

No.	Title
1	2025 Baseline Roadway Traffic-Volume Summary
2	Motor Vehicle Crash Data Summary
3	Observed Vehicle Speeds (In Miles Per Hour)
4	Trip-Generation Summary
5	Trip-Distribution Summary
6	Peak-Hour Traffic-Volume Increases
7	Project Parking Demand
8	Sight Distance Analysis
9	Level-of-Service Criteria for Signalized Intersections
10	Level-of-Service Criteria for Unsignalized Intersections
11	Signalized Intersection Capacity Analysis Summary
12	Unsignalized Intersection Capacity Analysis Summary

EXECUTIVE SUMMARY

DESCRIPTION OF PROJECT

Vanasse & Associates, Inc. (VAI) has prepared this Transportation Impact Assessment (TIA) to identify traffic impacts associated with a proposed residential development to be located at 29 Clark's Road in Amesbury, Massachusetts (the "Project"). The purpose of this TIA is to review existing and future traffic conditions in the vicinity of the site, determine the traffic impact of the proposed Project at key intersections expected to experience increased traffic levels from the Project, and review the need for improvements to mitigate the Project's traffic impact.

PROPOSED PROJECT

The Project entails constructing 152 multifamily residential units. The Project will provide 41 studios, 46 one-bedroom, 16 one-bedroom plus den, 37 two-bedroom, and 12 three-bedroom units. Approximately 209 parking spaces are proposed for the Project, with 103 spaces proposed in a surface lot and 106 in a garaged area. Sidewalks will be provided throughout the site and connect to the existing sidewalk along Clark's Road. Access for this development will be provided via a full-access driveway onto Clark's Road.

EXISTING CONDITIONS

A comprehensive field inventory was conducted to collect existing roadway geometrics, traffic volumes, operating characteristics, speed limits, and sight distances, as well as land use information. Traffic volumes were collected in July 2023 and April and May 2025 at the study area intersections. The study area that will be assessed for the Project consists of the following specific intersections through which Project-related traffic will travel:

- Route 110 at the Carriagetown Marketplace driveway
- Route 110 at Elm Street and Clark's Road
- Route 110 at the I-95 southbound ramps
- Route 110 at the I-95 northbound ramps

FUTURE CONDITIONS

Traffic volumes within the study area were projected to 2032, which reflects a seven-year planning horizon consistent with State traffic study guidelines. These conditions incorporate traffic growth due to general background traffic increases, as well as development projects currently being proposed/permitted, or under construction, which are expected to generate traffic in the future. This condition is referred to as the No-Build condition.

PROJECT-GENERATED TRAFFIC

The Project is expected to generate between 55 and 58 vehicle trips during its critical peak hours. On a daily basis, the Project is expected to generate between 654 and 678 daily trips over the course of an average weekday or Saturday.

Project-related traffic-volume increases external to the study area relative to 2032 No-Build conditions are anticipated to range from 1 to 20 vehicles or 0.2 to 0.9 percent during the peak periods.

TRAFFIC OPERATIONS ANALYSIS

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

RECOMMENDATIONS

Access to the Project site will be provided via one curb cut onto Clark's Road. The following recommendations are offered with respect to the design and operation of the Project site driveway:

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

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

Transportation Demand Management (TDM) Plan

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

- A “welcome packet” should be provided to residents detailing available public transportation services, bicycles, micro-mobility devices, walking alternatives, and available commuter options.
- In order to encourage the use of public transportation, the property management team will make public transportation schedules available, which will be posted in a centralized location for the residents.
- In order to encourage car/vanpooling, the property management team will identify car/vanpool resources that may be available to residents of the proposed Project. This information will be posted in a centralized location for the residents and visitors.
- The property management team will provide information on available pedestrian and bicycle facilities in the vicinity of the Project site. This information will be posted in a centralized location. Approximately 21 bike spaces will be provided for use at the site.

CONCLUSIONS

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

INTRODUCTION

VAI has prepared this TIA in order to identify the traffic impacts associated with the proposed residential development to be located at 29 Clark's Road in Amesbury, Massachusetts. This report identifies and analyzes existing and future traffic conditions both with and without the Project and reviews access requirements, potential off-site improvements, and safety considerations.

STUDY METHODOLOGY

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

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

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

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

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in April and May 2025. The field investigation consisted of an inventory of existing roadway geometrics, traffic volumes, and operating characteristics, as well as posted speed limits, sight distance, and land use information within the study area. The study area that will be assessed for the Project consists of the following specific intersections through which Project-related traffic will travel:

- Route 110 at the Carriagetown Marketplace driveway
- Route 110 at Elm Street and Clark’s Road
- Route 110 at the I-95 southbound ramps
- Route 110 at the I-95 northbound ramps

The study area is graphically depicted on Figure 1. The following describes the study area roadways and intersections which provide access/egress to the Project.

GEOMETRY

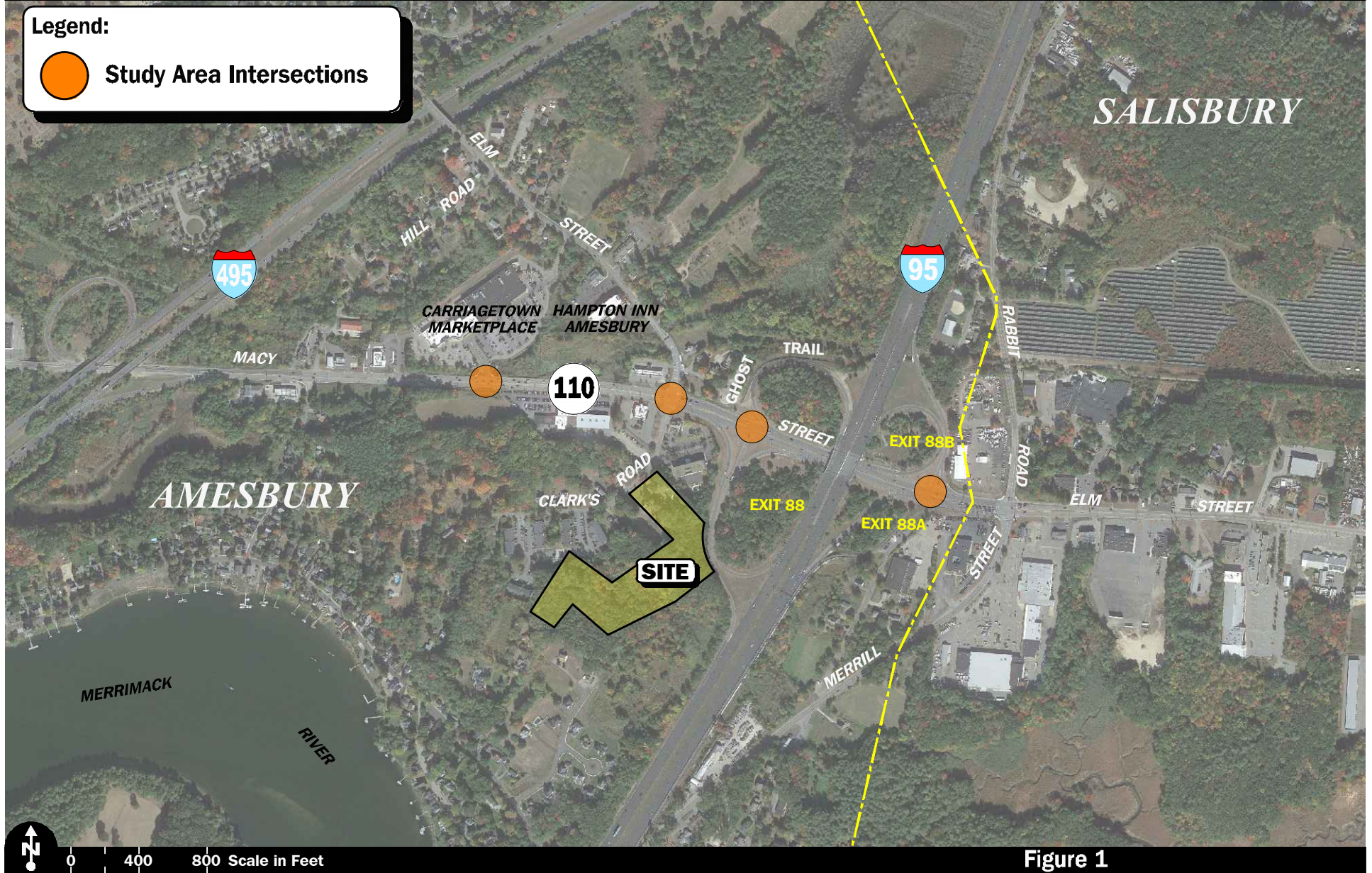
Roadways

Clark’s Road

Clark’s Road is a major collector roadway under the jurisdiction of the City of Amesbury that traverses the study area in a general southwest-northeast orientation. Within the study area, Clark’s Road generally provides one travel lane in each direction, separated by a double-yellow centerline with additional turn lanes provided at some intersections. Land use along the corridor is predominantly a mix of commercial and residential properties and open and wooded areas.

Route 110

Route 110 is an urban principal arterial roadway under the jurisdiction of the Massachusetts Department of Transportation (MassDOT) that traverses the study area in a general east-west orientation. Within the study area, Route 110 generally provides two travel lanes in each direction, separated by a raised median or double-yellow centerline. Land use along the corridor is predominantly a mix of commercial properties and open and wooded areas.



Intersections

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

EXISTING TRAFFIC VOLUMES

In order to establish existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts and manual turning movement counts (TMCs) were completed in July 2023 and April and May 2025. The ATR was conducted between April 30 and May 1, 2025. The TMCs were conducted during the weekday morning (7:00 to 9:00 AM), weekday evening (4:00 to 6:00 PM), and Saturday midday (11:00 AM to 2:00 PM) peak periods.

Traffic-Volume Adjustments

In order to develop 2025 Baseline traffic-volume conditions, MassDOT weekday seasonal factors for Urban Group 3 (other principal arterials) were reviewed.² Based on a review of this data, it was determined that traffic volumes for the months of April, May, and July are *above* average-month conditions. As such, the traffic volumes were not adjusted in order to be representative of average-month conditions. The 2023 traffic volumes were then increased by 1.5 percent per year (discussion provided in Future Conditions section) to align with 2025 traffic-volume conditions. The 2025 Baseline traffic volumes on Clark's Road are summarized in Table 1.

Table 1
2025 BASELINE ROADWAY TRAFFIC-VOLUME SUMMARY

Location/Peak-Hour	AWT ^a	VPH ^b	K Factor ^c	Directional Distribution ^d
<i>Clark's Road, south of Route 110</i>	2,644	--	--	--
Weekday Morning	--	178	6.7	62% NB
Weekday Evening	--	301	11.4	56% SB
Saturday Midday	--	258	9.8	52% NB

^aAverage weekday traffic in vehicles per day, based on ATR.

^bVehicles per hour, based on TMCs.

^cPercent of daily traffic occurring during the peak hour.

^dPercent traveling in peak direction.

As can be seen in Table 1, Clark's Road was measured to carry approximately 2,644 vehicles on an average weekday with approximately 178 vehicles per hour (vph) during the weekday morning peak hour, 301 vph during the weekday evening peak hour, and 258 vph during the Saturday midday peak hour. During the weekday morning peak hour, 62 percent of traffic is traveling northbound; during the weekday evening peak hour, 56 percent of traffic is traveling southbound; and during the Saturday midday peak hour, 52 percent of traffic is traveling northbound. The existing weekday morning, weekday evening, and Saturday midday peak-hour traffic volumes for

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



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

the study area intersections are graphically depicted on Figure 3, Figure 4, and Figure 5, respectively.

PEDESTRIAN AND BICYCLE FACILITIES

An extensive inventory of pedestrian and bicycle facilities within the study area was undertaken in April 2025. The field inventory included a review of sidewalk and pedestrian crossing locations along the study area roadways and at the study area intersections, as well as the location of bicycle facilities.

Pedestrian Facilities

Pedestrian facilities (sidewalks or shared-use paths) are provided along one or both sides of the study area roadways, with marked crosswalks provided for crossing one or more legs of the study area intersections. There is a sidewalk on the east side of Clark's Road that the Project will connect to. Pedestrian signal equipment and phasing are provided at the signalized study area intersections. The Ghost Trail and the William Lloyd Garrison Trail are situated proximate to these intersections.

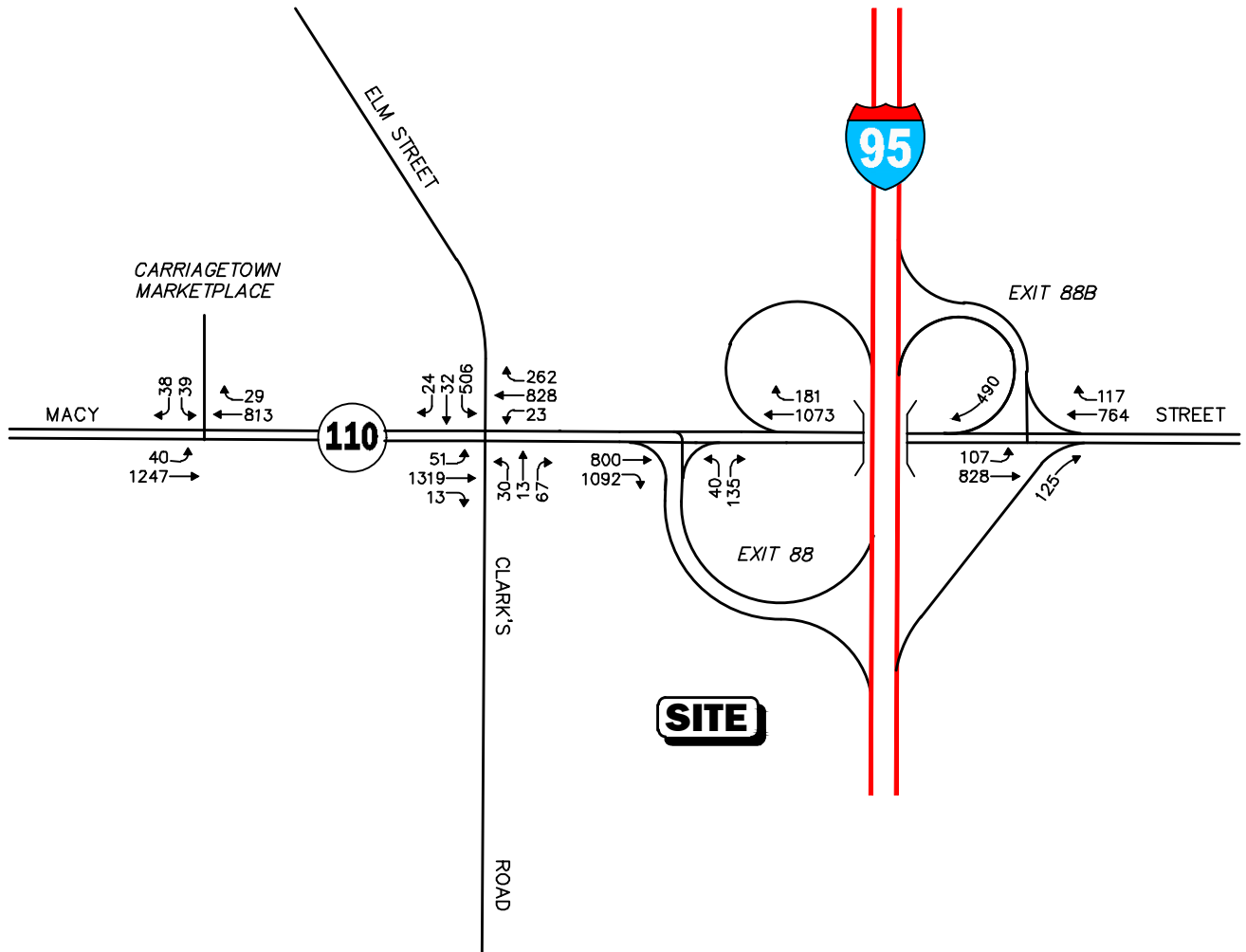
Bicycle Facilities

Within the study area, marked bicycle lanes are provided along Elm Street north of Route 110. Southeast of the Project site, the Ghost Trail traverses an east-west alignment between Elm Street in Amesbury and Lion's Park in Salisbury, a distance of approximately 2.1 miles, and provides connections to the William Lloyd Garrison Trail and the Old Eastern Marsh Trail.

PUBLIC TRANSPORTATION

Public transportation services are provided within the study area by Merrimack Valley Transit (MeVA). MeVA operates fixed-route bus service along Elm Street and Route 110 by way of bus Route 17, *Salisbury Beach via Amesbury*, and Route 19, *Amesbury/Costello*. The Route 17 bus provides service between the Washington Square Transit Center in Haverhill and Salisbury Beach and travels along Elm Street past the Project to Route 110. The closest regular stop for the Route 17 bus to the Project site is at the Elm Street/Carriagetown Marketplace driveway intersection, approximately 0.5 miles (or a 12-minute walk) from the Project site. The Route 19 bus provides service between the Nicholas J. Costello Transportation Center in Amesbury and the Newburyport Massachusetts Bay Transportation Authority (MBTA) station, and travels along Route 110 to the I-95 interchange. The closest regular stop for the Route 19 bus to the Project site is located within the Carriagetown Marketplace, approximately 0.4 miles (or a 9-minute walk) from the Project site. MeVA 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 public transportation schedules and fare information are provided in the Appendix.



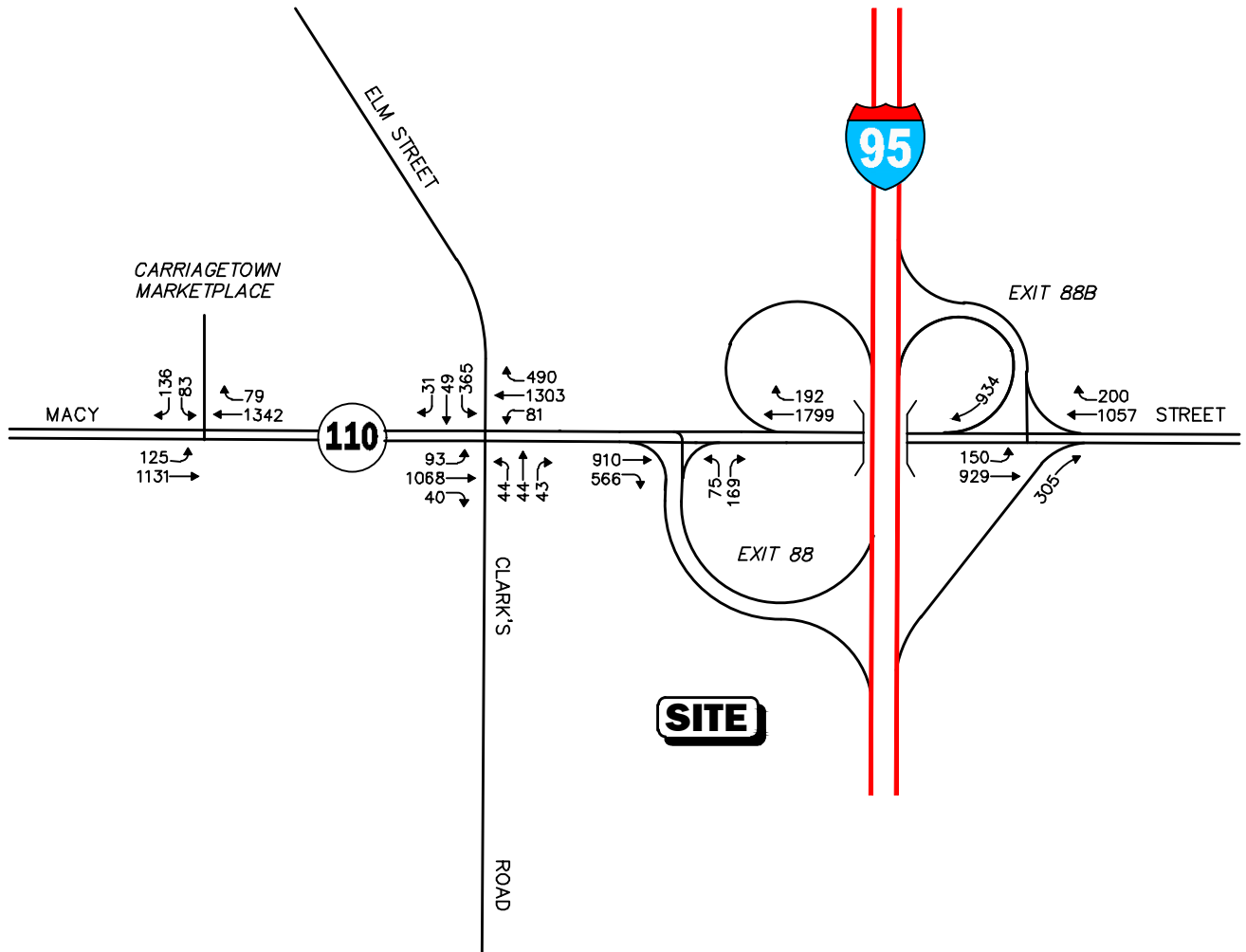
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale



Figure 3

2025 Baseline
Weekday Morning
Peak-Hour Traffic Volumes



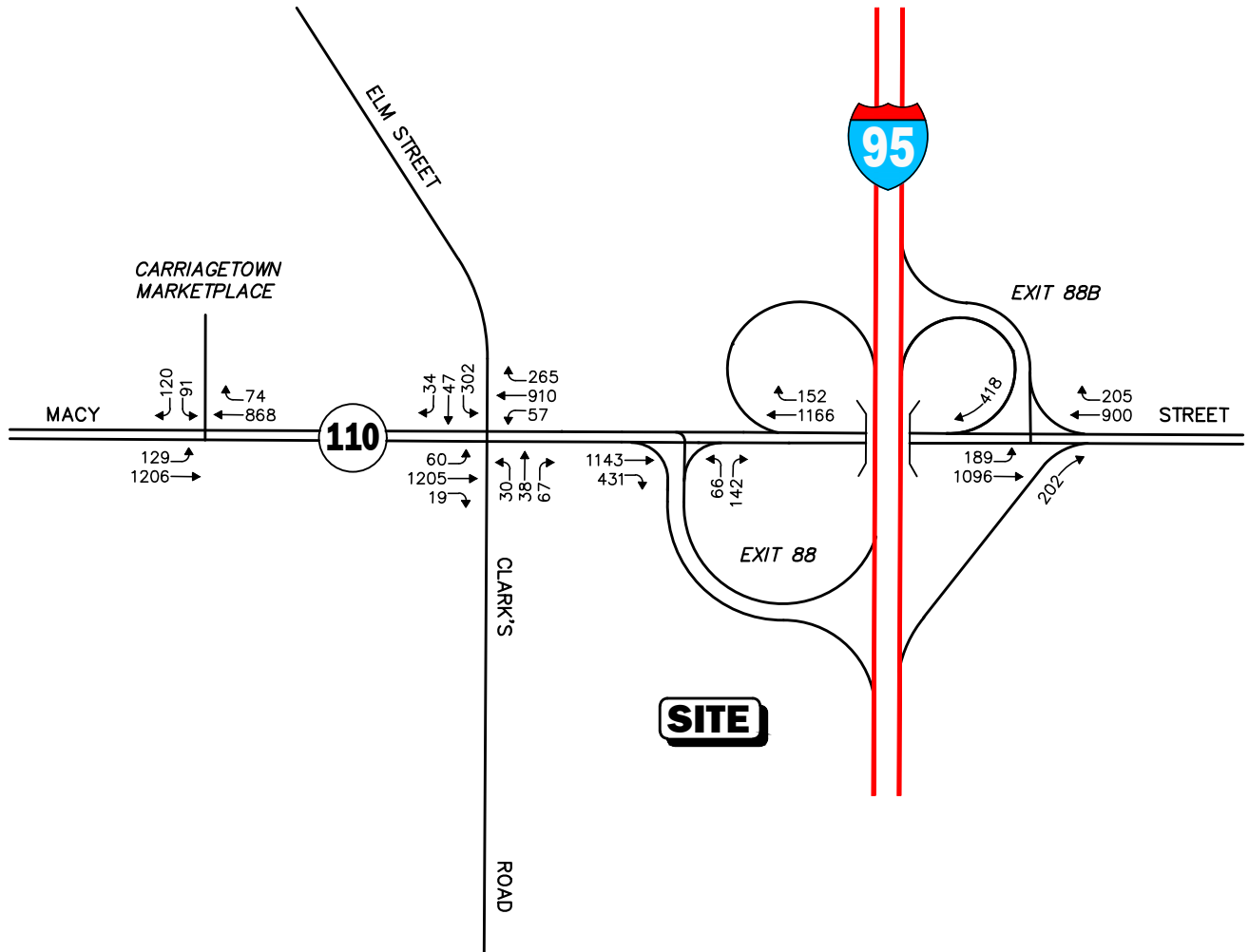
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 4



2025 Baseline
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



2025 Baseline
Saturday Midday
Peak-Hour Traffic Volumes

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Safety Management/Traffic Operations Unit and the Amesbury Police Department for the most recent five-year period available (2017 through 2021) to examine crash trends within the study area. The data is summarized in Table 2 by intersection, type, weather condition, lighting condition, pavement condition, and severity.

As can be seen in Table 2, the intersections of Route 110 at Carriagetown Marketplace, Route 110 at I-95 southbound ramps, and Route 110 at the I-95 northbound ramps experienced less than 11 crashes over the five-year review period, averaging 2.2 accidents per year or less. The intersection of Route 110 at Clark's Road and Elm Street experienced 45 accidents over the five-year review period, averaging 6.8 accidents per year.

The majority of the accidents were rear-end collisions that occurred on dry pavement, during daylight, in clear weather, and caused property damage only. The crash rates for the study area intersections were observed to be lower than the statewide and MassDOT District 4 crash rates for signalized and unsignalized intersections. No fatalities were reported over the five-year review period.

A Road Safety Audit (RSA) was recently conducted for the intersection of Route 110 at Clark's Road/Elm Street. The RSA was conducted as mitigation for the Rocky Hill residential development located on Elm Street. The crash data from this TIA is consistent with the data presented in the RSA for the period 2017-2021.

Table 2
MOTOR VEHICLE CRASH DATA SUMMARY

Scenario	Route 110 at Carriagetown Marketplace	Route 110 at Clark's Road/ Elm Street	Route 110 at I-95 SB Ramps	Route 110 at I-95 NB Ramps
<i>Year:</i>				
2017	0	10	0	6
2018	2	15	2	1
2019	0	15	2	3
2020	2	0	1	1
<u>2021</u>	<u>4</u>	<u>5</u>	<u>1</u>	<u>0</u>
Total	8	45	6	11
Average ^a	1.6	9.0	1.2	2.2
Crash Rate ^b	0.14	0.62	0.08	0.16
Significant ^c	No/No	No/No	No/No	No/No
<i>Type:</i>				
Angle	1	11	1	4
Rear-End	4	20	4	3
Head-On	0	0	1	1
Sideswipe	2	13	0	2
Fixed Object	0	1	0	0
Pedestrian/Bicyclist	0	0	0	0
Animal	1	0	0	1
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	45	6	11
<i>Weather Conditions:</i>				
Clear	6	34	5	11
Cloudy/Rain	2	10	0	0
Snow/Ice	0	1	1	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	45	6	11
<i>Lighting Conditions:</i>				
Daylight	5	37	6	5
Dawn/Dusk	0	1	0	0
Dark (lit)	3	7	0	5
Dark (unlit)	0	0	0	1
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	45	6	11
<i>Pavement Conditions:</i>				
Dry	6	37	5	11
Wet	2	7	0	0
Snow/Ice	0	1	1	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	45	6	11
<i>Severity:</i>				
Property Damage Only	8	40	4	10
Personal Injury	0	5	2	1
Fatality	0	0	0	0
<u>Unknown/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	8	45	6	11

^aAverage number of crashes over five-year period.

^bCrash rate per million entering vehicles (mev).

^cSignificant if crash rate > 0.73/0.78 for signalized intersections or > 0.57/0.57 for unsignalized intersections (MassDOT District 4/Statewide rates).

Source: Amesbury Police Department, 2017 through 2021.

VEHICLE SPEEDS

Existing vehicle speeds along Clark's Road in front of 29 Clark's Road were measured to determine the average and 85th percentile vehicle speeds. There is a 25 mph posted speed limit on Clark's Road. The results of the speed measurements are shown in Table 3.

Table 3
OBSERVED VEHICLE SPEEDS (In Miles Per Hour)

Location/Direction	Average Speed	85 th Percentile Speed ^a
<i>Clark's Road, south of Route 110:</i>		
Northbound	15	19
Southbound	17	20

^aThe 85th percentile speed is the speed at which 85 percent of the traffic is traveling at or below. It is commonly used for setting speed limits on roadways.

As can be seen from Table 3, the average speed recorded northbound on Clark's Road was 15 mph, and the 85th percentile speed recorded was 19 mph. The average speed recorded southbound was 17 mph, and the 85th percentile speed was 20 mph.

FUTURE CONDITIONS

To determine the impact of site-generated traffic volumes on the roadway network under future conditions, existing traffic volumes in the study area were projected to the year 2032. Traffic volumes on the roadway network at that time, in the absence of the Project (that is, the No-Build condition), would include existing traffic, new traffic due to general background traffic growth, and traffic related to specific development by others expected to be completed by 2032. Inclusion of these factors resulted in the development of 2032 No-Build traffic volumes. Anticipated site-generated traffic volumes were then superimposed upon these No-Build traffic-flow networks to develop the 2032 Build traffic-volume conditions.

FUTURE TRAFFIC GROWTH

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

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

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

General Background Growth

Traffic-volume data compiled by MassDOT from permanent count stations and historic traffic counts in the area were reviewed to determine general background traffic growth trends. Based on a review of this data and other area traffic studies, it was determined that traffic volumes in the area are fluctuating, with an average growth rate of 1.37 percent. Therefore, a 1.5 percent per year compounded annual background traffic growth rate was used to account for future traffic growth, including presently unforeseen development within the study area.

Specific Development by Others

The City of Amesbury and the Town of Salisbury were consulted 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 consultation, the following projects were identified for review in conjunction with this assessment:

- ***Proposed Starbucks Coffee Shop, 37 Clark's Road, Amesbury, Massachusetts.*** This project entails the construction of a 2,460± sf Starbucks coffee shop with a drive-through window to be located at 37 Clark's Road. Traffic volumes associated with this development were obtained from a traffic study prepared for the project³ and were added to the future condition traffic volumes.
- ***The Marina at Amesbury Point, 14 Merrimac Street, Amesbury, Massachusetts.*** This project entails the redevelopment of The Marina at Amesbury Point to include a new 2,265± sf marina and associated 4,663± sf restaurant. Traffic volumes associated with this development were obtained from a traffic study prepared for the project⁴ and were added to the future condition traffic volumes.
- ***Proposed Elm Street 40R Residential Development, Elm Street, Amesbury, Massachusetts.*** This project entails the construction of 115 multifamily residential units to be located off Elm Street. Traffic volumes associated with this development were estimated using trip generation statistics published by the Institute of Transportation Engineers (ITE)⁵ and were added to the future condition traffic volumes based on existing traffic patterns.
- ***Proposed Rocky Hill Residential Development, Elm Street, Amesbury, Massachusetts.*** This project entails the construction of 381 residential units to be located off Elm Street. Traffic volumes associated with this development were obtained from the traffic study prepared for this project⁶ and were added to the future condition traffic volumes based on existing traffic patterns.
- ***Barewolf Brewery, 12 Oakland Street, Amesbury, Massachusetts.*** This project entails the construction of an 8,165± sf brewery and restaurant to be located at 12 Oakland Street, northwest of the Project site. Traffic volumes associated with this project within the study area are expected to be relatively minor and would be reflected in the general background traffic growth rate (discussion follows).
- ***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 this project within the study area are expected to be minor and would be reflected in the general background traffic growth rate.

³Transportation Impact Assessment, *Proposed Starbucks Coffee Shop, 37 Clark's Road, Amesbury, Massachusetts*; VAI; September 2023.

⁴Transportation Impact Assessment, *The Marina at Amesbury Point, 14 Merrimac Street, Amesbury, Massachusetts*; VAI; July 2023.

⁵*Trip Generation*, 12th Edition; Institute of Transportation Engineers; Washington, DC; 2025.

⁶*Final Environmental Impact Report – Rocky Hill; Proposed Residential Development, Amesbury, Massachusetts*; VAI; August 15, 2025

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.

Planned Roadway Improvements

The City of Amesbury and MassDOT were contacted in order to determine if there were any planned future roadway improvement projects expected to be completed by 2032 within the study area. Based on these discussions, the following was identified:

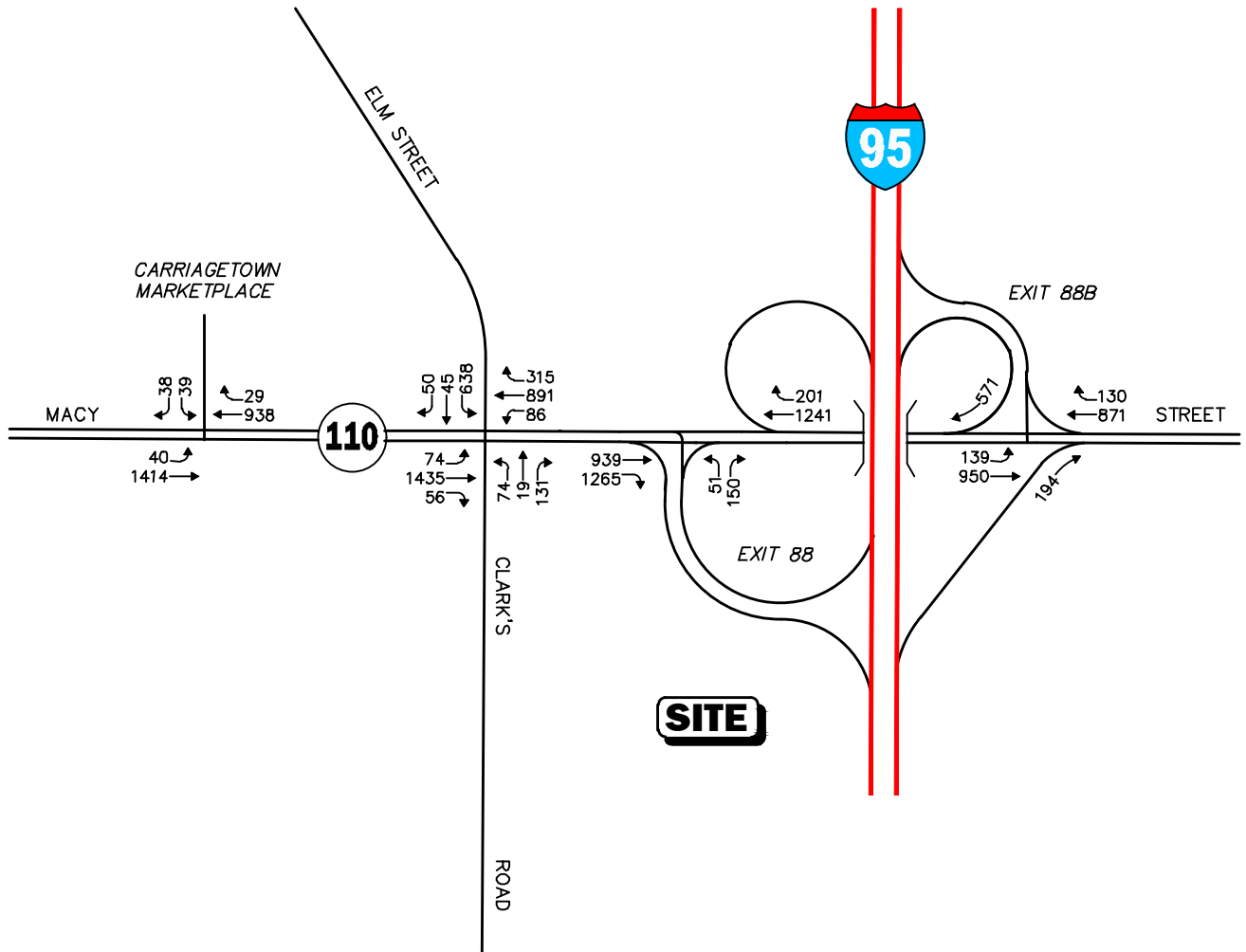
- ***Clark's Road.*** As a part of the mitigation commitment for the proposed Starbucks coffee shop to be located at 37 Clark's Road, the developer for that project has committed to widening Clark's Road to provide two travel lanes for a distance of approximately 250 feet (from the STOP-bar to the southern driveway to the Fairfield Inn Amesbury). These improvements are anticipated to be complete by 2032.
- ***Route 110 Improvements.*** The City of Amesbury is planning to make several improvements along the Route 110 corridor as part of a MassWorks project. Improvements are proposed at the intersections of Route 110 at Carriagetown Marketplace driveway, Route 110 at Elm Street/Clark's Road, Route 110 at I-95 southbound ramps, and Route 110 at Merrill Street/Rabbit Road. The improvements include, but are not limited to, widening Route 110 westbound at the Elm Street intersection to accommodate three westbound through-travel lanes, restripe Clark's Road northbound as a shared left-turn/through lane and an exclusive right-turn lane, install a fully actuated and coordinated traffic signal system at the intersection of Route 110 at the I-95 southbound off-ramps, and optimized signal timings at all four intersections.

