Functional Design Report/ Project Framework Document

Route 110 Improvements
Amesbury, Massachusetts

Prepared for:

CITY OF AMESBURY
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August 2025

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INTRODUCTION

Vanasse & Associates, Inc. (VAI) has prepared intersection design plans and an associated Functional Design Report (FDR) for the intersections of Macy Street (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 in the City of Amesbury and Town of Salisbury, Massachusetts.

BACKGROUND

Roadway geometric and traffic control requirements are identified in this document for the intersection improvements in Amesbury and Salisbury, Massachusetts. These improvements were initially identified during the local permitting process for several developments proposed in the area. The City of Amesbury decided to pursue the individual development projects proposed improvements as one overall improvement project.

PROJECT SETTING

The intersection improvements (the "Project") are associated with several proposed developments in Amesbury, Massachusetts. The development projects consist of several residential developments, a Starbucks, a restaurant, a brewery, and a bakery/café. The Project includes improvements that are proposed at the intersections of Macy Street (Route 110) at Carriagetown Marketplace, Route 110 at Elm Street/Clark's Road, Route 110 at I-95 southbound ramps, and Route 110 at Merrill Street/Rabbit Road. Figure 1 depicts the location of the study area roadways and intersections, which are described below.

EXISTING GEOMETRIC CONDITIONS

Roadways

Elm Street

Elm Street is a minor arterial roadway under the jurisdiction of the Massachusetts Department of Transportation (MassDOT) that traverses the study area in a general northwest-southeast

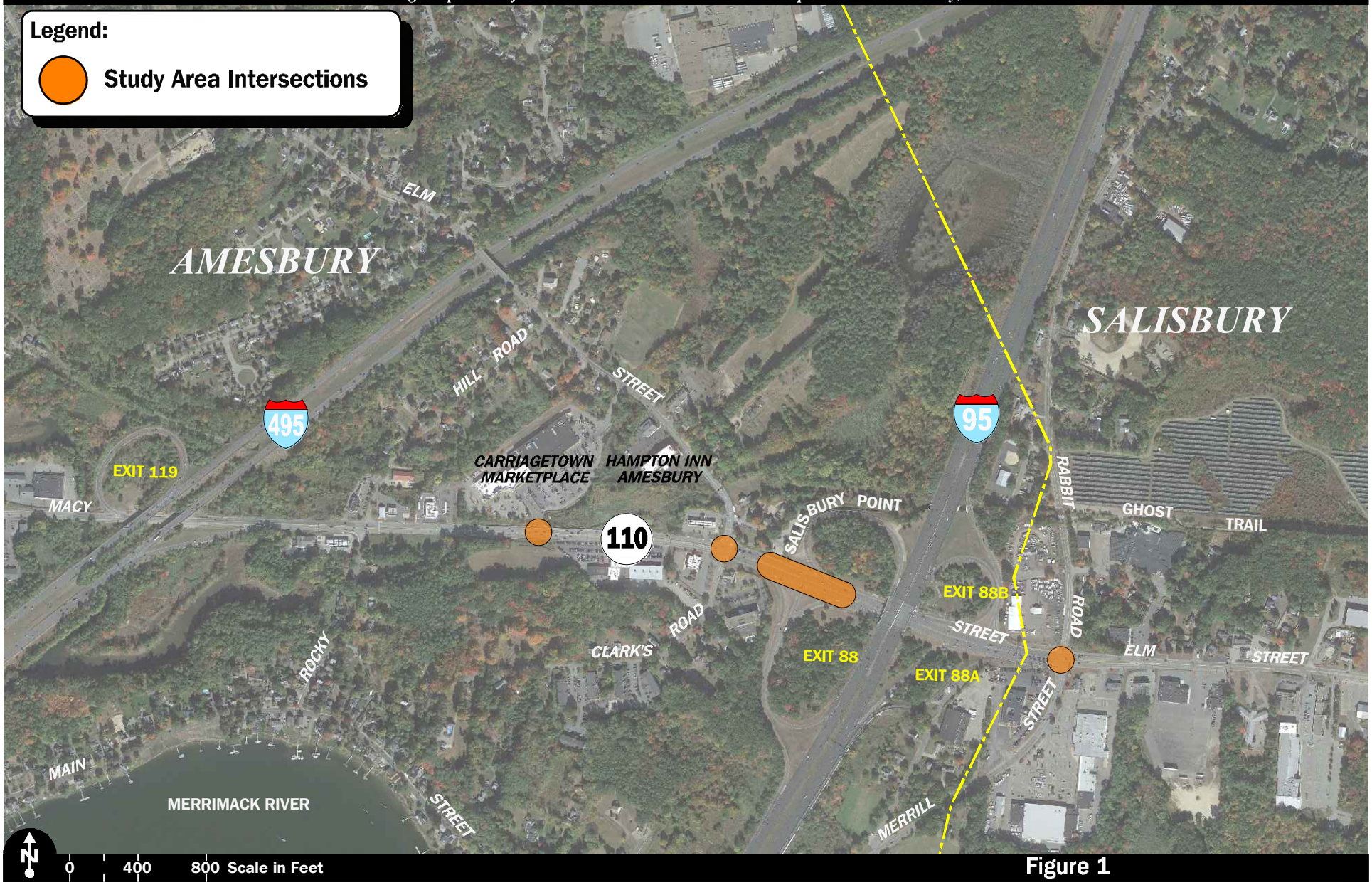

Figure 1

Study Area Map

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orientation. Within the study area, Elm Street 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.

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 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

Route 110 at Carriagetown Marketplace Driveway

Route 110 is intersected by the Carriagetown Marketplace driveway from the north to form this three-legged intersection under traffic signal control. The Carriagetown Marketplace driveway southbound approach consists of an 11-foot-wide exclusive left-turn lane and an 11-foot-wide exclusive right-turn lane with a marked shoulder and sidewalk provided. The Route 110 eastbound approach provides a 10-foot-wide exclusive left-turn lane and two 12-foot-wide through lanes with a marked shoulder provided. The Route 110 westbound approach provides an 11-foot-wide through lane and an 11-foot-wide through/right-turn lane with a marked shoulder and sidewalk provided. The direction of travel along Carriagetown Marketplace driveway is separated by a raised median, while on Route 110, it is separated by a double-yellow centerline. Land use in the vicinity of the intersection generally consists of commercial properties.

Route 110 at Elm Street/Clark's Road

Route 110 is intersected by Elm Street from the north and Clark's Road from the south to form this four-legged intersection under traffic signal control. The Clark's Road northbound approach consists of an 11-foot-wide exclusive left-turn lane and an 11-foot-wide shared through/right-turn lane with a marked shoulder and sidewalk provided. The Elm Street southbound approach consists of two 11-foot-wide exclusive left-turn lanes and an 11-foot-wide shared through/right-turn lane with a marked shoulder provided. The Route 110 eastbound approach provides a 12-foot-wide exclusive left-turn lane, an 11-foot-wide through lane, and an 11-foot-wide shared through/right-turn lane with a marked shoulder provided. The Route 110 westbound approach provides a 12-foot-wide exclusive left-turn lane, an 11-foot-wide through lane, a 12-foot-wide through lane, and a 10-foot-wide channelized right-turn lane with a marked shoulder. The Salisbury Point Ghost Trail runs along the north side of Route 110 west of the I-95 southbound ramps and terminates at the intersection of Elm Street. The direction of travel along Clark's Road and Elm Street is separated

by a double-yellow centerline, while on Route 110, it is separated by a raised median. Land use in the vicinity of the intersection generally consists of commercial and residential properties.

Route 110 at I-95 Southbound Ramps

Route 110 is intersected by the I-95 southbound ramps from the south and north to form a four-legged intersection under STOP-sign control. The I-95 southbound off-ramp northbound approach consists of an 18-foot-wide exclusive left-turn lane and a 19-foot-wide exclusive right-turn lane with a marked shoulder provided. The I-95 southbound on-ramps consist of a 19-foot-wide accepting lane with a marked shoulder provided. The Route 110 eastbound approach provides two 11-foot-wide general-purpose travel lanes and a 20-foot-wide channelized right-turn lane with a marked shoulder and sidewalk provided. The Route 110 westbound approach provides two 11-foot-wide general-purpose travel lanes and a 19-foot-wide channelized right-turn lane with a marked shoulder and sidewalk provided. The direction of travel along Route 110 is separated by a raised median. Land use in the vicinity of the intersection generally consists of commercial and residential properties and open and wooded areas.

Route 110 at Merrill Street/Rabbit Road

Route 110 is intersected by Merrill Street from the south and Rabbit Road from the north to form a four-legged intersection under traffic signal control. The Merrill Street northbound approach consists of an 11-foot-wide exclusive left-turn lane and an 11-foot-wide through/right-turn lane with a marked shoulder and sidewalk provided. The Rabbit Road southbound approach consists of a 12-foot-wide shared left/through lane and an 11-foot-wide exclusive right-turn lane with a marked shoulder and sidewalk provided. The Route 110 eastbound approach provides an 11-foot-wide exclusive left-turn lane, two 11-foot-wide through lanes, and an 11-foot-wide exclusive right-turn lane with a marked shoulder and sidewalk provided. The Route 110 westbound approach provides a 12-foot-wide exclusive left-turn lane, a 12-foot-wide through lane, and a 12-foot-wide shared through/right-turn lane with a marked shoulder and sidewalk provided. The direction of travel along Route 110 is separated by a raised median. Land use in the vicinity of the intersection generally consists of commercial properties.

FUTURE GEOMETRIC CONDITIONS

The following summarizes the proposed improvements that are reflected in the design plans accompanying this FDR. These improvements include mitigation measures proposed at the study area intersections.

Route 110 at Carriagetown Marketplace Driveway

- Optimize signal timing

Route 110 at Elm Street/Clark's Road

- Widen Route 110 westbound to accommodate an additional (third) through-travel lane;
- Reconstruct the westbound right-turn slip lane from Route 110 to Elm Street;
- Relocate the shared-use path on the north side of the intersection to accommodate the widened roadway;

- Replace the existing traffic signal system at Route 110 and Elm Street to accommodate the revised intersection geometry;

- Modify Route 110 center median to extend the westbound left-turn lane;

- Repave and apply new pavement markings within the limits of work;

- Rebuild sidewalk, and Americans with Disabilities Act (ADA)-compliant pedestrian curb ramps from the western limit of work to the intersection, connecting to the shared-used path;

- Rebuild delta island at the intersection;

- Restripe Clark's Road as a shared left-turn/through lane and an exclusive right-turn lane;

- Implement an overlap for the Clarks Road right-turn movement with the Macy Street left-turn movement; and

- Implement concurrent pedestrian phasing.

Route 110 at I-95 Southbound Ramps

- Install a fully actuated and coordinated traffic signal system at the intersection of Route 110 at the I-95 southbound off-ramps;

- Repave and apply new pavement markings within the limits of work; and

- Rebuild ADA-compliant pedestrian curb ramps.

Route 110 at Merrill Street/Rabbit Road

- Short-term, low-cost Road Safety Audit (RSA) safety enhancements:

    - Signing improvements
    - Pavement markings
    - Signal improvements:

        - Install reflective backplates on all signal heads
        - Optimize signal timing
        - Update clearance intervals

TRAFFIC VOLUMES

Design conditions have been established to evaluate the operation of the planned improvements under existing and projected future traffic demands. Design conditions relating to critical peak-hour traffic demands were derived in part from the collection of existing traffic volumes, the establishment of baseline traffic volumes, and the projection of future conditions, incorporating both general background traffic growth and planned future development in the area.

EXISTING TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts and turning movement counts (TMCs) were completed in July 2023, February 2024, April 2025, and May 2025. The peak-period TMCs were performed at the study intersections during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods and during the Saturday midday peak period (11:00 AM to 2:00 PM). The ATR counts were conducted over a 48-hour period.

Traffic-Volume Adjustments

In order to develop 2025 Baseline traffic-volume conditions, adjustments for seasonal fluctuations in traffic were reviewed. MassDOT's 2023 Weekday Seasonal Factors were used to determine the appropriate seasonal adjustment factor for the study area. The study area includes principal arterials, minor arterials, and major collector roadways. The 2023 Weekday Seasonal Factors indicate that these types of roadways in the months of April, May, and July are all above-average month conditions. In February, principal arterial roadways are approximately 2 percent below average-month conditions, while minor arterial and major collector roadways are equal to average-month conditions. The count conducted in February 2024 was on Elm Street, which is a minor arterial roadway and therefore did not need adjustment to average-month conditions. As such, all counts were left unadjusted to provide a conservative analysis scenario. The 2023 and 2024 traffic volumes were then grown by 1.5 percent per year to 2025 traffic-volume conditions. The 2025 Baseline traffic volumes on Route 110, Elm Street, and Clark's Road are summarized in Table 1.

Table 1
2025 BASELINE TRAFFIC VOLUMES

Location/Peak-Hour	AWT[a]	Saturday[b]	VPH[c]	K Factor[d]	Directional Distribution[e]
Route 110, east of Clark's Road:	35,850	32,250	--	--	--
Weekday Morning	--	--	2,989	8.3	63.3% EB
Weekday Evening	--	--	3,315	9.2	56.0% WB
Saturday Midday	--	--	2,773	8.6	56.6% EB
Clark's Road, south of Route 110:	2,650	3,000	--	--	--
Weekday Morning	--	--	177	6.7	62.1% NB
Weekday Evening	--	--	300	11.3	56.3% SB
Saturday Midday	--	--	257	8.6	52.5% NB
Elm Street, north of Clark's Road:	10,900	8,650	--	--	--
Weekday Morning	--	--	885	8.1	63.5% SB
Weekday Evening	--	--	1,067	9.8	55.3% NB
Saturday Midday	--	--	740	8.6	51.8% SB

[a]Average weekday traffic in vehicles per day; counted.
[b]Average Saturday traffic in vehicles per day; estimated.
[c]Vehicles per hour.
[d]Percent of daily traffic occurring during the peak hour.
[e]Percent traveling in peak direction.

As can be seen in Table 1, Route 110 was found to carry approximately 35,850 vehicles per day (vpd), with 2,989 vehicles per hour (vph) during the weekday morning peak hour and 3,315 vph during the weekday evening peak hour. During the weekday morning peak hour, 63.3 percent of the traffic is traveling eastbound, while 56.0 percent of the traffic is traveling westbound during the weekday evening peak hour. On Saturday, Route 110 was estimated to carry approximately 32,250 vpd with 2,773 vph during the Saturday midday peak hour. During the Saturday midday peak hour, 56.6 percent of the traffic is traveling eastbound.

In addition, Clark's Road was found to carry approximately 2,650 vpd, with 177 vph during the weekday morning peak hour and 300 vph during the weekday evening peak hour. During the weekday morning peak hour, 62.1 percent of the traffic is traveling northbound, while 56.3 percent of the traffic is traveling southbound during the weekday evening peak hour. On Saturday, Clark's Road was estimated to carry approximately 3,000 vpd with 257 vph during the Saturday midday peak hour. During the Saturday midday peak hour, 52.5 percent of the traffic is traveling northbound.

Lastly, Elm Street was found to carry approximately 10,900 vpd, with 885 vph during the weekday morning peak hour and 1,067 vph during the weekday evening peak hour. During the weekday morning peak hour, 63.5 percent of the traffic is traveling southbound, while 55.3 percent of the traffic is traveling northbound during the weekday evening peak hour. On Saturday, Elm Street was

estimated to carry approximately 8,650 vpd with 740 vph during the Saturday midday peak hour. During the Saturday midday peak hour, 51.8 percent of the traffic is traveling southbound.

The baseline weekday morning, weekday evening, and Saturday midday peak-hour traffic volumes for the study area intersections are graphically depicted in Figure 2.

DESIGN-YEAR TRAFFIC VOLUMES

In accordance with MassDOT and the Federal Highway Administration (FHWA) requirements, both a seven-year and 20-year planning horizon (2032 and 2045) were selected to represent Future conditions. Existing traffic volumes were adjusted to account for anticipated background traffic growth and defined specific development projects by others, anticipated to be constructed by the 2032 and 2045 Future conditions.

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, south of the Project site. Traffic volumes associated with this development were obtained from a traffic study prepared for the project[1] 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, southwest of the Project site. Traffic volumes associated with this development were obtained from a traffic study prepared for the project[2] 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 of Elm Street, south of the Project site. Traffic volumes associated with this development were estimated using trip generation statistics published by the Institute of Transportation Engineers (ITE)[3] and were added to the future condition traffic volumes based on existing traffic patterns.

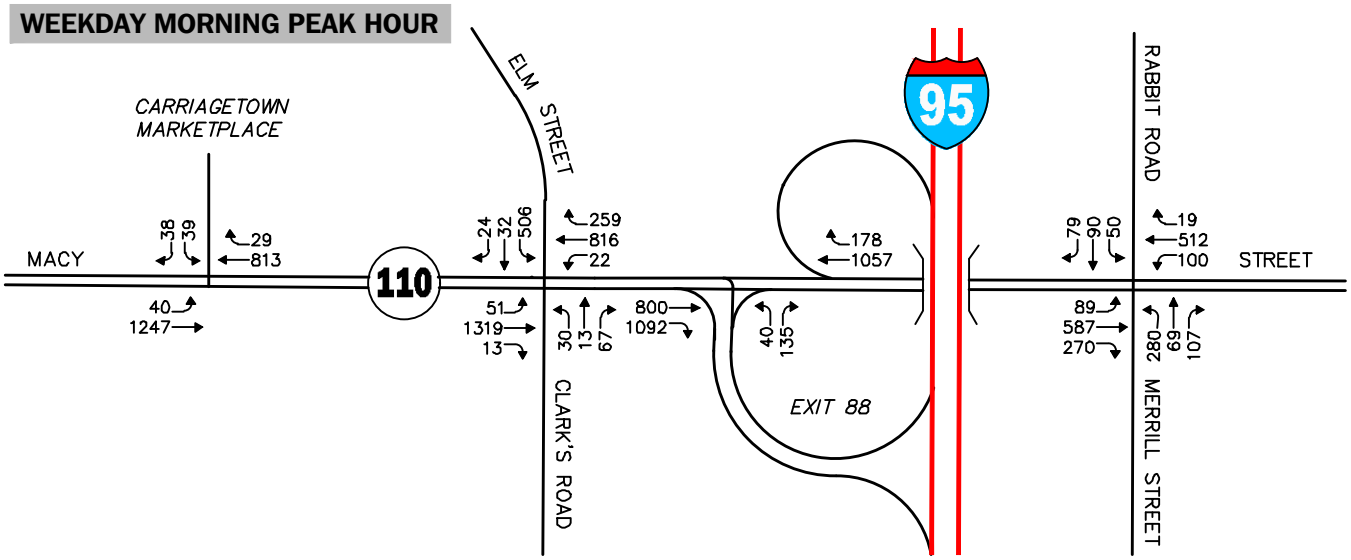
- ***Proposed Clarks Road 40R Residential Development, Clark's Road, Amesbury, Massachusetts.*** This project entails the construction of eight (8) single-family homes and 110 multifamily residential units to be located off of Clark's Road to the south of the Project site. Traffic volumes associated with this development were estimated using trip

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

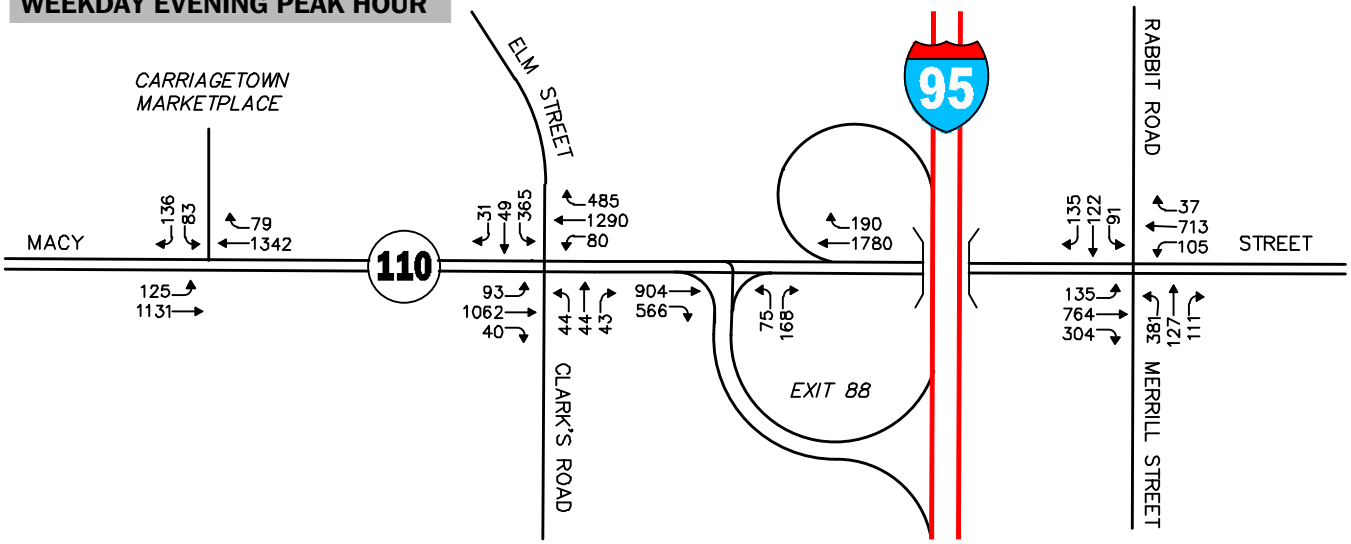
[2] *Transportation Impact Assessment*, The Marina at Amesbury Point, 14 Merrimac Street, Amesbury, Massachusetts; VAI; July 2023.

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

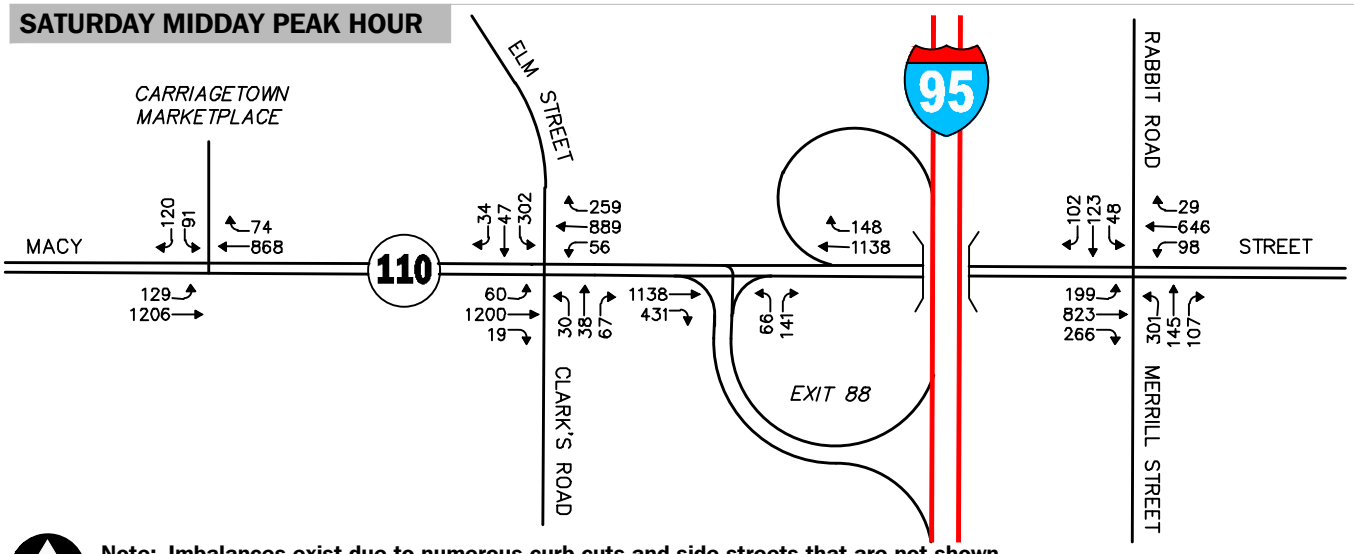
WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



SATURDAY MIDDAY PEAK HOUR



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

Not To Scale

Figure 2

2025 Baseline
Peak-Hour Traffic Volumes

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generation statistics published by the ITE 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.

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.

Roadway Improvement Projects

The City of Amesbury and MassDOT were contacted in order to determine if there were any planned future roadway improvement projects expected to be completed by 2032 within the study area. Based on these discussions, no roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.

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 and, as such, are modeled in the future year conditions.

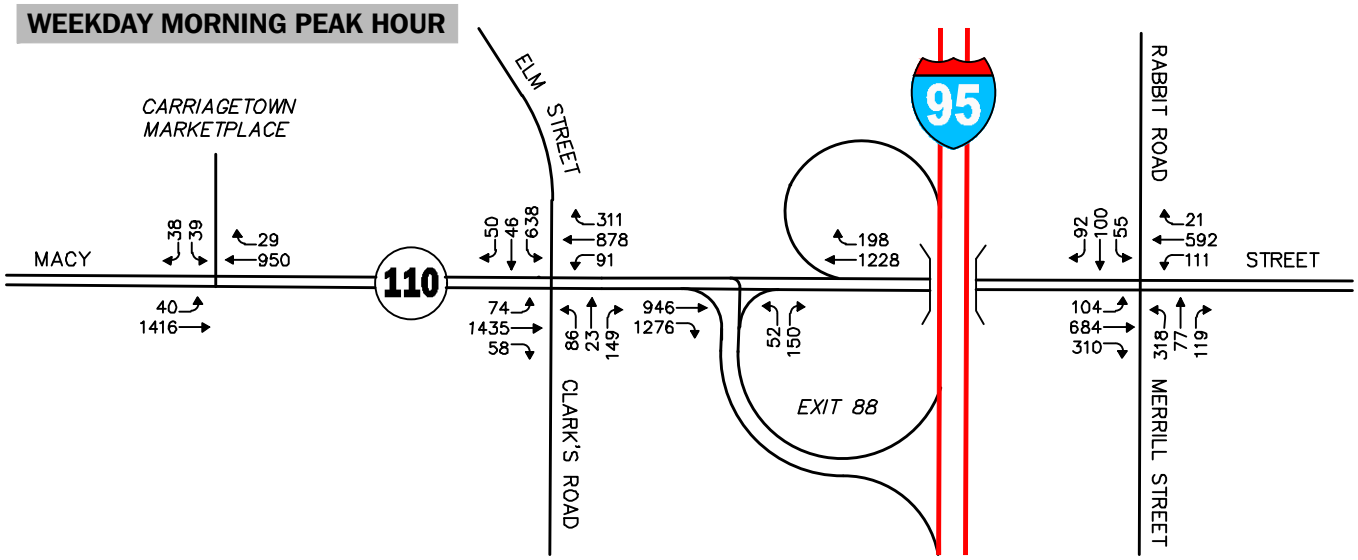
General Background Traffic Growth

Traffic-volume data compiled by MassDOT from permanent count stations located in and around Amesbury were reviewed in order to determine general traffic growth trends in the area. This data indicates that traffic volumes have fluctuated over the 10-year period between 2009 and 2019, with an average traffic growth rate of 1.37 percent. In order to provide conservative (high) traffic volumes from which to assess the impact of the Project, a slightly higher 1.5 percent per year compounded annual background traffic growth rate was used to account for future traffic growth to 2032 and presently unforeseen development within the study area. When developing the future traffic volumes for 2045, a 1.0 percent per year compounded annual background traffic growth rate was used instead of 1.5 percent.

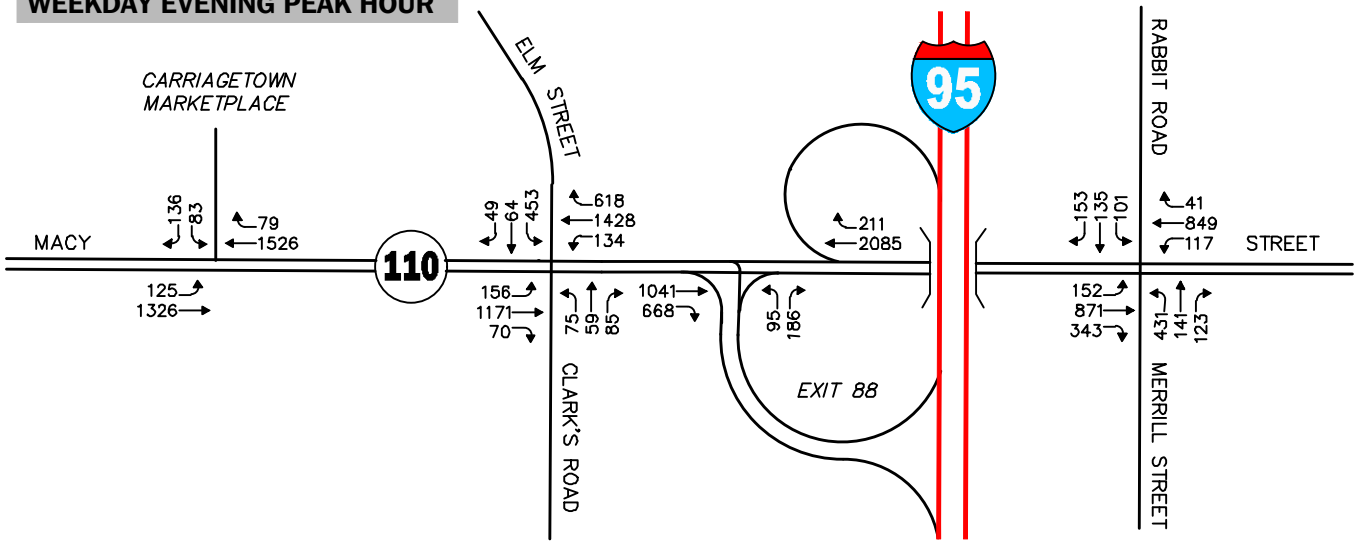
Design-Year Build Traffic Volumes

The 2032 Design-Year Build weekday morning, weekday evening, and Saturday midday 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 incorporating the traffic volumes from the identified background developments. The resulting 2032 Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are shown on Figure 3.

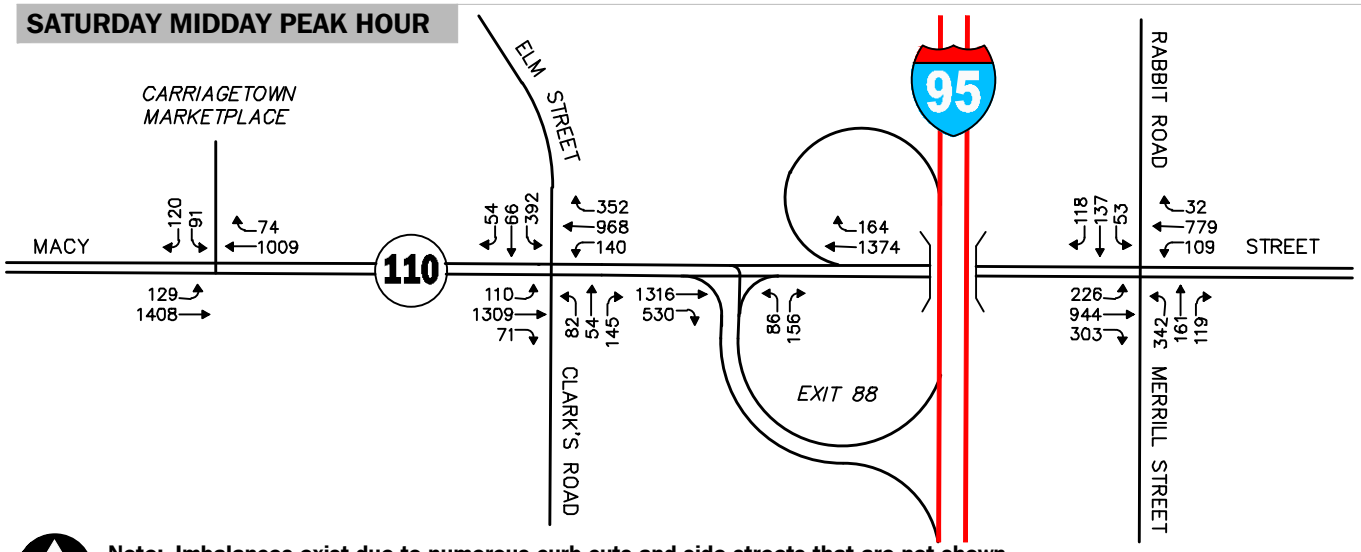
WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



SATURDAY MIDDAY PEAK HOUR



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

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Figure 3

2032 Build
Peak-Hour Traffic Volumes

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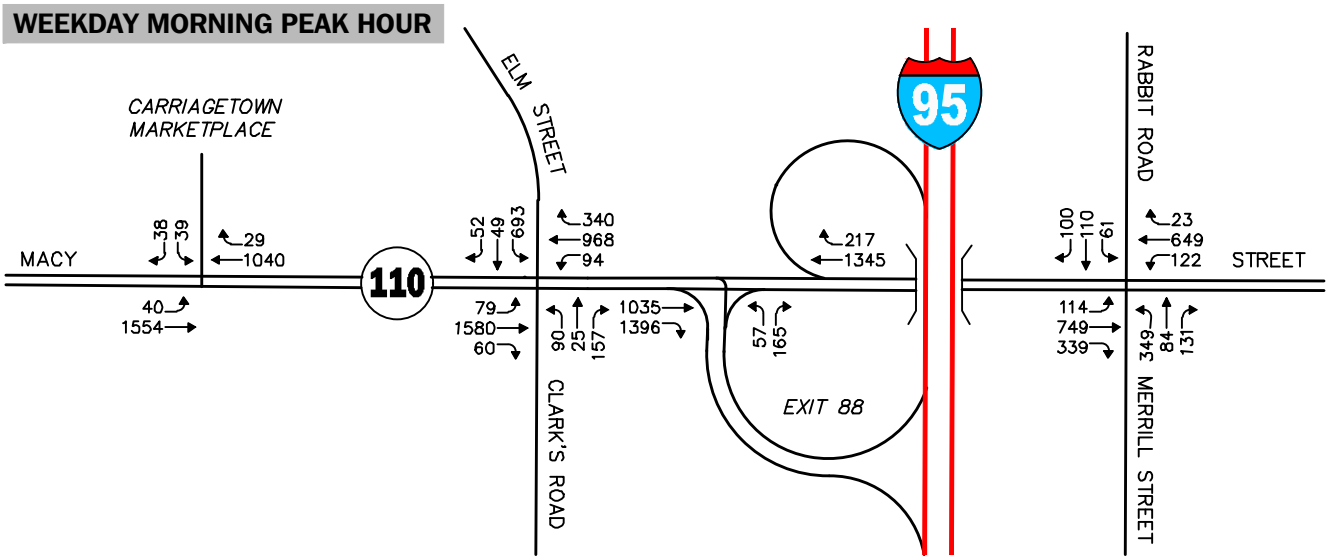
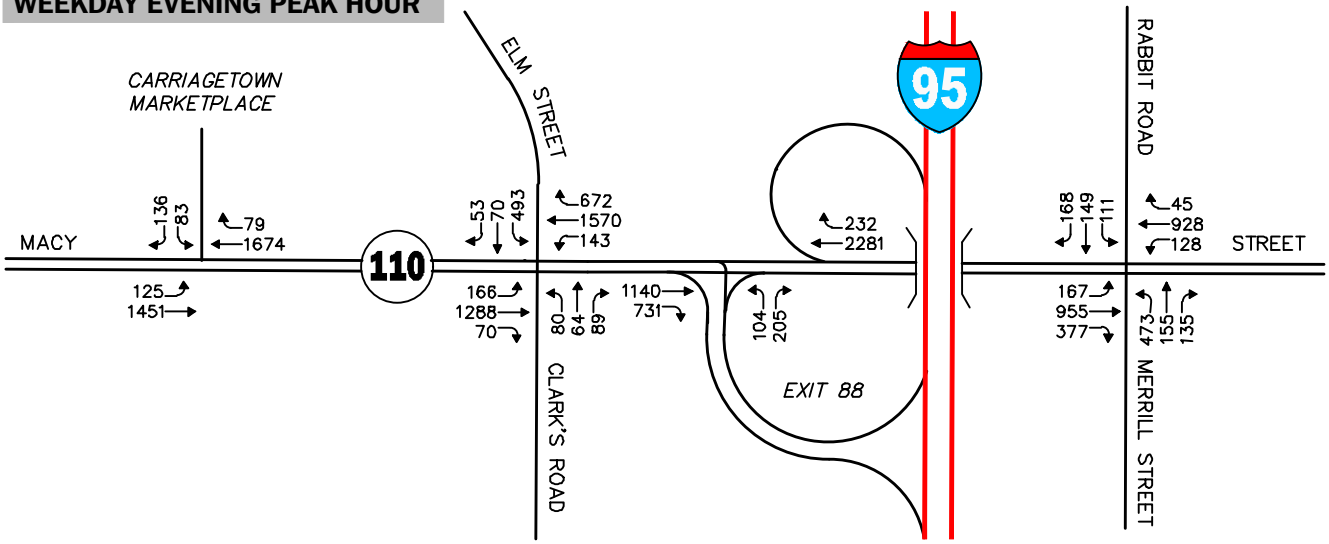
The 2045 Design-Year Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2025 Baseline peak-hour traffic volumes and incorporating the traffic volumes from the identified background developments. The resulting 2045 Build weekday morning, weekday evening, and Saturday midday peak-hour traffic-volume networks are shown on Figure 4.

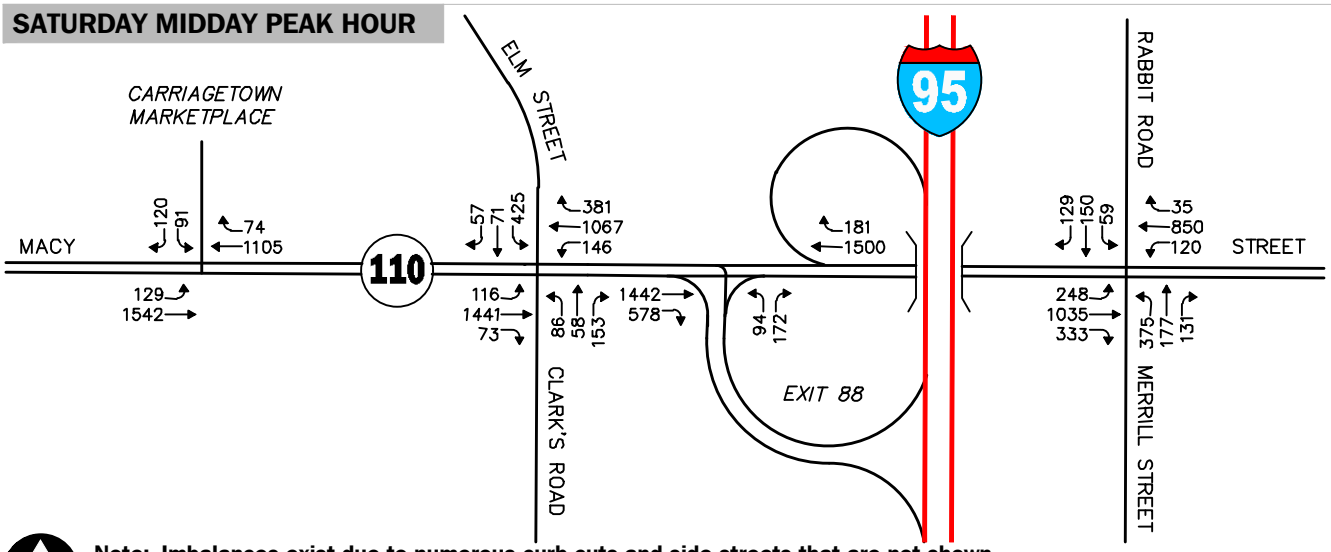
WEEKDAY MORNING PEAK HOUR



WEEKDAY EVENING PEAK HOUR



SATURDAY MIDDAY PEAK HOUR



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

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Figure 4

2045 Build
Peak-Hour Traffic Volumes

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SUMMARY OF ANALYSIS

GENERAL

This section presents an operational profile of the study intersections in the context of the analysis conditions cited in the MassDOT Submission Guidelines for the 25% Design Phase and in FWHAs guidelines.

The scenarios analyzed within this report, which enable the MassDOT standard FDR comparisons of known and projected conditions, are:

1. 2025 Baseline;
2. 2032 Design-Year Build (future volume with the background developments);
3. 2045 Design-Year Build (future volume with the background developments);
4. 2032 Design-Year Build Mitigated (future volume with the background developments and proposed improvements); and
5. 2045 Design-Year Build Mitigated (future volume with the background developments and proposed improvements).

MOTOR VEHICLE CRASH HISTORY

Motor vehicle crash data provided by the Amesbury Police Department were reviewed in order to evaluate safety characteristics of roadways and intersections within the study area. Data for the period 2017 through 2021 were used. A summary of the motor vehicle crash history for the study intersections is presented in Table 2.

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 Merrill Street/ Rabbit Road
Year:				
2017	0	10	0	11
2018	2	15	2	11
2019	0	15	2	12
2020	2	0	1	16
2021	4	5	1	11
Total	8	45	6	61
Average[a]	1.6	9.0	1.2	12.2
Crash Rate[b]	0.14	0.63	0.08	1.02
Significant[c]	No/No	No/No	No/No	Yes/Yes
Type:				
Angle	1	11	1	18
Rear-End	4	20	4	33
Head-On	0	0	1	0
Sideswipe	2	13	0	8
Fixed Object	0	1	0	0
Pedestrian/Bicyclist	0	0	0	1
Animal	1	0	0	0
Unknown/Other	0	0	0	1
Total	8	45	6	61
Weather Conditions:				
Clear	6	34	5	44
Cloudy/Rain	2	10	0	15
Snow/Ice	0	1	1	2
Unknown/Other	0	0	0	0
Total	8	45	6	61
Lighting Conditions:				
Daylight	5	37	6	47
Dawn/Dusk	0	1	0	3
Dark (lit)	3	7	0	11
Dark (unlit)	0	0	0	0
Unknown/Other	0	0	0	0
Total	8	45	6	61
Pavement Conditions:				
Dry	6	37	5	48
Wet	2	7	0	10
Snow/Ice	0	1	1	1
Unknown/Other	0	0	0	2
Total	8	45	6	61
Severity:				
Property Damage Only	8	40	4	47
Personal Injury	0	5	2	14
Fatality	0	0	0	0
Unknown/Other	0	0	0	0
Total	8	45	6	61

[a]Average number of crashes over five-year period.
[b]Crash rate per million entering vehicles (mev).
[c]Significant 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.

As can be seen in Table 2, the intersections of Route 110 at Carriagetown Marketplace and Route 110 at I-95 southbound ramps experienced less than 10 crashes per year over the five-year review period. 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, and the intersection of Route 110 at Merrill Street/Rabbit Road experienced 61 accidents over the five-year review period, averaging 12.2 accidents per year.

The majority of the accidents were rear-end collisions, 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, except for the intersection of Route 110 at Merrill Street/Rabbit Road. No fatalities were reported over the five-year review period.

Crash diagrams were prepared for the intersections of Route 110 at Carriagetown Marketplace, Route 110 at Elm Street/Clark's Road, and Route 110 at Merrill Street/Rabbit Road and can be found in the Appendix. The crash diagrams for Route 110 at Elm Street/Clark's Road and Route 110 at Merrill Street/Rabbit Road were obtained from the RSA conducted by Toole Design.

This Project will improve safety by providing traffic signal control at an intersection currently with a single approach under STOP-sign control. Installation of the traffic signal will allow vehicles exiting I-95 southbound an adequate time gap to cross multiple lanes. The traffic signal will reduce queueing on the ramp, reducing the likelihood of queues backing onto I-95. Pedestrian safety is improved with the implementation of signalized crossings at the intersection.

TRAFFIC SIGNAL WARRANT ANALYSIS (TSWA)

A TSWA was conducted at the intersection of Route 110 at Clark's Road and Elm Street using the raw 2025 traffic with the anticipated traffic from the area developments added. The *Manual on Uniform Traffic Control Devices* (MUTCD)[4] establishes nine warrants or criteria to evaluate a location for the installation or retention of a traffic signal. At least one of the nine warrants should be satisfied in order to justify the installation or retention of a traffic signal; however, satisfaction of a warrant in and of itself does not justify traffic signal control. An engineering evaluation of the location in question should indicate that the establishment of traffic signal control will improve the overall safety and/or operation of the intersection. Table 3 identifies the nine traffic signal warrants that were reviewed for this analysis.

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

Table 3
TRAFFIC SIGNAL WARRANTS

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

A TSWA was conducted using 2025 Raw and 2032 Build traffic volumes with the background developments traffic added and a posted speed of 35 mph on Route 110. Based on the TSWA analysis, it was determined that the 2025 condition traffic volumes exceed the threshold levels for the four-hour traffic-volume warrant and the coordinated signal system warrant. The 2032 condition traffic volumes exceed the threshold levels for the four-hour and eight-hour traffic-volume warrants and the coordinated signal system warrant.

Warrant 4 is related to pedestrian volume at an intersection. This warrant requires a minimum of 75 pedestrians per hour for each four hours or a minimum of 93 pedestrians per hour for a peak hour. This intersection had no more than 1 pedestrian in any hour over the count period; therefore, this warrant is not met.

Warrant 5 is related to street crossings by schoolchildren, including elementary through high school students. This warrant requires a minimum of 20 schoolchildren crossing during the highest crossing hour. This intersection had no more than 1 pedestrian in any hour over the count period; therefore, this warrant is not met.

Warrant 6 is related to the potential installation of a traffic signal at an intersection in the middle of a coordinated signal system to improve progressive traffic movement on a corridor. The intersection is in a coordinated signal system and would benefit from signalization; therefore, this warrant is met.

Warrant 7 is related to crash experience and involves adequate trial of alternatives with no reduction in outcome of crashes, and five or more reported crashes of a type that could be corrected by a traffic control signal have occurred within a twelve-month period. The summarized crash data shows that the intersection experienced 6 crashes over a five-year period. Therefore, this warrant is not met.

Warrant 8 is related to the installation of a signal to encourage concentration and organization of traffic flow on a roadway network. The intersection is in the middle of a coordinated signal system but is not at the intersection of two major routes that might benefit from organization of traffic flows; therefore, this warrant is not met.

Warrant 9 is related to the installation of a signal at an intersection near a railroad grade crossing, where none of the other warrants are met, but the proximity of the intersection to a railroad grade crossing is the principal reason to consider installation of signal control. As there are no railroad grade crossings near the intersection, this warrant is not met.

Table 4 summarizes the traffic signal warrant analysis.

Table 4
TRAFFIC SIGNAL WARRANTS ANALYSIS RESULTS

Warrant No.	Description	Satisfied for 2025 Conditions[a]	Satisfied for 2032 Conditions[b]
1	Eight-Hour Vehicular Volume	No	Yes
2	Four-Hour Vehicular Volume	Yes	Yes
3	Peak Hour	No	No
4	Pedestrian Volume	No	No
5	School Crossing	No	No
6	Coordinated Signal System	Yes	Yes
7	Crash Experience	No	No
8	Roadway Network	No	No
9	Grade Crossing	No	No

[a]2025 Raw count data plus development volumes.
[b]2025 Raw count data grown 1.5 percent per year to 2032 plus development volumes.

The signal warrant analysis indicates that the intersection meets the four-hour traffic-volume-related signal warrant under 2025 conditions and the four-hour and eight-hour traffic-volume-related signal warrants under 2032 conditions. It should be noted that the 2025 conditions meet 7 of the 8 hours for the eight-hour volume warrant and the eighth hour is 3 vehicles short of meeting the threshold.

INTERSECTION GEOMETRY AND VOLUME SUMMARY

Summaries of the existing and proposed intersection lane configurations and peak-hour volumes were prepared for the intersections of Route 110 at Carriagetown Marketplace, Route 110 at Elm Street/Clark's Road, Route 110 at I-95 southbound ramps, and Route 110 at Merrill Street/Rabbit Road and are shown in Table 5, Table 6, Table 7, and Table 8 respectively.

Table 5
GEOMETRY AND PEAK-HOUR VOLUMES: ROUTE 110 AT CARRIAGETOWN MARKETPLACE

Approach/Lane	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
		Volume (vph)[a]				Volume (vph)				Volume (vph)				Volume (vph)				Volume (vph)		
	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday
Route 110:																				
Eastbound LT	1	40	125	129	1	40	125	129	1	40	125	129	1	40	125	129	1	40	125	129
Eastbound TH	2	1,247	1,131	1,206	2	1,416	1,326	1,408	2	1,416	1,326	1,408	2	1,554	1,451	1,542	2	1,554	1,451	1,542
Route 110:																				
Westbound TH/RT	2	842	1,421	942	2	979	1,605	1,083	2	979	1,605	1,083	2	1,069	1,753	1,179	2	1,069	1,753	1,179
Carriagetown Marketplace:																				
Southbound LT	1	39	83	91	1	39	83	91	1	39	83	91	1	39	83	91	1	39	83	91
Southbound RT	1	38	136	120	1	38	136	120	1	38	136	120	1	38	136	120	1	38	136	120

[a]Vehicles per hour.

Table 6
GEOMETRY AND PEAK-HOUR VOLUMES: ROUTE 110 AT CLARK'S ROAD AND ELM STREET

	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
		Volume (vph)[a]				Volume (vph)				Volume (vph)				Volume (vph)				Volume (vph)		
Approach/Lane	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday
Route 110:																				
Eastbound LT	1	51	93	60	1	74	156	110	1	74	156	110	1	79	166	116	1	79	166	116
Eastbound TH/RT	2	1,332	1,102	1,219	2	1,523	1,258	1,402	2	1,523	1,258	1,402	2	1,640	1,358	1,514	2	1,640	1,358	1,514
Route 110:																				
Westbound LT	1	22	80	56	1	91	134	140	1	91	134	140	1	94	143	146	1	94	143	146
Westbound TH	2	816	1,290	889	2	886	1,455	990	3	886	1,455	990	2	968	1,570	1,067	3	968	1,570	1,067
Westbound RT	1	259	485	259	1	317	634	365	1	317	634	365	1	340	672	381	1	340	672	381
Clark's Road:																				
Northbound LT	1	30	44	30	1	86	75	82	--	--	--	--	1	90	80	86	--	--	--	--
Northbound LT/TH	--	--	--	--	--	--	--	--	1	109	135	137	--	--	--	--	1	115	144	144
Northbound TH/RT	1	80	87	105	1	172	145	200	--	--	--	--	1	182	153	211	--	--	--	--
Northbound RT	--	--	--	--	--	--	--	--	1	149	85	145	--	--	--	--	1	157	89	153
Elm Street:																				
Southbound LT	2	506	365	302	2	655	463	405	2	655	463	405	2	693	493	425	2	693	493	425
Southbound TH/RT	1	56	80	81	1	97	114	121	1	97	114	121	1	101	123	128	1	101	123	128

[a]Vehicles per hour.

Table 7
GEOMETRY AND PEAK-HOUR VOLUMES: ROUTE 110 AT I-95 SOUTHBOUND RAMPS

	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
		Volume (vph)[a]				Volume (vph)				Volume (vph)				Volume (vph)				Volume (vph)		
Approach/Lane	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday
Route 110:																				
Eastbound TH	2	800	904	1,138	2	964	1,051	1,329	2	964	1,051	1,329	2	1,035	1,140	1,442	2	1,035	1,140	1,442
Eastbound RT	1	1,092	566	431	1	1,305	685	552	1	1,305	685	552	1	1,396	731	578	1	1,396	731	578
Route 110:																				
Westbound TH	2	1,057	1,780	1,138	2	1,241	2,125	1,407	2	1,241	2,125	1,407	2	1,345	2,281	1,500	2	1,345	2,281	1,500
Westbound RT	1	178	190	148	1	198	211	164	1	198	211	164	1	217	232	181	1	217	232	181
I-95 Southbound Off Ramp:																				
Northbound LT	1	40	75	60	1	53	98	88	1	53	98	88	1	57	104	94	1	57	104	94
Northbound RT	1	135	168	141	1	150	186	156	1	150	186	156	1	165	205	172	1	165	205	172

[a]Vehicles per hour.

Table 8
GEOMETRY AND PEAK-HOUR VOLUMES: ROUTE 110 AT MERRILL STREET/RABBIT ROAD

	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
		Volume (vph)[a]				Volume (vph)				Volume (vph)				Volume (vph)				Volume (vph)		
Approach/Lane	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday	No. of Lanes	Weekday Morning	Weekday Evening	Saturday Midday
Route 110:																				
Eastbound LT	1	89	135	199	1	104	152	226	1	104	152	226	1	114	167	248	1	114	167	248
Eastbound TH	2	587	764	823	2	684	871	944	2	684	871	944	2	749	955	1035	2	749	955	1035
Eastbound RT	1	270	304	266	1	310	343	303	1	310	343	303	1	339	377	333	1	339	377	333
Route 110:																				
Westbound LT	1	100	105	98	1	111	117	109	1	111	117	109	1	122	128	120	1	122	128	120
Westbound TH/RT	2	531	750	675	2	613	890	811	2	613	890	811	2	672	973	885	2	672	973	885
Merrill Street:																				
Northbound LT	1	280	381	301	1	318	431	342	1	318	431	342	1	349	473	375	1	349	473	375
Northbound TH/RT	1	176	238	252	1	196	264	280	1	196	264	280	1	215	290	308	1	215	290	308
Rabbit Road:																				
Southbound LT/TH	1	140	213	171	1	155	236	190	1	155	236	190	1	171	260	209	1	171	260	209
Southbound RT	1	79	135	102	1	92	153	118	1	92	153	118	1	100	168	129	1	100	168	129

[a]Vehicles per hour.

CAPACITY ANALYSIS

Lane geometry and capacity analysis results are summarized in Table 9 for the study intersections with respect to each MassDOT required analysis conditions by approach and lane group, allowing a detailed understanding of intersection operations. A detailed description of the capacity analysis procedure and the associated worksheets and data sheets are included in the Appendix. Queue diagrams are also presented in the Appendix. The Synchro analysis software program was used for the intersection analyses.

In addition, a weave analysis on I-95 southbound between the on-/off-ramps to Route 110 and on Route 110 westbound between the I-95 northbound off-ramp and I-95 southbound on-ramp were conducted. Table 10 summarizes the weave analysis results which were conducted using the 2025 HCS software.

Route 110 at Carriagetown Marketplace

Under 2025 Baseline, 2032 Build, and 2045 Build conditions, this intersection operates at an overall LOS B or better during the weekday morning, weekday evening, and Saturday midday peak hours. With the signal timing optimization implemented, this intersection continues to operate at an overall LOS B or better during the weekday morning, weekday evening, and Saturday midday peak hours under the 2032 Build Mitigated and 2045 Build Mitigated conditions.

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 Build and 2045 Build conditions this intersection operates at an overall LOS F during the weekday morning, weekday evening, and Saturday midday peak hours. With proposed improvements implemented, this intersection operates at an overall LOS E during the weekday morning peak hour and LOS D during the weekday evening and Saturday midday peak hours under 2032 Build conditions. Under 2045 Build conditions, this intersection operates at LOS F during the weekday morning peak hour, LOS D during the weekday evening, and LOS E during the Saturday midday peak hour.

Route 110 at I-95 Southbound Ramps

Under 2025 Baseline, 2032 Build, and 2045 Build conditions, the northbound left-turn movement at this intersection operates at LOS F during the weekday morning, weekday evening, and Saturday midday peak hours. With the implementation of traffic signal control, the northbound left-turn movement operates at LOS E during the weekday morning, weekday evening, and Saturday midday peak hour under 2032 Build Mitigated and 2045 Build Mitigated conditions.

Route 110 at Rabbit Road/Merrill Street

Under 2025 Baseline conditions, this intersection operates at an overall LOS C during the weekday morning peak hour, LOS D during the weekday evening, and Saturday midday peak hours. Under 2032 Build conditions, this intersection operates at an overall LOS C during the weekday morning peak hour, LOS E during the weekday evening peak hour, and LOS D during the Saturday midday peak hour. Under 2045 Build conditions, this intersection operates at an overall LOS D during the weekday morning peak hour, LOS F during the weekday evening peak hour, and LOS E during the Saturday midday peak hour. With the signal timing optimization implemented, this intersection

operates at an overall LOS C during the weekday morning and Saturday midday peak hours and at LOS D during the weekday evening under 2032 Build conditions and at LOS C during the weekday morning peak hour, LOS E during the weekday evening, and LOS D during the Saturday midday peak hour under 2045 Build conditions.

I-95 Southbound between On-Ramp from Route 110 and Off-Ramp to Route 110.

Under 2025 Baseline, 2032 Build, and 2045 Build conditions, the weave on I-95 southbound between the on-ramp from Route 110 and off-ramp to Route 110 operates at a LOS B or better during the weekday morning, weekday evening, and Saturday midday peak hours.

Route 110 Westbound between I-95 Northbound Off-Ramp and I-95 Southbound On-Ramp

Under 2025 Baseline, 2032 Build, and 2045 Build conditions, the weave on Route 110 between the I-95 northbound off-ramp and the I-95 southbound on-ramp operates at a LOS B during the weekday morning peak hour, at LOS D or better during the weekday evening, and at LOS C or better during the Saturday midday peak hour.

Table 9
INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/Peak Hour/Movement	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 110 at Carrigetown Marketplace Driveway:																				
Weekday Morning:																				
Route 110 EB LT	0.26	44.5	D	27/59	0.25	44.4	D	26/58	0.32	63.9	E	36/75	0.25	44.4	D	26/58	0.32	63.9	E	36/75
Route 110 EB TH	0.45	2.5	A	95/146	0.53	7.6	A	109/525	0.54	7.4	A	124/607	0.58	8.6	A	130/684	0.58	8.0	A	140/680
Route 110 WB TH/RT	0.34	1.2	A	2/59	0.43	3.5	A	4/442	0.41	13.2	B	236/472	0.47	4.5	A	4/443	0.45	15.9	B	262/524
Carrigetown Marketplace Driveway SB LT	0.29	46.3	D	28/57	0.27	46.1	D	26/58	0.33	65.8	E	36/74	0.27	46.1	D	26/58	0.33	65.8	E	36/74
Carrigetown Marketplace Driveway SB RT	0.14	9.6	A	0/23	0.13	9.9	A	0/25	0.14	13.3	B	0/32	0.13	9.9	A	0/25	0.14	13.3	B	0/32
Overall	--	**3.8**	**A**	--	--	**7.2**	**A**	--	--	**11.5**	**B**	--	--	**8.0**	**A**	--	--	**12.8**	**B**	--
Weekday Evening:																				
Route 110 EB LT	0.56	50.5	D	79/204	0.56	50.7	D	79/201	0.64	71.2	E	116/256	0.56	50.7	D	79/201	0.64	71.2	E	116/256
Route 110 EB TH	0.46	7.0	A	103/334	0.54	7.7	A	123/422	0.51	6.7	A	151/450	0.59	8.4	A	144/493	0.55	7.3	A	177/524
Route 110 WB TH/RT	0.73	14.2	B	54/223	0.86	12.6	B	160/320	0.77	20.6	C	299/392	0.94	17.5	B	222/444	0.84	24.4	C	373/570
Carrigetown Marketplace Driveway SB LT	0.55	52.3	D	58/127	0.49	52.3	D	54/126	0.56	74.0	E	78/191	0.49	52.3	D	54/126	0.56	74.0	E	78/191
Carrigetown Marketplace Driveway SB RT	0.28	6.5	A	0/46	0.27	6.6	A	0/51	0.30	8.5	A	0/61	0.27	6.6	A	0/51	0.30	8.5	A	0/61
Overall	--	**13.7**	**B**	--	--	**12.8**	**B**	--	--	**17.8**	**B**	--	--	**15.3**	**B**	--	--	**19.6**	**B**	--
Saturday Midday:																				
Route 110 EB LT	0.55	45.9	D	87/138	0.54	45.9	D	83/136	0.61	63.2	E	112/174	0.54	45.9	D	83/136	0.61	63.2	E	112/174
Route 110 EB TH	0.46	3.9	A	114/180	0.51	4.2	A	136/221	0.51	4.1	A	152/235	0.56	4.6	A	161/261	0.56	4.5	A	178/276
Route 110 WB TH/RT	0.48	7.2	A	15/231	0.53	9.0	A	36/245	0.50	15.2	B	171/215	0.58	11.8	B	39/229	0.55	15.8	B	162/275
Carrigetown Marketplace Driveway SB LT	0.48	47.7	D	62/107	0.47	47.6	D	60/106	0.54	65.2	E	81/135	0.47	47.6	D	60/106	0.54	65.2	E	81/135
Carrigetown Marketplace Driveway SB RT	0.24	4.6	A	0/33	0.24	4.8	A	0/35	0.25	6.1	A	0/43	0.24	4.8	A	0/35	0.25	6.1	A	0/43
Overall	--	**8.9**	**A**	--	--	**9.4**	**A**	--	--	**13.1**	**B**	--	--	**10.4**	**B**	--	--	**13.2**	**B**	--

See notes at end of table.