No-Build Traffic Volumes

The 2032 No-Build peak-hour traffic-volume networks were developed by applying the 1.5 percent per year compounded annual background traffic growth rate to the 2025 Baseline peak-hour traffic volumes and adding the traffic volumes from the identified specific development projects. The resulting 2032 No-Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are shown on Figure 6, Figure 7, and Figure 8, respectively.

PROJECT-GENERATED TRAFFIC

The Project involves the construction of multi-family housing with approximately 152 units, ranging in size from studios to three-bedroom units. To develop the traffic characteristics of the development program, trip-generation statistics published by ITE for Land Use Code (LUC) 221 *Multifamily Housing (Mid-Rise)* was used. Table 4 presents the results of the trip-generation calculations for the Project. A summary of the trip generation is summarized in Table 4.



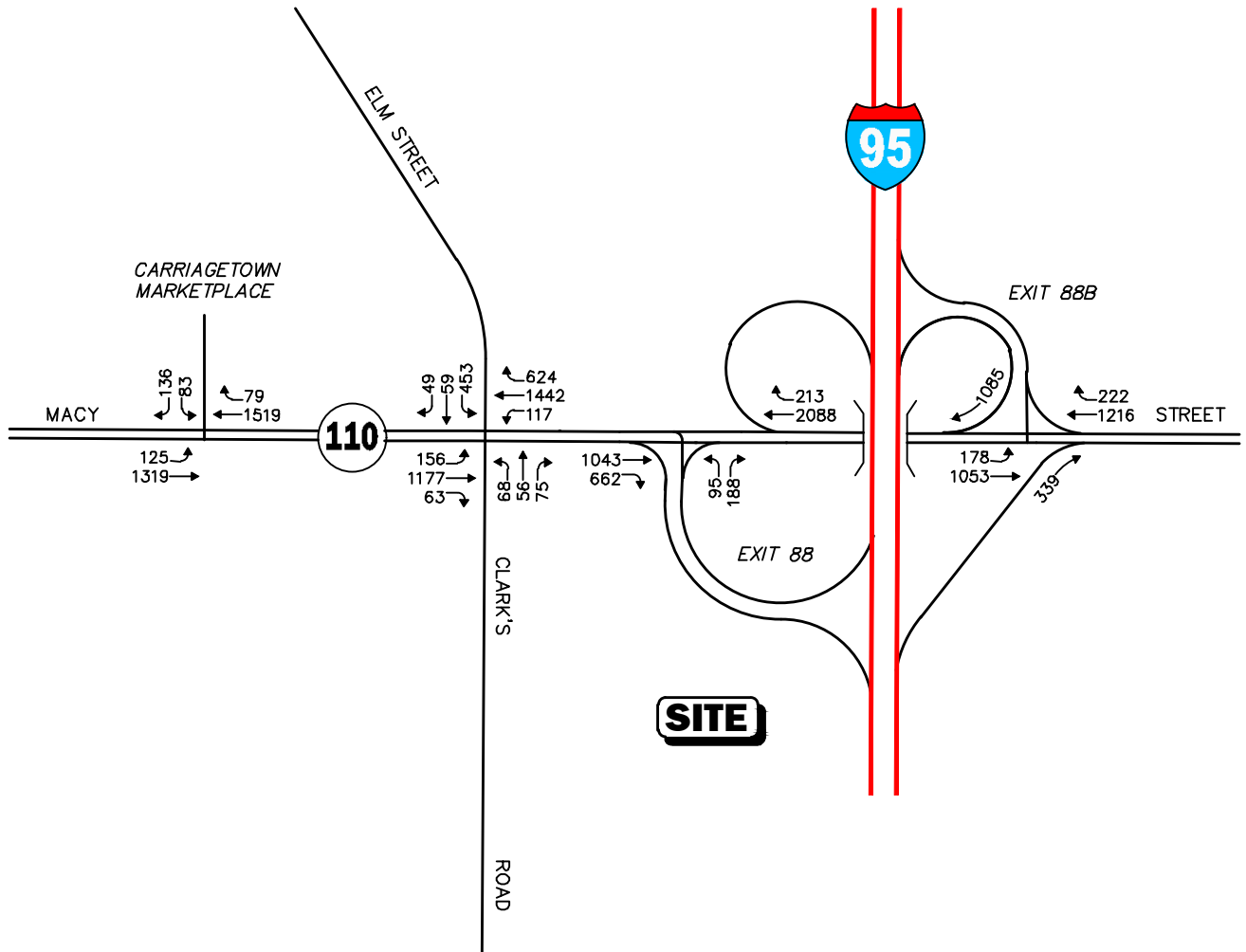
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 6



2032 No-Build
Weekday Morning
Peak-Hour Traffic Volumes



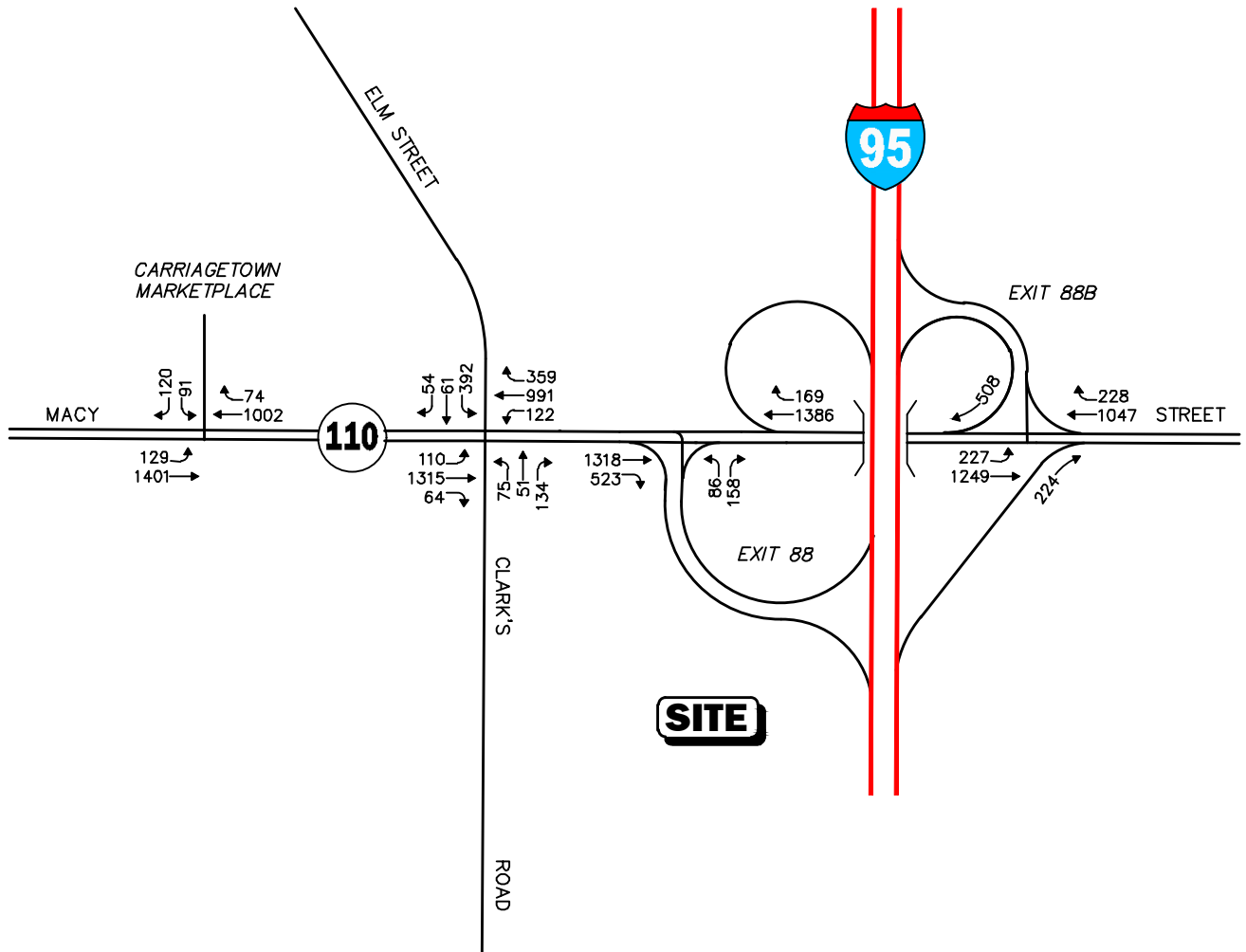
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 7



2032 No-Build
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 8



2032 No-Build
Saturday MIDDAY
Peak-Hour Traffic Volumes

Table 4
TRIP-GENERATION SUMMARY

Time Period/ Directional Distribution	Residential Trips ^a
Weekday Daily	678
<i>Weekday Morning Peak Hour:</i>	
Entering	13
<u>Exiting</u>	<u>43</u>
Total	56
<i>Weekday Evening Peak Hour:</i>	
Entering	37
<u>Exiting</u>	<u>21</u>
Total	58
Saturday Daily	654
<i>Saturday Midday Peak Hour:</i>	
Entering	28
<u>Exiting</u>	<u>27</u>
Total	55

^aBased on ITE LUC 221, *Multifamily Housing (Mid-Rise)*; 152 units.

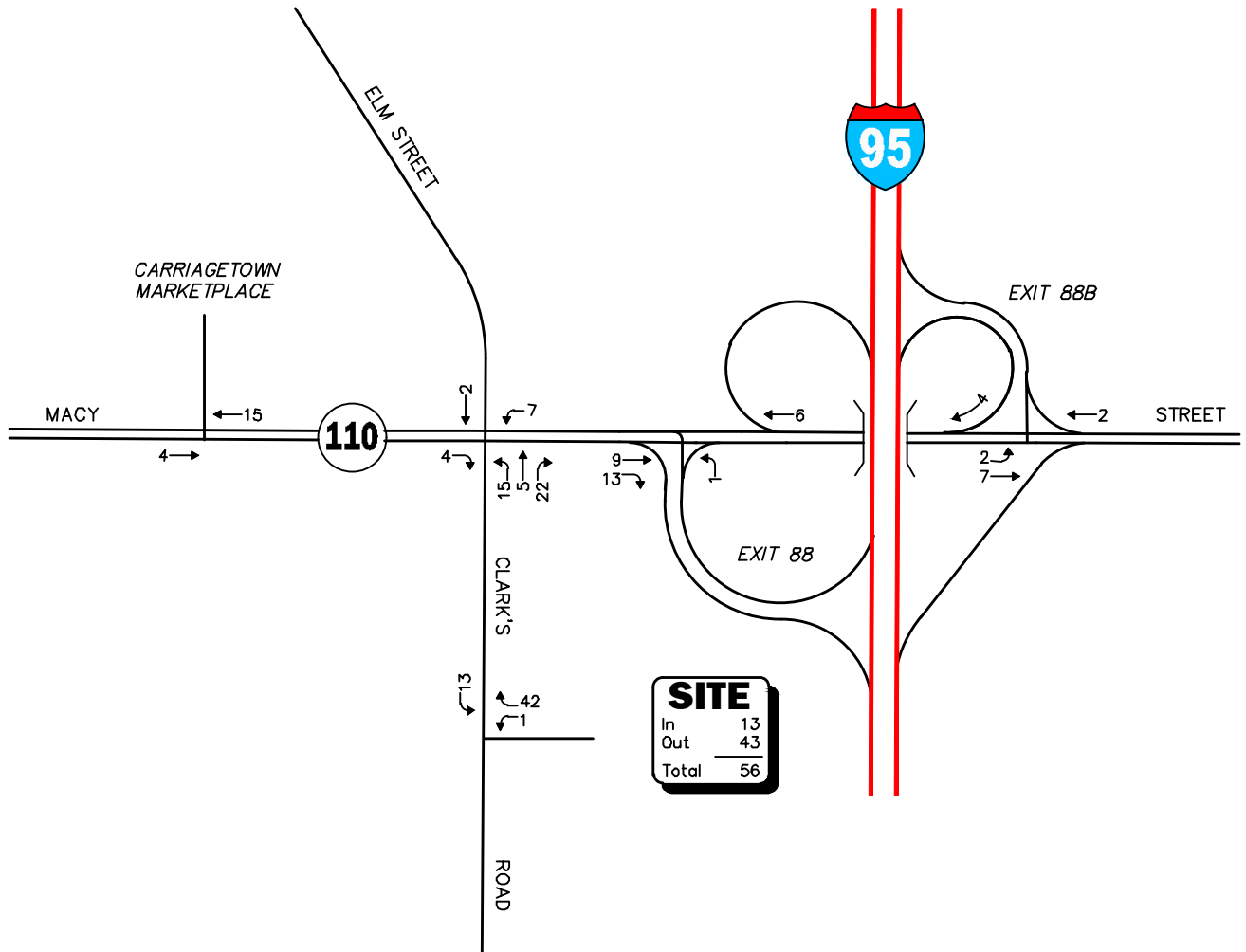
As can be seen in Table 4, the Project is expected to generate between 55 and 58 vehicle trips (two-way, total of both directions) during the critical peak hours. This equates to less than one vehicle trip per minute during these same peak hours, which is not likely to be noticed by motorists outside of the immediate vicinity of the Project. On a daily basis, the Project is expected to generate between 654 and 678 daily trips (two-way, 24-hour volume), or between 327 and 339 vehicle trips entering and exiting the site over the course of an average weekday or Saturday.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was determined based on a review of Journey-to-Work data obtained from the U.S. Census for persons residing in the City of Amesbury and then refined based on existing traffic patterns within the study area during the peak periods. The trip distribution for the Project is summarized in Table 5 and graphically depicted on Figure 9. Trips expected to be generated by the Project were assigned on the study area roadway networks as shown on Figure 10, Figure 11, and Figure 12, respectively.



Trip Distribution Map

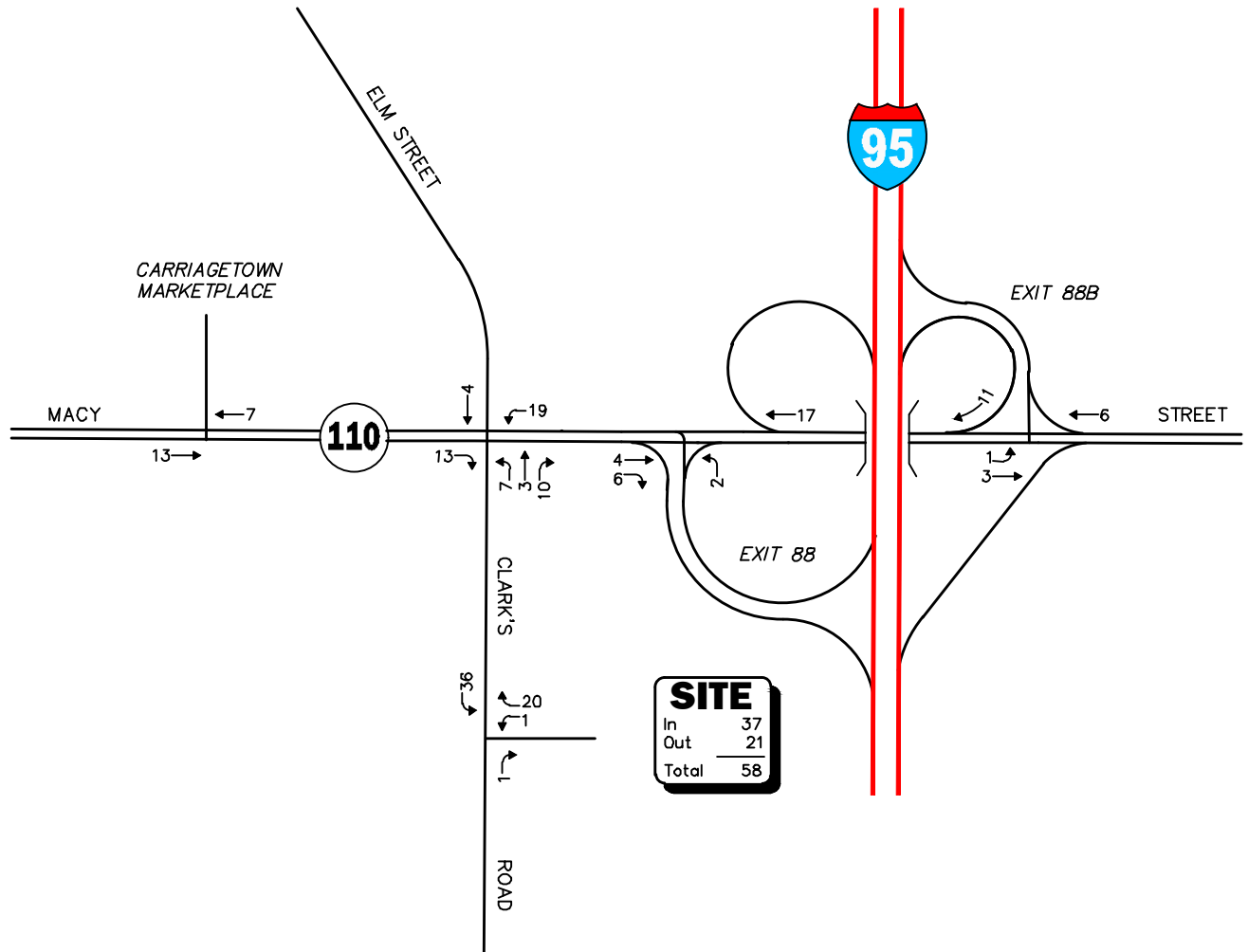


Not To Scale



Figure 10

Site Generated
Weekday Morning
Peak-Hour Traffic Volumes

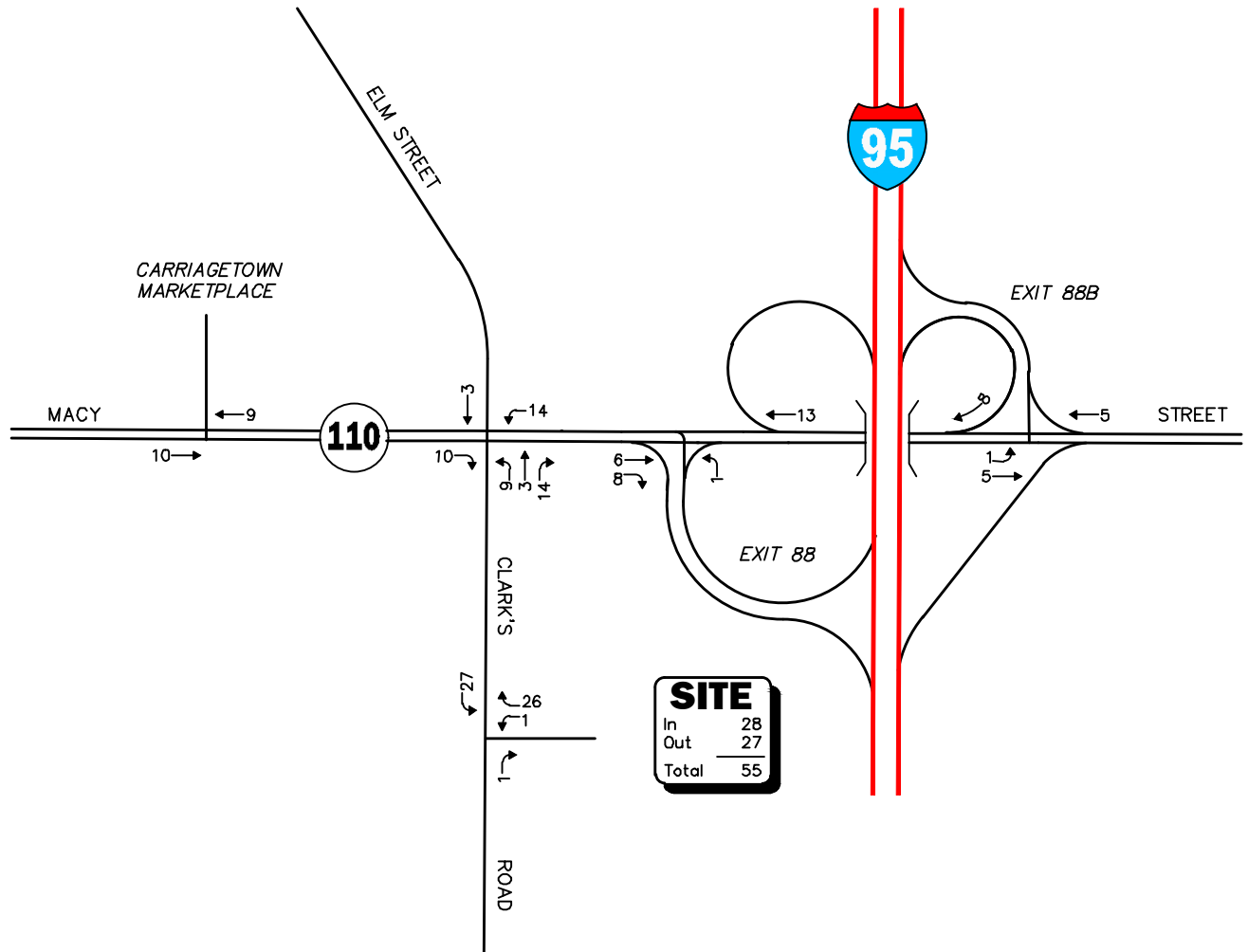


Not To Scale



Figure 11

Site Generated
Weekday Evening
Peak-Hour Traffic Volumes



Not To Scale



Figure 12

Site Generated
Saturday Midday
Peak-Hour Traffic Volumes

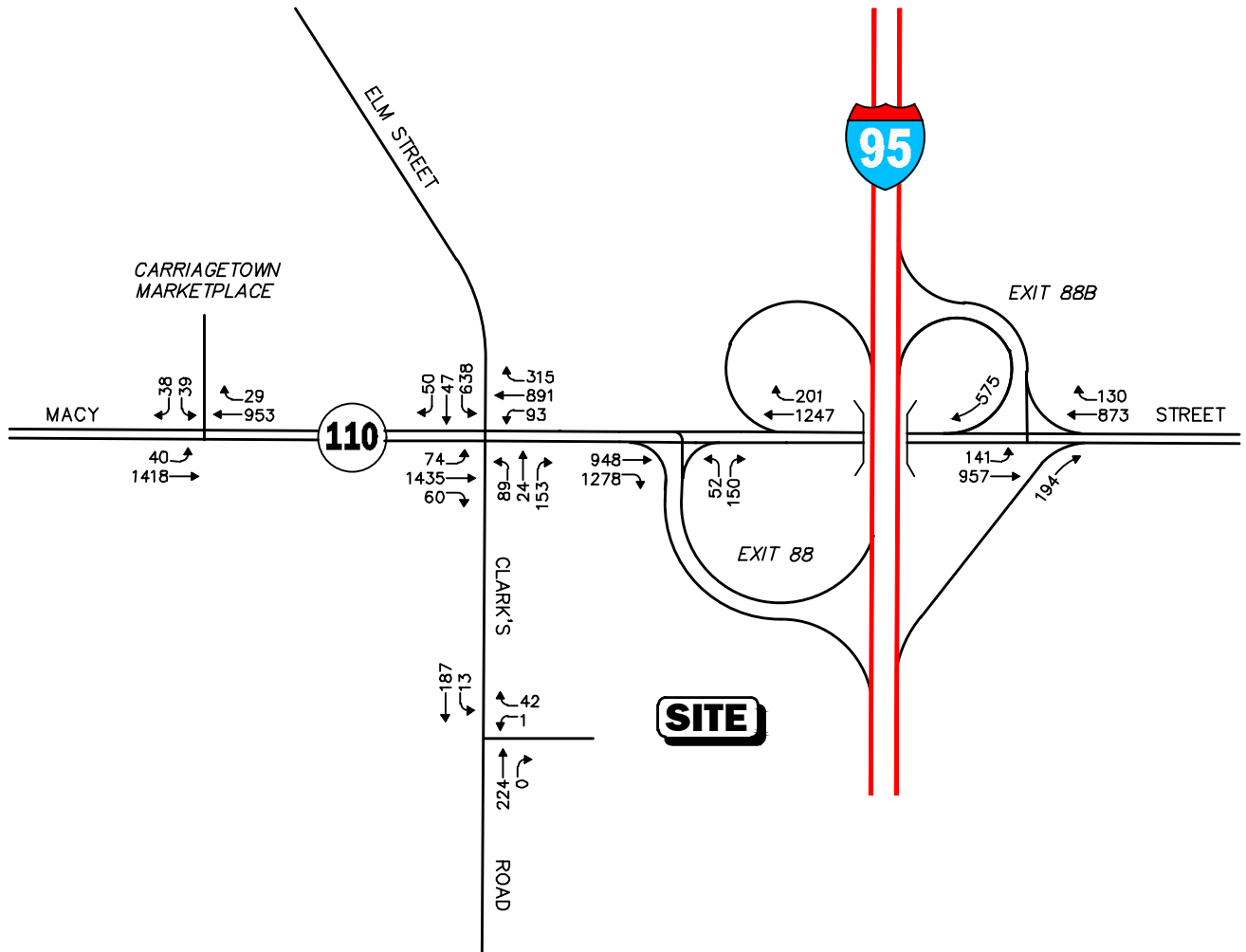
Table 5
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction (To/From)	Percent (To/From)
Route 110	East	16
Route 110	West	34
I-95	North	5
I-95	South	30
Elm Street	North	12
Clark's Road	South	<u>3</u>
TOTAL		100

FUTURE TRAFFIC VOLUMES – BUILD CONDITION

The 2032 Build condition networks consist of the 2032 No-Build traffic volumes with the existing site trips removed and the anticipated Project-generated traffic added to them. The 2032 Build weekday morning, evening, and Saturday midday peak-hour traffic-volume networks are graphically depicted on Figure 13, Figure 14, and Figure 15, respectively.

A summary of peak-hour projected traffic-volume increases external to the study area, which is the subject of this assessment, is shown in Table 6. These volumes are based on the expected increases from the Project.



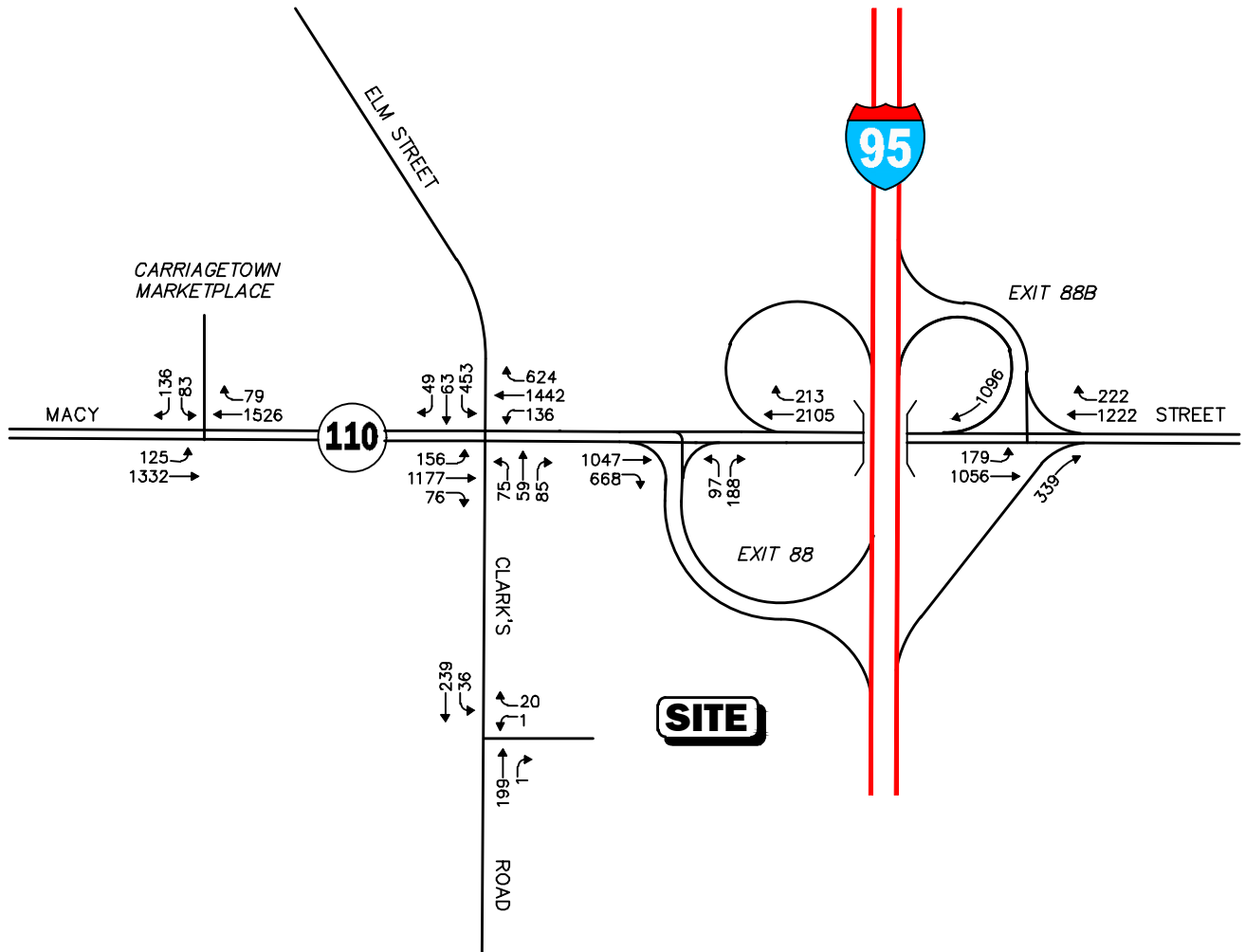
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 13



2032 Build
Weekday Morning
Peak-Hour Traffic Volumes



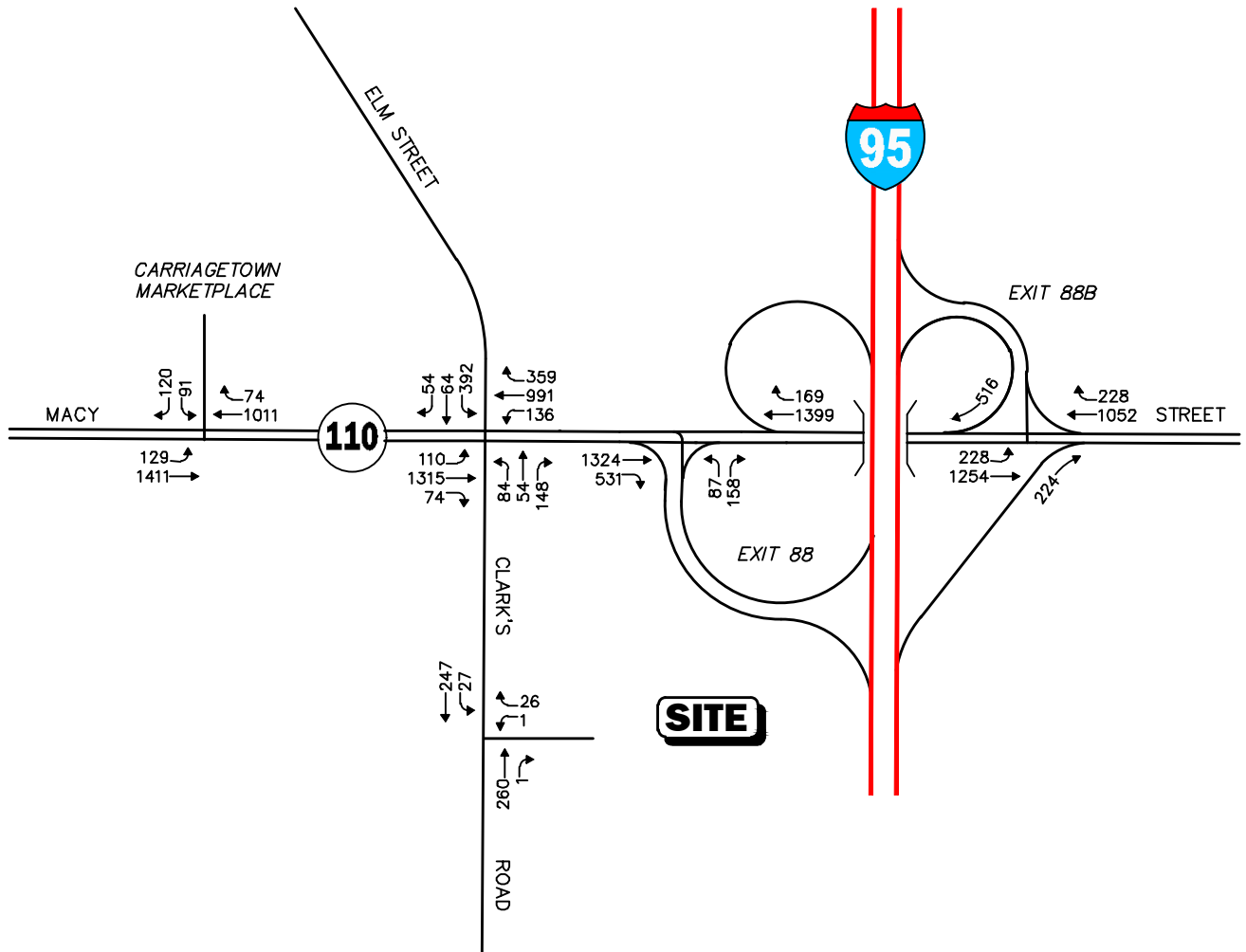
Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Not To Scale

Figure 14



2032 Build
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 15



2032 Build
Saturday Middy
Peak-Hour Traffic Volumes

Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES^a

Location/Peak Hour	2032 No-Build	2032 Build	Traffic-Volume Change Over No-Build	Percent Change Over No-Build
<i>Route 110, east of I-95 Northbound Ramps:</i>				
Weekday Morning	2,145	2,154	9	0.4
Weekday Evening	2,830	2,839	9	0.3
Saturday Midday	2,748	1,758	10	0.4
<i>Route 110, west of Carriagetown</i>				
<i>Marketplace Driveway:</i>				
Weekday Morning	2,430	2,449	19	0.8
Weekday Evening	3,099	3,119	20	0.6
Saturday Midday	2,652	2,671	19	0.7
<i>I-95 Ramps, north of Route 110:</i>				
Weekday Morning	1,041	1,047	6	0.6
Weekday Evening	1,698	1,710	12	0.7
Saturday Midday	1,132	1,141	9	0.8
<i>I-95 Ramps, south of Route 110:</i>				
Weekday Morning	1,660	1,674	14	0.8
Weekday Evening	1,284	1,292	8	0.6
Saturday Midday	991	1,000	9	0.9
<i>Elm Street, north of Route 110:</i>				
Weekday Morning	1,141	1,148	7	0.6
Weekday Evening	1,397	1,404	7	0.5
Saturday Midday	1,027	1,033	6	0.6
<i>Clark's Road, south of Site Driveway:</i>				
Weekday Morning	411	412	1	0.2
Weekday Evening	438	440	2	0.5
Saturday Midday	507	509	2	0.4

^aTwo-way traffic volume.

As shown in Table 6, Project-related traffic-volume increases external to the study area relative to 2032 No-Build conditions are anticipated to range from 1 to 20 vehicles or 0.2 to 0.9 percent during the peak periods.

PARKING GENERATION

A review of potential parking demand for the Project was conducted using industry sources. The following analysis was conducted to provide an estimate of parking demand for this Project. Parking demand was determined by using the ITE *Parking Generation* publication⁷ and LUC 221, *Multifamily Housing 2+ BR (Mid-Rise)*. Estimates of parking demand for the Project were calculated and are summarized in Table 7.

⁷*Parking Generation*, 6th Edition; Institution of Transportation Engineers; Washington, DC; October 2023.

Table 7
PROJECT PARKING DEMAND^a

Land Use	85 th percentile Parking Rate	Parking Demand (spaces)
Residential ^a	0.88 spaces/bedroom	187

^aBased on ITE LUC 221, *Multifamily Housing 2+ BR (Mid-Rise)*; 213 bedrooms.

As can be seen in Table 7, the 85th percentile ITE parking rates indicate that the site would require 187 spaces to satisfy the expected demand. The Project is proposing 209 parking spaces; therefore, the parking supply will meet the expected demand.

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the proposed location of the site driveway intersection with Clark's Road in accordance with MassDOT and American Association of State Highway and Transportation Officials (AASHTO)⁸ recommendations. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance recommended to be provided by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. The provision of SSD at all locations along each roadway, including intersection approaches, is fundamental to intersection operations. ISD is the sight distance recommended to be provided by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. While SSD is a fundamental value, ISD values that exceed SSD values are, according to AASHTO, desirable along the major road. Table 8 presents the measured SSD and ISD at the subject intersection.

⁸*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 8
SIGHT DISTANCE ANALYSIS^a

Intersection/Sight Distance Measurement	AASHTO ^b		Field
	Recommended Minimum Distances (Feet)	Desirable Distances (Feet)	Measured Distances (Feet)
<i>Clark's Road at the Site Driveway</i>			
<i>Stopping Sight Distance:</i>			
Clark's Road approaching from the north	155	--	284
Clark's Road approaching from the south	155	--	250
<i>Intersection Sight Distance:</i>			
Left turn from site driveway (looking north)	155	280	314
Left turn from site driveway (looking south)	155	280	269

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

^bBased on the posted speed limit of 25 mph.

As can be seen in Table 8, the sight distance at the intersection of the Project site driveway with Clark's Road was found to exceed the recommended values for SSD in both directions and desirable values for ISD looking north of the site driveway. Looking south of the site driveway meets the minimum recommended distance for ISD is meet.

TRAFFIC OPERATIONS ANALYSIS

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

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.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 over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections were calculated using the Percentile Delay Method implemented as a part of the Synchro™ 12 software as required by MassDOT. The Percentile Delay Method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on “percentile” delay. Level-of-service designations are based on the criterion of percentile delay per vehicle and are a measure of: i) driver discomfort; ii) motorist frustration; and iii) fuel consumption; and include a uniform delay based on percentile volumes using a Poisson arrival pattern, an initial queue move-up time, and a queue interaction delay that accounts for delays resulting from queues extending from adjacent intersections. Table 9 summarizes the relationship between level-of-service and percentile delay and uses the same numerical delay thresholds as the *Highway Capacity Manual*¹⁰ method. The tabulated percentile delay criterion may be applied in assigning level-of-service designations to individual lane groups, individual intersection approaches, or to entire intersections.

Table 9
LEVEL-OF-SERVICE CRITERIA
FOR SIGNALIZED INTERSECTIONS

Level of Service	Percentile 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.

¹⁰*Highway Capacity Manual 7th Edition*; Transportation Research Board; Washington, DC; 2022.

Unsignalized Intersections

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

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

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 7th Edition*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 7th Edition*. Table 10 summarizes the relationship between level of service and average control delay for two-way STOP-controlled and all-way STOP-controlled intersections.

Table 10
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 7th Edition*; Transportation Research Board; Washington, DC; 2022.

ANALYSIS RESULTS

Level-of-service analyses were conducted for 2025 Baseline, 2032 No-Build, and 2032 Build conditions for the study area intersections. The results of the intersection capacity analysis within the study area are described below, with a tabular summary provided in Table 11 and Table 12.

Signalized Intersections

Route 110 at Carriagetown Marketplace Driveway

Under 2025 Baseline and 2032 No-Build conditions, this intersection operates at an overall LOS B or better during the weekday morning, weekday evening, and Saturday midday peak hours. No changes to level of service occur under 2032 Build conditions due to the addition of Project traffic.

Route 110 at Elm Street/Clark's Road

Under 2025 Baseline conditions, this intersection operates at an overall LOS D during the weekday morning peak hour, LOS F during the weekday evening peak hour, and at LOS C during the Saturday midday peak hour. Under 2032 No-Build conditions, this intersection operates at an overall LOS E during the weekday morning peak hour, LOS D during the weekday evening and Saturday midday peak hours. No changes to level of service occur under 2032 Build conditions due to the addition of Project traffic.

Route 110 at I-95 Southbound Ramps

This intersection is unsignalized under 2025 Baseline conditions. Under 2032 No-Build conditions, this intersection operates at an overall LOS A during the weekday morning, weekday evening, and Saturday midday peak hours. No changes to level of service occur under 2032 Build conditions due to the addition of Project traffic.

Unsignalized Intersections

Route 110 at I-95 Southbound Ramps

Under 2025 Baseline conditions, the northbound left-turn movement operates at an LOS F during the weekday morning, weekday evening, and Saturday midday peak hours, while the northbound right-turn movement operates at LOS C or better. This intersection is signalized under 2032 No-Build and 2032 Build conditions.

Route 110 at I-95 Northbound Ramps

Under 2025 Baseline and 2032 No-Build conditions, the eastbound left-turn movement operates at a LOS B during the weekday morning, weekday evening, and Saturday midday peak hours. Under 2025 Baseline and 2032 No-Build conditions, the northbound right-turn movement operates at an LOS E or better during the weekday morning, weekday evening, and Saturday midday peak hours, while the southbound right-turn movement operates at LOS F. No changes to critical movement level of service occur under 2032 Build conditions due to the addition of Project traffic.

Table 11
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak Hour/Movement	2025 Baseline				2032 No-Build				2032 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th
Route 110 at Carriagetown Marketplace Driveway:												
<i>Weekday Morning:</i>												
Route 110 EB LT	0.26	44.5	D	27/59	0.32	63.9	E	36/75	0.32	63.9	E	36/75
Route 110 EB TH	0.45	2.5	A	97/151	0.53	7.2	A	121/590	0.53	7.2	A	121/593
Route 110 WB TH/RT	0.34	1.2	A	2/62	0.41	12.1	B	232/464	0.41	13.7	B	250/500
Carriagetown Marketplace Driveway SB LT	0.29	46.3	D	29/59	0.33	65.8	E	37/76	0.33	65.8	E	37/76
Carriagetown Marketplace Driveway SB RT	0.14	9.6	A	0/23	0.14	13.3	B	0/33	0.14	13.3	B	0/33
Overall	--	3.7	A	--	--	11.0	B	--	--	11.6	B	--
<i>Weekday Evening:</i>												
Route 110 EB LT	0.56	50.5	D	80/206	0.64	71.2	E	117/258	0.64	71.2	E	117/258
Route 110 EB TH	0.46	7.0	A	105/340	0.50	6.7	A	152/453	0.51	6.7	A	155/460
Route 110 WB TH/RT	0.73	14.2	B	55/222	0.77	20.2	C	303/376	0.77	20.8	C	306/397
Carriagetown Marketplace Driveway SB LT	0.50	52.3	D	58/128	0.56	74.0	E	79/192	0.56	74.0	E	79/192
Carriagetown Marketplace Driveway SB RT	0.28	6.5	A	0/47	0.30	8.5	A	0/62	0.30	8.5	A	0/62
Overall	--	13.7	B	--	--	17.6	B	--	--	17.9	B	--
<i>Saturday Midday:</i>												
Route 110 EB LT	0.55	45.9	D	89/141	0.61	63.2	E	115/178	0.61	63.2	E	115/178
Route 110 EB TH	0.46	3.9	A	115/181	0.51	4.0	A	151/234	0.51	4.1	A	153/238
Route 110 WB TH/RT	0.48	7.2	A	13/237	0.50	14.4	B	164/201	0.50	15.3	B	173/221
Carriagetown Marketplace Driveway SB LT	0.48	47.7	D	63/108	0.54	65.2	E	81/137	0.54	65.2	E	81/137
Carriagetown Marketplace Driveway SB RT	0.24	4.6	A	0/33	0.25	6.1	A	0/44	0.25	6.1	A	0/44
Overall	--	9.0	A	--	--	12.8	B	--	--	13.1	B	--

See notes at end of table.

Table 11 (Continued)
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak Hour/Movement	2025 Baseline				2032 No-Build				2032 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th
Route 110 at Clark's Road/Elm Street:												
<i>Weekday Morning:</i>												
Route 110 EB LT	0.31	53.8	D	41/76	0.47	71.2	E	71/133	0.47	71.8	E	71/134
Route 110 EB TH/RT	1.08	76.7	E	492/888	1.08	81.7	F	892/1083	1.13	100.5	F	933/1086
Route 110 WB LT	0.17	43.8	D	16/42	0.47	61.5	E	80/141	0.50	62.0	E	87/152
Route 110 WB TH	0.77	37.0	D	291/490	0.43	30.7	C	249/307	0.44	32.1	C	256/315
Route 110 WB RT	0.26	2.1	A	7/42	0.31	2.1	A	0/39	0.31	2.3	A	0/44
Clark's Road NB LT	0.24	45.4	D	22/50	0.56	68.8	E	85/141	0.62	68.9	E	104/164
Clark's Road NB TH/RT	0.44	20.0	B	9/50	0.52	15.4	B	0/67	0.55	15.2	B	0/74
Elm Street SB LT	0.47	27.6	C	142/190	1.05	101.9	F	344/469	1.05	101.9	F	344/469
Elm Street SB TH/RT	0.10	15.5	B	15/44	0.30	32.1	C	50/107	0.31	33.4	C	53/111
Overall	--	49.2	D	--	--	62.1	E	--	--	69.5	E	--
<i>Weekday Evening:</i>												
Route 110 EB LT	0.43	55.9	E	67/124	0.65	71.3	E	127/229	0.65	70.8	E	125/225
Route 110 EB TH/RT	1.00	58.6	E	226/803	0.87	38.0	D	442/845	0.91	42.7	D	449/860
Route 110 WB LT	0.41	45.3	D	54/100	0.56	69.9	E	111/156	0.64	70.3	E	129/181
Route 110 WB TH	1.30	173.8	F	595/988	0.74	35.2	D	445/565	0.75	36.2	D	449/612
Route 110 WB RT	0.54	9.3	A	58/256	0.58	3.8	A	49/50	0.59	4.0	A	42/58
Clark's Road NB LT	0.30	44.5	D	33/60	0.63	70.9	E	119/183	0.65	70.9	E	128/194
Clark's Road NB TH/RT	0.50	32.3	C	38/73	0.26	1.9	A	0/0	0.28	2.0	A	0/0
Elm Street SB LT	0.52	37.8	D	114/236	0.84	69.6	E	227/310	0.84	69.6	E	227/310
Elm Street SB TH/RT	0.21	26.1	C	32/86	0.36	43.0	D	73/135	0.38	44.6	D	78/143
Overall	--	88.7	F	--	--	38.0	D	--	--	39.8	D	--
<i>Saturday MIDDAY:</i>												
Route 110 EB LT	0.34	49.0	D	41/79	0.55	56.9	E	99/137	0.55	56.9	E	99/139
Route 110 EB TH/RT	0.89	33.8	C	271/931	0.94	45.3	D	644/885	0.99	54.4	D	713/896
Route 110 WB LT	0.32	44.6	D	37/75	0.56	58.0	E	106/175	0.58	57.8	E	117/195
Route 110 WB TH	0.64	28.7	C	242/651	0.46	28.1	C	250/313	0.46	28.7	C	252/318
Route 110 WB RT	0.28	3.2	A	9/46	0.35	5.4	A	0/142	0.35	5.6	A	0/142
Clark's Road NB LT	0.19	42.8	D	19/49	0.61	65.1	E	111/172	0.64	65.0	E	122/185
Clark's Road NB TH/RT	0.50	25.7	C	25/75	0.47	13.2	B	0/63	0.48	12.7	B	0/66
Elm Street SB LT	0.58	42.8	D	96/147	0.89	76.9	E	185/278	0.89	76.9	F	185/278
Elm Street SB TH/RT	0.28	27.1	C	30/78	0.48	46.0	D	75/141	0.50	47.8	D	80/147
Overall	--	30.6	C	--	--	40.5	D	--	--	44.1	D	--

See notes at end of table.

Table 11 (Continued)
SIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak Hour/Movement	2025 Baseline				2032 No-Build				2032 Build			
	V/C ^a	Delay ^b	LOS ^c	Queue ^d Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th	V/C	Delay	LOS	Queue Avg/95 th
Route 110 at I-95 Southbound Off-Ramps												
<i>Weekday Morning:</i>												
Route 110 EB TH					0.33	4.7	A	137/160	0.33	4.9	A	152/154
Route 110 EB RT					0.77	8.9	A	0/0	0.77	9.9	A	0/0
Route 110 WB TH					0.46	2.7	A	110/164	0.46	2.7	A	112/168
Route 110 WB RT					0.15	0.2	A	0/0	0.15	0.2	A	0/0
I-95 Southbound Off-Ramp NB LT					0.33	63.0	E	46/89	0.34	63.2	E	48/92
I-95 Southbound Off-Ramp NB RT					0.09	0.1	A	0/0	0.09	0.1	A	0/0
Overall					--	5.8	A	--	--	6.2	A	--
<i>Weekday Evening:</i>												
Route 110 EB TH					0.38	1.8	A	30/60	0.38	1.6	A	12/24
Route 110 EB RT					0.40	0.3	A	0/0	0.40	0.3	A	0/0
Route 110 WB TH					0.78	8.6	A	402/606	0.79	9.0	A	415/624
Route 110 WB RT					0.16	0.2	A	0/0	0.16	0.2	A	0/0
I-95 Southbound Off-Ramp NB LT					0.50	66.8	E	91/149	0.50	66.9	E	93/150
I-95 Southbound Off-Ramp NB RT					0.11	0.1	A	0/0	0.11	0.1	A	0/0
Overall					--	6.2	A	--	--	6.3	A	--
<i>Saturday Midday:</i>												
Route 110 EB TH					0.48	8.8	A	267/326	0.48	9.3	A	351/702
Route 110 EB RT					0.31	0.2	A	0/0	0.32	0.2	A	0/0
Route 110 WB TH					0.52	4.1	A	152/230	0.53	4.2	A	156/235
Route 110 WB RT					0.12	0.2	A	0/0	0.12	0.2	A	0/0
I-95 Southbound Off-Ramp NB LT					0.45	61.2	E	76/129	0.46	61.2	E	78/131
I-95 Southbound Off-Ramp NB RT					0.09	0.1	A	0/0	0.09	0.1	A	0/0
Overall					--	6.2	A	--	--	6.4	A	--

^aVolume to capacity ratio.

^bAverage control delay per vehicle (in seconds).

^cLevel of service.

^dQueue length in feet.

Table 12
UNSIGNALIZED INTERSECTION CAPACITY ANALYSIS SUMMARY

Unsignalized Intersection/ Critical Movement/Peak Hour	2025 Existing				2032 No-Build				2032 Build				
	Demand ^a	Delay ^b	LOS ^c	Queue ^d	Demand	Delay	LOS	Queue	Demand	Delay	LOS	Queue	
Route 110 at I-95 Southbound Off-Ramps													
<i>Weekday Morning:</i>													
I-95 Southbound Off-Ramp NB LT	40	54.5	F	48	This intersection is signalized under 2032 No-Build and Build conditions.								
I-95 Southbound Off-Ramp NB RT	135	14.2	B	35									
<i>Weekday Evening:</i>													
I-95 Southbound Off-Ramp NB LT	75	380.7	F	185									
I-95 Southbound Off-Ramp NB RT	169	15.8	C	40									
<i>Saturday Midday:</i>													
I-95 Southbound Off-Ramp NB LT	66	289.4	F	153									
I-95 Southbound Off-Ramp NB RT	142	18.1	C	43									
Route 110 at I-95 Northbound Ramps													
<i>Weekday Morning:</i>													
Route 110 EB LT	107	10.4	B	13	139	11.3	B	20	141	11.4	B	20	
I-95 Northbound Off-Ramp NB RT	125	14.3	B	33	194	17.2	C	50	194	17.3	C	53	
I-95 Northbound Off-Ramp SB RT	409	67.4	F	375	571	126.8	F	563	575	130.7	F	573	
<i>Weekday Evening:</i>													
Route 110 EB LT	150	12.7	B	25	178	15.8	C	43	179	16.0	C	43	
I-95 Northbound Off-Ramp NB RT	305	29.9	D	158	339	36.2	E	180	339	36.5	E	180	
I-95 Northbound Off-Ramp SB RT	934	541.6	F	1843	1085	887.4	F	2530	1096	907.3	F	2573	
<i>Saturday Midday:</i>													
Route 110 EB LT	189	13.0	B	35	227	14.6	B	48	228	14.7	B	48	
I-95 Northbound Off-Ramp NB RT	202	23.6	C	85	224	27.5	D	100	224	27.7	D	100	
I-95 Northbound Off-Ramp SB RT	418	50.3	F	263	508	131.5	F	520	516	140.5	F	545	

^aDemand in vehicles per hour.

^bDelay in seconds per vehicle.

^cLevel of service.

^d95th percentile queue length (feet).

RECOMMENDATIONS AND CONCLUSIONS

VAI has prepared this TIA to identify traffic impacts associated with a proposed residential development to be located at 29 Clark's Road in Amesbury, Massachusetts. This study was prepared in accordance with MassDOT Guidelines for TIAs and was conducted pursuant to the standards of the traffic engineering and transportation planning professions for the preparation of such reports. Based on the results of this study, the following can be concluded:

- The Project is expected to generate between 55 and 58 vehicle trips during its critical peak hours. On a daily basis, the Project is expected to generate between 654 and 678 daily trips over the course of an average weekday or Saturday.
- The sight distance at the intersection of the Project site driveway with Clark's Road was found to exceed the recommended values for SSD in both directions and desirable values for ISD looking north of the site driveway. Looking south of the site driveway meets the minimum recommended distance for ISD is meet.
- The analysis has indicated that the Project will generally result in minimal impact on motorist delays and vehicle queue lengths at the study intersections.

RECOMMENDATIONS

A transportation improvement program has been developed to provide efficient access to the Project. The following improvements have been recommended as a part of this evaluation.

Project Access

Access to the Project site will be provided via the one curb cut onto Clark's Road. The following recommendations are offered with respect to the design and operation of the Project site driveway:

- The Project site driveway should be placed under STOP-sign control, with a painted STOP-bar included.
- All signs and other pavement markings to be installed within the Project site shall conform to the applicable standards of the current MUTCD.
- Signs and landscaping adjacent to the Project site driveway should be designed and

maintained to ensure they do not restrict lines of sight.

- Snow windrows within sight triangle areas of the Project site driveway should be promptly removed if they impede sightlines.

Transportation Demand Management (TDM) Plan

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

- A “welcome packet” should be provided to residents detailing available public transportation services, bicycles, micro-mobility devices, walking alternatives, and available commuter options.
- In order to encourage the use of public transportation, the property management team will make public transportation schedules available, which will be posted in a centralized location for the residents.
- In order to encourage car/vanpooling, the property management team will identify car/vanpool resources that may be available to residents of the proposed Project. This information will be posted in a centralized location for the residents and visitors.
- The property management team will provide information on available pedestrian and bicycle facilities in the vicinity of the Project site. This information will be posted in a centralized location. Approximately 21 bike spaces will be provided for use at the site.

CONCLUSIONS

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

APPENDIX

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

TRAFFIC COUNT DATA

Accurate Counts
978-664-2565

Site Code: 10269003

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

4/30/2025	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2		21		1		20		
12:15		0		23		0		18		
12:30		2		20		3		19		
12:45		0	4	18		0	4	18	8	157
1:00		1		20		0		25		
1:15		0		23		0		16		
1:30		1		25		0		17		
1:45		1	3	16		1	1	21	4	163
2:00		1		29		0		28		
2:15		1		21		0		23		
2:30		0		28		0		21		
2:45		0	2	24		0	0	25	2	199
3:00		0		22		0		30		
3:15		0		26		0		25		
3:30		0		27		0		25		
3:45		0	0	28		1	1	33	1	216
4:00		1		28		3		27		
4:15		0		25		2		19		
4:30		0		30		3		25		
4:45		2	3	54		6	14	27	17	235
5:00		1		32		1		34		
5:15		2		41		8		33		
5:30		3		23		5		31		
5:45		2	8	28		10	24	27	32	249
6:00		6		29		10		26		
6:15		10		27		14		29		
6:30		10		15		20		31		
6:45		10	36	23		15	59	21	95	201
7:00		12		26		27		24		
7:15		16		14		31		19		
7:30		11		13		31		15		
7:45		18	57	15		27	116	5	173	131
8:00		9		15		28		8		
8:15		22		22		24		7		
8:30		14		18		28		2		
8:45		13	58	12		19	99	5	157	89
9:00		14		6		18		14		
9:15		13		15		18		3		
9:30		16		6		15		1		
9:45		15	58	5		30	81	1	139	51
10:00		21		3		15		3		
10:15		11		4		18		4		
10:30		20		2		12		1		
10:45		25	77	3		20	65	0	142	20
11:00		22		4		21		1		
11:15		21		5		17		0		
11:30		21		1		22		0		
11:45		22	86	1		23	83	0	169	13
Total	392	916			547	808			939	1724
Percent	30.0%	70.0%			40.4%	59.6%			35.3%	64.7%

Accurate Counts
978-664-2565

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

Site Code: 10269003

5/1/2025		SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	
12:00	0	23			2	28					
12:15	0	20			1	23					
12:30	1	20			3	20					
12:45	0	21	1	84	0	21	6	92	7	176	
1:00	0	28			0	25					
1:15	0	20			0	16					
1:30	0	23			0	24					
1:45	3	19	3	90	0	37	0	102	3	192	
2:00	0	16			0	18					
2:15	1	31			3	19					
2:30	2	19			0	28					
2:45	0	24	3	90	0	21	3	86	6	176	
3:00	0	23			0	19					
3:15	0	27			1	25					
3:30	0	18			1	29					
3:45	0	29	0	97	3	30	5	103	5	200	
4:00	0	27			2	30					
4:15	1	24			3	28					
4:30	0	23			1	28					
4:45	1	25	2	99	6	38	12	124	14	223	
5:00	1	36			3	42					
5:15	3	30			7	43					
5:30	3	25			13	24					
5:45	2	21	9	112	11	19	34	128	43	240	
6:00	6	24			13	23					
6:15	6	28			14	18					
6:30	5	18			19	16					
6:45	22	22	39	92	19	17	65	74	104	166	
7:00	10	20			27	15					
7:15	14	14			30	10					
7:30	12	13			21	9					
7:45	21	14	57	61	28	9	106	43	163	104	
8:00	10	12			27	12					
8:15	20	24			22	12					
8:30	12	15			20	6					
8:45	28	11	70	62	19	7	88	37	158	99	
9:00	17	18			23	4					
9:15	13	11			17	7					
9:30	21	12			24	3					
9:45	17	6	68	47	22	5	86	19	154	66	
10:00	18	6			19	3					
10:15	19	8			11	2					
10:30	19	6			15	7					
10:45	14	5	70	25	19	0	64	12	134	37	
11:00	21	3			13	2					
11:15	14	7			23	3					
11:30	11	0			23	0					
11:45	14	1	60	11	19	1	78	6	138	17	
Total	382	870			547	826			929	1696	
Percent	30.5%	69.5%			39.8%	60.2%			35.4%	64.6%	
Grand Total	774	1786			1094	1634			1868	3420	
Percent	30.2%	69.8%			40.1%	59.9%			35.3%	64.7%	

ADT

ADT: 2,644

AADT: 2,644

Accurate Counts
978-664-2565

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

Site Code: 10269003

4/28/2025	Monday		Tuesday		Wednesday		Thursday		Friday		Saturday		Sunday		Week Average	
Time	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,	SB,	NB,
12:00 AM	*	*	*	*	4	4	1	6	*	*	*	*	*	*	2	5
1:00	*	*	*	*	3	1	3	0	*	*	*	*	*	*	3	0
2:00	*	*	*	*	2	0	3	3	*	*	*	*	*	*	2	2
3:00	*	*	*	*	0	1	0	5	*	*	*	*	*	*	0	3
4:00	*	*	*	*	3	14	2	12	*	*	*	*	*	*	2	13
5:00	*	*	*	*	8	24	9	34	*	*	*	*	*	*	8	29
6:00	*	*	*	*	36	59	39	65	*	*	*	*	*	*	38	62
7:00	*	*	*	*	57	116	57	106	*	*	*	*	*	*	57	111
8:00	*	*	*	*	58	99	70	88	*	*	*	*	*	*	64	94
9:00	*	*	*	*	58	81	68	86	*	*	*	*	*	*	63	84
10:00	*	*	*	*	77	65	70	64	*	*	*	*	*	*	74	64
11:00	*	*	*	*	86	83	60	78	*	*	*	*	*	*	73	80
12:00 PM	*	*	*	*	82	75	84	92	*	*	*	*	*	*	83	84
1:00	*	*	*	*	84	79	90	102	*	*	*	*	*	*	87	90
2:00	*	*	*	*	102	97	90	86	*	*	*	*	*	*	96	92
3:00	*	*	*	*	103	113	97	103	*	*	*	*	*	*	100	108
4:00	*	*	*	*	137	98	99	124	*	*	*	*	*	*	118	111
5:00	*	*	*	*	124	125	112	128	*	*	*	*	*	*	118	126
6:00	*	*	*	*	94	107	92	74	*	*	*	*	*	*	93	90
7:00	*	*	*	*	68	63	61	43	*	*	*	*	*	*	64	53
8:00	*	*	*	*	67	22	62	37	*	*	*	*	*	*	64	30
9:00	*	*	*	*	32	19	47	19	*	*	*	*	*	*	40	19
10:00	*	*	*	*	12	8	25	12	*	*	*	*	*	*	18	10
11:00	*	*	*	*	11	2	11	6	*	*	*	*	*	*	11	4
Total	0	0	0	0	1308	1355	1252	1373	0	0	0	0	0	0	1278	1364
Day	0		0		2663		2625		0		0		0		2642	
AM Peak					11:00	7:00	8:00	7:00							10:00	7:00
Volume					86	116	70	106							74	111
PM Peak					4:00	5:00	5:00	5:00							4:00	5:00
Volume					137	125	112	128							118	126
Comb Total	0		0		2663		2625		0		0		0		2642	
ADT	ADT: 2,644		AADT: 2,644													

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

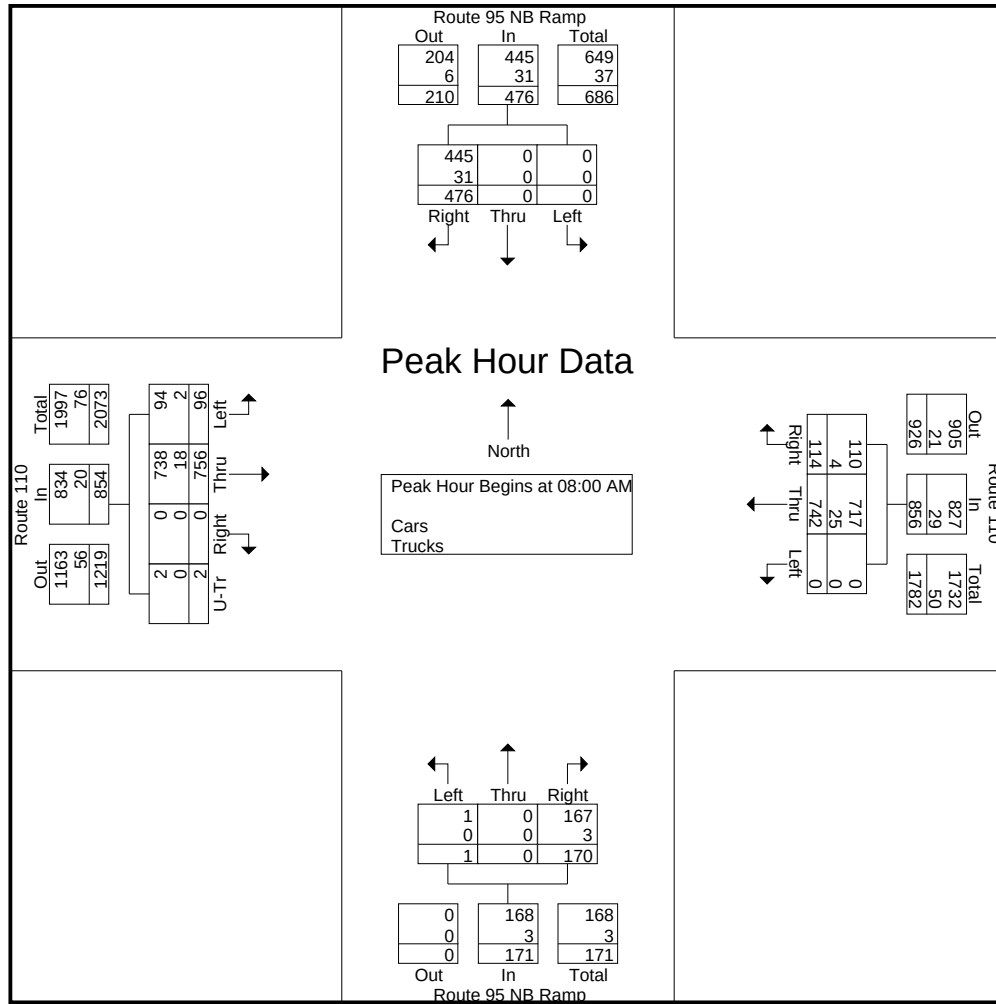
Weather : Cloudy

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

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

978-664-2565

Page No : 1

[illegible]

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
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

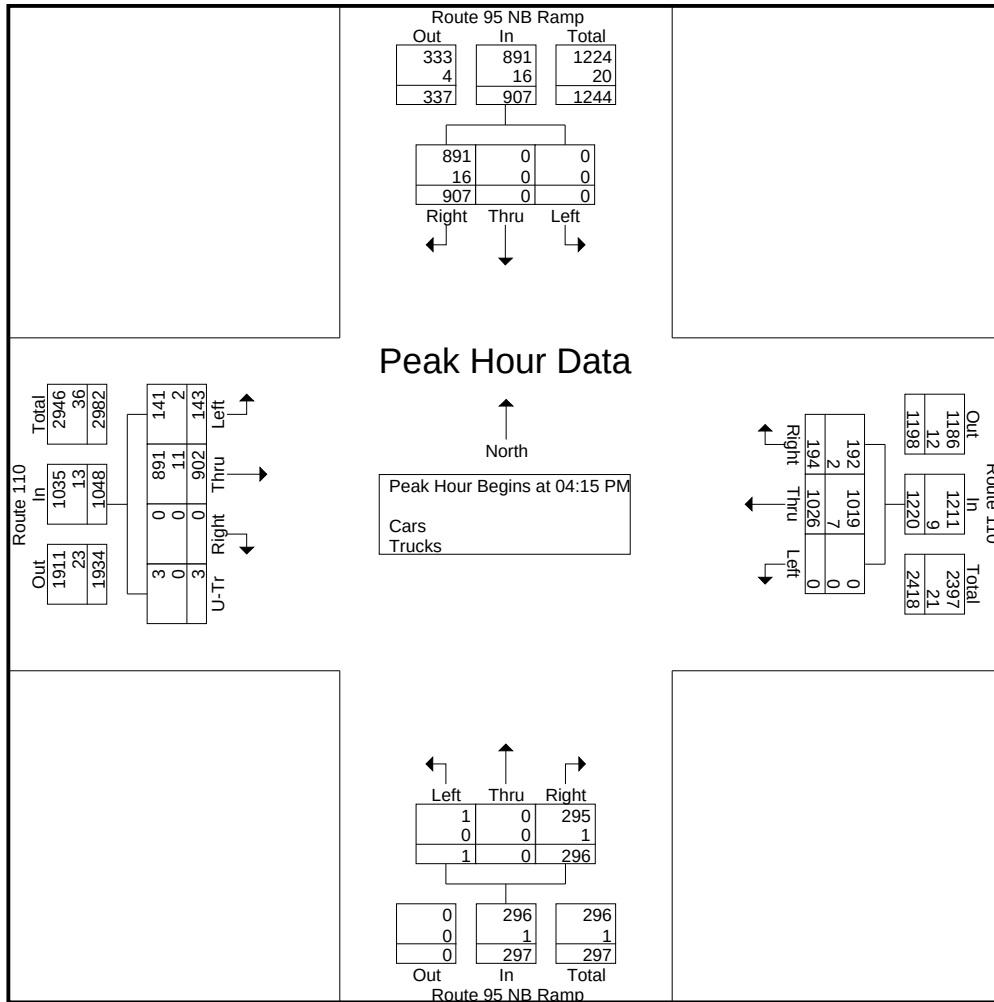
Weather : Cloudy

File Name : 97650004

Site Code : 97650004

Start Date : 7/13/2023

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:

	04:15 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

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
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

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	1	0	1	0	0	1	2	3
Total	0	0	0	0	0	1	0	0	0	0	0	1	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	1	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 : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

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
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	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	101	101	0	197	48	245	0	0	41	41	43	312	0	0	355	742
12:00 PM	0	0	103	103	0	181	50	231	0	0	56	56	39	246	0	0	285	675
12:15 PM	0	0	93	93	0	261	56	317	0	0	59	59	47	238	0	1	286	755
12:30 PM	0	0	109	109	0	235	45	280	0	0	40	40	53	268	0	0	321	750
Total Volume	0	0	406	406	0	874	199	1073	0	0	196	196	182	1064	0	1	1247	2922
% 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	.968
Cars	0	0	399	399	0	867	199	1066	0	0	194	194	182	1058	0	1	1241	2900
% 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	99.2
Trucks	0	0	7	7	0	7	0	7	0	0	2	2	0	6	0	0	6	22
% 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	0.8

Accurate Counts

978-664-2565

N/S Street : Route 95 NB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

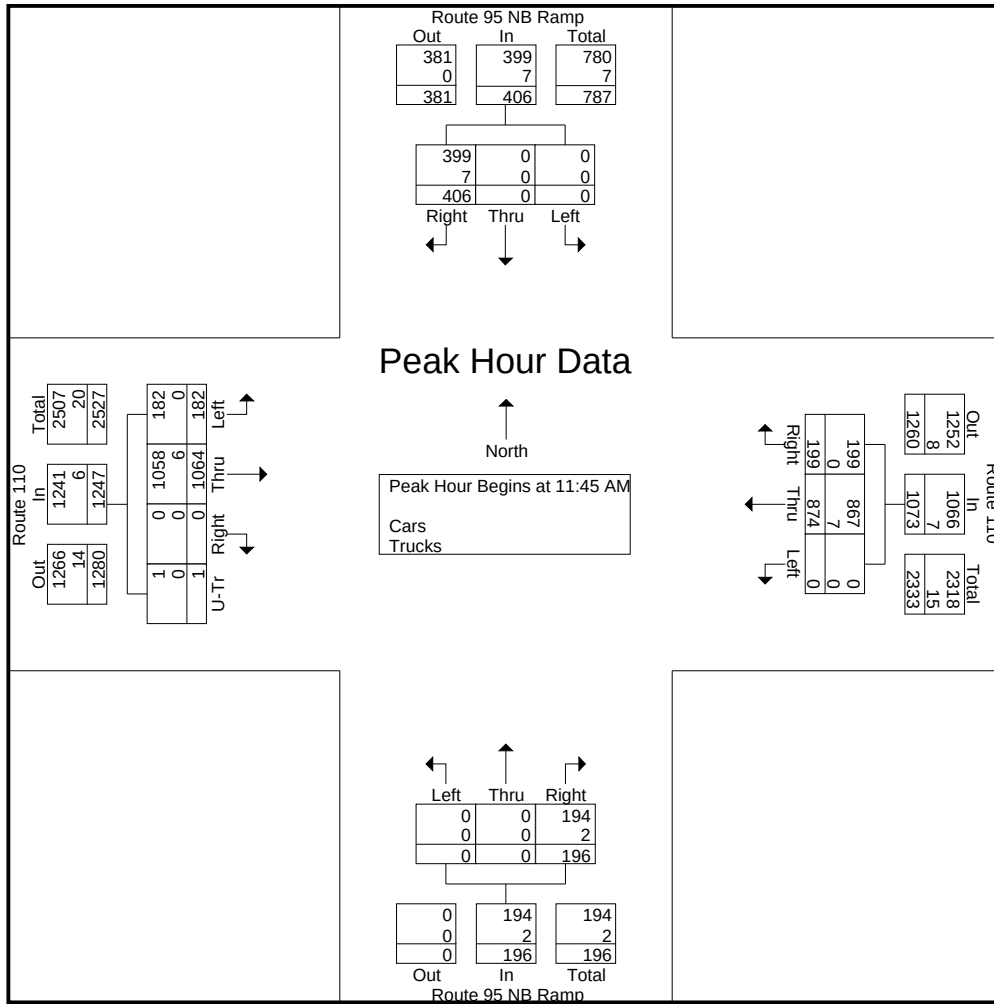
Weather : Cloudy

File Name : 976500S4

Site Code : 97650004

Start Date : 7/15/2023

Page No : 2



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

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

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			
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

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 1

Groups Printed- Cars - Trucks

	Elm St From North			Route 110 From East				Clark's 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	103	8	6	3	181	47	0	9	4	12	8	299	0	0	680
07:15 AM	120	6	3	7	208	40	0	15	4	16	9	277	2	0	707
07:30 AM	130	6	6	5	183	62	1	7	3	22	13	337	2	0	777
07:45 AM	134	11	2	4	232	65	0	8	3	19	13	374	4	0	869
Total	487	31	17	19	804	214	1	39	14	69	43	1287	8	0	3033
08:00 AM	110	6	6	3	199	56	0	7	5	17	11	314	1	0	735
08:15 AM	132	9	10	9	190	72	0	8	2	9	14	294	6	0	755
08:30 AM	93	7	1	5	193	65	1	7	2	20	11	288	2	0	695
08:45 AM	90	11	8	2	175	65	1	6	5	14	7	251	1	0	636
Total	425	33	25	19	757	258	2	28	14	60	43	1147	10	0	2821
09:00 AM	86	6	3	9	170	61	0	7	6	9	12	200	2	0	571
09:15 AM	87	6	9	9	139	43	0	6	4	9	12	213	1	0	538
09:30 AM	70	7	4	9	142	48	0	6	4	7	7	186	1	0	491
09:45 AM	70	9	2	10	167	48	1	9	5	13	8	199	1	1	543
Total	313	28	18	37	618	200	1	28	19	38	39	798	5	1	2143
10:00 AM	73	9	3	9	148	60	0	3	7	9	10	185	2	0	518
10:15 AM	83	6	11	7	158	59	0	7	3	5	11	166	0	0	516
10:30 AM	66	9	7	6	152	64	0	6	5	8	6	185	5	0	519
10:45 AM	55	10	3	7	174	53	0	2	1	15	11	178	5	0	514
Total	277	34	24	29	632	236	0	18	16	37	38	714	12	0	2067
11:00 AM	66	9	7	13	166	60	0	8	2	10	13	164	6	1	525
11:15 AM	66	14	8	6	158	60	1	4	5	5	9	179	3	1	519
11:30 AM	57	7	11	11	177	55	2	4	7	17	5	221	5	0	579
11:45 AM	76	8	5	14	168	66	0	6	5	10	15	192	2	1	568
Total	265	38	31	44	669	241	3	22	19	42	42	756	16	3	2191
12:00 PM	60	12	10	12	184	73	1	9	7	11	15	203	5	1	603
12:15 PM	66	6	7	19	184	59	1	11	3	8	8	223	3	0	598
12:30 PM	56	14	7	11	179	66	0	5	8	12	9	189	1	1	558
12:45 PM	59	5	7	13	174	57	1	12	5	6	12	186	4	1	542
Total	241	37	31	55	721	255	3	37	23	37	44	801	13	3	2301
01:00 PM	54	10	11	9	194	51	0	7	4	14	5	192	3	0	554
01:15 PM	57	12	13	11	183	68	0	5	11	3	12	154	3	0	532
01:30 PM	47	10	4	17	182	75	2	8	3	8	16	198	2	0	572
01:45 PM	63	8	3	9	237	60	1	10	8	9	10	192	1	0	611
Total	221	40	31	46	796	254	3	30	26	34	43	736	9	0	2269
02:00 PM	59	6	4	10	230	55	0	5	10	8	13	189	12	0	601
02:15 PM	55	8	5	17	265	77	1	6	6	14	10	224	3	0	691
02:30 PM	89	10	6	9	256	71	0	6	11	7	22	239	5	2	733
02:45 PM	83	9	8	16	261	112	0	9	6	11	13	249	4	0	781
Total	286	33	23	52	1012	315	1	26	33	40	58	901	24	2	2806
03:00 PM	56	4	3	10	365	98	1	9	8	8	13	252	4	1	832
03:15 PM	73	6	11	19	326	130	1	8	9	11	19	245	5	1	864
03:30 PM	78	8	9	11	335	108	2	10	8	7	28	290	7	0	901
03:45 PM	81	7	7	16	302	135	0	10	9	11	21	272	6	0	877
Total	288	25	30	56	1328	471	4	37	34	37	81	1059	22	2	3474
04:00 PM	82	13	4	14	321	119	0	14	4	12	19	228	2	1	833
04:15 PM	66	10	11	15	343	129	1	8	8	10	18	222	6	0	847
04:30 PM	71	10	2	14	304	107	1	6	12	3	26	251	5	1	813
04:45 PM	94	15	10	23	288	113	0	9	6	13	22	238	9	0	840
Total	313	48	27	66	1256	468	2	37	30	38	85	939	22	2	3333
05:00 PM	95	12	13	20	324	116	0	12	11	16	15	234	13	0	881
05:15 PM	82	12	6	20	340	136	0	17	15	8	29	267	13	0	945
05:30 PM	70	11	7	18	291	121	0	10	8	12	17	225	3	0	793

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 2

Groups Printed- Cars - Trucks

	Elm St From North			Route 110 From East				Clark's Rd 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	
05:45 PM	77	12	7	8	269	120	2	10	13	11	20	203	8	0	760
Total	324	47	33	66	1224	493	2	49	47	47	81	929	37	0	3379
06:00 PM	78	7	4	22	222	113	2	4	5	10	20	175	1	1	664
06:15 PM	60	13	6	12	178	104	0	11	9	9	11	181	5	0	599
06:30 PM	84	5	5	9	179	85	2	10	13	7	16	205	2	0	622
06:45 PM	53	7	3	14	200	83	0	12	3	14	13	161	8	0	571
Total	275	32	18	57	779	385	4	37	30	40	60	722	16	1	2456
Grand Total	3715	426	308	546	10596	3790	26	388	305	519	657	10789	194	14	32273
Apprch %	83.5	9.6	6.9	3.7	70.8	25.3	0.2	32	25.2	42.8	5.6	92.6	1.7	0.1	
Total %	11.5	1.3	1	1.7	32.8	11.7	0.1	1.2	0.9	1.6	2	33.4	0.6	0	
Cars	3659	423	295	535	10247	3718	26	381	301	512	644	10455	190	14	31400
% Cars	98.5	99.3	95.8	98	96.7	98.1	100	98.2	98.7	98.7	98	96.9	97.9	100	97.3
Trucks	56	3	13	11	349	72	0	7	4	7	13	334	4	0	873
% Trucks	1.5	0.7	4.2	2	3.3	1.9	0	1.8	1.3	1.3	2	3.1	2.1	0	2.7

	Elm St From North				Route 110 From East					Clark's Rd 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 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:30 AM																			
07:30 AM	130	6	6	142	5	183	62	1	251	7	3	22	32	13	337	2	0	352	777
07:45 AM	134	11	2	147	4	232	65	0	301	8	3	19	30	13	374	4	0	391	869
08:00 AM	110	6	6	122	3	199	56	0	258	7	5	17	29	11	314	1	0	326	735
08:15 AM	132	9	10	151	9	190	72	0	271	8	2	9	19	14	294	6	0	314	755
Total Volume	506	32	24	562	21	804	255	1	1081	30	13	67	110	51	1319	13	0	1383	3136
% App. Total	90	5.7	4.3		1.9	74.4	23.6	0.1		27.3	11.8	60.9		3.7	95.4	0.9	0		
PHF	.944	.727	.600	.930	.583	.866	.885	.250	.898	.938	.650	.761	.859	.911	.882	.542	.000	.884	.902
Cars	499	31	22	552	20	781	245	1	1047	28	13	64	105	48	1271	13	0	1332	3036
% Cars	98.6	96.9	91.7	98.2	95.2	97.1	96.1	100	96.9	93.3	100	95.5	95.5	94.1	96.4	100	0	96.3	96.8
Trucks	7	1	2	10	1	23	10	0	34	2	0	3	5	3	48	0	0	51	100
% Trucks	1.4	3.1	8.3	1.8	4.8	2.9	3.9	0	3.1	6.7	0	4.5	4.5	5.9	3.6	0	0	3.7	3.2

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

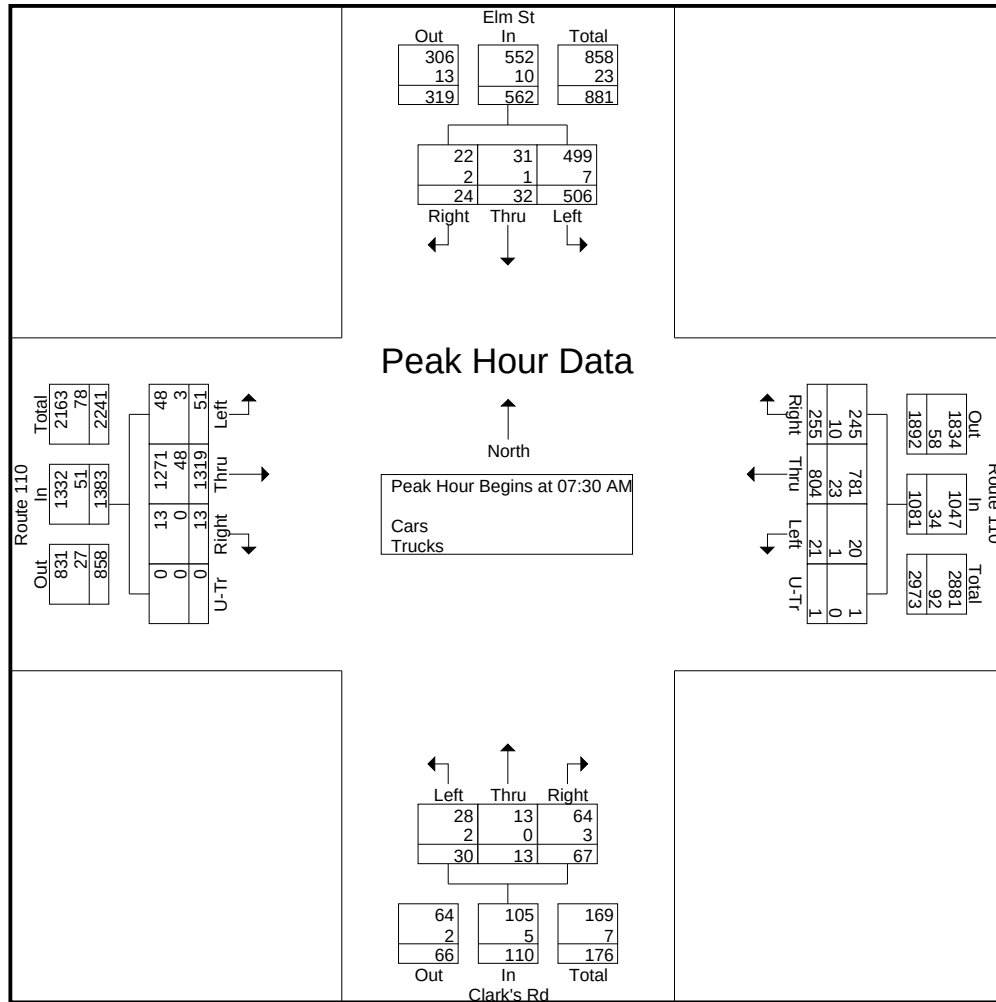
Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 3



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

Peak Hour for Each Approach Begins at:

	07:30 AM				07:45 AM				07:15 AM				07:30 AM					
+0 mins.	130	6	6	142	4	232	65	0	301	15	4	16	35	13	337	2	0	352
+15 mins.	134	11	2	147	3	199	56	0	258	7	3	22	32	13	374	4	0	391
+30 mins.	110	6	6	122	9	190	72	0	271	8	3	19	30	11	314	1	0	326
+45 mins.	132	9	10	151	5	193	65	1	264	7	5	17	29	14	294	6	0	314
Total Volume	506	32	24	562	21	814	258	1	1094	37	15	74	126	51	1319	13	0	1383
% App. Total	90	5.7	4.3		1.9	74.4	23.6	0.1		29.4	11.9	58.7		3.7	95.4	0.9	0	
PHF	.944	.727	.600	.930	.583	.877	.896	.250	.909	.617	.750	.841	.900	.911	.882	.542	.000	.884
Cars	499	31	22	552	20	789	252	1	1062	36	14	71	121	48	1271	13	0	1332
% Cars	98.6	96.9	91.7	98.2	95.2	96.9	97.7	100	97.1	97.3	93.3	95.9	96	94.1	96.4	100	0	96.3
Trucks	7	1	2	10	1	25	6	0	32	1	1	3	5	3	48	0	0	51
% Trucks	1.4	3.1	8.3	1.8	4.8	3.1	2.3	0	2.9	2.7	6.7	4.1	4	5.9	3.6	0	0	3.7

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

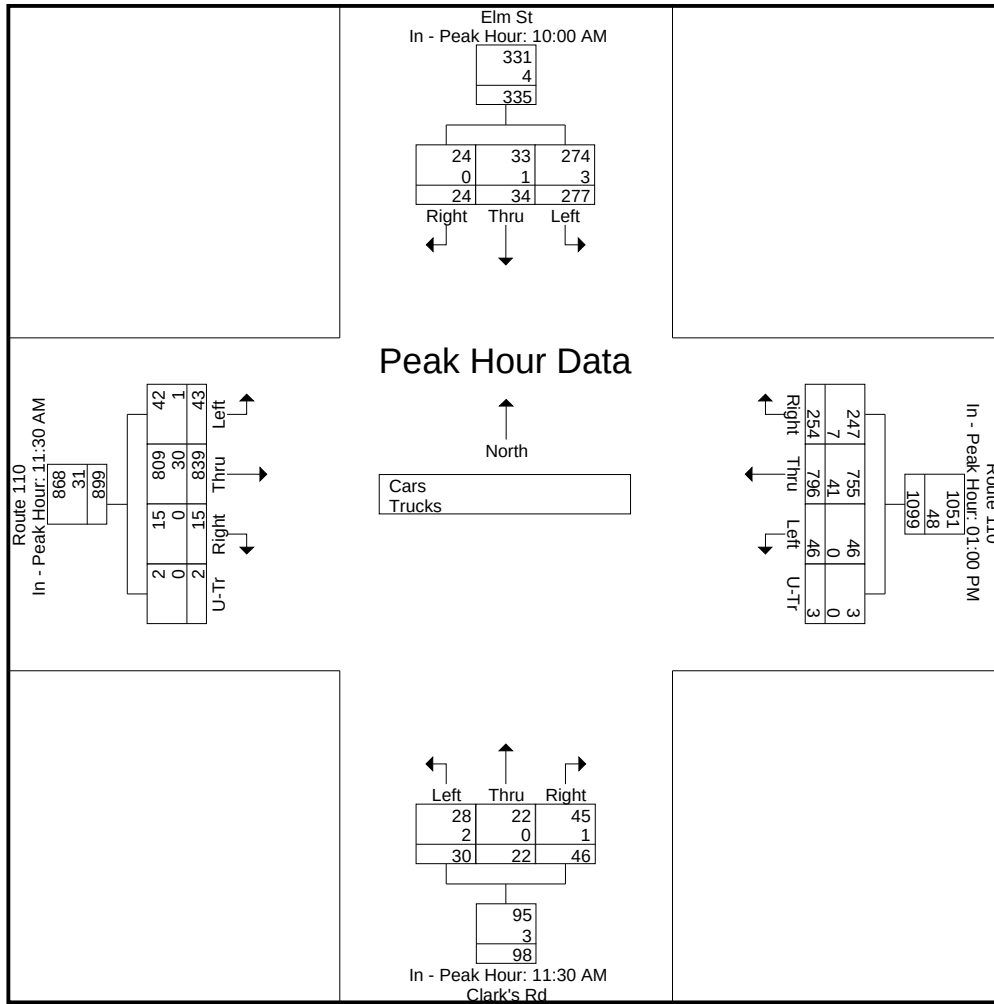
Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 6



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

Peak Hour for Entire Intersection Begins at 04:30 PM

04:30 PM	71	10	2	83	14	304	107	1	426	6	12	3	21	26	251	5	1	283	813
04:45 PM	94	15	10	119	23	288	113	0	424	9	6	13	28	22	238	9	0	269	840
05:00 PM	95	12	13	120	20	324	116	0	460	12	11	16	39	15	234	13	0	262	881
05:15 PM	82	12	6	100	20	340	136	0	496	17	15	8	40	29	267	13	0	309	945
Total Volume	342	49	31	422	77	1256	472	1	1806	44	44	40	128	92	990	40	1	1123	3479
% App. Total	81	11.6	7.3		4.3	69.5	26.1	0.1		34.4	34.4	31.2		8.2	88.2	3.6	0.1		
PHF	.900	.817	.596	.879	.837	.924	.868	.250	.910	.647	.733	.625	.800	.793	.927	.769	.250	.909	.920
Cars	340	49	31	420	75	1236	469	1	1781	44	44	40	128	91	976	39	1	1107	3436
% Cars	99.4	100	100	99.5	97.4	98.4	99.4	100	98.6	100	100	100	100	98.9	98.6	97.5	100	98.6	98.8
Trucks	2	0	0	2	2	20	3	0	25	0	0	0	0	1	14	1	0	16	43
% Trucks	0.6	0	0	0.5	2.6	1.6	0.6	0	1.4	0	0	0	0	1.1	1.4	2.5	0	1.4	1.2

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

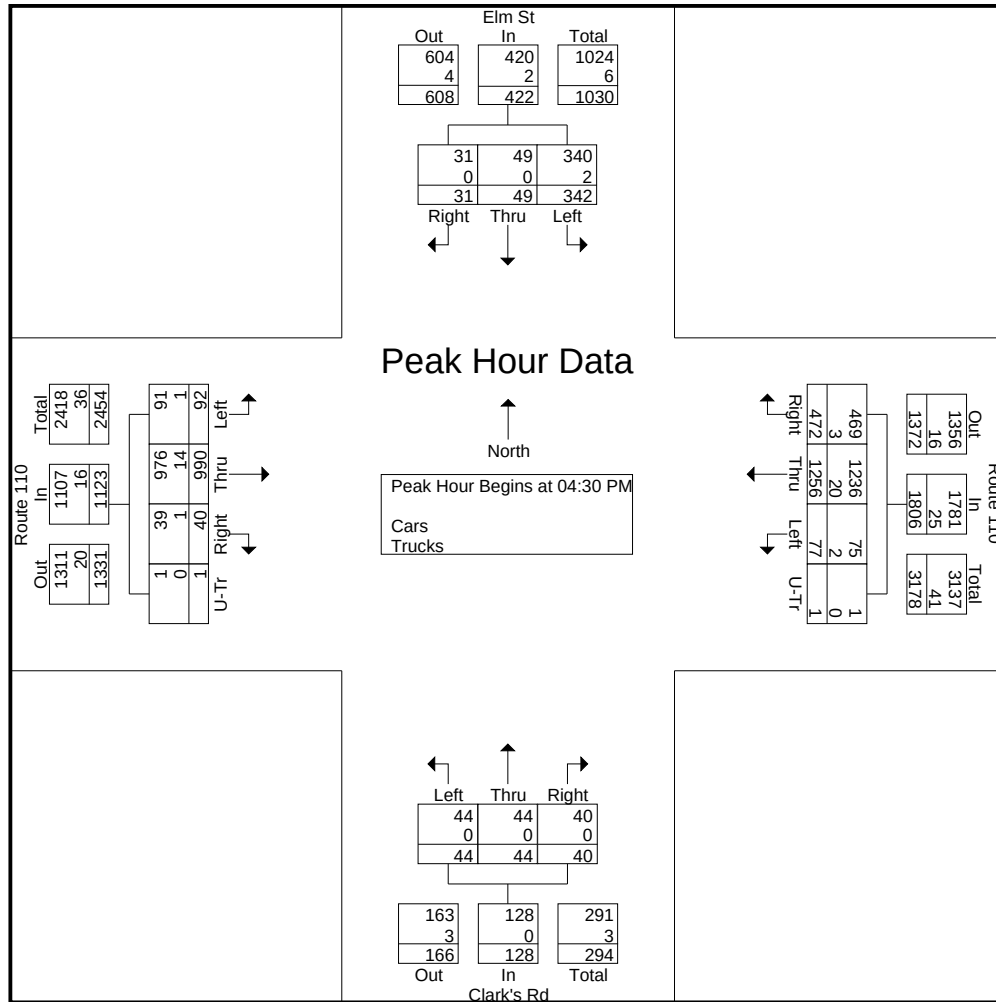
Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 7



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

Peak Hour for Each Approach Begins at:

	04:45 PM				03:00 PM				05:00 PM				03:00 PM					
+0 mins.	94	15	10	119	10	365	98	1	474	12	11	16	39	13	252	4	1	270
+15 mins.	95	12	13	120	19	326	130	1	476	17	15	8	40	19	245	5	1	270
+30 mins.	82	12	6	100	11	335	108	2	456	10	8	12	30	28	290	7	0	325
+45 mins.	70	11	7	88	16	302	135	0	453	10	13	11	34	21	272	6	0	299
Total Volume	341	50	36	427	56	1328	471	4	1859	49	47	47	143	81	1059	22	2	1164
% App. Total	79.9	11.7	8.4		3	71.4	25.3	0.2		34.3	32.9	32.9		7	91	1.9	0.2	
PHF	.897	.833	.692	.890	.737	.910	.872	.500	.976	.721	.783	.734	.894	.723	.913	.786	.500	.895
Cars	339	50	36	425	56	1284	466	4	1810	49	47	47	143	79	1040	21	2	1142
% Cars	99.4	100	100	99.5	100	96.7	98.9	100	97.4	100	100	100	100	97.5	98.2	95.5	100	98.1
Trucks	2	0	0	2	0	44	5	0	49	0	0	0	0	2	19	1	0	22
% Trucks	0.6	0	0	0.5	0	3.3	1.1	0	2.6	0	0	0	0	2.5	1.8	4.5	0	1.9

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

Start Date : 4/30/2025

Page No : 1

Groups Printed- Trucks

	Elm St From North			Route 110 From East				Clark's Rd 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	
07:00 AM	3	0	0	0	5	2	0	0	1	1	0	8	0	0	20
07:15 AM	0	0	0	0	5	1	0	0	1	0	0	8	0	0	15
07:30 AM	1	0	1	0	5	4	0	0	0	2	0	14	0	0	27
07:45 AM	2	0	0	0	4	0	0	1	0	1	0	14	0	0	22
Total	6	0	1	0	19	7	0	1	2	4	0	44	0	0	84
08:00 AM	2	0	0	0	7	4	0	0	0	0	2	12	0	0	27
08:15 AM	2	1	1	1	7	2	0	1	0	0	1	8	0	0	24
08:30 AM	0	0	0	0	7	0	0	0	0	0	0	13	0	0	20
08:45 AM	1	0	1	0	15	6	0	1	0	0	1	12	0	0	37
Total	5	1	2	1	36	12	0	2	0	0	4	45	0	0	108
09:00 AM	2	0	0	0	9	3	0	0	0	0	0	4	0	0	18
09:15 AM	3	0	1	0	6	0	0	0	0	0	0	16	0	0	26
09:30 AM	2	0	0	0	12	0	0	0	0	0	0	8	0	0	22
09:45 AM	1	0	0	0	8	1	0	0	0	0	0	8	0	0	18
Total	8	0	1	0	35	4	0	0	0	0	0	36	0	0	84
10:00 AM	1	0	0	0	6	3	0	0	0	0	1	9	0	0	20
10:15 AM	0	1	0	1	4	1	0	0	0	0	0	9	0	0	16
10:30 AM	0	0	0	0	5	0	0	0	0	0	0	6	1	0	12
10:45 AM	2	0	0	0	12	1	0	0	0	0	0	6	0	0	21
Total	3	1	0	1	27	5	0	0	0	0	1	30	1	0	69
11:00 AM	0	0	0	0	8	6	0	0	0	0	0	14	0	0	28
11:15 AM	1	0	1	0	8	1	0	0	0	0	0	8	0	0	19
11:30 AM	0	0	0	0	14	1	0	0	0	1	0	7	0	0	23
11:45 AM	2	0	2	2	5	1	0	0	0	0	1	5	0	0	18
Total	3	0	3	2	35	9	0	0	0	1	1	34	0	0	88
12:00 PM	0	0	0	1	6	3	0	1	0	0	0	11	0	0	22
12:15 PM	1	0	1	0	5	1	0	1	0	0	0	7	0	0	16
12:30 PM	1	0	0	0	12	1	0	0	0	0	0	8	0	0	22
12:45 PM	1	0	1	0	9	2	0	0	0	0	0	10	0	0	23
Total	3	0	2	1	32	7	0	2	0	0	0	36	0	0	83
01:00 PM	1	0	0	0	11	5	0	0	0	0	0	6	0	0	23
01:15 PM	0	0	2	0	6	0	0	0	0	0	1	5	1	0	15
01:30 PM	3	0	0	0	13	2	0	0	0	0	0	6	0	0	24
01:45 PM	2	0	0	0	11	0	0	0	0	0	1	7	0	0	21
Total	6	0	2	0	41	7	0	0	0	0	2	24	1	0	83
02:00 PM	0	0	0	0	12	4	0	0	0	0	0	7	0	0	23
02:15 PM	1	0	0	0	14	1	0	0	0	0	0	9	0	0	25
02:30 PM	1	0	0	0	9	1	0	0	2	0	0	8	0	0	21
02:45 PM	2	1	0	1	10	2	0	0	0	0	2	7	0	0	25
Total	4	1	0	1	45	8	0	0	2	0	2	31	0	0	94
03:00 PM	2	0	0	0	18	4	0	0	0	0	0	4	0	0	28
03:15 PM	2	0	1	0	9	1	0	0	0	0	1	7	0	0	21
03:30 PM	3	0	0	0	10	0	0	2	0	1	1	3	1	0	21
03:45 PM	3	0	0	0	7	0	0	0	0	1	0	5	0	0	16
Total	10	0	1	0	44	5	0	2	0	2	2	19	1	0	86
04:00 PM	3	0	1	0	5	0	0	0	0	0	0	5	0	0	14
04:15 PM	0	0	0	0	2	0	0	0	0	0	0	4	0	0	6
04:30 PM	0	0	0	0	1	0	0	0	0	0	1	5	0	0	7
04:45 PM	1	0	0	1	4	0	0	0	0	0	0	5	0	0	11
Total	4	0	1	1	12	0	0	0	0	0	1	19	0	0	38
05:00 PM	0	0	0	0	6	3	0	0	0	0	0	3	1	0	13
05:15 PM	1	0	0	1	9	0	0	0	0	0	0	1	0	0	12
05:30 PM	0	0	0	0	1	0	0	0	0	0	0	2	0	0	3

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

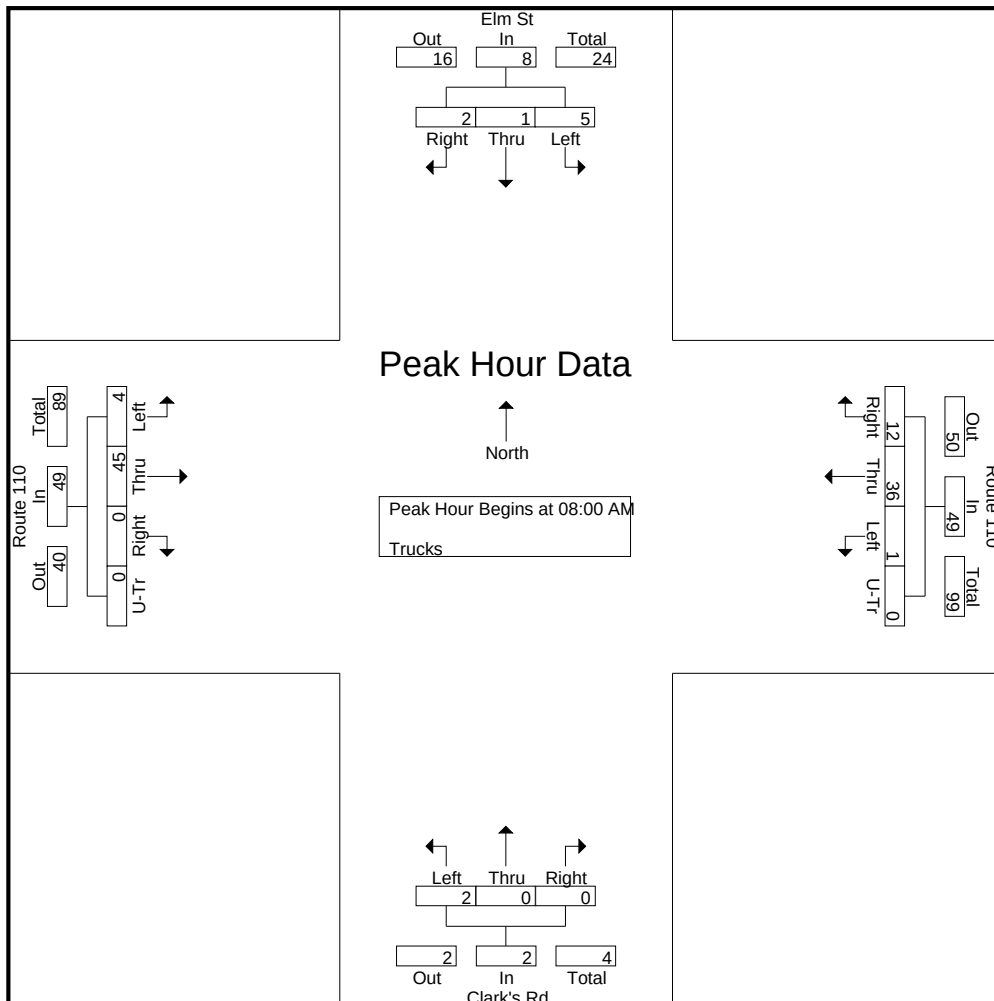
Start Date : 4/30/2025

Page No : 2

Groups Printed- Trucks

	Elm St From North			Route 110 From East				Clark's Rd 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	
05:45 PM	1	0	0	1	3	1	0	0	0	0	0	1	0	0	7
Total	2	0	0	2	19	4	0	0	0	0	0	7	1	0	35
06:00 PM	0	0	0	2	1	2	0	0	0	0	0	2	0	0	7
06:15 PM	0	0	0	0	0	1	0	0	0	0	0	1	0	0	2
06:30 PM	2	0	0	0	0	0	0	0	0	0	0	3	0	0	5
06:45 PM	0	0	0	0	3	1	0	0	0	0	0	3	0	0	7
Total	2	0	0	2	4	4	0	0	0	0	0	9	0	0	21
Grand Total	56	3	13	11	349	72	0	7	4	7	13	334	4	0	873
Apprch %	77.8	4.2	18.1	2.5	80.8	16.7	0	38.9	22.2	38.9	3.7	95.2	1.1	0	
Total %	6.4	0.3	1.5	1.3	40	8.2	0	0.8	0.5	0.8	1.5	38.3	0.5	0	