Table 9 (Continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 110 at Clark's Road/Elm Street:																				
Weekday Morning:																				
Route 110 EB LT	0.31	53.8	D	39/73	0.59	65.0	E	53/115	0.47	71.7	E	67/128	0.63	67.5	E	57/114	0.49	71.3	E	72/137
Route 110 EB TH /RT	1.07	74.1	E	466/858	1.62	309.9	F	795/914	1.11	95.6	F	895/1052	1.77	377.9	F	908/1027	1.24	146.9	F	1046/1205
Route 110 WB LT	0.15	43.7	D	14/39	0.72	74.4	E	63/144	0.49	62.1	E	82/145	0.74	76.8	E	65/151	0.50	61.4	E	85/148
Route 110 WB TH	0.76	36.2	D	274/469	0.87	42.9	D	311/438	0.43	31.5	C	242/301	0.96	53.9	D	381/510	0.48	32.6	C	275/332
Route 110 WB RT	0.25	2.0	A	6/40	0.29	1.1	A	0/21	0.31	2.1	A	0/38	0.31	1.2	A	1/22	0.34	3.3	A	0/81
Clark's Road NB LT	0.24	45.4	D	21/48	0.81	91.5	F	60/149	0.60	68.8	E	100/159	0.86	100.8	F	63/159	0.62	68.7	E	106/166
Clark's Road NB TH/RT	0.44	20.0	B	9/50	0.72	27.7	C	15/111	0.54	15.3	B	0/69	0.74	28.5	C	17/117	0.55	15.2	B	0/72
Elm Street SB LT	0.47	27.7	C	143/189	0.52	24.5	C	169/223	1.05	101.9	F	341/465	0.56	25.2	C	187/245	1.15	130.7	F	397/523
Elm Street SB TH/RT	0.10	15.6	B	15/43	0.16	12.3	B	23/58	0.30	32.7	C	51/107	0.16	12.7	B	26/62	0.32	33.9	C	55/113
Overall	--	**48.1**	**D**	--	--	**141.1**	**F**	--	--	**67.7**	**E**	--	--	**171.4**	**F**	--	--	**93.0**	**F**	--
Weekday Evening:																				
Route 110 EB LT	0.43	55.9	E	66/123	1.20	178.6	F	137/274	0.65	70.7	E	123/224	1.27	201.3	F	150/291	0.67	71.3	E	130/233
Route 110 EB TH /RT	0.99	55.7	E	222/790	1.19	125.4	F	345/668	0.90	41.5	D	438/840	1.31	174.2	F	619/767	1.01	58.9	E	758/948
Route 110 WB LT	0.41	45.4	D	53/97	1.04	134.4	F	101/225	0.63	70.8	E	120/177	1.11	151.9	F	113/240	0.65	67.5	E	141/171
Route 110 WB TH	1.28	165.7	F	576/963	1.38	204.4	F	693/830	0.74	36.2	D	435/594	1.51	263.7	F	802/940	0.83	38.5	D	441/718
Route 110 WB RT	0.54	9.1	A	56/246	0.59	6.1	A	43/179	0.58	3.9	A	53/106	0.64	7.7	A	51/290	0.64	4.4	A	33/120
Clark's Road NB LT	0.30	44.5	D	33/60	0.60	63.6	E	50/124	0.65	70.9	E	128/194	0.71	76.8	E	55/133	0.66	70.7	E	138/206
Clark's Road NB TH/RT	0.50	32.3	C	38/73	0.85	67.0	E	62/188	0.28	2.1	A	0/0	1.00	103.2	F	73/211	0.29	2.1	A	0/0
Elm Street SB LT	0.52	37.9	D	113/234	0.48	33.3	C	123/324	0.84	69.6	E	226/307	0.51	33.0	C	130/358	0.91	77.9	E	250/353
Elm Street SB TH/RT	0.21	26.1	C	32/86	0.22	24.6	C	41/128	0.38	44.8	D	80/145	0.24	24.9	C	44/147	0.42	46.5	D	90/158
Overall	--	**84.8**	**F**	--	--	**121.4**	**F**	--	--	**39.5**	**D**	--	--	**158.1**	**F**	--	--	**50.4**	**D**	--
Saturday Midday:																				
Route 110 EB LT	0.34	49.0	D	40/78	0.54	56.4	E	78/121	0.55	56.9	E	97/137	0.55	57.5	E	83/130	0.57	57.2	E	102/144
Route 110 EB TH /RT	0.88	33.4	C	267/916	1.39	207.5	F	676/1033	0.99	54.9	D	703/881	1.68	334.6	F	830/1136	1.10	91.2	F	856/1712
Route 110 WB LT	0.31	44.7	D	37/74	0.60	50.9	D	90/185	0.58	57.6	E	120/198	0.61	51.0	D	94/196	0.59	56.3	E	126/218
Route 110 WB TH	0.63	28.4	C	233/630	0.92	49.4	D	332/709	0.45	28.4	C	245/306	1.11	100.0	F	450/787	0.51	28.6	C	268/346
Route 110 WB RT	0.27	3.0	A	7/43	0.39	4.4	A	19/63	0.35	5.5	A	0/138	0.43	5.4	A	30/83	0.38	6.1	A	16/144
Clark's Road NB LT	0.19	42.8	D	19/46	0.40	44.1	D	53/96	0.63	65.1	E	120/183	0.04	35.3	D	5/19	0.64	64.9	E	126/191
Clark's Road NB TH/RT	0.50	25.7	C	25/75	0.70	30.9	C	59/131	0.46	12.5	B	0/65	0.72	33.2	C	68/143	0.47	12.3	B	0/68
Elm Street SB LT	0.58	42.8	D	95/146	0.60	40.2	D	121/217	0.89	96.3	F	184/276	0.59	38.6	D	128/244	0.97	102.2	F	202/310
Elm Street SB TH/RT	0.28	27.1	C	30/78	0.34	27.7	C	50/116	0.51	48.6	D	82/150	0.33	27.2	C	52/123	0.54	50.3	D	89/160
Overall	--	**30.4**	**C**	--	--	**100.9**	**F**	--	--	**46.4**	**D**	--	--	**164.3**	**F**	--	--	**60.6**	**E**	--

See notes at end of table.

Table 9 (Continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] 95th	V/C	Delay	LOS	Queue 95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 110 at I-95 Southbound Off Ramps																				
Weekday Morning:																				
Route 110 EB TH	--	--	--	--	--	--	--	--	0.33	5.0	A	144/155	--	--	--	--	0.36	5.7	A	186/372
Route 110 EB RT	--	--	--	--	--	--	--	--	0.77	9.6	A	0/0	--	--	--	--	0.85	14.4	B	0/0
Route 110 WB TH	--	--	--	--	--	--	--	--	0.45	2.7	A	106/159	--	--	--	--	0.50	3.0	A	127/189
Route 110 WB RT	--	--	--	--	--	--	--	--	0.15	0.2	A	0/0	--	--	--	--	0.16	0.2	A	0/0
I-95 Southbound Off Ramp LT	0.44	53.4	F	48	0.66	106.7	F	78	0.34	63.2	E	48/92	0.93	194.0	F	113	0.36	63.3	E	52/98
I-95 Southbound Off Ramp RT	0.33	14.2	B	35	0.32	15.5	C	35	0.09	0.1	A	0/0	0.38	17.3	C	45	0.10	0.1	A	0/0
Overall	--	--	--	--	--	--	--	--	--	**6.1**	**A**	--	--	--	--	--	--	**8.0**	**A**	--
Weekday Evening:																				
Route 110 EB TH	--	--	--	--	--	--	--	--	0.38	1.8	A	32/64	--	--	--	--	0.41	1.6	A	4/5
Route 110 EB RT	--	--	--	--	--	--	--	--	0.40	0.3	A	0/0	--	--	--	--	0.44	0.3	A	0/0
Route 110 WB TH	--	--	--	--	--	--	--	--	0.78	8.8	A	395/599	--	--	--	--	0.86	17.6	B	550/814
Route 110 WB RT	--	--	--	--	--	--	--	--	0.15	0.2	A	0/0	--	--	--	--	0.17	0.3	A	0/0
I-95 Southbound Off Ramp LT	1.39	363.2	F	183	2.96	1126.5	F	295	0.50	66.8	E	90/147	4.55	1914.6	F	350	0.53	67.4	E	99/160
I-95 Southbound Off Ramp RT	0.36	15.6	C	40	0.43	18.3	C	53	0.11	0.1	A	0/0	0.51	21.8	C	73	0.12	0.1	A	0/0
Overall	--	--	--	--	--	--	--	--	--	**6.2**	**A**	--	--	--	--	--	--	**10.5**	**B**	--
Saturday Midday:																				
Route 110 EB TH	--	--	--	--	--	--	--	--	0.48	10.2	B	340/680	--	--	--	--	0.53	10.2	B	428/856
Route 110 EB RT	--	--	--	--	--	--	--	--	0.32	0.2	A	0/0	--	--	--	--	0.35	0.0	A	0/0
Route 110 WB TH	--	--	--	--	--	--	--	--	0.52	4.0	A	148/223	--	--	--	--	0.57	4.7	A	179/271
Route 110 WB RT	--	--	--	--	--	--	--	--	0.12	0.2	A	0/0	--	--	--	--	0.13	0.2	A	0/0
I-95 Southbound Off Ramp LT	1.16	271.6	F	150	2.37	841.9	F	255	0.45	61.2	E	75/127	3.58	1446.5	F	308	0.48	61.4	E	82/137
I-95 Southbound Off Ramp RT	0.37	17.9	C	43	0.45	22.1	C	58	0.09	0.1	A	0/0	0.55	27.7	D	78	0.10	0.1	A	0/0
Overall	--	--	--	--	--	--	--	--	--	**6.7**	**A**	--	--	--	--	--	--	**6.9**	**A**	--

See notes at end of table.

Table 9 (Continued)
INTERSECTION CAPACITY ANALYSIS SUMMARY

Signalized Intersection/ Peak Hour/Movement	2025 Baseline				2032 Build				2032 Build Mitigated				2045 Build				2045 Build Mitigated			
	V/C[a]	Delay[b]	LOS[c]	Queue[d] Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th	V/C	Delay	LOS	Queue Avg/95th
Route 110 at Rabbit Road/Merrill Street:																				
Weekday Morning:																				
Route 110 EB LT	0.37	33.8	C	35/110	0.41	35.3	D	42/126	0.70	62.5	E	52/196	0.45	36.9	D	50/138	0.77	69.3	E	57/217
Route 110 EB TH	0.57	24.0	C	108/276	0.62	25.0	C	126/323	0.76	34.5	C	160/420	0.67	26.3	C	148/393	0.83	37.7	D	179/477
Route 110 EB RT	0.35	2.5	A	0/25	0.37	2.7	A	0/29	0.36	2.5	A	0/30	0.39	2.7	A	0/30	0.39	2.6	A	0/31
Route 110 WB LT	0.83	83.7	F	42/205	0.96	112.5	F	51/228	0.68	58.8	E	55/203	1.10	149.3	F	67/252	0.75	64.5	E	61/225
Route 110 WB TH/RT	0.57	29.8	C	104/354	0.76	35.5	D	130/431	0.66	31.5	C	137/350	0.82	38.5	D	153/483	0.73	33.3	C	154/404
Merrill Street NB LT	0.85	45.6	D	90/418	0.96	64.0	E	110/479	0.75	34.7	C	114/360	1.08	98.1	F	134/537	0.85	42.9	D	128/430
Merrill Street NB TH/RT	0.31	14.9	B	32/132	0.33	15.8	B	39/148	0.31	15.8	B	43/151	0.36	16.7	B	48/164	0.34	16.5	B	49/169
Rabbit Road SB LT/TH	0.52	35.6	D	53/169	0.55	37.2	D	62/196	0.77	60.1	E	76/268	0.59	39.0	D	72/227	0.86	70.6	E	84/300
Rabbit Road SB RT	0.13	2.9	A	0/20	0.15	3.8	A	0/28	0.19	4.1	A	0/26	0.16	4.2	A	0/33	0.20	5.2	A	0/33
Overall	--	**27.6**	**C**	--	--	**33.1**	**C**	--	--	**31.2**	**C**	--	--	**40.2**	**D**	--	--	**34.8**	**C**	--
Weekday Evening:																				
Route 110 EB LT	0.90	91.2	F	64/244	1.05	126.2	F	76/285	0.95	108.7	F	111/333	1.16	158.7	F	94/315	1.05	132.0	F	124/373
Route 110 EB TH	0.82	37.0	D	172/454	0.97	52.9	D	214/566	0.84	44.1	D	300/636	1.06	77.0	E	244/636	0.92	51.0	D	342/727
Route 110 EB RT	0.36	2.7	A	0/29	0.40	2.8	A	0/30	0.36	2.3	A	2/31	0.44	3.0	A	1/32	0.40	3.0	A	11/43
Route 110 WB LT	0.93	108.4	F	49/202	1.10	152.9	F	61/240	0.98	125.8	F	86/279	1.21	185.5	F	74/261	1.07	148.1	F	96/305
Route 110 WB TH/RT	0.84	39.3	D	166/443	1.06	77.2	E	227/604	0.91	51.7	D	320/684	1.16	112.3	F	288/675	1.00	66.3	E	362/776
Merrill Street NB LT	0.94	51.8	D	126/552	1.06	83.2	F	145/632	0.99	68.6	E	231/676	1.23	144.5	F	188/634	1.14	117.1	F	331/809
Merrill Street NB TH/RT	0.33	15.9	B	57/190	0.36	16.5	B	65/212	0.37	23.0	C	107/270	0.40	17.1	B	73/237	0.41	23.9	C	122/301
Rabbit Road SB LT/TH	0.73	44.0	D	100/308	0.76	46.7	D	105/349	1.03	110.5	F	173/478	0.85	55.6	E	119/394	1.15	145.8	F	215/536
Rabbit Road SB RT	0.23	5.1	A	0/42	0.24	5.1	A	0/49	0.28	10.7	B	16/88	0.26	5.3	A	1/54	0.31	12.3	B	24/106
Overall	--	**38.1**	**D**	--	--	**59.2**	**E**	--	--	**52.0**	**D**	--	--	**85.1**	**F**	--	--	**68.0**	**E**	--
Saturday Midday:																				
Route 110 EB LT	1.08	113.4	F	77/169	1.14	131.3	F	84/192	0.93	78.5	E	132/271	1.25	171.2	F	99/212	1.02	99.7	F	150/303
Route 110 EB TH	0.96	40.5	D	137/223	1.02	54.0	D	153/267	0.79	28.9	C	250/328	1.12	87.3	F	200/302	0.87	33.2	C	286/406
Route 110 EB RT	0.37	2.8	A	0/27	0.38	2.8	A	0/33	0.32	1.9	A	1/32	0.41	2.9	A	0/35	0.35	2.4	A	7/42
Route 110 WB LT	0.80	63.5	E	34/92	0.79	61.5	E	33/105	0.70	60.5	E	62/142	0.87	74.6	E	37/115	0.77	67.7	E	69/160
Route 110 WB TH/RT	0.93	37.3	D	116/183	0.99	50.1	D	127/238	0.78	23.1	C	222/294	1.08	76.9	E	167/268	0.85	36.1	D	250/355
Merrill Street NB LT	0.97	59.4	E	75/185	1.02	72.0	E	80/244	0.88	45.1	D	153/270	1.17	124.7	F	109/276	1.00	70.3	E	172/342
Merrill Street NB TH/RT	0.44	12.0	B	50/92	0.44	12.1	B	51/103	0.46	21.2	C	109/181	0.48	12.8	B	58/115	0.50	22.2	C	123/202
Rabbit Road SB LT/TH	0.59	25.2	C	51/95	0.60	25.8	C	52/122	0.91	77.9	E	110/237	0.67	29.7	C	58/140	1.01	102.5	F	125/266
Rabbit Road SB RT	0.16	2.0	A	0/13	0.17	2.2	A	0/18	0.20	4.5	A	0/34	0.18	2.5	A	0/21	0.21	4.4	A	0/36
Overall	--	**39.3**	**D**	--	--	**48.8**	**D**	--	--	34.6	**C**	--	--	**73.6**	**E**	--	--	**42.6**	**D**	--

[a]Volume to capacity ratio. C
[b]Average control delay per vehicle (in seconds).
[c]Level of service.
[d]Queue length in feet.

Table 10
WEAVE ANALYSIS SUMMARY

Weave/Peak Hour	2025 Baseline		2032 Build		2045 Build	
	Density[a]	LOS[b]	Density	LOS	Density	LOS
I-95 Southbound between Route 110 On/Off Ramps:						
Weekday Morning	7.0	A	7.9	A	8.8	A
Weekday Evening	8.4	A	9.5	A	10.5	B
Saturday Midday	11.2	B	12.7	B	14.1	B
Route 110 Westbound between I-95 Northbound Off-Ramp and I-95 Southbound On-Ramp:						
Weekday Morning	15.1	B	17.0	B	19.0	B
Weekday Evening	23.8	C	29.6	D	33.4	D
Saturday Midday	15.0	B	18.6	B	20.6	C

[a]Density = passenger cars per mile per lane.
[b]Level of service.

SUMMARY

VAI has conducted a detailed assessment of the proposed Route 110 improvements in accordance with the requirements for an FDR as defined by MassDOT and a Project Framework Document as defined by FHWA. A review of operating conditions at the signalized subject intersections under 2032 Build Mitigated and 2045 Build Mitigated conditions indicates that improvements significantly improve operations over unmitigated conditions.

APPENDIX

TRAFFIC COUNT DATA
SEASONAL ADJUSTMENT DATA
MOTOR VEHICLE CRASH DATA
TRAFFIC SIGNAL WARRANT ANALYSIS
CAPACITY ANALYSIS METHODOLOGY
CAPACITY ANALYSIS WORKSHEETS
WEAVE ANALYSIS METHODOLOGY
WEAVE ANALYSIS WORKSHEETS
VEHICLE QUEUE DIAGRAMS

TRAFFIC COUNT DATA

Accurate Counts
978-664-2565

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

Site Code: 102691EB

Time	4/30/2025 Wednesday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		14	243		
12:15		15	225		
12:30		11	215		
12:45		7	202	47	885
1:00		6	178		
1:15		6	206		
1:30		12	199		
1:45		11	222	35	805
2:00		2	243		
2:15		13	240		
2:30		9	275		
2:45		12	242	36	1000
3:00		13	283		
3:15		9	288		
3:30		11	315		
3:45		13	267	46	1153
4:00		17	250		
4:15		25	265		
4:30		42	246		
4:45		51	246	135	1007
5:00		76	225		
5:15		116	281		
5:30		160	227		
5:45		137	207	489	940
6:00		187	201		
6:15		243	202		
6:30		281	213		
6:45		287	176	998	792
7:00		287	136		
7:15		271	155		
7:30		236	122		
7:45		312	100	1106	513
8:00		222	111		
8:15		279	110		
8:30		281	71		
8:45		233	64	1015	356
9:00		240	69		
9:15		205	58		
9:30		202	44		
9:45		198	38	845	209
10:00		194	39		
10:15		203	52		
10:30		190	45		
10:45		208	29	795	165
11:00		212	33		
11:15		199	17		
11:30		240	33		
11:45		226	12	877	95
Total		6424	7920		
Percent		44.8%	55.2%		

Accurate Counts
978-664-2565

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

Site Code: 102691EB

Time	5/1/2025 Thursday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		10	221		
12:15		9	226		
12:30		10	222		
12:45		12	222	41	891
1:00		9	219		
1:15		10	180		
1:30		5	220		
1:45		6	208	30	827
2:00		6	231		
2:15		6	250		
2:30		10	243		
2:45		14	242	36	966
3:00		7	247		
3:15		11	307		
3:30		12	284		
3:45		16	260	46	1098
4:00		14	266		
4:15		26	231		
4:30		42	249		
4:45		63	260	145	1006
5:00		72	268		
5:15		99	289		
5:30		174	227		
5:45		145	257	490	1041
6:00		190	233		
6:15		235	200		
6:30		267	195		
6:45		252	160	944	788
7:00		265	140		
7:15		253	154		
7:30		293	123		
7:45		251	130	1062	547
8:00		231	88		
8:15		279	78		
8:30		281	115		
8:45		242	74	1033	355
9:00		291	69		
9:15		244	78		
9:30		237	79		
9:45		223	54	995	280
10:00		206	45		
10:15		181	55		
10:30		219	43		
10:45		210	41	816	184
11:00		206	24		
11:15		203	29		
11:30		240	25		
11:45		230	12	879	90
Total		6517	8073		
Percent		44.7%	55.3%		
Grand Total		12941	15993		
Percent		44.7%	55.3%		
ADT		ADT: 14,467		AADT: 14,467	

Accurate Counts
978-664-2565

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

Site Code: 102691EB

4/28/2025	4/28/25	4/29/25	4/30/2025	5/1/2025	5/2/2025	5/3/2025	5/4/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	*	47	41	*	*	*	44	44
1:00	*	*	35	30	*	*	*	32	32
2:00	*	*	36	36	*	*	*	36	36
3:00	*	*	46	46	*	*	*	46	46
4:00	*	*	135	145	*	*	*	140	140
5:00	*	*	489	490	*	*	*	490	490
6:00	*	*	998	944	*	*	*	971	971
7:00	*	*	1106	1062	*	*	*	1084	1084
8:00	*	*	1015	1033	*	*	*	1024	1024
9:00	*	*	845	995	*	*	*	920	920
10:00	*	*	795	816	*	*	*	806	806
11:00	*	*	877	879	*	*	*	878	878
12:00 PM	*	*	885	891	*	*	*	888	888
1:00	*	*	805	827	*	*	*	816	816
2:00	*	*	1000	966	*	*	*	983	983
3:00	*	*	1153	1098	*	*	*	1126	1126
4:00	*	*	1007	1006	*	*	*	1006	1006
5:00	*	*	940	1041	*	*	*	990	990
6:00	*	*	792	788	*	*	*	790	790
7:00	*	*	513	547	*	*	*	530	530
8:00	*	*	356	355	*	*	*	356	356
9:00	*	*	209	280	*	*	*	244	244
10:00	*	*	165	184	*	*	*	174	174
11:00	*	*	95	90	*	*	*	92	92
Total	0	0	14344	14590	0	0	0	14466	14466
Percent	0.0%	0.0%	49.6%	50.4%	0.0%	0.0%	0.0%		
AM Peak			7:00	7:00				7:00	7:00
Volume			1106	1062				1084	1084
PM Peak			3:00	3:00				3:00	3:00
Volume			1153	1098				1126	1126

Accurate Counts
978-664-2565

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

Site Code: 102691WB

Time	4/30/2025 Wednesday	WB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		23	229		
12:15		26	219		
12:30		16	199		
12:45		7	200	72	847
1:00		13	208		
1:15		19	207		
1:30		11	224		
1:45		11	264	54	903
2:00		13	252		
2:15		11	245		
2:30		7	300		
2:45		5	267	36	1064
3:00		22	367		
3:15		8	340		
3:30		12	332		
3:45		11	344	53	1383
4:00		12	335		
4:15		16	336		
4:30		19	356		
4:45		23	328	70	1355
5:00		33	347		
5:15		37	384		
5:30		67	321		
5:45		65	303	202	1355
6:00		88	230		
6:15		108	193		
6:30		187	217		
6:45		202	225	585	865
7:00		228	191		
7:15		226	204		
7:30		214	164		
7:45		244	151	912	710
8:00		210	152		
8:15		224	142		
8:30		211	127		
8:45		200	145	845	566
9:00		180	127		
9:15		161	88		
9:30		166	76		
9:45		190	62	697	353
10:00		160	44		
10:15		166	43		
10:30		195	42		
10:45		192	48	713	177
11:00		180	46		
11:15		170	33		
11:30		186	27		
11:45		200	19	736	125
Total		4975	9703		
Percent		33.9%	66.1%		

Accurate Counts
978-664-2565

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

Site Code: 102691WB

Time	5/1/2025 Thursday	WB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		22	217		
12:15		15	234		
12:30		14	231		
12:45		16	230	67	912
1:00		22	235		
1:15		10	229		
1:30		9	243		
1:45		7	254	48	961
2:00		15	271		
2:15		8	263		
2:30		0	308		
2:45		4	289	27	1131
3:00		22	381		
3:15		8	332		
3:30		9	374		
3:45		10	343	49	1430
4:00		11	369		
4:15		11	383		
4:30		22	371		
4:45		25	353	69	1476
5:00		36	384		
5:15		36	374		
5:30		71	312		
5:45		82	301	225	1371
6:00		89	234		
6:15		110	226		
6:30		156	225		
6:45		192	180	547	865
7:00		207	180		
7:15		226	193		
7:30		226	175		
7:45		214	134	873	682
8:00		211	161		
8:15		216	120		
8:30		224	117		
8:45		202	123	853	521
9:00		186	117		
9:15		202	116		
9:30		203	88		
9:45		143	90	734	411
10:00		156	77		
10:15		204	68		
10:30		211	46		
10:45		170	41	741	232
11:00		203	52		
11:15		212	47		
11:30		188	39		
11:45		203	30	806	168
Total		5039	10160		
Percent		33.2%	66.8%		
Grand Total		10014	19863		
Percent		33.5%	66.5%		
ADT		ADT: 14,938		AADT: 14,938	

Accurate Counts
978-664-2565

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

Site Code: 102691WB

4/28/2025	4/28/25	4/29/25	4/30/2025	5/1/2025	5/2/2025	5/3/2025	5/4/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	*	72	67	*	*	*	70	70
1:00	*	*	54	48	*	*	*	51	51
2:00	*	*	36	27	*	*	*	32	32
3:00	*	*	53	49	*	*	*	51	51
4:00	*	*	70	69	*	*	*	70	70
5:00	*	*	202	225	*	*	*	214	214
6:00	*	*	585	547	*	*	*	566	566
7:00	*	*	912	873	*	*	*	892	892
8:00	*	*	845	853	*	*	*	849	849
9:00	*	*	697	734	*	*	*	716	716
10:00	*	*	713	741	*	*	*	727	727
11:00	*	*	736	806	*	*	*	771	771
12:00 PM	*	*	847	912	*	*	*	880	880
1:00	*	*	903	961	*	*	*	932	932
2:00	*	*	1064	1131	*	*	*	1098	1098
3:00	*	*	1383	1430	*	*	*	1406	1406
4:00	*	*	1355	1476	*	*	*	1416	1416
5:00	*	*	1355	1371	*	*	*	1363	1363
6:00	*	*	865	865	*	*	*	865	865
7:00	*	*	710	682	*	*	*	696	696
8:00	*	*	566	521	*	*	*	544	544
9:00	*	*	353	411	*	*	*	382	382
10:00	*	*	177	232	*	*	*	204	204
11:00	*	*	125	168	*	*	*	146	146
Total	0	0	14678	15199	0	0	0	14941	14941
Percent	0.0%	0.0%	49.1%	50.9%	0.0%	0.0%	0.0%		
AM Peak			7:00	7:00				7:00	7:00
Volume			912	873				892	892
PM Peak			3:00	4:00				4:00	4:00
Volume			1383	1476				1416	1416

Accurate Counts
978-664-2565

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

Site Code: 102692EB

Time	4/30/2025 Wednesday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		15	274		
12:15		13	296		
12:30		13	260		
12:45		8	254	49	1084
1:00		6	218		
1:15		6	236		
1:30		10	252		
1:45		9	258	31	964
2:00		6	254		
2:15		16	303		
2:30		11	338		
2:45		17	314	50	1209
3:00		13	315		
3:15		12	328		
3:30		16	363		
3:45		21	382	62	1388
4:00		25	305		
4:15		34	293		
4:30		56	327		
4:45		72	323	187	1248
5:00		101	361		
5:15		159	321		
5:30		196	313		
5:45		176	253	632	1248
6:00		256	264		
6:15		307	243		
6:30		371	283		
6:45		395	216	1329	1006
7:00		392	171		
7:15		388	195		
7:30		487	147		
7:45		457	137	1724	650
8:00		425	144		
8:15		405	131		
8:30		387	91		
8:45		301	81	1518	447
9:00		292	118		
9:15		311	66		
9:30		270	64		
9:45		278	38	1151	286
10:00		261	56		
10:15		243	49		
10:30		239	58		
10:45		244	37	987	200
11:00		253	36		
11:15		265	19		
11:30		256	30		
11:45		296	12	1070	97
Total		8790	9827		
Percent		47.2%	52.8%		

Accurate Counts
978-664-2565

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

Site Code: 102692EB

Time	5/1/2025 Thursday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		11	265		
12:15		11	272		
12:30		10	294		
12:45		13	298	45	1129
1:00		15	268		
1:15		9	242		
1:30		7	289		
1:45		6	268	37	1067
2:00		11	274		
2:15		8	313		
2:30		9	336		
2:45		12	312	40	1235
3:00		8	305		
3:15		14	362		
3:30		15	382		
3:45		22	355	59	1404
4:00		18	356		
4:15		36	317		
4:30		67	323		
4:45		89	330	210	1326
5:00		93	345		
5:15		140	368		
5:30		221	281		
5:45		198	308	652	1302
6:00		248	299		
6:15		313	236		
6:30		365	252		
6:45		373	205	1299	992
7:00		383	186		
7:15		446	199		
7:30		458	153		
7:45		464	158	1751	696
8:00		419	112		
8:15		364	108		
8:30		373	129		
8:45		336	98	1492	447
9:00		349	103		
9:15		293	96		
9:30		305	95		
9:45		292	65	1239	359
10:00		247	57		
10:15		244	55		
10:30		256	49		
10:45		272	46	1019	207
11:00		263	34		
11:15		265	32		
11:30		301	25		
11:45		271	12	1100	103
Total		8943	10267		
Percent		46.6%	53.4%		
Grand Total		17733	20094		
Percent		46.9%	53.1%		
ADT		ADT: 18,914		AADT: 18,914	

Accurate Counts
978-664-2565

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

Site Code: 102692EB

4/28/2025	4/28/25	4/29/25	4/30/2025	5/1/2025	5/2/2025	5/3/2025	5/4/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	*	49	45	*	*	*	47	47
1:00	*	*	31	37	*	*	*	34	34
2:00	*	*	50	40	*	*	*	45	45
3:00	*	*	62	59	*	*	*	60	60
4:00	*	*	187	210	*	*	*	198	198
5:00	*	*	632	652	*	*	*	642	642
6:00	*	*	1329	1299	*	*	*	1314	1314
7:00	*	*	1724	1751	*	*	*	1738	1738
8:00	*	*	1518	1492	*	*	*	1505	1505
9:00	*	*	1151	1239	*	*	*	1195	1195
10:00	*	*	987	1019	*	*	*	1003	1003
11:00	*	*	1070	1100	*	*	*	1085	1085
12:00 PM	*	*	1084	1129	*	*	*	1106	1106
1:00	*	*	964	1067	*	*	*	1016	1016
2:00	*	*	1209	1235	*	*	*	1222	1222
3:00	*	*	1388	1404	*	*	*	1396	1396
4:00	*	*	1248	1326	*	*	*	1287	1287
5:00	*	*	1248	1302	*	*	*	1275	1275
6:00	*	*	1006	992	*	*	*	999	999
7:00	*	*	650	696	*	*	*	673	673
8:00	*	*	447	447	*	*	*	447	447
9:00	*	*	286	359	*	*	*	322	322
10:00	*	*	200	207	*	*	*	204	204
11:00	*	*	97	103	*	*	*	100	100
Total	0	0	18617	19210	0	0	0	18913	18913
Percent	0.0%	0.0%	49.2%	50.8%	0.0%	0.0%	0.0%		
AM Peak			7:00	7:00				7:00	7:00
Volume			1724	1751				1738	1738
PM Peak			3:00	3:00				3:00	3:00
Volume			1388	1404				1396	1396

Accurate Counts
978-664-2565

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

Site Code: 102692WB

	5/13/2025	WB,		Hour Totals	
Time	Tuesday	Morning	Afternoon	Morning	Afternon
12:00		25	269		
12:15		26	244		
12:30		13	272		
12:45		13	249	77	1034
1:00		18	293		
1:15		12	270		
1:30		18	256		
1:45		10	292	58	1111
2:00		11	316		
2:15		6	329		
2:30		10	294		
2:45		13	231	40	1170
3:00		21	323		
3:15		6	234		
3:30		12	315		
3:45		13	340	52	1212
4:00		10	358		
4:15		13	352		
4:30		20	353		
4:45		18	310	61	1373
5:00		38	367		
5:15		39	265		
5:30		56	385		
5:45		84	347	217	1364
6:00		84	333		
6:15		133	299		
6:30		192	287		
6:45		242	244	651	1163
7:00		233	224		
7:15		266	237		
7:30		265	194		
7:45		290	179	1054	834
8:00		235	204		
8:15		212	227		
8:30		246	157		
8:45		207	175	900	763
9:00		231	166		
9:15		201	106		
9:30		203	103		
9:45		228	87	863	462
10:00		204	67		
10:15		220	77		
10:30		235	50		
10:45		202	52	861	246
11:00		238	60		
11:15		211	49		
11:30		237	35		
11:45		230	24	916	168
Total		5750	10900		
Percent		34.5%	65.5%		

Accurate Counts
978-664-2565

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

Site Code: 102692WB

Time	5/14/2025 Wednesday	WB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		22	263		
12:15		1	278		
12:30		14	245		
12:45		18	245	55	1031
1:00		14	267		
1:15		9	283		
1:30		5	291		
1:45		9	322	37	1163
2:00		14	320		
2:15		6	307		
2:30		7	352		
2:45		4	324	31	1303
3:00		33	385		
3:15		14	351		
3:30		13	276		
3:45		10	316	70	1328
4:00		12	197		
4:15		13	273		
4:30		21	373		
4:45		16	393	62	1236
5:00		32	403		
5:15		42	388		
5:30		51	347		
5:45		74	367	199	1505
6:00		93	286		
6:15		114	303		
6:30		215	254		
6:45		248	271	670	1114
7:00		221	252		
7:15		250	216		
7:30		245	239		
7:45		262	209	978	916
8:00		246	207		
8:15		276	184		
8:30		238	180		
8:45		247	189	1007	760
9:00		224	161		
9:15		182	148		
9:30		245	117		
9:45		203	110	854	536
10:00		180	91		
10:15		248	68		
10:30		219	77		
10:45		216	58	863	294
11:00		246	73		
11:15		205	61		
11:30		239	49		
11:45		224	21	914	204
Total		5740	11390		
Percent		33.5%	66.5%		
Grand Total		11490	22290		
Percent		34.0%	66.0%		
ADT		ADT: 16,890		AADT: 16,890	

Accurate Counts
978-664-2565

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

Site Code: 102692WB

5/12/2025	5/12/25	5/13/25	5/14/2025	5/15/2025	5/16/2025	5/17/2025	5/18/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	77	55	*	*	*	*	66	66
1:00	*	58	37	*	*	*	*	48	48
2:00	*	40	31	*	*	*	*	36	36
3:00	*	52	70	*	*	*	*	61	61
4:00	*	61	62	*	*	*	*	62	62
5:00	*	217	199	*	*	*	*	208	208
6:00	*	651	670	*	*	*	*	660	660
7:00	*	1054	978	*	*	*	*	1016	1016
8:00	*	900	1007	*	*	*	*	954	954
9:00	*	863	854	*	*	*	*	858	858
10:00	*	861	863	*	*	*	*	862	862
11:00	*	916	914	*	*	*	*	915	915
12:00 PM	*	1034	1031	*	*	*	*	1032	1032
1:00	*	1111	1163	*	*	*	*	1137	1137
2:00	*	1170	1303	*	*	*	*	1236	1236
3:00	*	1212	1328	*	*	*	*	1270	1270
4:00	*	1373	1236	*	*	*	*	1304	1304
5:00	*	1364	1505	*	*	*	*	1434	1434
6:00	*	1163	1114	*	*	*	*	1138	1138
7:00	*	834	916	*	*	*	*	875	875
8:00	*	763	760	*	*	*	*	762	762
9:00	*	462	536	*	*	*	*	499	499
10:00	*	246	294	*	*	*	*	270	270
11:00	*	168	204	*	*	*	*	186	186
Total	0	16650	17130	0	0	0	0	16889	16889
Percent	0.0%	49.3%	50.7%	0.0%	0.0%	0.0%	0.0%		
AM Peak		7:00	8:00					7:00	7:00
Volume		1054	1007					1016	1016
PM Peak		4:00	5:00					5:00	5:00
Volume		1373	1505					1434	1434

Accurate Counts
978-664-2565

Location : Route 110 EB
Location : East of Route 95 SB Ramp
City/State: Amesbury, MA

Site Code: 102694EB

Time	4/30/2025 Wednesday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		13	205		
12:15		9	194		
12:30		7	186		
12:45		7	199	36	784
1:00		4	157		
1:15		4	172		
1:30		7	193		
1:45		7	178	22	700
2:00		2	164		
2:15		7	198		
2:30		3	243		
2:45		4	210	16	815
3:00		9	198		
3:15		7	212		
3:30		4	260		
3:45		7	264	27	934
4:00		10	201		
4:15		10	221		
4:30		18	242		
4:45		24	226	62	890
5:00		38	248		
5:15		55	253		
5:30		68	231		
5:45		55	216	216	948
6:00		91	189		
6:15		117	198		
6:30		150	207		
6:45		127	172	485	766
7:00		168	135		
7:15		180	127		
7:30		229	103		
7:45		233	85	810	450
8:00		214	94		
8:15		193	89		
8:30		194	68		
8:45		188	51	789	302
9:00		171	61		
9:15		185	49		
9:30		159	34		
9:45		196	23	711	167
10:00		155	33		
10:15		177	28		
10:30		155	31		
10:45		172	25	659	117
11:00		204	22		
11:15		183	14		
11:30		206	17		
11:45		212	9	805	62
Total		4638	6935		
Percent		40.1%	59.9%		

Accurate Counts
978-664-2565

Location : Route 110 EB
Location : East of Route 95 SB Ramp
City/State: Amesbury, MA

Site Code: 102694EB

Time	5/1/2025 Thursday	EB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		9	185		
12:15		10	206		
12:30		6	220		
12:45		10	212	35	823
1:00		8	198		
1:15		7	208		
1:30		3	203		
1:45		3	180	21	789
2:00		5	185		
2:15		2	212		
2:30		3	227		
2:45		4	222	14	846
3:00		1	192		
3:15		9	236		
3:30		9	232		
3:45		5	239	24	899
4:00		7	254		
4:15		11	211		
4:30		16	222		
4:45		29	226	63	913
5:00		32	233		
5:15		49	267		
5:30		52	215		
5:45		68	220	201	935
6:00		78	221		
6:15		124	190		
6:30		150	180		
6:45		120	173	472	764
7:00		159	142		
7:15		208	134		
7:30		204	124		
7:45		238	101	809	501
8:00		202	90		
8:15		199	75		
8:30		215	93		
8:45		197	89	813	347
9:00		184	84		
9:15		178	61		
9:30		198	62		
9:45		171	45	731	252
10:00		177	32		
10:15		167	33		
10:30		176	39		
10:45		175	40	695	144
11:00		188	25		
11:15		180	22		
11:30		198	15		
11:45		215	6	781	68
Total		4659	7281		
Percent		39.0%	61.0%		
Grand Total		9297	14216		
Percent		39.5%	60.5%		
ADT		ADT: 11,756		AADT: 11,756	

Accurate Counts
978-664-2565

Location : Route 110 EB
Location : East of Route 95 SB Ramp
City/State: Amesbury, MA

Site Code: 102694EB

4/28/2025	4/28/25	4/29/25	4/30/2025	5/1/2025	5/2/2025	5/3/2025	5/4/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	*	36	35	*	*	*	36	36
1:00	*	*	22	21	*	*	*	22	22
2:00	*	*	16	14	*	*	*	15	15
3:00	*	*	27	24	*	*	*	26	26
4:00	*	*	62	63	*	*	*	62	62
5:00	*	*	216	201	*	*	*	208	208
6:00	*	*	485	472	*	*	*	478	478
7:00	*	*	810	809	*	*	*	810	810
8:00	*	*	789	813	*	*	*	801	801
9:00	*	*	711	731	*	*	*	721	721
10:00	*	*	659	695	*	*	*	677	677
11:00	*	*	805	781	*	*	*	793	793
12:00 PM	*	*	784	823	*	*	*	804	804
1:00	*	*	700	789	*	*	*	744	744
2:00	*	*	815	846	*	*	*	830	830
3:00	*	*	934	899	*	*	*	916	916
4:00	*	*	890	913	*	*	*	902	902
5:00	*	*	948	935	*	*	*	942	942
6:00	*	*	766	764	*	*	*	765	765
7:00	*	*	450	501	*	*	*	476	476
8:00	*	*	302	347	*	*	*	324	324
9:00	*	*	167	252	*	*	*	210	210
10:00	*	*	117	144	*	*	*	130	130
11:00	*	*	62	68	*	*	*	65	65
Total	0	0	11573	11940	0	0	0	11757	11757
Percent	0.0%	0.0%	49.2%	50.8%	0.0%	0.0%	0.0%		
AM Peak			7:00	8:00				7:00	7:00
Volume			810	813				810	810
PM Peak			5:00	5:00				5:00	5:00
Volume			948	935				942	942

Accurate Counts
978-664-2565

Location : Route 110 WB
Location : East of Route 95 SB Ramps
City/State: Amesbury, MA

Site Code: 102694WB

Time	4/30/2025 Wednesday	WB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		29	290		
12:15		31	301		
12:30		18	267		
12:45		5	276	83	1134
1:00		19	268		
1:15		16	287		
1:30		11	310		
1:45		13	359	59	1224
2:00		19	340		
2:15		9	342		
2:30		7	382		
2:45		7	392	42	1456
3:00		22	384		
3:15		12	413		
3:30		15	460		
3:45		12	434	61	1691
4:00		17	481		
4:15		19	435		
4:30		33	448		
4:45		37	304	106	1668
5:00		47	375		
5:15		61	326		
5:30		89	421		
5:45		105	375	302	1497
6:00		107	369		
6:15		139	319		
6:30		250	305		
6:45		257	328	753	1321
7:00		279	295		
7:15		295	257		
7:30		302	237		
7:45		361	202	1237	991
8:00		295	212		
8:15		318	215		
8:30		293	175		
8:45		287	180	1193	782
9:00		242	175		
9:15		216	143		
9:30		237	110		
9:45		247	89	942	517
10:00		251	73		
10:15		246	63		
10:30		251	59		
10:45		266	59	1014	254
11:00		259	61		
11:15		235	41		
11:30		264	36		
11:45		279	24	1037	162
Total		6829	12697		
Percent		35.0%	65.0%		

Accurate Counts
978-664-2565

Location : Route 110 WB
Location : East of Route 95 SB Ramps
City/State: Amesbury, MA

Site Code: 102694WB

Time	5/1/2025 Thursday	WB, Morning	Afternoon	Hour Totals Morning	Afternon
12:00		25	317		
12:15		20	316		
12:30		22	297		
12:45		21	309	88	1239
1:00		25	345		
1:15		17	308		
1:30		17	324		
1:45		10	345	69	1322
2:00		15	370		
2:15		7	376		
2:30		4	424		
2:45		4	416	30	1586
3:00		25	423		
3:15		9	367		
3:30		11	393		
3:45		12	450	57	1633
4:00		20	377		
4:15		17	424		
4:30		28	481		
4:45		41	439	106	1721
5:00		51	445		
5:15		70	451		
5:30		86	477		
5:45		111	388	318	1761
6:00		123	339		
6:15		154	327		
6:30		205	324		
6:45		270	252	752	1242
7:00		283	272		
7:15		295	269		
7:30		305	247		
7:45		309	214	1192	1002
8:00		288	217		
8:15		298	174		
8:30		315	201		
8:45		300	161	1201	753
9:00		276	178		
9:15		271	146		
9:30		287	135		
9:45		209	117	1043	576
10:00		234	97		
10:15		266	103		
10:30		284	42		
10:45		251	62	1035	304
11:00		285	82		
11:15		265	63		
11:30		269	48		
11:45		283	36	1102	229
Total		6993	13368		
Percent		34.3%	65.7%		
Grand Total		13822	26065		
Percent		34.7%	65.3%		
ADT		ADT: 19,944		AADT: 19,944	

Accurate Counts
978-664-2565

Location : Route 110 WB
Location : East of Route 95 SB Ramps
City/State: Amesbury, MA

Site Code: 102694WB

4/28/2025	4/28/25	4/29/25	4/30/2025	5/1/2025	5/2/2025	5/3/2025	5/4/2025	Average	
Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon - Fri	Mon - Sun
12:00 AM	*	*	83	88	*	*	*	86	86
1:00	*	*	59	69	*	*	*	64	64
2:00	*	*	42	30	*	*	*	36	36
3:00	*	*	61	57	*	*	*	59	59
4:00	*	*	106	106	*	*	*	106	106
5:00	*	*	302	318	*	*	*	310	310
6:00	*	*	753	752	*	*	*	752	752
7:00	*	*	1237	1192	*	*	*	1214	1214
8:00	*	*	1193	1201	*	*	*	1197	1197
9:00	*	*	942	1043	*	*	*	992	992
10:00	*	*	1014	1035	*	*	*	1024	1024
11:00	*	*	1037	1102	*	*	*	1070	1070
12:00 PM	*	*	1134	1239	*	*	*	1186	1186
1:00	*	*	1224	1322	*	*	*	1273	1273
2:00	*	*	1456	1586	*	*	*	1521	1521
3:00	*	*	1691	1633	*	*	*	1662	1662
4:00	*	*	1668	1721	*	*	*	1694	1694
5:00	*	*	1497	1761	*	*	*	1629	1629
6:00	*	*	1321	1242	*	*	*	1282	1282
7:00	*	*	991	1002	*	*	*	996	996
8:00	*	*	782	753	*	*	*	768	768
9:00	*	*	517	576	*	*	*	546	546
10:00	*	*	254	304	*	*	*	279	279
11:00	*	*	162	229	*	*	*	196	196
Total	0	0	19526	20361	0	0	0	19942	19942
Percent	0.0%	0.0%	49.0%	51.0%	0.0%	0.0%	0.0%		
AM Peak			7:00	8:00				7:00	7:00
Volume			1237	1201				1214	1214
PM Peak			3:00	5:00				4:00	4:00
Volume			1691	1761				1694	1694

Accurate Counts
978-664-2565

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

Site Code: 10269003

4/30/2025	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	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	18	4	82	0	18	4	75	8	157
1:00	1	20			0	25				
1:15	0	23			0	16				
1:30	1	25			0	17				
1:45	1	16	3	84	1	21	1	79	4	163
2:00	1	29			0	28				
2:15	1	21			0	23				
2:30	0	28			0	21				
2:45	0	24	2	102	0	25	0	97	2	199
3:00	0	22			0	30				
3:15	0	26			0	25				
3:30	0	27			0	25				
3:45	0	28	0	103	1	33	1	113	1	216
4:00	1	28			3	27				
4:15	0	25			2	19				
4:30	0	30			3	25				
4:45	2	54	3	137	6	27	14	98	17	235
5:00	1	32			1	34				
5:15	2	41			8	33				
5:30	3	23			5	31				
5:45	2	28	8	124	10	27	24	125	32	249
6:00	6	29			10	26				
6:15	10	27			14	29				
6:30	10	15			20	31				
6:45	10	23	36	94	15	21	59	107	95	201
7:00	12	26			27	24				
7:15	16	14			31	19				
7:30	11	13			31	15				
7:45	18	15	57	68	27	5	116	63	173	131
8:00	9	15			28	8				
8:15	22	22			24	7				
8:30	14	18			28	2				
8:45	13	12	58	67	19	5	99	22	157	89
9:00	14	6			18	14				
9:15	13	15			18	3				
9:30	16	6			15	1				
9:45	15	5	58	32	30	1	81	19	139	51
10:00	21	3			15	3				
10:15	11	4			18	4				
10:30	20	2			12	1				
10:45	25	3	77	12	20	0	65	8	142	20
11:00	22	4			21	1				
11:15	21	5			17	1				
11:30	21	1			22	0				
11:45	22	1	86	11	23	0	83	2	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	Afternon	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

Location : Elm Street
Location : North of Route 110
City/State: Amesbury, MA

Site Code: 95260001

2/14/2024	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	1	87			3	72				
12:15	1	89			7	97				
12:30	2	89			4	74				
12:45	1	80	5	345	3	89	17	332	22	677
1:00	0	82			2	77				
1:15	0	97			5	97				
1:30	3	92			5	89				
1:45	2	70	5	341	1	95	13	358	18	699
2:00	1	88			2	84				
2:15	1	83			1	112				
2:30	1	104			0	109				
2:45	3	108	6	383	0	130	3	435	9	818
3:00	5	102			1	127				
3:15	4	92			2	139				
3:30	3	112			1	152				
3:45	8	105	20	411	5	185	9	603	29	1014
4:00	3	110			0	150				
4:15	15	110			1	156				
4:30	14	106			5	152				
4:45	30	102	62	428	11	141	17	599	79	1027
5:00	32	111			6	147				
5:15	44	107			6	158				
5:30	39	99			34	149				
5:45	65	94	180	411	29	144	75	598	255	1009
6:00	55	70			13	115				
6:15	72	77			24	100				
6:30	114	65			23	87				
6:45	118	77	359	289	48	84	108	386	467	675
7:00	109	59			41	59				
7:15	115	39			44	68				
7:30	142	33			60	58				
7:45	163	45	529	176	83	55	228	240	757	416
8:00	111	27			76	51				
8:15	119	28			90	48				
8:30	108	25			75	45				
8:45	107	25	445	105	71	42	312	186	757	291
9:00	74	24			73	35				
9:15	86	22			71	33				
9:30	94	11			70	22				
9:45	84	15	338	72	59	29	273	119	611	191
10:00	79	15			64	17				
10:15	67	12			62	19				
10:30	76	12			79	13				
10:45	74	8	296	47	84	16	289	65	585	112
11:00	73	7			75	18				
11:15	84	9			71	21				
11:30	110	1			68	19				
11:45	81	4	348	21	59	7	273	65	621	86
Total	2593	3029			1617	3986			4210	7015
Percent	46.1%	53.9%			28.9%	71.1%			37.5%	62.5%

Accurate Counts
978-664-2565

Location : Elm Street
Location : North of Route 110
City/State: Amesbury, MA

Site Code: 95260001

2/15/2024	SB,		Hour Totals		NB,		Hour Totals		Combined Totals	
Time	Morning	Afternoon	Morning	Afternon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00	3	76			6	87				
12:15	4	80			2	71				
12:30	1	86			7	82				
12:45	4	71	12	313	4	77	19	317	31	630
1:00	1	78			1	74				
1:15	1	67			4	64				
1:30	0	72			1	78				
1:45	3	81	5	298	3	89	9	305	14	603
2:00	5	87			5	101				
2:15	2	77			1	105				
2:30	3	95			2	95				
2:45	1	106	11	365	0	92	8	393	19	758
3:00	3	78			1	117				
3:15	3	97			0	127				
3:30	2	95			0	148				
3:45	6	79	14	349	1	134	2	526	16	875
4:00	4	100			1	142				
4:15	18	94			5	168				
4:30	17	89			3	135				
4:45	26	100	65	383	7	134	16	579	81	962
5:00	37	96			8	138				
5:15	37	98			9	160				
5:30	40	106			26	131				
5:45	52	72	166	372	28	126	71	555	237	927
6:00	52	75			15	97				
6:15	87	78			22	90				
6:30	108	69			28	87				
6:45	115	55	362	277	43	90	108	364	470	641
7:00	116	51			37	83				
7:15	119	45			59	72				
7:30	144	44			55	50				
7:45	154	36	533	176	81	55	232	260	765	436
8:00	101	37			70	50				
8:15	125	25			93	40				
8:30	102	36			74	55				
8:45	108	24	436	122	81	42	318	187	754	309
9:00	77	28			74	38				
9:15	72	20			52	44				
9:30	78	12			55	15				
9:45	81	6	308	66	57	10	238	107	546	173
10:00	68	12			64	13				
10:15	66	17			60	14				
10:30	88	16			65	13				
10:45	75	3	297	48	60	15	249	55	546	103
11:00	67	5			74	13				
11:15	70	8			73	8				
11:30	74	2			69	3				
11:45	67	4	278	19	61	9	277	33	555	52
Total	2487	2788			1547	3681			4034	6469
Percent	47.1%	52.9%			29.6%	70.4%			38.4%	61.6%
Grand Total	5080	5817			3164	7667			8244	13484
Percent	46.6%	53.4%			29.2%	70.8%			37.9%	62.1%
ADT		ADT: 10,864		AADT: 10,864						

Accurate Counts
978-664-2565

Location : Elm Street
Location : North of Route 110
City/State: Amesbury, MA

Site Code: 95260001

	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,
0:00	*	*	*	*	5	17	12	19	*	*	*	*	*	*	8	18
1:00	*	*	*	*	5	13	5	9	*	*	*	*	*	*	5	11
2:00	*	*	*	*	6	3	11	8	*	*	*	*	*	*	8	6
3:00	*	*	*	*	20	9	14	2	*	*	*	*	*	*	17	6
4:00	*	*	*	*	62	17	65	16	*	*	*	*	*	*	64	16
5:00	*	*	*	*	180	75	166	71	*	*	*	*	*	*	173	73
6:00	*	*	*	*	359	108	362	108	*	*	*	*	*	*	360	108
7:00	*	*	*	*	529	228	533	232	*	*	*	*	*	*	531	230
8:00	*	*	*	*	445	312	436	318	*	*	*	*	*	*	440	315
9:00	*	*	*	*	338	273	308	238	*	*	*	*	*	*	323	256
10:00	*	*	*	*	296	289	297	249	*	*	*	*	*	*	296	269
11:00	*	*	*	*	348	273	278	277	*	*	*	*	*	*	313	275
12:00	*	*	*	*	345	332	313	317	*	*	*	*	*	*	329	324
13:00	*	*	*	*	341	358	298	305	*	*	*	*	*	*	320	332
14:00	*	*	*	*	383	435	365	393	*	*	*	*	*	*	374	414
15:00	*	*	*	*	411	603	349	526	*	*	*	*	*	*	380	564
16:00	*	*	*	*	428	599	383	579	*	*	*	*	*	*	406	589
17:00	*	*	*	*	411	598	372	555	*	*	*	*	*	*	392	576
18:00	*	*	*	*	289	386	277	364	*	*	*	*	*	*	283	375
19:00	*	*	*	*	176	240	176	260	*	*	*	*	*	*	176	250
20:00	*	*	*	*	105	186	122	187	*	*	*	*	*	*	114	186
21:00	*	*	*	*	72	119	66	107	*	*	*	*	*	*	69	113
22:00	*	*	*	*	47	65	48	55	*	*	*	*	*	*	48	60
23:00	*	*	*	*	21	65	19	33	*	*	*	*	*	*	20	49
Total	0	0	0	0	5622	5603	5275	5228	0	0	0	0	0	0	5449	5415
Day	0		0		11225		10503		0		0		0		10864	
AM Peak					7:00	8:00	7:00	8:00							7:00	8:00
Volume					529	312	533	318							531	315
PM Peak					16:00	15:00	16:00	16:00							16:00	16:00
Volume					428	603	383	579							406	589
Comb Total	0		0		11225		10503		0		0		0		10864	

Location Info	
Location ID	5087_SB
Type	I-SECTION
Functional Class	1
Located On	INTERSTATE 95
AT	AMESBURY
Direction	SB
Community	Salisbury
MPO_ID	
HPMS ID	7000901130
Agency	Massachusetts Highway Department

Count Data Info	
Start Date	7/10/2025
End Date	7/11/2025
Start Time	12:00 AM
End Time	12:00 AM
Direction	
Notes	
Count Source	508702
File Name	
Weather	
Study	
Owner	MhdTelemetryAuto
QC Status	Accepted

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	49	41	48	42	180
01:00 - 02:00	40	29	21	21	111
02:00 - 03:00	18	25	25	35	103
03:00 - 04:00	44	42	38	59	183
04:00 - 05:00	64	95	153	175	487
05:00 - 06:00	264	298	335	352	1249
06:00 - 07:00	341	374	450	449	1614
07:00 - 08:00	446	469	526	537	1978
08:00 - 09:00	479	535	483	496	1993
09:00 - 10:00	489	482	510	498	1979
10:00 - 11:00	438	508	508	489	1943
11:00 - 12:00	536	579	554	584	2253
12:00 - 13:00	536	518	517	502	2073
13:00 - 14:00	526	542	502	451	2021
14:00 - 15:00	515	537	579	585	2216
15:00 - 16:00	587	573	609	658	2427
16:00 - 17:00	566	615	607	579	2367
17:00 - 18:00	545	615	587	534	2281
18:00 - 19:00	514	454	427	409	1804
19:00 - 20:00	345	362	311	300	1318
20:00 - 21:00	284	253	259	241	1037
21:00 - 22:00	231	211	165	159	766
22:00 - 23:00	165	115	112	112	504
23:00 - 24:00	143	106	56	61	366
TOTAL					33253

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

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
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

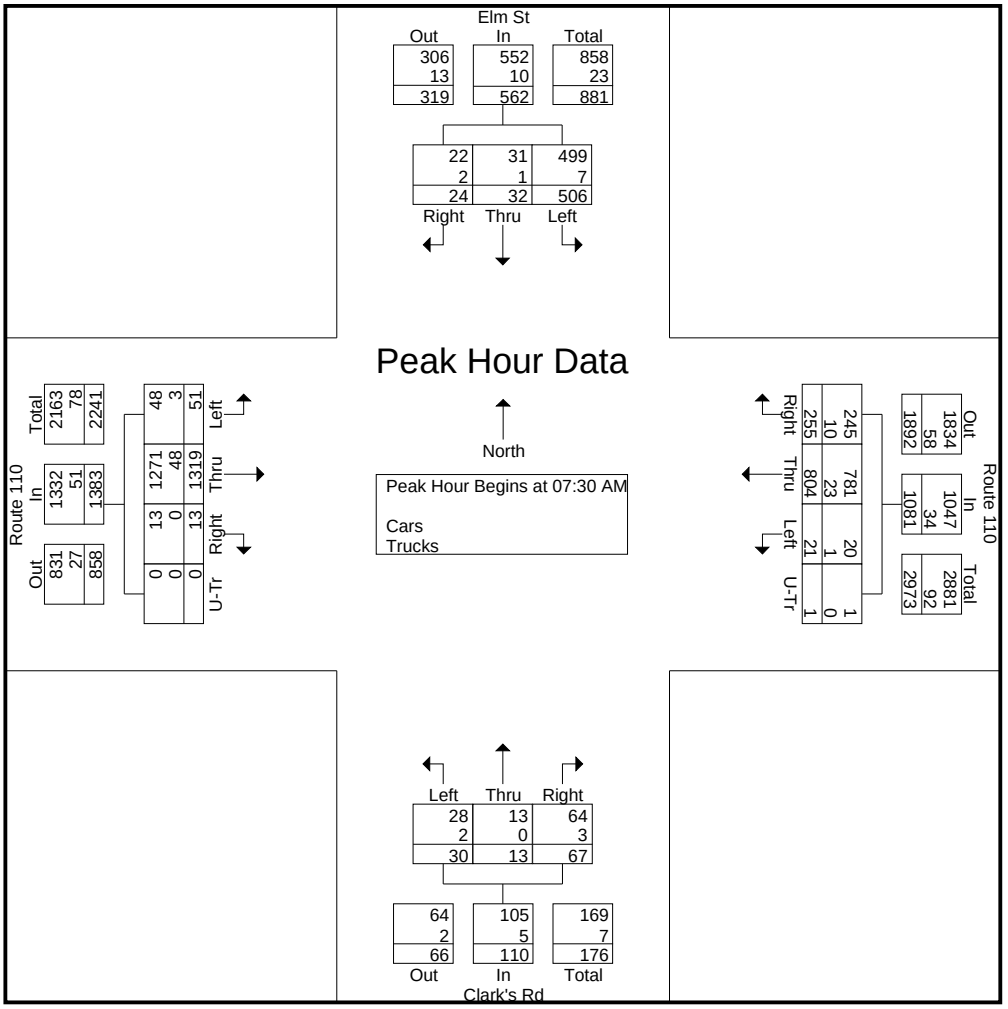
	Elm St From North				Route 110 From East					Clark's Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1																			
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:

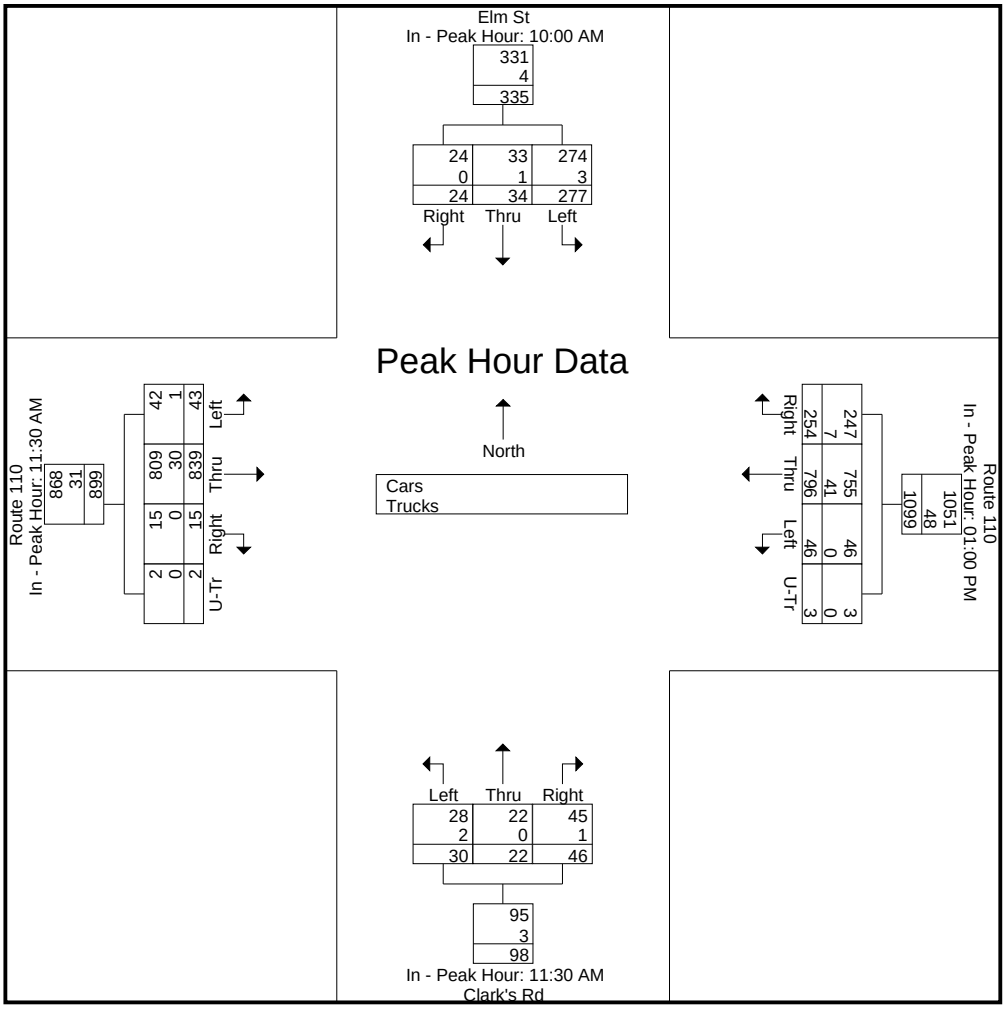
	07:30 AM				07:45 AM					07:15 AM				07:30 AM				
+0 mins.	130	6	6	142	4	**232**	65	0	**301**	**15**	4	16	**35**	13	337	2	0	352
+15 mins.	**134**	**11**	2	147	3	199	56	0	258	7	3	**22**	32	13	**374**	4	0	**391**
+30 mins.	110	6	6	122	**9**	190	**72**	0	271	8	3	19	30	11	314	1	0	326
+45 mins.	132	9	**10**	**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