	Elm St From North				Route 110 From East					Clark's Rd 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 07:00 AM to 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00 AM																			
08:00 AM	2	0	0	2	0	7	4	0	11	0	0	0	0	2	12	0	0	14	27
08:15 AM	2	1	1	4	1	7	2	0	10	1	0	0	1	1	8	0	0	9	24
08:30 AM	0	0	0	0	0	7	0	0	7	0	0	0	0	0	13	0	0	13	20
08:45 AM	1	0	1	2	0	15	6	0	21	1	0	0	1	1	12	0	0	13	37
Total Volume	5	1	2	8	1	36	12	0	49	2	0	0	2	4	45	0	0	49	108
% App. Total	62.5	12.5	25		2	73.5	24.5	0		100	0	0		8.2	91.8	0	0		
PHF	.625	.250	.500	.500	.250	.600	.500	.000	.583	.500	.000	.000	.500	.500	.865	.000	.000	.875	.730



978-664-2565

Page No : 1

	Elm St From North				Route 110 From East				Clark's 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
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	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	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
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 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
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 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
11:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	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	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
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														

Accurate Counts

978-664-2565

N/S Street : Elm Street / Clark's Road

E/W Street : Route 110

City/State : Amesbury, MA

Weather : Clear

File Name : 10269001

Site Code : 10269001

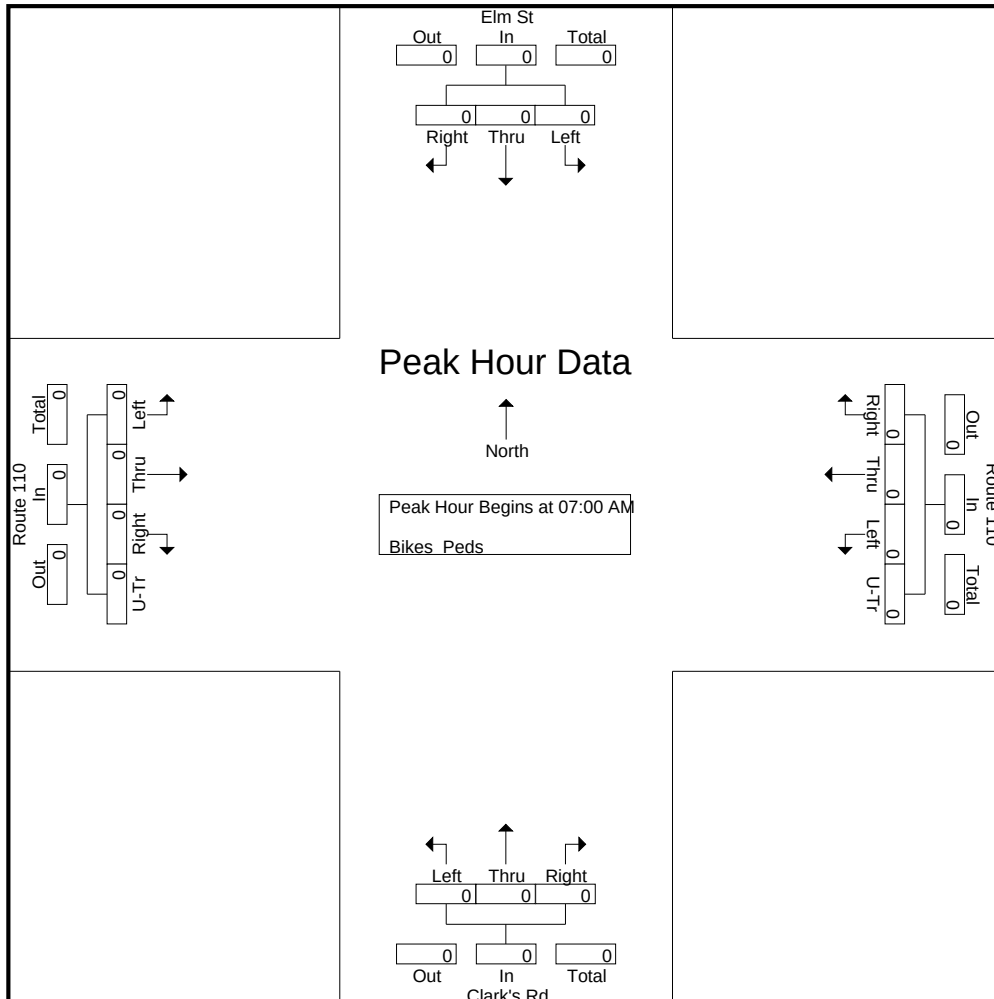
Start Date : 4/30/2025

Page No : 2

Groups Printed- Bikes Peds

	Elm St From North				Route 110 From East				Clark's 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			
05:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Total	0	1	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	5	5
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
06:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1
06:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3	3
Total	0	0	0	1	0	1	0	3	0	0	0	0	0	0	0	0	1	4	5
Grand Total	0	1	0	5	0	4	0	5	0	0	0	0	0	0	0	0	5	10	15
Apprch %	0	100	0		0	44.4	0	55.6	0	0	0	0	0	0	0	0			
Total %	0	10	0		0	40	0	50	0	0	0	0	0	0	0	0	33.3	66.7	

	Elm St From North				Route 110 From East				Clark's 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 09:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:00 AM																			
07:00 AM	0	0	0	0	0	0	0	0	0	0	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 Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% App. Total	0	0	0		0	0	0	0		0	0	0		0	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : 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 - 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

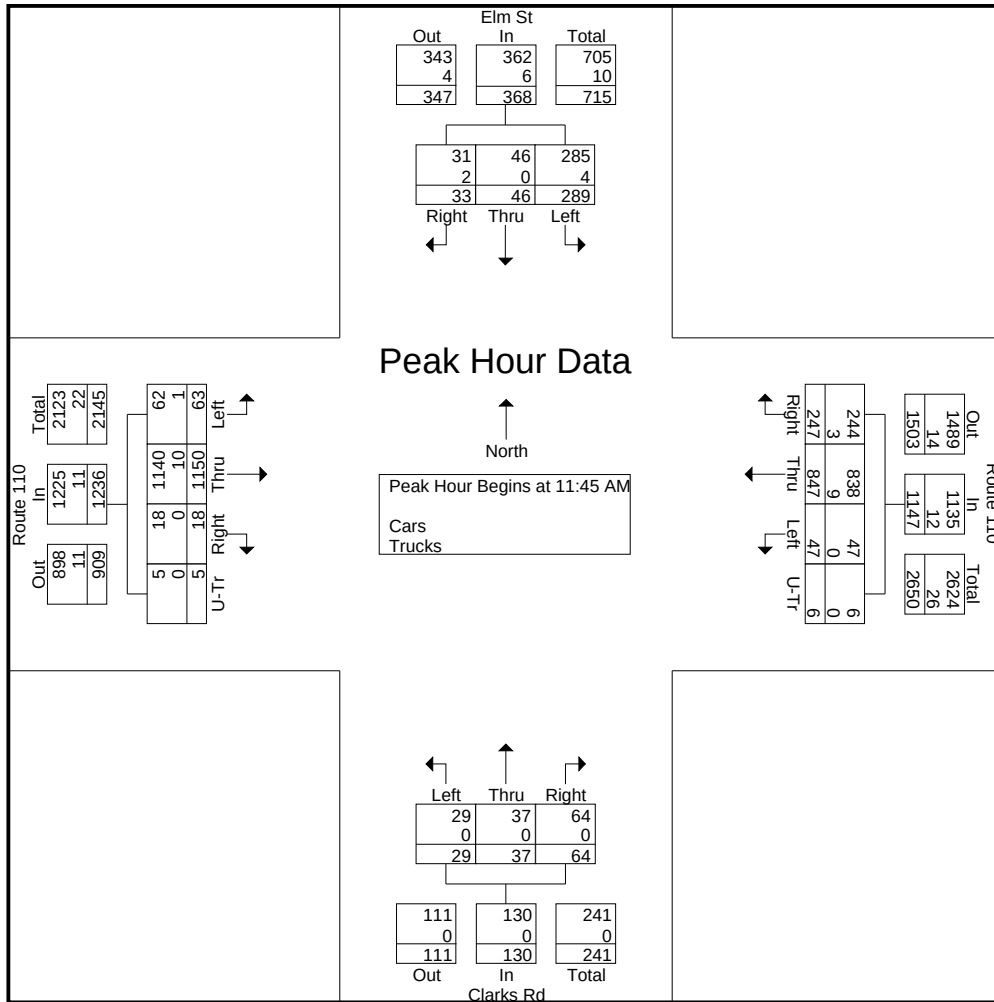
Weather : Cloudy

File Name : 976500S1

Site Code : 97650001

Start Date : 7/15/2023

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	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

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

978-664-2565

Page No : 1

[illegible]

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
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

978-664-2565

N/S Street : Route 95 SB Ramps

E/W Street : Route 110

City/State : Amesbury, MA

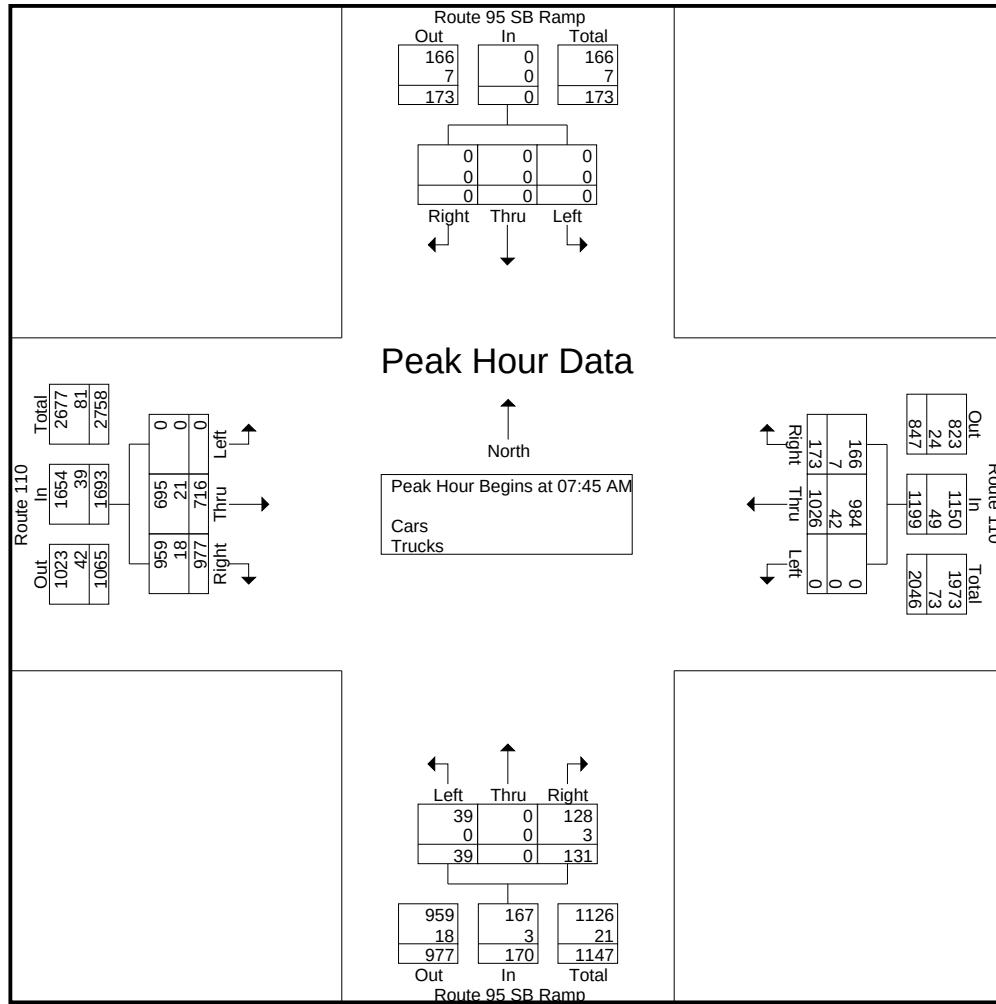
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 2



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

Peak Hour for Each Approach Begins at:

	07:00 AM				08:00 AM				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

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			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

978-664-2565

Page No : 10

[illegible]

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

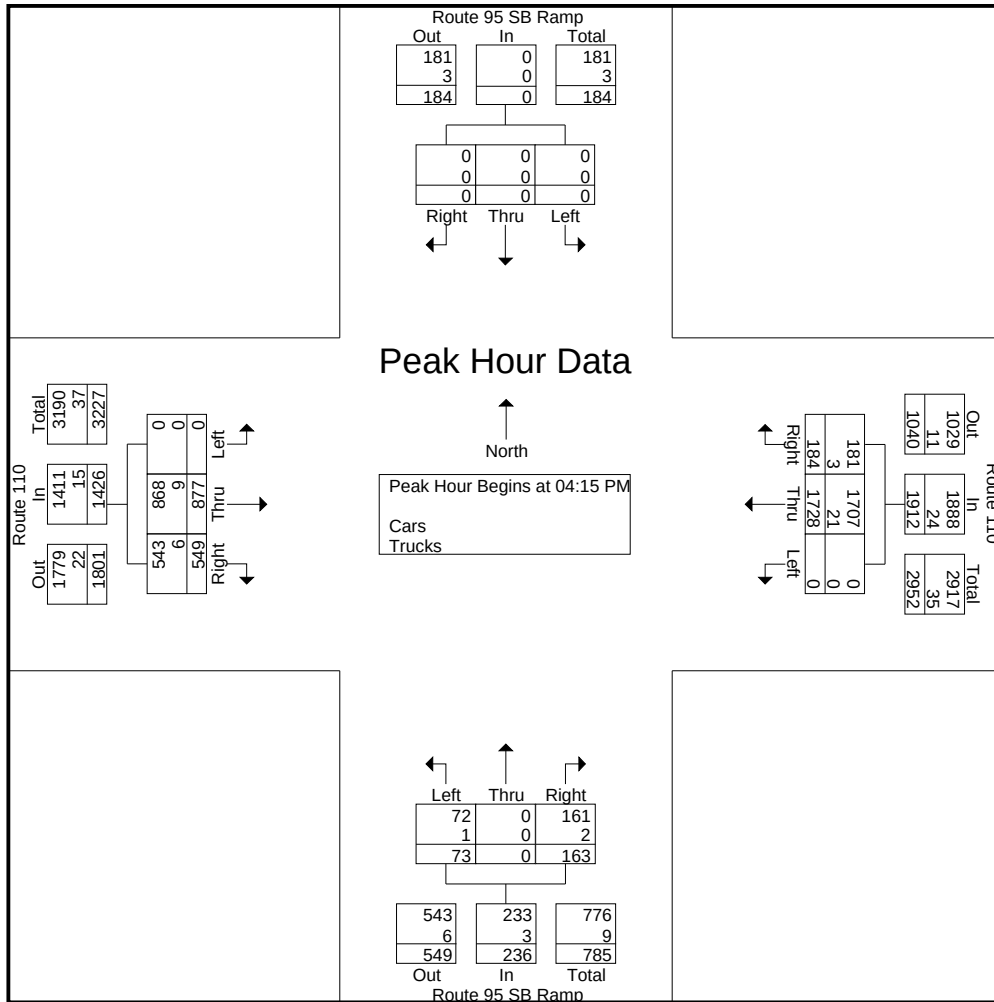
Weather : Cloudy

File Name : 97650003

Site Code : 97650003

Start Date : 7/13/2023

Page No : 2



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

Peak Hour for Each Approach Begins at:

	04:00 PM				04:15 PM				04:15 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

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			Int. Total
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
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 : 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 : 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

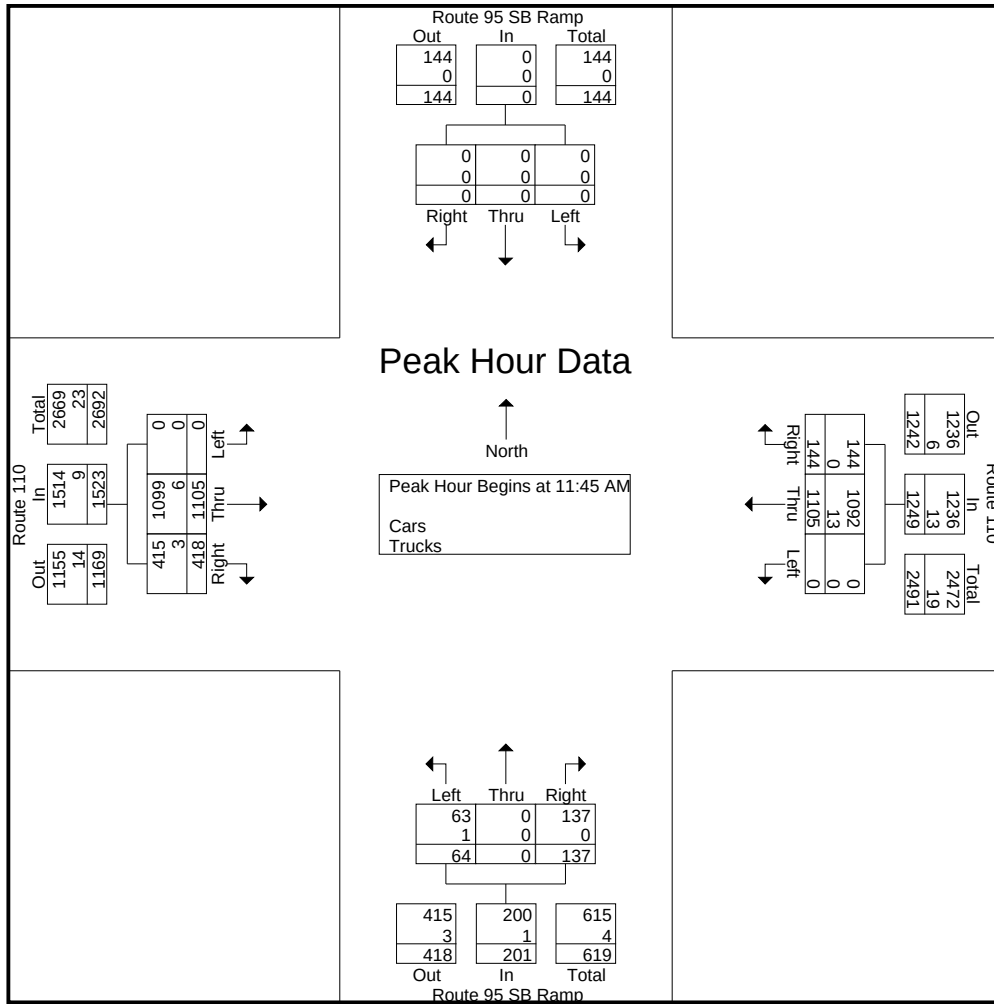
Weather : Cloudy

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 : 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
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

978-664-2565

Page No : 10

[illegible]

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

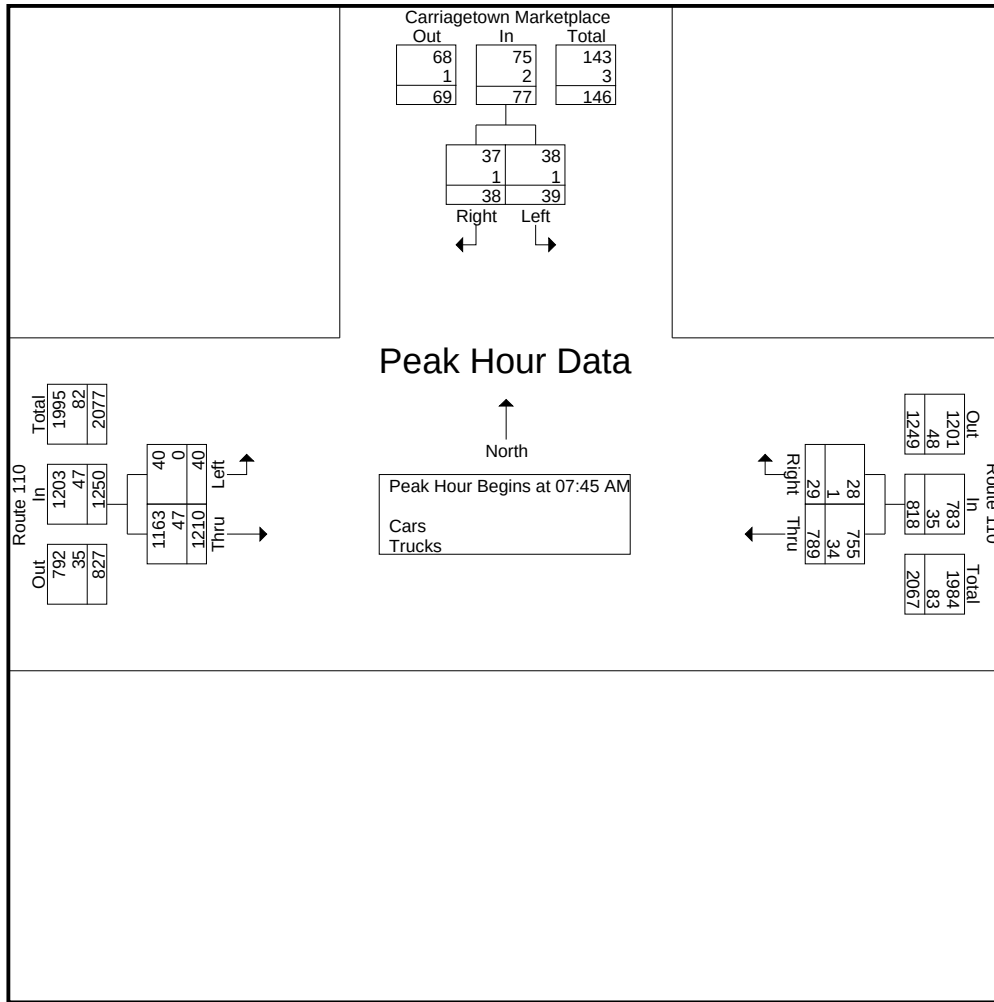
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

Page No : 2



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

Peak Hour for Each Approach Begins at:

	08:00 AM			07:45 AM			07:45 AM		
+0 mins.	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

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 : 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
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

Page No : 10

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

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
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

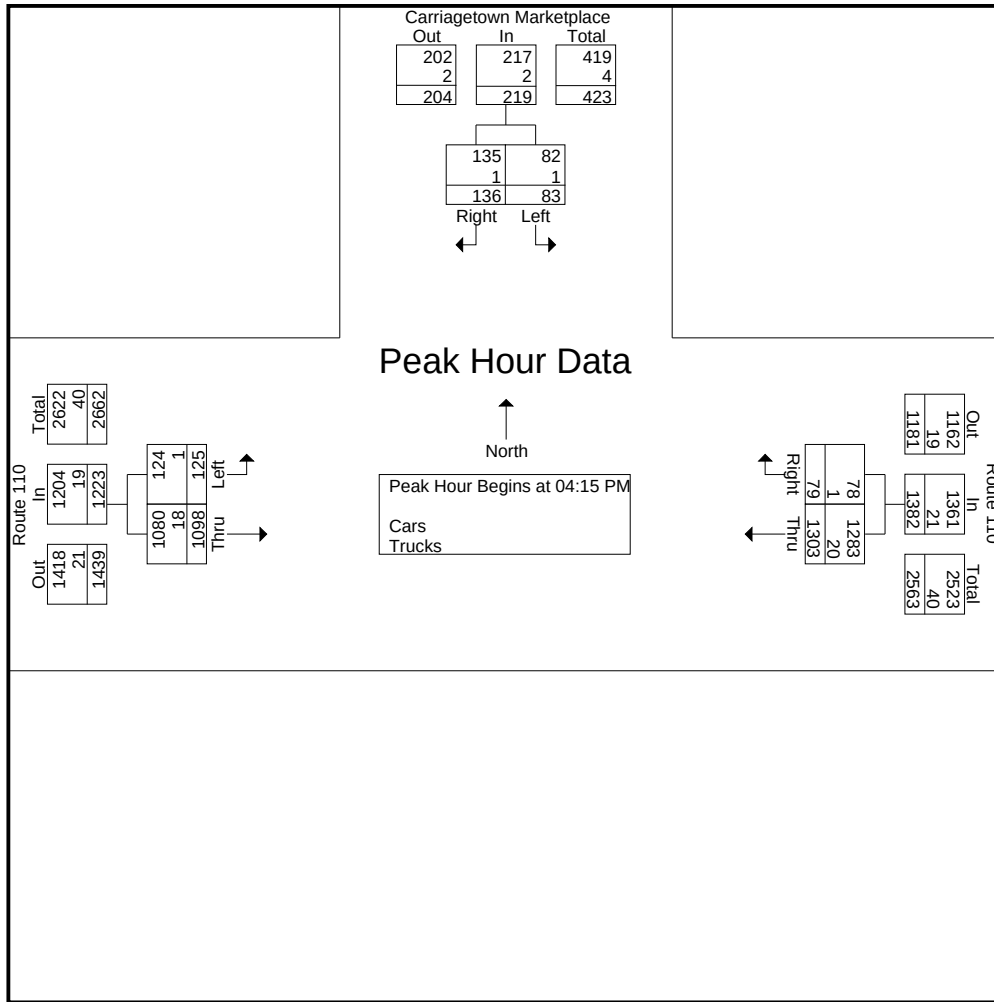
Weather : Cloudy

File Name : 97650002

Site Code : 97650002

Start Date : 7/13/2023

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:

	04:15 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

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 : 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

Page No : 10

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

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

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		
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

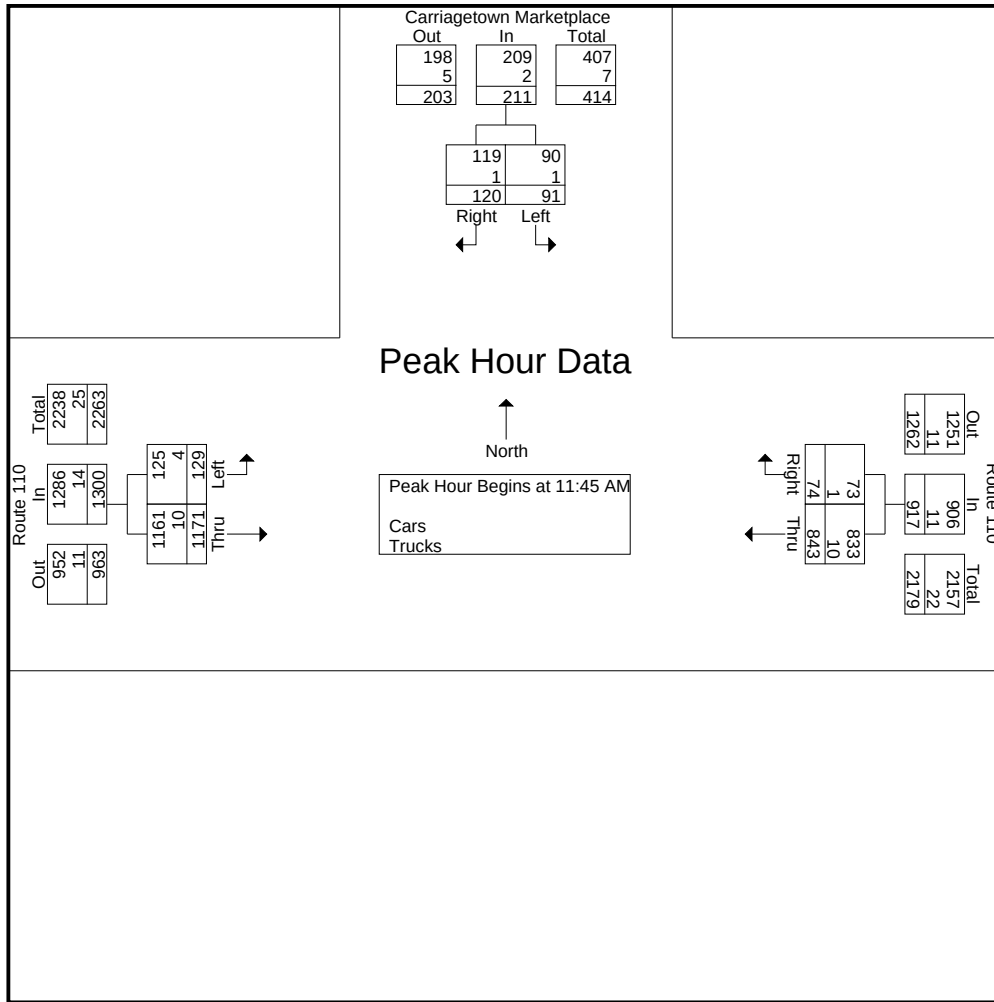
Weather : Cloudy

File Name : 976500S2

Site Code : 97650002

Start Date : 7/15/2023

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:

	11:45 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

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

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
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

Page No : 10

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

SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department
Statewide Traffic Data Collection
2024 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.17	1.12	1.11	1.06	1.00	0.96	0.94	0.92	1.00	0.98	1.06	1.07	0.78
R3	1.10	1.04	1.04	1.02	0.91	0.88	0.88	0.87	0.92	0.92	0.99	1.01	0.98
R4-R7	1.16	1.12	1.08	1.03	0.92	0.89	0.88	0.89	0.92	0.94	1.04	1.10	0.98
U1-Boston	1.07	1.03	0.98	0.97	0.94	0.91	0.94	0.91	0.94	0.94	0.98	1.02	0.94
U1-Essex	1.13	1.09	1.06	1.04	0.95	0.89	0.88	0.87	0.95	0.95	1.03	1.05	0.96
U1-Southeast	1.14	1.10	1.04	0.99	0.93	0.86	0.87	0.85	0.91	0.93	0.99	1.02	0.96
U1-West	1.10	1.02	0.98	0.96	0.95	0.92	0.94	0.91	0.91	0.91	0.96	1.00	0.83
U1-Worcester	1.08	1.03	0.99	0.98	0.94	0.91	0.93	0.91	0.92	0.91	0.95	1.00	0.93
U3	1.06	1.02	0.98	0.96	0.93	0.91	0.95	0.94	0.93	0.93	0.96	1.00	0.98
U4-U7	1.04	1.02	0.96	0.95	0.91	0.90	0.94	0.94	0.93	0.94	0.98	1.02	0.99
UR2	1.08	1.02	0.98	0.97	0.93	0.90	0.93	0.90	0.92	0.92	0.97	1.01	0.98
Rec - East	1.21	1.20	1.09	1.01	0.91	0.81	0.77	0.79	0.91	0.95	1.05	1.13	0.99
Rec - West	1.46	1.38	1.32	1.06	0.94	0.79	0.59	0.69	0.97	0.99	1.18	1.28	0.99

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

UR2 Group - Combination of Urban Freeways and Expressways and Rural Freeways and Expressways.

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

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

PUBLIC TRANSPORTATION SCHEDULES

ROUTE 17 OUTBOUND

SALISBURY BEACH VIA AMESBURY

WEEKDAYS

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

SUNDAYS

9:00	-	9:15	9:23	9:30	9:35	9:45	17
10:00	-	10:15	10:23	10:30	10:35	10:45	17
11:00	-	11:15	11:23	11:30	11:35	11:45	17
12:00	-	12:15	12:23	12:30	12:35	12:45	17
1:00	-	1:15	1:23	1:30	1:35	1:45	17
2:00	-	2:15	2:23	2:30	2:35	2:45	17
3:00	-	3:15	3:23	3:30	3:35	3:45	17
4:00	-	4:15	4:23	4:30	4:35	4:45	17
5:00	-	5:15	5:23	5:30	5:35	5:45	-

Updated 01/29/25

ROUTE 17 INBOUND

HAVERHILL VIA AMESBURY

WEEKDAYS

7	8	9	10	11	12	13	14	
Bus starts at Salisbury Beach	Bus leaves from Salisbury Center	Bus leaves from Elm & Lafayette Street	Bus leaves from Nicholas Costello Transportation Center	Bus leaves from Route 110 & Main Street	Bus leaves from Merrivillage Apartments	Bus leaves from NECC	Bus ends at Washington Square	Bus continues on as Route
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	-
7:50	7:55	8:05	8:10	8:15	8:25	8:35	8:45	-

SATURDAYS

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	-
6:50	6:55	7:05	7:10	7:15	7:25	7:35	7:45	-

SUNDAYS

9:00	-	9:10	9:15	9:22	9:30	-	9:45	17
10:00	-	10:10	10:15	10:22	10:30	-	10:45	17
11:00	-	11:10	11:15	11:22	11:30	-	11:45	17
12:00	-	12:10	12:15	12:22	12:30	-	12:45	17
1:00	-	1:10	1:15	1:22	1:30	-	1:45	17
2:00	-	2:10	2:15	2:22	2:30	-	2:45	17
3:00	-	3:10	3:15	3:22	3:30	-	3:45	17
4:00	-	4:10	4:15	4:22	4:30	-	4:45	17
5:00	-	5:10	5:15	5:22	5:30	-	5:45	-

Updated 01/29/25

ROUTE 19 OUTBOUND AMESBURY/COSTELLO

WEEKDAYS

1	2	3	4	5	6	7	Bus continues on as Route
Bus starts	Bus leaves	Bus leaves	Bus leaves	Bus leaves	Bus leaves	Bus ends	
at Newburyport Commuter Rail	from State Street (Library)	from Heritage House	from Anna Jaques Hospital	from Market Basket	from Carriage Town Stop & Shop	at Costello Transit Center	
5:30	5:40	5:43	5:46	5:50	6:00	6:10	19
6:30	6:40	6:43	6:46	6:50	7:00	7:10	19
7:30	7:40	7:43	7:46	7:50	8:00	8:10	19
8:30	8:40	8:43	8:46	8:50	9:00	9:10	19
9:30	9:40	9:43	9:46	9:50	10:00	10:10	19
10:30	10:40	10:43	10:46	10:50	11:00	11:10	19
11:30	11:40	11:43	11:46	11:50	12:00	12:10	19
12:30	12:40	12:43	12:46	12:50	1:00	1:10	19
1:30	1:40	1:43	1:46	1:50	2:00	2:10	19
2:30	2:40	2:43	2:46	2:50	3:00	3:10	19
3:30	3:40	3:43	3:46	3:50	4:00	4:10	19
4:30	4:40	4:43	4:46	4:50	5:00	5:10	19
5:30	5:40	5:43	5:46	5:50	6:00	6:10	19
6:30	6:40	6:43	6:46	6:50	7:00	7:10	-

SATURDAYS

7:30	7:40	7:43	7:46	7:50	8:00	8:10	19
8:30	8:40	8:43	8:46	8:50	9:00	9:10	19
9:30	9:40	9:43	9:46	9:50	10:00	10:10	19
10:30	10:40	10:43	10:46	10:50	11:00	11:10	19
11:30	11:40	11:43	11:46	11:50	12:00	12:10	19
12:30	12:40	12:43	12:46	12:50	1:00	1:10	19
1:30	1:40	1:43	1:46	1:50	2:00	2:10	19
2:30	2:40	2:43	2:46	2:50	3:00	3:10	19
3:30	3:40	3:43	3:46	3:50	4:00	4:10	19
4:30	4:40	4:43	4:46	4:50	5:00	5:10	19
5:30	5:40	5:43	5:46	5:50	6:00	6:10	-
6:30	6:40	6:43	6:46	6:50	7:00	7:10	-

Updated 01/24/25

ROUTE 19 INBOUND

NEWBURYPORT RAIL STATION

WEEKDAYS

7	8	9	10	11	12	
Bus starts	Bus leaves	Bus leaves	Bus leaves	Bus leaves	Bus ends	
at Costello Transit Center	from Carriage Town Stop & Shop	from Market Basket	from Anna Jaques Hospital	from Heritage House	at Newburyport Commuter Rail	Bus continues on as Route
5:40	5:50	6:00	6:03	6:07	6:10	20 Outbound
6:40	6:50	7:00	7:03	7:07	7:10	20 Outbound
7:40	7:50	8:00	8:03	8:07	8:10	20 Outbound
8:40	8:50	9:00	9:03	9:07	9:10	20 Outbound
9:40	9:50	10:00	10:03	10:07	10:10	20 Outbound
10:40	10:50	11:00	11:03	11:07	11:10	20 Outbound
11:40	11:50	12:00	12:03	12:07	12:10	20 Outbound
12:40	12:50	1:00	1:03	1:07	1:10	20 Outbound
1:40	1:50	2:00	2:03	2:07	2:10	20 Outbound
2:40	2:50	3:00	3:03	3:07	3:10	20 Outbound
3:40	3:50	4:00	4:03	4:07	4:10	20 Outbound
4:40	4:50	5:00	5:03	5:07	5:10	20 Outbound
5:40	5:50	6:00	6:03	6:07	6:10	20 Outbound
6:40	6:50	7:00	7:03	7:07	7:10	20 Outbound

SATURDAYS						
7:40	7:50	8:00	8:03	8:07	8:10	20 Outbound
8:40	8:50	9:00	9:03	9:07	9:10	20 Outbound
9:40	9:50	10:00	10:03	10:07	10:10	20 Outbound
10:40	10:50	11:00	11:03	11:07	11:10	20 Outbound
11:40	11:50	12:00	12:03	12:07	12:10	20 Outbound
12:40	12:50	1:00	1:03	1:07	1:10	20 Outbound
1:40	1:50	2:00	2:03	2:07	2:10	20 Outbound
2:40	2:50	3:00	3:03	3:07	3:10	20 Outbound
3:40	3:50	4:00	4:03	4:07	4:10	20 Outbound
4:40	4:50	5:00	5:03	5:07	5:10	20 Outbound
5:40	5:50	6:00	6:03	6:07	6:10	-

Updated 10/04/2024

MOTOR VEHICLE CRASH DATA

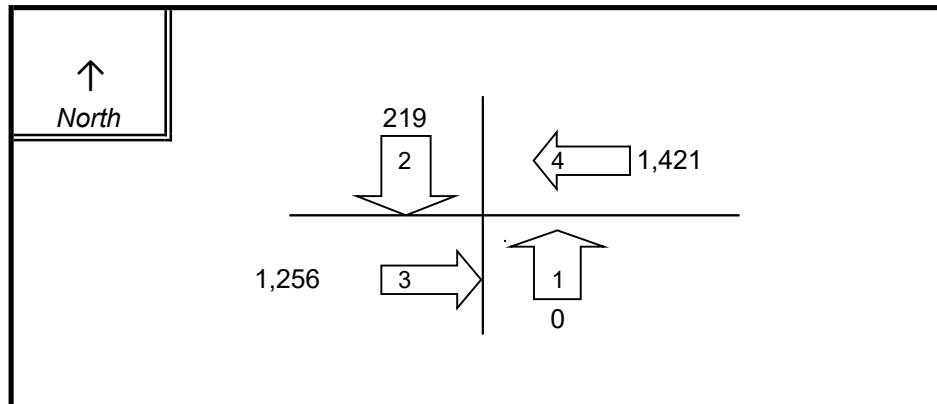
INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Apr-25
 DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : Route 110
 MINOR STREET(S) : Carriagetown Marketplace

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,256	1,421		219		2,896

" K " FACTOR : **0.092** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **31,478**

TOTAL # OF CRASHES : **8** # OF YEARS : **5** AVERAGE # OF CRASHES PER YEAR (A) : **1.60**

CRASH RATE CALCULATION :

0.14

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

Comments : Accident Rate for District 4 signalized intersections = 0.73

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Apr-25

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒

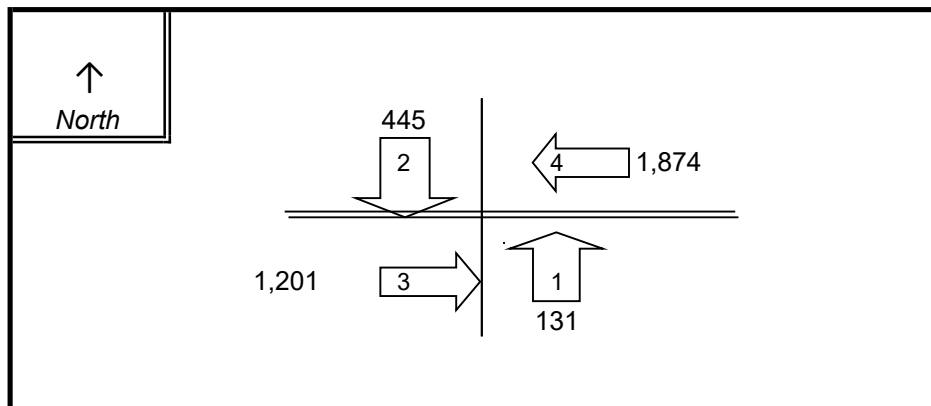
~ INTERSECTION DATA ~

MAJOR STREET : Route 110

MINOR STREET(S) : Clark's Road

Elm Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,201	1,874	131	445		3,651

" K " FACTOR :

0.092

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

39,685

TOTAL # OF CRASHES :

45

OF
YEARS :

5

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

9.00

CRASH RATE CALCULATION :

0.62

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

Comments : Accident Rate for District 4 signalized intersections = 0.73

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amesbury COUNT DATE : Jul-23

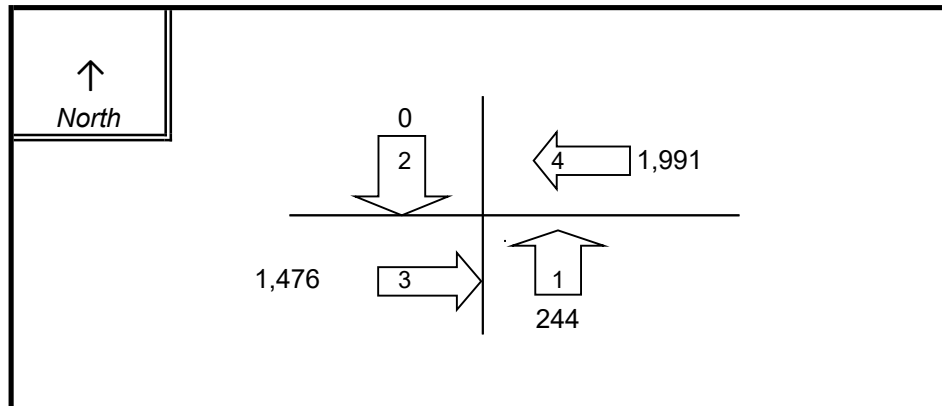
DISTRICT : 4 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ 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 :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,476	1,991	244			3,711

"K" FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

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

CRASH RATE CALCULATION :

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

Comments : Accident Rate for District 4 unsignalized intersections = 0.57

INTERSECTION CRASH RATE WORKSHEET

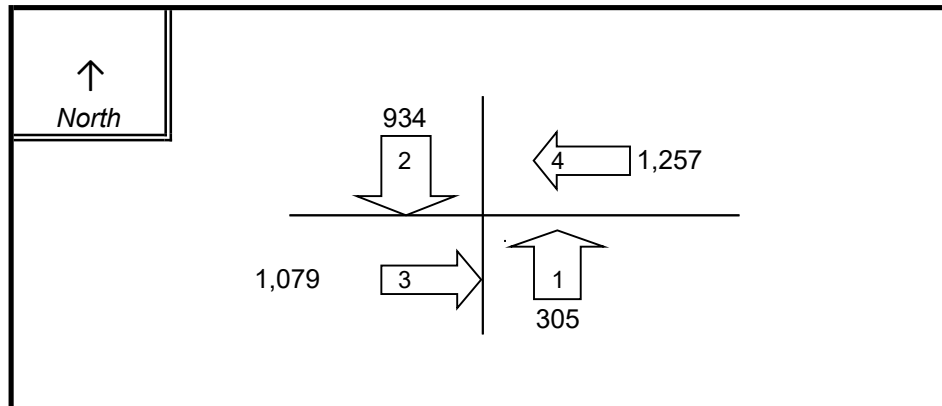
CITY/TOWN : Amesbury COUNT DATE : 7/13/2023

DISTRICT : 4 UNSIGNALIZED : ☒ SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Route 110
 MINOR STREET(S) : I-95 Northbound Ramps

**INTERSECTION
 DIAGRAM**
 (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (PM) :	1,079	1,257	305	934		3,575

"K" FACTOR : **0.092** INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : **38,859**

TOTAL # OF CRASHES : **11** # OF YEARS : **5** AVERAGE # OF CRASHES PER YEAR (A) : **2.20**

CRASH RATE CALCULATION :

0.16

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

Comments : Accident Rate for District 4 unsignalized intersections = 0.57

VEHICLE SPEED DATA

Accurate Counts
978-664-2565

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

Site Code: 10269003

4/30/2025	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	1	2	1	0	0	0	0	0	0	0	0	0	0	4
1:00	3	0	0	0	0	0	0	0	0	0	0	0	0	3
2:00	0	1	1	0	0	0	0	0	0	0	0	0	0	2
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	2	1	0	0	0	0	0	0	0	0	0	0	0	3
5:00	3	5	0	0	0	0	0	0	0	0	0	0	0	8
6:00	6	26	4	0	0	0	0	0	0	0	0	0	0	36
7:00	9	36	11	1	0	0	0	0	0	0	0	0	0	57
8:00	13	28	17	0	0	0	0	0	0	0	0	0	0	58
9:00	7	38	11	2	0	0	0	0	0	0	0	0	0	58
10:00	17	42	18	0	0	0	0	0	0	0	0	0	0	77
11:00	24	50	12	0	0	0	0	0	0	0	0	0	0	86
12:00 PM	23	45	13	1	0	0	0	0	0	0	0	0	0	82
1:00	14	50	19	1	0	0	0	0	0	0	0	0	0	84
2:00	18	65	19	0	0	0	0	0	0	0	0	0	0	102
3:00	32	49	16	6	0	0	0	0	0	0	0	0	0	103
4:00	33	75	28	1	0	0	0	0	0	0	0	0	0	137
5:00	28	67	28	1	0	0	0	0	0	0	0	0	0	124
6:00	25	54	13	2	0	0	0	0	0	0	0	0	0	94
7:00	23	35	10	0	0	0	0	0	0	0	0	0	0	68
8:00	26	34	7	0	0	0	0	0	0	0	0	0	0	67
9:00	10	19	3	0	0	0	0	0	0	0	0	0	0	32
10:00	9	3	0	0	0	0	0	0	0	0	0	0	0	12
11:00	5	5	1	0	0	0	0	0	0	0	0	0	0	11
Total	331	730	232	15	0	0	0	0	0	0	0	0	0	1308

Percentile	15th	50th	85th	95th
Speed	13	16	20	22
Mean Speed (Average)	16.7			
10 MPH Pace Speed	16-25			
Number in Pace	962			
Percent in Pace	74.0%			
Number > 15 MPH	977			
Percent > 15 MPH	74.7%			

Accurate Counts
978-664-2565

Site Code: 10269003

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

5/1/2025 Time	0 - 15 MPH	> 15 - 20 MPH	> 20 - 25 MPH	> 25 - 30 MPH	> 30 - 35 MPH	> 35 - 40 MPH	> 40 - 45 MPH	> 45 - 50 MPH	> 50 - 55 MPH	> 55 - 60 MPH	> 60 - 65 MPH	> 65 - 70 MPH	> 70 MPH	Total
12:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
1:00	1	1	0	1	0	0	0	0	0	0	0	0	0	3
2:00	2	0	0	1	0	0	0	0	0	0	0	0	0	3
3:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
5:00	2	6	1	0	0	0	0	0	0	0	0	0	0	9
6:00	5	22	11	1	0	0	0	0	0	0	0	0	0	39
7:00	10	29	15	3	0	0	0	0	0	0	0	0	0	57
8:00	13	39	18	0	0	0	0	0	0	0	0	0	0	70
9:00	16	32	19	1	0	0	0	0	0	0	0	0	0	68
10:00	29	34	7	0	0	0	0	0	0	0	0	0	0	70
11:00	20	28	10	2	0	0	0	0	0	0	0	0	0	60
12:00 PM	23	47	12	2	0	0	0	0	0	0	0	0	0	84
1:00	21	54	12	3	0	0	0	0	0	0	0	0	0	90
2:00	22	50	17	1	0	0	0	0	0	0	0	0	0	90
3:00	25	54	17	1	0	0	0	0	0	0	0	0	0	97
4:00	12	61	25	1	0	0	0	0	0	0	0	0	0	99
5:00	24	67	19	2	0	0	0	0	0	0	0	0	0	112
6:00	24	51	17	0	0	0	0	0	0	0	0	0	0	92
7:00	22	32	6	1	0	0	0	0	0	0	0	0	0	61
8:00	18	34	10	0	0	0	0	0	0	0	0	0	0	62
9:00	18	25	3	1	0	0	0	0	0	0	0	0	0	47
10:00	12	13	0	0	0	0	0	0	0	0	0	0	0	25
11:00	4	5	1	1	0	0	0	0	0	0	0	0	0	11
Total	324	686	220	22	0	0	0	0	0	0	0	0	0	1252

Percentile	15th
Speed	13
Mean Speed (Average)	16.7
10 MPH Pace Speed	16-25
Number in Pace	887
Percent in Pace	73.0%
Number > 15 MPH	928
Percent > 15 MPH	74.1%

Grand Total	655	1416	452	37	0	0	0	0	0	0	0	0	0	2560
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Stats	Percentile	15th
Speed	13	
Mean Speed (Average)	16.7	
10 MPH Pace Speed	16-25	
Number in Pace	1862	
Percent in Pace	73.0%	
Number > 15 MPH	1905	
Percent > 15 MPH	74.4%	

Accurate Counts
978-664-2565

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

Site Code: 10269003

4/30/2025	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	2	2	0	0	0	0	0	0	0	0	0	0	0	4
1:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:00	8	5	1	0	0	0	0	0	0	0	0	0	0	14
5:00	8	13	2	1	0	0	0	0	0	0	0	0	0	24
6:00	20	28	9	1	1	0	0	0	0	0	0	0	0	59
7:00	54	48	12	2	0	0	0	0	0	0	0	0	0	116
8:00	51	37	11	0	0	0	0	0	0	0	0	0	0	99
9:00	26	36	17	2	0	0	0	0	0	0	0	0	0	81
10:00	16	36	12	1	0	0	0	0	0	0	0	0	0	65
11:00	30	41	12	0	0	0	0	0	0	0	0	0	0	83
12:00 PM	32	35	7	1	0	0	0	0	0	0	0	0	0	75
1:00	36	34	7	2	0	0	0	0	0	0	0	0	0	79
2:00	41	45	9	2	0	0	0	0	0	0	0	0	0	97
3:00	57	44	11	1	0	0	0	0	0	0	0	0	0	113
4:00	38	50	8	2	0	0	0	0	0	0	0	0	0	98
5:00	54	64	6	1	0	0	0	0	0	0	0	0	0	125
6:00	55	43	8	1	0	0	0	0	0	0	0	0	0	107
7:00	33	25	4	0	1	0	0	0	0	0	0	0	0	63
8:00	12	8	2	0	0	0	0	0	0	0	0	0	0	22
9:00	8	10	1	0	0	0	0	0	0	0	0	0	0	19
10:00	3	4	1	0	0	0	0	0	0	0	0	0	0	8
11:00	1	1	0	0	0	0	0	0	0	0	0	0	0	2
Total	585	611	140	17	2	0	0	0	0	0	0	0	0	1355

Percentile	15th	50th	85th	95th
Speed	11	15	19	21
Mean Speed (Average)	14.6			
10 MPH Pace Speed	11-20			
Number in Pace	843			
Percent in Pace	62.0%			
Number > 15 MPH	770			
Percent > 15 MPH	56.8%			

Accurate Counts
978-664-2565

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

Site Code: 10269003

5/1/2025	0 - 15	> 15 -	> 20 -	> 25 -	> 30 -	> 35 -	> 40 -	> 45 -	> 50 -	> 55 -	> 60 -	> 65 -	> 70	Total
Time	MPH	20 MPH	25 MPH	30 MPH	35 MPH	40 MPH	45 MPH	50 MPH	55 MPH	60 MPH	65 MPH	70 MPH	MPH	
12:00 AM	3	3	0	0	0	0	0	0	0	0	0	0	0	6
1:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00	2	1	0	0	0	0	0	0	0	0	0	0	0	3
3:00	3	2	0	0	0	0	0	0	0	0	0	0	0	5
4:00	6	4	2	0	0	0	0	0	0	0	0	0	0	12
5:00	15	12	6	1	0	0	0	0	0	0	0	0	0	34
6:00	16	35	14	0	0	0	0	0	0	0	0	0	0	65
7:00	46	46	11	3	0	0	0	0	0	0	0	0	0	106
8:00	31	43	14	0	0	0	0	0	0	0	0	0	0	88
9:00	24	45	16	1	0	0	0	0	0	0	0	0	0	86
10:00	29	31	4	0	0	0	0	0	0	0	0	0	0	64
11:00	27	42	7	2	0	0	0	0	0	0	0	0	0	78
12:00 PM	41	41	10	0	0	0	0	0	0	0	0	0	0	92
1:00	44	49	9	0	0	0	0	0	0	0	0	0	0	102
2:00	36	38	12	0	0	0	0	0	0	0	0	0	0	86
3:00	47	43	12	1	0	0	0	0	0	0	0	0	0	103
4:00	60	53	11	0	0	0	0	0	0	0	0	0	0	124
5:00	58	52	18	0	0	0	0	0	0	0	0	0	0	128
6:00	27	40	7	0	0	0	0	0	0	0	0	0	0	74
7:00	17	22	4	0	0	0	0	0	0	0	0	0	0	43
8:00	16	18	3	0	0	0	0	0	0	0	0	0	0	37
9:00	4	14	1	0	0	0	0	0	0	0	0	0	0	19
10:00	6	4	2	0	0	0	0	0	0	0	0	0	0	12
11:00	3	3	0	0	0	0	0	0	0	0	0	0	0	6
Total	561	641	163	8	0	0	0	0	0	0	0	0	0	1373

Percentile	15th	50th	85th	95th
Speed	11	15	19	21
Mean Speed (Average)	14.7			
10 MPH Pace Speed	12-21			
Number in Pace	847			
Percent in Pace	63.0%			
Number > 15 MPH	812			
Percent > 15 MPH	59.1%			

Grand Total	1146	1252	303	25	2	0	0	0	0	0	0	0	0	2728
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Stats	Percentile	15th	50th	85th	95th
Speed	11	15	19	21	
Mean Speed (Average)	14.7				
10 MPH Pace Speed	11-20				
Number in Pace	1696				
Percent in Pace	62.0%				
Number > 15 MPH	1582				
Percent > 15 MPH	58.0%				

GROWTH RATE DATA

General Background Traffic Growth - Daily Traffic Volumes

CITY/TOWN	ROUTE/STREET	LOCATION	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual
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	8,336	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%

TRIP GENERATION DATA

Institute of Transportation Engineers (ITE)

Trip Generation, 12th Edition

Land Use Code (LUC) 221 - Multifamily Housing (Mid-Rise) Not Close to Rail Transit

Average Vehicle Trips Ends vs: Dwelling Units
Independent Variable (X): 152

AVERAGE WEEKDAY DAILY

$$T = 4.55 * (X) - 17.52$$

$$T = 4.55 * 152 - 17.52$$

$$T = 678.58$$

$$T = 678.00$$

$$T = 678 \text{ vehicle trips}$$

with 50% (339 vpd) entering and 50% (339 vpd) exiting.

WEEKDAY MORNING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 0.42 * (X) - 7.77$$

$$T = 0.42 * 152 - 7.77$$

$$T = 56.07$$

$$T = 56 \text{ vehicle trips}$$

with 23% (13 vph) entering and 77% (43 vph) exiting.

WEEKDAY EVENING PEAK HOUR OF ADJACENT STREET TRAFFIC

$$T = 0.36 * (X) + 3.07$$

$$T = 0.36 * 152 + 3.07$$

$$T = 57.79$$

$$T = 58 \text{ vehicle trips}$$

with 64% (37 vph) entering and 36% (21 vph) exiting.

AVERAGE SATURDAY

$$T = 4.30 * (X)$$

$$T = 4.30 * 0$$

$$T = 653.60$$

$$T = 654 \text{ vehicle trips}$$

with 50% (327 vph) entering and 50% (327 vph) exiting.

SATURDAY MIDDAY PEAK HOUR OF GENERATOR

$$T = 0.36 * (X)$$

$$T = 0.36 * 0$$

$$T = 54.72$$

$$T = 55 \text{ vehicle trips}$$

with 51% (28 vph) entering and 49% (27 vph) exiting.

JOURNEY TO WORK DATA

Golden Triangle Residential Community
Amesbury, State

Residence	Workplace	Number	I-95 (North)		I-95 (South)		I-495 (South)		Route 110 (East)		Route 110 (West)		Elm Street (West)		Clark Road (South)		Rabbit Road (North)		Merril Street (South)	
Amesbury	Amesbury Town	2,271		0		0		0		0	60%	1363	40%	908		0		0		0
Amesbury	Newburyport city	940		0		0		0	50%	470		0		0	20%	188		0	30%	282
Amesbury	Boston city	572		0	100%	572		0		0		0		0		0		0		0
Amesbury	Haverhill city	400		0		0	100%	400		0		0		0		0		0		0
Amesbury	Danvers town	311		0	100%	311		0		0		0		0		0		0		0
Amesbury	Seabrook town	271	50%	136		0		0		0		0		0		0	50%	136		0
Amesbury	Andover town	260		0	50%	130	50%	130		0		0		0		0		0		0
Amesbury	Lynn city	260		0	100%	260		0		0		0		0		0		0		0
Amesbury	Peabody city	250		0	100%	250		0		0		0		0		0		0		0
Amesbury	Salisbury town	245		0		0		0	100%	245		0		0		0		0		0
Amesbury	Beverly city	237		0	100%	237		0		0		0		0		0		0		0
Amesbury	Lawrence city	164		0		0	100%	164		0		0		0		0		0		0
Amesbury	Methuen Town	148		0		0	100%	148		0		0		0		0		0		0
Amesbury	Salem city	145		0	100%	145		0		0		0		0		0		0		0
Amesbury	Woburn city	130		0	50%	65	50%	65		0		0		0		0		0		0
Amesbury	Portsmouth city	124	100%	124		0		0		0		0		0		0		0		0
Amesbury	North Andover	103		0		0	100%	103		0		0		0		0		0		0
Amesbury	Salem town	102		0		0	100%	102		0		0		0		0		0		0
Amesbury	Georgetown town	101		0	100%	101		0		0		0		0		0		0		0
Amesbury	West Newbury	97		0	100%	97		0		0		0		0		0		0		0
Amesbury	Chelmsford town	89		0		0	100%	89		0		0		0		0		0		0
Amesbury	Lowell city	88		0		0	100%	88		0		0		0		0		0		0
Amesbury	Burlington town	83		0	50%	42	50%	42		0		0		0		0		0		0
Amesbury	Rowley town	77		0	100%	77		0		0		0		0		0		0		0
Amesbury	Dover city	77		0	100%	77		0		0		0		0		0		0		0
Amesbury	Ipswich town	76		0	50%	38		0	50%	38		0		0		0		0		0
Amesbury	Reading town	75		0	50%	38	50%	38		0		0		0		0		0		0
Amesbury	Hampton town	72	100%	72		0		0		0		0		0		0		0		0
Amesbury	Kensington town	71	50%	36		0		0		0		0	50%	36		0		0		0
Amesbury	Newbury town	70		0		0		0	50%	35		0		0		0		0	50%	35
7,909			367		2,439		1,368		788		1,363		944		188		136		317	
			4.6%		30.8%		17.3%		10.0%		17.2%		11.9%		2.4%		1.7%		4.0%	
<u>SAY</u>			5%		30%		17%		10%		17%		12%		3%		2%		4%	

PARKING GENERATION DATA

Institute of Transportation Engineers (ITE)
Parking Generation, 6th Edition
Land Use Code (LUC) 221 - Multifamily Housing 2+ BR (Mid-Rise)

Parking Demand vs: bedrooms
Independent Variable (X): 213

AVERAGE WEEKDAY DAILY

$T = 0.78 * (X)$
 $T = 0.78 * 213$
 $T = 166.14$
 $T = 167$ Parking Spaces

85th Percentile WEEKDAY DAILY

$T = 0.88 * (X)$
 $T = 0.88 * 213$
 $T = 187.44$
 $T = 188$ Parking Spaces

CAPACITY ANALYSIS

2025 Baseline Weekday Morning Peak Hour
2025 Baseline Weekday Evening Peak Hour
2025 Baseline Saturday Midday Peak Hour
2032 No-Build Weekday Morning Peak Hour
2032 No-Build Weekday Evening Peak Hour
2032 No-Build Saturday Midday Peak Hour
2032 Build Weekday Morning Peak Hour
2032 Build Weekday Evening Peak Hour
2032 Build Saturday Midday Peak Hour

2025 Baseline Weekday Morning Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		 	 				
Traffic Volume (vph)	40	1247	813	29	39	38	
Future Volume (vph)	40	1247	813	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
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	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3			45	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.89	0.89	0.93	0.93	0.84	0.84	
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%	
Adj. Flow (vph)	45	1401	874	31	46	45	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	45	1401	905	0	46	45	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	12.0	16.0	16.0		11.0	12.0	29.0
Total Split (s)	32.0	54.0	22.0		17.0	32.0	29.0
Total Split (%)	32.0%	54.0%	22.0%		17.0%	32.0%	29%
Maximum Green (s)	26.0	48.0	16.0		12.0	26.0	27.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	5.0	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							20.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	10.3	89.0	76.3		9.2	17.9	
Actuated g/C Ratio	0.10	0.89	0.76		0.09	0.18	
v/c Ratio	0.26	0.45	0.34		0.29	0.14	
Control Delay (s/veh)	44.5	2.5	1.2		46.3	9.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.5	2.5	1.2		46.3	9.6	
LOS	D	A	A		D	A	
Approach Delay (s/veh)		3.8	1.2		28.1		
Approach LOS		A	A		C		

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 27 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 75

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.45

Intersection Signal Delay (s/veh): 3.7

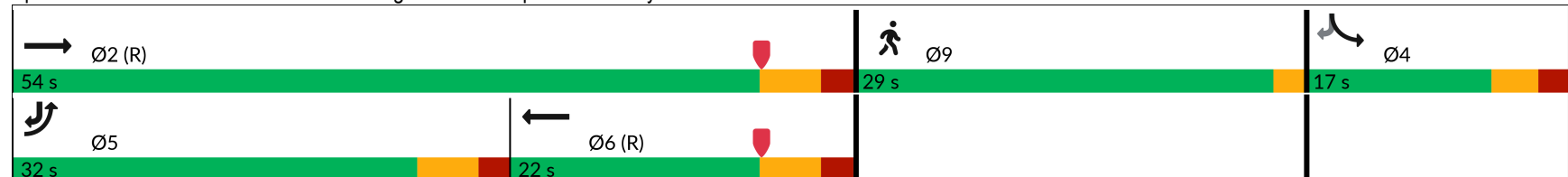
Intersection LOS: A

Intersection Capacity Utilization 46.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

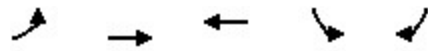


Queues

2025 Baseline Weekday Morning Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	45	1401	905	46	45
v/c Ratio	0.26	0.45	0.34	0.29	0.14
Control Delay (s/veh)	44.5	2.5	1.2	46.3	9.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.5	2.5	1.2	46.3	9.6
Queue Length 50th (ft)	27	97	2	29	0
Queue Length 95th (ft)	59	151	62	59	23
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	471	3088	2637	227	587
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	0.45	0.34	0.20	0.08
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	51	1319	13	23	828	262	30	13	67	506	32	24	
Future Volume (vph)	51	1319	13	23	828	262	30	13	67	506	32	24	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	100		0	300		0	
Storage Lanes	1		0	1		1	1		0	2		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00	
Frt		0.999				0.850		0.874			0.935		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1703	3353	0	1719	3388	1449	1631	1541	0	3351	1633	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1703	3353	0	1719	3388	1449	1631	1541	0	3351	1633	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		1				253		78			26		
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		1168			503			549			338		
Travel Time (s)		19.9			8.6			12.5			7.7		
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.90	0.86	0.86	0.86	0.93	0.93	0.93	
Heavy Vehicles (%)	6%	4%	0%	5%	3%	4%	7%	0%	5%	1%	3%	8%	
Adj. Flow (vph)	58	1499	15	26	920	291	35	15	78	544	34	26	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	58	1514	0	26	920	291	35	93	0	544	60	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)		12			12			22			22		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2		1	2	1	1	2		1	2		
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru		

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100		20	100	20	20	100		20	100		
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6		
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 2 Position(ft)		94			94			94			94		
Detector 2 Size(ft)		6			6			6			6		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA		Split	NA		
Protected Phases	5	2		1	6	6 3	4	4		3	3		9
Permitted Phases													
Detector Phase	5	2		1	6	6 3	4	4		3	3		
Switch Phase													
Minimum Initial (s)	6.0	7.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	13.0		12.0	16.0		11.0	11.0		11.0	11.0		28.0
Total Split (s)	13.0	19.0		13.0	19.0		28.0	28.0		12.0	12.0		28.0
Total Split (%)	13.0%	19.0%		13.0%	19.0%		28.0%	28.0%		12.0%	12.0%		28%
Maximum Green (s)	7.0	13.0		7.0	13.0		23.0	23.0		7.0	7.0		26.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-1.0	-1.0		-2.0	-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.0	3.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead	Lead		
Lead-Lag Optimize?							Yes	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													18.0

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Morning Peak-Hour
10/09/2025

													Ø9
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	10.9	41.9		9.2	35.2	73.5	9.0	9.0		34.6	34.6		
Actuated g/C Ratio	0.11	0.42		0.09	0.35	0.74	0.09	0.09		0.35	0.35		
v/c Ratio	0.31	1.08		0.17	0.77	0.26	0.24	0.44		0.47	0.10		
Control Delay (s/veh)	53.8	76.7		43.8	37.0	2.1	45.4	20.0		27.6	15.5		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	53.8	76.7		43.8	37.0	2.1	45.4	20.0		27.6	15.5		
LOS	D	E		D	D	A	D	B		C	B		
Approach Delay (s/veh)		75.8			28.9			26.9			26.4		
Approach LOS		E			C			C			C		

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay (s/veh): 49.2

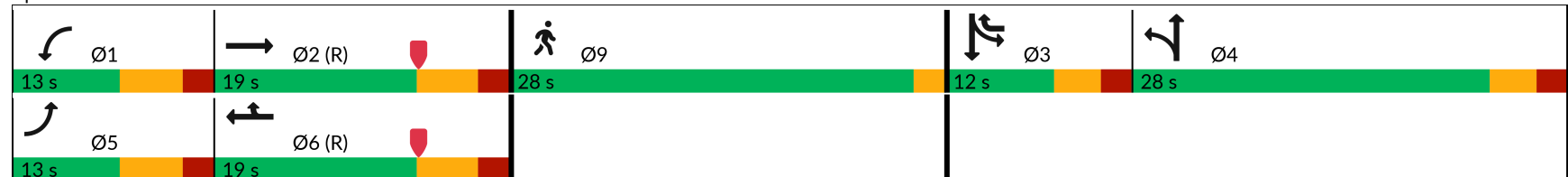
Intersection LOS: D

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues

2025 Baseline Weekday Morning Peak-Hour

5: Clarks Road/Elm Street & Route 110

10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	1514	26	920	291	35	93	544	60
v/c Ratio	0.31	1.08	0.17	0.77	0.26	0.24	0.44	0.47	0.10
Control Delay (s/veh)	53.8	76.7	43.8	37.0	2.1	45.4	20.0	27.6	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.8	76.7	43.8	37.0	2.1	45.4	20.0	27.6	15.5
Queue Length 50th (ft)	41	492	16	291	7	22	9	142	15
Queue Length 95th (ft)	76	#888	42	#490	42	50	50	190	44
Internal Link Dist (ft)		1088		423			469		258
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	188	1404	164	1191	1132	391	429	1157	581
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.31	1.08	0.16	0.77	0.26	0.09	0.22	0.47	0.10

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Intersection												
Int Delay, s/veh	15.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱	↰			↰			↰
Traffic Vol, veh/h	107	828	0	0	764	117	0	0	125	0	0	490
Future Vol, veh/h	107	828	0	0	764	117	0	0	125	0	0	490
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	90	90	90	74	74	74	86	86	86
Heavy Vehicles, %	2	2	0	0	3	4	0	0	2	0	0	7
Mvmt Flow	116	900	0	0	849	130	0	0	169	0	0	570

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	849	0	-	-	-	-	0	-	-	450	-	-	424
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	-	-	6.94	-	-	7.04
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	-	-	3.32	-	-	3.37
Pot Cap-1 Maneuver	785	-	0	0	-	-	0	0	556	0	0	0	~ 564
Stage 1	-	-	0	0	-	-	0	0	-	0	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-	0	0	0	-
Platoon blocked, %		-			-	-							
Mov Cap-1 Maneuver	785	-	-	-	-	-	-	-	-	556	-	-	~ 564
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.19	0	14.26	67.37
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	556	785	-	-	-	564
HCM Lane V/C Ratio	0.304	0.148	-	-	-	1.009
HCM Ctrl Dly (s/v)	14.3	10.4	-	-	-	67.4
HCM Lane LOS	B	B	-	-	-	F
HCM 95th %tile Q(veh)	1.3	0.5	-	-	-	15

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

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	0	800	1092	0	1073	181	40	0	135	0	0	0
Future Vol, veh/h	0	800	1092	0	1073	181	40	0	135	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	-	-	Yield	-	-	None
Storage Length	-	-	300	-	-	0	0	-	350	-	-	-
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	851	1162	0	1179	199	56	0	188	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	-	0	1441	- 426
Stage 1	-	-	-	-	-	-	-	851	- -
Stage 2	-	-	-	-	-	-	-	590	- -
Critical Hdwy	-	-	-	-	-	-	-	6.8	- 6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	5.8	- -
Critical Hdwy Stg 2	-	-	-	-	-	-	-	5.8	- -
Follow-up Hdwy	-	-	-	-	-	-	-	3.5	- 3.32
Pot Cap-1 Maneuver	0	-	0	0	-	0	0	126	0 577
Stage 1	0	-	0	0	-	0	0	384	0 -
Stage 2	0	-	0	0	-	0	0	523	0 -
Platoon blocked, %	-			-			-		
Mov Cap-1 Maneuver	-	-	-	-	-	-	-	126	0 577
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	126	0 -
Stage 1	-	-	-	-	-	-	-	384	0 -
Stage 2	-	-	-	-	-	-	-	523	0 -

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	23.42
HCM LOS	C		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	126	577	-	-
HCM Lane V/C Ratio	0.442	0.325	-	-
HCM Ctrl Dly (s/v)	54.5	14.2	-	-
HCM Lane LOS	F	B	-	-
HCM 95th %tile Q(veh)	1.9	1.4	-	-

2025 Baseline Weekday Evening Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

							Ø9
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1131	1342	79	83	136	
Future Volume (vph)	125	1131	1342	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
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	3539	3513	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3539	3513	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			7			158	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.91	0.91	0.97	0.97	0.86	0.86	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	1%	
Adj. Flow (vph)	137	1243	1384	81	97	158	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	137	1243	1465	0	97	158	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	12.0	16.0	16.0		11.0	12.0	29.0
Total Split (s)	13.0	60.0	47.0		11.0	13.0	29.0
Total Split (%)	13.0%	60.0%	47.0%		11.0%	13.0%	29%
Maximum Green (s)	7.0	54.0	41.0		6.0	7.0	27.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	5.0	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							20.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							2
Act Effct Green (s)	14.7	75.6	56.8		10.8	28.6	
Actuated g/C Ratio	0.15	0.76	0.57		0.11	0.29	
v/c Ratio	0.56	0.46	0.73		0.50	0.28	
Control Delay (s/veh)	50.5	7.0	14.2		52.3	6.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.5	7.0	14.2		52.3	6.5	
LOS	D	A	B		D	A	
Approach Delay (s/veh)		11.3	14.2		23.9		
Approach LOS		B	B		C		

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 27 (27%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.73

Intersection Signal Delay (s/veh): 13.7

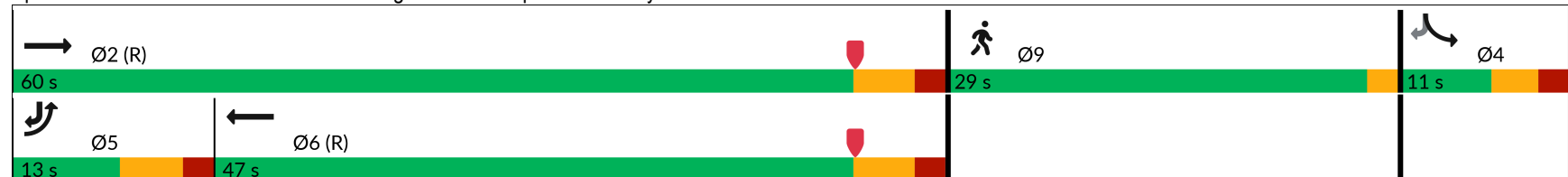
Intersection LOS: B

Intersection Capacity Utilization 61.5%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

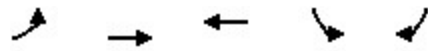


Queues

2025 Baseline Weekday Evening Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	137	1243	1465	97	158
v/c Ratio	0.56	0.46	0.73	0.50	0.28
Control Delay (s/veh)	50.5	7.0	14.2	52.3	6.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.5	7.0	14.2	52.3	6.5
Queue Length 50th (ft)	80	105	55	58	0
Queue Length 95th (ft)	#206	340	m222	#128	47
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	246	2674	1999	193	569
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	0.56	0.46	0.73	0.50	0.28

Intersection Summary

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.