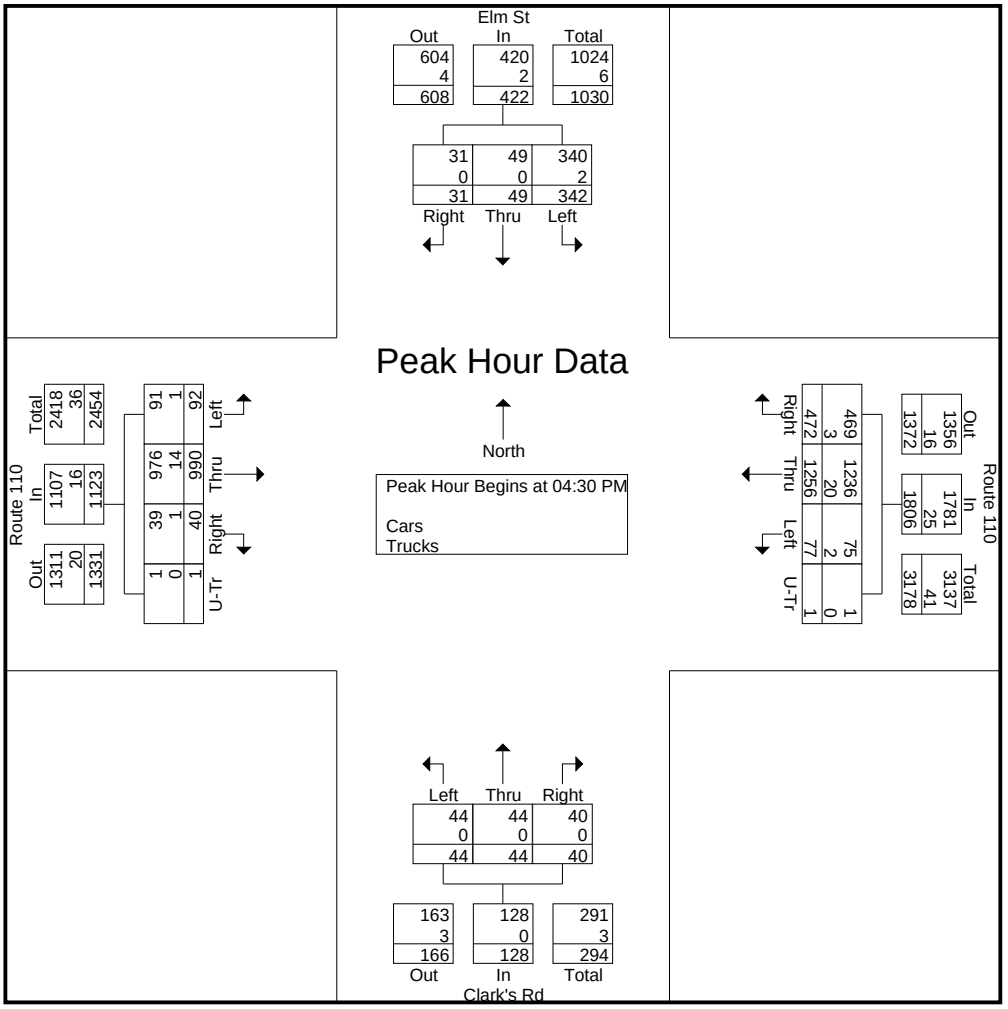
04:30 PM	71	10	2	83	14	304	107	**1**	426	6	12	3	21	26	251	5	**1**	283	813
04:45 PM	94	**15**	10	119	**23**	288	113	0	424	9	6	13	28	22	238	9	0	269	840
05:00 PM	**95**	12	**13**	**120**	20	324	116	0	460	12	11	**16**	39	15	234	**13**	0	262	881
05:15 PM	82	12	6	100	20	**340**	**136**	0	**496**	**17**	**15**	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				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
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

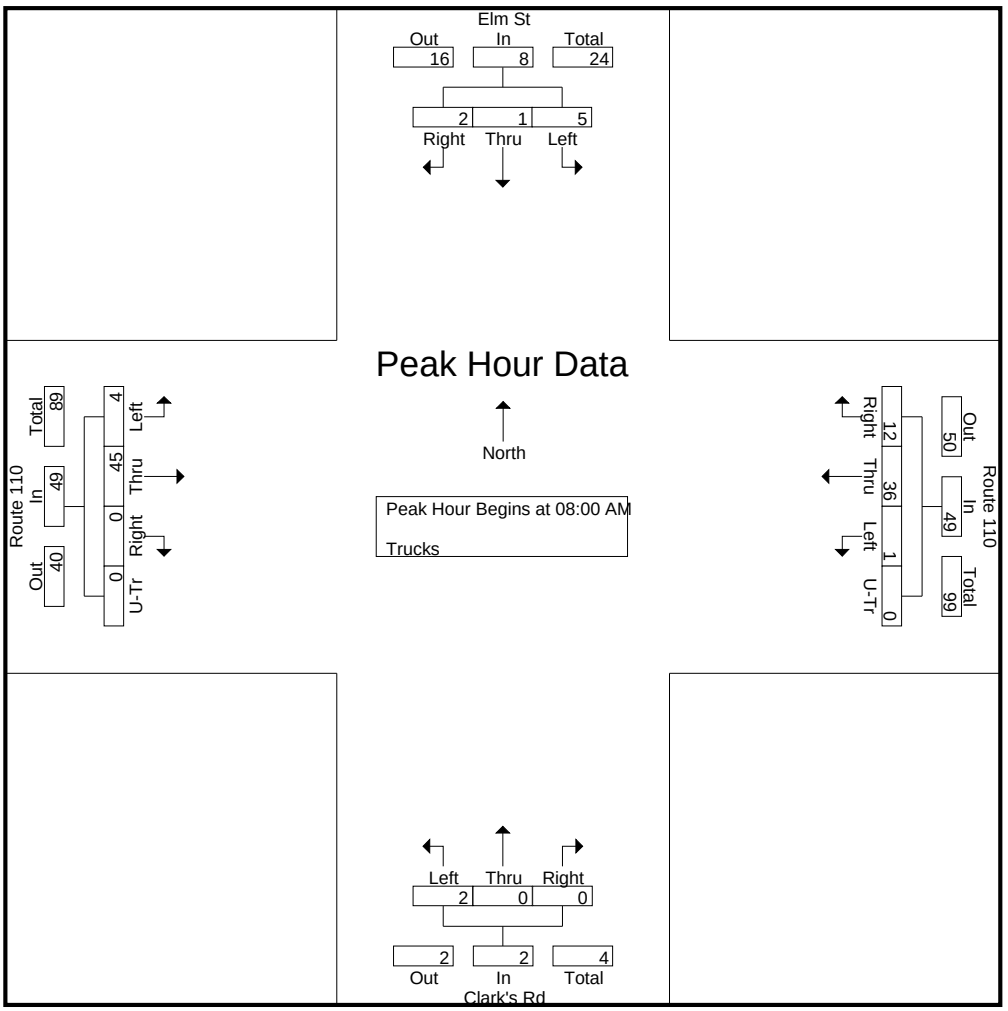
N/S Street : Elm Street / Clark's Road
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Clear

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				
Start Time	Left	Thru	Right	Left	Thru	Right	U-Tr	Left	Thru	Right	Left	Thru	Right	U-Tr	Int. Total
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					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 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



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- Bikes Peds

	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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 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
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 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
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	0	0	1	0	0	0	0	0	0	0	0	0	1	1
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
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	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	2
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	2	2

Accurate Counts

978-664-2565

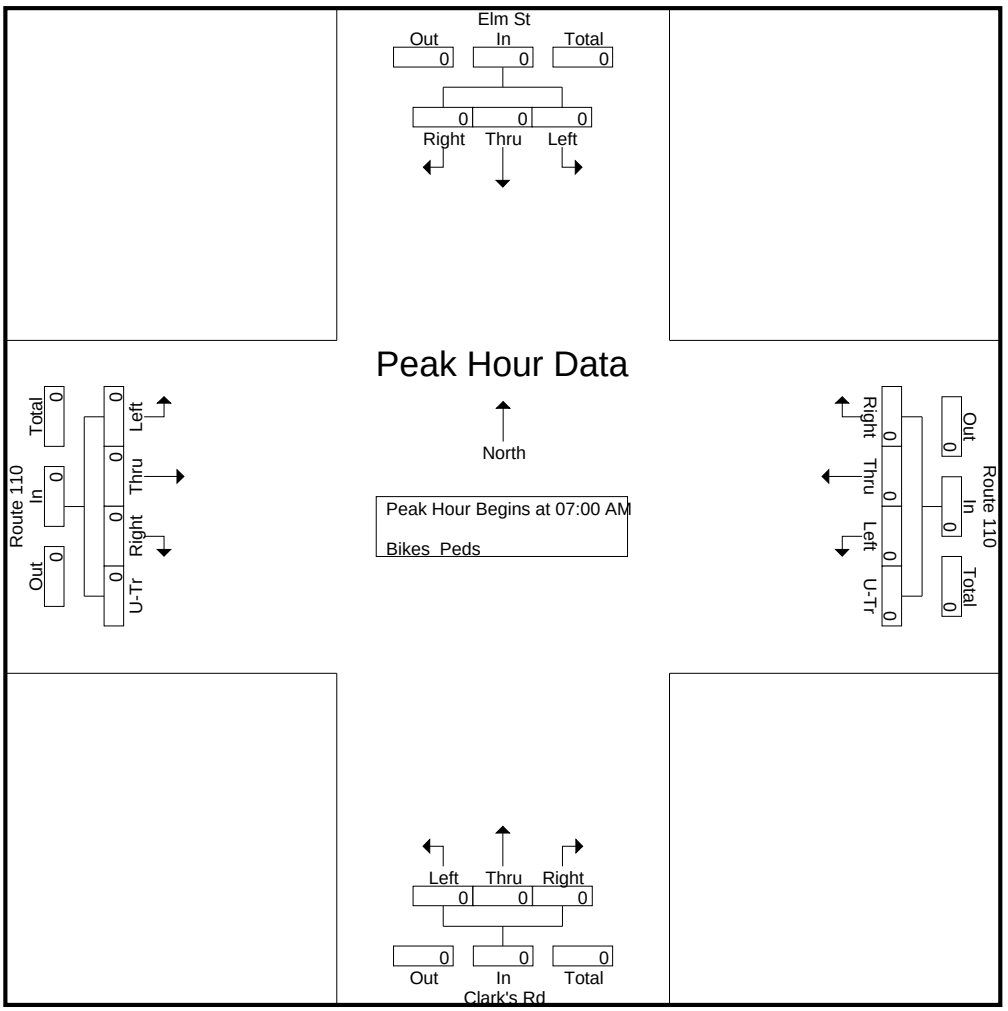
N/S Street : Elm Street / Clark's Road
E/W Street : Route 110
City/State : Amesbury, MA
Weather : Clear

File Name : 10269001
Site Code : 10269001
Start Date : 4/30/2025

Groups Printed- Bikes Peds

	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
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			
Total %	0	10	0		0	40	0	50	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

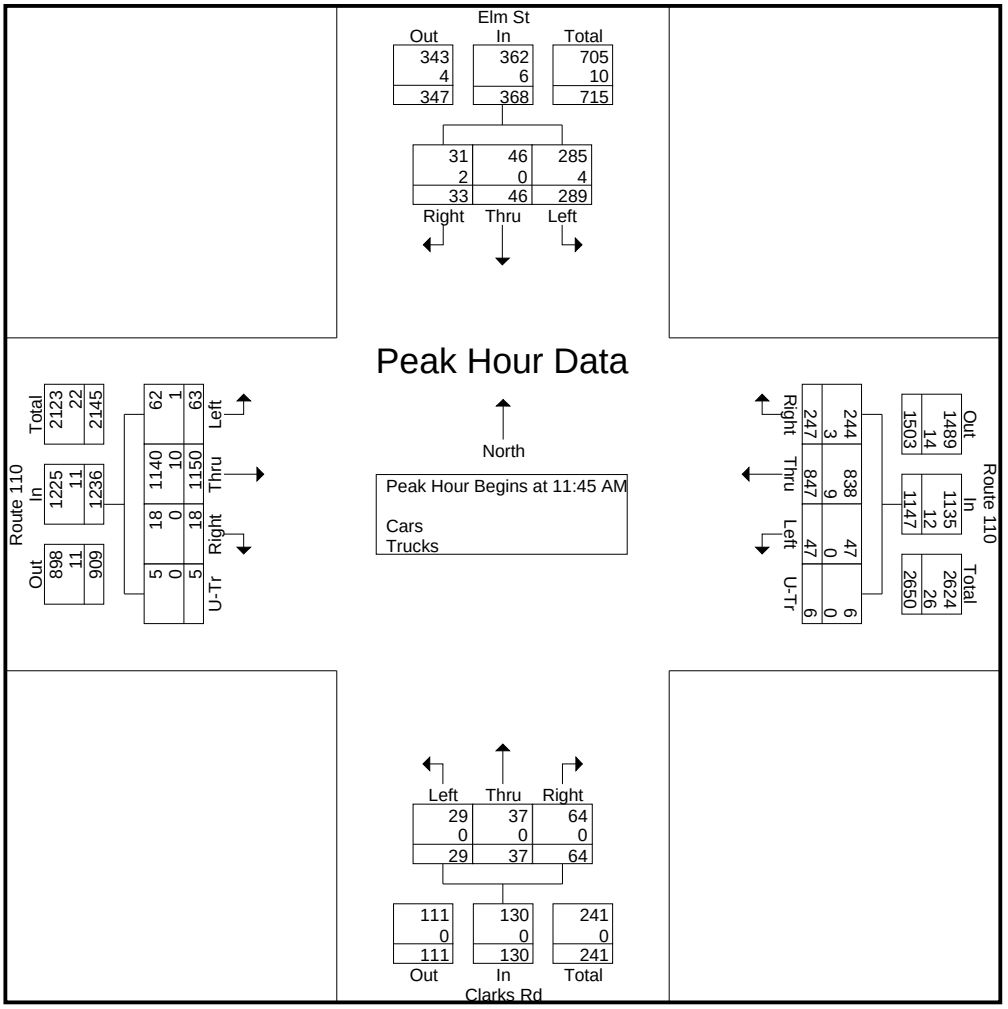
	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
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

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- Bikes Peds

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

	Elm St From North				Route 110 From East					Clarks Rd From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 11:00 AM																			
11:00 AM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11:15 AM	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	2
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	**3**	0	0	**3**	0	0	0	0	0	0	0	0	0	**3**
Total Volume	1	0	0	1	0	5	0	0	5	0	0	0	0	0	0	0	0	0	6
% App. Total	100	0	0		0	100	0	0		0	0	0		0	0	0	0		
PHF	.250	.000	.000	.250	.000	.417	.000	.000	.417	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500

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

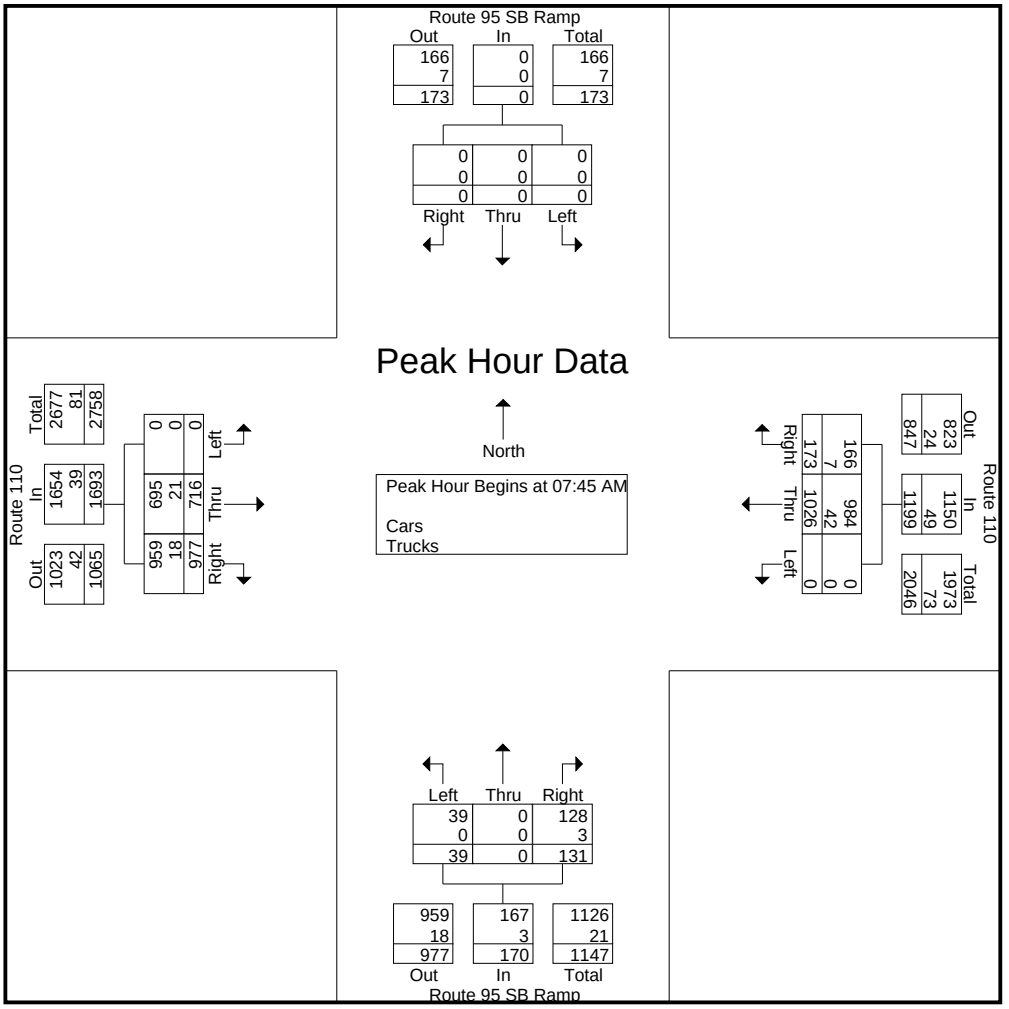
	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
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	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

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

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	8	**3**	11	0	0	1	1	0	**5**	**6**	**11**	23
08:15 AM	0	0	0	0	0	13	3	16	0	0	**2**	**2**	0	4	4	8	**26**
08:30 AM	0	0	0	0	0	12	1	13	0	0	0	0	0	4	6	10	23
08:45 AM	0	0	0	0	0	**14**	3	**17**	0	0	2	2	0	4	1	5	24
Total Volume	0	0	0	0	0	47	10	57	0	0	5	5	0	17	17	34	96
% App. Total	0	0	0		0	82.5	17.5		0	0	100		0	50	50		
PHF	.000	.000	.000	.000	.000	.839	.833	.838	.000	.000	.625	.625	.000	.850	.708	.773	.923

Accurate Counts

978-664-2565

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

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

Groups Printed- Bikes Peds

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
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	1	0	0	0	0	0	0	0	0	0	0	0	1	1
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	1	0	0	0	0	0	0	0	0	0	0	0	1	1
08:00 AM	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
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	1	0	1	0	0	0	0	0	0	0	0	0	0	1	1	2
Grand Total	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	1	2	3
Apprch %	0	0	0		0	100	0		0	0	0		0	0	0				
Total %	0	0	0		0	100	0		0	0	0		0	0	0		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 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	0	0	0	**1**
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.500

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

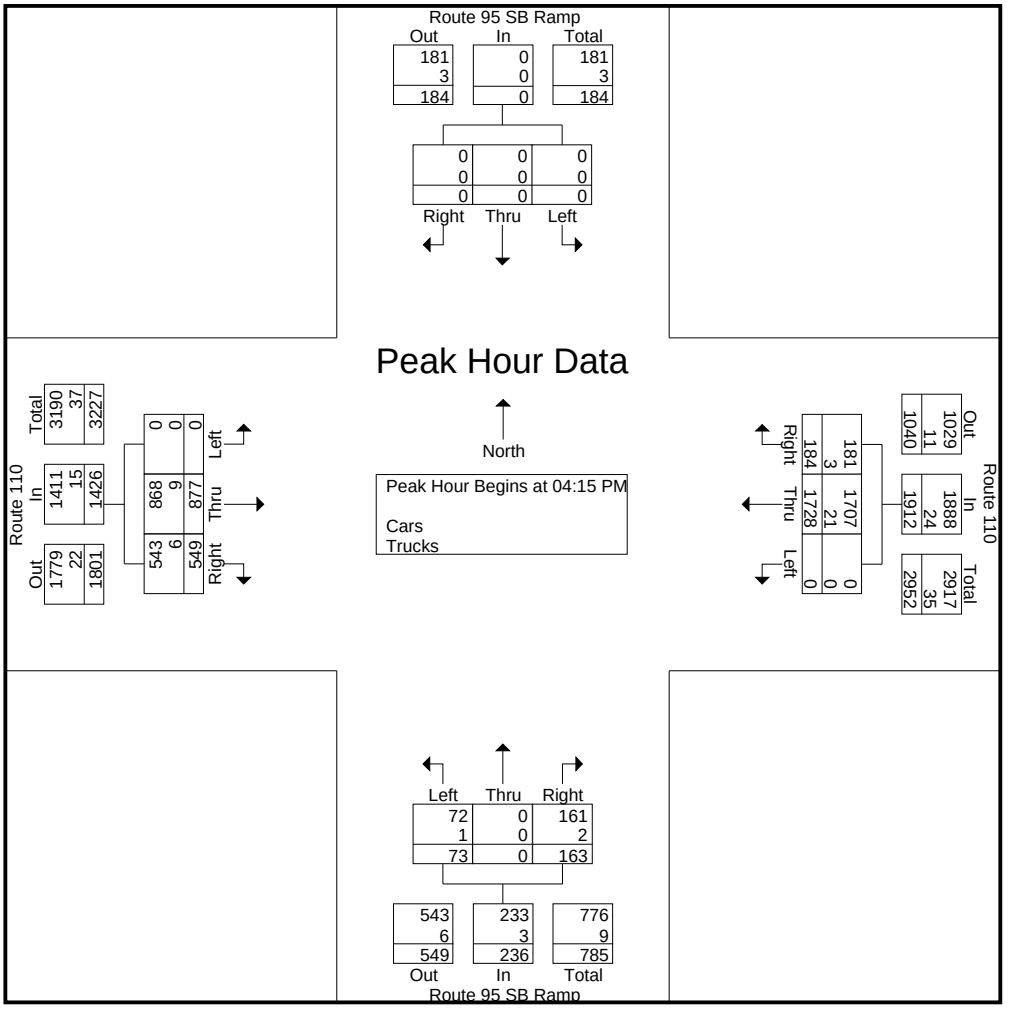
	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
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	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

Groups Printed- Trucks

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

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	4	1	5	**2**	0	0	**2**	0	1	1	2	9
04:15 PM	0	0	0	0	0	**6**	0	6	0	0	0	0	0	**3**	**3**	**6**	**12**
04:30 PM	0	0	0	0	0	6	**2**	**8**	0	0	0	0	0	1	3	4	12
04:45 PM	0	0	0	0	0	6	1	7	1	0	**1**	2	0	0	0	0	9
Total Volume	0	0	0	0	0	22	4	26	3	0	1	4	0	5	7	12	42
% App. Total	0	0	0		0	84.6	15.4		75	0	25		0	41.7	58.3		
PHF	.000	.000	.000	.000	.000	.917	.500	.813	.375	.000	.250	.500	.000	.417	.583	.500	.875

Accurate Counts

978-664-2565

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

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

Groups Printed- Bikes Peds

	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
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

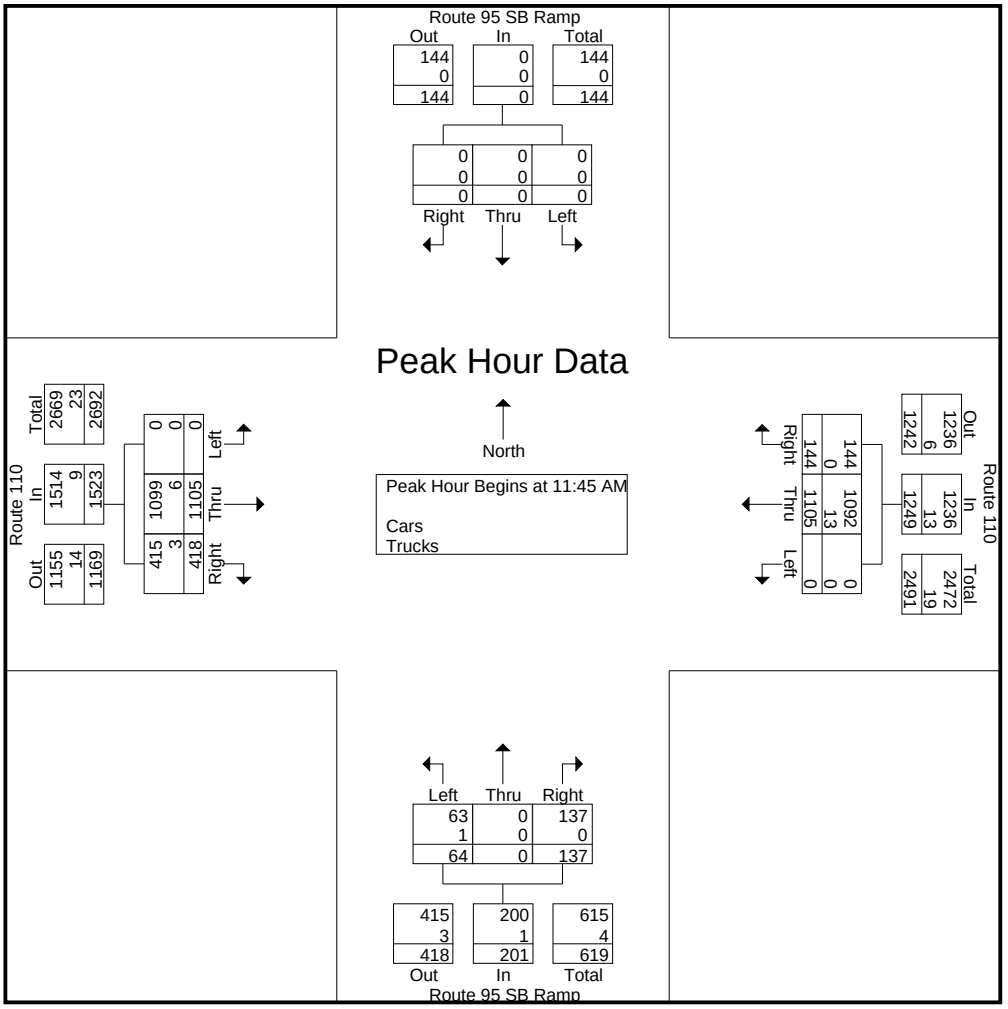
	Route 95 SB Ramp From North				Route 110 From East				Route 95 SB Ramp From South				Route 110 From West				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
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	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

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

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

Groups Printed- Bikes Peds

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

	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 12:30 PM																	
12:30 PM	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
01:00 PM	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	**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	0	0	0	2
% App. Total	0	0	0		0	100	0		0	0	0		0	0	0		
PHF	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250

Accurate Counts

978-664-2565

N/S Street : 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

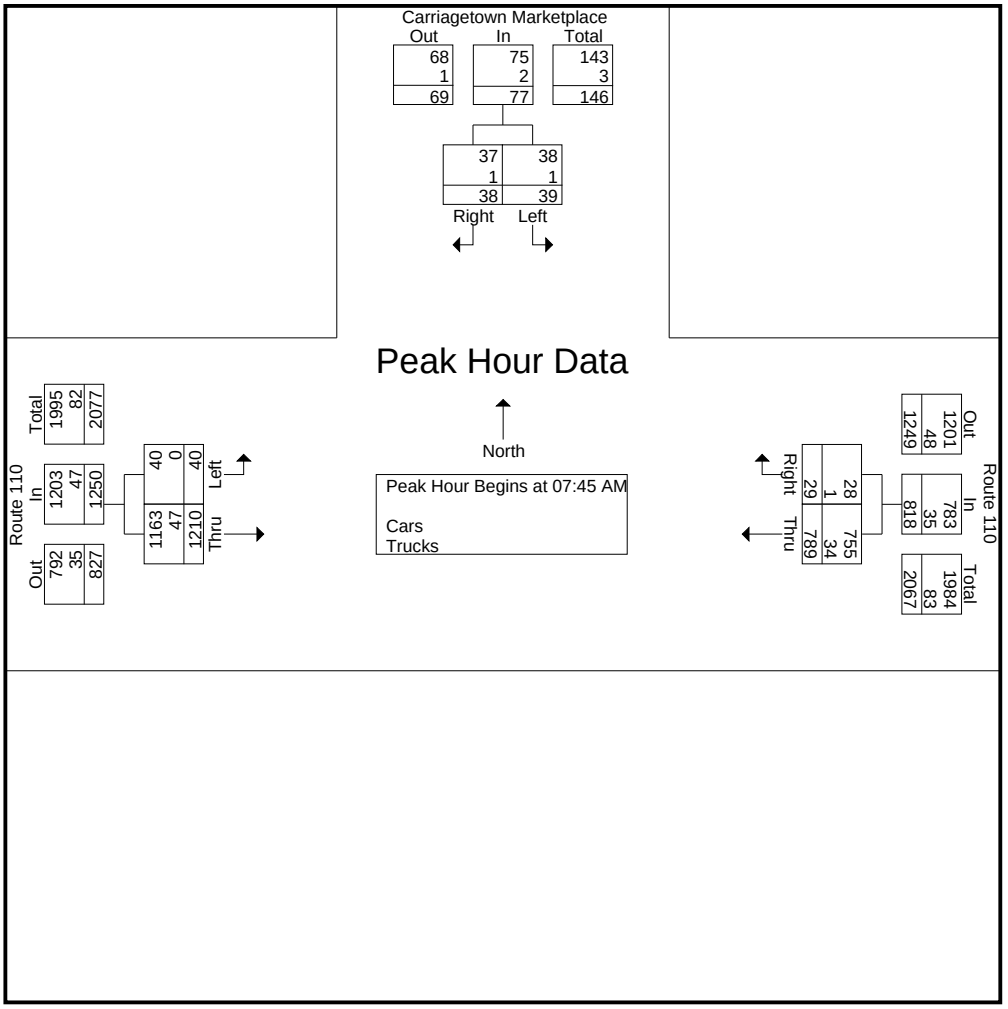
	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 07:45 AM										
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

Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	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

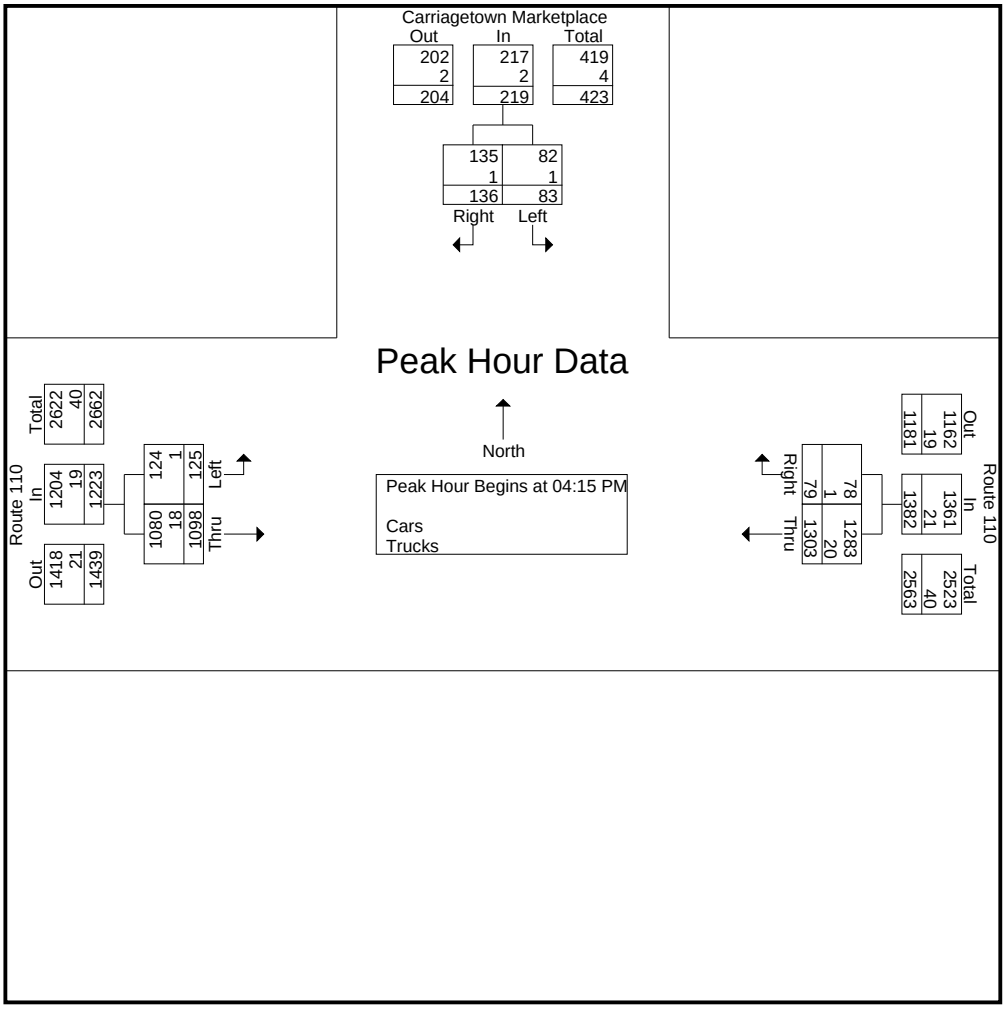
	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:15 PM										
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

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

Groups Printed- Bikes Peds

	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West					
Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Exclu. Total	Inclu. Total	Int. Total
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

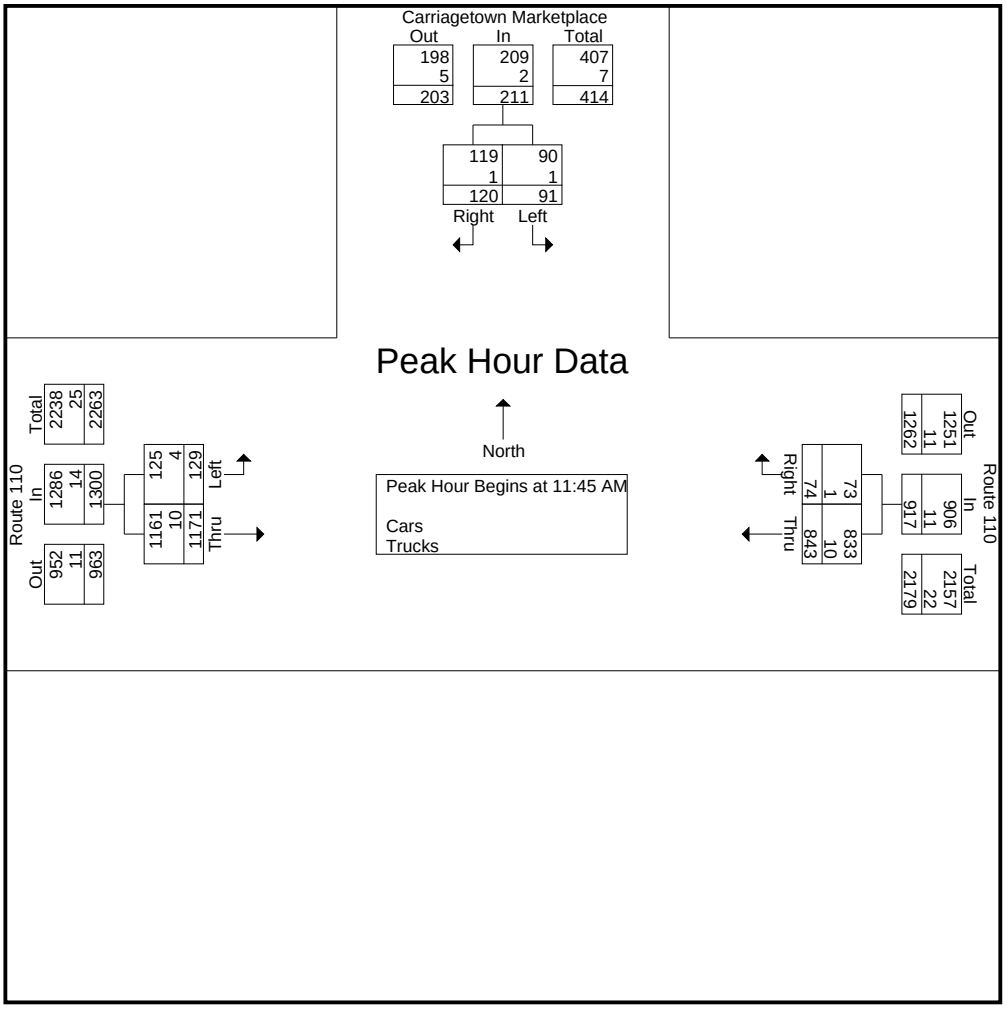
	Carriagetown Marketplace From North			Route 110 From East			Route 110 From West			
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:45 AM										
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

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

Groups Printed- Bikes Peds

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

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

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Cars - Trucks

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

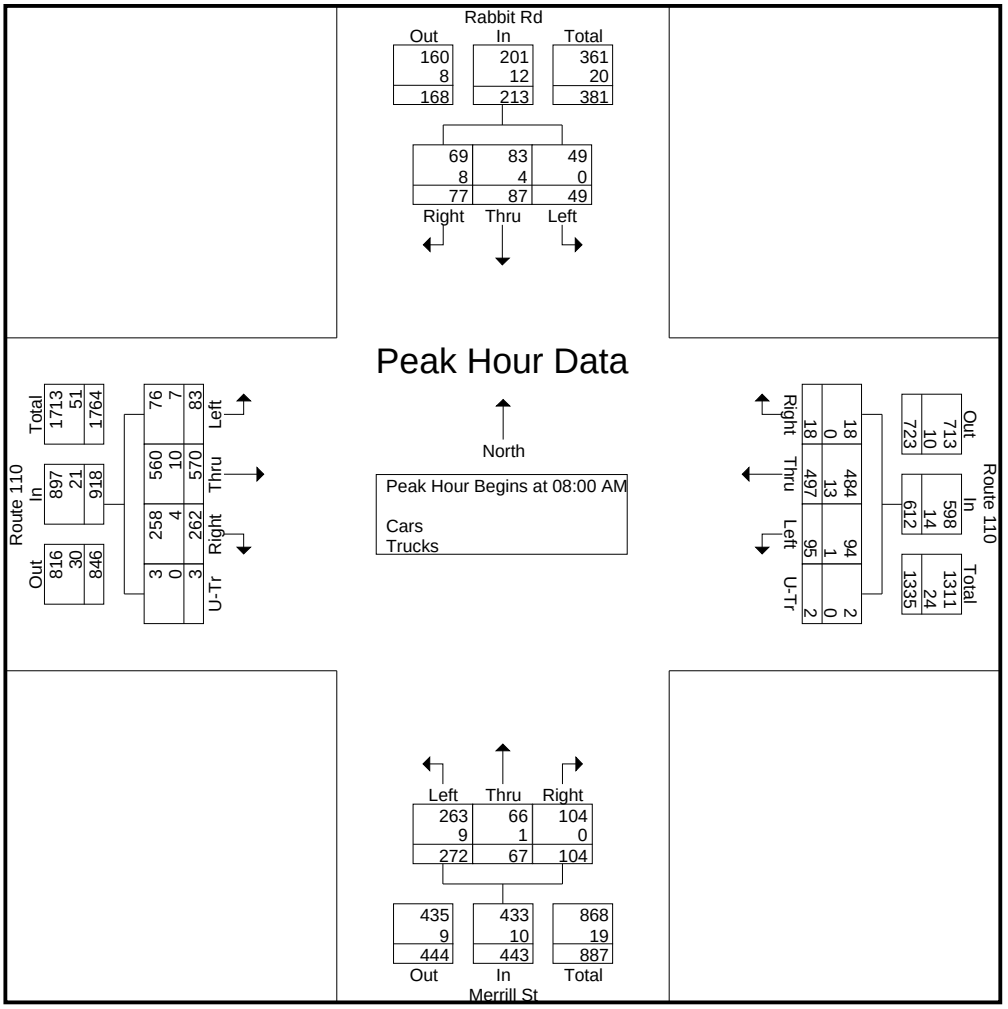
	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 08:00 AM																			
08:00 AM	**14**	14	14	42	21	127	3	0	151	**81**	14	**29**	**124**	**28**	119	57	0	204	521
08:15 AM	13	19	**26**	58	18	**135**	3	0	156	71	11	25	107	14	147	68	0	229	550
08:30 AM	14	19	21	54	21	111	**8**	**1**	141	63	20	21	104	19	133	68	**2**	222	521
08:45 AM	8	**35**	16	**59**	**35**	124	4	1	**164**	57	**22**	29	108	22	**171**	**69**	1	**263**	**594**
Total Volume	49	87	77	213	95	497	18	2	612	272	67	104	443	83	570	262	3	918	2186
% App. Total	23	40.8	36.2		15.5	81.2	2.9	0.3		61.4	15.1	23.5		9	62.1	28.5	0.3		
PHF	.875	.621	.740	.903	.679	.920	.563	.500	.933	.840	.761	.897	.893	.741	.833	.949	.375	.873	.920
Cars	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897	2129
% Cars	100	95.4	89.6	94.4	98.9	97.4	100	100	97.7	96.7	98.5	100	97.7	91.6	98.2	98.5	100	97.7	97.4
Trucks	0	4	8	12	1	13	0	0	14	9	1	0	10	7	10	4	0	21	57
% Trucks	0	4.6	10.4	5.6	1.1	2.6	0	0	2.3	3.3	1.5	0	2.3	8.4	1.8	1.5	0	2.3	2.6

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
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				08:00 AM					08:00 AM				08:00 AM				
+0 mins.	**14**	14	14	42	21	127	3	0	151	**81**	14	**29**	**124**	**28**	119	57	0	204
+15 mins.	13	19	**26**	58	18	**135**	3	0	156	71	11	25	107	14	147	68	0	229
+30 mins.	14	19	21	54	21	111	**8**	**1**	141	63	20	21	104	19	133	68	**2**	222
+45 mins.	8	**35**	16	**59**	**35**	124	4	1	**164**	57	**22**	29	108	22	**171**	**69**	1	**263**
Total Volume	49	87	77	213	95	497	18	2	612	272	67	104	443	83	570	262	3	918
% App. Total	23	40.8	36.2		15.5	81.2	2.9	0.3		61.4	15.1	23.5		9	62.1	28.5	0.3	
PHF	.875	.621	.740	.903	.679	.920	.563	.500	.933	.840	.761	.897	.893	.741	.833	.949	.375	.873
Cars	49	83	69	201	94	484	18	2	598	263	66	104	433	76	560	258	3	897
% Cars	100	95.4	89.6	94.4	98.9	97.4	100	100	97.7	96.7	98.5	100	97.7	91.6	98.2	98.5	100	97.7
Trucks	0	4	8	12	1	13	0	0	14	9	1	0	10	7	10	4	0	21
% Trucks	0	4.6	10.4	5.6	1.1	2.6	0	0	2.3	3.3	1.5	0	2.3	8.4	1.8	1.5	0	2.3

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Trucks

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

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

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Bikes Peds

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

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:30 AM																			
07:30 AM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
07:45 AM	0	**2**	0	**2**	0	0	0	0	0	0	**2**	0	**2**	0	0	0	**4**	**4**	**8**
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	1	2
Total Volume	0	3	0	3	0	0	0	0	0	0	4	0	4	0	0	0	7	7	14
% App. Total	0	100	0		0	0	0	0		0	100	0		0	0	0	100		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.438	.438	.438

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Cars - Trucks

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

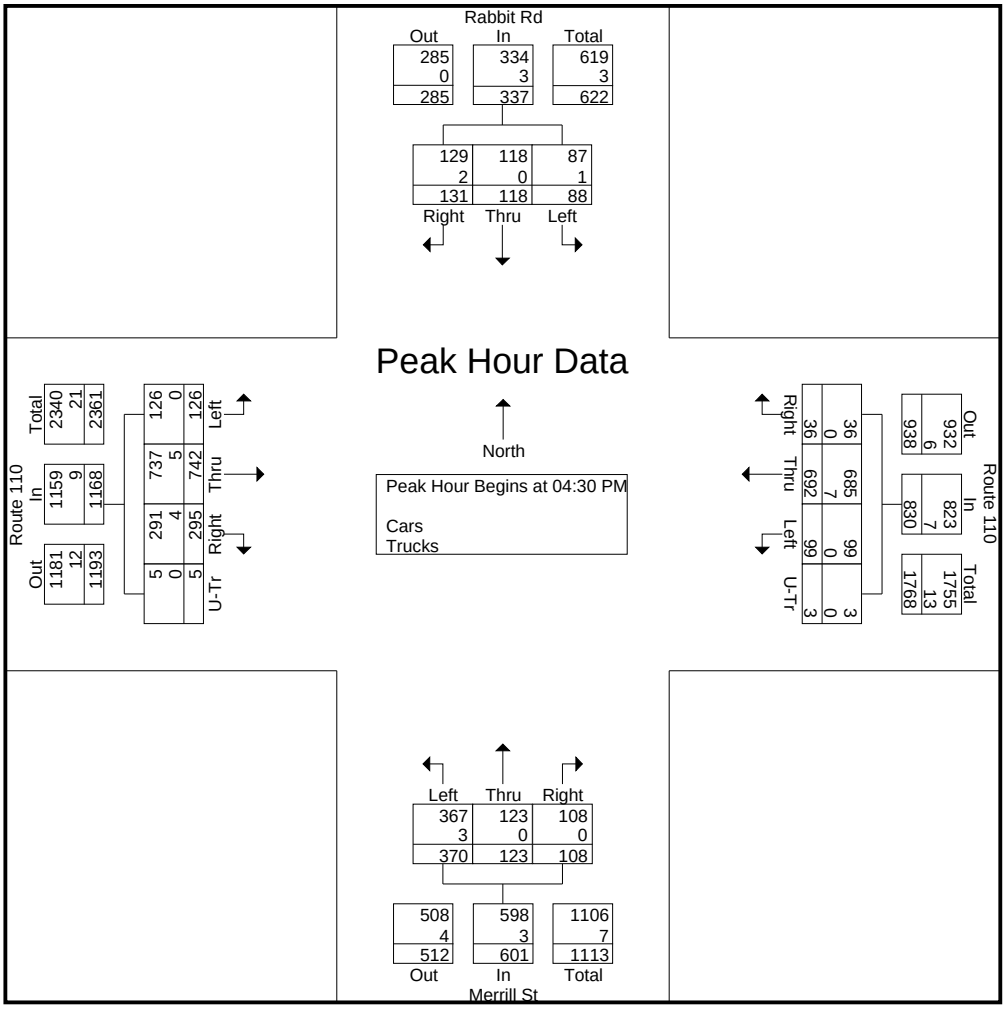
	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1				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

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

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

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Trucks

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

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 04:15 PM																			
04:15 PM	0	0	0	0	0	0	0	0	0	**2**	0	0	**2**	**3**	0	0	0	3	5
04:30 PM	0	0	0	0	0	**2**	0	0	**2**	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	**1**	**1**	0	2	0	0	2	2	0	0	2	0	**2**	1	0	3	**8**
05:00 PM	0	0	1	1	0	1	0	0	1	0	0	0	0	0	2	**3**	0	**5**	7
Total Volume	0	0	2	2	0	5	0	0	5	4	0	0	4	3	4	4	0	11	22
% App. Total	0	0	100		0	100	0	0		100	0	0		27.3	36.4	36.4	0		
PHF	.000	.000	.500	.500	.000	.625	.000	.000	.625	.500	.000	.000	.500	.250	.500	.333	.000	.550	.688

Accurate Counts

978-664-2565

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

File Name : 97650005
Site Code : 97650005
Start Date : 7/13/2023
Page No : 1

Groups Printed- Bikes Peds

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

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West						
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 05:00 PM																			
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	**1**	0	1	2	3
05:15 PM	0	0	0	0	0	0	0	0	0	0	**2**	0	**2**	0	0	0	2	2	**4**
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**3**	**3**	4
Total Volume	0	1	0	1	0	0	0	0	0	0	3	0	3	0	1	0	6	7	11
% App. Total	0	100	0		0	0	0	0		0	100	0		0	14.3	0	85.7		
PHF	.000	.250	.000	.250	.000	.000	.000	.000	.000	.000	.375	.000	.375	.000	.250	.000	.500	.583	.688

Accurate Counts

978-664-2565

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

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 1

Groups Printed- Cars - Trucks

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

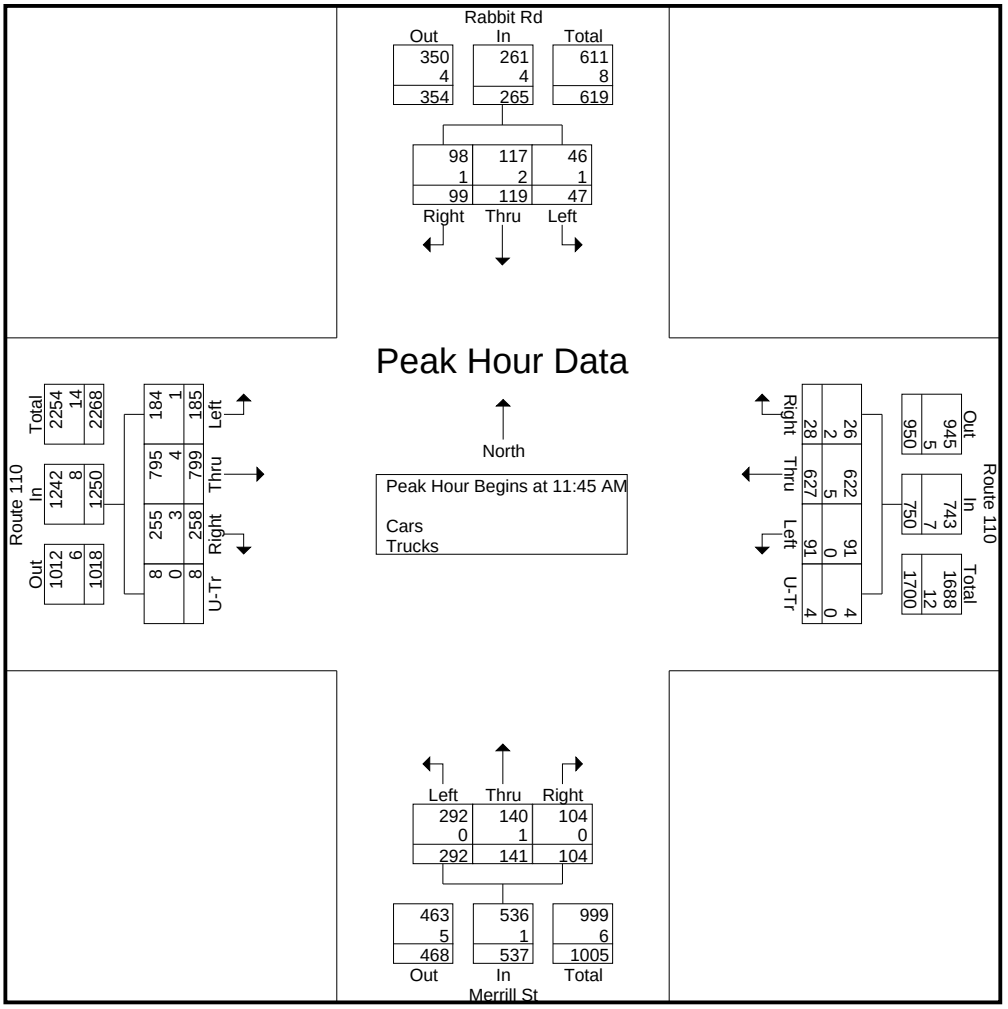
	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1				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

Accurate Counts

978-664-2565

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

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 2



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

Peak Hour for Each Approach Begins at:

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

Accurate Counts

978-664-2565

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

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 1

Groups Printed- Trucks

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

	Rabbit Rd From North				Route 110 From East					Merrill St From South				Route 110 From West					
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	0	0	0	0	0	1	0	0	1	0	0	0	0	**1**	1	**1**	0	**3**	4
12:30 PM	**1**	**2**	0	**3**	0	1	0	0	1	0	0	0	0	0	1	1	0	2	6
12:45 PM	0	0	**1**	1	0	2	0	0	2	**2**	**1**	0	**3**	1	**2**	0	0	3	**9**
01:00 PM	0	0	0	0	0	**3**	0	0	**3**	0	0	0	0	1	1	0	0	2	5
Total Volume	1	2	1	4	0	7	0	0	7	2	1	0	3	3	5	2	0	10	24
% App. Total	25	50	25		0	100	0	0		66.7	33.3	0		30	50	20	0		
PHF	.250	.250	.250	.333	.000	.583	.000	.000	.583	.250	.250	.000	.250	.750	.625	.500	.000	.833	.667

Accurate Counts

978-664-2565

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

File Name : 976500S5
Site Code : 97650005
Start Date : 7/15/2023
Page No : 1

Groups Printed- Bikes Peds

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

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

Accurate Counts

978-664-2565

N/S Street : 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

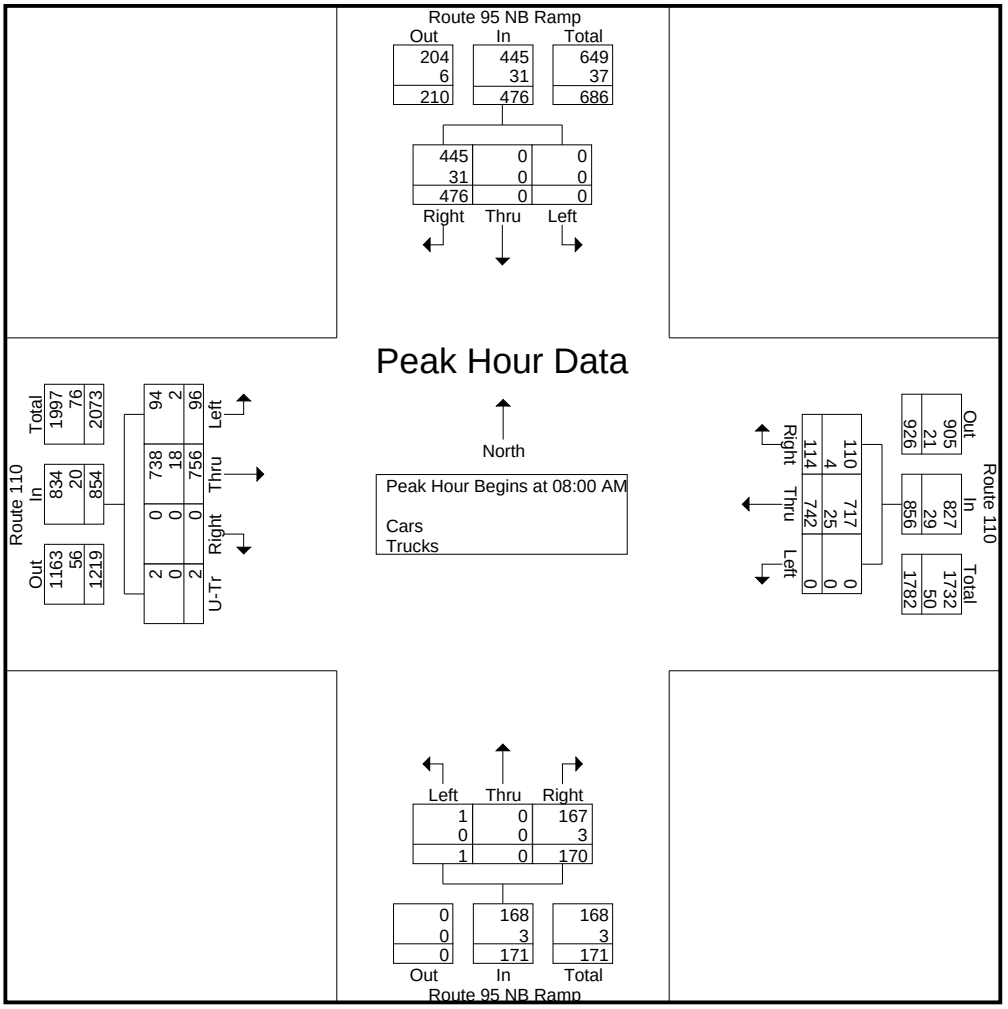
	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 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

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						
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
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0		0	0	0		0	0	0		0	0	0	0			
Total %																	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	Peds	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 07:00 AM																			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
% App. Total	0	0	0		0	0	0		0	0	0		0	0	0	0			
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	

Accurate Counts

978-664-2565

N/S Street : 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

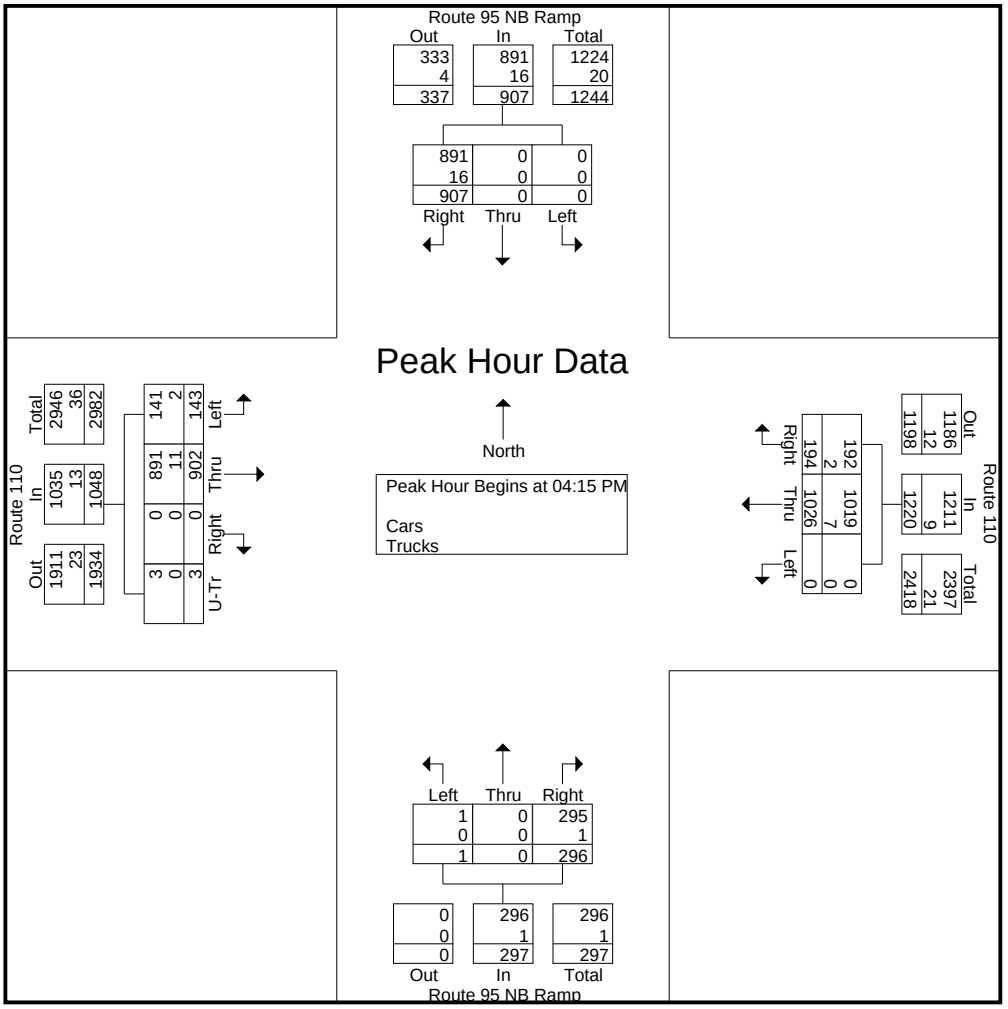
	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 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						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
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

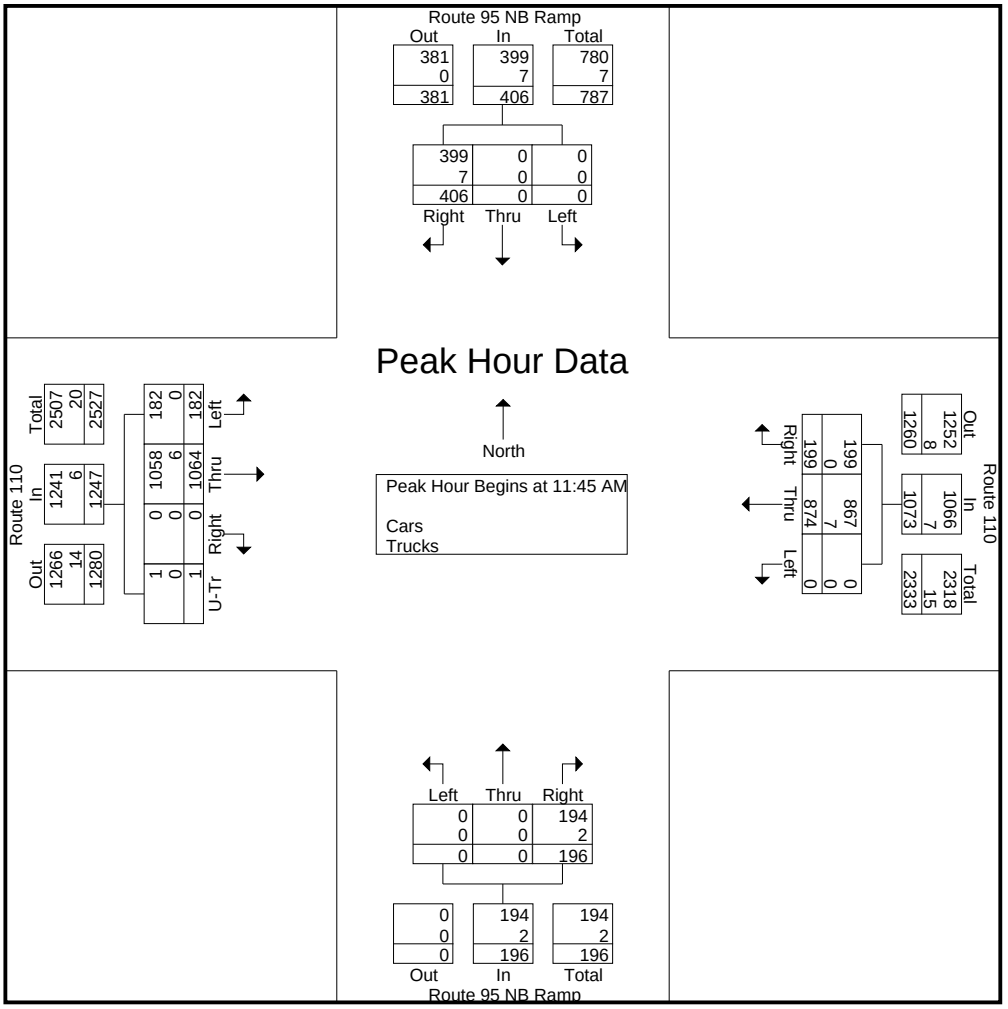
	Route 95 NB Ramp From North				Route 110 From East				Route 95 NB Ramp From South				Route 110 From West					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	U-Tr	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 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						
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total
11:00 AM	0	0	0	0	0	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	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

SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department
Statewide Traffic Data Collection
2023 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.23	1.14	1.11	1.06	1.01	0.96	0.93	0.91	1.00	0.97	1.04	1.08	0.77
R3	1.11	1.07	1.02	0.95	0.90	0.89	0.87	0.87	0.92	0.89	0.95	0.99	0.98
R4-R7	1.19	1.16	1.10	1.00	0.92	0.91	0.87	0.88	0.93	0.93	1.01	1.06	0.98
U1-Boston	1.07	1.05	1.00	0.95	0.93	0.92	0.92	0.92	0.94	0.93	0.96	0.99	0.94
U1-Essex	1.14	1.11	1.06	1.00	0.95	0.91	0.87	0.87	0.94	0.95	1.00	1.03	0.96
U1-Southeast	1.12	1.09	1.04	0.96	0.91	0.87	0.84	0.86	0.92	0.94	0.98	1.03	0.96
U1-West	1.05	1.02	0.98	0.96	0.94	0.93	0.94	0.94	0.95	0.92	0.96	0.98	0.81
U1-Worcester	1.06	1.04	0.97	0.93	0.92	0.90	0.92	0.92	0.93	0.92	0.94	0.97	0.88
U3	1.05	1.02	0.96	0.92	0.89	0.89	0.91	0.92	0.91	0.90	0.94	0.96	0.98
U4-U7	1.02	1.00	0.94	0.89	0.86	0.88	0.91	0.92	0.89	0.88	0.91	0.91	0.99
UR2	1.05	1.01	0.97	0.92	0.90	0.90	0.91	0.91	0.91	0.90	0.94	0.97	0.98
Rec - East	1.17	1.16	1.09	1.04	0.92	0.84	0.76	0.80	0.93	1.00	1.03	1.06	0.98
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	0.98

Round off:
0-999 = 10
>1000 = 100

U = Urban
R = Rural

1 - Interstate
2 - Freeway and Expressway
3 - Other Principal Arterial
4 - Minor Arterial
5 - Major Collector
6 - Minor Collector
7 - Local Road and Street

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.