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	93	1068	40	81	1303	490	44	44	43	365	49	31	
Future Volume (vph)	93	1068	40	81	1303	490	44	44	43	365	49	31	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	100		0	300		0	
Storage Lanes	1		0	1		1	1		0	2		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00	
Frt		0.995				0.850		0.926			0.942		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1787	3435	0	1752	3421	1492	1745	1701	0	3351	1730	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1787	3435	0	1752	3421	1492	1745	1701	0	3351	1730	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		3				300		47			25		
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		1168			503			549			354		
Travel Time (s)		19.9			8.6			12.5			8.0		
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.80	0.80	0.80	0.88	0.88	0.88	
Heavy Vehicles (%)	1%	1%	3%	3%	2%	1%	0%	0%	0%	1%	0%	0%	
Adj. Flow (vph)	102	1174	44	89	1432	538	55	55	54	415	56	35	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	102	1218	0	89	1432	538	55	109	0	415	91	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)		12			12			22			22		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2		1	2	1	1	2		1	2		
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru		

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100		20	100	20	20	100		20	100		
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6		
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 2 Position(ft)		94			94			94			94		
Detector 2 Size(ft)		6			6			6			6		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA		Split	NA		
Protected Phases	5	2		1	6	6 3	4	4		3	3		9
Permitted Phases													
Detector Phase	5	2		1	6	6 3	4	4		3	3		
Switch Phase													
Minimum Initial (s)	6.0	7.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	13.0		12.0	16.0		11.0	11.0		11.0	11.0		28.0
Total Split (s)	13.0	17.0		13.0	17.0		28.0	28.0		14.0	14.0		28.0
Total Split (%)	13.0%	17.0%		13.0%	17.0%		28.0%	28.0%		14.0%	14.0%		28%
Maximum Green (s)	7.0	11.0		7.0	11.0		23.0	23.0		9.0	9.0		26.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-1.0	-1.0		-2.0	-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.0	3.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead	Lead		
Lead-Lag Optimize?							Yes	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													18.0

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													1
Act Effct Green (s)	13.2	35.4		12.4	32.1	58.2	10.5	10.5		23.8	23.8		
Actuated g/C Ratio	0.13	0.35		0.12	0.32	0.58	0.11	0.11		0.24	0.24		
v/c Ratio	0.43	1.00		0.41	1.30	0.54	0.30	0.50		0.52	0.21		
Control Delay (s/veh)	55.9	58.6		45.3	173.9	9.3	44.5	32.3		37.8	26.1		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	55.9	58.6		45.3	173.9	9.3	44.5	32.3		37.8	26.1		
LOS	E	E		D	F	A	D	C		D	C		
Approach Delay (s/veh)		58.4			125.4			36.4			35.7		
Approach LOS		E			F			D			D		

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.30

Intersection Signal Delay (s/veh): 88.7

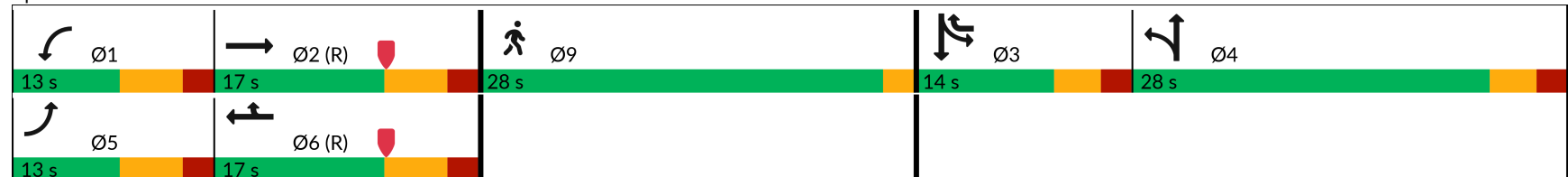
Intersection LOS: F

Intersection Capacity Utilization 68.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2025 Baseline Weekday Evening Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	1218	89	1432	538	55	109	415	91
v/c Ratio	0.43	1.00	0.41	1.30	0.54	0.30	0.50	0.52	0.21
Control Delay (s/veh)	55.9	58.6	45.3	173.9	9.3	44.5	32.3	37.8	26.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	55.9	58.6	45.3	173.9	9.3	44.5	32.3	37.8	26.1
Queue Length 50th (ft)	67	226	54	~595	58	33	38	114	32
Queue Length 95th (ft)	124	#803	100	#988	#256	60	73	#236	86
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	235	1217	219	1098	993	418	443	798	431
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	1.00	0.41	1.30	0.54	0.13	0.25	0.52	0.21

Intersection Summary

~ 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.

Intersection												
Int Delay, s/veh	145.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱	↰			↰			↰
Traffic Vol, veh/h	150	929	0	0	1057	200	0	0	305	0	0	934
Future Vol, veh/h	150	929	0	0	1057	200	0	0	305	0	0	934
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	96	96	96	81	81	81	91	91	91
Heavy Vehicles, %	1	1	0	0	1	1	0	0	1	0	0	2
Mvmt Flow	167	1032	0	0	1101	208	0	0	377	0	0	1026

Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1101	0	-	-	-	0	-	-	516	-	-	551
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.21	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	636	-	0	0	-	-	0	0	507	0	0	~ 478
Stage 1	-	-	0	0	-	-	0	0	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	636	-	-	-	-	-	-	-	507	-	-	~ 478
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.76	0	29.94	\$ 541.57
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	507	636	-	-	-	478
HCM Lane V/C Ratio	0.743	0.262	-	-	-	2.145
HCM Ctrl Dly (s/v)	29.9	12.7	-	-	-	\$ 541.6
HCM Lane LOS	D	B	-	-	-	F
HCM 95th %tile Q(veh)	6.3	1	-	-	-	73.7

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

Intersection												
Int Delay, s/veh	11.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	910	566	0	1799	192	75	0	169	0	0	0
Future Vol, veh/h	0	910	566	0	1799	192	75	0	169	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	-	-	Yield	-	-	None
Storage Length	-	-	300	-	-	0	0	-	350	-	-	-
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	989	615	0	1874	200	84	0	190	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	-	0	-	-	0	1926
Stage 1	-	-	-	-	-	989
Stage 2	-	-	-	-	-	937
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
Stage 1	0	-	0	0	-	0
Stage 2	0	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	~ 59
Mov Cap-2 Maneuver	-	-	-	-	-	~ 59
Stage 1	-	-	-	-	-	323
Stage 2	-	-	-	-	-	344

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	127.93
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	59	523	-	-
HCM Lane V/C Ratio	1.424	0.363	-	-
HCM Ctrl Dly (s/v)	\$ 380.7	15.8	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	7.4	1.6	-	-

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

2025 Baseline Saturday Midday Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		 	 				
Traffic Volume (vph)	129	1206	868	74	91	120	
Future Volume (vph)	129	1206	868	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
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	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			7			136	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.88	0.88	0.90	0.90	0.88	0.88	
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	
Adj. Flow (vph)	147	1370	964	82	103	136	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	147	1370	1046	0	103	136	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	12.0	16.0	16.0		11.0	12.0	29.0
Total Split (s)	27.0	45.0	18.0		26.0	27.0	29.0
Total Split (%)	27.0%	45.0%	18.0%		26.0%	27.0%	29%
Maximum Green (s)	21.0	39.0	12.0		21.0	21.0	27.0
Yellow Time (s)	4.0	4.0	4.0		3.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0		2.0	2.0	0.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.0	4.0	4.0		4.0	5.0	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							20.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

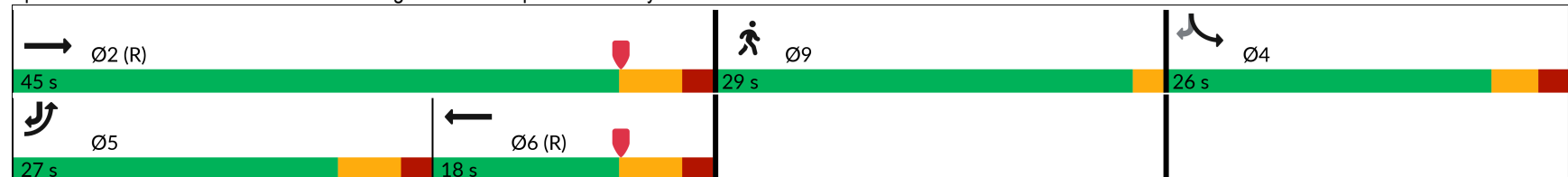
2025 Baseline Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	16.2	83.1	62.1		12.1	28.9	
Actuated g/C Ratio	0.16	0.83	0.62		0.12	0.29	
v/c Ratio	0.55	0.46	0.48		0.48	0.24	
Control Delay (s/veh)	45.9	3.9	7.2		47.7	4.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	45.9	3.9	7.2		47.7	4.6	
LOS	D	A	A		D	A	
Approach Delay (s/veh)		7.9	7.2		23.2		
Approach LOS		A	A		C		

Intersection Summary

Area Type: Other
 Cycle Length: 100
 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
 Maximum v/c Ratio: 0.55
 Intersection Signal Delay (s/veh): 9.0 Intersection LOS: A
 Intersection Capacity Utilization 48.5% ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

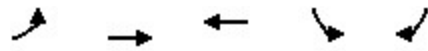


Queues

2025 Baseline Saturday Midday Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	147	1370	1046	103	136
v/c Ratio	0.55	0.46	0.48	0.48	0.24
Control Delay (s/veh)	45.9	3.9	7.2	47.7	4.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	3.9	7.2	47.7	4.6
Queue Length 50th (ft)	89	115	13	63	0
Queue Length 95th (ft)	141	181	237	108	33
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	376	2969	2193	393	658
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	0.46	0.48	0.26	0.21
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

													Ø9
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	60	1205	19	57	910	265	30	38	67	302	47	34	
Future Volume (vph)	60	1205	19	57	910	265	30	38	67	302	47	34	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	100		0	300		0	
Storage Lanes	1		0	1		1	1		0	2		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	1.00	1.00	1.00	1.00	0.97	1.00	1.00	
Frt		0.998				0.850		0.904			0.937		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	3449	0	1805	3455	1492	1745	1660	0	3351	1679	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1770	3449	0	1805	3455	1492	1745	1660	0	3351	1679	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		1				242		72			30		
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		1168			503			549			354		
Travel Time (s)		19.9			8.6			12.5			8.0		
Peak Hour Factor	0.89	0.89	0.89	0.92	0.92	0.92	0.93	0.93	0.93	0.94	0.94	0.94	
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	6%	
Adj. Flow (vph)	67	1354	21	62	989	288	32	41	72	321	50	36	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	67	1375	0	62	989	288	32	113	0	321	86	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right	
Median Width(ft)		12			12			22			22		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2		1	2	1	1	2		1	2		
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru		

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100		20	100	20	20	100		20	100		
Trailing Detector (ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Position(ft)	0	0		0	0	0	0	0		0	0		
Detector 1 Size(ft)	20	6		20	6	20	20	6		20	6		
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Detector 2 Position(ft)		94			94			94			94		
Detector 2 Size(ft)		6			6			6			6		
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex		
Detector 2 Channel													
Detector 2 Extend (s)		0.0			0.0			0.0			0.0		
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA		Split	NA		
Protected Phases	5	2		1	6	6 3	4	4		3	3		9
Permitted Phases													
Detector Phase	5	2		1	6	6 3	4	4		3	3		
Switch Phase													
Minimum Initial (s)	6.0	7.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	13.0		12.0	16.0		11.0	11.0		11.0	11.0		28.0
Total Split (s)	16.0	17.0		16.0	17.0		22.0	22.0		17.0	17.0		28.0
Total Split (%)	16.0%	17.0%		16.0%	17.0%		22.0%	22.0%		17.0%	17.0%		28%
Maximum Green (s)	10.0	11.0		10.0	11.0		17.0	17.0		12.0	12.0		26.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0	3.0		3.0	3.0		2.0
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-1.0	-1.0		-2.0	-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		3.0	3.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag		Lead	Lead		
Lead-Lag Optimize?							Yes	Yes		Yes	Yes		
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	C-Min		None	C-Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													18.0

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	11.2	44.8		10.9	44.5	63.4	9.6	9.6		16.6	16.6		
Actuated g/C Ratio	0.11	0.45		0.11	0.45	0.63	0.10	0.10		0.17	0.17		
v/c Ratio	0.34	0.89		0.32	0.64	0.28	0.19	0.50		0.58	0.28		
Control Delay (s/veh)	49.0	33.8		44.6	28.7	3.2	42.8	25.7		42.8	27.1		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	49.0	33.8		44.6	28.7	3.2	42.8	25.7		42.8	27.1		
LOS	D	C		D	C	A	D	C		D	C		
Approach Delay (s/veh)		34.5			23.9			29.5			39.5		
Approach LOS		C			C			C			D		

Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 110

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay (s/veh): 30.6

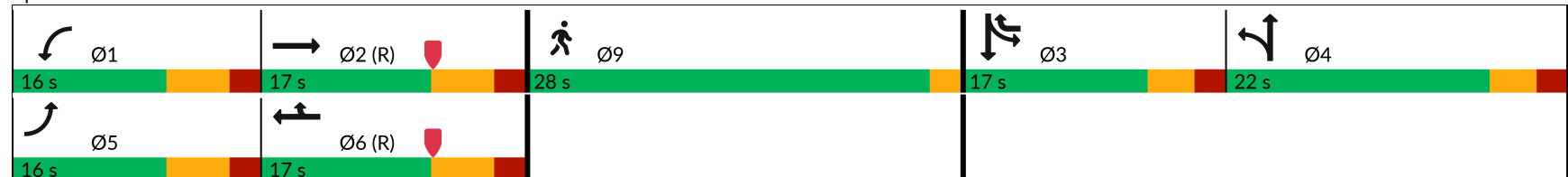
Intersection LOS: C

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2025 Baseline Saturday Midday Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	1375	62	989	288	32	113	321	86
v/c Ratio	0.34	0.89	0.32	0.64	0.28	0.19	0.50	0.58	0.28
Control Delay (s/veh)	49.0	33.8	44.6	28.7	3.2	42.8	25.7	42.8	27.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	49.0	33.8	44.6	28.7	3.2	42.8	25.7	42.8	27.1
Queue Length 50th (ft)	41	271	37	242	9	19	25	96	30
Queue Length 95th (ft)	79	#931	75	#651	46	46	75	147	78
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	223	1547	224	1538	1037	314	357	565	308
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.30	0.89	0.28	0.64	0.28	0.10	0.32	0.57	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Intersection												
Int Delay, s/veh	9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	189	1096	0	0	900	205	0	0	202	0	0	418
Future Vol, veh/h	189	1096	0	0	900	205	0	0	202	0	0	418
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	85	85	85	83	83	83	93	93	93
Heavy Vehicles, %	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	215	1245	0	0	1059	241	0	0	243	0	0	449

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	1059	0	-	-	-	-	0	-	-	623	-	-	529
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	665	-	0	0	-	-	0	0	0	432	0	0	494
Stage 1	-	-	0	0	-	-	0	0	0	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	0	-	0	0	-
Platoon blocked, %		-			-	-							
Mov Cap-1 Maneuver	665	-	-	-	-	-	-	-	-	432	-	-	494
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.91	0	23.6	50.31
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	432	665	-	-	-	494
HCM Lane V/C Ratio	0.564	0.323	-	-	-	0.91
HCM Ctrl Dly (s/v)	23.6	13	-	-	-	50.3
HCM Lane LOS	C	B	-	-	-	F
HCM 95th %tile Q(veh)	3.4	1.4	-	-	-	10.5

Intersection												
Int Delay, s/veh	8.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↑		↑↑	↑	↑		↑			
Traffic Vol, veh/h	0	1143	431	0	1166	152	66	0	142	0	0	0
Future Vol, veh/h	0	1143	431	0	1166	152	66	0	142	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	-	-	Yield	-	-	None
Storage Length	-	-	300	-	-	0	0	-	350	-	-	-
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	1	0	1	0	2	0	0	0	0	0
Mvmt Flow	0	1242	468	0	1281	167	75	0	161	0	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	-	0	-	-	0	1883
Stage 1	-	-	-	-	-	1242
Stage 2	-	-	-	-	-	641
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
Stage 1	0	-	0	0	-	0
Stage 2	0	-	0	0	-	0
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	-	~ 63
Mov Cap-2 Maneuver	-	-	-	-	-	~ 63
Stage 1	-	-	-	-	-	235
Stage 2	-	-	-	-	-	487

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	104.16
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	63	435	-	-
HCM Lane V/C Ratio	1.2	0.371	-	-
HCM Ctrl Dly (s/v)	289.4	18.1	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	6.1	1.7	-	-

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

2032 No-Build Weekday Morning Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		 	 				
Traffic Volume (vph)	40	1414	938	29	39	38	
Future Volume (vph)	40	1414	938	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
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	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3			41	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%	
Adj. Flow (vph)	43	1537	1020	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1537	1052	0	42	41	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	20.0	85.0	65.0		17.0	20.0	33.0
Total Split (%)	14.8%	63.0%	48.1%		12.6%	14.8%	24%
Maximum Green (s)	13.5	79.0	59.0		12.0	13.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	10.9	113.6	100.7		9.8	21.5	
Actuated g/C Ratio	0.08	0.84	0.75		0.07	0.16	
v/c Ratio	0.32	0.53	0.41		0.33	0.14	
Control Delay (s/veh)	63.9	7.2	12.1		65.8	13.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.9	7.2	12.1		65.8	13.3	
LOS	E	A	B		E	B	
Approach Delay (s/veh)		8.7	12.1		39.9		
Approach LOS		A	B		D		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 9 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay (s/veh): 11.0

Intersection LOS: B

Intersection Capacity Utilization 50.8%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

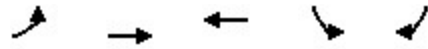


Queues

2032 No-Build Weekday Morning Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1537	1052	42	41
v/c Ratio	0.32	0.53	0.41	0.33	0.14
Control Delay (s/veh)	63.9	7.2	12.1	65.8	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.9	7.2	12.1	65.8	13.3
Queue Length 50th (ft)	36	121	232	37	0
Queue Length 95th (ft)	75	590	104	76	33
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	193	2921	2578	168	335
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	0.22	0.53	0.41	0.25	0.12
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1435	56	86	891	315	74	19	131	638	45	50
Future Volume (vph)	74	1435	56	86	891	315	74	19	131	638	45	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.994				0.850			0.850		0.921	
Flt Protected	0.950			0.950				0.962		0.950		
Satd. Flow (prot)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1602	0
Flt Permitted	0.950			0.950				0.962		0.950		
Satd. Flow (perm)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1602	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				342			142		37	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			338	
Travel Time (s)		19.9			8.6			12.5			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	4%	0%	5%	3%	4%	7%	0%	5%	1%	3%	8%
Adj. Flow (vph)	80	1560	61	93	968	342	80	21	142	693	49	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1621	0	93	968	342	0	101	142	693	103	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	17.0	57.0		13.0	53.0		34.0	34.0	13.0	31.0	31.0	
Total Split (%)	12.6%	42.2%		9.6%	39.3%		25.2%	25.2%	9.6%	23.0%	23.0%	
Maximum Green (s)	11.0	51.0		6.5	47.0		28.0	28.0	6.5	24.5	24.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	13.7	60.6		15.4	62.9	93.9		14.5	13.4	26.5	26.5	
Actuated g/C Ratio	0.10	0.45		0.11	0.47	0.70		0.11	0.10	0.20	0.20	
v/c Ratio	0.47	1.08		0.47	0.43	0.31		0.56	0.52	1.05	0.30	
Control Delay (s/veh)	71.2	81.7		61.5	30.7	1.7		68.8	15.4	101.9	32.1	
Queue Delay	0.0	0.0		0.0	0.0	0.3		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.2	81.7		61.5	30.7	2.1		68.8	15.4	101.9	32.1	
LOS	E	F		E	C	A		E	B	F	C	
Approach Delay (s/veh)		81.2			25.7			37.6			92.9	
Approach LOS		F			C			D			F	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay (s/veh): 62.1

Intersection LOS: E

Intersection Capacity Utilization 82.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	80	1621	93	968	342	101	142	693	103
v/c Ratio	0.47	1.08	0.47	0.43	0.31	0.56	0.52	1.05	0.30
Control Delay (s/veh)	71.2	81.7	61.5	30.7	1.7	68.8	15.4	101.9	32.1
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	81.7	61.5	30.7	2.1	68.8	15.4	101.9	32.1
Queue Length 50th (ft)	71	~892	80	249	0	85	0	~344	50
Queue Length 95th (ft)	133	#1083	141	307	39	141	67	#469	107
Internal Link Dist (ft)		1088		423		469			258
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	184	1501	196	2267	1111	359	275	657	344
Starvation Cap Reductn	0	0	0	0	334	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	1.08	0.47	0.43	0.44	0.28	0.52	1.05	0.30

Intersection Summary

~ 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.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	0	939	1265	0	1241	201	51	0	150	0	0	0
Future Volume (vph)	0	939	1265	0	1241	201	51	0	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3505	1794	0	3355	1449	2046	0	1794	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3505	1794	0	3355	1449	2046	0	1794	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			888			90			163			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1133			992			328	
Travel Time (s)		8.6			19.3			22.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	2%	0%	4%	4%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1021	1375	0	1349	218	55	0	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1021	1375	0	1349	218	55	0	163	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		116.0			116.0		19.0					
Total Split (%)		85.9%			85.9%		14.1%					
Maximum Green (s)		110.0			110.0		13.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		119.2	135.0		119.2	135.0	11.0		135.0			
Actuated g/C Ratio		0.88	1.00		0.88	1.00	0.08		1.00			
v/c Ratio		0.33	0.77		0.46	0.15	0.33		0.09			
Control Delay (s/veh)		3.8	8.9		2.7	0.2	63.0		0.1			
Queue Delay		0.8	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		4.7	8.9		2.7	0.2	63.0		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		7.1			2.3			16.0				
Approach LOS		A			A			B				

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 53 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 5.8

Intersection LOS: A

Intersection Capacity Utilization 44.3%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Morning Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1021	1375	1349	218	55	163
v/c Ratio	0.33	0.77	0.46	0.15	0.33	0.09
Control Delay (s/veh)	3.8	8.9	2.7	0.2	63.0	0.1
Queue Delay	0.8	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.7	8.9	2.7	0.2	63.0	0.1
Queue Length 50th (ft)	137	696	110	0	46	0
Queue Length 95th (ft)	m160	m688	164	0	89	0
Internal Link Dist (ft)	423		1053			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3093	1794	2961	1449	227	1794
Starvation Cap Reductn	1659	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.77	0.46	0.15	0.24	0.09
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	27.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱	↰			↰			↰
Traffic Vol, veh/h	139	950	0	0	871	130	0	0	194	0	0	571
Future Vol, veh/h	139	950	0	0	871	130	0	0	194	0	0	571
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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	0	0	3	4	0	0	2	0	0	7
Mvmt Flow	151	1033	0	0	947	141	0	0	211	0	0	621

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	947	0	-	-	-	0	-	- 516
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	721	-	0	0	-	-	0	504
Stage 1	-	-	0	0	-	-	0	-
Stage 2	-	-	0	0	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	721	-	-	-	-	-	-	504
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.44	0	17.19	126.76
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	504	721	-	-	-	524
HCM Lane V/C Ratio	0.419	0.21	-	-	-	1.184
HCM Ctrl Dly (s/v)	17.2	11.3	-	-	-	126.8
HCM Lane LOS	C	B	-	-	-	F
HCM 95th %tile Q(veh)	2	0.8	-	-	-	22.5

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

2032 No-Build Weekday Evening Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

							Ø9
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1319	1519	79	83	136	
Future Volume (vph)	125	1319	1519	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.993			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3539	3516	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3539	3516	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6			148	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	1%	
Adj. Flow (vph)	136	1434	1651	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1434	1737	0	90	148	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	17.0	95.0	78.0		12.0	17.0	33.0
Total Split (%)	12.1%	67.9%	55.7%		8.6%	12.1%	24%
Maximum Green (s)	10.5	89.0	72.0		7.0	10.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	18.0	112.8	90.2		12.6	33.7	
Actuated g/C Ratio	0.13	0.81	0.64		0.09	0.24	
v/c Ratio	0.64	0.50	0.77		0.56	0.30	
Control Delay (s/veh)	71.2	6.7	20.2		74.0	8.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.2	6.7	20.2		74.0	8.5	
LOS	E	A	C		E	A	
Approach Delay (s/veh)		12.3	20.2		33.3		
Approach LOS		B	C		C		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 18 (13%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay (s/veh): 17.6 Intersection LOS: B
 Intersection Capacity Utilization 66.8% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

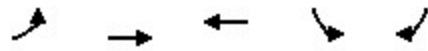


Queues

2032 No-Build Weekday Evening Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1434	1737	90	148
v/c Ratio	0.64	0.50	0.77	0.56	0.30
Control Delay (s/veh)	71.2	6.7	20.2	74.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	6.7	20.2	74.0	8.5
Queue Length 50th (ft)	117	152	303	79	0
Queue Length 95th (ft)	#258	453	#376	#192	62
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	214	2850	2267	161	497
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	0.50	0.77	0.56	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  					 		
Traffic Volume (vph)	156	1177	63	117	1442	624	68	56	75	453	59	49
Future Volume (vph)	156	1177	63	117	1442	624	68	56	75	453	59	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.992				0.850			0.850		0.932	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1712	0
Flt Permitted	0.950			0.950				0.973		0.950		
Satd. Flow (perm)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1712	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				589			168		26	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			354	
Travel Time (s)		19.9			8.6			12.5			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	3%	3%	2%	1%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	170	1279	68	127	1567	678	74	61	82	492	64	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1347	0	127	1567	678	0	135	82	492	117	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

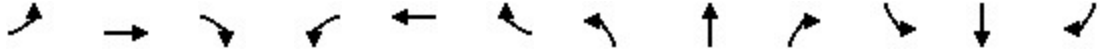
Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	27.0	57.0		20.0	50.0		34.0	34.0	20.0	29.0	29.0	
Total Split (%)	19.3%	40.7%		14.3%	35.7%		24.3%	24.3%	14.3%	20.7%	20.7%	
Maximum Green (s)	21.0	51.0		13.5	44.0		28.0	28.0	13.5	22.5	22.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	20.5	63.4		17.2	60.6	89.6		16.9	15.2	24.5	24.5	
Actuated g/C Ratio	0.15	0.45		0.12	0.43	0.64		0.12	0.11	0.18	0.18	
v/c Ratio	0.65	0.87		0.59	0.74	0.58		0.63	0.26	0.84	0.36	
Control Delay (s/veh)	71.3	38.0		69.9	33.5	3.1		70.9	1.9	69.6	43.0	
Queue Delay	0.0	0.0		0.0	1.7	0.7		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.3	38.0		69.9	35.2	3.8		70.9	1.9	69.6	43.0	
LOS	E	D		E	D	A		E	A	E	D	
Approach Delay (s/veh)		41.7			28.1			44.8			64.5	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 115

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay (s/veh): 38.0

Intersection LOS: D

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	170	1347	127	1567	678	135	82	492	117
v/c Ratio	0.65	0.87	0.59	0.74	0.58	0.63	0.26	0.84	0.36
Control Delay (s/veh)	71.3	38.0	69.9	33.5	3.1	70.9	1.9	69.6	43.0
Queue Delay	0.0	0.0	0.0	1.7	0.7	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.3	38.0	69.9	35.2	3.8	70.9	1.9	69.6	43.0
Queue Length 50th (ft)	127	442	111	445	49	119	0	227	73
Queue Length 95th (ft)	229	#845	m156	#565	50	183	0	#310	135
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	304	1552	225	2129	1167	370	327	586	321
Starvation Cap Reductn	0	0	0	373	199	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.87	0.56	0.89	0.70	0.36	0.25	0.84	0.36

Intersection Summary

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.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↗		↑↑	↗	↗		↗			
Traffic Volume (vph)	0	1043	662	0	2088	213	95	0	188	0	0	0
Future Volume (vph)	0	1043	662	0	2088	213	95	0	188	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3574	1812	0	3455	1478	2025	0	1812	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3574	1812	0	3455	1478	2025	0	1812	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			403			70			204			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1143			499			328	
Travel Time (s)		8.6			19.5			11.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	1%	2%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	0	1134	720	0	2270	232	103	0	204	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1134	720	0	2270	232	103	0	204	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		117.0			117.0		23.0					
Total Split (%)		83.6%			83.6%		16.4%					
Maximum Green (s)		111.0			111.0		17.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		117.6	140.0		117.6	140.0	14.4		140.0			
Actuated g/C Ratio		0.84	1.00		0.84	1.00	0.10		1.00			
v/c Ratio		0.38	0.40		0.78	0.16	0.50		0.11			
Control Delay (s/veh)		1.5	0.3		8.2	0.2	66.8		0.1			
Queue Delay		0.3	0.0		0.4	0.0	0.0		0.0			
Total Delay (s/veh)		1.8	0.3		8.6	0.2	66.8		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		1.2			7.8			22.5				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 86 (61%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.78

Intersection Signal Delay (s/veh): 6.2

Intersection LOS: A

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 No-Build Weekday Evening Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1134	720	2270	232	103	204
v/c Ratio	0.38	0.40	0.78	0.16	0.50	0.11
Control Delay (s/veh)	1.5	0.3	8.2	0.2	66.8	0.1
Queue Delay	0.3	0.0	0.4	0.0	0.0	0.0
Total Delay (s/veh)	1.8	0.3	8.6	0.2	66.8	0.1
Queue Length 50th (ft)	30	0	402	0	91	0
Queue Length 95th (ft)	4	m0	606	0	149	0
Internal Link Dist (ft)	423		1063			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3001	1812	2901	1478	274	1812
Starvation Cap Reductn	1053	0	0	0	0	0
Spillback Cap Reductn	0	0	208	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.40	0.84	0.16	0.38	0.11
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	238.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰			↰↰	↰			↰			↰
Traffic Vol, veh/h	178	1053	0	0	1216	222	0	0	339	0	0	1085
Future Vol, veh/h	178	1053	0	0	1216	222	0	0	339	0	0	1085
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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, %	1	1	0	0	1	1	0	0	1	0	0	2
Mvmt Flow	193	1145	0	0	1322	241	0	0	368	0	0	1179

Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1322	0	-	-	-	0	-	-	572	-	-	661
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.21	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	524	-	0	0	-	-	0	0	466	0	0	~ 405
Stage 1	-	-	0	0	-	-	0	0	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	524	-	-	-	-	-	-	-	466	-	-	~ 405
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.29	0	36.21	\$ 887.43
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	466	524	-	-	-	405
HCM Lane V/C Ratio	0.791	0.369	-	-	-	2.912
HCM Ctrl Dly (s/v)	36.2	15.8	-	-	-	\$ 887.4
HCM Lane LOS	E	C	-	-	-	F
HCM 95th %tile Q(veh)	7.2	1.7	-	-	-	101.2

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

2032 No-Build Saturday Midday Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		 	 				
Traffic Volume (vph)	129	1401	1002	74	91	120	
Future Volume (vph)	129	1401	1002	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3539	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3539	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			7			130	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	
Adj. Flow (vph)	140	1523	1089	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1523	1169	0	99	130	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	23.0	80.0	57.0		17.0	23.0	33.0
Total Split (%)	17.7%	61.5%	43.8%		13.1%	17.7%	25%
Maximum Green (s)	16.5	74.0	51.0		12.0	16.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	18.3	108.5	85.7		13.5	34.8	
Actuated g/C Ratio	0.14	0.83	0.66		0.10	0.27	
v/c Ratio	0.61	0.51	0.50		0.54	0.25	
Control Delay (s/veh)	63.2	4.0	14.4		65.2	6.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.2	4.0	14.4		65.2	6.1	
LOS	E	A	B		E	A	
Approach Delay (s/veh)		9.0	14.4		31.7		
Approach LOS		A	B		C		