MOTOR VEHICLE CRASH DATA

MassDOT Crash Report for Route 110 at I-95 Southbound Ramps in Amesbury MA 2017-2021

Crash Date	Crash Severity	Crash Time	Number of Vehicles	Driver Contributing Circumstances (All Drivers)	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions	Vehicle Sequence of Events (All Vehicles)	Street Number	Roadway	Near Intersection Roadway	Distance and Direction From Intersection
01/09/2018	Non-fatal injury	2:23 PM	4	D1: (Distracted) / D2: (No improper driving) / D3: (No improper driving) / D4: (No improper driving)	Daylight	Rear-end	Dry	V1: Travelling straight ahead / V2: Slowing or stopped in traffic / V3: Slowing or stopped in traffic / V4: Slowing or stopped in traffic	V1: W / V2: W / V3: W / V4: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic) V4:(Collision with motor vehicle in traffic)		MACY STREET Rte 110 W	RAMP-RT 110 WB TO RT 95 SB	200 feet E of
04/19/2018	Property damage only (none injured)	5:50 PM	2	D1: (Disregarded traffic signs, signals, road markings) / D2: (No improper driving)	Daylight	Sideswipe, same direction	Dry	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: W / V2: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		MACY ST	ELM ST	1000 feet E of
06/18/2019	Property damage only (none injured)	12:20 PM	2	D1: (Inattention) / D2: (No improper driving)	Daylight	Rear-end	Dry	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: W / V2: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		MACY ST Rte SR110 W	RAMP-RT 95 NB TO RT 110 WB	
09/24/2019	Property damage only (none injured)	3:43 PM	3	D1: (Distracted) / D2: (No improper driving) / D3: (No improper driving)	Daylight	Rear-end	Dry	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Travelling straight ahead	V1: W / V2: W / V3: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic) V3:(Collision with motor vehicle in traffic)		MACY ST	I-95	
07/13/2020	Non-fatal injury	11:04 AM	2	D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	V1: Travelling straight ahead / V2: Turning left	V1: E / V2: W	Clear	V1:(Collision with motor vehicle in traffic) V2:(Collision with motor vehicle in traffic)		MACY STREET Rte SR110 E	RAMP-RT 95 SB TO RT 110	
02/07/2021	Property damage only (none injured)	1:55 PM			Daylight	Rear-end	Snow			Snow					

Figure CD-1

Route 110 at Carriagetown Marketplace Collision Diagram

Vanasse & Associates inc

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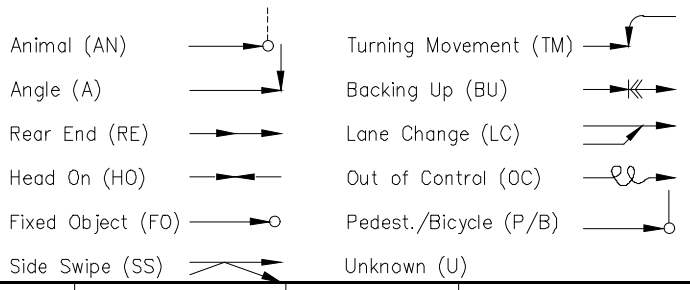

PD = Property Damage Only
PI = Personal Injury
F = Fatality
U = Unknown

1 = Dry
2 = Wet
3 = Snowy
4 = Icy
5 = Unknown
6 = Slush

1 = Clear
2 = Cloudy
3 = Rain
4 = Snow
5 = Other
6 = Unknown

CRASH #	DATE	DAY	TIME	SEV.	R/S	W	CRASH TYPE	VEHICLES
1	03/12/2018	Monday	10:45 AM	PD	1	1	LC	2
2	12/21/2018	Friday	6:15 PM	PD	1	1	AN	1
3	10/15/2020	Thursday	7:43 PM	PD	1	1	RE	2
4	10/28/2020	Wednesday	6:27 PM	PD	2	3	RE	2
5	03/04/2021	Thursday	7:44 AM	PD	1	1	RE	3
6	07/03/2021	Saturday	11:28 AM	PD	2	2/3	TM	4
7	09/14/2021	Tuesday	8:23 AM	PD	1	1	RE	2
8	11/11/2021	Thursday	3:20 PM	PD	1	1	LC	2

Figure CD-2

Collision Data
Macy Street (Route 110) at
Carriagetown Marketplace

Vanasse & Associates inc

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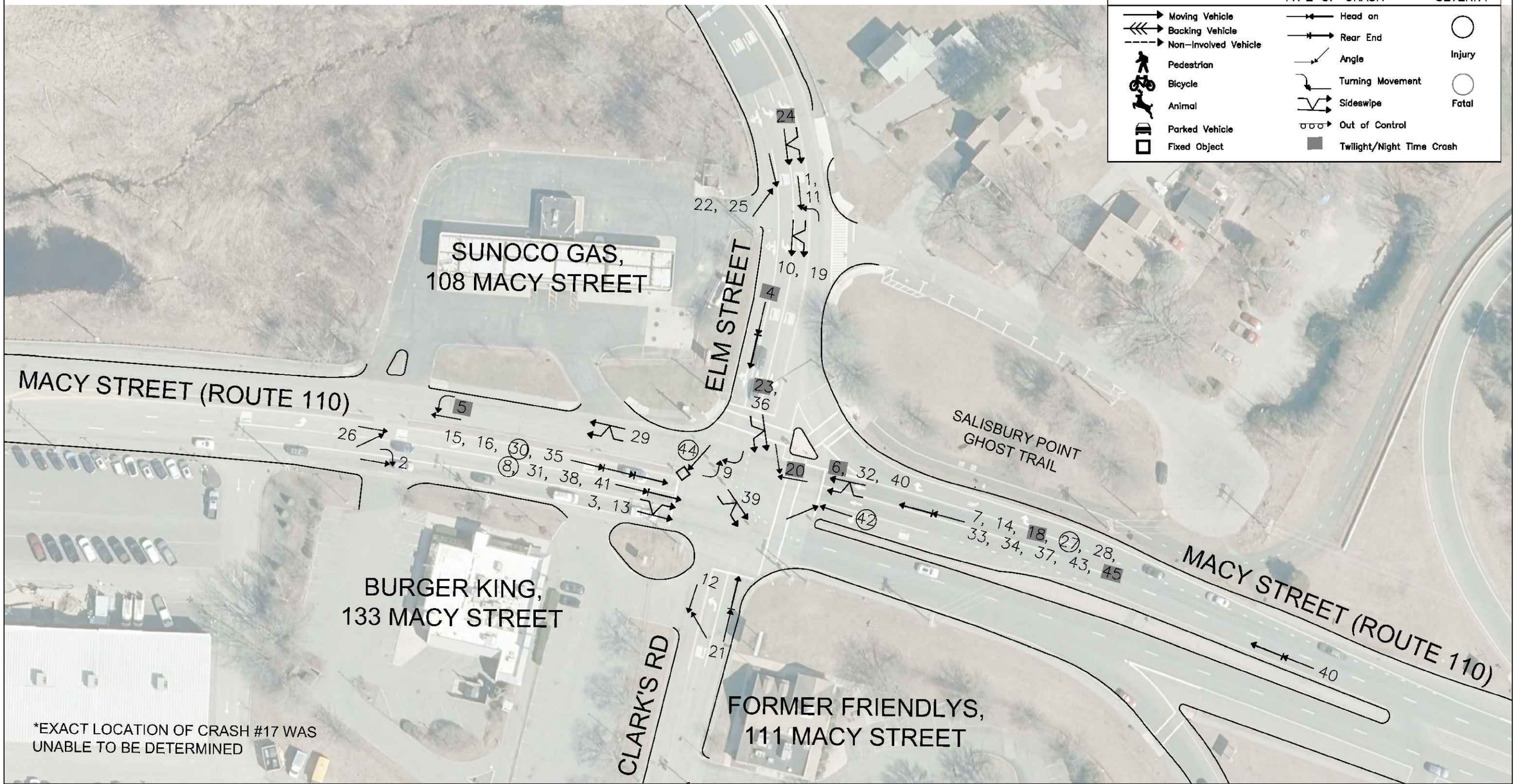

Not To Scale

Figure CD-3

Route 110 at
Clark's Road and Elm Street
Collision Diagram

Vanasse & Associates inc

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R

Unknown (U)

Angle (A)

Turning Movement (TM)

Rear End (RE)

Backing Up (BU)

Head On (HO)

Lane Change (LC)

Fixed Object (FO)

Out of Control (OC)

Side Swipe (SS)

Pedest./Bicycle (P/B)

r

PD = Property Damage Only
PI = Personal Injury
F = Fatality
U = Unknown

R d r
R

r

1 = Dry
2 = Wet
3 = Snowy
4 = Icy
5 = Unknown
6 = Slush

1 = Clear
2 = Cloudy
3 = Rain
4 = Snow
5 = Other
6 = Unknown

CRASH #	DATE	DAY	TIME	SEV.	R/S	W	CRASH TYPE	VEHICLES
1	02/27/2017	Monday	5:37 AM	PD	1	1	A	2
2	03/08/2017	Wednesday	6:00 AM	PD	1	1	A	2
3	03/16/2017	Thursday	12:18 PM	PD	1	1	SS	2
4	04/01/2017	Saturday	1:23 AM	PD	1	1	RE	2
5	05/10/2017	Wednesday	10:09 PM	PD	1	1	A	2
6	05/18/2017	Thursday	8:46 PM	PD	1	1	SS	2
7	05/25/2017	Thursday	4:25 PM	PD	2	3	RE	2
8	06/16/2017	Friday	5:41 AM	PI	1	1	RE	2
9	08/06/2017	Sunday	8:27 AM	PD	1	1	A	2
10	12/04/2017	Monday	8:51 AM	PD	1	1	SS	3
11	01/02/2018	Tuesday	12:43 PM	PD	1	1	A	2
12	01/30/2018	Tuesday	2:13 PM	PD	1	2	A	2
13	02/03/2018	Saturday	7:50 AM	PD	1	1	SS	2
14	02/08/2018	Thursday	4:44 PM	PD	1	1	RE	2
15	05/01/2018	Wednesday	4:20 PM	PD	1	1	RE	2
16	05/14/2018	Monday	11:46 AM	PD	1	2	RE	3
17	05/23/2018	Wednesday	7:43 AM	PD	1	1	SS	2
18	06/14/2018	Thursday	1:06 AM	PD	1	1	RE	2
19	06/21/2018	Thursday	12:21 PM	PD	1	1	SS	2
20	07/26/2018	Thursday	7:23 PM	PD	1	1	A	2
21	09/06/2018	Thursday	4:50 PM	PD	1	1	RE	2
22	10/03/2018	Wednesday	7:46 AM	PD	2	2	A	2
23	10/11/2018	Thursday	8:02 PM	PD	2	3	SS	3
24	11/28/2018	Wednesday	5:19 PM	PD	1	1	SS	2
25	12/09/2018	Sunday	9:57 AM	PD	1	1	A	2
26	01/19/2019	Saturday	10:14 AM	PD	1	1	SS	2
27	01/24/2019	Thursday	2:43 PM	PI	2	3	RE	2
28	01/29/2019	Tuesday	3:17 PM	PD	3	4	RE	2
29	02/04/2019	Monday	10:11 AM	PD	1	1	SS	2
30	03/13/2019	Wednesday	7:53 AM	PI	1	1	RE	3

Figure CD-4

Vanasse & Associates inc

Collision Data
Macy Street (Route 110) at Clark's Road and Elm Street (Sheet of 1 of 2)

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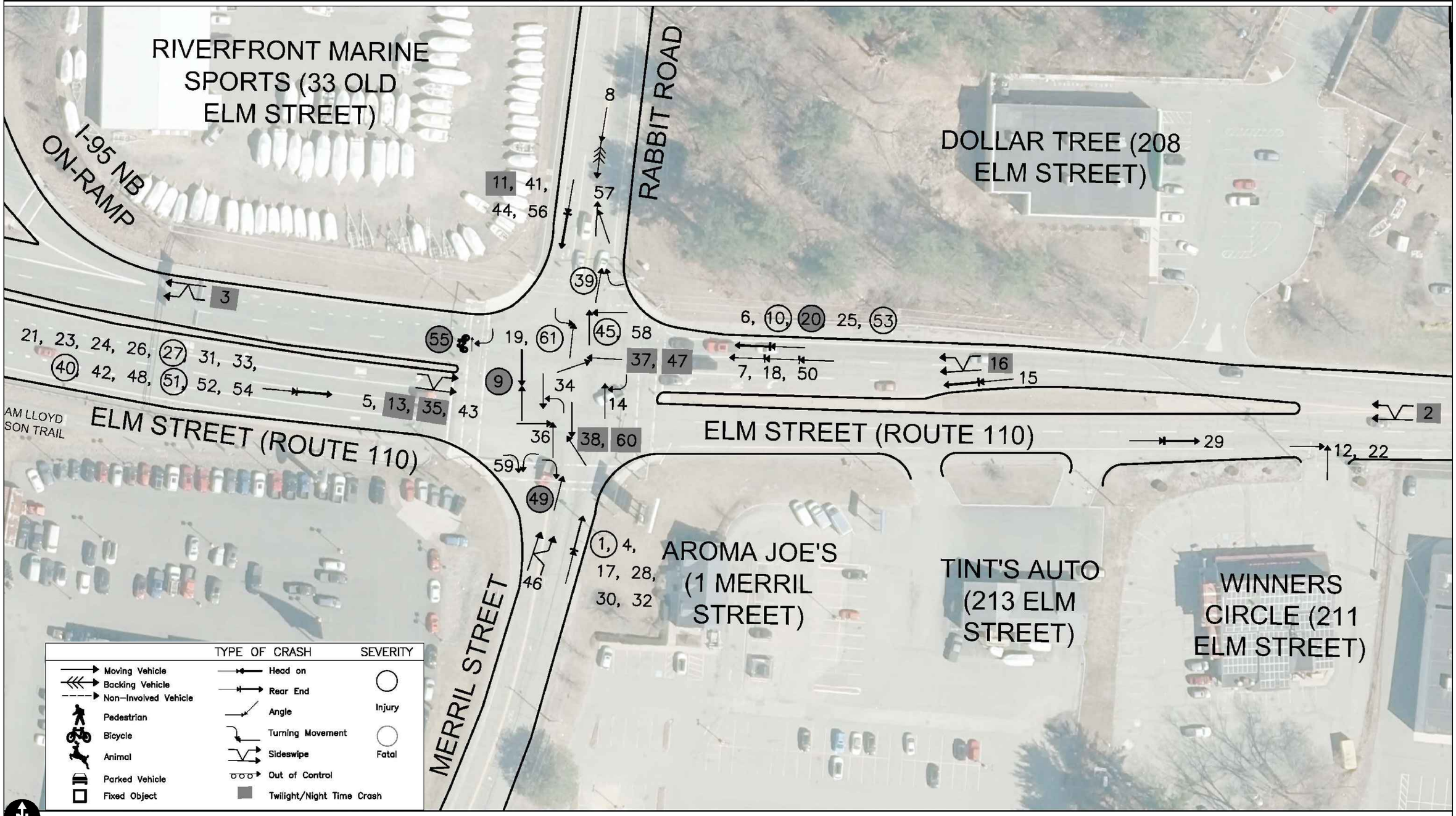

Not To Scale

Figure CD-6

Route 110 at Rabbit Road and Merrill Street Collision Diagram

Vanasse & Associates inc

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R:\10269\Graphics\FDR\July 2025\10269CD6.dwg, 8/6/2025 3:53:27 PM

R

Unknown (U)

Angle (A)

Turning Movement (TM)

Rear End (RE)

Backing Up (BU)

Head On (HO)

Lane Change (LC)

Fixed Object (FO)

Out of Control (OC)

Side Swipe (SS)

Pedest./Bicycle (P/B)

r

PD = Property Damage Only
PI = Personal Injury
F = Fatality
U = Unknown

R d r
R

r

1 = Dry
2 = Wet
3 = Snowy
4 = Icy
5 = Unknown
6 = Slush

1 = Clear
2 = Cloudy
3 = Rain
4 = Snow
5 = Other
6 = Unknown

CRASH #	DATE	DAY	TIME	SEV.	R/S	W	CRASH TYPE	VEHICLES
31	03/28/2019	Thursday	10:46 AM	PD	1	1	RE	2
32	04/12/2019	Friday	7:13 PM	PD	1	1	SS	2
33	04/15/2019	Monday	3:47 PM	PD	2	3	RE	2
34	04/27/2019	Friday	3:34 PM	PD	1	2	RE	2
35	05/07/2019	Tuesday	4:31 PM	PD	2	3	A	2
36	05/08/2019	Wednesday	11:59 AM	PD	1	1	SS	2
37	07/03/2019	Wednesday	3:36 PM	PD	1	1	RE	2
38	07/03/2019	Wednesday	3:45 PM	PD	1	1	RE	2
39	09/06/2019	Friday	12:08 PM	PD	1	1	SS	2
40	10/16/2019	Wednesday	2:11 PM	PD	1	1	RE	2
41	05/23/2021	Sunday	10:19 AM	PD	1	1	RE	2
42	05/30/2021	Sunday	12:51 PM	PI	2	3	A	2
43	09/14/2021	Tuesday	3:10 PM	PD	1	1	RE	2
44	11/01/2021	Monday	9:55 AM	PI	1	1	FO	1
45	12/05/2021	Sunday	9:38 PM	PD	1	1	RE	2

Figure CD-5

Vanasse & Associates inc

Collision Data
Macy Street (Route 110) at Clark's Road and Elm Street
(Sheet of 2 of 2)

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R

Unknown (U)

Angle (A)

Turning Movement (TM)

Rear End (RE)

Backing Up (BU)

Head On (HO)

Lane Change (LC)

Fixed Object (FO)

Out of Control (OC)

Side Swipe (SS)

Pedest./Bicycle (P/B)

r

PD = Property Damage Only
PI = Personal Injury
F = Fatality
U = Unknown

R d r
R

r

1 = Dry
2 = Wet
3 = Snowy
4 = Icy
5 = Unknown
6 = Slush

1 = Clear
2 = Cloudy
3 = Rain
4 = Snow
5 = Other
6 = Unknown

CRASH #	DATE	DAY	TIME	SEV.	R/S	W	CRASH TYPE	VEHICLES
1	01/17/2017	Tuesday	3:11 PM	PI	1	2	RE	2
2	02/21/2017	Tuesday	6:51 PM	PD	1	1	SS	2
3	04/05/2017	Wednesday	8:06 PM	PD	1	1	SS	2
4	04/23/2017	Sunday	4:28 PM	PD	1	1	RE	2
5	04/30/2017	Sunday	12:44 PM	PD	1	1	SS	2
6	05/20/2017	Saturday	4:54 PM	PD	1	1	RE	2
7	06/11/2017	Sunday	2:27 PM	PD	1	2	RE	3
8	07/11/2017	Tuesday	11:57 AM	PD	2	2	U	2
9	08/07/2017	Monday	11:09 PM	PI	2	3	A	2
10	08/24/2017	Thursday	3:00 PM	PI	1	1	RE	2
11	08/26/2017	Saturday	9:24 PM	PD	1	1	RE	2
12	02/11/2018	Sunday	12:01 PM	PD	2	3	A	2
13	03/16/2018	Friday	10:35 PM	PD	1	1	SS	2
14	05/07/2018	Monday	8:59 PM	PD	1	1	A	2
15	05/15/2018	Tuesday	4:09 PM	PD	1	1	RE	2
16	06/12/2018	Tuesday	8:39 PM	PD	1	1	SS	2
17	07/03/2018	Tuesday	11:17 AM	PD	1	1	RE	2
18	07/09/2018	Monday	3:23 PM	PD	1	1	RE	3
19	07/25/2018	Wednesday	1:00 PM	PD	1	1	A	2
20	09/14/2018	Friday	6:56 PM	PI	1	2	RE	2
21	10/24/2018	Wednesday	11:54 AM	PD	2	3	RE	2
22	12/26/2018	Wednesday	2:35 PM	PD	1	1	A	2
23	02/12/2019	Saturday	3:54 PM	PD	3	4	RE	3
24	03/01/2019	Friday	11:57 AM	PD	1	1	RE	2
25	03/15/2019	Friday	2:02 PM	PD	2	1	RE	2
26	03/29/2019	Friday	1:45 PM	PD	1	2	RE	2
27	04/05/2019	Friday	3:43 PM	PI	1	1	RE	2
28	05/22/2019	Wednesday	8:00 AM	PD	1	1	RE	2
29	06/08/2019	Saturday	1:30 PM	PD	1	1	RE	2
30	03/13/2019	Wednesday	7:53 AM	PI	1	1	RE	2

Figure CD-7

Vanasse & Associates inc

Collision Data
Macy Street (Route 110) at Rabbit Road and Merrill Street
(Sheet of 1 of 3)

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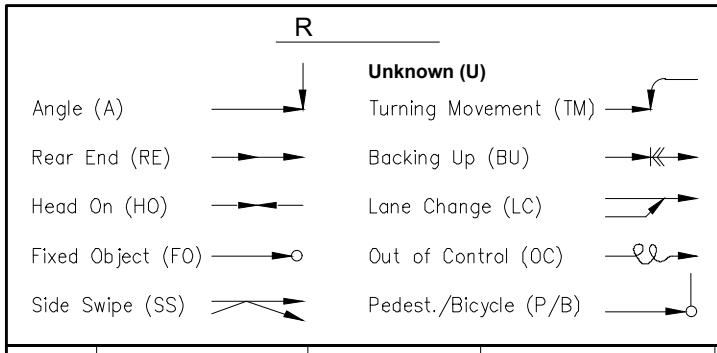

r
PD = Property Damage Only
PI = Personal Injury
F = Fatality
U = Unknown

R d r
R

1 = Dry
2 = Wet
3 = Snowy
4 = Icy
5 = Unknown
6 = Slush

r

1 = Clear
2 = Cloudy
3 = Rain
4 = Snow
5 = Other
6 = Unknown

CRASH #	DATE	DAY	TIME	SEV.	R/S	W	CRASH TYPE	VEHICLES
31	07/18/2019	Thursday	5:00 PM	PD	5	1	RE	2
32	07/23/2019	Tuesday	3:15 PM	PD	5	2	RE	2
33	09/05/2019	Thursday	8:21 AM	PD	1	1	RE	2
34	09/17/2019	Tuesday	8:49 AM	PD	1	1	A	2
35	01/18/2020	Saturday	5:27 PM	PD	2	4	SS	2
36	01/22/2020	Wednesday	3:44 PM	PD	1	1	A	2
37	02/20/2020	Thursday	6:41 PM	PD	1	1	A	2
38	04/13/2020	Monday	5:50 PM	PD	2	3	A	2
39	05/13/2020	Wednesday	4:38 PM	PI	1	1	A	2
40	06/14/2020	Sunday	7:01 PM	PI	1	1	RE	2
41	06/23/2020	Tuesday	9:09 AM	PD	1	1	RE	2
42	07/13/2020	Monday	5:21 PM	PD	1	2	RE	2
43	08/13/2020	Thursday	11:28 AM	PD	1	1	SS	2
44	08/13/2020	Tuesday	4:00 PM	PD	1	1	RE	1
45	08/23/2020	Sunday	1:36 PM	PI	1	1	A	2
46	10/23/2020	Friday	5:53 PM	PD	1	1	SS	2
47	11/01/2020	Sunday	6:54 PM	PD	2	1	A	2
48	11/11/2020	Wednesday	11:23 AM	PD	1	2	RE	2
49	11/14/2020	Saturday	7:00 PM	PI	1	1	A	2
50	12/24/2020	Thursday	12:16 PM	PD	1	2	RE	2
51	01/10/2021	Sunday	4:21 PM	PI	1	1	RE	2
52	05/27/2021	Thursday	3:22 PM	PD	1	1	RE	2
53	06/16/2021	Wednesday	3:20 PM	PI	1	1	RE	2
54	08/11/2021	Wednesday	12:02 PM	PD	1	1	RE	2
55	10/02/2021	Saturday	7:17 PM	PI	1	1	P/B	2
56	10/05/2021	Tuesday	12:50 PM	PD	1	1	RE	2
57	10/31/2021	Sunday	10:46 AM	PD	1	2	A	2
58	11/06/2021	Saturday	3:53 PM	PD	1	1	A	2
59	11/16/2021	Tuesday	8:40 AM	PD	1	1	A	2
60	12/22/2021	Wednesday	5:17 PM	PD	2	1	A	2
61	12/24/2021	Friday	3:10 PM	PI	2	2	A	3

Figure CD-8

Vanasse & Associates inc

Collision Data
Macy Street (Route 110) at Rabbit Road and Merrill Street
(Sheet of 2 of 3)

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TRAFFIC SIGNAL WARRANT ANALYSIS

Warrants Analysis

File Name:	10269 TSWA 2025 Build.xsw
Analyst:	DIR
Agency:	VAI
Date Performed:	7/31/25
Time Analyzed:	7 AM to 7 PM
Jurisdiction:	MassDOT
Analysis Year:	2025 Build
Project Description:	
Units:	U.S. Customary
MUTCD Method:	MUTCD 11 (2023)

General

Major Street Direction: East-West	Starting Time Interval: 7:00
Major Street Speed (mi/h): 35	Nearest Signal (ft): 500
Coordinated Signal System: Yes	Population <10,000: No

School Crossing and Roadway Network

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

Railroad Crossing

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

Crash Experience

Adequate Trials of Crash Experience Alternatives: No

One-Year Period	Three-Year Period
Angle Crashes (All Severities): 0	Angle Crashes (All Severities): 0
Angle Crashes (Fatal-and-Injury): 0	Angle Crashes (Fatal-and-Injury): 0
Pedestrian Crashes (All Severities): 0	Pedestrian Crashes (All Severities): 0
Pedestrian Crashes (Fatal-and-Injury): 0	Pedestrian Crashes (Fatal-and-Injury): 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	0	0	0	0
Lane Usage		T			T		L					

Traffic Volumes (veh/h)

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Hour												
7:00-8:00	0	872	0	0	1140	0	68	0	0	0	0	0
8:00-9:00	0	843	0	0	1109	0	67	0	0	0	0	0
9:00-10:00	0	747	0	0	877	0	53	0	0	0	0	0
10:00-11:00	0	689	0	0	942	0	57	0	0	0	0	0
11:00-12:00	0	836	0	0	975	0	60	0	0	0	0	0
12:00-13:00	0	815	0	0	1067	0	66	0	0	0	0	0
13:00-14:00	0	730	0	0	1142	0	69	0	0	0	0	0
14:00-15:00	0	843	0	0	1353	0	81	0	0	0	0	0
15:00-16:00	0	962	0	0	1577	0	95	0	0	0	0	0
16:00-17:00	0	919	0	0	584	0	97	0	0	0	0	0
17:00-18:00	0	983	0	0	1452	0	92	0	0	0	0	0
18:00-19:00	0	934	0	0	1543	0	95	0	0	0	0	0

Pedestrian Volumes and Gaps (Per Hour)

15th Percentile Pedestrian Speed < 3.5 ft/s: No

	Eastbound		Westbound		Northbound		Southbound	
Med Refuge	No		No		No		No	
	Gaps	Volume	Gaps	Volume	Gaps	Volume	Gaps	Volume
Hour								
7:00-8:00	0	0	0	0	0	0	0	0
8:00-9:00	0	0	0	0	0	0	0	0

9:00-10:00	0	0	0	0	0	0	0	0
10:00-11:00	0	0	0	0	0	0	0	0
11:00-12:00	0	0	0	0	0	0	0	0
12:00-13:00	0	0	0	0	0	0	0	0
13:00-14:00	0	0	0	0	0	0	0	0
14:00-15:00	0	0	0	0	0	0	0	0
15:00-16:00	0	0	0	0	0	0	0	0
16:00-17:00	0	0	0	0	0	0	0	0
17:00-18:00	0	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	0	0

Delay

	Eastbound		Westbound		Northbound		Southbound	
Hour	secs/veh	veh-hrs	secs/veh	veh-hrs	secs/veh	veh-hrs	secs/veh	veh-hrs
7:00-8:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8:00-9:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9:00-10:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10:00-11:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11:00-12:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12:00-13:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13:00-14:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14:00-15:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15:00-16:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16:00-17:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17:00-18:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18:00-19:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary

Hour	Major Volume	Minor Volume	Total Volume	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 80%	4A 100%	4B 100%
7:00-8:00	2012	68	2080	No	No	No	Yes	No	No	No	No	No
8:00-9:00	1952	67	2019	No	No	No	Yes	No	No	No	No	No
9:00-10:00	1624	53	1677	No	No	No	No	No	No	No	No	No
10:00-11:00	1631	57	1688	No	No	No	No	No	No	No	No	No
11:00-12:00	1811	60	1871	No	No	No	Yes	No	No	No	No	No
12:00-13:00	1882	66	1948	No	No	No	Yes	No	No	No	No	No
13:00-14:00	1872	69	1941	No	No	No	Yes	No	No	No	No	No
14:00-15:00	2196	81	2277	No	No	Yes	Yes	Yes	No	No	No	No
15:00-16:00	2539	95	2634	No	No	Yes	Yes	Yes	No	No	No	No
16:00-17:00	1503	97	1600	No	No	Yes	Yes	Yes	No	No	No	No
17:00-18:00	2435	92	2527	No	No	Yes	Yes	Yes	No	No	No	No
18:00-19:00	2477	95	2572	No	No	Yes	Yes	Yes	No	No	No	No
Total	23934	900	24834	0	0	5	10	5	0	0	0	0

Results

Warrant 1: Eight-Hour Vehicular Volume [ ]
   A. Minimum Vehicular Volumes [ ]
   B. Interruption of Continuous Traffic [ ]
   80% Vehicular --and-- Interruption Volumes [ ]

Warrant 2: Four-Hour Vehicular Volume [X]
   Four-Hour Vehicular Volumes [X]

Warrant 3: Peak Hour [ ]
   A. Peak-Hour Conditions [ ]
   B. Peak-Hour Vehicular Volume Hours Met [ ]

Warrant 4: Pedestrian Volume [ ]
   A. Four Hour Volumes [ ]
   B. One-Hour Volumes [ ]

Warrant 5: School Crossing [ ]
   Gaps Same Period [ ]
   Student Volumes [ ]
   Nearest Traffic Control Signal [X]

Warrant 6: Coordinated Signal System [X]
   Degree of Platooning [X]

Warrant 7: Crash Experience	[ ]
A. Adequate Trials of Alternatives	[ ]
B. Reported Crashes	[ ]
B1. Angle Crashes and Pedestrian Crashes within a 1-year Period (All Severities)	[ ]
B2. Angle Crashes and Pedestrian Crashes within a 1-year Period (Fatal-and-Injury)	[ ]
B3. Angle Crashes and Pedestrian Crashes within a 3-year Period (All Severities)	[ ]
B4. Angle Crashes and Pedestrian Crashes within a 3-year Period (Fatal-and-Injury)	[ ]
C. 80% Volumes for Warrants 1A, 1B --or-- 4	[X]
Warrant 8: Roadway Network	[ ]
A. Weekday Volume	[ ]
B. Weekend Volume	[ ]
Warrant 9: Grade Crossing	[ ]
A. Grade Crossing within 140 ft --and--	[ ]
B. Peak-Hour Vehicular Volumes	[ ]

This text report was created in HCS™ Warrants Version 2025 on 8/11/2025 11:06:59 AM

Warrants Analysis

File Name:	10269 TSWA 2032 Build.xsw
Analyst:	DIR
Agency:	VAI
Date Performed:	7/31/25
Time Analyzed:	7 AM to 7 PM
Jurisdiction:	MassDOT
Analysis Year:	2032 Build
Project Description:	
Units:	U.S. Customary
MUTCD Method:	MUTCD 11 (2023)

General

Major Street Direction: East-West	Starting Time Interval: 7:00
Major Street Speed (mi/h): 35	Nearest Signal (ft): 500
Coordinated Signal System: Yes	Population <10,000: No

School Crossing and Roadway Network

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

Railroad Crossing

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

Crash Experience

Adequate Trials of Crash Experience Alternatives: No

One-Year Period	Three-Year Period
Angle Crashes (All Severities): 0	Angle Crashes (All Severities): 0
Angle Crashes (Fatal-and-Injury): 0	Angle Crashes (Fatal-and-Injury): 0
Pedestrian Crashes (All Severities): 0	Pedestrian Crashes (All Severities): 0
Pedestrian Crashes (Fatal-and-Injury): 0	Pedestrian Crashes (Fatal-and-Injury): 0

Geometry and Traffic

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0	2	0	0	2	0	1	0	0	0	0	0
Lane Usage		T			T		L					

Traffic Volumes (veh/h)

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Hour												
7:00-8:00	0	961	0	0	1261	0	45	0	0	0	0	0
8:00-9:00	0	930	0	0	1226	0	65	0	0	0	0	0
9:00-10:00	0	825	0	0	969	0	71	0	0	0	0	0
10:00-11:00	0	761	0	0	1041	0	58	0	0	0	0	0
11:00-12:00	0	924	0	0	1076	0	79	0	0	0	0	0
12:00-13:00	0	901	0	0	1178	0	83	0	0	0	0	0
13:00-14:00	0	807	0	0	1262	0	87	0	0	0	0	0
14:00-15:00	0	933	0	0	1495	0	86	0	0	0	0	0
15:00-16:00	0	1065	0	0	1742	0	92	0	0	0	0	0
16:00-17:00	0	1017	0	0	1747	0	98	0	0	0	0	0
17:00-18:00	0	1087	0	0	1598	0	96	0	0	0	0	0
18:00-19:00	0	1033	0	0	1701	0	84	0	0	0	0	0

Pedestrian Volumes and Gaps (Per Hour)

15th Percentile Pedestrian Speed < 3.5 ft/s: No

	Eastbound		Westbound		Northbound		Southbound	
Med Refuge	No		No		No		No	
	Gaps	Volume	Gaps	Volume	Gaps	Volume	Gaps	Volume
Hour								
7:00-8:00	0	0	0	0	0	0	0	0
8:00-9:00	0	0	0	0	0	0	0	0

9:00-10:00	0	0	0	0	0	0	0	0
10:00-11:00	0	0	0	0	0	0	0	0
11:00-12:00	0	0	0	0	0	0	0	0
12:00-13:00	0	0	0	0	0	0	0	0
13:00-14:00	0	0	0	0	0	0	0	0
14:00-15:00	0	0	0	0	0	0	0	0
15:00-16:00	0	0	0	0	0	0	0	0
16:00-17:00	0	0	0	0	0	0	0	0
17:00-18:00	0	0	0	0	0	0	0	0
18:00-19:00	0	0	0	0	0	0	0	0

Delay

	Eastbound		Westbound		Northbound		Southbound	
Hour	secs/veh	veh-hrs	secs/veh	veh-hrs	secs/veh	veh-hrs	secs/veh	veh-hrs
7:00-8:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8:00-9:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9:00-10:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10:00-11:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11:00-12:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12:00-13:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13:00-14:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14:00-15:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15:00-16:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16:00-17:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17:00-18:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18:00-19:00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary

Hour	Major Volume	Minor Volume	Total Volume	1A 100%	1A 80%	1B 100%	1B 80%	2 100%	3A 100%	3B 80%	4A 100%	4B 100%
7:00-8:00	2222	45	2267	No	No	No	No	No	No	No	No	No
8:00-9:00	2156	65	2221	No	No	No	Yes	No	No	No	No	No
9:00-10:00	1794	71	1865	No	No	No	Yes	No	No	No	No	No
10:00-11:00	1802	58	1860	No	No	No	No	No	No	No	No	No
11:00-12:00	2000	79	2079	No	No	Yes	Yes	No	No	No	No	No
12:00-13:00	2079	83	2162	No	No	Yes	Yes	Yes	No	No	No	No
13:00-14:00	2069	87	2156	No	No	Yes	Yes	Yes	No	No	No	No
14:00-15:00	2428	86	2514	No	No	Yes	Yes	Yes	No	No	No	No
15:00-16:00	2807	92	2899	No	No	Yes	Yes	Yes	No	No	No	No
16:00-17:00	2764	98	2862	No	No	Yes	Yes	Yes	No	No	No	No
17:00-18:00	2685	96	2781	No	No	Yes	Yes	Yes	No	No	No	No
18:00-19:00	2734	84	2818	No	No	Yes	Yes	Yes	No	No	No	No
Total	27540	944	28484	0	0	8	10	7	0	0	0	0

Results

Warrant 1: Eight-Hour Vehicular Volume [X]
- A. Minimum Vehicular Volumes [ ]
- B. Interruption of Continuous Traffic [X]
- 80% Vehicular --and-- Interruption Volumes [ ]

Warrant 2: Four-Hour Vehicular Volume [X]
- Four-Hour Vehicular Volumes [X]

Warrant 3: Peak Hour [ ]
- A. Peak-Hour Conditions [ ]
- B. Peak-Hour Vehicular Volume Hours Met [ ]

Warrant 4: Pedestrian Volume [ ]
- A. Four Hour Volumes [ ]
- B. One-Hour Volumes [ ]

Warrant 5: School Crossing [ ]
- Gaps Same Period [ ]
- Student Volumes [ ]
- Nearest Traffic Control Signal [X]

Warrant 6: Coordinated Signal System [X]
- Degree of Platooning [X]

Warrant 7: Crash Experience	[ ]
A. Adequate Trials of Alternatives	[ ]
B. Reported Crashes	[ ]
B1. Angle Crashes and Pedestrian Crashes within a 1-year Period (All Severities)	[ ]
B2. Angle Crashes and Pedestrian Crashes within a 1-year Period (Fatal-and-Injury)	[ ]
B3. Angle Crashes and Pedestrian Crashes within a 3-year Period (All Severities)	[ ]
B4. Angle Crashes and Pedestrian Crashes within a 3-year Period (Fatal-and-Injury)	[ ]
C. 80% Volumes for Warrants 1A, 1B --or-- 4	[X]
Warrant 8: Roadway Network	[ ]
A. Weekday Volume	[ ]
B. Weekend Volume	[ ]
Warrant 9: Grade Crossing	[ ]
A. Grade Crossing within 140 ft --and--	[ ]
B. Peak-Hour Vehicular Volumes	[ ]

This text report was created in HCS™ Warrants Version 2025 on 8/11/2025 11:06:11 AM

	Exiting	Percent Entering	Entering
37 Calrks Road	0.45	0.54	0.09
Marina	0.19	0.23	0.06
Clarks Road 40R	0.22	0.65	0.11
Elm Street 40 R	0.23	0.52	0.09
Rocky Hill Road 1	0.2	0.43	0.05
Rocky Hill Road 2	0.2	0.43	0.05
Rocky Hill Road 3	0.2	0.43	0.05

April/May 2025 Raw Aug-25

	Eastbound	Westbound	Northbound	
Time	Thru	Thru	Left	
12-1 AM	36	74	7	6
1-2 AM	22	53	5	5
2-3 AM	16	37	3	4
3-4 AM	27	55	2	2
4-5 AM	62	94	3	1
5-6 AM	216	268	7	16
6-7 AM	485	670	19	27
7-8 AM	810	1101	35	35
8-9 AM	789	1062	52	60
9-10 AM	711	838	59	48
10-11 AM	659	902	47	45
11-12 PM	805	923	64	60
12-1 PM	784	1010	67	73
1-2 PM	700	1090	71	78
2-3 PM	815	1296	70	54
3-4 PM	934	1505	74	68
4-5 PM	890	1485	76	60
5-6 PM	948	1333	71	74
6-7 PM	901	1438	62	63
7-8 PM	450	883	38	39
8-9 PM	302	696	49	51
9-10 PM	167	460	30	24
10-11 PM	117	227	29	11
11-12 AM	62	143	9	13

Development Volumes

	Eastbound	Westbound	Northbound
Time	Thru	Thru	Left
12-1 AM	2	9	1
1-2 AM	1	5	1
2-3 AM	1	3	0
3-4 AM	2	4	1
4-5 AM	6	6	1
5-6 AM	19	17	3
6-7 AM	40	28	4
7-8 AM	62	39	6
8-9 AM	54	47	7
9-10 AM	36	39	6
10-11 AM	30	40	6
11-12 PM	31	52	8
12-1 PM	31	57	9
1-2 PM	30	52	8
2-3 PM	28	57	8
3-4 PM	28	72	10
4-5 PM	29	99	14
5-6 PM	35	119	17
6-7 PM	33	105	15
7-8 PM	26	83	12
8-9 PM	20	71	10
9-10 PM	12	57	8
10-11 PM	10	38	5
11-12 AM	5	20	3

2025 Build

	Eastbound	Westbound	Northbound	
Time	Thru	Thru	Left	
12-1 AM	38	83	8	7
1-2 AM	23	58	6	6
2-3 AM	17	40	3	4
3-4 AM	29	59	3	3
4-5 AM	68	100	4	2
5-6 AM	235	285	10	19
6-7 AM	525	698	23	31
7-8 AM	872	1140	41	41
8-9 AM	843	1109	59	67
9-10 AM	747	877	65	54
10-11 AM	689	942	53	51
11-12 PM	836	975	72	68
12-1 PM	815	1067	76	82
1-2 PM	730	1142	79	86
2-3 PM	843	1353	78	62
3-4 PM	962	1577	84	78
4-5 PM	919	1584	90	74
5-6 PM	983	1452	88	91
6-7 PM	934	1543	77	78
7-8 PM	476	966	50	51
8-9 PM	322	767	59	61
9-10 PM	179	517	38	32
10-11 PM	127	265	34	16
11-12 AM	67	163	12	16

2032 Future

	Eastbound	Westbound	Northbound
Time	Thru	Thru	Left
12-1 AM	40	82	8
1-2 AM	24	59	6
2-3 AM	18	41	3
3-4 AM	30	61	2
4-5 AM	69	104	3
5-6 AM	240	297	8
6-7 AM	538	744	21
7-8 AM	899	1222	39
8-9 AM	876	1179	58
9-10 AM	789	930	65
10-11 AM	731	1001	52
11-12 PM	893	1024	71
12-1 PM	870	1121	74
1-2 PM	777	1210	79
2-3 PM	905	1438	78
3-4 PM	1037	1670	82
4-5 PM	988	1648	84
5-6 PM	1052	1479	79
6-7 PM	1000	1596	69
7-8 PM	499	980	42
8-9 PM	335	772	54
9-10 PM	185	511	33
10-11 PM	130	252	32
11-12 AM	69	159	10

2032 Build

	Eastbound	Westbound	Northbound
Time	Thru	Thru	Left
12-1 AM	42	91	9
1-2 AM	25	64	7
2-3 AM	19	44	3
3-4 AM	32	65	3
4-5 AM	75	110	4
5-6 AM	259	314	11
6-7 AM	578	772	25
7-8 AM	961	1261	45
8-9 AM	930	1226	65
9-10 AM	825	969	71
10-11 AM	761	1041	58
11-12 PM	924	1076	79
12-1 PM	901	1178	83
1-2 PM	807	1262	87
2-3 PM	933	1495	86
3-4 PM	1065	1742	92
4-5 PM	1017	1747	98
5-6 PM	1087	1598	96
6-7 PM	1033	1701	84
7-8 PM	525	1063	54
8-9 PM	355	843	64
9-10 PM	197	568	41
10-11 PM	140	290	37
11-12 AM	74	179	13

Daily Trip Gen

	Enter	Exit	
37 Calrks Road	296	296	LUC 937
Marina	234	234	LUC 932
Clarks Road 40R	285	285	LUC 221
Elm Street 40 R	251	251	LUC 222
Rocky Hill Road 1	37	37	LUC 210
Rocky Hill Road 2	291	291	LUC 215
Rocky Hill Road 3	1041	1041	LUC 220

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use			
Source: ITE *Trip Generation Manual* , 11th Edition			
Land Use Code	937		
Land Use	Coffee/Donut Shop with Drive-Through Window		
Setting	General Urban/Suburban		
Time Period	Weekday		
# Data Sites	1		
	% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting
12:00 - 1:00 AM	0.1%	0.1%	0.1%
1:00 - 2:00 AM	0.1%	0.1%	0.1%
2:00 - 3:00 AM	0.0%	0.0%	0.1%
3:00 - 4:00 AM	0.3%	0.4%	0.1%
4:00 - 5:00 AM	1.7%	1.9%	1.5%
5:00 - 6:00 AM	7.5%	8.2%	6.8%
6:00 - 7:00 AM	9.5%	10.0%	8.9%
7:00 - 8:00 AM	10.0%	10.3%	9.8%
8:00 - 9:00 AM	10.0%	10.0%	10.1%
9:00 - 10:00 AM	8.1%	7.7%	8.5%
10:00 - 11:00 AM	7.4%	7.2%	7.6%
11:00 - 12:00 PM	6.9%	6.7%	7.2%
12:00 - 1:00 PM	5.8%	5.4%	6.1%
1:00 - 2:00 PM	6.0%	6.3%	5.7%
2:00 - 3:00 PM	5.4%	5.2%	5.6%
3:00 - 4:00 PM	5.5%	5.7%	5.3%
4:00 - 5:00 PM	4.4%	4.6%	4.2%
5:00 - 6:00 PM	3.0%	2.7%	3.4%
6:00 - 7:00 PM	2.9%	2.7%	3.0%
7:00 - 8:00 PM	2.1%	2.1%	2.2%
8:00 - 9:00 PM	1.6%	1.2%	1.9%
9:00 - 10:00 PM	1.2%	1.2%	1.2%
10:00 - 11:00 PM	0.5%	0.4%	0.6%
11:00 - 12:00 AM	0.0%	0.0%	0.1%

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	932			932			932		
Land Use	High-Turnover (Sit-Down) Restaurant			High-Turnover (Sit-Down) Restaurant			High-Turnover (Sit-Down) Restaurant		
Setting	General Urban/Suburban			General Urban/Suburban			General Urban/Suburban		
Time Period	Weekday			Saturday			Sunday		
# Data Sites	37			2			1		
	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
12:00 - 1:00 AM	0.5%	0.3%	0.8%	1.3%	0.3%	2.3%	1.4%	0.7%	2.1%
1:00 - 2:00 AM	0.2%	0.1%	0.3%	0.1%	0.0%	0.1%	0.2%	0.2%	0.2%
2:00 - 3:00 AM	0.3%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
3:00 - 4:00 AM	0.3%	0.2%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
4:00 - 5:00 AM	0.3%	0.2%	0.3%	0.2%	0.3%	0.1%	0.0%	0.0%	0.0%
5:00 - 6:00 AM	0.5%	0.7%	0.2%	0.1%	0.1%	0.1%	0.2%	0.5%	0.0%
6:00 - 7:00 AM	1.3%	1.7%	0.9%	0.2%	0.3%	0.1%	0.5%	0.7%	0.2%
7:00 - 8:00 AM	2.3%	2.7%	1.8%	1.3%	2.0%	0.6%	2.3%	3.2%	1.4%
8:00 - 9:00 AM	3.2%	3.4%	3.1%	3.6%	5.2%	2.0%	5.0%	8.5%	1.7%
9:00 - 10:00 AM	3.7%	4.0%	3.4%	4.9%	5.9%	3.8%	13.0%	17.2%	8.8%
10:00 - 11:00 AM	4.9%	5.5%	4.4%	6.7%	7.5%	5.8%	19.7%	19.7%	19.8%
11:00 - 12:00 PM	9.5%	12.1%	6.9%	7.8%	7.1%	8.5%	15.1%	16.0%	14.3%
12:00 - 1:00 PM	12.3%	12.4%	12.3%	7.0%	8.1%	5.8%	13.6%	11.9%	15.2%
1:00 - 2:00 PM	8.8%	6.5%	11.2%	6.0%	4.6%	7.4%	7.7%	4.6%	10.7%
2:00 - 3:00 PM	4.5%	4.0%	5.1%	5.4%	3.9%	7.0%	5.6%	4.6%	6.7%
3:00 - 4:00 PM	3.6%	3.3%	4.0%	4.9%	5.3%	4.4%	2.9%	1.5%	4.3%
4:00 - 5:00 PM	5.1%	6.2%	3.9%	4.4%	5.4%	3.4%	2.4%	1.7%	3.1%
5:00 - 6:00 PM	8.5%	10.2%	6.8%	7.8%	10.0%	5.5%	1.7%	1.5%	1.9%
6:00 - 7:00 PM	9.4%	10.1%	8.7%	9.8%	12.3%	7.2%	1.8%	2.2%	1.4%
7:00 - 8:00 PM	8.2%	7.2%	9.2%	9.3%	7.8%	10.8%	3.2%	3.2%	3.3%
8:00 - 9:00 PM	5.7%	4.3%	7.1%	7.7%	4.9%	10.6%	1.4%	1.0%	1.9%
9:00 - 10:00 PM	3.7%	2.6%	4.8%	6.0%	5.4%	6.5%	0.8%	0.7%	1.0%
10:00 - 11:00 PM	2.2%	1.4%	2.9%	3.5%	2.1%	5.0%	0.7%	0.5%	1.0%
11:00 - 12:00 AM	0.9%	0.5%	1.4%	2.2%	1.5%	2.8%	0.5%	0.0%	1.0%

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	221			221			221			221			221		
Land Use	Multifamily Housing (Mid-Rise)			Multifamily Housing (Mid-Rise)			Multifamily Housing (Mid-Rise)			Multifamily Housing (Mid-Rise)			Multifamily Housing (Mid-Rise)		
Subcategory	Not Close to Rail transit			Not Close to Rail transit			Not Close to Rail transit			Not Close to Rail transit			Close to Rail transit		
Setting	General Urban/Suburban			General Urban/Suburban			General Urban/Suburban			Dense Multi-Use Urban			Dense Multi-Use Urban		
Time Period	Weekday			Saturday			Sunday			Weekday			Weekday		
# Data Sites	6			1			1			1			1		
	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
12:00 - 1:00 AM	0.8%	1.2%	0.4%	1.8%	2.8%	0.8%	3.5%	5.5%	1.2%	0.6%	1.0%	0.2%	1.1%	1.6%	0.6%
1:00 - 2:00 AM	0.4%	0.6%	0.3%	0.3%	0.4%	0.2%	2.0%	2.9%	0.9%	0.2%	0.0%	0.5%	0.4%	0.4%	0.3%
2:00 - 3:00 AM	0.2%	0.3%	0.1%	0.5%	0.9%	0.2%	3.3%	4.7%	1.8%	0.2%	0.2%	0.2%	0.6%	1.0%	0.1%
3:00 - 4:00 AM	0.2%	0.2%	0.2%	1.7%	2.4%	1.0%	0.6%	0.5%	0.6%	0.0%	0.0%	0.0%	0.3%	0.3%	0.3%
4:00 - 5:00 AM	0.3%	0.1%	0.5%	0.3%	0.4%	0.2%	0.6%	1.0%	0.0%	0.6%	0.0%	1.2%	0.1%	0.3%	0.0%
5:00 - 6:00 AM	1.2%	0.4%	2.0%	0.2%	0.2%	0.2%	0.4%	0.5%	0.3%	2.2%	0.7%	3.6%	0.6%	0.1%	1.0%
6:00 - 7:00 AM	4.4%	1.0%	7.8%	1.2%	0.4%	1.9%	0.6%	0.0%	1.2%	4.2%	1.5%	7.0%	2.7%	1.3%	4.2%
7:00 - 8:00 AM	8.6%	2.5%	14.7%	3.5%	3.0%	4.0%	1.3%	0.8%	1.8%	9.8%	1.9%	17.6%	7.3%	1.0%	13.6%
8:00 - 9:00 AM	7.8%	3.0%	12.5%	3.8%	2.8%	4.8%	2.2%	0.8%	3.9%	9.5%	1.9%	17.1%	7.5%	4.4%	10.5%
9:00 - 10:00 AM	4.5%	2.2%	6.9%	5.8%	3.5%	8.1%	2.9%	1.8%	4.2%	5.2%	3.4%	7.0%	4.5%	2.3%	6.8%
10:00 - 11:00 AM	3.7%	2.7%	4.6%	6.4%	5.0%	7.7%	5.4%	3.9%	7.2%	3.9%	2.9%	4.8%	5.6%	4.2%	6.9%
11:00 - 12:00 PM	3.7%	3.4%	4.0%	6.4%	6.1%	6.7%	6.8%	3.7%	10.4%	3.5%	3.6%	3.4%	4.5%	2.5%	6.5%
12:00 - 1:00 PM	4.6%	4.3%	4.8%	6.6%	4.5%	8.5%	6.8%	6.0%	7.8%	4.5%	4.1%	4.8%	5.2%	5.1%	5.3%
1:00 - 2:00 PM	4.4%	4.4%	4.4%	6.2%	6.9%	5.4%	7.3%	6.0%	8.7%	4.1%	4.6%	3.6%	5.5%	5.4%	5.6%
2:00 - 3:00 PM	3.9%	4.1%	3.7%	7.3%	7.1%	7.5%	6.7%	6.3%	7.2%	3.3%	2.9%	3.6%	3.9%	3.9%	3.9%
3:00 - 4:00 PM	4.9%	5.9%	3.8%	6.7%	8.2%	5.2%	7.8%	5.8%	10.1%	4.1%	4.1%	4.1%	5.6%	6.3%	4.9%
4:00 - 5:00 PM	7.2%	9.2%	5.1%	6.2%	6.3%	6.0%	5.6%	5.8%	5.4%	5.0%	6.3%	3.6%	6.8%	8.6%	5.1%
5:00 - 6:00 PM	9.4%	13.1%	5.8%	7.7%	7.8%	7.7%	7.7%	7.9%	7.5%	9.1%	13.1%	5.1%	7.7%	11.0%	4.4%
6:00 - 7:00 PM	9.0%	12.1%	6.0%	6.8%	6.3%	7.3%	7.8%	9.2%	6.3%	9.4%	15.0%	3.9%	6.7%	8.3%	5.1%
7:00 - 8:00 PM	7.4%	9.4%	5.4%	5.4%	6.9%	4.0%	6.6%	9.2%	3.6%	8.3%	13.1%	3.6%	6.5%	8.7%	4.4%
8:00 - 9:00 PM	5.4%	7.7%	3.1%	4.3%	4.5%	4.2%	4.7%	5.0%	4.5%	5.1%	7.3%	2.9%	5.1%	5.9%	4.2%
9:00 - 10:00 PM	4.0%	6.5%	1.5%	4.0%	4.3%	3.7%	4.3%	5.8%	2.7%	4.0%	7.0%	1.0%	5.8%	8.6%	3.0%
10:00 - 11:00 PM	2.6%	3.7%	1.6%	3.9%	4.8%	3.1%	3.9%	5.2%	2.4%	2.4%	3.9%	1.0%	3.5%	5.2%	1.7%
11:00 - 12:00 AM	1.4%	2.1%	0.8%	3.0%	4.3%	1.7%	1.3%	1.8%	0.6%	0.8%	1.5%	0.2%	2.6%	3.5%	1.7%

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	210			210			210		
Land Use	Single-Family Detached Housing			Single-Family Detached Housing			Single-Family Detached Housing		
Setting	General Urban/Suburban			General Urban/Suburban			General Urban/Suburban		
Time Period	Weekday			Saturday			Sunday		
# Data Sites	7			3			2		
	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting	Total	Entering	Exiting	Total	Entering	Exiting
12:00 - 1:00 AM	0.3%	0.5%	0.2%	0.8%	0.6%	1.0%	0.6%	0.6%	0.6%
1:00 - 2:00 AM	0.2%	0.2%	0.1%	0.4%	0.6%	0.2%	0.6%	1.2%	0.0%
2:00 - 3:00 AM	0.2%	0.3%	0.1%	0.3%	0.4%	0.2%	0.0%	0.0%	0.0%
3:00 - 4:00 AM	0.2%	0.2%	0.2%	0.5%	0.4%	0.6%	0.3%	0.0%	0.6%
4:00 - 5:00 AM	0.6%	0.3%	0.8%	0.5%	0.6%	0.4%	0.0%	0.0%	0.0%
5:00 - 6:00 AM	1.2%	0.5%	2.0%	1.0%	0.8%	1.2%	1.8%	1.8%	1.8%
6:00 - 7:00 AM	3.7%	1.6%	5.8%	1.0%	0.4%	1.5%	1.5%	1.8%	1.2%
7:00 - 8:00 AM	6.5%	3.1%	10.0%	2.0%	0.8%	3.3%	1.8%	0.6%	3.0%
8:00 - 9:00 AM	6.2%	3.8%	8.5%	3.8%	2.5%	5.2%	4.7%	0.6%	9.0%
9:00 - 10:00 AM	4.6%	3.3%	5.8%	5.5%	5.0%	6.0%	4.7%	3.5%	6.0%
10:00 - 11:00 AM	4.9%	4.2%	5.6%	8.2%	6.2%	10.2%	11.5%	8.8%	14.4%
11:00 - 12:00 PM	5.3%	5.4%	5.1%	7.2%	8.7%	5.8%	7.7%	8.2%	7.2%
12:00 - 1:00 PM	5.7%	5.7%	5.7%	7.7%	7.3%	8.1%	9.2%	10.5%	7.8%
1:00 - 2:00 PM	6.1%	6.1%	6.0%	8.1%	7.1%	9.0%	9.8%	10.5%	9.0%
2:00 - 3:00 PM	6.6%	7.1%	6.1%	8.0%	8.7%	7.3%	5.9%	5.8%	6.0%
3:00 - 4:00 PM	7.5%	8.7%	6.2%	9.2%	9.8%	8.7%	4.4%	5.8%	3.0%
4:00 - 5:00 PM	8.9%	10.5%	7.4%	6.2%	6.9%	5.4%	8.3%	8.2%	8.4%
5:00 - 6:00 PM	8.7%	10.0%	7.3%	8.4%	9.6%	7.1%	9.8%	11.1%	8.4%
6:00 - 7:00 PM	7.2%	8.5%	5.9%	6.0%	7.3%	4.6%	6.2%	5.8%	6.6%
7:00 - 8:00 PM	5.1%	6.1%	4.2%	5.1%	4.8%	5.4%	5.3%	7.0%	3.6%
8:00 - 9:00 PM	4.6%	6.1%	3.1%	4.8%	6.0%	3.7%	4.1%	5.8%	2.4%
9:00 - 10:00 PM	3.3%	4.4%	2.3%	2.4%	2.7%	2.1%	0.3%	0.6%	0.0%
10:00 - 11:00 PM	1.6%	2.1%	1.0%	1.7%	1.5%	1.9%	1.5%	1.8%	1.2%
11:00 - 12:00 AM	1.0%	1.3%	0.6%	1.4%	1.5%	1.3%	0.0%	0.0%	0.0%

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

Hourly Distribution of Entering and Exiting Vehicle Trips by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	220			220		
Land Use	Multifamily Housing (Low-Rise)			Multifamily Housing (Low-Rise)		
Subcategory	Not Close to Rail Transit			Close to Rail Transit		
Setting	General Urban/Suburban			General Urban/Suburban		
Time Period	Weekday			Weekday		
# Data Sites	6			1		
	% of 24-Hour Vehicle Trips			% of 24-Hour Vehicle Trips		
Time	Total	Entering	Exiting	Total	Entering	Exiting
12:00 - 1:00 AM	0.7%	0.9%	0.4%	0.4%	0.4%	0.3%
1:00 - 2:00 AM	0.4%	0.5%	0.3%	0.2%	0.1%	0.2%
2:00 - 3:00 AM	0.4%	0.4%	0.4%	0.1%	0.2%	0.0%
3:00 - 4:00 AM	0.4%	0.4%	0.3%	0.2%	0.1%	0.2%
4:00 - 5:00 AM	0.9%	0.3%	1.4%	0.2%	0.2%	0.1%
5:00 - 6:00 AM	1.6%	0.5%	2.6%	2.4%	0.9%	4.0%
6:00 - 7:00 AM	4.2%	1.4%	6.9%	4.4%	2.0%	6.7%
7:00 - 8:00 AM	6.5%	2.0%	10.8%	7.2%	4.2%	10.3%
8:00 - 9:00 AM	5.8%	3.1%	8.5%	5.2%	3.4%	6.9%
9:00 - 10:00 AM	3.9%	2.9%	4.9%	4.4%	3.1%	5.7%
10:00 - 11:00 AM	3.6%	2.4%	4.8%	3.9%	3.4%	4.4%
11:00 - 12:00 PM	4.3%	3.8%	4.7%	5.4%	6.4%	4.4%
12:00 - 1:00 PM	4.3%	4.5%	4.1%	6.1%	5.8%	6.5%
1:00 - 2:00 PM	4.2%	4.0%	4.4%	4.7%	4.1%	5.4%
2:00 - 3:00 PM	5.2%	5.6%	4.9%	6.8%	7.5%	6.1%
3:00 - 4:00 PM	6.1%	6.9%	5.3%	6.5%	7.6%	5.4%
4:00 - 5:00 PM	7.9%	10.1%	5.6%	9.5%	11.6%	7.5%
5:00 - 6:00 PM	9.5%	11.4%	7.6%	11.2%	13.5%	8.9%
6:00 - 7:00 PM	8.2%	9.7%	6.7%	7.2%	7.7%	6.6%
7:00 - 8:00 PM	6.4%	8.1%	4.7%	6.1%	7.5%	4.7%
8:00 - 9:00 PM	5.9%	7.7%	4.2%	3.2%	4.2%	2.2%
9:00 - 10:00 PM	4.4%	6.0%	2.7%	2.4%	3.3%	1.5%
10:00 - 11:00 PM	3.5%	4.7%	2.4%	1.3%	1.5%	1.0%
11:00 - 12:00 AM	1.9%	2.5%	1.4%	1.1%	1.2%	1.0%

CAPACITY ANALYSIS METHODOLOGY

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 10 summarizes the relationship between level-of-service and percentile delay and uses the same numerical delay thresholds as the *Highway Capacity Manual*[1] 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 10
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

[a]Source: Highway Capacity Manual; Transportation Research Board; Washington, DC; 2000; page 16-2.

[1]*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 11 summarizes the relationship between level of service and average control delay for two-way STOP-controlled and all-way STOP-controlled intersections.

Table 11
LEVEL-OF-SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS[a]

Level-of-Service by Volume-to-Capacity Ratio		Average Control Delay
v/c ≤ 1.0	v/c > 1.0	(Seconds Per Vehicle)
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

[a]Source: *Highway Capacity Manual 7th Edition*; Transportation Research Board; Washington, DC; 2022.

CAPACITY ANALYSIS WORKSHEETS

2025 Baseline Weekday Morning Peak Hour
2025 Baseline Weekday Evening Peak Hour
2025 Baseline Saturday Midday Peak Hour
2032 Build Weekday Morning Peak Hour
2032 Build Weekday Evening Peak Hour
2032 Build Saturday Midday Peak Hour
2032 Build Mitigated Weekday Morning Peak Hour
2032 Build Mitigated Weekday Evening Peak Hour
2032 Build Mitigated Saturday Midday Peak Hour
2045 Build Weekday Morning Peak Hour
2045 Build Weekday Evening Peak Hour
2045 Build Saturday Midday Peak Hour
2045 Build Mitigated Weekday Morning Peak Hour
2045 Build Mitigated Weekday Evening Peak Hour
2045 Build Mitigated Saturday Midday Peak Hour

2025 Baseline Weekday Morning Peak Hour

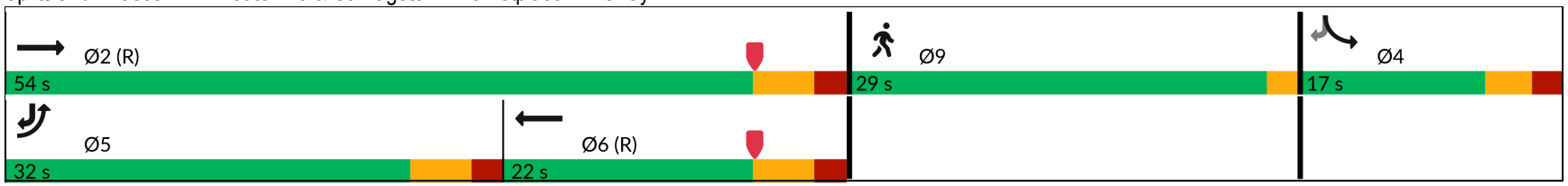
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1247	813	29	39	38	
Future Volume (vph)	40	1247	813	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (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	

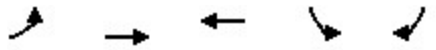
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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): 3.8		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





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	95	2	28	0
Queue Length 95th (ft)	59	146	59	57	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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	51	1319	13	22	816	259	30	13	67	506	32	24	
Future Volume (vph)	51	1319	13	22	816	259	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				254		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	24	907	288	35	15	78	544	34	26	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	58	1514	0	24	907	288	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		

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

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	42.1		9.1	35.4	73.5	9.0	9.0		34.4	34.4		
Actuated g/C Ratio	0.11	0.42		0.09	0.35	0.74	0.09	0.09		0.34	0.34		
v/c Ratio	0.31	1.07		0.15	0.76	0.25	0.24	0.44		0.47	0.10		
Control Delay (s/veh)	53.6	74.1		43.7	36.2	2.0	45.4	20.0		27.7	15.6		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	53.6	74.1		43.7	36.2	2.0	45.4	20.0		27.7	15.6		
LOS	D	E		D	D	A	D	B		C	B		
Approach Delay (s/veh)		73.4			28.3			26.9			26.5		
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: 1.07			
Intersection Signal Delay (s/veh): 48.1		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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	58	1514	24	907	288	35	93	544	60
v/c Ratio	0.31	1.07	0.15	0.76	0.25	0.24	0.44	0.47	0.10
Control Delay (s/veh)	53.6	74.1	43.7	36.2	2.0	45.4	20.0	27.7	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	53.6	74.1	43.7	36.2	2.0	45.4	20.0	27.7	15.6
Queue Length 50th (ft)	39	466	14	274	6	21	9	143	15
Queue Length 95th (ft)	73	#858	39	#469	40	48	50	189	43
Internal Link Dist (ft)		1088		423			469		258
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	188	1412	163	1198	1132	391	429	1151	578
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	1.07	0.15	0.76	0.25	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.

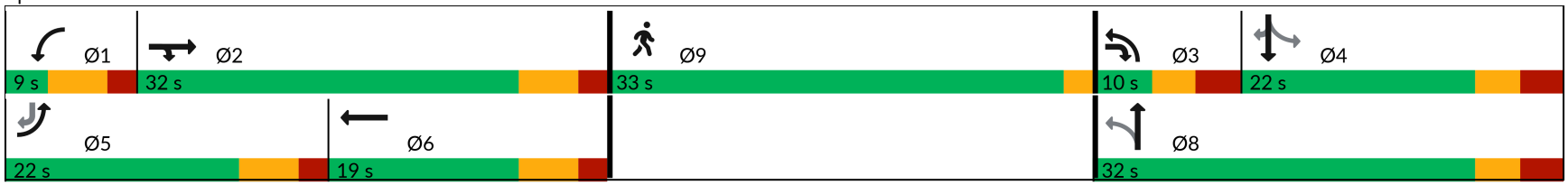
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	89	587	270	100	512	19	280	69	107	50	90	79	
Future Volume (vph)	89	587	270	100	512	19	280	69	107	50	90	79	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.995			0.909				0.850	
Flt Protected	0.950			0.950			0.950				0.982		
Satd. Flow (prot)	1616	3421	1531	1787	3491	0	1752	1714	0	0	1808	1419	
Flt Permitted	0.950			0.950			0.458				0.813		
Satd. Flow (perm)	1616	3421	1531	1787	3491	0	845	1714	0	0	1497	1419	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			310		3			71				113	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			7.5		
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.89	0.89	0.89	0.90	0.90	0.90	
Heavy Vehicles (%)	8%	2%	2%	1%	3%	0%	3%	2%	0%	0%	5%	10%	
Adj. Flow (vph)	102	675	310	108	551	20	315	78	120	56	100	88	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	102	675	310	108	571	0	315	198	0	0	156	88	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

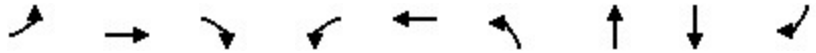
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	22.0	32.0		9.0	19.0		10.0	32.0		22.0	22.0		33.0
Total Split (%)	20.8%	30.2%		8.5%	17.9%		9.4%	30.2%		20.8%	20.8%		31%
Maximum Green (s)	16.0	26.0		3.0	13.0		4.0	26.0		16.0	16.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	12.2	24.7	34.6	5.2	20.7		24.9	24.9			14.4	30.8	
Actuated g/C Ratio	0.17	0.34	0.48	0.07	0.29		0.35	0.35			0.20	0.43	
v/c Ratio	0.37	0.57	0.35	0.83	0.57		0.85	0.31			0.52	0.13	
Control Delay (s/veh)	33.8	24.0	2.6	83.7	29.8		45.6	14.9			35.6	2.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	33.8	24.0	2.6	83.7	29.8		45.6	14.9			35.6	2.9	
LOS	C	C	A	F	C		D	B			D	A	
Approach Delay (s/veh)		18.8			38.4			33.7			23.8		
Approach LOS		B			D			C			C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 71.8			
Natural Cycle: 90			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.85			
Intersection Signal Delay (s/veh): 27.6		Intersection LOS: C	
Intersection Capacity Utilization 58.6%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	102	675	310	108	571	315	198	156	88
v/c Ratio	0.37	0.57	0.35	0.83	0.57	0.85	0.31	0.52	0.13
Control Delay (s/veh)	33.8	24.0	2.6	83.7	29.8	45.6	14.9	35.6	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	33.8	24.0	2.6	83.7	29.8	45.6	14.9	35.6	2.9
Queue Length 50th (ft)	35	108	0	42	104	90	32	53	0
Queue Length 95th (ft)	110	276	25	#205	#354	#418	132	169	20
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	423	1396	893	130	1008	371	741	393	783
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	0.24	0.48	0.35	0.83	0.57	0.85	0.27	0.40	0.11

Intersection Summary

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

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	1057	178	40	0	135	0	0	0
Future Vol, veh/h	0	800	1092	0	1057	178	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	1162	196	56	0	188	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	1432	-	426
Stage 1	-	-	-	-	-	-	851	-	-
Stage 2	-	-	-	-	-	-	581	-	-
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	127	0	577
Stage 1	0	-	0	0	-	0	384	0	-
Stage 2	0	-	0	0	-	0	528	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	127	0	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	127	0	-
Stage 1	-	-	-	-	-	-	384	0	-
Stage 2	-	-	-	-	-	-	528	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	23.18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	127	577	-	-
HCM Lane V/C Ratio	0.436	0.325	-	-
HCM Ctrl Dly (s/v)	53.4	14.2	-	-
HCM Lane LOS	F	B	-	-
HCM 95th %tile Q(veh)	1.9	1.4	-	-

2025 Baseline Weekday Evening Peak Hour

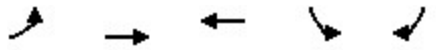
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1131	1342	79	83	136	
Future Volume (vph)	125	1131	1342	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	

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

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



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)	79	103	54	58	0
Queue Length 95th (ft)	#204	334	m223	#127	46
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.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	93	1062	40	80	1290	485	44	44	43	365	49	31	
Future Volume (vph)	93	1062	40	80	1290	485	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				301		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	1167	44	88	1418	533	55	55	54	415	56	35	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	102	1211	0	88	1418	533	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		

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

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	35.6		12.3	32.3	58.2	10.5	10.5		23.7	23.7		
Actuated g/C Ratio	0.13	0.36		0.12	0.32	0.58	0.11	0.11		0.24	0.24		
v/c Ratio	0.43	0.99		0.41	1.28	0.54	0.30	0.50		0.52	0.21		
Control Delay (s/veh)	55.9	55.7		45.4	165.7	9.1	44.5	32.3		37.9	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	55.7		45.4	165.7	9.1	44.5	32.3		37.9	26.1		
LOS	E	E		D	F	A	D	C		D	C		
Approach Delay (s/veh)		55.7			119.6			36.4			35.8		
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: 1.28			
Intersection Signal Delay (s/veh): 84.8		Intersection LOS: F	
Intersection Capacity Utilization 67.9%		ICU Level of Service C	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	102	1211	88	1418	533	55	109	415	91
v/c Ratio	0.43	0.99	0.41	1.28	0.54	0.30	0.50	0.52	0.21
Control Delay (s/veh)	55.9	55.7	45.4	165.7	9.1	44.5	32.3	37.9	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	55.7	45.4	165.7	9.1	44.5	32.3	37.9	26.1
Queue Length 50th (ft)	66	222	53	~576	56	33	38	113	32
Queue Length 95th (ft)	123	#790	97	#963	#246	60	73	#234	86
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	235	1224	218	1104	993	418	443	793	428
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	0.99	0.40	1.28	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.

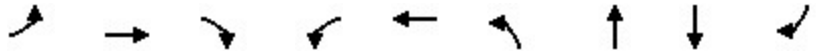
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	135	764	304	105	713	37	381	127	111	91	122	135	
Future Volume (vph)	135	764	304	105	713	37	381	127	111	91	122	135	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.993			0.930				0.850	
Flt Protected	0.950			0.950			0.950				0.979		
Satd. Flow (prot)	1745	3455	1546	1805	3551	0	1787	1767	0	0	1852	1531	
Flt Permitted	0.950			0.950			0.352				0.743		
Satd. Flow (perm)	1745	3455	1546	1805	3551	0	662	1767	0	0	1406	1531	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			320		4			44				157	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			7.5		
Peak Hour Factor	0.95	0.95	0.95	0.98	0.98	0.98	0.91	0.91	0.91	0.86	0.86	0.86	
Heavy Vehicles (%)	0%	1%	1%	0%	1%	0%	1%	0%	0%	1%	0%	2%	
Adj. Flow (vph)	142	804	320	107	728	38	419	140	122	106	142	157	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	142	804	320	107	766	0	419	262	0	0	248	157	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	5.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	11.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	11.0	26.0		9.0	24.0		15.0	38.0		23.0	23.0		33.0
Total Split (%)	10.4%	24.5%		8.5%	22.6%		14.2%	35.8%		21.7%	21.7%		31%
Maximum Green (s)	5.0	20.0		3.0	18.0		9.0	32.0		17.0	17.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	7.2	22.5	37.2	5.1	20.5		34.8	34.8			19.4	30.7	
Actuated g/C Ratio	0.09	0.28	0.47	0.06	0.26		0.44	0.44			0.24	0.39	
v/c Ratio	0.90	0.82	0.36	0.93	0.84		0.94	0.33			0.73	0.23	
Control Delay (s/veh)	91.2	37.0	2.7	108.4	39.3		51.8	15.9			44.0	5.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	91.2	37.0	2.7	108.4	39.3		51.8	15.9			44.0	5.1	
LOS	F	D	A	F	D		D	B			D	A	
Approach Delay (s/veh)		34.4			47.7			38.0			29.0		
Approach LOS		C			D			D			C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 79.6			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 38.1		Intersection LOS: D	
Intersection Capacity Utilization 74.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	142	804	320	107	766	419	262	248	157
v/c Ratio	0.90	0.82	0.36	0.93	0.84	0.94	0.33	0.73	0.23
Control Delay (s/veh)	91.2	37.0	2.7	108.4	39.3	51.8	15.9	44.0	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	91.2	37.0	2.7	108.4	39.3	51.8	15.9	44.0	5.1
Queue Length 50th (ft)	64	172	0	49	166	126	57	100	0
Queue Length 95th (ft)	#244	#454	29	#202	#443	#552	190	#308	42
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	157	976	893	115	915	447	796	342	686
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	0.90	0.82	0.36	0.93	0.84	0.94	0.33	0.73	0.23

Intersection Summary

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

Intersection	
Int Delay, s/veh	10.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	904	566	0	1780	190	75	0	168	0	0	0
Future Vol, veh/h	0	904	566	0	1780	190	75	0	168	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	983	615	0	1854	198	84	0	189	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	1910	-	491
Stage 1	-	-	-	-	-	-	983	-	-
Stage 2	-	-	-	-	-	-	927	-	-
Critical Hdwy	-	-	-	-	-	-	6.82	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	5.82	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.82	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.51	-	3.31
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 61	0	526
Stage 1	0	-	0	0	-	0	326	0	-
Stage 2	0	-	0	0	-	0	348	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 61	0	526
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 61	0	-
Stage 1	-	-	-	-	-	-	326	0	-
Stage 2	-	-	-	-	-	-	348	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	122.91
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	61	526	-	-
HCM Lane V/C Ratio	1.389	0.359	-	-
HCM Ctrl Dly (s/v)	$ 363.2	15.6	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	7.3	1.6	-	-

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

2025 Baseline Saturday Midday Peak Hour

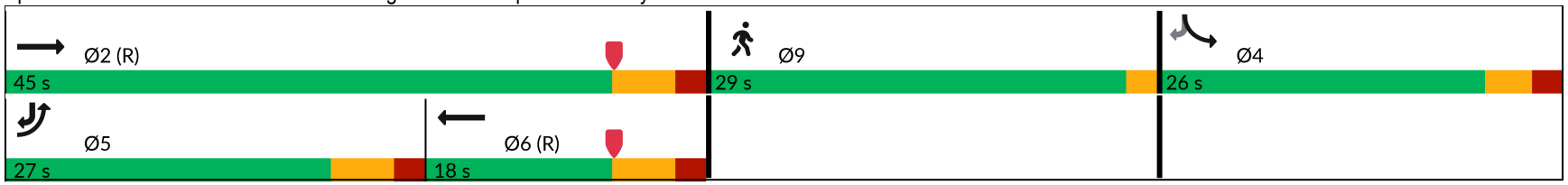
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1206	868	74	91	120	
Future Volume (vph)	129	1206	868	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	

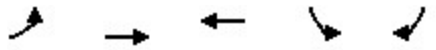
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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): 8.9		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





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)	87	114	15	62	0
Queue Length 95th (ft)	138	180	231	107	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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	60	1200	19	56	889	259	30	38	67	302	47	34	
Future Volume (vph)	60	1200	19	56	889	259	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				243		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	1348	21	61	966	282	32	41	72	321	50	36	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	67	1369	0	61	966	282	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		

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

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	44.9		10.8	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	0.88		0.31	0.63	0.27	0.19	0.50		0.58	0.28		
Control Delay (s/veh)	49.0	33.4		44.7	28.4	3.0	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	33.4		44.7	28.4	3.0	42.8	25.7		42.8	27.1		
LOS	D	C		D	C	A	D	C		D	C		
Approach Delay (s/veh)		34.1			23.7			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: 0.88			
Intersection Signal Delay (s/veh): 30.4		Intersection LOS: C	
Intersection Capacity Utilization 64.1%		ICU Level of Service C	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	67	1369	61	966	282	32	113	321	86
v/c Ratio	0.34	0.88	0.31	0.63	0.27	0.19	0.50	0.58	0.28
Control Delay (s/veh)	49.0	33.4	44.7	28.4	3.0	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	33.4	44.7	28.4	3.0	42.8	25.7	42.8	27.1
Queue Length 50th (ft)	40	267	37	233	7	19	25	95	30
Queue Length 95th (ft)	78	#916	74	#630	43	46	75	146	78
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	100		300	
Base Capacity (vph)	223	1549	223	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	0.88	0.27	0.63	0.27	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.

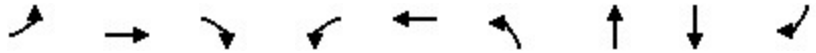
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	199	823	266	98	646	29	301	145	107	48	123	102	
Future Volume (vph)	199	823	266	98	646	29	301	145	107	48	123	102	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.994			0.936				0.850	
Flt Protected	0.950			0.950			0.950				0.986		
Satd. Flow (prot)	1728	3455	1546	1805	3544	0	1805	1768	0	0	1837	1546	
Flt Permitted	0.950			0.950			0.433				0.808		
Satd. Flow (perm)	1728	3455	1546	1805	3544	0	823	1768	0	0	1505	1546	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			313		5			42				148	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			7.5		
Peak Hour Factor	0.85	0.85	0.85	0.82	0.82	0.82	0.84	0.84	0.84	0.84	0.84	0.84	
Heavy Vehicles (%)	1%	1%	1%	0%	1%	7%	0%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	234	968	313	120	788	35	358	173	127	57	146	121	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	234	968	313	120	823	0	358	300	0	0	203	121	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	1.0	8.0		1.0	8.0		1.0	1.0		1.0	1.0		5.0
Minimum Split (s)	7.0	14.0		7.0	14.0		7.0	7.0		7.0	7.0		33.0
Total Split (s)	10.0	18.0		8.0	16.0		7.0	22.0		15.0	15.0		33.0
Total Split (%)	12.3%	22.2%		9.9%	19.8%		8.6%	27.2%		18.5%	18.5%		41%
Maximum Green (s)	4.0	12.0		2.0	10.0		1.0	16.0		9.0	9.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	6.0	14.0	21.0	4.0	12.0		18.0	18.0			11.0	21.0	
Actuated g/C Ratio	0.13	0.29	0.44	0.08	0.25		0.38	0.38			0.23	0.44	
v/c Ratio	1.08	0.96	0.37	0.80	0.93		0.97	0.44			0.59	0.16	
Control Delay (s/veh)	113.4	40.5	2.8	63.5	37.3		59.4	12.0			25.2	2.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	113.4	40.5	2.8	63.5	37.3		59.4	12.0			25.2	2.0	
LOS	F	D	A	E	D		E	B			C	A	
Approach Delay (s/veh)		44.0			40.7			37.8			16.5		
Approach LOS		D			D			D			B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 48			
Natural Cycle: 140			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.08			
Intersection Signal Delay (s/veh): 39.3		Intersection LOS: D	
Intersection Capacity Utilization 68.9%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	234	968	313	120	823	358	300	203	121
v/c Ratio	1.08	0.96	0.37	0.80	0.93	0.97	0.44	0.59	0.16
Control Delay (s/veh)	113.4	40.5	2.8	63.5	37.3	59.4	12.0	25.2	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	113.4	40.5	2.8	63.5	37.3	59.4	12.0	25.2	2.0
Queue Length 50th (ft)	~77	137	0	34	116	75	50	51	0
Queue Length 95th (ft)	#169	#223	27	#92	#183	#185	92	95	13
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	216	1007	852	150	889	370	689	344	759
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	1.08	0.96	0.37	0.80	0.93	0.97	0.44	0.59	0.16

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	8.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1138	431	0	1138	148	66	0	141	0	0	0
Future Vol, veh/h	0	1138	431	0	1138	148	66	0	141	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	1237	468	0	1251	163	75	0	160	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	1862	-	618
Stage 1	-	-	-	-	-	-	1237	-	-
Stage 2	-	-	-	-	-	-	625	-	-
Critical Hdwy	-	-	-	-	-	-	6.84	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.3
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 65	0	437
Stage 1	0	-	0	0	-	0	237	0	-
Stage 2	0	-	0	0	-	0	496	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 65	0	437
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 65	0	-
Stage 1	-	-	-	-	-	-	237	0	-
Stage 2	-	-	-	-	-	-	496	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	98.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	65	437	-	-
HCM Lane V/C Ratio	1.161	0.367	-	-
HCM Ctrl Dly (s/v)	271.6	17.9	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	6	1.7	-	-

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

2032 Build Weekday Morning Peak Hour

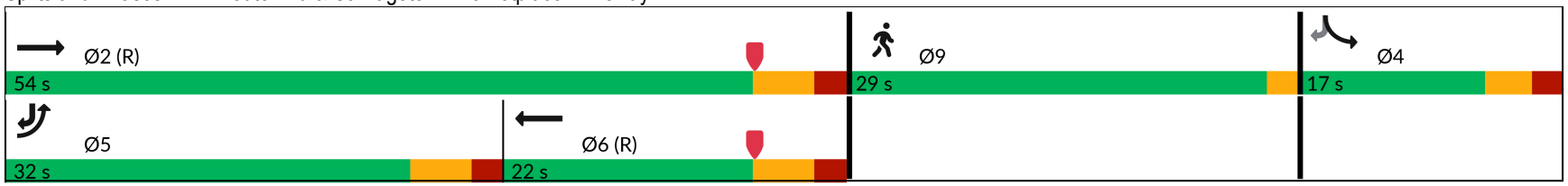
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1416	950	29	39	38	
Future Volume (vph)	40	1416	950	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (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	1539	1033	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1539	1065	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	

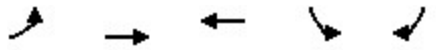
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	10.1	83.6	71.0		9.0	17.6	
Actuated g/C Ratio	0.10	0.84	0.71		0.09	0.18	
v/c Ratio	0.25	0.53	0.43		0.27	0.13	
Control Delay (s/veh)	44.4	7.6	3.5		46.1	9.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.4	7.6	3.5		46.1	9.9	
LOS	D	A	A		D	A	
Approach Delay (s/veh)		8.6	3.5		28.2		
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: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.53			
Intersection Signal Delay (s/veh): 7.2		Intersection LOS: A	
Intersection Capacity Utilization 50.8%		ICU Level of Service A	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1539	1065	42	41
v/c Ratio	0.25	0.53	0.43	0.27	0.13
Control Delay (s/veh)	44.4	7.6	3.5	46.1	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.4	7.6	3.5	46.1	9.9
Queue Length 50th (ft)	26	109	4	26	0
Queue Length 95th (ft)	58	525	m442	58	25
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	471	2900	2454	227	582
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	0.09	0.53	0.43	0.19	0.07

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

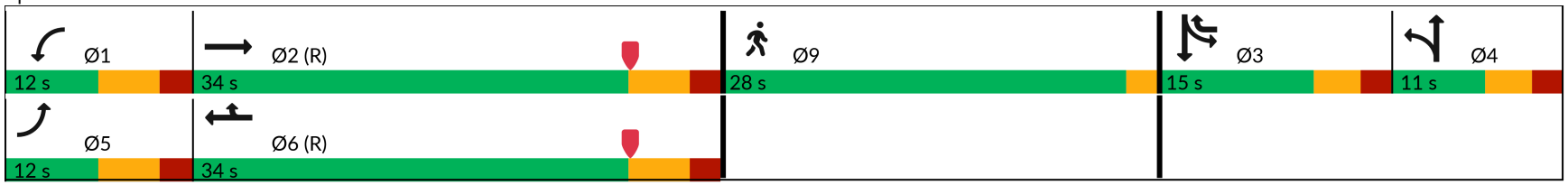
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	74	1435	58	91	878	311	86	23	149	638	46	50	
Future Volume (vph)	74	1435	58	91	878	311	86	23	149	638	46	50	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	240		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		0.994				0.850		0.870			0.922		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1703	3340	0	1719	3388	1449	1631	1532	0	3351	1604	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1703	3340	0	1719	3388	1449	1631	1532	0	3351	1604	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4				338		162			44		
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	63	99	954	338	93	25	162	693	50	54	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	80	1623	0	99	954	338	93	187	0	693	104	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		

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)	12.0	34.0		12.0	34.0		11.0	11.0		15.0	15.0		28.0
Total Split (%)	12.0%	34.0%		12.0%	34.0%		11.0%	11.0%		15.0%	15.0%		28%
Maximum Green (s)	6.0	28.0		6.0	28.0		6.0	6.0		10.0	10.0		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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	8.0	30.0		8.0	32.4	75.3	7.1	7.1		39.9	39.9		
Actuated g/C Ratio	0.08	0.30		0.08	0.32	0.75	0.07	0.07		0.40	0.40		
v/c Ratio	0.59	1.62		0.72	0.87	0.29	0.81	0.72		0.52	0.16		
Control Delay (s/veh)	65.0	309.9		74.4	42.9	1.1	91.5	27.7		24.5	12.3		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	65.0	309.9		74.4	42.9	1.1	91.5	27.7		24.5	12.3		
LOS	E	F		E	D	A	F	C		C	B		
Approach Delay (s/veh)		298.4			35.0			48.9			22.9		
Approach LOS		F			C			D			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.62			
Intersection Signal Delay (s/veh): 141.1		Intersection LOS: F	
Intersection Capacity Utilization 88.5%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	80	1623	99	954	338	93	187	693	104
v/c Ratio	0.59	1.62	0.72	0.87	0.29	0.81	0.72	0.52	0.16
Control Delay (s/veh)	65.0	309.9	74.4	42.9	1.1	91.5	27.7	24.5	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	65.0	309.9	74.4	42.9	1.1	91.5	27.7	24.5	12.3
Queue Length 50th (ft)	53	~795	63	311	0	60	15	169	23
Queue Length 95th (ft)	m#115	#914	#144	#438	21	#149	#111	223	58
Internal Link Dist (ft)		1088		423			469		258
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	136	1004	137	1097	1175	115	258	1338	667
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	0.59	1.62	0.72	0.87	0.29	0.81	0.72	0.52	0.16

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.

m Volume for 95th percentile queue is metered by upstream signal.

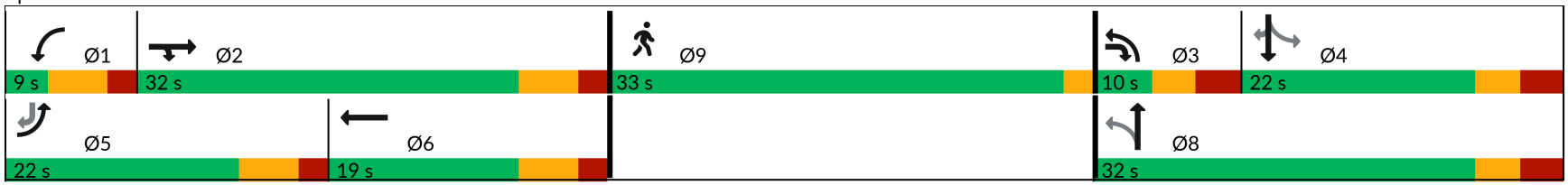
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	104	684	310	111	592	21	318	77	119	55	100	92	
Future Volume (vph)	104	684	310	111	592	21	318	77	119	55	100	92	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.995			0.909				0.850	
Flt Protected	0.950			0.950			0.950				0.983		
Satd. Flow (prot)	1616	3421	1531	1787	3491	0	1752	1720	0	0	1809	1419	
Flt Permitted	0.950			0.950			0.443				0.809		
Satd. Flow (perm)	1616	3421	1531	1787	3491	0	817	1720	0	0	1489	1419	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			337		3			71				113	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	8%	2%	2%	1%	3%	0%	3%	1%	0%	0%	5%	10%	
Adj. Flow (vph)	113	743	337	121	643	23	346	84	129	60	109	100	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	113	743	337	121	666	0	346	213	0	0	169	100	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

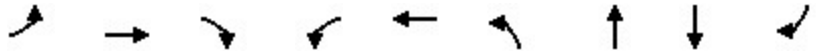
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	22.0	32.0		9.0	19.0		10.0	32.0		22.0	22.0		33.0
Total Split (%)	20.8%	30.2%		8.5%	17.9%		9.4%	30.2%		20.8%	20.8%		31%
Maximum Green (s)	16.0	26.0		3.0	13.0		4.0	26.0		16.0	16.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	12.6	25.9	35.7	5.2	18.5		25.6	25.6			15.2	32.0	
Actuated g/C Ratio	0.17	0.35	0.48	0.07	0.25		0.35	0.35			0.21	0.43	
v/c Ratio	0.41	0.62	0.37	0.96	0.76		0.96	0.33			0.55	0.15	
Control Delay (s/veh)	35.3	25.0	2.7	112.5	35.5		64.0	15.8			37.2	3.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	35.3	25.0	2.7	112.5	35.5		64.0	15.8			37.2	3.8	
LOS	D	C	A	F	D		E	B			D	A	
Approach Delay (s/veh)		19.7			47.4			45.6			24.8		
Approach LOS		B			D			D			C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 73.8			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay (s/veh): 33.1		Intersection LOS: C	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	113	743	337	121	666	346	213	169	100
v/c Ratio	0.41	0.62	0.37	0.96	0.76	0.96	0.33	0.55	0.15
Control Delay (s/veh)	35.3	25.0	2.7	112.5	35.5	64.0	15.8	37.2	3.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	35.3	25.0	2.7	112.5	35.5	64.0	15.8	37.2	3.8
Queue Length 50th (ft)	42	126	0	51	130	110	39	62	0
Queue Length 95th (ft)	126	#323	29	#228	#431	#479	148	#196	28
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	411	1353	909	126	876	362	723	378	769
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	0.27	0.55	0.37	0.96	0.76	0.96	0.29	0.45	0.13

Intersection Summary

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

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	946	1276	0	1228	198	52	0	150	0	0	0
Future Vol, veh/h	0	946	1276	0	1228	198	52	0	150	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	2	0	4	4	0	0	2	0	0	0
Mvmt Flow	0	1028	1387	0	1335	215	57	0	163	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	1696	-	514
Stage 1	-	-	-	-	-	-	1028	-	-
Stage 2	-	-	-	-	-	-	667	-	-
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	85	0	505
Stage 1	0	-	0	0	-	0	310	0	-
Stage 2	0	-	0	0	-	0	477	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	85	0	505
Mov Cap-2 Maneuver	-	-	-	-	-	-	85	0	-
Stage 1	-	-	-	-	-	-	310	0	-
Stage 2	-	-	-	-	-	-	477	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	38.95
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	85	505	-	-
HCM Lane V/C Ratio	0.662	0.323	-	-
HCM Ctrl Dly (s/v)	106.7	15.5	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	3.1	1.4	-	-

2032 Build Weekday Evening Peak Hour

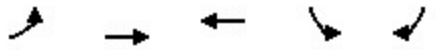
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1326	1526	79	83	136	
Future Volume (vph)	125	1326	1526	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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)			7			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	1441	1659	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1441	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	

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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	14.6	76.1	57.4		10.3	28.0	
Actuated g/C Ratio	0.15	0.76	0.57		0.10	0.28	
v/c Ratio	0.56	0.54	0.86		0.49	0.27	
Control Delay (s/veh)	50.7	7.7	12.6		52.3	6.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.7	7.7	12.6		52.3	6.6	
LOS	D	A	B		D	A	
Approach Delay (s/veh)		11.4	12.6		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: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 12.8		Intersection LOS: B	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1441	1745	90	148
v/c Ratio	0.56	0.54	0.86	0.49	0.27
Control Delay (s/veh)	50.7	7.7	12.6	52.3	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.7	7.7	12.6	52.3	6.6
Queue Length 50th (ft)	79	123	160	54	0
Queue Length 95th (ft)	#201	422	m44	#126	51
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	244	2691	2021	184	553
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	0.54	0.86	0.49	0.27

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.

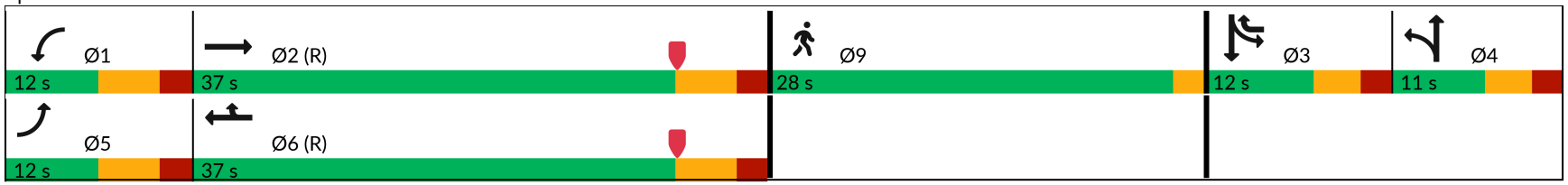
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	156	1171	70	134	1428	618	75	59	85	453	64	49	
Future Volume (vph)	156	1171	70	134	1428	618	75	59	85	453	64	49	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	240		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		0.992				0.850		0.912			0.935		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1787	3424	0	1752	3421	1492	1745	1675	0	3351	1717	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1787	3424	0	1752	3421	1492	1745	1675	0	3351	1717	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		6				452		56			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	0.92	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	1273	76	146	1552	672	82	64	92	492	70	53	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	170	1349	0	146	1552	672	82	156	0	492	123	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		

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)	12.0	37.0		12.0	37.0		11.0	11.0		12.0	12.0		28.0
Total Split (%)	12.0%	37.0%		12.0%	37.0%		11.0%	11.0%		12.0%	12.0%		28%
Maximum Green (s)	6.0	31.0		6.0	31.0		6.0	6.0		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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													1
Act Effct Green (s)	8.0	33.0		8.0	33.0	65.9	7.9	7.9		30.7	30.7		
Actuated g/C Ratio	0.08	0.33		0.08	0.33	0.66	0.08	0.08		0.31	0.31		
v/c Ratio	1.20	1.19		1.04	1.38	0.59	0.60	0.85		0.48	0.22		
Control Delay (s/veh)	178.6	125.4		134.4	204.4	6.1	63.6	67.0		33.3	24.6		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	178.6	125.4		134.4	204.4	6.1	63.6	67.0		33.3	24.6		
LOS	F	F		F	F	A	E	E		C	C		
Approach Delay (s/veh)		131.3			143.9			65.8			31.5		
Approach LOS		F			F			E			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.38			
Intersection Signal Delay (s/veh): 121.4		Intersection LOS: F	
Intersection Capacity Utilization 82.7%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	170	1349	146	1552	672	82	156	492	123
v/c Ratio	1.20	1.19	1.04	1.38	0.59	0.60	0.85	0.48	0.22
Control Delay (s/veh)	178.6	125.4	134.4	204.4	6.1	63.6	67.0	33.3	24.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	178.6	125.4	134.4	204.4	6.1	63.6	67.0	33.3	24.6
Queue Length 50th (ft)	~137	~345	~101	~693	43	50	62	123	41
Queue Length 95th (ft)	#274	#668	#225	#830	179	#124	#188	#324	#128
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	142	1133	140	1128	1137	137	183	1029	548
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	1.20	1.19	1.04	1.38	0.59	0.60	0.85	0.48	0.22

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.

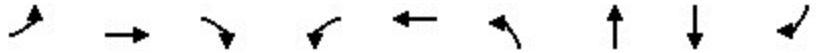
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	152	871	343	117	849	41	431	141	123	101	135	153	
Future Volume (vph)	152	871	343	117	849	41	431	141	123	101	135	153	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.993			0.930				0.850	
Flt Protected	0.950			0.950			0.950				0.979		
Satd. Flow (prot)	1745	3455	1546	1805	3551	0	1787	1767	0	0	1852	1531	
Flt Permitted	0.950			0.950			0.339				0.732		
Satd. Flow (perm)	1745	3455	1546	1805	3551	0	638	1767	0	0	1385	1531	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			373		4			44				166	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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%	1%	0%	0%	1%	0%	2%	
Adj. Flow (vph)	165	947	373	127	923	45	468	153	134	110	147	166	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	165	947	373	127	968	0	468	287	0	0	257	166	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	5.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	11.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	11.0	26.0		9.0	24.0		15.0	38.0		23.0	23.0		33.0
Total Split (%)	10.4%	24.5%		8.5%	22.6%		14.2%	35.8%		21.7%	21.7%		31%
Maximum Green (s)	5.0	20.0		3.0	18.0		9.0	32.0		17.0	17.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	7.2	22.5	37.2	5.1	20.5		34.8	34.8			19.4	30.7	
Actuated g/C Ratio	0.09	0.28	0.47	0.06	0.26		0.44	0.44			0.24	0.39	
v/c Ratio	1.05	0.97	0.40	1.10	1.06		1.06	0.36			0.76	0.24	
Control Delay (s/veh)	126.2	52.9	2.8	152.9	77.2		83.2	16.5			46.7	5.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	126.2	52.9	2.8	152.9	77.2		83.2	16.5			46.7	5.1	
LOS	F	D	A	F	E		F	B			D	A	
Approach Delay (s/veh)		48.5			85.9			57.9			30.4		
Approach LOS		D			F			E			C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 79.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 59.2		Intersection LOS: E	
Intersection Capacity Utilization 83.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	165	947	373	127	968	468	287	257	166
v/c Ratio	1.05	0.97	0.40	1.10	1.06	1.06	0.36	0.76	0.24
Control Delay (s/veh)	126.2	52.9	2.8	152.9	77.2	83.2	16.5	46.7	5.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	126.2	52.9	2.8	152.9	77.2	83.2	16.5	46.7	5.1
Queue Length 50th (ft)	76	214	0	~61	227	145	65	105	0
Queue Length 95th (ft)	#285	#566	30	#240	#604	#632	212	#349	49
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	157	976	921	115	915	441	796	338	691
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	1.05	0.97	0.40	1.10	1.06	1.06	0.36	0.76	0.24

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	32.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1041	668	0	2085	211	95	0	186	0	0	0
Future Vol, veh/h	0	1041	668	0	2085	211	95	0	186	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	2	1	0	1	0	0	0
Mvmt Flow	0	1132	726	0	2266	229	103	0	202	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	2265	-	566
Stage 1	-	-	-	-	-	-	1132	-	-
Stage 2	-	-	-	-	-	-	1133	-	-
Critical Hdwy	-	-	-	-	-	-	6.82	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	5.82	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.82	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.51	-	3.31
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 35	0	470
Stage 1	0	-	0	0	-	0	272	0	-
Stage 2	0	-	0	0	-	0	271	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 35	0	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 35	0	-
Stage 1	-	-	-	-	-	-	272	0	-
Stage 2	-	-	-	-	-	-	271	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	$ 392.95
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	35	470	-	-
HCM Lane V/C Ratio	2.962	0.43	-	-
HCM Ctrl Dly (s/v)	$ 1126.5	18.3	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	11.8	2.1	-	-

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

2032 Build Saturday Midday Peak Hour

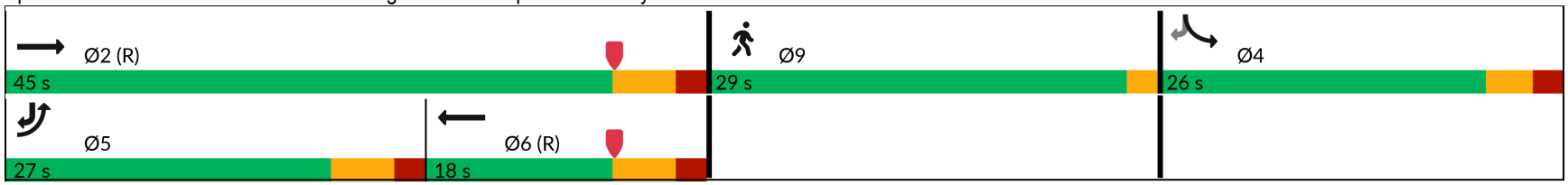
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1408	1009	74	91	120	
Future Volume (vph)	129	1408	1009	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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)			6			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	1530	1097	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1530	1177	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	

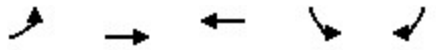
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	15.8	83.2	62.6		11.9	28.4	
Actuated g/C Ratio	0.16	0.83	0.63		0.12	0.28	
v/c Ratio	0.54	0.51	0.53		0.47	0.24	
Control Delay (s/veh)	45.9	4.2	9.0		47.6	4.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	45.9	4.2	9.0		47.6	4.8	
LOS	D	A	A		D	A	
Approach Delay (s/veh)		7.7	9.0		23.3		
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: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.54			
Intersection Signal Delay (s/veh): 9.4		Intersection LOS: A	
Intersection Capacity Utilization 52.4%		ICU Level of Service A	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1530	1177	99	130
v/c Ratio	0.54	0.51	0.53	0.47	0.24
Control Delay (s/veh)	45.9	4.2	9.0	47.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	4.2	9.0	47.6	4.8
Queue Length 50th (ft)	83	136	36	60	0
Queue Length 95th (ft)	136	221	m245	106	35
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	376	2975	2219	393	652
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	0.37	0.51	0.53	0.25	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	110	1309	71	140	968	352	82	54	145	392	66	54	
Future Volume (vph)	110	1309	71	140	968	352	82	54	145	392	66	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	115		200	240		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		0.992				0.850		0.891			0.932		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	3429	0	1805	3455	1492	1745	1636	0	3351	1667	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1770	3429	0	1805	3455	1492	1745	1636	0	3351	1667	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4				303		118			34		
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	1423	77	152	1052	383	89	59	158	426	72	59	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	120	1500	0	152	1052	383	89	217	0	426	131	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		

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	12.7	31.5		14.2	33.0	56.4	12.7	12.7		21.2	21.2		
Actuated g/C Ratio	0.13	0.32		0.14	0.33	0.56	0.13	0.13		0.21	0.21		
v/c Ratio	0.54	1.39		0.60	0.92	0.39	0.40	0.70		0.60	0.34		
Control Delay (s/veh)	56.4	207.5		50.9	49.4	4.4	44.1	30.9		40.2	27.7		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	56.4	207.5		50.9	49.4	4.4	44.1	30.9		40.2	27.7		
LOS	E	F		D	D	A	D	C		D	C		
Approach Delay (s/veh)		196.3			38.7			34.7			37.2		
Approach LOS		F			D			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.39			
Intersection Signal Delay (s/veh): 100.9		Intersection LOS: F	
Intersection Capacity Utilization 82.5%		ICU Level of Service E	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	120	1500	152	1052	383	89	217	426	131
v/c Ratio	0.54	1.39	0.60	0.92	0.39	0.40	0.70	0.60	0.34
Control Delay (s/veh)	56.4	207.5	50.9	49.4	4.4	44.1	30.9	40.2	27.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.4	207.5	50.9	49.4	4.4	44.1	30.9	40.2	27.7
Queue Length 50th (ft)	78	~676	90	332	19	53	59	121	50
Queue Length 95th (ft)	121	#1033	#185	#709	63	96	131	#217	116
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	233	1081	259	1138	973	314	391	710	380
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	0.52	1.39	0.59	0.92	0.39	0.28	0.55	0.60	0.34

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.

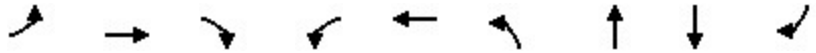
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	226	944	303	109	779	32	342	161	119	53	137	118	
Future Volume (vph)	226	944	303	109	779	32	342	161	119	53	137	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.994			0.936				0.850	
Flt Protected	0.950			0.950			0.950				0.986		
Satd. Flow (prot)	1728	3455	1546	1805	3544	0	1805	1768	0	0	1837	1546	
Flt Permitted	0.950			0.950			0.427				0.807		
Satd. Flow (perm)	1728	3455	1546	1805	3544	0	811	1768	0	0	1503	1546	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			329		4			42				148	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	1%	1%	1%	0%	1%	7%	0%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	246	1026	329	118	847	35	372	175	129	58	149	128	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	246	1026	329	118	882	0	372	304	0	0	207	128	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	1.0	8.0		1.0	8.0		1.0	1.0		1.0	1.0		5.0
Minimum Split (s)	7.0	14.0		7.0	14.0		7.0	7.0		7.0	7.0		33.0
Total Split (s)	10.0	18.0		8.0	16.0		7.0	22.0		15.0	15.0		33.0
Total Split (%)	12.3%	22.2%		9.9%	19.8%		8.6%	27.2%		18.5%	18.5%		41%
Maximum Green (s)	4.0	12.0		2.0	10.0		1.0	16.0		9.0	9.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	6.0	14.0	21.0	4.0	12.0		18.0	18.0			11.0	21.0	
Actuated g/C Ratio	0.13	0.29	0.44	0.08	0.25		0.38	0.38			0.23	0.44	
v/c Ratio	1.14	1.02	0.38	0.79	0.99		1.02	0.44			0.60	0.17	
Control Delay (s/veh)	131.3	54.0	2.8	61.5	50.1		72.0	12.1			25.8	2.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	131.3	54.0	2.8	61.5	50.1		72.0	12.1			25.8	2.2	
LOS	F	D	A	E	D		E	B			C	A	
Approach Delay (s/veh)		55.4			51.5			45.1			16.8		
Approach LOS		E			D			D			B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 48			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.14			
Intersection Signal Delay (s/veh): 48.8		Intersection LOS: D	
Intersection Capacity Utilization 77.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	246	1026	329	118	882	372	304	207	128
v/c Ratio	1.14	1.02	0.38	0.79	0.99	1.02	0.44	0.60	0.17
Control Delay (s/veh)	131.3	54.0	2.8	61.5	50.1	72.0	12.1	25.8	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	131.3	54.0	2.8	61.5	50.1	72.0	12.1	25.8	2.2
Queue Length 50th (ft)	~84	~153	0	33	127	~80	51	52	0
Queue Length 95th (ft)	#192	#267	33	#105	#238	#244	103	#122	18
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	216	1007	861	150	889	366	689	344	759
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	1.14	1.02	0.38	0.79	0.99	1.02	0.44	0.60	0.17

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	25.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1316	530	0	1374	164	86	0	156	0	0	0
Future Vol, veh/h	0	1316	530	0	1374	164	86	0	156	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	0	2	0	0	0	0	0
Mvmt Flow	0	1430	576	0	1493	178	93	0	170	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	2177	-	715
Stage 1	-	-	-	-	-	-	1430	-	-
Stage 2	-	-	-	-	-	-	747	-	-
Critical Hdwy	-	-	-	-	-	-	6.84	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.3
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 39	0	378
Stage 1	0	-	0	0	-	0	187	0	-
Stage 2	0	-	0	0	-	0	429	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 39	0	378
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 39	0	-
Stage 1	-	-	-	-	-	-	187	0	-
Stage 2	-	-	-	-	-	-	429	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	$ 313.42
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	39	378	-	-
HCM Lane V/C Ratio	2.368	0.449	-	-
HCM Ctrl Dly (s/v)	$ 841.9	22.1	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	10.2	2.3	-	-

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

2032 Build Mitigated Weekday Morning Peak Hour

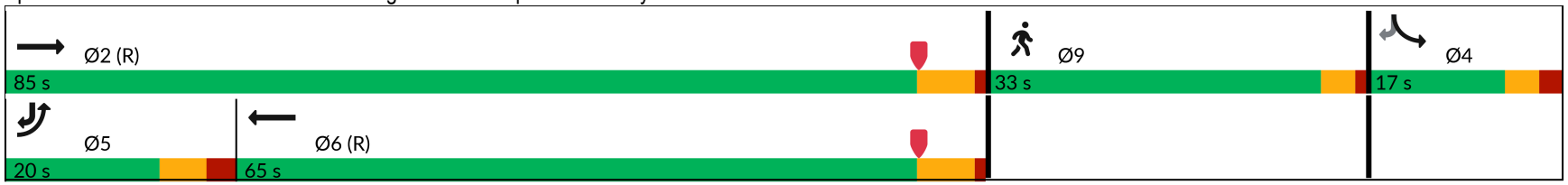
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1461	950	29	39	38	
Future Volume (vph)	40	1461	950	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (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	1588	1033	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1588	1065	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	

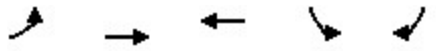
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	0.54	0.41		0.33	0.14	
Control Delay (s/veh)	63.9	7.4	13.2		65.8	13.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.9	7.4	13.2		65.8	13.3	
LOS	E	A	B		E	B	
Approach Delay (s/veh)		8.9	13.2		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: 0.54			
Intersection Signal Delay (s/veh): 11.5		Intersection LOS: B	
Intersection Capacity Utilization 52.1%		ICU Level of Service A	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1588	1065	42	41
v/c Ratio	0.32	0.54	0.41	0.33	0.14
Control Delay (s/veh)	63.9	7.4	13.2	65.8	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.9	7.4	13.2	65.8	13.3
Queue Length 50th (ft)	36	124	236	36	0
Queue Length 95th (ft)	75	607	107	74	32
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	0.54	0.41	0.25	0.12

Intersection Summary

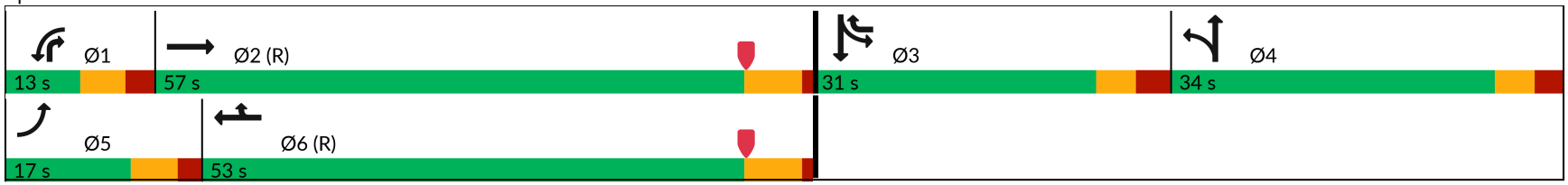
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	1435	58	91	878	311	86	23	149	638	46	50
Future Volume (vph)	74	1435	58	91	878	311	86	23	149	638	46	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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		0.922	
Flt Protected	0.950			0.950				0.962		0.950		
Satd. Flow (prot)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1604	0
Flt Permitted	0.950			0.950				0.962		0.950		
Satd. Flow (perm)	1703	3340	0	1719	4868	1449	0	1674	1487	3351	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				338			162		36	
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	63	99	954	338	93	25	162	693	50	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	1623	0	99	954	338	0	118	162	693	104	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	

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	

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	58.8		15.9	61.5	92.5		15.8	13.9	26.5	26.5	
Actuated g/C Ratio	0.10	0.44		0.12	0.46	0.69		0.12	0.10	0.20	0.20	
v/c Ratio	0.47	1.11		0.49	0.43	0.31		0.60	0.54	1.05	0.30	
Control Delay (s/veh)	71.7	95.6		62.1	31.5	1.8		68.8	15.3	101.9	32.7	
Queue Delay	0.0	0.0		0.0	0.0	0.3		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.7	95.6		62.1	31.5	2.1		68.8	15.3	101.9	32.7	
LOS	E	F		E	C	A		E	B	F	C	
Approach Delay (s/veh)		94.5			26.5			37.9			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: 1.11			
Intersection Signal Delay (s/veh): 67.7		Intersection LOS: E	
Intersection Capacity Utilization 82.3%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	80	1623	99	954	338	118	162	693	104
v/c Ratio	0.47	1.11	0.49	0.43	0.31	0.60	0.54	1.05	0.30
Control Delay (s/veh)	71.7	95.6	62.1	31.5	1.8	68.8	15.3	101.9	32.7
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.7	95.6	62.1	31.5	2.1	68.8	15.3	101.9	32.7
Queue Length 50th (ft)	67	~895	82	242	0	100	0	~341	51
Queue Length 95th (ft)	128	#1052	145	301	38	159	69	#465	107
Internal Link Dist (ft)		1088		423		469			258
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	184	1456	201	2218	1099	359	298	657	343
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	1.11	0.49	0.43	0.44	0.33	0.54	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.

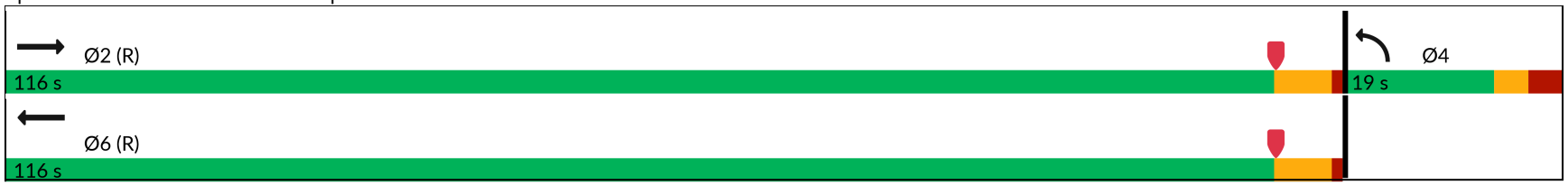
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	946	1276	0	1228	198	52	0	150	0	0	0
Future Volume (vph)	0	946	1276	0	1228	198	52	0	150	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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)			889			90			163			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			992			328	
Travel Time (s)		8.6			9.6			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	1028	1387	0	1335	215	57	0	163	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1028	1387	0	1335	215	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	

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										

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		0.45	0.15	0.34		0.09			
Control Delay (s/veh)		4.0	9.6		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)		5.0	9.6		2.7	0.2	63.2		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		7.6			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): 6.1		Intersection LOS: A	
Intersection Capacity Utilization 43.9%		ICU Level of Service A	
Analysis Period (min) 15			

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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1028	1387	1335	215	57	163
v/c Ratio	0.33	0.77	0.45	0.15	0.34	0.09
Control Delay (s/veh)	4.0	9.6	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)	5.0	9.6	2.7	0.2	63.2	0.1
Queue Length 50th (ft)	144	720	106	0	48	0
Queue Length 95th (ft)	m155	m661	159	0	92	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3091	1794	2959	1449	227	1794
Starvation Cap Reductn	1681	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	0.73	0.77	0.45	0.15	0.25	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

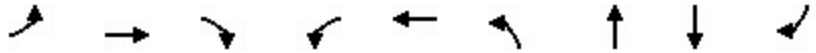
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	104	684	310	111	592	21	318	77	119	55	100	92	
Future Volume (vph)	104	684	310	111	592	21	318	77	119	55	100	92	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.995			0.909				0.850	
Flt Protected	0.950			0.950			0.950				0.983		
Satd. Flow (prot)	1616	3421	1531	1787	3491	0	1752	1720	0	0	1809	1419	
Flt Permitted	0.950			0.950			0.392				0.796		
Satd. Flow (perm)	1616	3421	1531	1787	3491	0	723	1720	0	0	1465	1419	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			337		3			69				129	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	8%	2%	2%	1%	3%	0%	3%	1%	0%	0%	5%	10%	
Adj. Flow (vph)	113	743	337	121	643	23	346	84	129	60	109	100	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	113	743	337	121	666	0	346	213	0	0	169	100	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	16.0		13.0	16.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	13.0	27.0		13.0	27.0		18.0	35.0		17.0	17.0		35.0
Total Split (%)	11.8%	24.5%		11.8%	24.5%		16.4%	31.8%		15.5%	15.5%		32%
Maximum Green (s)	6.0	21.0		6.0	21.0		12.0	28.0		10.0	10.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	8.2	23.5	41.4	8.2	23.5		31.7	30.7			12.3	25.6	
Actuated g/C Ratio	0.10	0.29	0.50	0.10	0.29		0.39	0.37			0.15	0.31	
v/c Ratio	0.70	0.76	0.36	0.68	0.66		0.75	0.31			0.77	0.19	
Control Delay (s/veh)	62.5	34.5	2.5	58.8	31.5		34.7	15.8			60.1	4.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	62.5	34.5	2.5	58.8	31.5		34.7	15.8			60.1	4.1	
LOS	E	C	A	E	C		C	B			E	A	
Approach Delay (s/veh)		28.1			35.7			27.5			39.3		
Approach LOS		C			D			C			D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 82			
Natural Cycle: 110			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay (s/veh): 31.2		Intersection LOS: C	
Intersection Capacity Utilization 66.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	113	743	337	121	666	346	213	169	100
v/c Ratio	0.70	0.76	0.36	0.68	0.66	0.75	0.31	0.77	0.19
Control Delay (s/veh)	62.5	34.5	2.5	58.8	31.5	34.7	15.8	60.1	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	62.5	34.5	2.5	58.8	31.5	34.7	15.8	60.1	4.1
Queue Length 50th (ft)	52	160	0	55	137	114	43	76	0
Queue Length 95th (ft)	#196	#420	30	#203	#350	#360	151	#268	26
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	161	982	939	178	1004	459	687	219	532
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	0.70	0.76	0.36	0.68	0.66	0.75	0.31	0.77	0.19

Intersection Summary

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

2032 Build Mitigated Weekday Evening Peak Hour

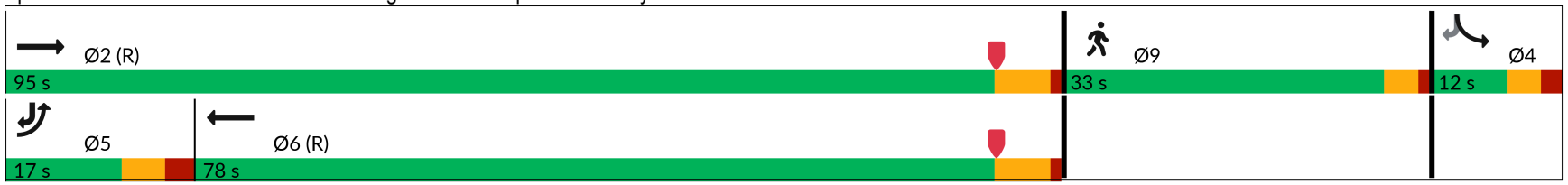
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1326	1526	79	83	136	
Future Volume (vph)	125	1326	1526	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	1441	1659	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1441	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	

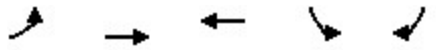
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	20.6		74.0	8.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.2	6.7	20.6		74.0	8.5	
LOS	E	A	C		E	A	
Approach Delay (s/veh)		12.3	20.6		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): 17.8		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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1441	1745	90	148
v/c Ratio	0.64	0.51	0.77	0.56	0.30
Control Delay (s/veh)	71.2	6.7	20.6	74.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	6.7	20.6	74.0	8.5
Queue Length 50th (ft)	116	151	299	78	0
Queue Length 95th (ft)	#256	450	#392	#191	61
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.