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay (s/veh): 12.8

Intersection LOS: B

Intersection Capacity Utilization 52.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

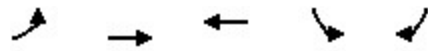


Queues

2032 No-Build Saturday Midday Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1523	1169	99	130
v/c Ratio	0.61	0.51	0.50	0.54	0.25
Control Delay (s/veh)	63.2	4.0	14.4	65.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.2	4.0	14.4	65.2	6.1
Queue Length 50th (ft)	115	151	164	81	0
Queue Length 95th (ft)	178	234	201	137	44
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	253	2983	2336	200	543
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	0.55	0.51	0.50	0.50	0.24
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 					  		
Traffic Volume (vph)	110	1315	64	122	991	359	75	51	134	392	61	54
Future Volume (vph)	110	1315	64	122	991	359	75	51	134	392	61	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.993				0.850			0.850		0.929	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1770	3433	0	1805	4964	1492	0	1783	1561	3351	1659	0
Flt Permitted	0.950			0.950				0.971		0.950		
Satd. Flow (perm)	1770	3433	0	1805	4964	1492	0	1783	1561	3351	1659	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				390			146		29	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			354	
Travel Time (s)		19.9			8.6			12.5			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	6%
Adj. Flow (vph)	120	1429	70	133	1077	390	82	55	146	426	66	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1499	0	133	1077	390	0	137	146	426	125	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	20.0	57.0		16.0	53.0		34.0	34.0	16.0	23.0	23.0	
Total Split (%)	15.4%	43.8%		12.3%	40.8%		26.2%	26.2%	12.3%	17.7%	17.7%	
Maximum Green (s)	14.0	51.0		9.5	47.0		28.0	28.0	9.5	16.5	16.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	16.1	60.2		17.0	61.6	84.6		16.3	15.0	18.5	18.5	
Actuated g/C Ratio	0.12	0.46		0.13	0.47	0.65		0.13	0.12	0.14	0.14	
v/c Ratio	0.55	0.94		0.56	0.46	0.35		0.61	0.47	0.89	0.48	
Control Delay (s/veh)	56.9	45.3		58.0	27.8	5.1		65.1	13.2	76.9	46.0	
Queue Delay	0.0	0.0		0.0	0.2	0.4		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	56.9	45.3		58.0	28.1	5.4		65.1	13.2	76.9	46.0	
LOS	E	D		E	C	A		E	B	E	D	
Approach Delay (s/veh)		46.1			25.0			38.3			69.9	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay (s/veh): 40.5

Intersection LOS: D

Intersection Capacity Utilization 73.8%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	120	1499	133	1077	390	137	146	426	125
v/c Ratio	0.55	0.94	0.56	0.46	0.35	0.61	0.47	0.89	0.48
Control Delay (s/veh)	56.9	45.3	58.0	27.8	5.1	65.1	13.2	76.9	46.0
Queue Delay	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.9	45.3	58.0	28.1	5.4	65.1	13.2	76.9	46.0
Queue Length 50th (ft)	99	644	106	250	0	111	0	185	75
Queue Length 95th (ft)	137	#885	175	313	142	172	63	#278	141
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	238	1591	236	2353	1107	397	309	476	260
Starvation Cap Reductn	0	0	0	538	299	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.94	0.56	0.59	0.48	0.35	0.47	0.89	0.48

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	0	1318	523	0	1386	169	86	0	158	0	0	0
Future Volume (vph)	0	1318	523	0	1386	169	86	0	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3574	1812	0	3455	1507	2006	0	1830	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3574	1812	0	3455	1507	2006	0	1830	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			271			76			172			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1143			499			328	
Travel Time (s)		8.6			19.5			11.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	1433	568	0	1507	184	93	0	172	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1433	568	0	1507	184	93	0	172	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		108.0			108.0		22.0					
Total Split (%)		83.1%			83.1%		16.9%					
Maximum Green (s)		102.0			102.0		16.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		108.6	130.0		108.6	130.0	13.4		130.0			
Actuated g/C Ratio		0.84	1.00		0.84	1.00	0.10		1.00			
v/c Ratio		0.48	0.31		0.52	0.12	0.45		0.09			
Control Delay (s/veh)		7.1	0.2		4.1	0.2	61.2		0.1			
Queue Delay		1.6	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		8.8	0.2		4.1	0.2	61.2		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		6.3			3.7			21.6				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 45 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.52

Intersection Signal Delay (s/veh): 6.2

Intersection LOS: A

Intersection Capacity Utilization 49.7%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 No-Build Saturday Midday Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1433	568	1507	184	93	172
v/c Ratio	0.48	0.31	0.52	0.12	0.45	0.09
Control Delay (s/veh)	7.1	0.2	4.1	0.2	61.2	0.1
Queue Delay	1.6	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	8.8	0.2	4.1	0.2	61.2	0.1
Queue Length 50th (ft)	267	0	152	0	76	0
Queue Length 95th (ft)	m326	m0	230	0	129	0
Internal Link Dist (ft)	423		1063			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2986	1812	2887	1507	277	1830
Starvation Cap Reductn	1306	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.85	0.31	0.52	0.12	0.34	0.09
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	21.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↱↱			↱↱	↰			↰			↰
Traffic Vol, veh/h	227	1249	0	0	1047	228	0	0	224	0	0	508
Future Vol, veh/h	227	1249	0	0	1047	228	0	0	224	0	0	508
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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, %	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	247	1358	0	0	1138	248	0	0	243	0	0	552

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1138	0	-	-	-	0	-	-	679	-	-	569
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	621	-	0	0	-	-	0	0	397	0	0	~ 465
Stage 1	-	-	0	0	-	-	0	0	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-	0	0	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	621	-	-	-	-	-	-	-	397	-	-	~ 465
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.24	0	27.48	131.52
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	397	621	-	-	-	465
HCM Lane V/C Ratio	0.614	0.397	-	-	-	1.187
HCM Ctrl Dly (s/v)	27.5	14.6	-	-	-	131.5
HCM Lane LOS	D	B	-	-	-	F
HCM 95th %tile Q(veh)	4	1.9	-	-	-	20.8

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

2032 Build Weekday Morning Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Morning Peak-Hour
10/09/2025

							Ø9
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1418	953	29	39	38	
Future Volume (vph)	40	1418	953	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.996			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1685	3471	3458	0	1752	1568	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1685	3471	3458	0	1752	1568	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			3			41	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	4%	4%	3%	3%	3%	
Adj. Flow (vph)	43	1541	1036	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1541	1068	0	42	41	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	20.0	85.0	65.0		17.0	20.0	33.0
Total Split (%)	14.8%	63.0%	48.1%		12.6%	14.8%	24%
Maximum Green (s)	13.5	79.0	59.0		12.0	13.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Morning Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	10.9	113.6	100.7		9.8	21.5	
Actuated g/C Ratio	0.08	0.84	0.75		0.07	0.16	
v/c Ratio	0.32	0.53	0.41		0.33	0.14	
Control Delay (s/veh)	63.9	7.2	13.7		65.8	13.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.9	7.2	13.7		65.8	13.3	
LOS	E	A	B		E	B	
Approach Delay (s/veh)		8.7	13.7		39.9		
Approach LOS		A	B		D		

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 9 (7%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay (s/veh): 11.6

Intersection LOS: B

Intersection Capacity Utilization 50.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

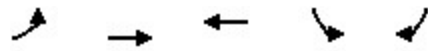


Queues

2032 Build Weekday Morning Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1541	1068	42	41
v/c Ratio	0.32	0.53	0.41	0.33	0.14
Control Delay (s/veh)	63.9	7.2	13.7	65.8	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.9	7.2	13.7	65.8	13.3
Queue Length 50th (ft)	36	121	250	37	0
Queue Length 95th (ft)	75	593	104	76	33
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	193	2921	2580	168	335
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	0.22	0.53	0.41	0.25	0.12
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 					 		
Traffic Volume (vph)	74	1435	60	93	891	315	89	24	153	638	47	50
Future Volume (vph)	74	1435	60	93	891	315	89	24	153	638	47	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.994				0.850			0.850		0.923	
Flt Protected	0.950			0.950				0.962		0.950		
Satd. Flow (prot)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1606	0
Flt Permitted	0.950			0.950				0.962		0.950		
Satd. Flow (perm)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1606	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				342			166		35	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			338	
Travel Time (s)		19.9			8.6			12.5			7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	4%	0%	5%	3%	4%	7%	0%	5%	1%	3%	8%
Adj. Flow (vph)	80	1560	65	101	968	342	97	26	166	693	51	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1625	0	101	968	342	0	123	166	693	105	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

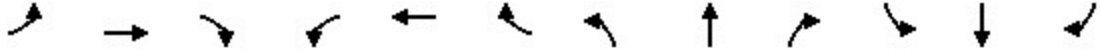
Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	17.0	57.0		13.0	53.0		34.0	34.0	13.0	31.0	31.0	
Total Split (%)	12.6%	42.2%		9.6%	39.3%		25.2%	25.2%	9.6%	23.0%	23.0%	
Maximum Green (s)	11.0	51.0		6.5	47.0		28.0	28.0	6.5	24.5	24.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	13.7	58.2		16.1	61.1	92.1		16.2	14.1	26.5	26.5	
Actuated g/C Ratio	0.10	0.43		0.12	0.45	0.68		0.12	0.10	0.20	0.20	
v/c Ratio	0.47	1.13		0.50	0.44	0.31		0.62	0.55	1.05	0.31	
Control Delay (s/veh)	71.8	100.5		62.0	32.1	1.9		68.9	15.2	101.9	33.4	
Queue Delay	0.0	0.0		0.0	0.0	0.3		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.8	100.5		62.0	32.1	2.3		68.9	15.2	101.9	33.4	
LOS	E	F		E	C	A		E	B	F	C	
Approach Delay (s/veh)		99.1			27.0			38.1			92.9	
Approach LOS		F			C			D			F	

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay (s/veh): 69.5

Intersection LOS: E

Intersection Capacity Utilization 82.4%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	80	1625	101	968	342	123	166	693	105
v/c Ratio	0.47	1.13	0.50	0.44	0.31	0.62	0.55	1.05	0.31
Control Delay (s/veh)	71.8	100.5	62.0	32.1	1.9	68.9	15.2	101.9	33.4
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.8	100.5	62.0	32.1	2.3	68.9	15.2	101.9	33.4
Queue Length 50th (ft)	71	~933	87	256	0	104	0	~344	53
Queue Length 95th (ft)	134	#1086	152	315	44	164	74	#469	111
Internal Link Dist (ft)		1088		423		469			258
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	184	1443	204	2204	1097	359	303	657	343
Starvation Cap Reductn	0	0	0	0	325	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	1.13	0.50	0.44	0.44	0.34	0.55	1.05	0.31

Intersection Summary

~ 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.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	0	948	1278	0	1247	201	52	0	150	0	0	0
Future Volume (vph)	0	948	1278	0	1247	201	52	0	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3505	1794	0	3355	1449	2046	0	1794	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3505	1794	0	3355	1449	2046	0	1794	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			888			90			163			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1133			992			328	
Travel Time (s)		8.6			19.3			22.5			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	2%	0%	4%	4%	0%	0%	2%	0%	0%	0%
Adj. Flow (vph)	0	1030	1389	0	1355	218	57	0	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1030	1389	0	1355	218	57	0	163	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		116.0			116.0		19.0					
Total Split (%)		85.9%			85.9%		14.1%					
Maximum Green (s)		110.0			110.0		13.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		119.1	135.0		119.1	135.0	11.1		135.0			
Actuated g/C Ratio		0.88	1.00		0.88	1.00	0.08		1.00			
v/c Ratio		0.33	0.77		0.46	0.15	0.34		0.09			
Control Delay (s/veh)		4.0	9.9		2.7	0.2	63.2		0.1			
Queue Delay		0.9	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		4.9	9.9		2.7	0.2	63.2		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		7.8			2.4			16.4				
Approach LOS		A			A			B				

Intersection Summary

Area Type: Other

Cycle Length: 135

Actuated Cycle Length: 135

Offset: 53 (39%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.77

Intersection Signal Delay (s/veh): 6.2

Intersection LOS: A

Intersection Capacity Utilization 44.5%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 Build Weekday Morning Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1030	1389	1355	218	57	163
v/c Ratio	0.33	0.77	0.46	0.15	0.34	0.09
Control Delay (s/veh)	4.0	9.9	2.7	0.2	63.2	0.1
Queue Delay	0.9	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	4.9	9.9	2.7	0.2	63.2	0.1
Queue Length 50th (ft)	152	742	112	0	48	0
Queue Length 95th (ft)	m154	m664	168	0	92	0
Internal Link Dist (ft)	423		1053			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3091	1794	2959	1449	227	1794
Starvation Cap Reductn	1669	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.77	0.46	0.15	0.25	0.09
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	27.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰			↰↰	↰			↰			↰
Traffic Vol, veh/h	141	957	0	0	873	130	0	0	194	0	0	575
Future Vol, veh/h	141	957	0	0	873	130	0	0	194	0	0	575
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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	0	0	3	4	0	0	2	0	0	7
Mvmt Flow	153	1040	0	0	949	141	0	0	211	0	0	625

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	949	0	-	-	-	0	-	- 520
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	-	-	-	-	3.32
Pot Cap-1 Maneuver	719	-	0	0	-	-	0	0 501
Stage 1	-	-	0	0	-	-	0	0
Stage 2	-	-	0	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	719	-	-	-	-	-	-	501
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	1.46	0	17.31	130.67
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	501	719	-	-	-	523
HCM Lane V/C Ratio	0.421	0.213	-	-	-	1.195
HCM Ctrl Dly (s/v)	17.3	11.4	-	-	-	130.7
HCM Lane LOS	C	B	-	-	-	F
HCM 95th %tile Q(veh)	2.1	0.8	-	-	-	22.9

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

2032 Build Weekday Evening Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Evening Peak-Hour
10/09/2025

							Ø9
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1332	1526	79	83	136	
Future Volume (vph)	125	1332	1526	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.993			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1668	3539	3516	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1668	3539	3516	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6			148	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	2%	2%	1%	1%	1%	
Adj. Flow (vph)	136	1448	1659	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1448	1745	0	90	148	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Evening Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	17.0	95.0	78.0		12.0	17.0	33.0
Total Split (%)	12.1%	67.9%	55.7%		8.6%	12.1%	24%
Maximum Green (s)	10.5	89.0	72.0		7.0	10.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Weekday Evening Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	18.0	112.8	90.2		12.6	33.7	
Actuated g/C Ratio	0.13	0.81	0.64		0.09	0.24	
v/c Ratio	0.64	0.51	0.77		0.56	0.30	
Control Delay (s/veh)	71.2	6.7	20.8		74.0	8.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.2	6.7	20.8		74.0	8.5	
LOS	E	A	C		E	A	
Approach Delay (s/veh)		12.3	20.8		33.3		
Approach LOS		B	C		C		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 18 (13%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
 Natural Cycle: 120
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.77
 Intersection Signal Delay (s/veh): 17.9 Intersection LOS: B
 Intersection Capacity Utilization 67.0% ICU Level of Service C
 Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

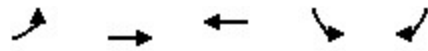


Queues

2032 Build Weekday Evening Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1448	1745	90	148
v/c Ratio	0.64	0.51	0.77	0.56	0.30
Control Delay (s/veh)	71.2	6.7	20.8	74.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	6.7	20.8	74.0	8.5
Queue Length 50th (ft)	117	155	306	79	0
Queue Length 95th (ft)	#258	460	#397	#192	62
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	214	2850	2267	161	497
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	0.51	0.77	0.56	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	1177	76	136	1442	624	75	59	85	453	63	49
Future Volume (vph)	156	1177	76	136	1442	624	75	59	85	453	63	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.991				0.850			0.850		0.934	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1787	3420	0	1752	4916	1492	0	1787	1561	3351	1715	0
Flt Permitted	0.950			0.950				0.973		0.950		
Satd. Flow (perm)	1787	3420	0	1752	4916	1492	0	1787	1561	3351	1715	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				581			168		24	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			354	
Travel Time (s)		19.9			8.6			12.5			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	3%	3%	2%	1%	0%	0%	0%	1%	0%	0%
Adj. Flow (vph)	170	1279	83	148	1567	678	82	64	92	492	68	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1362	0	148	1567	678	0	146	92	492	121	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

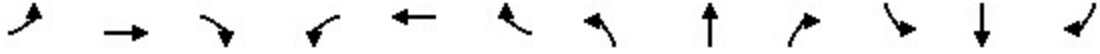
Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	27.0	57.0		20.0	50.0		34.0	34.0	20.0	29.0	29.0	
Total Split (%)	19.3%	40.7%		14.3%	35.7%		24.3%	24.3%	14.3%	20.7%	20.7%	
Maximum Green (s)	21.0	51.0		13.5	44.0		28.0	28.0	13.5	22.5	22.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	20.5	61.1		18.6	59.8	88.8		17.7	16.6	24.5	24.5	
Actuated g/C Ratio	0.15	0.44		0.13	0.43	0.63		0.13	0.12	0.18	0.18	
v/c Ratio	0.65	0.91		0.64	0.75	0.59		0.65	0.28	0.84	0.38	
Control Delay (s/veh)	70.8	42.7		70.3	34.3	3.3		70.9	2.0	69.6	44.6	
Queue Delay	0.0	0.0		0.0	1.9	0.7		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	70.8	42.7		70.3	36.2	4.0		70.9	2.0	69.6	44.6	
LOS	E	D		E	D	A		E	A	E	D	
Approach Delay (s/veh)		45.8			29.2			44.3			64.6	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay (s/veh): 39.8

Intersection LOS: D

Intersection Capacity Utilization 72.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues

2032 Build Weekday Evening Peak-Hour

5: Clarks Road/Elm Street & Route 110

10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	170	1362	148	1567	678	146	92	492	121
v/c Ratio	0.65	0.91	0.64	0.75	0.59	0.65	0.28	0.84	0.38
Control Delay (s/veh)	70.8	42.7	70.3	34.3	3.3	70.9	2.0	69.6	44.6
Queue Delay	0.0	0.0	0.0	1.9	0.7	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.8	42.7	70.3	36.2	4.0	70.9	2.0	69.6	44.6
Queue Length 50th (ft)	125	449	129	449	42	128	0	227	78
Queue Length 95th (ft)	225	#860	m181	#612	58	194	0	#310	143
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	304	1496	238	2099	1158	370	337	586	319
Starvation Cap Reductn	0	0	0	359	198	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.91	0.62	0.90	0.71	0.39	0.27	0.84	0.38

Intersection Summary

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.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	0	1047	668	0	2105	213	97	0	188	0	0	0
Future Volume (vph)	0	1047	668	0	2105	213	97	0	188	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3574	1812	0	3455	1478	2025	0	1812	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3574	1812	0	3455	1478	2025	0	1812	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			405			70			204			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1143			499			328	
Travel Time (s)		8.6			19.5			11.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	1%	2%	1%	0%	1%	0%	0%	0%
Adj. Flow (vph)	0	1138	726	0	2288	232	105	0	204	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1138	726	0	2288	232	105	0	204	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

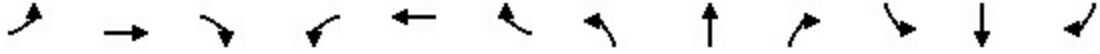
Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		117.0			117.0		23.0					
Total Split (%)		83.6%			83.6%		16.4%					
Maximum Green (s)		111.0			111.0		17.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		117.5	140.0		117.5	140.0	14.5		140.0			
Actuated g/C Ratio		0.84	1.00		0.84	1.00	0.10		1.00			
v/c Ratio		0.38	0.40		0.79	0.16	0.50		0.11			
Control Delay (s/veh)		1.3	0.3		8.5	0.2	66.9		0.1			
Queue Delay		0.3	0.0		0.5	0.0	0.0		0.0			
Total Delay (s/veh)		1.6	0.3		9.0	0.2	66.9		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		1.1			8.2			22.8				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 86 (61%), Referenced to phase 2:EBT and 6:WBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay (s/veh): 6.3

Intersection LOS: A

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 Build Weekday Evening Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1138	726	2288	232	105	204
v/c Ratio	0.38	0.40	0.79	0.16	0.50	0.11
Control Delay (s/veh)	1.3	0.3	8.5	0.2	66.9	0.1
Queue Delay	0.3	0.0	0.5	0.0	0.0	0.0
Total Delay (s/veh)	1.6	0.3	9.0	0.2	66.9	0.1
Queue Length 50th (ft)	12	0	415	0	93	0
Queue Length 95th (ft)	m5	m0	624	0	150	0
Internal Link Dist (ft)	423		1063			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2998	1812	2898	1478	274	1812
Starvation Cap Reductn	1060	0	0	0	0	0
Spillback Cap Reductn	0	0	230	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.40	0.86	0.16	0.38	0.11
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	245.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰			↰↰	↰			↰			↰
Traffic Vol, veh/h	179	1056	0	0	1222	222	0	0	339	0	0	1096
Future Vol, veh/h	179	1056	0	0	1222	222	0	0	339	0	0	1096
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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, %	1	1	0	0	1	1	0	0	1	0	0	2
Mvmt Flow	195	1148	0	0	1328	241	0	0	368	0	0	1191

Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	1328	0	-	-	-	0	-	-	574	-	-	664
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	-	-	-	-	-	-	6.92	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.21	-	-	-	-	-	-	-	3.31	-	-	3.32
Pot Cap-1 Maneuver	521	-	0	0	-	-	0	0	464	0	0	~ 403
Stage 1	-	-	0	0	-	-	0	0	-	0	0	-
Stage 2	-	-	0	0	-	-	0	0	-	0	0	-
Platoon blocked, %		-			-	-						
Mov Cap-1 Maneuver	521	-	-	-	-	-	-	-	464	-	-	~ 403
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.31	0	36.47	\$ 907.27
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	464	521	-	-	-	403
HCM Lane V/C Ratio	0.793	0.373	-	-	-	2.956
HCM Ctrl Dly (s/v)	36.5	16	-	-	-	\$ 907.3
HCM Lane LOS	E	C	-	-	-	F
HCM 95th %tile Q(veh)	7.2	1.7	-	-	-	102.9

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

2032 Build Saturday Midday Peak Hour

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Saturday Midday Peak-Hour
10/09/2025

							Ø9
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1411	1011	74	91	120	
Future Volume (vph)	129	1411	1011	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.990			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3539	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3539	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			7			130	
Link Speed (mph)		40	40		30		
Link Distance (ft)		1031	1168		461		
Travel Time (s)		17.6	19.9		10.5		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	1%	1%	1%	1%	1%	
Adj. Flow (vph)	140	1534	1099	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1534	1179	0	99	130	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Left	Left	Right	Left	Right	
Median Width(ft)		12	12		12		
Link Offset(ft)		0	0		0		
Crosswalk Width(ft)		16	16		16		
Two way Left Turn Lane							
Headway Factor	1.09	1.00	1.00	1.00	1.00	1.00	
Turning Speed (mph)	15			9	15	9	
Number of Detectors	1	2	2		1	1	
Detector Template	Left	Thru	Thru		Left	Right	

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Saturday Midday Peak-Hour
10/09/2025

							
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Prot	NA	NA		Prot	pm+ov	
Protected Phases	5	2	6		4	5	9
Permitted Phases						4	
Detector Phase	5	2	6		4	5	
Switch Phase							
Minimum Initial (s)	6.0	10.0	10.0		6.0	6.0	5.0
Minimum Split (s)	13.0	16.0	16.0		11.0	13.0	33.0
Total Split (s)	23.0	80.0	57.0		17.0	23.0	33.0
Total Split (%)	17.7%	61.5%	43.8%		13.1%	17.7%	25%
Maximum Green (s)	16.5	74.0	51.0		12.0	16.5	29.0
Yellow Time (s)	4.0	5.0	5.0		3.0	4.0	3.0
All-Red Time (s)	2.5	1.0	1.0		2.0	2.5	1.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-1.0	-1.0	
Total Lost Time (s)	4.5	4.0	4.0		4.0	5.5	
Lead/Lag	Lead		Lag		Lead		
Lead-Lag Optimize?							
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Min	C-Min		None	None	None
Walk Time (s)							6.0
Flash Don't Walk (s)							23.0

Lanes, Volumes, Timings
4: Route 110 & Carriagetown Marketplace Driveway

2032 Build Saturday Midday Peak-Hour
10/09/2025

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effect Green (s)	18.3	108.5	85.7		13.5	34.8	
Actuated g/C Ratio	0.14	0.83	0.66		0.10	0.27	
v/c Ratio	0.61	0.51	0.50		0.54	0.25	
Control Delay (s/veh)	63.2	4.1	15.3		65.2	6.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.2	4.1	15.3		65.2	6.1	
LOS	E	A	B		E	A	
Approach Delay (s/veh)		9.0	15.3		31.7		
Approach LOS		A	B		C		

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 2 (2%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay (s/veh): 13.1

Intersection LOS: B

Intersection Capacity Utilization 52.9%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 4: Route 110 & Carriagetown Marketplace Driveway

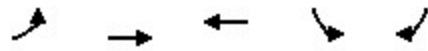


Queues

2032 Build Saturday Midday Peak-Hour

4: Route 110 & Carriagetown Marketplace Driveway

10/09/2025



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1534	1179	99	130
v/c Ratio	0.61	0.51	0.50	0.54	0.25
Control Delay (s/veh)	63.2	4.1	15.3	65.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.2	4.1	15.3	65.2	6.1
Queue Length 50th (ft)	115	153	173	81	0
Queue Length 95th (ft)	178	238	221	137	44
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	253	2983	2336	200	543
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	0.55	0.51	0.50	0.50	0.24
Intersection Summary					

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			  					  		
Traffic Volume (vph)	110	1315	74	136	991	359	84	54	148	392	64	54
Future Volume (vph)	110	1315	74	136	991	359	84	54	148	392	64	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11
Storage Length (ft)	400		0	215		200	240		240	300		0
Storage Lanes	1		0	1		1	0		1	2		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.91	1.00	1.00	1.00	1.00	0.97	1.00	1.00
Frt		0.992				0.850			0.850		0.931	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1770	3429	0	1805	4964	1492	0	1783	1561	3351	1664	0
Flt Permitted	0.950			0.950				0.971		0.950		
Satd. Flow (perm)	1770	3429	0	1805	4964	1492	0	1783	1561	3351	1664	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				390			161		27	
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		1168			503			549			354	
Travel Time (s)		19.9			8.6			12.5			8.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	6%
Adj. Flow (vph)	120	1429	80	148	1077	390	91	59	161	426	70	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1509	0	148	1077	390	0	150	161	426	129	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			22			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.04	1.04	1.00	1.04	1.09	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2	1		2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right		Thru	Right	Left	Thru	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)	20	100		20	100	20		100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0		0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20		6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA	pt+ov	Split	NA	Over	Split	NA	
Protected Phases	5	2		1	6	6 3	4	4	1	3	3	
Permitted Phases												
Detector Phase	5	2		1	6	6 3	4	4	1	3	3	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	6.0	
Minimum Split (s)	12.0	16.0		13.0	24.0		34.0	34.0	13.0	15.0	15.0	
Total Split (s)	20.0	57.0		16.0	53.0		34.0	34.0	16.0	23.0	23.0	
Total Split (%)	15.4%	43.8%		12.3%	40.8%		26.2%	26.2%	12.3%	17.7%	17.7%	
Maximum Green (s)	14.0	51.0		9.5	47.0		28.0	28.0	9.5	16.5	16.5	
Yellow Time (s)	4.0	5.0		4.0	5.0		3.5	3.5	4.0	3.5	3.5	
All-Red Time (s)	2.0	1.0		2.5	1.0		2.5	2.5	2.5	3.0	3.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-1.0	0.0	-2.0	-2.0	
Total Lost Time (s)	4.0	4.0		4.5	4.0			5.0	6.5	4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Min		None	C-Min		None	None	None	None	None	
Walk Time (s)					7.0		7.0	7.0		7.0	7.0	
Flash Don't Walk (s)					11.0		21.0	21.0		1.0	1.0	

Lanes, Volumes, Timings
5: Clarks Road/Elm Street & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)					0		0	0		0	0	
Act Effct Green (s)	16.1	57.9		18.3	60.7	83.7		17.2	16.3	18.5	18.5	
Actuated g/C Ratio	0.12	0.45		0.14	0.47	0.64		0.13	0.13	0.14	0.14	
v/c Ratio	0.55	0.99		0.58	0.46	0.35		0.64	0.48	0.89	0.50	
Control Delay (s/veh)	56.9	54.4		57.8	28.5	5.3		65.0	12.7	76.9	47.8	
Queue Delay	0.0	0.0		0.0	0.2	0.4		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	56.9	54.4		57.8	28.7	5.6		65.0	12.7	76.9	47.8	
LOS	E	D		E	C	A		E	B	E	D	
Approach Delay (s/veh)		54.6			25.8			37.9			70.1	
Approach LOS		D			C			D			E	

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow, Master Intersection

Natural Cycle: 125

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay (s/veh): 44.1

Intersection LOS: D

Intersection Capacity Utilization 74.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 5: Clarks Road/Elm Street & Route 110



Queues

2032 Build Saturday Midday Peak-Hour

5: Clarks Road/Elm Street & Route 110

10/09/2025

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	120	1509	148	1077	390	150	161	426	129
v/c Ratio	0.55	0.99	0.58	0.46	0.35	0.64	0.48	0.89	0.50
Control Delay (s/veh)	56.9	54.4	57.8	28.5	5.3	65.0	12.7	76.9	47.8
Queue Delay	0.0	0.0	0.0	0.2	0.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.9	54.4	57.8	28.7	5.6	65.0	12.7	76.9	47.8
Queue Length 50th (ft)	99	~713	117	252	0	122	0	185	80
Queue Length 95th (ft)	139	#896	195	318	142	185	66	#278	147
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	238	1530	254	2317	1099	397	336	476	259
Starvation Cap Reductn	0	0	0	518	293	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.99	0.58	0.60	0.48	0.38	0.48	0.89	0.50

Intersection Summary

~ 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.

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 							
Traffic Volume (vph)	0	1324	531	0	1399	169	87	0	158	0	0	0
Future Volume (vph)	0	1324	531	0	1399	169	87	0	158	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	16	12	11	10	16	12	16	12	12	12
Storage Length (ft)	0		300	0		0	0		350	0		0
Storage Lanes	0		1	0		1	1		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			
Flt Protected							0.950					
Satd. Flow (prot)	0	3574	1812	0	3455	1507	2006	0	1830	0	0	0
Flt Permitted							0.950					
Satd. Flow (perm)	0	3574	1812	0	3455	1507	2006	0	1830	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			274			76			172			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			1143			499			328	
Travel Time (s)		8.6			19.5			11.3			7.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	1439	577	0	1521	184	95	0	172	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1439	577	0	1521	184	95	0	172	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			16			16	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	0.85	1.00	1.04	1.09	0.85	1.00	0.85	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1		2	1	1	2	1		2	
Detector Template		Thru	Right		Thru	Right	Left	Thru	Right		Thru	

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Leading Detector (ft)		100	20		100	20	20	100	20		100	
Trailing Detector (ft)		0	0		0	0	0	0	0		0	
Detector 1 Position(ft)		0	0		0	0	0		0			
Detector 1 Size(ft)		6	20		6	20	20		20			
Detector 1 Type		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex			
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Queue (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 1 Delay (s)		0.0	0.0		0.0	0.0	0.0		0.0			
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type		NA	Free		NA	Free	Prot		Free			
Protected Phases		2			6		4					
Permitted Phases			Free			Free			Free			
Detector Phase		2			6		4					
Switch Phase												
Minimum Initial (s)		10.0			10.0		6.0					
Minimum Split (s)		16.0			16.0		12.0					
Total Split (s)		108.0			108.0		22.0					
Total Split (%)		83.1%			83.1%		16.9%					
Maximum Green (s)		102.0			102.0		16.0					
Yellow Time (s)		5.0			5.0		3.0					
All-Red Time (s)		1.0			1.0		3.0					
Lost Time Adjust (s)		-2.0			-2.0		-2.0					
Total Lost Time (s)		4.0			4.0		4.0					
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)		3.0			3.0		3.0					
Recall Mode		C-Min			C-Min		None					
Walk Time (s)		7.0										
Flash Don't Walk (s)		2.0										

Lanes, Volumes, Timings
6: I-95 SB Ramps & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		108.5	130.0		108.5	130.0	13.5		130.0			
Actuated g/C Ratio		0.83	1.00		0.83	1.00	0.10		1.00			
v/c Ratio		0.48	0.32		0.53	0.12	0.46		0.09			
Control Delay (s/veh)		7.5	0.2		4.2	0.2	61.2		0.1			
Queue Delay		1.8	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		9.3	0.2		4.2	0.2	61.2		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		6.7			3.7			21.8				
Approach LOS		A			A			C				

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 45 (35%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow

Natural Cycle: 40

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.53

Intersection Signal Delay (s/veh): 6.4

Intersection LOS: A

Intersection Capacity Utilization 50.2%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: I-95 SB Ramps & Route 110



Queues
6: I-95 SB Ramps & Route 110

2032 Build Saturday Midday Peak-Hour
10/09/2025

	→	↘	←	↖	↙	↗
Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1439	577	1521	184	95	172
v/c Ratio	0.48	0.32	0.53	0.12	0.46	0.09
Control Delay (s/veh)	7.5	0.2	4.2	0.2	61.2	0.1
Queue Delay	1.8	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	9.3	0.2	4.2	0.2	61.2	0.1
Queue Length 50th (ft)	351	0	156	0	78	0
Queue Length 95th (ft)	m297	m0	235	0	131	0
Internal Link Dist (ft)	423		1063			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2982	1812	2883	1507	277	1830
Starvation Cap Reductn	1311	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.86	0.32	0.53	0.12	0.34	0.09
Intersection Summary						
m Volume for 95th percentile queue is metered by upstream signal.						

Intersection												
Int Delay, s/veh	23.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↰↰			↰↰	↰			↰			↰
Traffic Vol, veh/h	228	1254	0	0	1052	228	0	0	224	0	0	516
Future Vol, veh/h	228	1254	0	0	1052	228	0	0	224	0	0	516
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	Yield
Storage Length	80	-	-	-	-	0	-	-	0	-	-	0
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, %	0	1	0	0	1	0	0	0	1	0	0	2
Mvmt Flow	248	1363	0	0	1143	248	0	0	243	0	0	561

Major/Minor	Major1		Major2		Minor1		Minor2	
Conflicting Flow All	1143	0	-	-	-	0	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	-	-	-	6.92	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	-	-	-	3.31	-
Pot Cap-1 Maneuver	618	-	0	0	-	-	0	0
Stage 1	-	-	0	0	-	-	0	0
Stage 2	-	-	0	0	-	-	0	0
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	618	-	-	-	-	-	395	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	2.26	0	27.7	140.52
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	395	618	-	-	-	463
HCM Lane V/C Ratio	0.617	0.401	-	-	-	1.21
HCM Ctrl Dly (s/v)	27.7	14.7	-	-	-	140.5
HCM Lane LOS	D	B	-	-	-	F
HCM 95th %tile Q(veh)	4	1.9	-	-	-	21.8

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