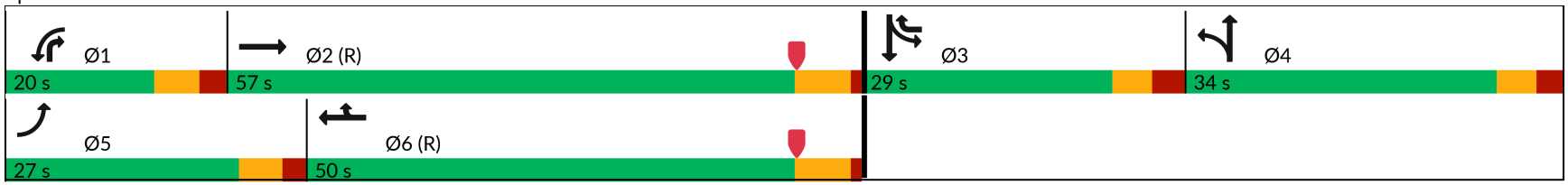
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	156	1171	70	134	1428	618	75	59	85	453	64	49
Future Volume (vph)	156	1171	70	134	1428	618	75	59	85	453	64	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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		0.935	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1717	0
Flt Permitted	0.950			0.950				0.973		0.950		
Satd. Flow (perm)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1717	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	1273	76	146	1552	672	82	64	92	492	70	53
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1349	0	146	1552	672	0	146	92	492	123	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	

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	

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	61.3		18.5	59.8	88.8		17.7	16.5	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	0.90		0.63	0.74	0.58		0.65	0.28	0.84	0.38	
Control Delay (s/veh)	70.7	41.5		70.8	34.1	3.2		70.9	2.1	69.6	44.8	
Queue Delay	0.0	0.0		0.0	2.1	0.7		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	70.7	41.5		70.8	36.2	3.9		70.9	2.1	69.6	44.8	
LOS	E	D		E	D	A		E	A	E	D	
Approach Delay (s/veh)		44.8			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: 0.90			
Intersection Signal Delay (s/veh): 39.5		Intersection LOS: D	
Intersection Capacity Utilization 72.4%		ICU Level of Service C	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	170	1349	146	1552	672	146	92	492	123
v/c Ratio	0.65	0.90	0.63	0.74	0.58	0.65	0.28	0.84	0.38
Control Delay (s/veh)	70.7	41.5	70.8	34.1	3.2	70.9	2.1	69.6	44.8
Queue Delay	0.0	0.0	0.0	2.1	0.7	0.0	0.0	0.0	0.0
Total Delay (s/veh)	70.7	41.5	70.8	36.2	3.9	70.9	2.1	69.6	44.8
Queue Length 50th (ft)	123	438	120	435	53	128	0	226	80
Queue Length 95th (ft)	224	#840	m177	#594	49	194	0	#307	145
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	304	1501	236	2099	1158	370	336	586	320
Starvation Cap Reductn	0	0	0	385	205	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	0.90	0.62	0.91	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.

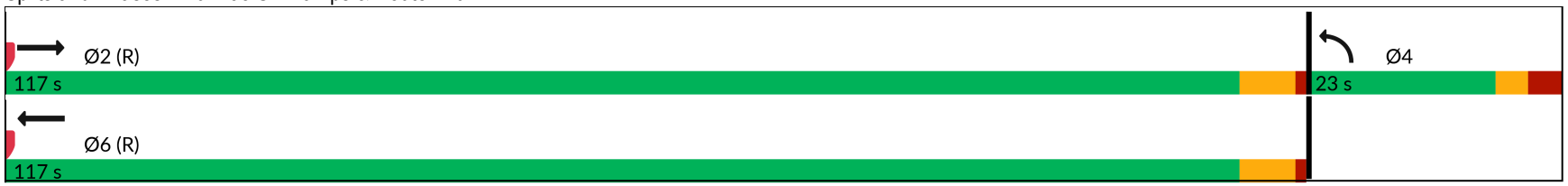
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1041	668	0	2085	211	95	0	186	0	0	0
Future Volume (vph)	0	1041	668	0	2085	211	95	0	186	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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)			407			70			202			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			499			328	
Travel Time (s)		8.6			9.6			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	1132	726	0	2266	229	103	0	202	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1132	726	0	2266	229	103	0	202	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	

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										

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	0.15	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		0.6	0.0	0.0		0.0			
Total Delay (s/veh)		1.8	0.3		8.8	0.2	66.8		0.1			
LOS		A	A		A	A	E		A			
Approach Delay (s/veh)		1.2			8.0			22.6				
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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1132	726	2266	229	103	202
v/c Ratio	0.38	0.40	0.78	0.15	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	0.6	0.0	0.0	0.0
Total Delay (s/veh)	1.8	0.3	8.8	0.2	66.8	0.1
Queue Length 50th (ft)	32	0	395	0	90	0
Queue Length 95th (ft)	m5	m0	599	0	147	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3001	1812	2901	1478	274	1812
Starvation Cap Reductn	1119	0	0	0	0	0
Spillback Cap Reductn	0	0	272	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.40	0.86	0.15	0.38	0.11

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

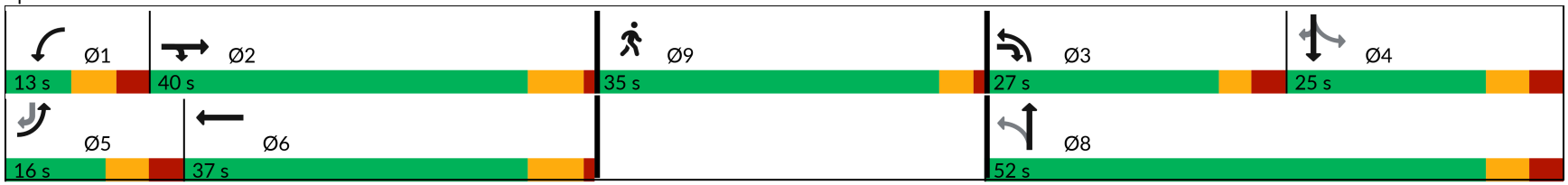
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	152	871	343	117	849	41	431	141	123	101	135	153	
Future Volume (vph)	152	871	343	117	849	41	431	141	123	101	135	153	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.993			0.930				0.850	
Flt Protected	0.950			0.950			0.950				0.979		
Satd. Flow (prot)	1745	3455	1546	1805	3551	0	1787	1767	0	0	1852	1531	
Flt Permitted	0.950			0.950			0.234				0.732		
Satd. Flow (perm)	1745	3455	1546	1805	3551	0	440	1767	0	0	1385	1531	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			366		3			34				130	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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%	1%	0%	0%	1%	0%	2%	
Adj. Flow (vph)	165	947	373	127	923	45	468	153	134	110	147	166	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	165	947	373	127	968	0	468	287	0	0	257	166	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

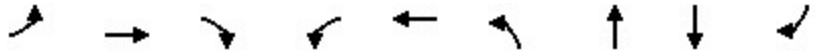
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	16.0		13.0	16.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	16.0	40.0		13.0	37.0		27.0	52.0		25.0	25.0		35.0
Total Split (%)	11.4%	28.6%		9.3%	26.4%		19.3%	37.1%		17.9%	17.9%		25%
Maximum Green (s)	9.0	34.0		6.0	31.0		21.0	45.0		18.0	18.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	11.1	36.5	63.2	8.1	33.4		48.6	47.6			20.3	36.5	
Actuated g/C Ratio	0.10	0.33	0.56	0.07	0.30		0.43	0.43			0.18	0.33	
v/c Ratio	0.95	0.84	0.36	0.98	0.91		0.99	0.37			1.03	0.28	
Control Delay (s/veh)	108.7	44.1	2.3	125.8	51.7		68.6	23.0			110.5	10.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	108.7	44.1	2.3	125.8	51.7		68.6	23.0			110.5	10.7	
LOS	F	D	A	F	D		E	C			F	B	
Approach Delay (s/veh)		40.8			60.3			51.3			71.3		
Approach LOS		D			E			D			E		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 112			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.03			
Intersection Signal Delay (s/veh): 52.0		Intersection LOS: D	
Intersection Capacity Utilization 85.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	165	947	373	127	968	468	287	257	166
v/c Ratio	0.95	0.84	0.36	0.98	0.91	0.99	0.37	1.03	0.28
Control Delay (s/veh)	108.7	44.1	2.3	125.8	51.7	68.6	23.0	110.5	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	108.7	44.1	2.3	125.8	51.7	68.6	23.0	110.5	10.7
Queue Length 50th (ft)	111	300	2	86	320	231	107	173	16
Queue Length 95th (ft)	#333	#636	31	#279	#684	#679	270	#478	88
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	173	1125	1032	130	1062	471	770	250	586
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	0.95	0.84	0.36	0.98	0.91	0.99	0.37	1.03	0.28

Intersection Summary

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

2032 Build Mitigated Saturday Midday Peak Hour

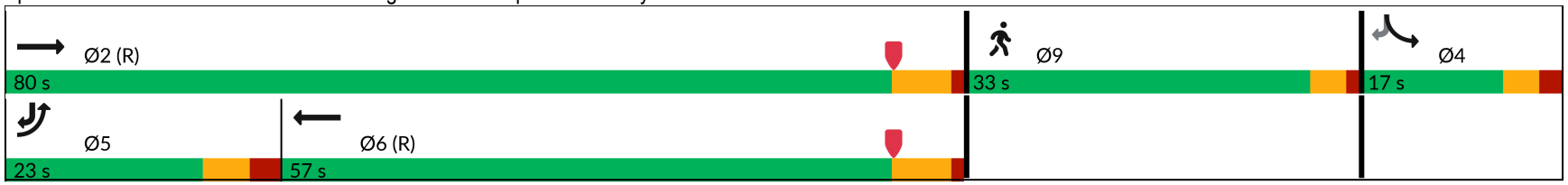
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1408	1009	74	91	120	
Future Volume (vph)	129	1408	1009	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	1530	1097	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1530	1177	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	

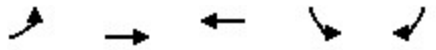
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	4.1	15.2		65.2	6.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.2	4.1	15.2		65.2	6.1	
LOS	E	A	B		E	A	
Approach Delay (s/veh)		9.0	15.2		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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1530	1177	99	130
v/c Ratio	0.61	0.51	0.50	0.54	0.25
Control Delay (s/veh)	63.2	4.1	15.2	65.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.2	4.1	15.2	65.2	6.1
Queue Length 50th (ft)	112	152	171	81	0
Queue Length 95th (ft)	174	235	215	135	43
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

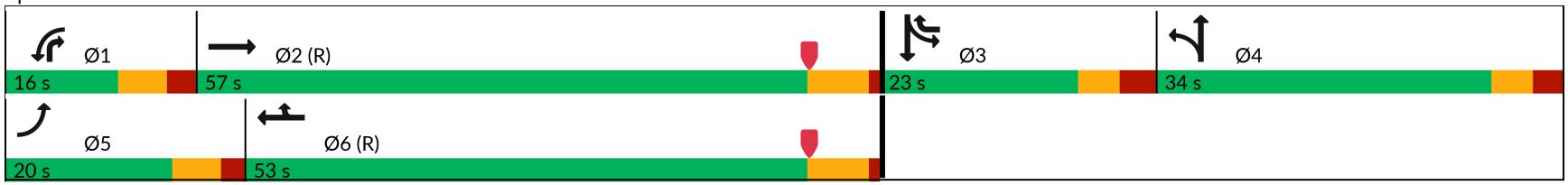
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	1309	71	140	968	352	82	54	145	392	66	54
Future Volume (vph)	110	1309	71	140	968	352	82	54	145	392	66	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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		0.932	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1770	3429	0	1805	4964	1492	0	1783	1561	3351	1667	0
Flt Permitted	0.950			0.950				0.971		0.950		
Satd. Flow (perm)	1770	3429	0	1805	4964	1492	0	1783	1561	3351	1667	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				383			158		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 (%)	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	6%
Adj. Flow (vph)	120	1423	77	152	1052	383	89	59	158	426	72	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	120	1500	0	152	1052	383	0	148	158	426	131	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	

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	

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	57.5		18.9	60.9	83.9		17.1	16.9	18.5	18.5	
Actuated g/C Ratio	0.12	0.44		0.15	0.47	0.65		0.13	0.13	0.14	0.14	
v/c Ratio	0.55	0.99		0.58	0.45	0.35		0.63	0.46	0.89	0.51	
Control Delay (s/veh)	56.9	54.9		57.6	28.1	5.2		65.1	12.4	76.9	48.6	
Queue Delay	0.0	0.0		0.0	0.3	0.4		0.0	0.0	19.4	0.0	
Total Delay (s/veh)	56.9	54.9		57.6	28.4	5.5		65.1	12.5	96.3	48.6	
LOS	E	D		E	C	A		E	B	F	D	
Approach Delay (s/veh)		55.0			25.7			37.9			85.1	
Approach LOS		E			C			D			F	

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: 135			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.99			
Intersection Signal Delay (s/veh): 46.4		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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	120	1500	152	1052	383	148	158	426	131
v/c Ratio	0.55	0.99	0.58	0.45	0.35	0.63	0.46	0.89	0.51
Control Delay (s/veh)	56.9	54.9	57.6	28.1	5.2	65.1	12.4	76.9	48.6
Queue Delay	0.0	0.0	0.0	0.3	0.4	0.0	0.0	19.4	0.0
Total Delay (s/veh)	56.9	54.9	57.6	28.4	5.5	65.1	12.5	96.3	48.6
Queue Length 50th (ft)	97	~703	120	245	0	120	0	184	82
Queue Length 95th (ft)	137	#881	198	306	138	183	65	#276	150
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	238	1519	262	2323	1098	397	340	476	259
Starvation Cap Reductn	0	0	0	561	306	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	2	56	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	0.37	0.47	1.01	0.51

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.

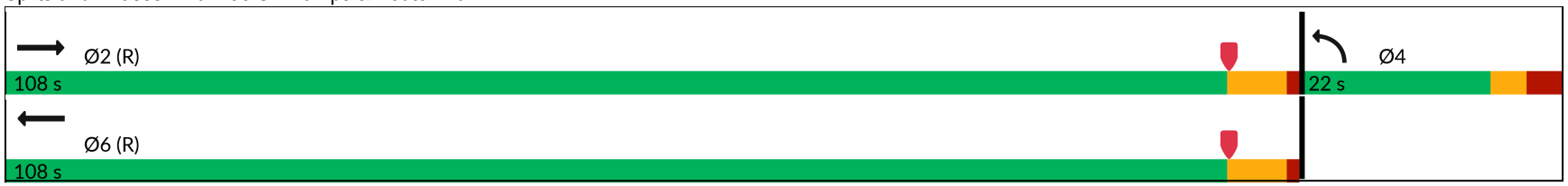
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1316	530	0	1374	164	86	0	156	0	0	0
Future Volume (vph)	0	1316	530	0	1374	164	86	0	156	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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)			275			76			170			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			499			328	
Travel Time (s)		8.6			9.6			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	1430	576	0	1493	178	93	0	170	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1430	576	0	1493	178	93	0	170	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	

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										

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	0.32		0.52	0.12	0.45		0.09			
Control Delay (s/veh)		7.8	0.2		4.0	0.2	61.2		0.1			
Queue Delay		2.4	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		10.2	0.2		4.0	0.2	61.2		0.1			
LOS		B	A		A	A	E		A			
Approach Delay (s/veh)		7.3			3.6			21.7				
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): 6.7		Intersection LOS: A	
Intersection Capacity Utilization 49.4%		ICU Level of Service A	
Analysis Period (min) 15			

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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1430	576	1493	178	93	170
v/c Ratio	0.48	0.32	0.52	0.12	0.45	0.09
Control Delay (s/veh)	7.8	0.2	4.0	0.2	61.2	0.1
Queue Delay	2.4	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.2	0.2	4.0	0.2	61.2	0.1
Queue Length 50th (ft)	340	0	148	0	75	0
Queue Length 95th (ft)	m316	m0	223	0	127	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2986	1812	2887	1507	277	1830
Starvation Cap Reductn	1379	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	0.89	0.32	0.52	0.12	0.34	0.09

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

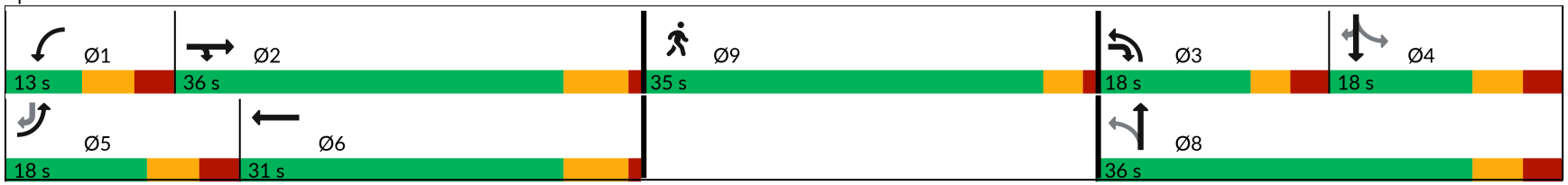
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	226	944	303	109	779	32	342	161	119	53	137	118	
Future Volume (vph)	226	944	303	109	779	32	342	161	119	53	137	118	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.994			0.936				0.850	
Flt Protected	0.950			0.950			0.950				0.986		
Satd. Flow (prot)	1728	3455	1546	1805	3544	0	1805	1768	0	0	1837	1546	
Flt Permitted	0.950			0.950			0.319				0.801		
Satd. Flow (perm)	1728	3455	1546	1805	3544	0	606	1768	0	0	1492	1546	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			326		3			30				128	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	1%	1%	1%	0%	1%	7%	0%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	246	1026	329	118	847	35	372	175	129	58	149	128	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	246	1026	329	118	882	0	372	304	0	0	207	128	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

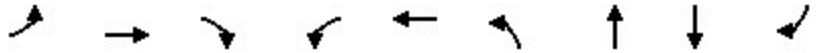
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	26.0		13.0	19.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	18.0	36.0		13.0	31.0		18.0	36.0		18.0	18.0		35.0
Total Split (%)	15.0%	30.0%		10.8%	25.8%		15.0%	30.0%		15.0%	15.0%		29%
Maximum Green (s)	11.0	30.0		6.0	25.0		12.0	29.0		11.0	11.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	13.0	32.0	50.0	8.0	27.0		32.0	31.0			13.0	31.0	
Actuated g/C Ratio	0.15	0.38	0.59	0.09	0.32		0.38	0.36			0.15	0.36	
v/c Ratio	0.93	0.79	0.32	0.70	0.78		0.88	0.46			0.91	0.20	
Control Delay (s/veh)	78.5	28.9	1.9	60.5	32.1		45.1	21.2			77.9	4.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	78.5	28.9	1.9	60.5	32.1		45.1	21.2			77.9	4.5	
LOS	E	C	A	E	C		D	C			E	A	
Approach Delay (s/veh)		30.9			35.4			34.4			49.9		
Approach LOS		C			D			C			D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 85			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.93			
Intersection Signal Delay (s/veh): 34.6		Intersection LOS: C	
Intersection Capacity Utilization 80.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	246	1026	329	118	882	372	304	207	128
v/c Ratio	0.93	0.79	0.32	0.70	0.78	0.88	0.46	0.91	0.20
Control Delay (s/veh)	78.5	28.9	1.9	60.5	32.1	45.1	21.2	77.9	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	78.5	28.9	1.9	60.5	32.1	45.1	21.2	77.9	4.5
Queue Length 50th (ft)	132	250	1	62	222	153	109	110	0
Queue Length 95th (ft)	#271	328	32	#142	294	#270	181	#237	34
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	264	1300	1043	169	1127	425	663	228	645
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	0.93	0.79	0.32	0.70	0.78	0.88	0.46	0.91	0.20

Intersection Summary

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

2045 Build Weekday Morning Peak Hour

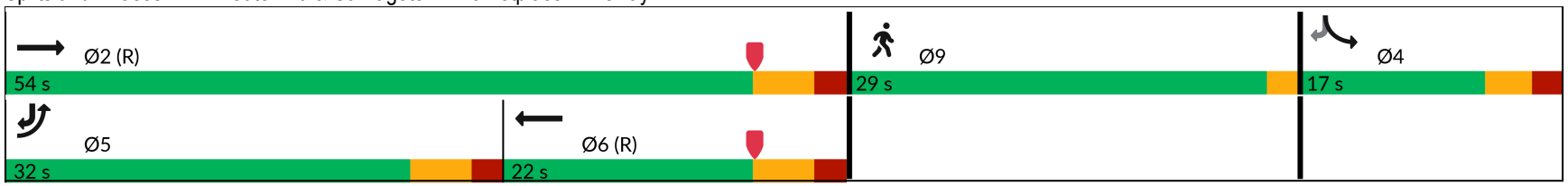
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1554	1040	29	39	38	
Future Volume (vph)	40	1554	1040	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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)			2			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	1689	1130	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1689	1162	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	

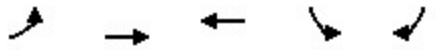
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	10.1	83.6	71.0		9.0	17.6	
Actuated g/C Ratio	0.10	0.84	0.71		0.09	0.18	
v/c Ratio	0.25	0.58	0.47		0.27	0.13	
Control Delay (s/veh)	44.4	8.6	4.5		46.1	9.9	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	44.4	8.6	4.5		46.1	9.9	
LOS	D	A	A		D	A	
Approach Delay (s/veh)		9.4	4.5		28.2		
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: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1689	1162	42	41
v/c Ratio	0.25	0.58	0.47	0.27	0.13
Control Delay (s/veh)	44.4	8.6	4.5	46.1	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	44.4	8.6	4.5	46.1	9.9
Queue Length 50th (ft)	26	130	4	26	0
Queue Length 95th (ft)	58	#684	m443	58	25
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	471	2900	2456	227	582
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	0.09	0.58	0.47	0.19	0.07

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.

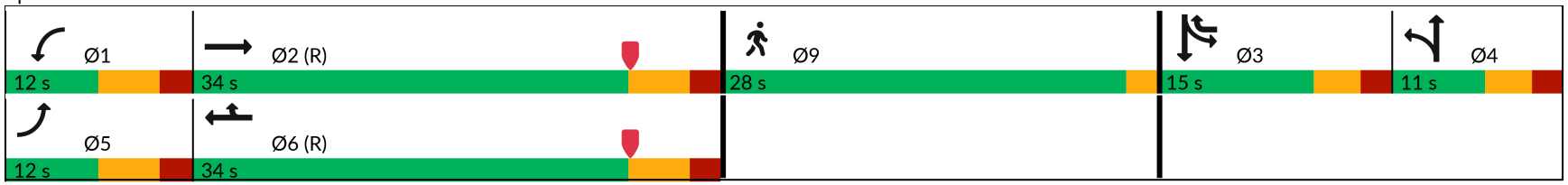
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	79	1580	60	94	968	340	90	25	157	693	49	52	
Future Volume (vph)	79	1580	60	94	968	340	90	25	157	693	49	52	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	240		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		0.870			0.922		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1703	3343	0	1719	3388	1449	1631	1532	0	3351	1604	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1703	3343	0	1719	3388	1449	1631	1532	0	3351	1604	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4				367		171			44		
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)	86	1717	65	102	1052	370	98	27	171	753	53	57	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	86	1782	0	102	1052	370	98	198	0	753	110	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		

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)	12.0	34.0		12.0	34.0		11.0	11.0		15.0	15.0		28.0
Total Split (%)	12.0%	34.0%		12.0%	34.0%		11.0%	11.0%		15.0%	15.0%		28%
Maximum Green (s)	6.0	28.0		6.0	28.0		6.0	6.0		10.0	10.0		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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	8.0	30.0		8.0	32.4	75.4	7.0	7.0		40.0	40.0		
Actuated g/C Ratio	0.08	0.30		0.08	0.32	0.75	0.07	0.07		0.40	0.40		
v/c Ratio	0.63	1.77		0.74	0.96	0.31	0.86	0.74		0.56	0.16		
Control Delay (s/veh)	67.5	377.9		76.8	53.9	1.2	100.8	28.5		25.2	12.7		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	67.5	377.9		76.8	53.9	1.2	100.8	28.5		25.2	12.7		
LOS	E	F		E	D	A	F	C		C	B		
Approach Delay (s/veh)		363.6			42.6			52.5			23.6		
Approach LOS		F			D			D			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.77			
Intersection Signal Delay (s/veh): 171.4		Intersection LOS: F	
Intersection Capacity Utilization 94.9%		ICU Level of Service F	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	86	1782	102	1052	370	98	198	753	110
v/c Ratio	0.63	1.77	0.74	0.96	0.31	0.86	0.74	0.56	0.16
Control Delay (s/veh)	67.5	377.9	76.8	53.9	1.2	100.8	28.5	25.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	67.5	377.9	76.8	53.9	1.2	100.8	28.5	25.2	12.7
Queue Length 50th (ft)	57	~909	65	~381	1	63	17	187	26
Queue Length 95th (ft)	m#114	#1027	#151	#510	22	#159	#117	245	62
Internal Link Dist (ft)		1088		423			469		258
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	136	1005	137	1097	1182	114	266	1340	668
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	0.63	1.77	0.74	0.96	0.31	0.86	0.74	0.56	0.16

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.

m Volume for 95th percentile queue is metered by upstream signal.

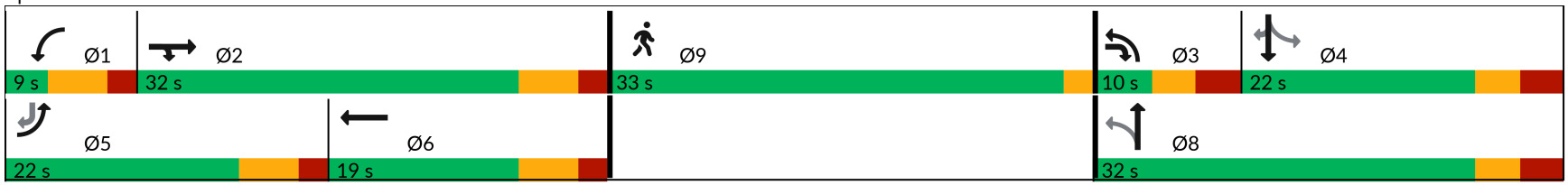
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	114	749	339	122	649	23	349	84	131	61	110	100	
Future Volume (vph)	114	749	339	122	649	23	349	84	131	61	110	100	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.995			0.909				0.850	
Flt Protected	0.950			0.950			0.950				0.983		
Satd. Flow (prot)	1616	3421	1531	1787	3491	0	1752	1720	0	0	1809	1419	
Flt Permitted	0.950			0.950			0.421				0.800		
Satd. Flow (perm)	1616	3421	1531	1787	3491	0	777	1720	0	0	1473	1419	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			368		3			72				113	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	8%	2%	2%	1%	3%	0%	3%	1%	0%	0%	5%	10%	
Adj. Flow (vph)	124	814	368	133	705	25	379	91	142	66	120	109	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	124	814	368	133	730	0	379	233	0	0	186	109	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

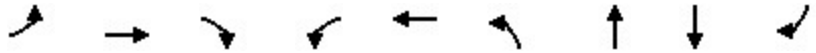
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	12.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	22.0	32.0		9.0	19.0		10.0	32.0		22.0	22.0		33.0
Total Split (%)	20.8%	30.2%		8.5%	17.9%		9.4%	30.2%		20.8%	20.8%		31%
Maximum Green (s)	16.0	26.0		3.0	13.0		4.0	26.0		16.0	16.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	12.9	27.1	36.9	5.2	19.4		26.5	26.5			16.2	33.3	
Actuated g/C Ratio	0.17	0.36	0.49	0.07	0.26		0.35	0.35			0.21	0.44	
v/c Ratio	0.45	0.67	0.39	1.10	0.82		1.08	0.36			0.59	0.16	
Control Delay (s/veh)	36.9	26.3	2.7	149.3	38.5		98.1	16.7			39.0	4.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	36.9	26.3	2.7	149.3	38.5		98.1	16.7			39.0	4.2	
LOS	D	C	A	F	D		F	B			D	A	
Approach Delay (s/veh)		20.7			55.6			67.1			26.1		
Approach LOS		C			E			E			C		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 76			
Natural Cycle: 120			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 40.2		Intersection LOS: D	
Intersection Capacity Utilization 69.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	124	814	368	133	730	379	233	186	109
v/c Ratio	0.45	0.67	0.39	1.10	0.82	1.08	0.36	0.59	0.16
Control Delay (s/veh)	36.9	26.3	2.7	149.3	38.5	98.1	16.7	39.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	36.9	26.3	2.7	149.3	38.5	98.1	16.7	39.0	4.2
Queue Length 50th (ft)	50	148	0	~67	153	~134	48	72	0
Queue Length 95th (ft)	136	#393	30	#252	#483	#537	164	#227	33
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	396	1304	924	121	891	351	700	361	768
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	0.62	0.40	1.10	0.82	1.08	0.33	0.52	0.14

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	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1035	1396	0	1345	217	57	0	165	0	0	0
Future Vol, veh/h	0	1035	1396	0	1345	217	57	0	165	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	2	0	4	4	0	0	2	0	0	0
Mvmt Flow	0	1125	1517	0	1462	236	62	0	179	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	1856	-	563
Stage 1	-	-	-	-	-	-	1125	-	-
Stage 2	-	-	-	-	-	-	731	-	-
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	67	0	470
Stage 1	0	-	0	0	-	0	276	0	-
Stage 2	0	-	0	0	-	0	443	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	67	0	470
Mov Cap-2 Maneuver	-	-	-	-	-	-	67	0	-
Stage 1	-	-	-	-	-	-	276	0	-
Stage 2	-	-	-	-	-	-	443	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	62.68
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	67	470	-	-
HCM Lane V/C Ratio	0.929	0.382	-	-
HCM Ctrl Dly (s/v)	194	17.3	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	4.5	1.8	-	-

2045 Build Weekday Evening Peak Hour

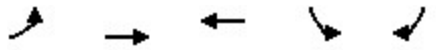
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1451	1674	79	83	136	
Future Volume (vph)	125	1451	1674	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	1577	1820	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1577	1906	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	

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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							3
Act Effct Green (s)	14.6	76.1	57.4		10.3	28.0	
Actuated g/C Ratio	0.15	0.76	0.57		0.10	0.28	
v/c Ratio	0.56	0.59	0.94		0.49	0.27	
Control Delay (s/veh)	50.7	8.4	17.5		52.3	6.6	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	50.7	8.4	17.5		52.3	6.6	
LOS	D	A	B		D	A	
Approach Delay (s/veh)		11.7	17.5		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: 120			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.94			
Intersection Signal Delay (s/veh): 15.3		Intersection LOS: B	
Intersection Capacity Utilization 70.7%		ICU Level of Service C	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1577	1906	90	148
v/c Ratio	0.56	0.59	0.94	0.49	0.27
Control Delay (s/veh)	50.7	8.4	17.5	52.3	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	50.7	8.4	17.5	52.3	6.6
Queue Length 50th (ft)	79	144	222	54	0
Queue Length 95th (ft)	#201	493	m43	#126	51
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	244	2691	2021	184	553
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	0.59	0.94	0.49	0.27

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.

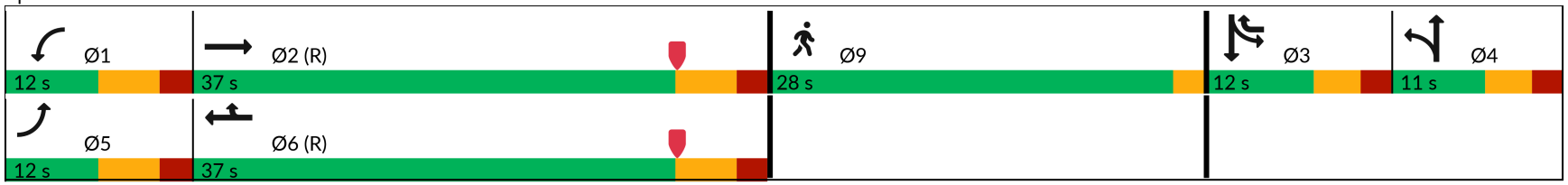
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	166	1288	75	143	1570	672	80	64	89	493	70	53	
Future Volume (vph)	166	1288	75	143	1570	672	80	64	89	493	70	53	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	11	10	11	11	11	11	11	11	
Storage Length (ft)	400		0	115		200	240		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		0.992				0.850		0.913			0.935		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1787	3424	0	1752	3421	1492	1745	1677	0	3351	1717	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1787	3424	0	1752	3421	1492	1745	1677	0	3351	1717	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		6				446		54			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	0.92	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)	180	1400	82	155	1707	730	87	70	97	536	76	58	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	180	1482	0	155	1707	730	87	167	0	536	134	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		

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)	12.0	37.0		12.0	37.0		11.0	11.0		12.0	12.0		28.0
Total Split (%)	12.0%	37.0%		12.0%	37.0%		11.0%	11.0%		12.0%	12.0%		28%
Maximum Green (s)	6.0	31.0		6.0	31.0		6.0	6.0		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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													1
Act Effct Green (s)	8.0	33.0		8.0	33.0	66.8	7.0	7.0		31.6	31.6		
Actuated g/C Ratio	0.08	0.33		0.08	0.33	0.67	0.07	0.07		0.32	0.32		
v/c Ratio	1.27	1.31		1.11	1.51	0.64	0.71	1.00		0.51	0.24		
Control Delay (s/veh)	201.3	174.2		151.9	263.7	7.7	76.8	103.2		33.0	24.9		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	201.3	174.2		151.9	263.7	7.7	76.8	103.2		33.0	24.9		
LOS	F	F		F	F	A	E	F		C	C		
Approach Delay (s/veh)		177.1			184.9			94.2			31.4		
Approach LOS		F			F			F			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.51			
Intersection Signal Delay (s/veh): 158.1		Intersection LOS: F	
Intersection Capacity Utilization 88.8%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	180	1482	155	1707	730	87	167	536	134
v/c Ratio	1.27	1.31	1.11	1.51	0.64	0.71	1.00	0.51	0.24
Control Delay (s/veh)	201.3	174.2	151.9	263.7	7.7	76.8	103.2	33.0	24.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	201.3	174.2	151.9	263.7	7.7	76.8	103.2	33.0	24.9
Queue Length 50th (ft)	~150	~619	~113	~802	51	55	73	130	44
Queue Length 95th (ft)	#291	#767	#240	#940	#290	#133	#211	#358	#147
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	142	1133	140	1128	1144	122	167	1058	563
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	1.27	1.31	1.11	1.51	0.64	0.71	1.00	0.51	0.24

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.

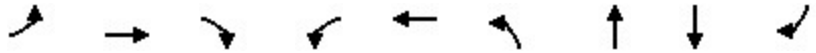
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	167	955	377	128	928	45	473	155	135	111	149	168	
Future Volume (vph)	167	955	377	128	928	45	473	155	135	111	149	168	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.993			0.930				0.850	
Flt Protected	0.950			0.950			0.950				0.979		
Satd. Flow (prot)	1745	3455	1546	1805	3551	0	1787	1767	0	0	1852	1531	
Flt Permitted	0.950			0.950			0.300				0.720		
Satd. Flow (perm)	1745	3455	1546	1805	3551	0	564	1767	0	0	1362	1531	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			407		4			44				178	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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%	1%	0%	0%	1%	0%	2%	
Adj. Flow (vph)	182	1038	410	139	1009	49	514	168	147	121	162	183	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	182	1038	410	139	1058	0	514	315	0	0	283	183	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	5.0	20.0		3.0	13.0		4.0	6.0		6.0	6.0		5.0
Minimum Split (s)	11.0	26.0		9.0	19.0		10.0	12.0		12.0	12.0		33.0
Total Split (s)	11.0	26.0		9.0	24.0		15.0	38.0		23.0	23.0		33.0
Total Split (%)	10.4%	24.5%		8.5%	22.6%		14.2%	35.8%		21.7%	21.7%		31%
Maximum Green (s)	5.0	20.0		3.0	18.0		9.0	32.0		17.0	17.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	7.2	22.5	37.2	5.1	20.5		34.8	34.8			19.4	30.7	
Actuated g/C Ratio	0.09	0.28	0.47	0.06	0.26		0.44	0.44			0.24	0.39	
v/c Ratio	1.16	1.06	0.44	1.21	1.16		1.23	0.40			0.85	0.26	
Control Delay (s/veh)	158.7	77.0	3.0	185.5	112.3		144.5	17.1			55.6	5.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	158.7	77.0	3.0	185.5	112.3		144.5	17.1			55.6	5.3	
LOS	F	E	A	F	F		F	B			E	A	
Approach Delay (s/veh)		67.5			120.8			96.1			35.9		
Approach LOS		E			F			F			D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 106			
Actuated Cycle Length: 79.6			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.23			
Intersection Signal Delay (s/veh): 85.1		Intersection LOS: F	
Intersection Capacity Utilization 89.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	182	1038	410	139	1058	514	315	283	183
v/c Ratio	1.16	1.06	0.44	1.21	1.16	1.23	0.40	0.85	0.26
Control Delay (s/veh)	158.7	77.0	3.0	185.5	112.3	144.5	17.1	55.6	5.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	158.7	77.0	3.0	185.5	112.3	144.5	17.1	55.6	5.3
Queue Length 50th (ft)	~94	244	1	~74	~288	~188	73	119	1
Queue Length 95th (ft)	#315	#636	32	#261	#675	#634	237	#394	54
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	157	976	939	115	915	418	796	332	699
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	1.16	1.06	0.44	1.21	1.16	1.23	0.40	0.85	0.26

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	54.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1140	731	0	2281	232	104	0	205	0	0	0
Future Vol, veh/h	0	1140	731	0	2281	232	104	0	205	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	2	1	0	1	0	0	0
Mvmt Flow	0	1239	795	0	2479	252	113	0	223	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	2479	-	620
Stage 1	-	-	-	-	-	-	1239	-	-
Stage 2	-	-	-	-	-	-	1240	-	-
Critical Hdwy	-	-	-	-	-	-	6.82	-	6.92
Critical Hdwy Stg 1	-	-	-	-	-	-	5.82	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.82	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.51	-	3.31
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 25	0	434
Stage 1	0	-	0	0	-	0	238	0	-
Stage 2	0	-	0	0	-	0	238	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 25	0	434
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 25	0	-
Stage 1	-	-	-	-	-	-	238	0	-
Stage 2	-	-	-	-	-	-	238	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	$ 658.83
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	25	434	-	-
HCM Lane V/C Ratio	4.548	0.514	-	-
HCM Ctrl Dly (s/v)	$ 1914.6	21.8	-	-
HCM Lane LOS	F	C	-	-
HCM 95th %tile Q(veh)	14	2.9	-	-

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

2045 Build Saturday Midday Peak Hour

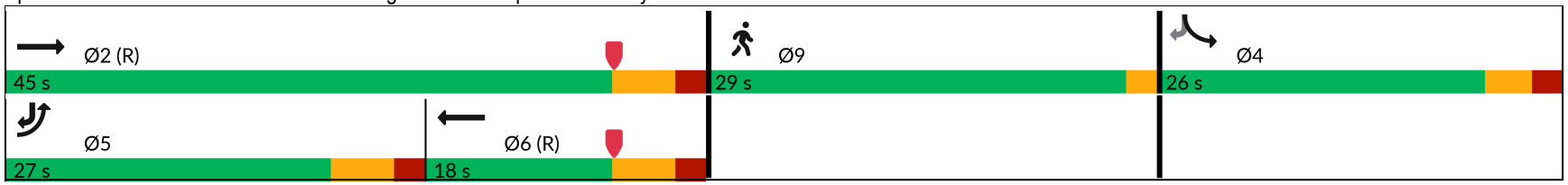
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1542	1105	74	91	120	
Future Volume (vph)	129	1542	1105	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.991			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3542	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3542	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6			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	1676	1201	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1676	1281	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	

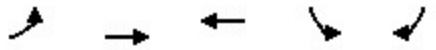
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Pedestrian Calls (#/hr)							0
Act Effct Green (s)	15.8	83.2	62.6		11.9	28.4	
Actuated g/C Ratio	0.16	0.83	0.63		0.12	0.28	
v/c Ratio	0.54	0.56	0.58		0.47	0.24	
Control Delay (s/veh)	45.9	4.6	11.8		47.6	4.8	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	45.9	4.6	11.8		47.6	4.8	
LOS	D	A	B		D	A	
Approach Delay (s/veh)		7.8	11.8		23.3		
Approach LOS		A	B		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: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.58			
Intersection Signal Delay (s/veh): 10.4		Intersection LOS: B	
Intersection Capacity Utilization 55.1%		ICU Level of Service B	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1676	1281	99	130
v/c Ratio	0.54	0.56	0.58	0.47	0.24
Control Delay (s/veh)	45.9	4.6	11.8	47.6	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	45.9	4.6	11.8	47.6	4.8
Queue Length 50th (ft)	83	161	39	60	0
Queue Length 95th (ft)	136	261	m229	106	35
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	376	2975	2221	393	652
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	0.37	0.56	0.58	0.25	0.20

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	116	1441	73	146	1067	381	8	58	153	425	71	57	
Future Volume (vph)	116	1441	73	146	1067	381	8	58	153	425	71	57	
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	240		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		0.993				0.850		0.891			0.933		
Flt Protected	0.950			0.950			0.950			0.950			
Satd. Flow (prot)	1770	3433	0	1805	3455	1492	1745	1636	0	3351	1669	0	
Flt Permitted	0.950			0.950			0.950			0.950			
Satd. Flow (perm)	1770	3433	0	1805	3455	1492	1745	1636	0	3351	1669	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		4				297		116			34		
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)	126	1566	79	159	1160	414	9	63	166	462	77	62	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	126	1645	0	159	1160	414	9	229	0	462	139	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		

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	12.9	28.5		14.6	30.1	55.7	13.2	13.2		23.4	23.4		
Actuated g/C Ratio	0.13	0.29		0.15	0.30	0.56	0.13	0.13		0.23	0.23		
v/c Ratio	0.55	1.68		0.61	1.11	0.43	0.04	0.72		0.59	0.33		
Control Delay (s/veh)	57.5	334.6		51.0	100.0	5.4	35.3	33.2		38.6	27.2		
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0		
Total Delay (s/veh)	57.5	334.6		51.0	100.0	5.4	35.3	33.2		38.6	27.2		
LOS	E	F		D	F	A	D	C		D	C		
Approach Delay (s/veh)		314.9			72.9			33.3			36.0		
Approach LOS		F			E			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: 150			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.68			
Intersection Signal Delay (s/veh): 164.3		Intersection LOS: F	
Intersection Capacity Utilization 88.2%		ICU Level of Service E	
Analysis Period (min) 15			

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

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	1645	159	1160	414	9	229	462	139
v/c Ratio	0.55	1.68	0.61	1.11	0.43	0.04	0.72	0.59	0.33
Control Delay (s/veh)	57.5	334.6	51.0	100.0	5.4	35.3	33.2	38.6	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.5	334.6	51.0	100.0	5.4	35.3	33.2	38.6	27.2
Queue Length 50th (ft)	83	~830	94	~450	30	5	68	128	52
Queue Length 95th (ft)	#130	#1136	#196	#787	83	19	143	#244	123
Internal Link Dist (ft)		1088		423			469		274
Turn Bay Length (ft)	400		115		200	240		300	
Base Capacity (vph)	236	980	265	1041	962	314	389	782	416
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	0.53	1.68	0.60	1.11	0.43	0.03	0.59	0.59	0.33

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.

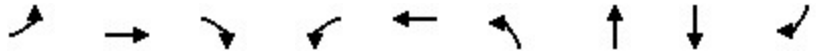
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	248	1035	333	120	850	35	375	177	131	59	150	129	
Future Volume (vph)	248	1035	333	120	850	35	375	177	131	59	150	129	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.994			0.936				0.850	
Flt Protected	0.950			0.950			0.950				0.986		
Satd. Flow (prot)	1728	3455	1546	1805	3544	0	1805	1768	0	0	1837	1546	
Flt Permitted	0.950			0.950			0.397				0.792		
Satd. Flow (perm)	1728	3455	1546	1805	3544	0	754	1768	0	0	1475	1546	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			362		4			42				148	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	1%	1%	1%	0%	1%	7%	0%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	270	1125	362	130	924	38	408	192	142	64	163	140	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	270	1125	362	130	962	0	408	334	0	0	227	140	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	1.0	8.0		1.0	8.0		1.0	1.0		1.0	1.0		5.0
Minimum Split (s)	7.0	14.0		7.0	14.0		7.0	7.0		7.0	7.0		33.0
Total Split (s)	10.0	18.0		8.0	16.0		7.0	22.0		15.0	15.0		33.0
Total Split (%)	12.3%	22.2%		9.9%	19.8%		8.6%	27.2%		18.5%	18.5%		41%
Maximum Green (s)	4.0	12.0		2.0	10.0		1.0	16.0		9.0	9.0		31.0
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		3.0	3.0		3.0	3.0		0.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	6.0	14.0	21.0	4.0	12.0		18.0	18.0			11.0	21.0	
Actuated g/C Ratio	0.13	0.29	0.44	0.08	0.25		0.38	0.38			0.23	0.44	
v/c Ratio	1.25	1.12	0.41	0.87	1.08		1.17	0.48			0.67	0.18	
Control Delay (s/veh)	171.2	87.3	2.9	74.6	76.9		124.7	12.8			29.7	2.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	171.2	87.3	2.9	74.6	76.9		124.7	12.8			29.7	2.5	
LOS	F	F	A	E	E		F	B			C	A	
Approach Delay (s/veh)		82.8			76.6			74.4			19.3		
Approach LOS		F			E			E			B		

Intersection Summary			
Area Type:	Other		
Cycle Length: 81			
Actuated Cycle Length: 48			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.25			
Intersection Signal Delay (s/veh): 73.6		Intersection LOS: E	
Intersection Capacity Utilization 83.6%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	270	1125	362	130	962	408	334	227	140
v/c Ratio	1.25	1.12	0.41	0.87	1.08	1.17	0.48	0.67	0.18
Control Delay (s/veh)	171.2	87.3	2.9	74.6	76.9	124.7	12.8	29.7	2.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	171.2	87.3	2.9	74.6	76.9	124.7	12.8	29.7	2.5
Queue Length 50th (ft)	~99	~200	0	37	~167	~109	58	58	0
Queue Length 95th (ft)	#212	#302	35	#115	#268	#276	115	#140	21
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	216	1007	880	150	889	348	689	338	759
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	1.25	1.12	0.41	0.87	1.08	1.17	0.48	0.67	0.18

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	43.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰		↱			
Traffic Vol, veh/h	0	1442	578	0	1500	181	94	0	172	0	0	0
Future Vol, veh/h	0	1442	578	0	1500	181	94	0	172	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	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	0	2	0	0	0	0	0
Mvmt Flow	0	1567	628	0	1630	197	102	0	187	0	0	0

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	-	0	-	-	-	0	2383	-	784
Stage 1	-	-	-	-	-	-	1567	-	-
Stage 2	-	-	-	-	-	-	815	-	-
Critical Hdwy	-	-	-	-	-	-	6.84	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	-	-
Follow-up Hdwy	-	-	-	-	-	-	3.52	-	3.3
Pot Cap-1 Maneuver	0	-	0	0	-	0	~ 29	0	341
Stage 1	0	-	0	0	-	0	157	0	-
Stage 2	0	-	0	0	-	0	395	0	-
Platoon blocked, %		-			-				
Mov Cap-1 Maneuver	-	-	-	-	-	-	~ 29	0	341
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 29	0	-
Stage 1	-	-	-	-	-	-	157	0	-
Stage 2	-	-	-	-	-	-	395	0	-

Approach	EB	WB	NB
HCM Ctrl Dly, s/v	0	0	$ 529.08
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBT
Capacity (veh/h)	29	341	-	-
HCM Lane V/C Ratio	3.58	0.549	-	-
HCM Ctrl Dly (s/v)	$ 1446.5	27.7	-	-
HCM Lane LOS	F	D	-	-
HCM 95th %tile Q(veh)	12.3	3.1	-	-

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

2045 Build Mitigated Weekday Morning Peak Hour

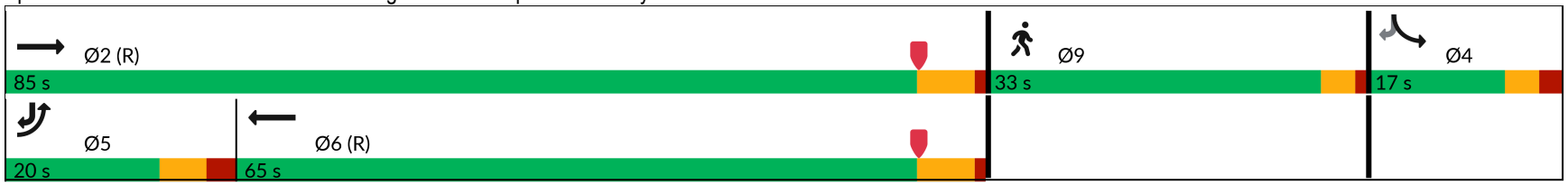
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	40	1554	1040	29	39	38	
Future Volume (vph)	40	1554	1040	29	39	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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	1689	1130	32	42	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	43	1689	1162	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	

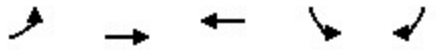
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	0.58	0.45		0.33	0.14	
Control Delay (s/veh)	63.9	8.0	15.9		65.8	13.3	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.9	8.0	15.9		65.8	13.3	
LOS	E	A	B		E	B	
Approach Delay (s/veh)		9.3	15.9		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: 0.58			
Intersection Signal Delay (s/veh): 12.8		Intersection LOS: B	
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	43	1689	1162	42	41
v/c Ratio	0.32	0.58	0.45	0.33	0.14
Control Delay (s/veh)	63.9	8.0	15.9	65.8	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.9	8.0	15.9	65.8	13.3
Queue Length 50th (ft)	36	140	262	36	0
Queue Length 95th (ft)	75	680	150	74	32
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	0.58	0.45	0.25	0.12

Intersection Summary

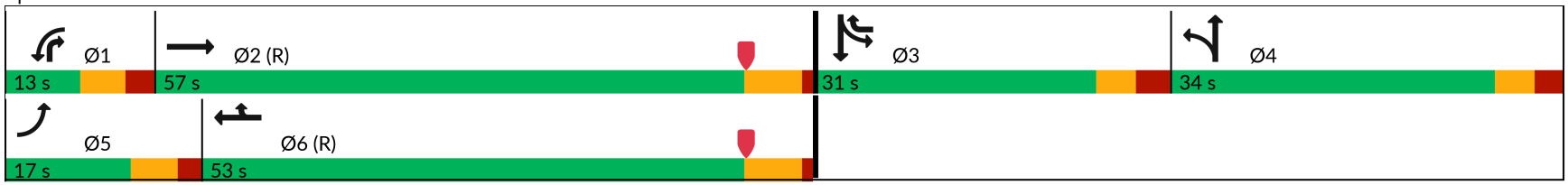
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	1580	60	94	968	340	90	25	157	693	49	52
Future Volume (vph)	79	1580	60	94	968	340	90	25	157	693	49	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (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		0.995				0.850			0.850		0.922	
Flt Protected	0.950			0.950				0.962		0.950		
Satd. Flow (prot)	1703	3343	0	1719	4868	1449	0	1675	1487	3351	1604	0
Flt Permitted	0.950			0.950				0.962		0.950		
Satd. Flow (perm)	1703	3343	0	1719	4868	1449	0	1675	1487	3351	1604	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				370			171		36	
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)	86	1717	65	102	1052	370	98	27	171	753	53	57
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	1782	0	102	1052	370	0	125	171	753	110	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	

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	

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)	14.1	57.9		16.2	60.5	91.5		16.4	14.2	26.5	26.5	
Actuated g/C Ratio	0.10	0.43		0.12	0.45	0.68		0.12	0.11	0.20	0.20	
v/c Ratio	0.49	1.24		0.50	0.48	0.34		0.62	0.55	1.15	0.32	
Control Delay (s/veh)	71.3	146.9		61.4	32.2	3.0		68.7	15.2	130.7	33.9	
Queue Delay	0.0	0.0		0.0	0.4	0.4		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.3	146.9		61.4	32.6	3.3		68.7	15.2	130.7	33.9	
LOS	E	F		E	C	A		E	B	F	C	
Approach Delay (s/veh)		143.5			27.4			37.8			118.3	
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: 1.24			
Intersection Signal Delay (s/veh): 93.0		Intersection LOS: F	
Intersection Capacity Utilization 88.1%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	86	1782	102	1052	370	125	171	753	110
v/c Ratio	0.49	1.24	0.50	0.48	0.34	0.62	0.55	1.15	0.32
Control Delay (s/veh)	71.3	146.9	61.4	32.2	3.0	68.7	15.2	130.7	33.9
Queue Delay	0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.3	146.9	61.4	32.6	3.3	68.7	15.2	130.7	33.9
Queue Length 50th (ft)	72	~1046	85	275	0	106	0	~397	55
Queue Length 95th (ft)	m137	#1205	148	332	81	166	72	#523	113
Internal Link Dist (ft)		1088		423		469			258
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	188	1436	205	2181	1101	359	309	657	343
Starvation Cap Reductn	0	0	0	550	318	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	0.46	1.24	0.50	0.65	0.47	0.35	0.55	1.15	0.32

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.

m Volume for 95th percentile queue is metered by upstream signal.

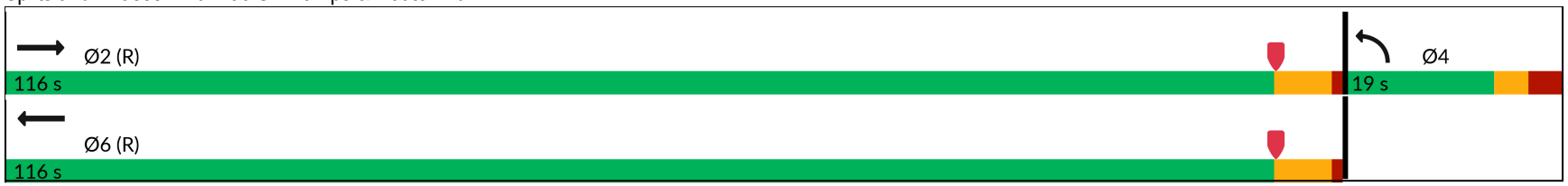
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1035	1396	0	1345	217	57	0	165	0	0	0
Future Volume (vph)	0	1035	1396	0	1345	217	57	0	165	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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			179			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			992			328	
Travel Time (s)		8.6			9.6			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	1125	1517	0	1462	236	62	0	179	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1125	1517	0	1462	236	62	0	179	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	

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										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		118.8	135.0		118.8	135.0	11.5		135.0			
Actuated g/C Ratio		0.88	1.00		0.88	1.00	0.09		1.00			
v/c Ratio		0.36	0.85		0.50	0.16	0.36		0.10			
Control Delay (s/veh)		4.4	14.4		3.0	0.2	63.3		0.1			
Queue Delay		1.3	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		5.7	14.4		3.0	0.2	63.3		0.1			
LOS		A	B		A	A	E		A			
Approach Delay (s/veh)		10.7			2.7			16.4				
Approach LOS		B			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: 0.85			
Intersection Signal Delay (s/veh): 8.0		Intersection LOS: A	
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1125	1517	1462	236	62	179
v/c Ratio	0.36	0.85	0.50	0.16	0.36	0.10
Control Delay (s/veh)	4.4	14.4	3.0	0.2	63.3	0.1
Queue Delay	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	5.7	14.4	3.0	0.2	63.3	0.1
Queue Length 50th (ft)	186	860	127	0	52	0
Queue Length 95th (ft)	m136	m659	189	0	98	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	3083	1794	2951	1449	227	1794
Starvation Cap Reductn	1661	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	0.79	0.85	0.50	0.16	0.27	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

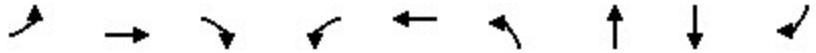
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	114	749	339	122	649	23	349	84	131	61	110	100	
Future Volume (vph)	114	749	339	122	649	23	349	84	131	61	110	100	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.995			0.909				0.850	
Flt Protected	0.950			0.950			0.950				0.983		
Satd. Flow (prot)	1616	3421	1531	1787	3491	0	1752	1720	0	0	1809	1419	
Flt Permitted	0.950			0.950			0.353				0.788		
Satd. Flow (perm)	1616	3421	1531	1787	3491	0	651	1720	0	0	1450	1419	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			368		3			70				129	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	8%	2%	2%	1%	3%	0%	3%	1%	0%	0%	5%	10%	
Adj. Flow (vph)	124	814	368	133	705	25	379	91	142	66	120	109	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	124	814	368	133	730	0	379	233	0	0	186	109	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
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	20	6		20	6			6	20	
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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	16.0		13.0	16.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	13.0	27.0		13.0	27.0		18.0	35.0		17.0	17.0		35.0
Total Split (%)	11.8%	24.5%		11.8%	24.5%		16.4%	31.8%		15.5%	15.5%		32%
Maximum Green (s)	6.0	21.0		6.0	21.0		12.0	28.0		10.0	10.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	8.2	23.5	41.4	8.2	23.5		31.7	30.7			12.3	25.6	
Actuated g/C Ratio	0.10	0.29	0.50	0.10	0.29		0.39	0.37			0.15	0.31	
v/c Ratio	0.77	0.83	0.39	0.75	0.73		0.85	0.34			0.86	0.20	
Control Delay (s/veh)	69.3	37.7	2.6	64.5	33.3		42.9	16.5			70.6	5.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	69.3	37.7	2.6	64.5	33.3		42.9	16.5			70.6	5.2	
LOS	E	D	A	E	C		D	B			E	A	
Approach Delay (s/veh)		30.8			38.1			32.9			46.4		
Approach LOS		C			D			C			D		

Intersection Summary			
Area Type:	Other		
Cycle Length: 110			
Actuated Cycle Length: 82			
Natural Cycle: 130			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 34.8		Intersection LOS: C	
Intersection Capacity Utilization 71.8%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110



Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	124	814	368	133	730	379	233	186	109
v/c Ratio	0.77	0.83	0.39	0.75	0.73	0.85	0.34	0.86	0.20
Control Delay (s/veh)	69.3	37.7	2.6	64.5	33.3	42.9	16.5	70.6	5.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	69.3	37.7	2.6	64.5	33.3	42.9	16.5	70.6	5.2
Queue Length 50th (ft)	57	179	0	61	154	128	49	84	0
Queue Length 95th (ft)	#217	#477	31	#225	#404	#430	169	#300	33
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	161	982	954	178	1004	444	688	217	532
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	0.77	0.83	0.39	0.75	0.73	0.85	0.34	0.86	0.20

Intersection Summary

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

2045 Build Mitigated Weekday Evening Peak Hour

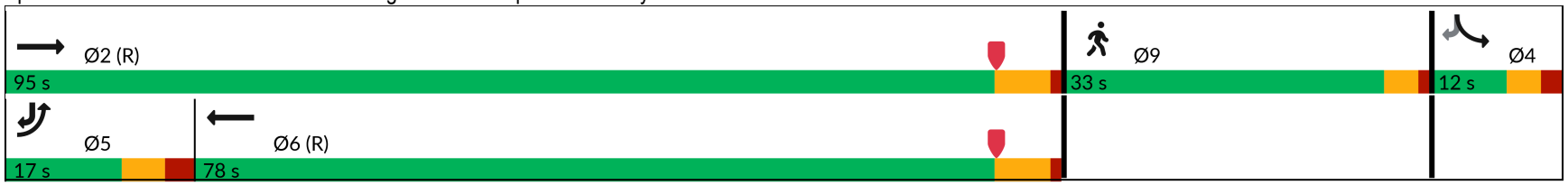
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	125	1451	1674	79	83	136	
Future Volume (vph)	125	1451	1674	79	83	136	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper 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)			5			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	1577	1820	86	90	148	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	136	1577	1906	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	

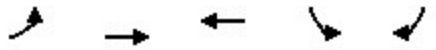
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	0.55	0.84		0.56	0.30	
Control Delay (s/veh)	71.2	7.3	24.4		74.0	8.5	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	71.2	7.3	24.4		74.0	8.5	
LOS	E	A	C		E	A	
Approach Delay (s/veh)		12.4	24.4		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: 130			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay (s/veh): 19.6		Intersection LOS: B	
Intersection Capacity Utilization 71.1%		ICU Level of Service C	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	136	1577	1906	90	148
v/c Ratio	0.64	0.55	0.84	0.56	0.30
Control Delay (s/veh)	71.2	7.3	24.4	74.0	8.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.2	7.3	24.4	74.0	8.5
Queue Length 50th (ft)	116	177	373	78	0
Queue Length 95th (ft)	#256	524	#570	#191	61
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	0.55	0.84	0.56	0.30

Intersection Summary

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

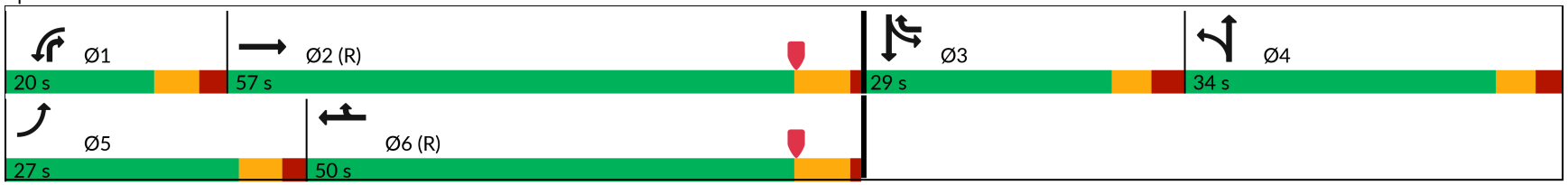
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	1288	70	143	1570	672	80	64	89	493	70	53
Future Volume (vph)	166	1288	70	143	1570	672	80	64	89	493	70	53
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane 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		0.935	
Flt Protected	0.950			0.950				0.973		0.950		
Satd. Flow (prot)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1717	0
Flt Permitted	0.950			0.950				0.973		0.950		
Satd. Flow (perm)	1787	3424	0	1752	4916	1492	0	1787	1561	3351	1717	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				556			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)	180	1400	76	155	1707	730	87	70	97	536	76	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	180	1476	0	155	1707	730	0	157	97	536	134	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	

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	

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)	21.1	59.9		19.1	58.3	87.3		18.6	17.1	24.5	24.5	
Actuated g/C Ratio	0.15	0.43		0.14	0.42	0.62		0.13	0.12	0.18	0.18	
v/c Ratio	0.67	1.01		0.65	0.83	0.64		0.66	0.29	0.91	0.42	
Control Delay (s/veh)	71.3	58.9		67.5	38.5	4.4		70.7	2.1	77.9	46.5	
Queue Delay	0.0	0.0		0.0	12.7	1.0		0.0	0.0	0.0	0.0	
Total Delay (s/veh)	71.3	58.9		67.5	51.3	5.3		70.7	2.1	77.9	46.5	
LOS	E	E		E	D	A		E	A	E	D	
Approach Delay (s/veh)		60.2			39.3			44.5			71.6	
Approach LOS		E			D			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: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.01			
Intersection Signal Delay (s/veh): 50.4		Intersection LOS: D	
Intersection Capacity Utilization 82.6%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	180	1476	155	1707	730	157	97	536	134
v/c Ratio	0.67	1.01	0.65	0.83	0.64	0.66	0.29	0.91	0.42
Control Delay (s/veh)	71.3	58.9	67.5	38.5	4.4	70.7	2.1	77.9	46.5
Queue Delay	0.0	0.0	0.0	12.7	1.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	71.3	58.9	67.5	51.3	5.3	70.7	2.1	77.9	46.5
Queue Length 50th (ft)	130	~758	141	441	33	138	0	250	90
Queue Length 95th (ft)	233	#948	m171	#718	m120	206	0	#353	158
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	306	1466	241	2047	1139	370	340	586	320
Starvation Cap Reductn	0	0	0	354	186	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	0.59	1.01	0.64	1.01	0.77	0.42	0.29	0.91	0.42

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.

m Volume for 95th percentile queue is metered by upstream signal.

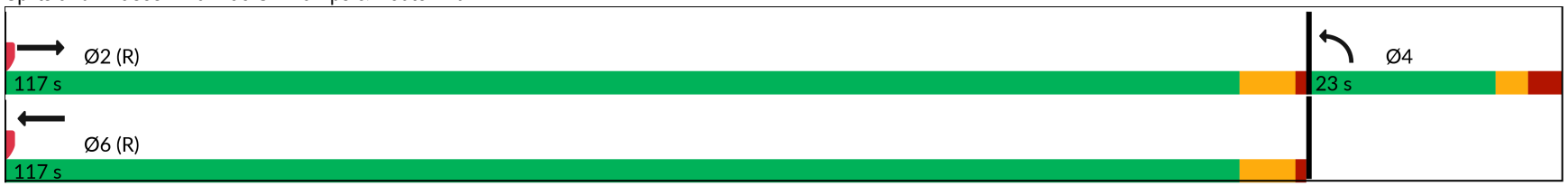
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1140	731	0	2281	232	104	0	205	0	0	0
Future Volume (vph)	0	1140	731	0	2281	232	104	0	205	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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)			408			70			223			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			499			328	
Travel Time (s)		8.6			9.6			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	1239	795	0	2479	252	113	0	223	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1239	795	0	2479	252	113	0	223	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	

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										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		117.1	140.0		117.1	140.0	14.9		140.0			
Actuated g/C Ratio		0.84	1.00		0.84	1.00	0.11		1.00			
v/c Ratio		0.41	0.44		0.86	0.17	0.53		0.12			
Control Delay (s/veh)		0.9	0.3		11.5	0.3	67.4		0.1			
Queue Delay		0.6	0.0		6.1	0.0	0.0		0.0			
Total Delay (s/veh)		1.6	0.3		17.6	0.3	67.4		0.1			
LOS		A	A		B	A	E		A			
Approach Delay (s/veh)		1.1			16.0			22.8				
Approach LOS		A			B			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: 65			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.86			
Intersection Signal Delay (s/veh): 10.5		Intersection LOS: B	
Intersection Capacity Utilization 75.5%		ICU Level of Service D	
Analysis Period (min) 15			

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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1239	795	2479	252	113	223
v/c Ratio	0.41	0.44	0.86	0.17	0.53	0.12
Control Delay (s/veh)	0.9	0.3	11.5	0.3	67.4	0.1
Queue Delay	0.6	0.0	6.1	0.0	0.0	0.0
Total Delay (s/veh)	1.6	0.3	17.6	0.3	67.4	0.1
Queue Length 50th (ft)	4	0	550	0	99	0
Queue Length 95th (ft)	m5	m0	814	0	160	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2988	1812	2888	1478	274	1812
Starvation Cap Reductn	1252	0	0	0	0	0
Spillback Cap Reductn	0	0	376	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.44	0.99	0.17	0.41	0.12

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

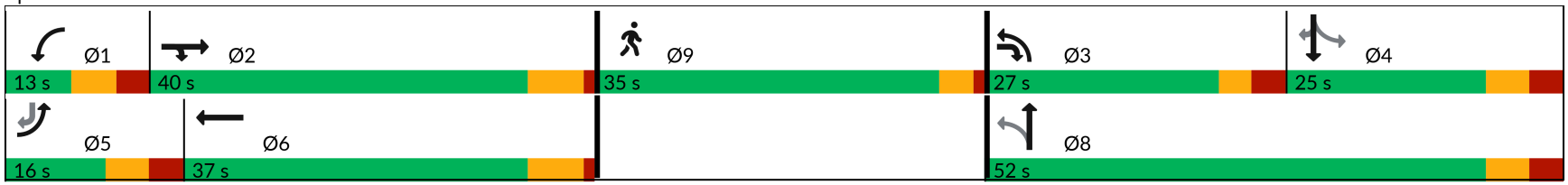
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	167	955	377	128	928	45	473	155	135	111	149	168	
Future Volume (vph)	167	955	377	128	928	45	473	155	135	111	149	168	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.993			0.930				0.850	
Flt Protected	0.950			0.950			0.950				0.979		
Satd. Flow (prot)	1745	3455	1546	1805	3551	0	1787	1767	0	0	1852	1531	
Flt Permitted	0.950			0.950			0.183				0.720		
Satd. Flow (perm)	1745	3455	1546	1805	3551	0	344	1767	0	0	1362	1531	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			367		3			34				130	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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%	1%	0%	0%	1%	0%	2%	
Adj. Flow (vph)	182	1038	410	139	1009	49	514	168	147	121	162	183	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	182	1038	410	139	1058	0	514	315	0	0	283	183	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

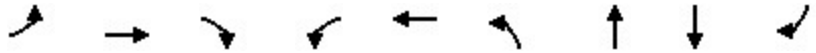
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	16.0		13.0	16.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	16.0	40.0		13.0	37.0		27.0	52.0		25.0	25.0		35.0
Total Split (%)	11.4%	28.6%		9.3%	26.4%		19.3%	37.1%		17.9%	17.9%		25%
Maximum Green (s)	9.0	34.0		6.0	31.0		21.0	45.0		18.0	18.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													3
Act Effct Green (s)	11.1	36.5	63.2	8.1	33.4		48.6	47.6			20.3	36.5	
Actuated g/C Ratio	0.10	0.33	0.56	0.07	0.30		0.43	0.43			0.18	0.33	
v/c Ratio	1.05	0.92	0.40	1.07	1.00		1.14	0.41			1.15	0.31	
Control Delay (s/veh)	132.0	51.0	3.0	148.1	66.3		117.1	23.9			145.8	12.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	132.0	51.0	3.0	148.1	66.3		117.1	23.9			145.8	12.3	
LOS	F	D	A	F	E		F	C			F	B	
Approach Delay (s/veh)		48.0			75.8			81.7			93.4		
Approach LOS		D			E			F			F		

Intersection Summary			
Area Type:	Other		
Cycle Length: 140			
Actuated Cycle Length: 112			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.15			
Intersection Signal Delay (s/veh): 68.0		Intersection LOS: E	
Intersection Capacity Utilization 92.4%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	182	1038	410	139	1058	514	315	283	183
v/c Ratio	1.05	0.92	0.40	1.07	1.00	1.14	0.41	1.15	0.31
Control Delay (s/veh)	132.0	51.0	3.0	148.1	66.3	117.1	23.9	145.8	12.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	132.0	51.0	3.0	148.1	66.3	117.1	23.9	145.8	12.3
Queue Length 50th (ft)	124	342	11	~96	362	~331	122	~215	24
Queue Length 95th (ft)	#373	#727	43	#305	#776	#809	301	#536	106
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	173	1125	1032	130	1062	449	770	246	586
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	1.05	0.92	0.40	1.07	1.00	1.14	0.41	1.15	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.

2045 Build Mitigated Saturday Midday Peak Hour

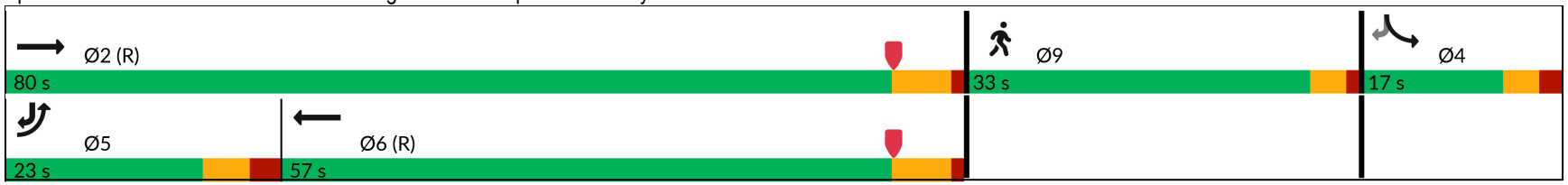
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations							
Traffic Volume (vph)	129	1542	1105	74	91	120	
Future Volume (vph)	129	1542	1105	74	91	120	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	12	12	12	12	12	
Storage Length (ft)	300			0	0	0	
Storage Lanes	1			0	1	1	
Taper Length (ft)	25				25		
Lane Util. Factor	1.00	0.95	0.95	0.95	1.00	1.00	
Frt			0.991			0.850	
Flt Protected	0.950				0.950		
Satd. Flow (prot)	1636	3574	3542	0	1787	1599	
Flt Permitted	0.950				0.950		
Satd. Flow (perm)	1636	3574	3542	0	1787	1599	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			6			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	1676	1201	80	99	130	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	140	1676	1281	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	

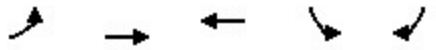
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Leading Detector (ft)	20	100	100		20	20	
Trailing Detector (ft)	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0		0	0	
Detector 1 Size(ft)	20	6	6		20	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0	0.0	
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

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	0.56	0.55		0.54	0.25	
Control Delay (s/veh)	63.2	4.5	15.8		65.2	6.1	
Queue Delay	0.0	0.0	0.0		0.0	0.0	
Total Delay (s/veh)	63.2	4.5	15.8		65.2	6.1	
LOS	E	A	B		E	A	
Approach Delay (s/veh)		9.0	15.8		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): 13.2		Intersection LOS: B	
Intersection Capacity Utilization 55.5%		ICU Level of Service B	
Analysis Period (min) 15			

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





Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	140	1676	1281	99	130
v/c Ratio	0.61	0.56	0.55	0.54	0.25
Control Delay (s/veh)	63.2	4.5	15.8	65.2	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	63.2	4.5	15.8	65.2	6.1
Queue Length 50th (ft)	112	178	162	81	0
Queue Length 95th (ft)	174	276	275	135	43
Internal Link Dist (ft)		951	1088	381	
Turn Bay Length (ft)	300				
Base Capacity (vph)	253	2983	2338	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	0.56	0.55	0.50	0.24

Intersection Summary

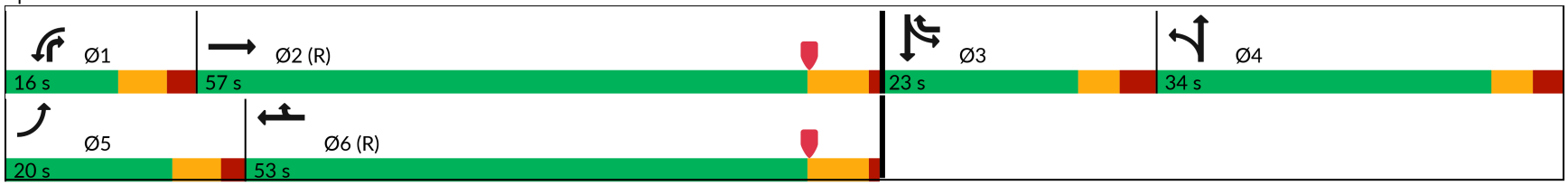
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	1441	73	146	1067	381	86	58	153	425	71	57
Future Volume (vph)	116	1441	73	146	1067	381	86	58	153	425	71	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
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		0.933	
Flt Protected	0.950			0.950				0.971		0.950		
Satd. Flow (prot)	1770	3433	0	1805	4964	1492	0	1783	1561	3351	1669	0
Flt Permitted	0.950			0.950				0.971		0.950		
Satd. Flow (perm)	1770	3433	0	1805	4964	1492	0	1783	1561	3351	1669	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5				414			166		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 (%)	2%	1%	0%	0%	1%	1%	0%	0%	0%	1%	0%	6%
Adj. Flow (vph)	126	1566	79	159	1160	414	93	63	166	462	77	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	126	1645	0	159	1160	414	0	156	166	462	139	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	

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	

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)	16.4	56.3		19.5	60.0	83.0		17.7	17.5	18.5	18.5	
Actuated g/C Ratio	0.13	0.43		0.15	0.46	0.64		0.14	0.13	0.14	0.14	
v/c Ratio	0.57	1.10		0.59	0.51	0.38		0.64	0.47	0.97	0.54	
Control Delay (s/veh)	57.2	91.2		56.3	28.3	5.7		64.9	12.3	89.9	50.3	
Queue Delay	0.0	0.0		0.0	0.3	0.4		0.0	0.1	12.3	0.0	
Total Delay (s/veh)	57.2	91.2		56.3	28.6	6.1		64.9	12.3	102.2	50.3	
LOS	E	F		E	C	A		E	B	F	D	
Approach Delay (s/veh)		88.8			25.8			37.8			90.2	
Approach LOS		F			C			D			F	

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: 145			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 1.10			
Intersection Signal Delay (s/veh): 60.6		Intersection LOS: E	
Intersection Capacity Utilization 85.2%		ICU Level of Service E	
Analysis Period (min) 15			

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



Lane Group	EBL	EBT	WBL	WBT	WBR	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	126	1645	159	1160	414	156	166	462	139
v/c Ratio	0.57	1.10	0.59	0.51	0.38	0.64	0.47	0.97	0.54
Control Delay (s/veh)	57.2	91.2	56.3	28.3	5.7	64.9	12.3	89.9	50.3
Queue Delay	0.0	0.0	0.0	0.3	0.4	0.0	0.1	12.3	0.0
Total Delay (s/veh)	57.2	91.2	56.3	28.6	6.1	64.9	12.3	102.2	50.3
Queue Length 50th (ft)	102	~856	126	268	16	126	0	202	89
Queue Length 95th (ft)	144	#370	#218	346	144	191	68	#310	160
Internal Link Dist (ft)		1088		423		469			274
Turn Bay Length (ft)	400		215		200		240	300	
Base Capacity (vph)	240	1489	271	2290	1102	397	354	476	259
Starvation Cap Reductn	0	0	0	505	290	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	6	24	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.10	0.59	0.65	0.51	0.39	0.48	1.02	0.54

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.

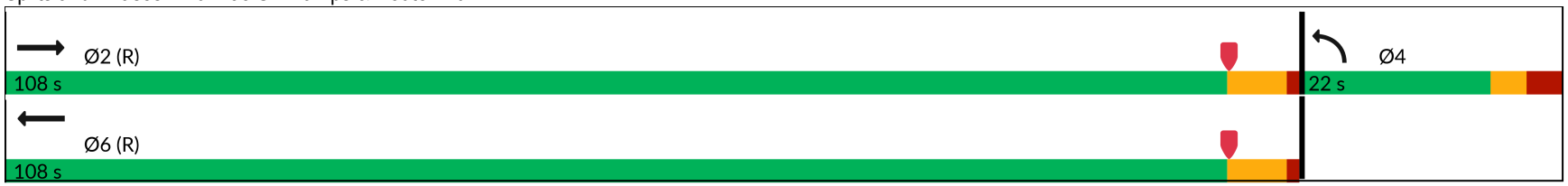
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1442	578	0	1500	181	94	0	172	0	0	0
Future Volume (vph)	0	1442	578	0	1500	181	94	0	172	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	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			187			
Link Speed (mph)		40			40			30			30	
Link Distance (ft)		503			564			499			328	
Travel Time (s)		8.6			9.6			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	1567	628	0	1630	197	102	0	187	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1567	628	0	1630	197	102	0	187	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	

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										

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Pedestrian Calls (#/hr)		0										
Act Effct Green (s)		108.1	130.0		108.1	130.0	13.9		130.0			
Actuated g/C Ratio		0.83	1.00		0.83	1.00	0.11		1.00			
v/c Ratio		0.53	0.35		0.57	0.13	0.48		0.10			
Control Delay (s/veh)		7.5	0.0		4.7	0.2	61.4		0.1			
Queue Delay		2.7	0.0		0.0	0.0	0.0		0.0			
Total Delay (s/veh)		10.2	0.0		4.7	0.2	61.4		0.1			
LOS		B	A		A	A	E		A			
Approach Delay (s/veh)		7.3			4.2			21.7				
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: 0.57			
Intersection Signal Delay (s/veh): 6.9		Intersection LOS: A	
Intersection Capacity Utilization 53.3%		ICU Level of Service A	
Analysis Period (min) 15			

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



Lane Group	EBT	EBR	WBT	WBR	NBL	NBR
Lane Group Flow (vph)	1567	628	1630	197	102	187
v/c Ratio	0.53	0.35	0.57	0.13	0.48	0.10
Control Delay (s/veh)	7.5	0.0	4.7	0.2	61.4	0.1
Queue Delay	2.7	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	10.2	0.0	4.7	0.2	61.4	0.1
Queue Length 50th (ft)	428	0	179	0	82	0
Queue Length 95th (ft)	m221	m0	271	0	137	0
Internal Link Dist (ft)	423		484			
Turn Bay Length (ft)		300				350
Base Capacity (vph)	2973	1812	2874	1507	278	1830
Starvation Cap Reductn	1249	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	0.91	0.35	0.57	0.13	0.37	0.10

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

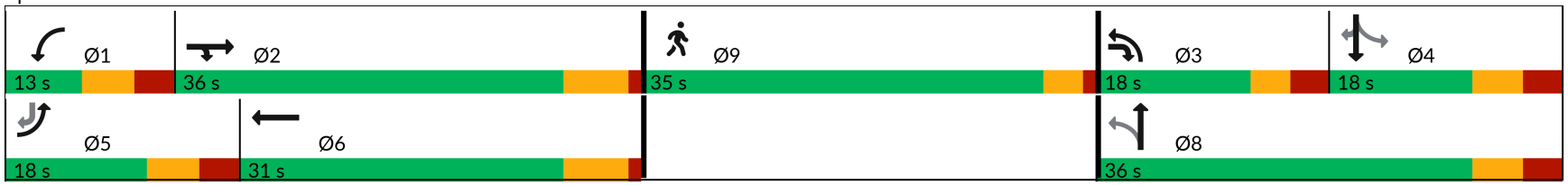
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	248	1035	333	120	850	35	375	177	131	59	150	129	
Future Volume (vph)	248	1035	333	120	850	35	375	177	131	59	150	129	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	11	11	11	12	12	12	12	12	12	12	12	11	
Storage Length (ft)	380		0	150		0	270		0	0		120	
Storage Lanes	1		1	1		0	1		0	0		1	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	
Frt			0.850		0.994			0.936				0.850	
Flt Protected	0.950			0.950			0.950				0.986		
Satd. Flow (prot)	1728	3455	1546	1805	3544	0	1805	1768	0	0	1837	1546	
Flt Permitted	0.950			0.950			0.276				0.789		
Satd. Flow (perm)	1728	3455	1546	1805	3544	0	524	1768	0	0	1470	1546	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			327		3			30				140	
Link Speed (mph)		40			40			30			30		
Link Distance (ft)		489			615			730			331		
Travel Time (s)		8.3			10.5			16.6			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 (%)	1%	1%	1%	0%	1%	7%	0%	1%	0%	2%	2%	1%	
Adj. Flow (vph)	270	1125	362	130	924	38	408	192	142	64	163	140	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	270	1125	362	130	962	0	408	334	0	0	227	140	
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			12			12		
Link Offset(ft)		0			0			0			0		
Crosswalk Width(ft)		16			16			16			16		
Two way Left Turn Lane													
Headway Factor	1.04	1.04	1.04	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.04	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	2	1	1	2		1	2			2	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru			Thru	Right	

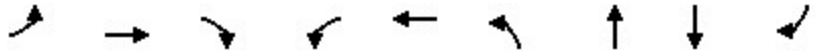
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Leading Detector (ft)	20	100	20	20	100		20	100			100	20	
Trailing Detector (ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0			0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6			6	20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		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	pt+ov	Prot	NA		pm+pt	NA		Perm	NA	custom	
Protected Phases	5	2	2 3	1	6		3	8			4		9
Permitted Phases							8			4		4 5	
Detector Phase	5	2	2 3	1	6		3	8		4	4	4 5	
Switch Phase													
Minimum Initial (s)	6.0	10.0		6.0	10.0		6.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	26.0		13.0	19.0		12.0	13.0		13.0	13.0		35.0
Total Split (s)	18.0	36.0		13.0	31.0		18.0	36.0		18.0	18.0		35.0
Total Split (%)	15.0%	30.0%		10.8%	25.8%		15.0%	30.0%		15.0%	15.0%		29%
Maximum Green (s)	11.0	30.0		6.0	25.0		12.0	29.0		11.0	11.0		31.0
Yellow Time (s)	4.0	5.0		4.0	5.0		3.0	4.0		4.0	4.0		3.0
All-Red Time (s)	3.0	1.0		3.0	1.0		3.0	3.0		3.0	3.0		1.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0		-2.0	-2.0			-2.0		
Total Lost Time (s)	5.0	4.0		5.0	4.0		4.0	5.0			5.0		
Lead/Lag	Lead	Lag		Lead	Lag		Lead			Lag	Lag		
Lead-Lag Optimize?													
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None	None		None	None		None
Walk Time (s)													7.0
Flash Don't Walk (s)													24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Pedestrian Calls (#/hr)													0
Act Effct Green (s)	13.0	32.0	50.0	8.0	27.0		32.0	31.0			13.0	31.0	
Actuated g/C Ratio	0.15	0.38	0.59	0.09	0.32		0.38	0.36			0.15	0.36	
v/c Ratio	1.02	0.87	0.35	0.77	0.85		1.00	0.50			1.01	0.21	
Control Delay (s/veh)	99.7	33.2	2.4	67.7	36.1		70.3	22.2			102.5	4.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0			0.0	0.0	
Total Delay (s/veh)	99.7	33.2	2.4	67.7	36.1		70.3	22.2			102.5	4.4	
LOS	F	C	A	E	D		E	C			F	A	
Approach Delay (s/veh)		37.1			39.9			48.6			65.1		
Approach LOS		D			D			D			E		

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 85			
Natural Cycle: 150			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 1.02			
Intersection Signal Delay (s/veh): 42.6		Intersection LOS: D	
Intersection Capacity Utilization 86.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 8: Merrill Street/Rabbit Road & Route 110





Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	270	1125	362	130	962	408	334	227	140
v/c Ratio	1.02	0.87	0.35	0.77	0.85	1.00	0.50	1.01	0.21
Control Delay (s/veh)	99.7	33.2	2.4	67.7	36.1	70.3	22.2	102.5	4.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (s/veh)	99.7	33.2	2.4	67.7	36.1	70.3	22.2	102.5	4.4
Queue Length 50th (ft)	~150	286	7	69	250	172	123	~125	0
Queue Length 95th (ft)	#303	#406	42	#160	#355	#342	202	#266	36
Internal Link Dist (ft)		409			535		650	251	
Turn Bay Length (ft)	380			150		270			120
Base Capacity (vph)	264	1300	1044	169	1127	408	663	224	652
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	1.02	0.87	0.35	0.77	0.85	1.00	0.50	1.01	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.

WEAVE ANALYSIS METHODOLOGY

HCS: Weave

The Highway Capacity Software (HCS) weave analysis is based on the procedures described in the *Highway Capacity Manual 7th edition (HCM)*.[1] The main features of the weave method for freeway ramp capacity estimation are the ramps and freeway traffic volumes, number of lanes, length of acceleration/deceleration lane, free flow speeds, ramp type, ramp location (left or right), terrain type, presence of upstream and downstream ramps.

The HCS analytical model calculates a roadway density in passenger cars per mile per lane. The density indicates the level-of-service based on the concepts described in the HCM. The density ranges that define levels of service for weave conditions are shown in Table 9.

Table 9
LEVEL-OF-SERVICE CRITERIA FOR FREEWAY MERGE AND DIVERGE SEGMENTS[a]

Level-Of-Service	Density (pc/mi/ln)
A	≤10.0
B	>10-20
C	>20-28
D	>28-35
E	>35
F	Demand Exceeds Capacity

[a]Source: *Highway Capacity Manual; 7th Edition*; Transportation Research Board, Washington, D.C.; 2022.

[1]*Highway Capacity Manual; 7th Edition*; Transportation Research Board, Washington, D.C.; 2022.

CAPACITY ANALYSIS WORKSHEETS

I-95 Southbound between Route 110 On/Off Ramps
Route 110 between I-95 NB Off Ramp and I-95 SB On Ramp

I-95 SOUTHBOUND BETWEEN ROUTE 110 ON/OFF RAMPS

HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1802	178	0	191
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	1999	197	0	212
Weaving Flow Rate (v_w), pc/h	409	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	1999	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10383
Total Flow Rate (v), pc/h	2408	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		13835
Volume Ratio (VR)	0.170	Weaving Area Capacity (c_W), veh/h		10383
Minimum Lane Change Rate (LC_{MIN}), lc/h	409	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10383
Maximum Weaving Length (L_{MAX}), ft	4232	Demand-to-Capacity Ratio (v/c)		0.23

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	90	Average Weaving Speed (S_W), mi/h	62.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	69.7
Weaving Lane Change Rate (LC_W), lc/h	661	Average Speed (S), mi/h	68.4
Total Lane Change Rate (LC_{All}), lc/h	661	Density (D), pc/mi/ln	7.0
Weaving Intensity Factor (W)	0.258000	Level of Service (LOS)	A

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2104	190	0	263
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2334	211	0	292
Weaving Flow Rate (v_w), pc/h	503	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	2334	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10359
Total Flow Rate (v), pc/h	2837	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		13288
Volume Ratio (VR)	0.177	Weaving Area Capacity (c_W), veh/h		10359
Minimum Lane Change Rate (LC_{MIN}), lc/h	503	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10359
Maximum Weaving Length (L_{MAX}), ft	4302	Demand-to-Capacity Ratio (v/c)		0.27

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	105	Average Weaving Speed (S_W), mi/h	61.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	68.7
Weaving Lane Change Rate (LC_W), lc/h	755	Average Speed (S), mi/h	67.3
Total Lane Change Rate (LC_{All}), lc/h	755	Density (D), pc/mi/ln	8.4
Weaving Intensity Factor (W)	0.286000	Level of Service (LOS)	A

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	3062	148	0	216
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	3396	164	0	240
Weaving Flow Rate (v_w), pc/h	404	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	3396	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10623
Total Flow Rate (v), pc/h	3800	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		22189
Volume Ratio (VR)	0.106	Weaving Area Capacity (c_W), veh/h		10623
Minimum Lane Change Rate (LC_{MIN}), lc/h	404	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10623
Maximum Weaving Length (L_{MAX}), ft	3598	Demand-to-Capacity Ratio (v/c)		0.35

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	152	Average Weaving Speed (S_W), mi/h	62.3
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	40	Average Non-Weaving Speed (S_{NW}), mi/h	68.4
Weaving Lane Change Rate (LC_W), lc/h	656	Average Speed (S), mi/h	67.7
Total Lane Change Rate (LC_{All}), lc/h	696	Density (D), pc/mi/ln	11.2
Weaving Intensity Factor (W)	0.268000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2000	198	0	220
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2218	220	0	244
Weaving Flow Rate (v_w), pc/h	464	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	2218	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10373
Total Flow Rate (v), pc/h	2682	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		13595
Volume Ratio (VR)	0.173	Weaving Area Capacity (c_W), veh/h		10373
Minimum Lane Change Rate (LC_{MIN}), lc/h	464	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10373
Maximum Weaving Length (L_{MAX}), ft	4262	Demand-to-Capacity Ratio (v/c)		0.25

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	99	Average Weaving Speed (S_W), mi/h	62.1
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	69.1
Weaving Lane Change Rate (LC_W), lc/h	716	Average Speed (S), mi/h	67.8
Total Lane Change Rate (LC_{All}), lc/h	716	Density (D), pc/mi/ln	7.9
Weaving Intensity Factor (W)	0.274000	Level of Service (LOS)	A

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2335	211	0	304
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2590	234	0	337
Weaving Flow Rate (v_w), pc/h	571	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	2590	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10344
Total Flow Rate (v), pc/h	3161	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		12994
Volume Ratio (VR)	0.181	Weaving Area Capacity (c_W), veh/h		10344
Minimum Lane Change Rate (LC_{MIN}), lc/h	571	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10344
Maximum Weaving Length (L_{MAX}), ft	4343	Demand-to-Capacity Ratio (v/c)		0.30

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	116	Average Weaving Speed (S_W), mi/h	60.9
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	67.9
Weaving Lane Change Rate (LC_W), lc/h	823	Average Speed (S), mi/h	66.5
Total Lane Change Rate (LC_{All}), lc/h	823	Density (D), pc/mi/ln	9.5
Weaving Intensity Factor (W)	0.306000	Level of Service (LOS)	A

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	3399	164	0	253
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	3770	182	0	281
Weaving Flow Rate (v_W), pc/h	463	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	3770	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10608
Total Flow Rate (v), pc/h	4233	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		21578
Volume Ratio (VR)	0.109	Weaving Area Capacity (c_W), veh/h		10608
Minimum Lane Change Rate (LC_{MIN}), lc/h	463	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10608
Maximum Weaving Length (L_{MAX}), ft	3627	Demand-to-Capacity Ratio (v/c)		0.39

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	169	Average Weaving Speed (S_W), mi/h	60.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	117	Average Non-Weaving Speed (S_{NW}), mi/h	67.6
Weaving Lane Change Rate (LC_W), lc/h	715	Average Speed (S), mi/h	66.8
Total Lane Change Rate (LC_{All}), lc/h	832	Density (D), pc/mi/ln	12.7
Weaving Intensity Factor (W)	0.309000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2199	217	0	241
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2439	241	0	267
Weaving Flow Rate (v_w), pc/h	508	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	2439	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10378
Total Flow Rate (v), pc/h	2947	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		13674
Volume Ratio (VR)	0.172	Weaving Area Capacity (c_W), veh/h		10378
Minimum Lane Change Rate (LC_{MIN}), lc/h	508	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10378
Maximum Weaving Length (L_{MAX}), ft	4252	Demand-to-Capacity Ratio (v/c)		0.28

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	109	Average Weaving Speed (S_W), mi/h	61.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	68.5
Weaving Lane Change Rate (LC_W), lc/h	760	Average Speed (S), mi/h	67.2
Total Lane Change Rate (LC_{All}), lc/h	760	Density (D), pc/mi/ln	8.8
Weaving Intensity Factor (W)	0.288000	Level of Service (LOS)	A

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	2567	232	0	333
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	2847	257	0	369
Weaving Flow Rate (v_w), pc/h	626	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	2847	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10344
Total Flow Rate (v), pc/h	3473	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		13067
Volume Ratio (VR)	0.180	Weaving Area Capacity (c_W), veh/h		10344
Minimum Lane Change Rate (LC_{MIN}), lc/h	626	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10344
Maximum Weaving Length (L_{MAX}), ft	4333	Demand-to-Capacity Ratio (v/c)		0.33

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	128	Average Weaving Speed (S_W), mi/h	60.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	67.2
Weaving Lane Change Rate (LC_W), lc/h	878	Average Speed (S), mi/h	65.9
Total Lane Change Rate (LC_{All}), lc/h	878	Density (D), pc/mi/ln	10.5
Weaving Intensity Factor (W)	0.322000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description	I-95 SB Weave	Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	5	Segment Type	Freeway
Segment Length (L_S), ft	560	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	3736	181	0	277
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	2.00	2.00	2.00	2.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.980	0.980	0.980	0.980
Flow Rate (v_i), pc/h	4144	201	0	307
Weaving Flow Rate (v_w), pc/h	508	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2400
Non-Weaving Flow Rate (v_{NW}), pc/h	4144	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		10608
Total Flow Rate (v), pc/h	4652	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		21578
Volume Ratio (VR)	0.109	Weaving Area Capacity (c_W), veh/h		10608
Minimum Lane Change Rate (LC_{MIN}), lc/h	508	Adjusted Weaving Area Capacity (c_{WA}), veh/h		10608
Maximum Weaving Length (L_{MAX}), ft	3627	Demand-to-Capacity Ratio (v/c)		0.43

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	186	Average Weaving Speed (S_W), mi/h	59.6
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	194	Average Non-Weaving Speed (S_{NW}), mi/h	66.9
Weaving Lane Change Rate (LC_W), lc/h	760	Average Speed (S), mi/h	66.0
Total Lane Change Rate (LC_{All}), lc/h	954	Density (D), pc/mi/ln	14.1
Weaving Intensity Factor (W)	0.344000	Level of Service (LOS)	B

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ROUTE 110 BETWEEN I-95 NB OFF RAMP AND I-95 SB ON RAMP

HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	583	490	0	181
Peak Hour Factor (PHF)	0.90	0.86	0.92	0.90
Total Trucks, %	5.00	5.00	0.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.952	1.000	0.952
Flow Rate (v_i), pc/h	680	598	0	211
Weaving Flow Rate (v_W), pc/h	809	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	680	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4572
Total Flow Rate (v), pc/h	1489	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4208
Volume Ratio (VR)	0.543	Weaving Area Capacity (c_W), veh/h		4208
Minimum Lane Change Rate (LC_{MIN}), lc/h	809	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4208
Maximum Weaving Length (L_{MAX}), ft	8333	Demand-to-Capacity Ratio (v/c)		0.34

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	27	Average Weaving Speed (S_W), mi/h	33.7
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	32.1
Weaving Lane Change Rate (LC_W), lc/h	888	Average Speed (S), mi/h	32.9
Total Lane Change Rate (LC_{All}), lc/h	888	Density (D), pc/mi/ln	15.1
Weaving Intensity Factor (W)	0.356000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	865	934	0	192
Peak Hour Factor (PHF)	0.96	0.91	0.92	0.96
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	910	1037	0	202
Weaving Flow Rate (v_w), pc/h	1239	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	910	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4663
Total Flow Rate (v), pc/h	2149	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4118
Volume Ratio (VR)	0.577	Weaving Area Capacity (c_W), veh/h		4118
Minimum Lane Change Rate (LC_{MIN}), lc/h	1239	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4118
Maximum Weaving Length (L_{MAX}), ft	8740	Demand-to-Capacity Ratio (v/c)		0.52

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	36	Average Weaving Speed (S_W), mi/h	32.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	27.9
Weaving Lane Change Rate (LC_W), lc/h	1318	Average Speed (S), mi/h	30.1
Total Lane Change Rate (LC_{All}), lc/h	1318	Density (D), pc/mi/ln	23.8
Weaving Intensity Factor (W)	0.486000	Level of Service (LOS)	C

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2025 Baseline
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	748	418	0	152
Peak Hour Factor (PHF)	0.85	0.93	0.92	0.85
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	889	454	0	181
Weaving Flow Rate (v_W), pc/h	635	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	889	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		5085
Total Flow Rate (v), pc/h	1524	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		5698
Volume Ratio (VR)	0.417	Weaving Area Capacity (c_W), veh/h		5085
Minimum Lane Change Rate (LC_{MIN}), lc/h	635	Adjusted Weaving Area Capacity (c_{WA}), veh/h		5085
Maximum Weaving Length (L_{MAX}), ft	6872	Demand-to-Capacity Ratio (v/c)		0.30

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	36	Average Weaving Speed (S_W), mi/h	34.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	33.3
Weaving Lane Change Rate (LC_W), lc/h	714	Average Speed (S), mi/h	33.8
Total Lane Change Rate (LC_{All}), lc/h	714	Density (D), pc/mi/ln	15.0
Weaving Intensity Factor (W)	0.299000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	675	571	0	201
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	5.00	5.00	0.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.952	1.000	0.952
Flow Rate (v_i), pc/h	771	652	0	229
Weaving Flow Rate (v_w), pc/h	881	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	771	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4598
Total Flow Rate (v), pc/h	1652	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4287
Volume Ratio (VR)	0.533	Weaving Area Capacity (c_W), veh/h		4287
Minimum Lane Change Rate (LC_{MIN}), lc/h	881	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4287
Maximum Weaving Length (L_{MAX}), ft	8215	Demand-to-Capacity Ratio (v/c)		0.37

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	31	Average Weaving Speed (S_W), mi/h	33.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	31.3
Weaving Lane Change Rate (LC_W), lc/h	960	Average Speed (S), mi/h	32.4
Total Lane Change Rate (LC_{All}), lc/h	960	Density (D), pc/mi/ln	17.0
Weaving Intensity Factor (W)	0.378000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_s), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1003	1103	0	213
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	1101	1211	0	234
Weaving Flow Rate (v_w), pc/h	1445	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1101	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4687
Total Flow Rate (v), pc/h	2546	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4183
Volume Ratio (VR)	0.568	Weaving Area Capacity (c_W), veh/h		4183
Minimum Lane Change Rate (LC_{MIN}), lc/h	1445	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4183
Maximum Weaving Length (L_{MAX}), ft	8632	Demand-to-Capacity Ratio (v/c)		0.60

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	44	Average Weaving Speed (S_W), mi/h	31.4
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	25.8
Weaving Lane Change Rate (LC_W), lc/h	1524	Average Speed (S), mi/h	28.7
Total Lane Change Rate (LC_{All}), lc/h	1524	Density (D), pc/mi/ln	29.6
Weaving Intensity Factor (W)	0.544000	Level of Service (LOS)	D

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2032 Build
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description		Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	878	527	0	169
Peak Hour Factor (PHF)	0.85	0.93	0.92	0.85
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	1043	572	0	201
Weaving Flow Rate (v_w), pc/h	773	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1043	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		5064
Total Flow Rate (v), pc/h	1816	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		5577
Volume Ratio (VR)	0.426	Weaving Area Capacity (c_W), veh/h		5064
Minimum Lane Change Rate (LC_{MIN}), lc/h	773	Adjusted Weaving Area Capacity (c_{WA}), veh/h		5064
Maximum Weaving Length (L_{MAX}), ft	6974	Demand-to-Capacity Ratio (v/c)		0.36

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	42	Average Weaving Speed (S_W), mi/h	33.8
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	31.8
Weaving Lane Change Rate (LC_W), lc/h	852	Average Speed (S), mi/h	32.6
Total Lane Change Rate (LC_{All}), lc/h	852	Density (D), pc/mi/ln	18.6
Weaving Intensity Factor (W)	0.344000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	AM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	739	625	0	221
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	5.00	5.00	0.00	5.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.952	0.952	1.000	0.952
Flow Rate (v_i), pc/h	844	714	0	252
Weaving Flow Rate (v_w), pc/h	966	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	844	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4595
Total Flow Rate (v), pc/h	1810	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4279
Volume Ratio (VR)	0.534	Weaving Area Capacity (c_W), veh/h		4279
Minimum Lane Change Rate (LC_{MIN}), lc/h	966	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4279
Maximum Weaving Length (L_{MAX}), ft	8227	Demand-to-Capacity Ratio (v/c)		0.40

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	34	Average Weaving Speed (S_W), mi/h	33.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	30.4
Weaving Lane Change Rate (LC_W), lc/h	1045	Average Speed (S), mi/h	31.7
Total Lane Change Rate (LC_{All}), lc/h	1045	Density (D), pc/mi/ln	19.0
Weaving Intensity Factor (W)	0.404000	Level of Service (LOS)	B

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HCS Freeway Weaving Report

Project Information

Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	PM Peak Hour
Project Description		Units	U.S. Customary

Geometric Data

Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	1099	1206	0	234
Peak Hour Factor (PHF)	0.92	0.92	0.92	0.92
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	1207	1324	0	257
Weaving Flow Rate (v_w), pc/h	1581	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1207	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		4690
Total Flow Rate (v), pc/h	2788	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		4190
Volume Ratio (VR)	0.567	Weaving Area Capacity (c_W), veh/h		4190
Minimum Lane Change Rate (LC_{MIN}), lc/h	1581	Adjusted Weaving Area Capacity (c_{WA}), veh/h		4190
Maximum Weaving Length (L_{MAX}), ft	8620	Demand-to-Capacity Ratio (v/c)		0.66

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	48	Average Weaving Speed (S_W), mi/h	31.0
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	24.5
Weaving Lane Change Rate (LC_W), lc/h	1660	Average Speed (S), mi/h	27.8
Total Lane Change Rate (LC_{All}), lc/h	1660	Density (D), pc/mi/ln	33.4
Weaving Intensity Factor (W)	0.582000	Level of Service (LOS)	D

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HCS Freeway Weaving Report

Project Information			
Analyst	DIR	Date	7/31/2025
Agency	VAI	Analysis Year	2045 Build
Jurisdiction		Time Analyzed	SAT Peak Hour
Project Description		Units	U.S. Customary

Geometric Data			
Number of Lanes (N), ln	3	Segment Type	Freeway
Segment Length (L_S), ft	500	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	-
Interchange Density (ID), int/mi	0.80	Cross Weaving Managed Lane	No

Adjustment Factors			
Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Demand Adjustment Factor (DAF)	1.000
Incident Type	No Incident	Capacity Adj. Factor for CAVs (CAF_{CAV})	1.000
Proportion of CAVs in Traffic Stream	0	Final Capacity Adjustment Factor (CAF)	1.000

Demand and Capacity				
	FF	RF	RR	FR
Demand Volume (V_i), veh/h	961	573	0	185
Peak Hour Factor (PHF)	0.85	0.93	0.92	0.85
Total Trucks, %	1.00	1.00	0.00	1.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.990	0.990	1.000	0.990
Flow Rate (v_i), pc/h	1142	622	0	220
Weaving Flow Rate (v_w), pc/h	842	Ideal Conditions Capacity (c_{IFL}), pc/h/ln		2200
Non-Weaving Flow Rate (v_{NW}), pc/h	1142	Density-Based Capacity ($c_{IWL} \times N \times f_{HV}$), veh/h		5067
Total Flow Rate (v), pc/h	1984	Demand Flow-Based Capacity ($c_{IW} \times f_{HV}$), veh/h		5604
Volume Ratio (VR)	0.424	Weaving Area Capacity (c_W), veh/h		5067
Minimum Lane Change Rate (LC_{MIN}), lc/h	842	Adjusted Weaving Area Capacity (c_{WA}), veh/h		5067
Maximum Weaving Length (L_{MAX}), ft	6952	Demand-to-Capacity Ratio (v/c)		0.39

Speed and Density			
Non-Weaving Vehicle Index (I_{NW})	46	Average Weaving Speed (S_W), mi/h	33.5
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	0	Average Non-Weaving Speed (S_{NW}), mi/h	31.1
Weaving Lane Change Rate (LC_W), lc/h	921	Average Speed (S), mi/h	32.1
Total Lane Change Rate (LC_{All}), lc/h	921	Density (D), pc/mi/ln	20.6
Weaving Intensity Factor (W)	0.366000	Level of Service (LOS)	C

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VEHICLE QUEUE DIAGRAMS

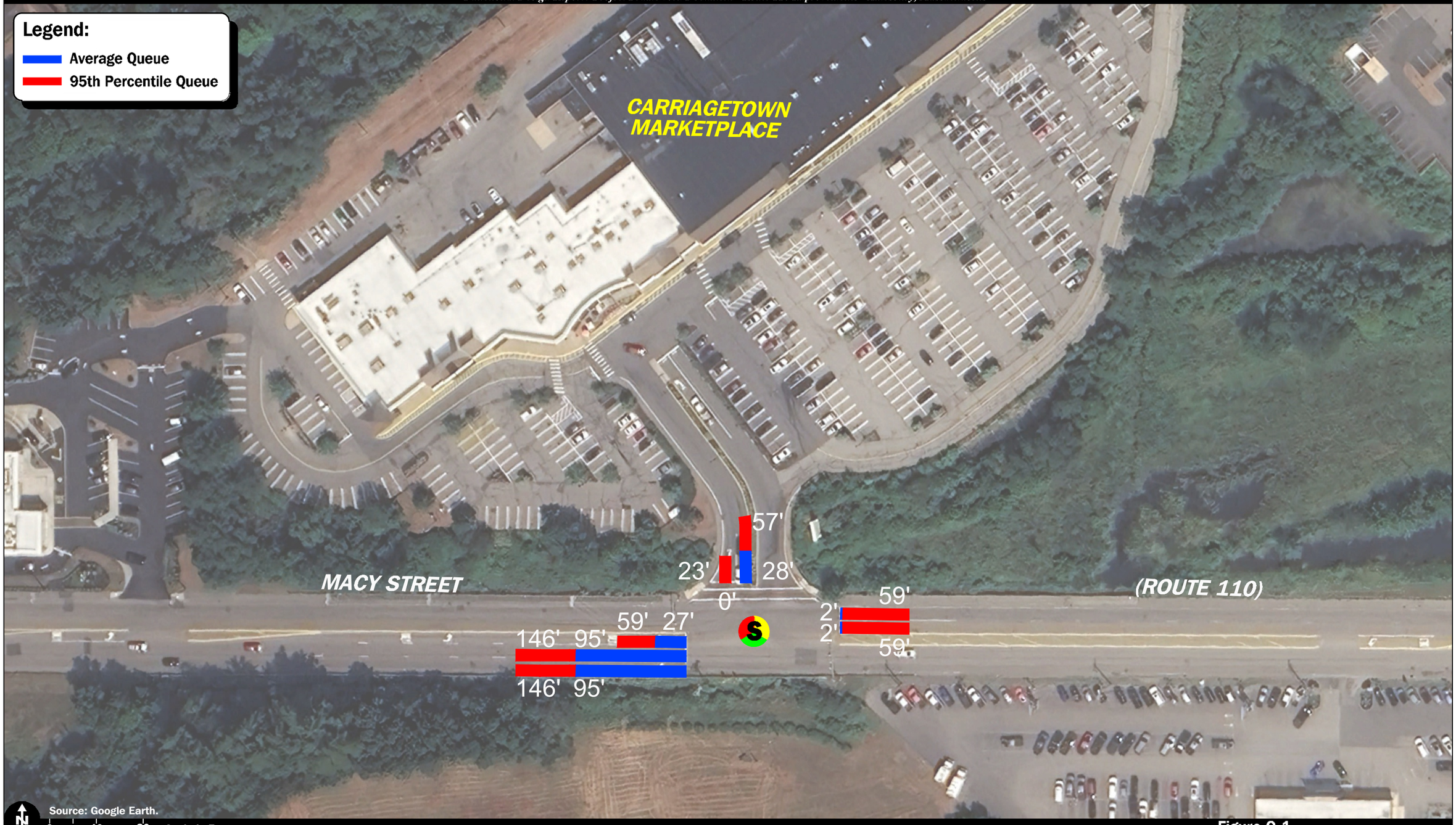

Figure Q-1

2025 Baseline
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

Vanasse & Associates inc

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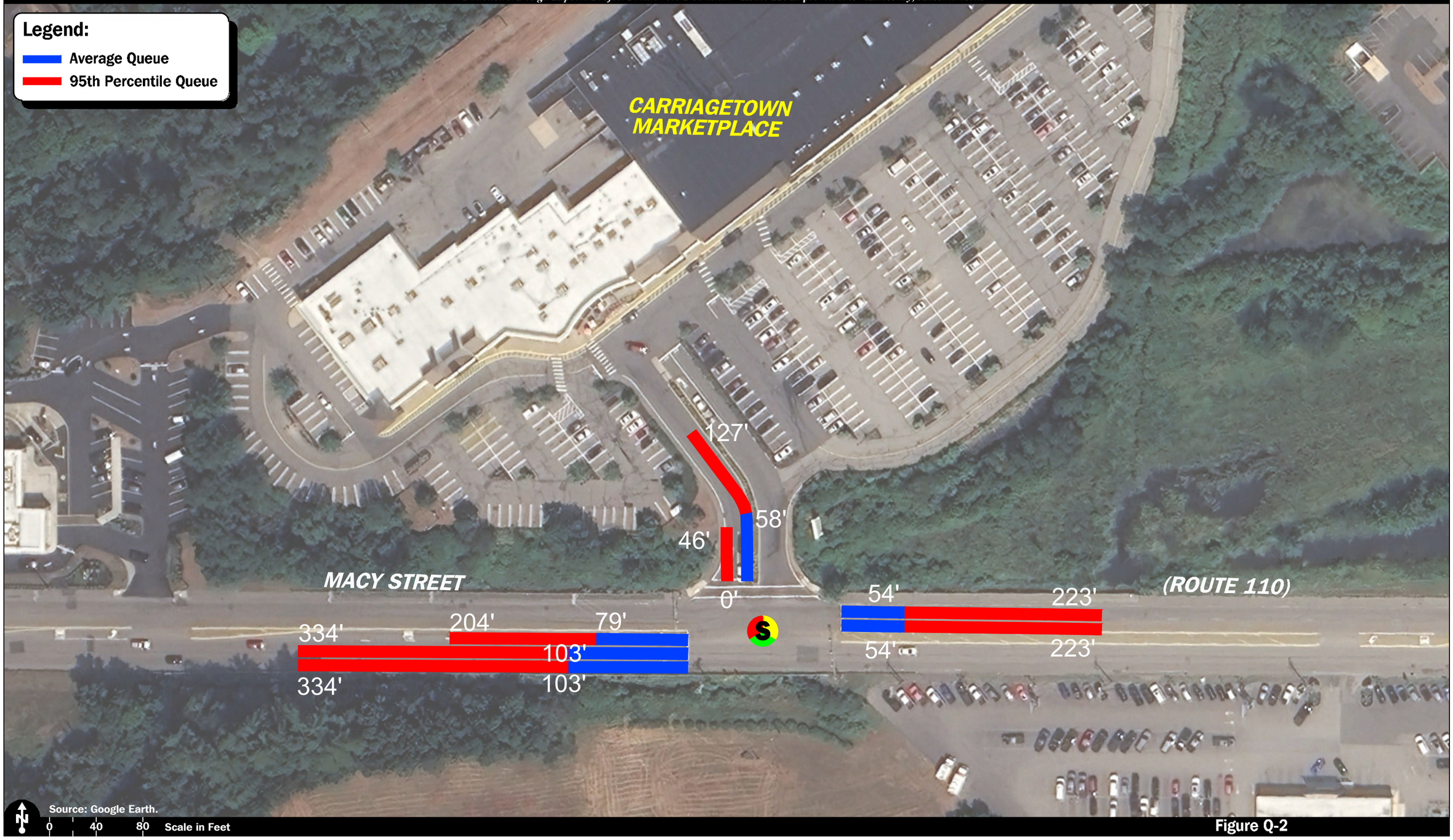

Figure Q-2

2025 Baseline
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

Vanasse & Associates inc

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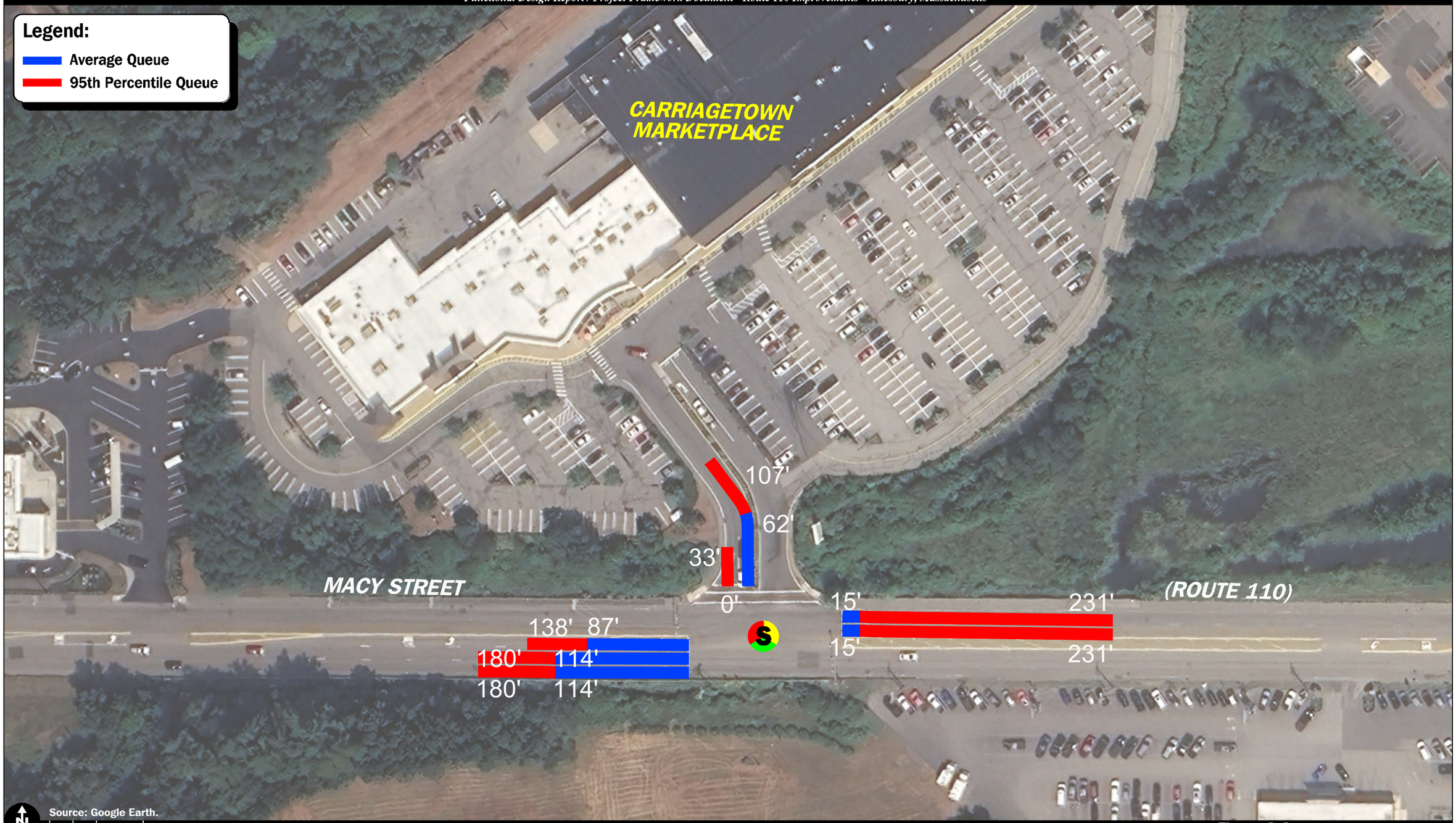

Figure Q-3

2025 Baseline
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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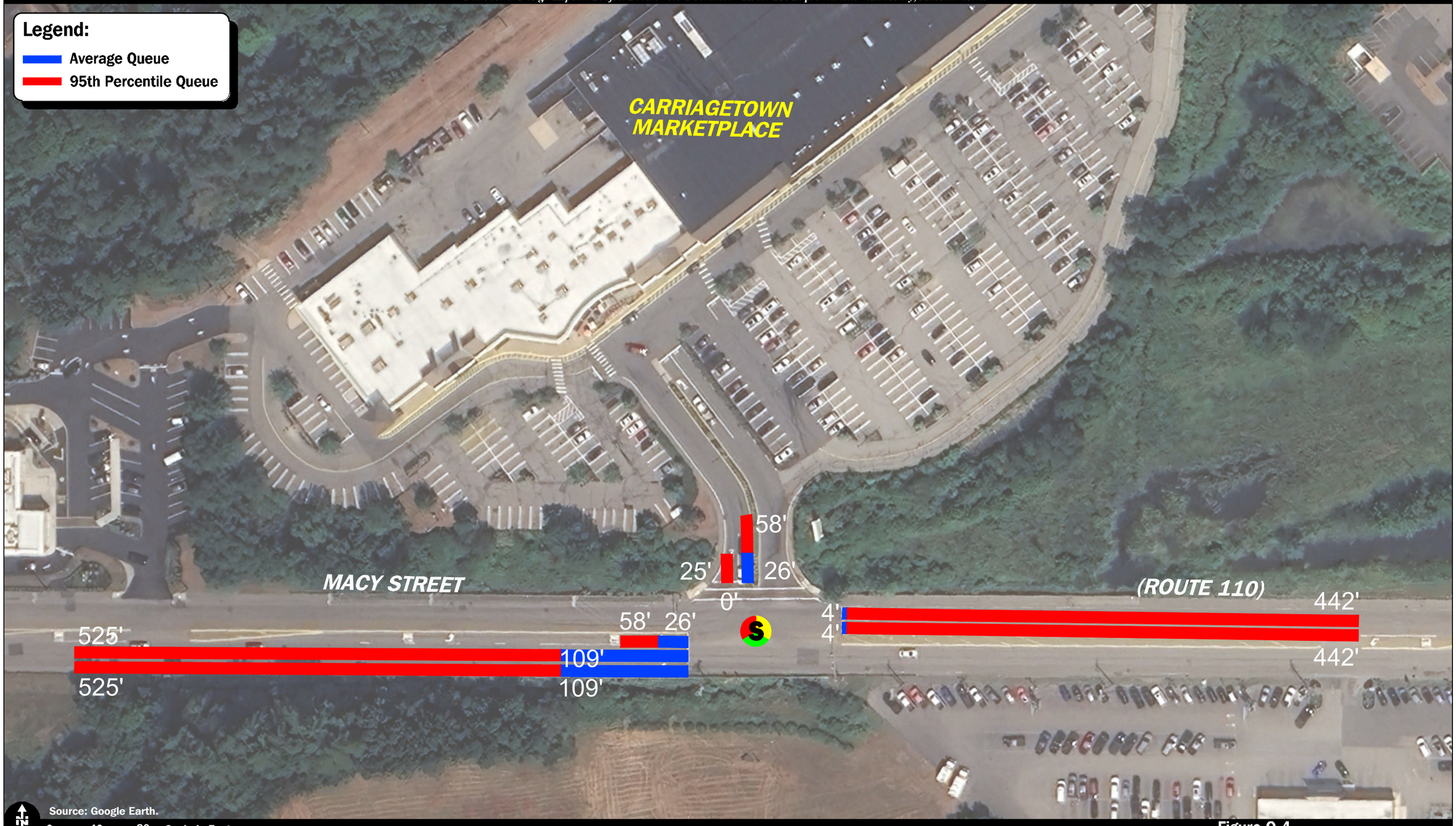

Figure Q-4

2032 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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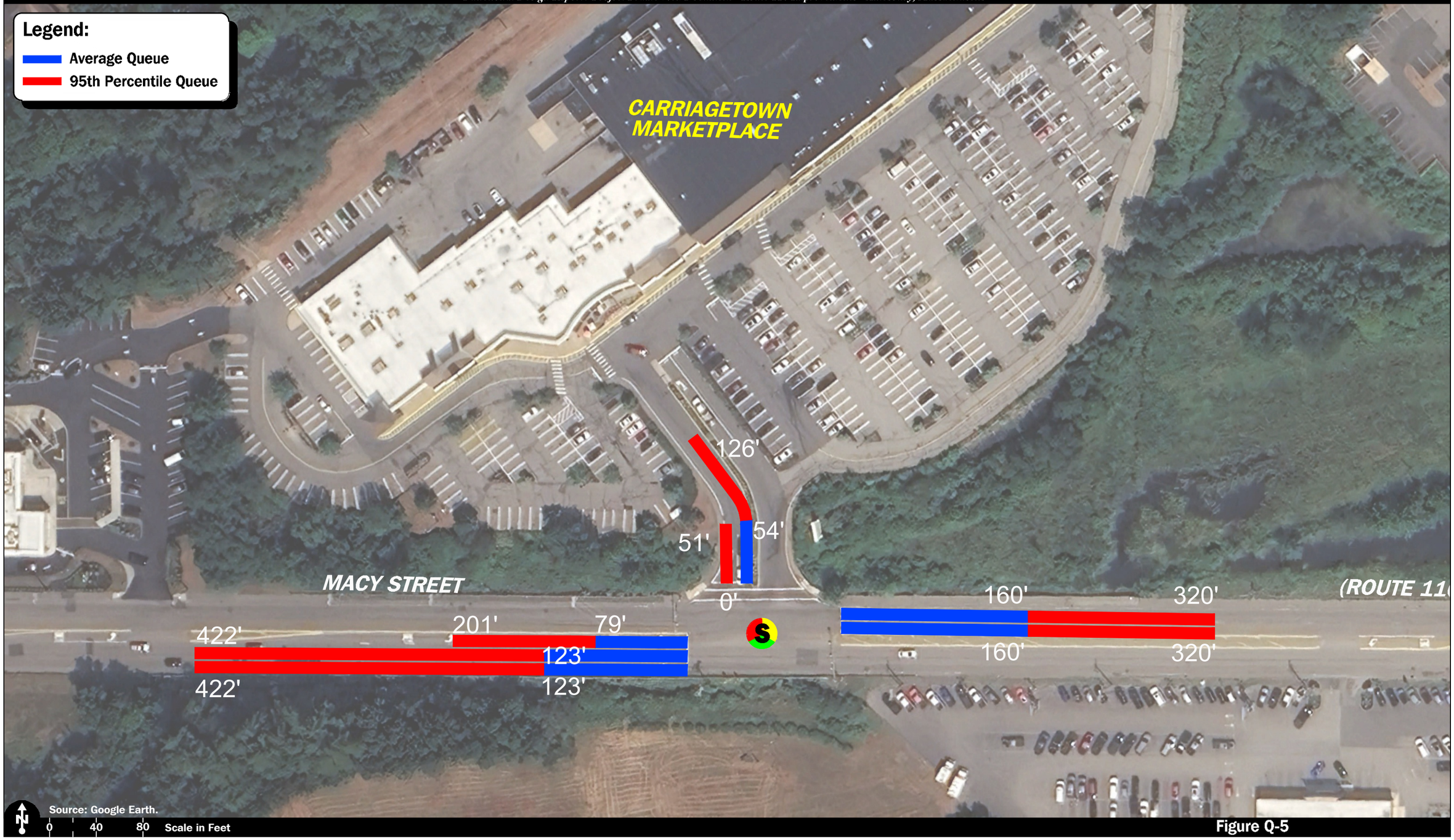

Figure Q-5

2032 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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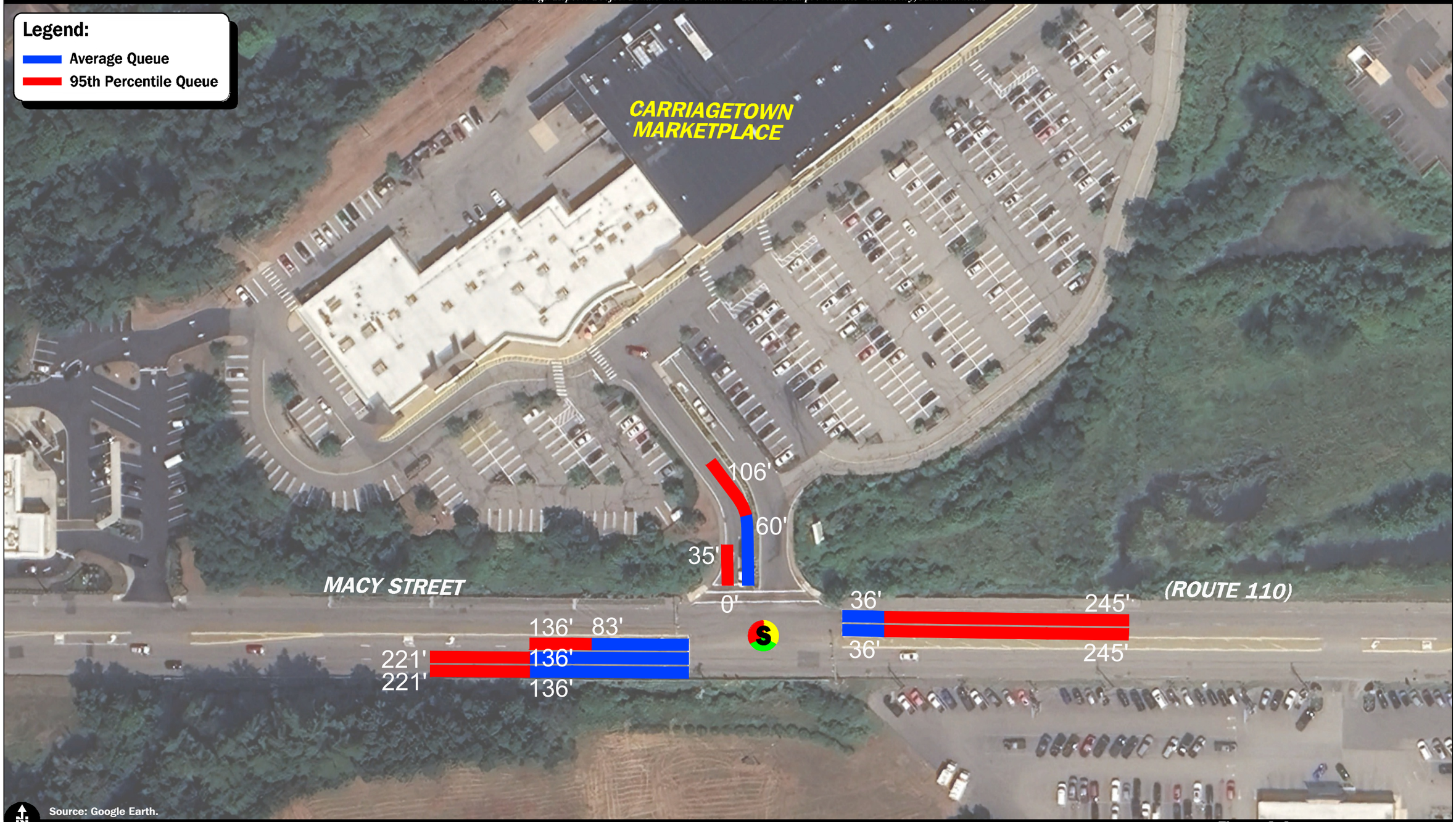

Figure Q-6

2032 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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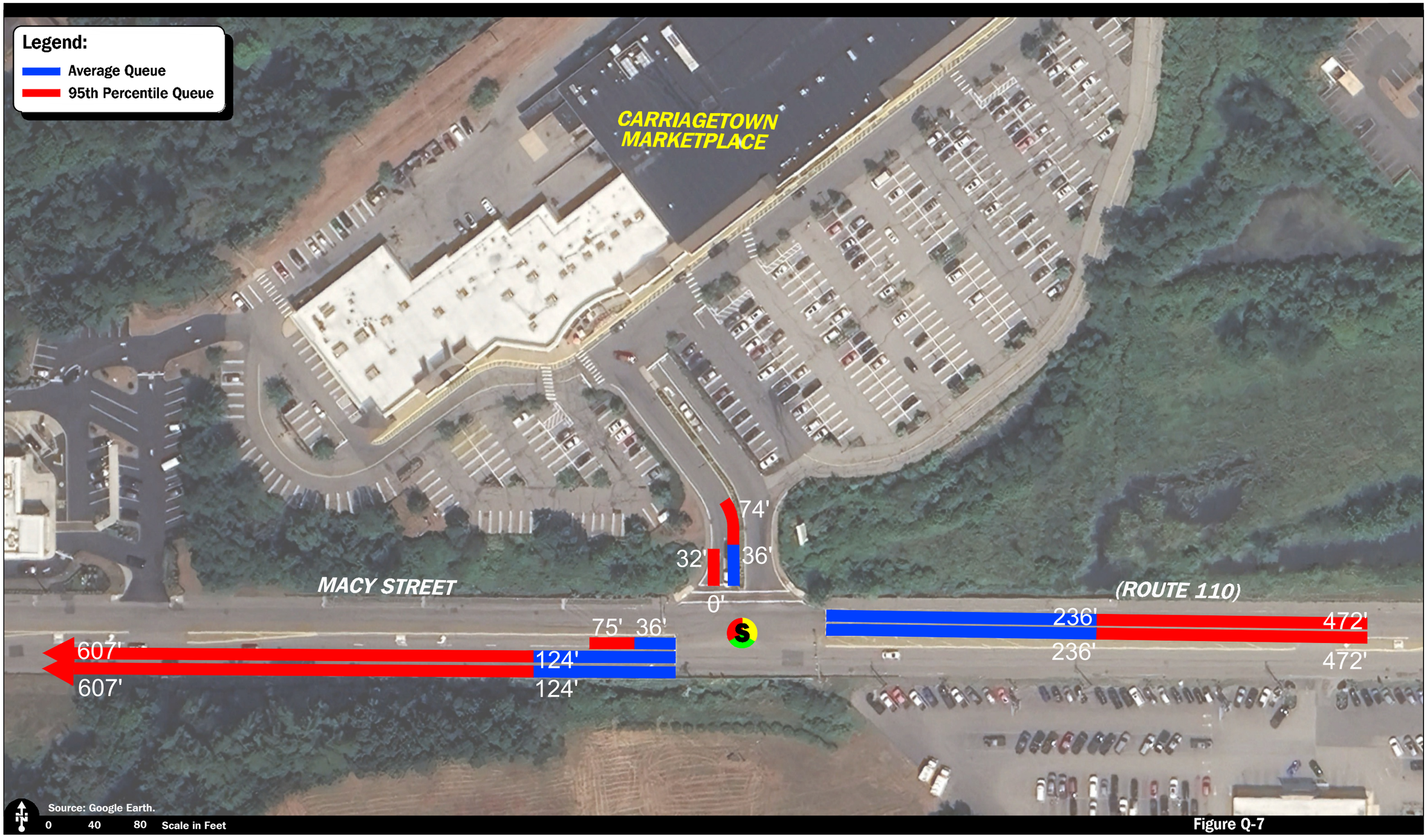

Figure Q-7

2032 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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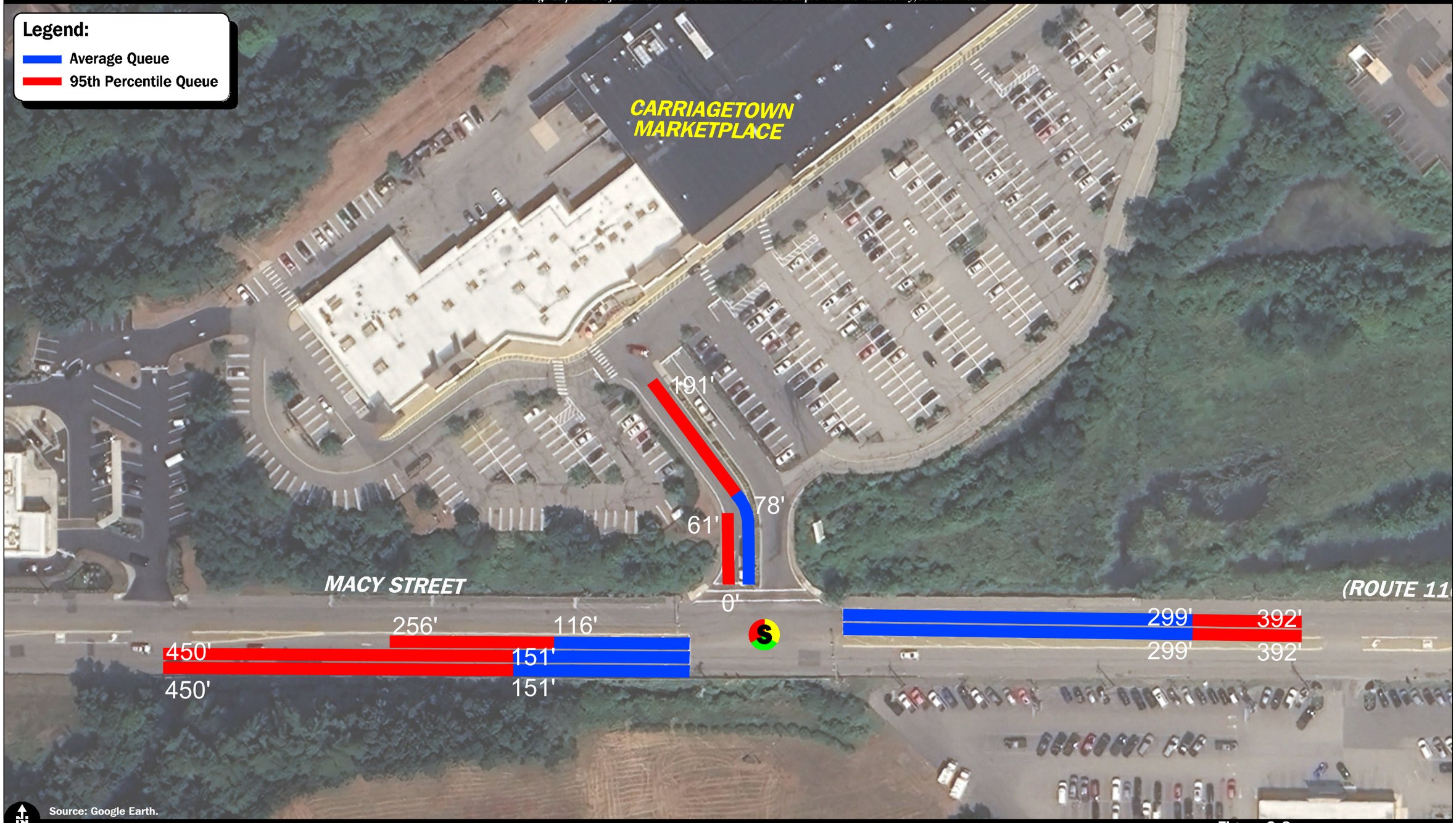

Figure Q-8

2032 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

Vanasse & Associates inc

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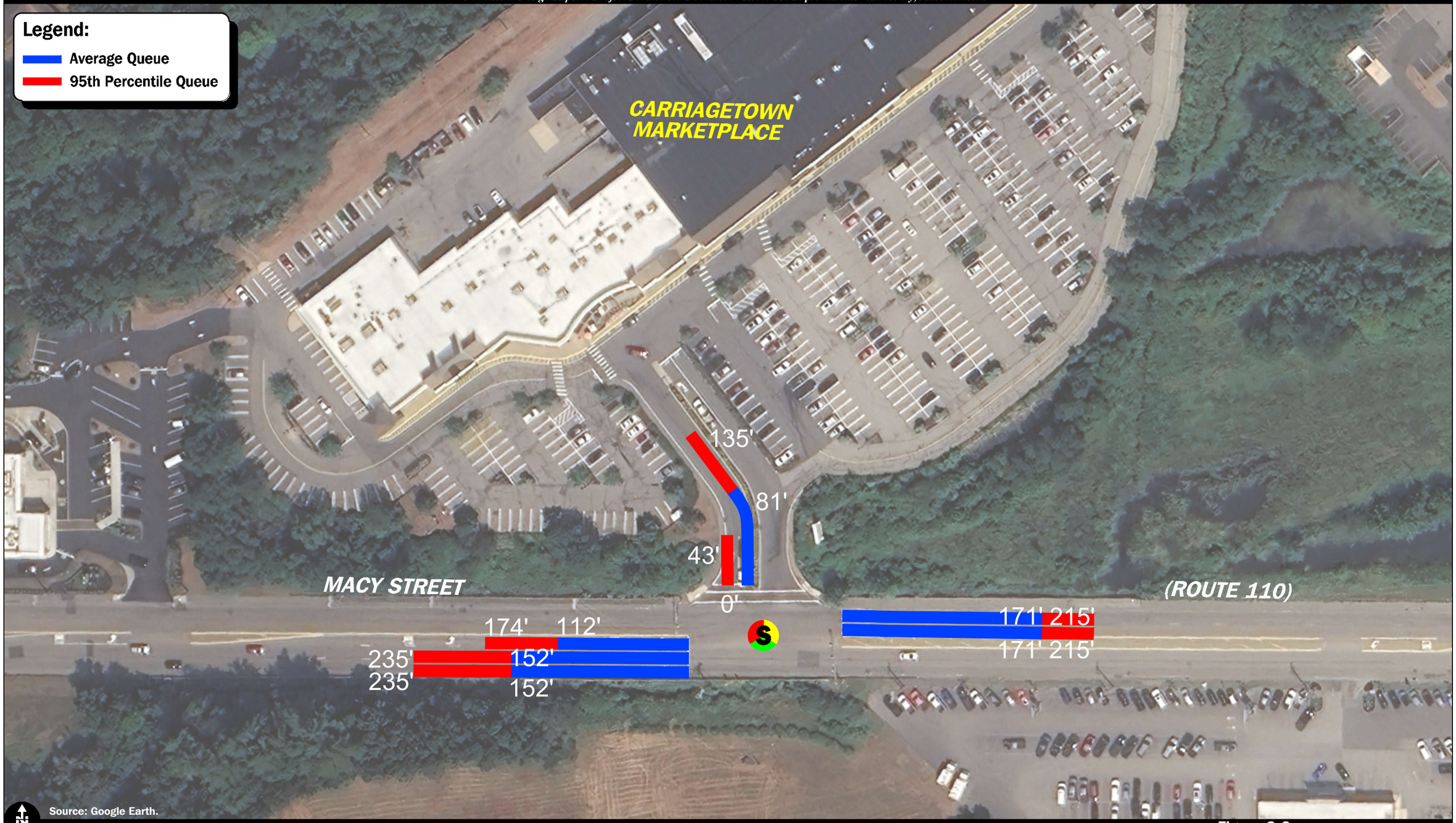

Figure Q-9

2032 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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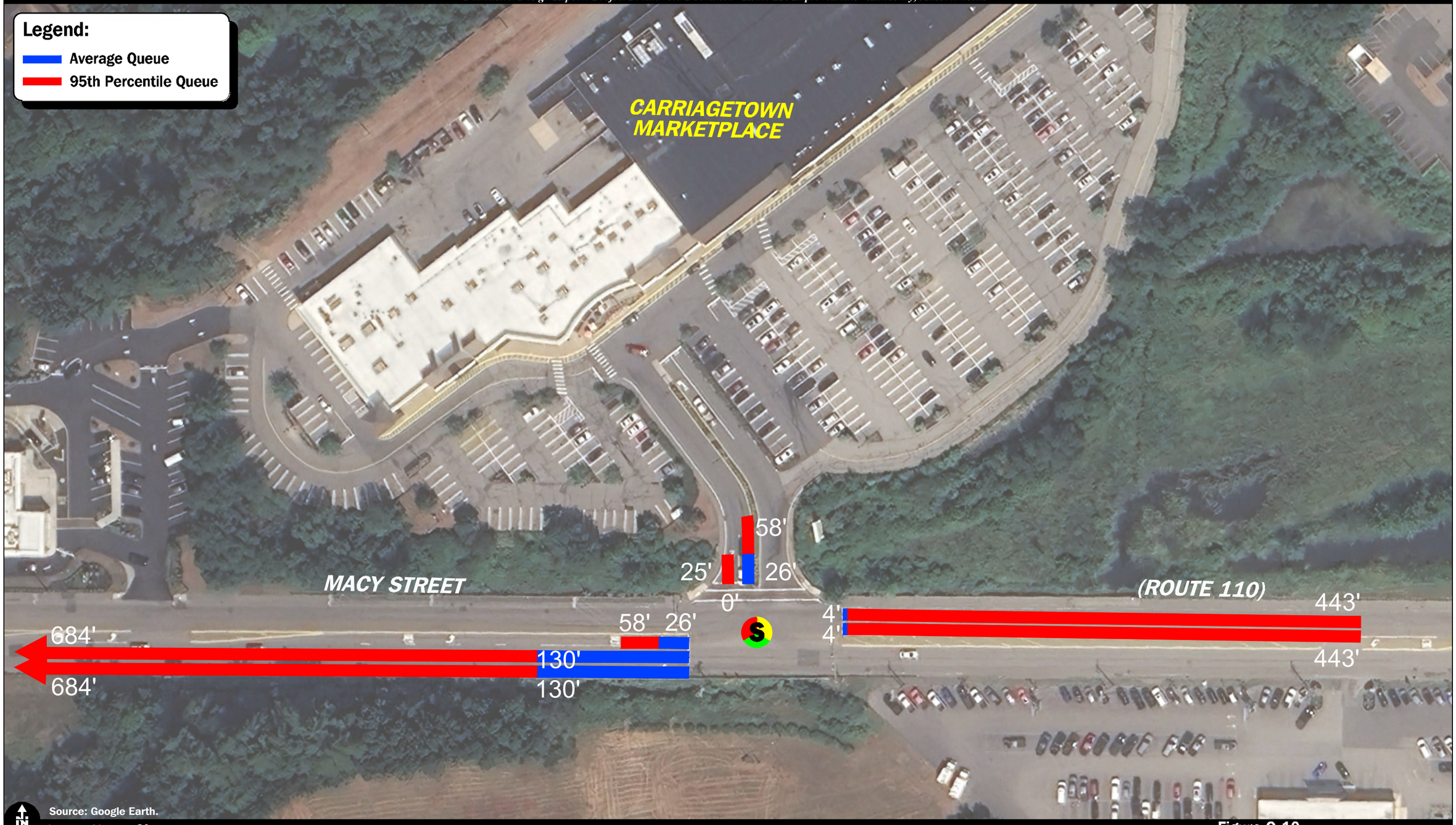

Figure Q-10

2045 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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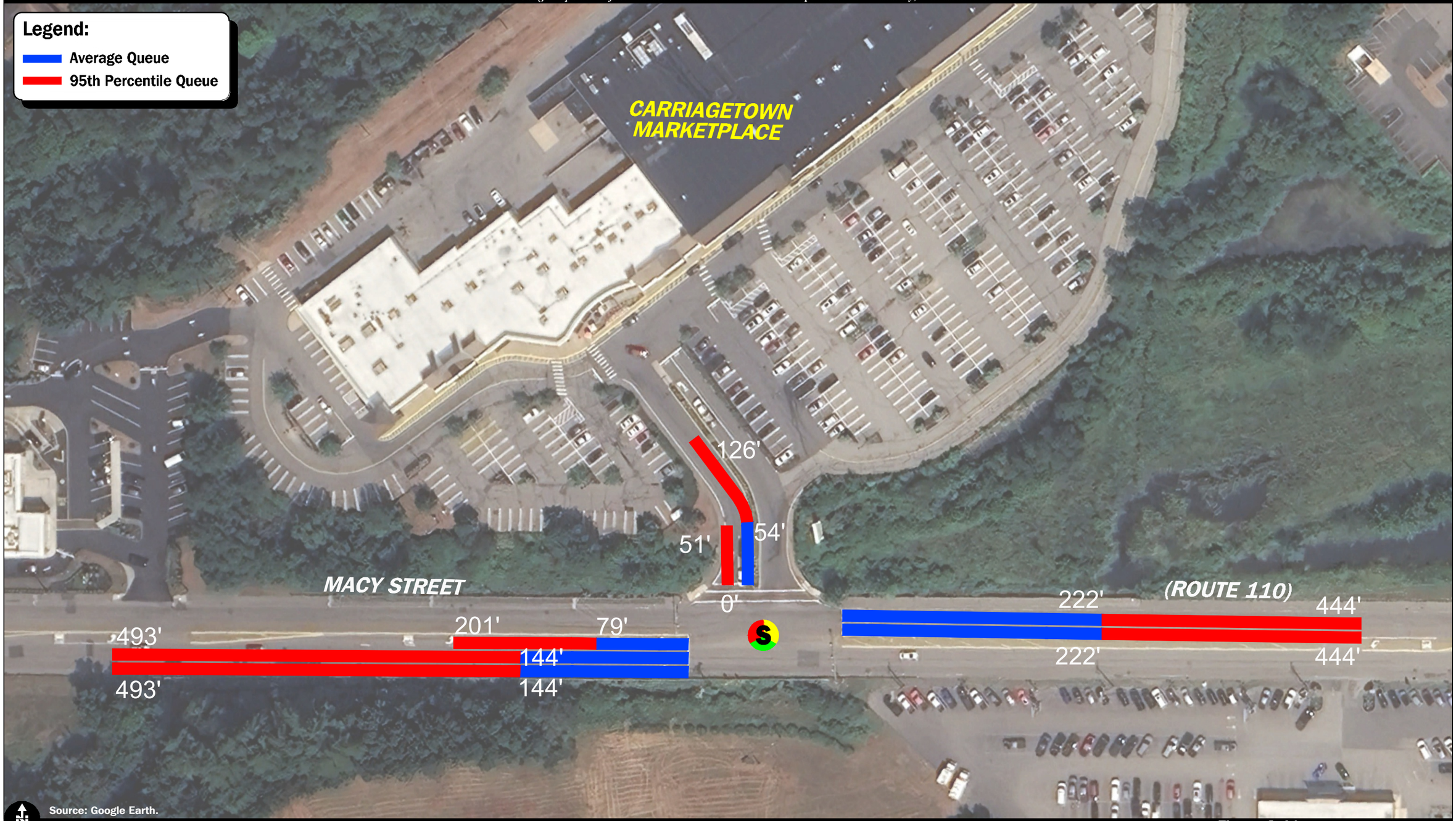

Figure Q-11

2045 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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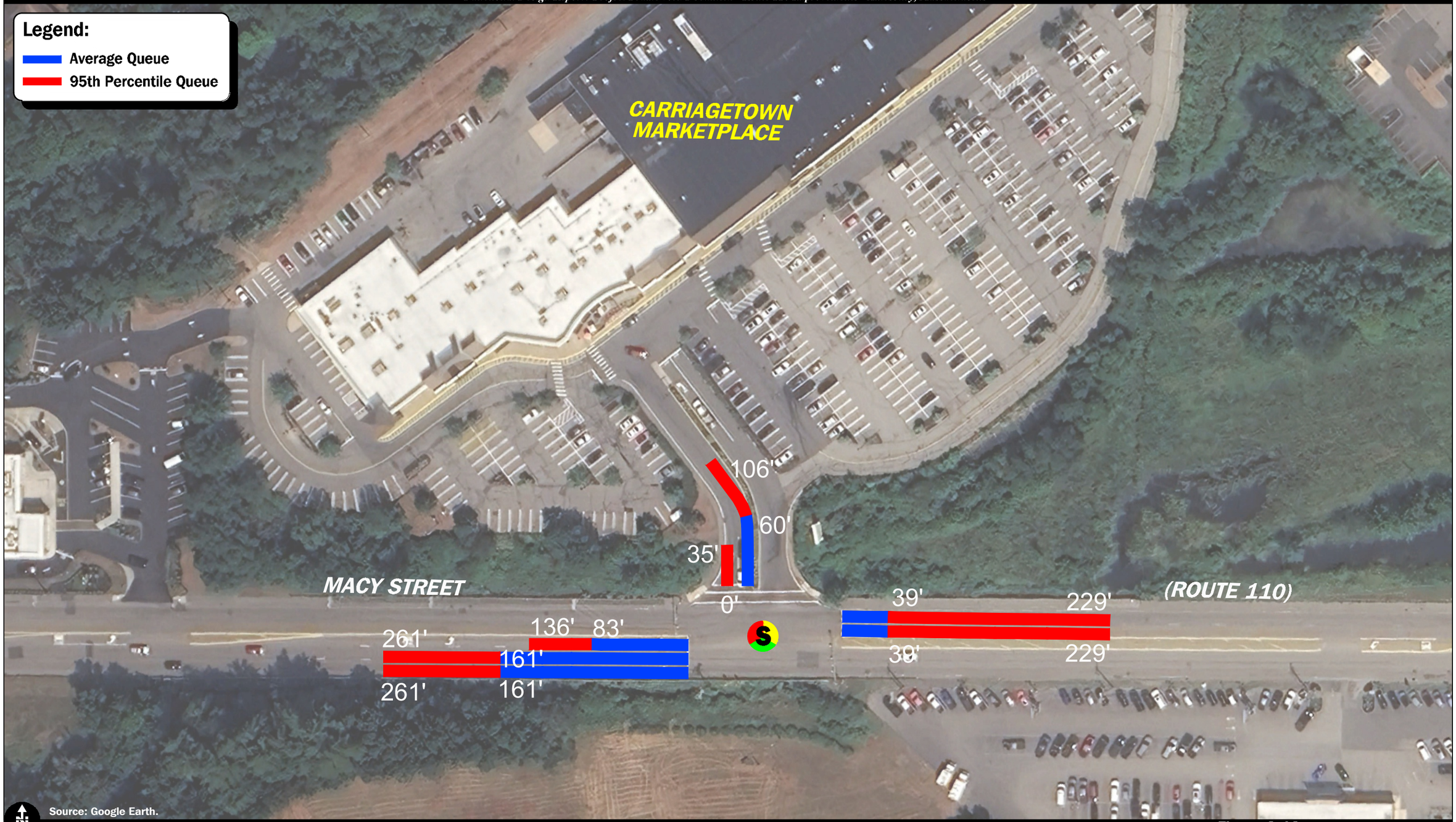

Figure Q-12

2045 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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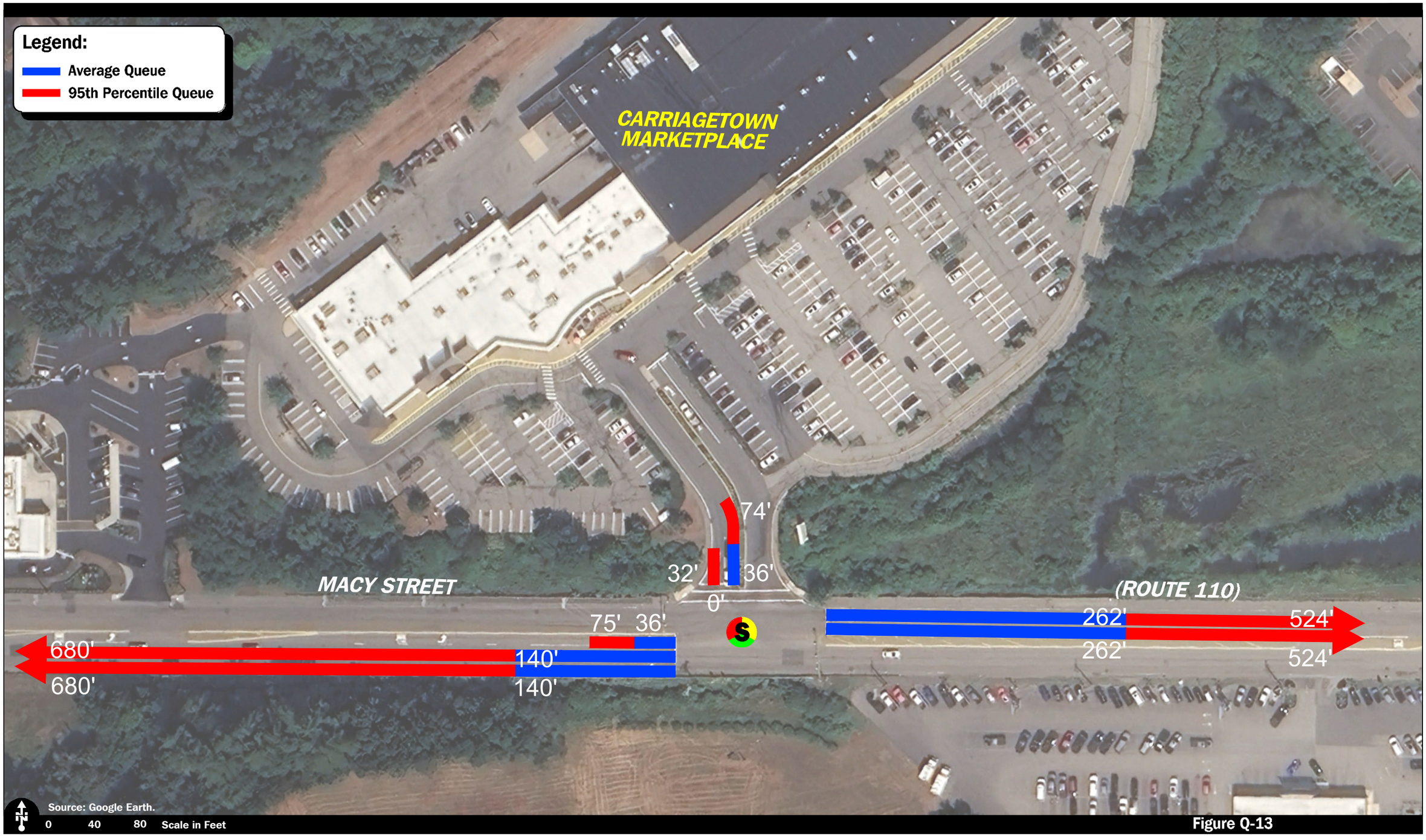

Figure Q-13

2045 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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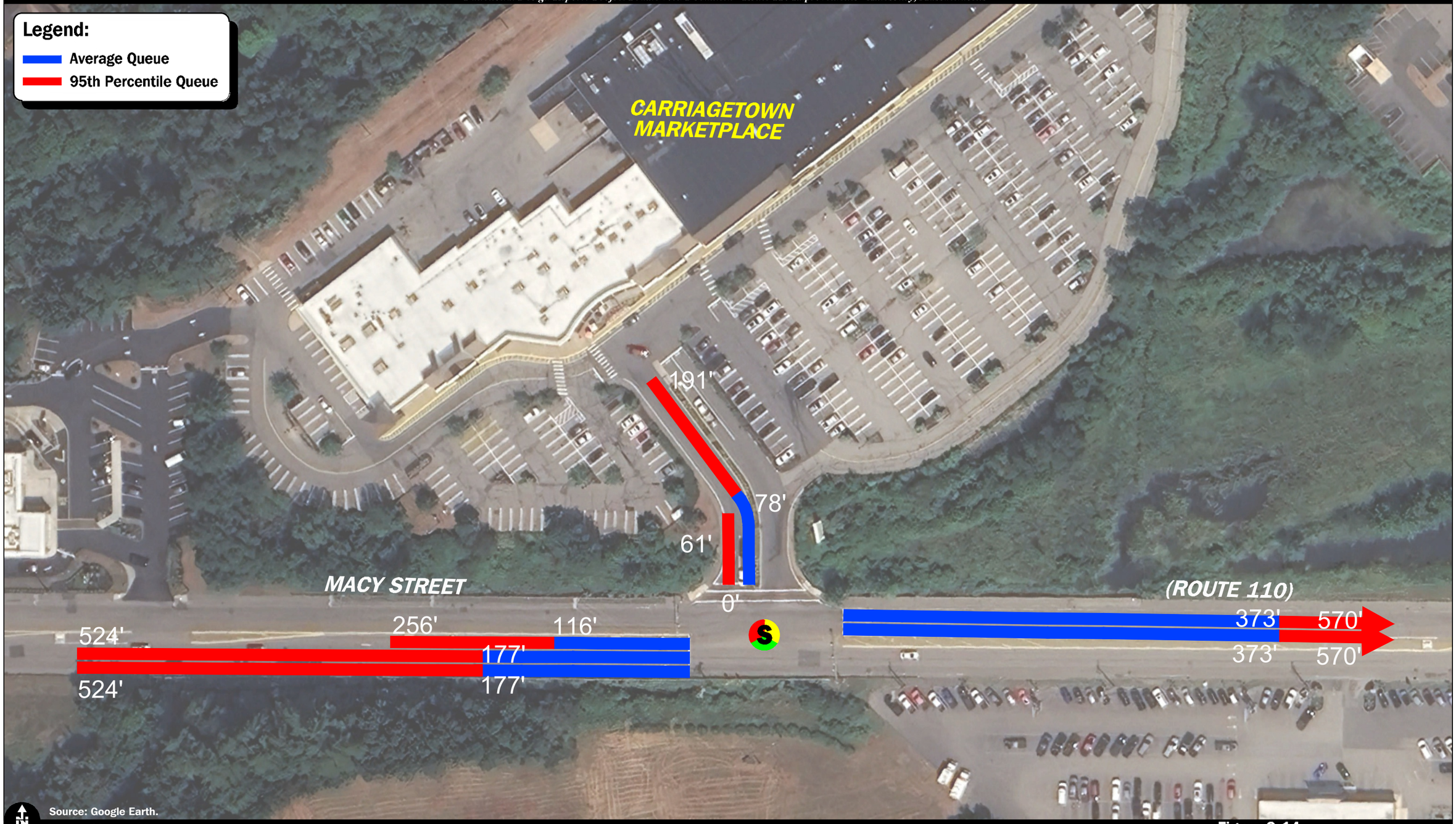

Figure Q-14

2045 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

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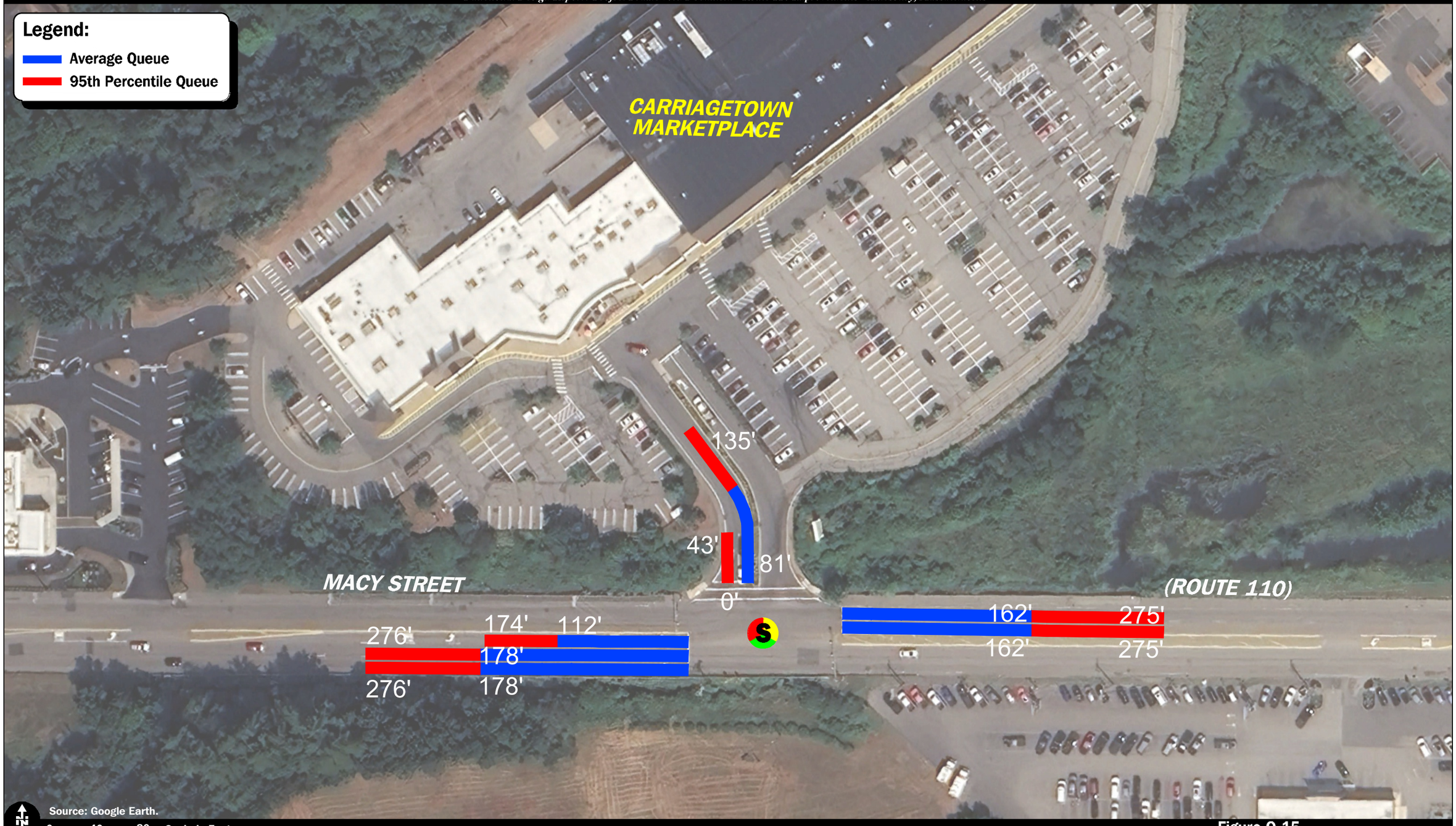

Figure Q-15

2045 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Carriagetown Marketplace

Vanasse & Associates inc

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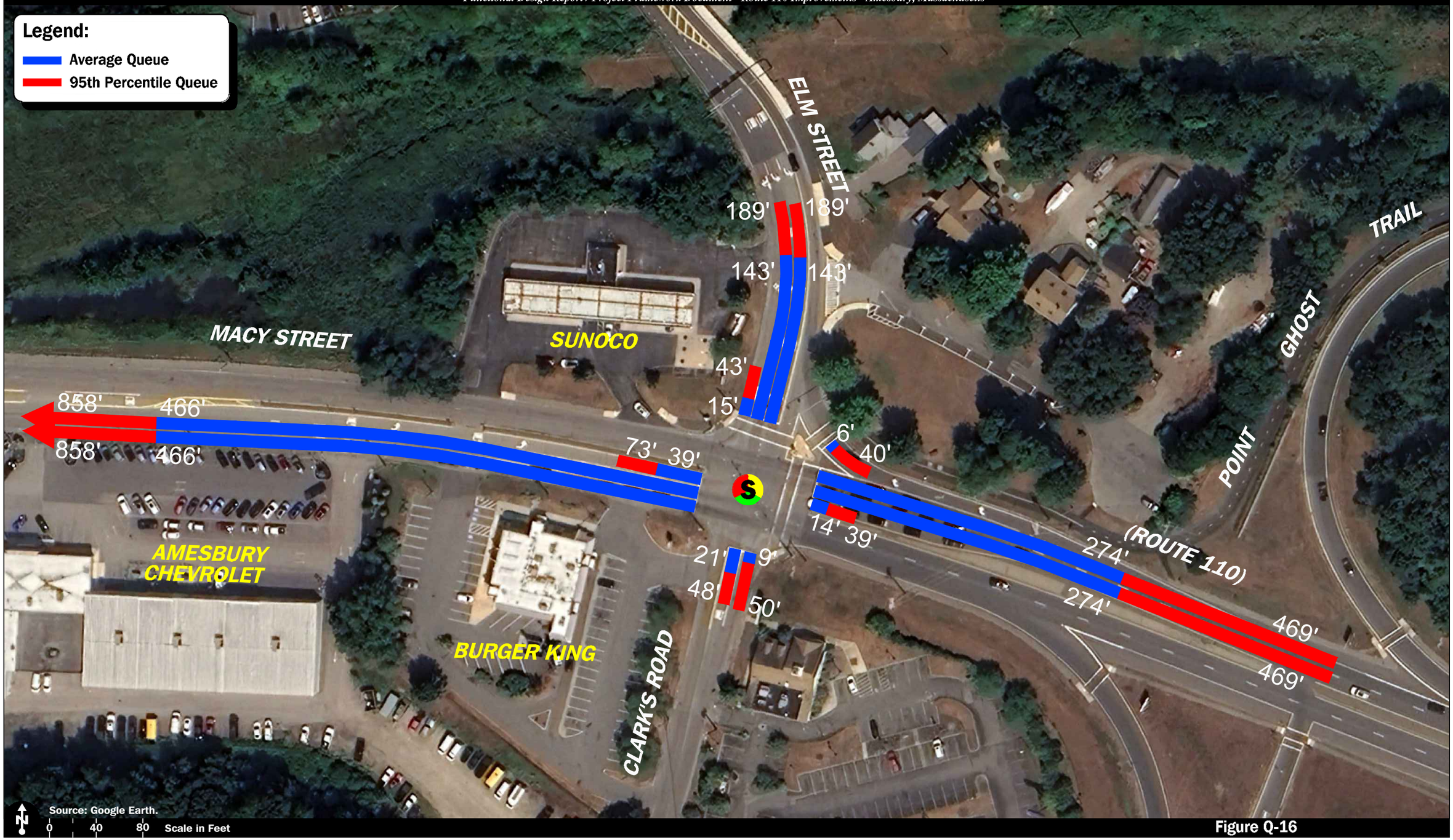

Figure Q-16

2025 Baseline
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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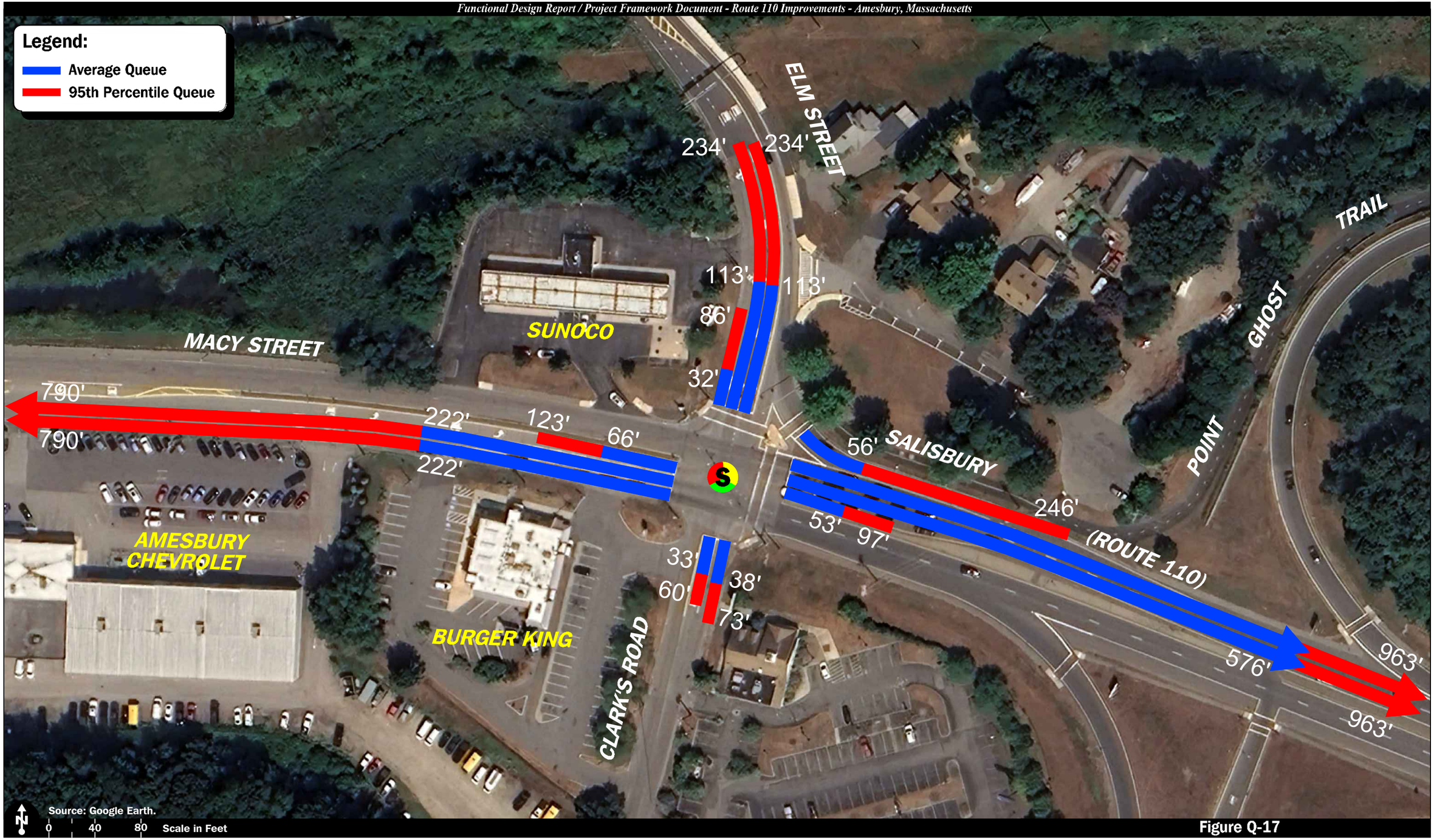

Figure Q-17

2025 Baseline
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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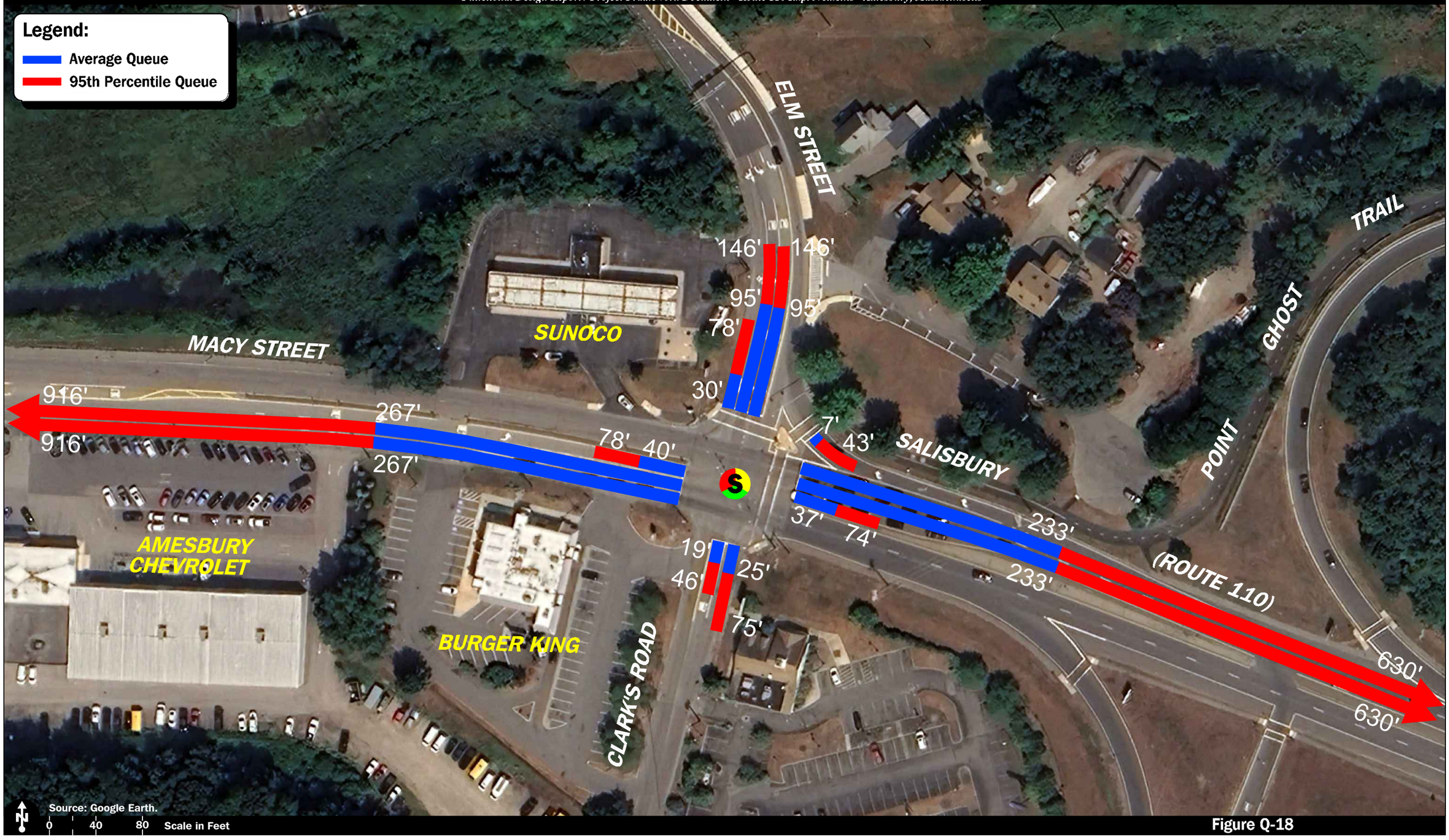

Figure Q-18

2025 Baseline
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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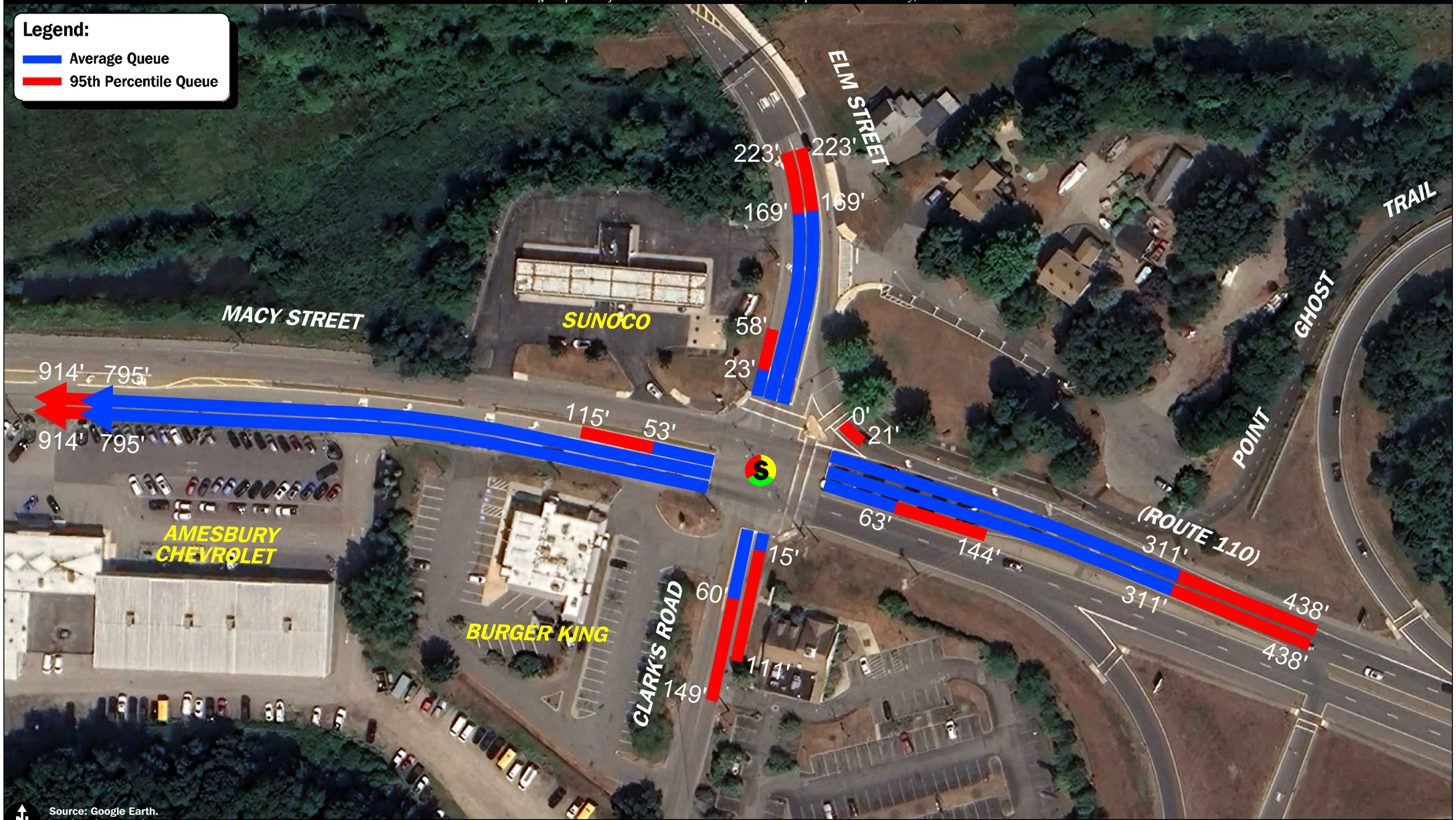

Figure Q-19

2032 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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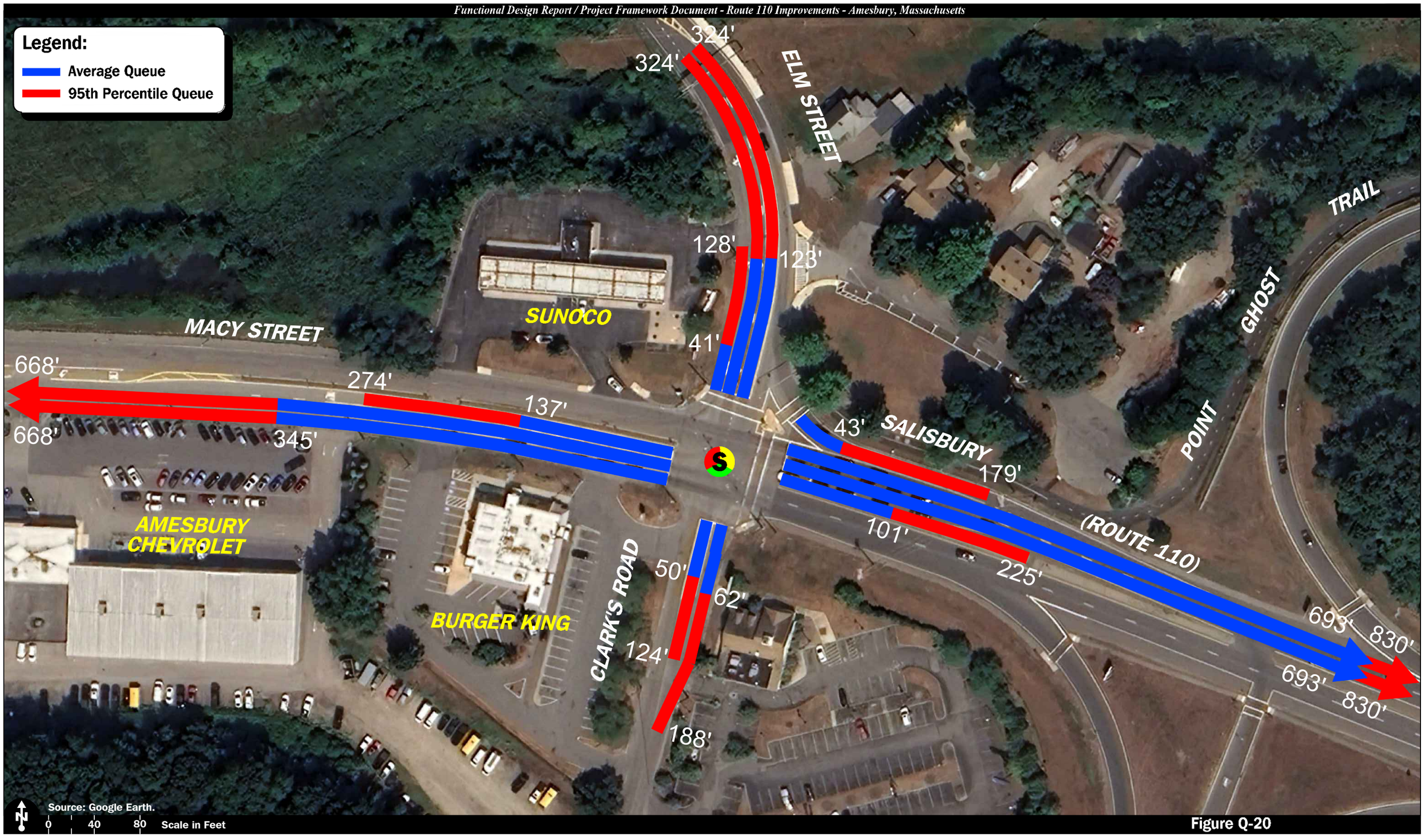

Figure Q-20

2032 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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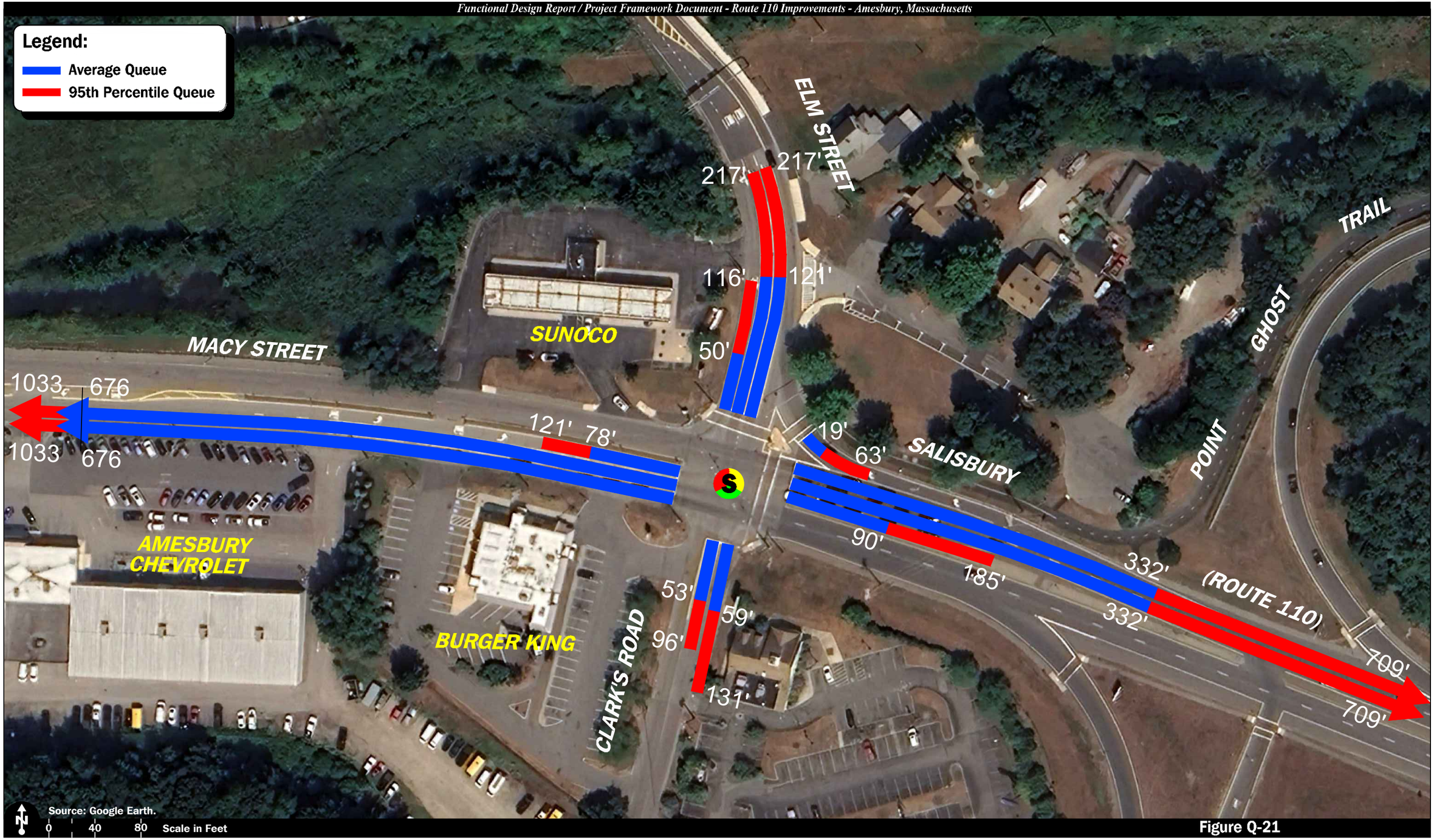

Figure Q-21

2032 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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Legend:

- Average Queue
- 95th Percentile Queue

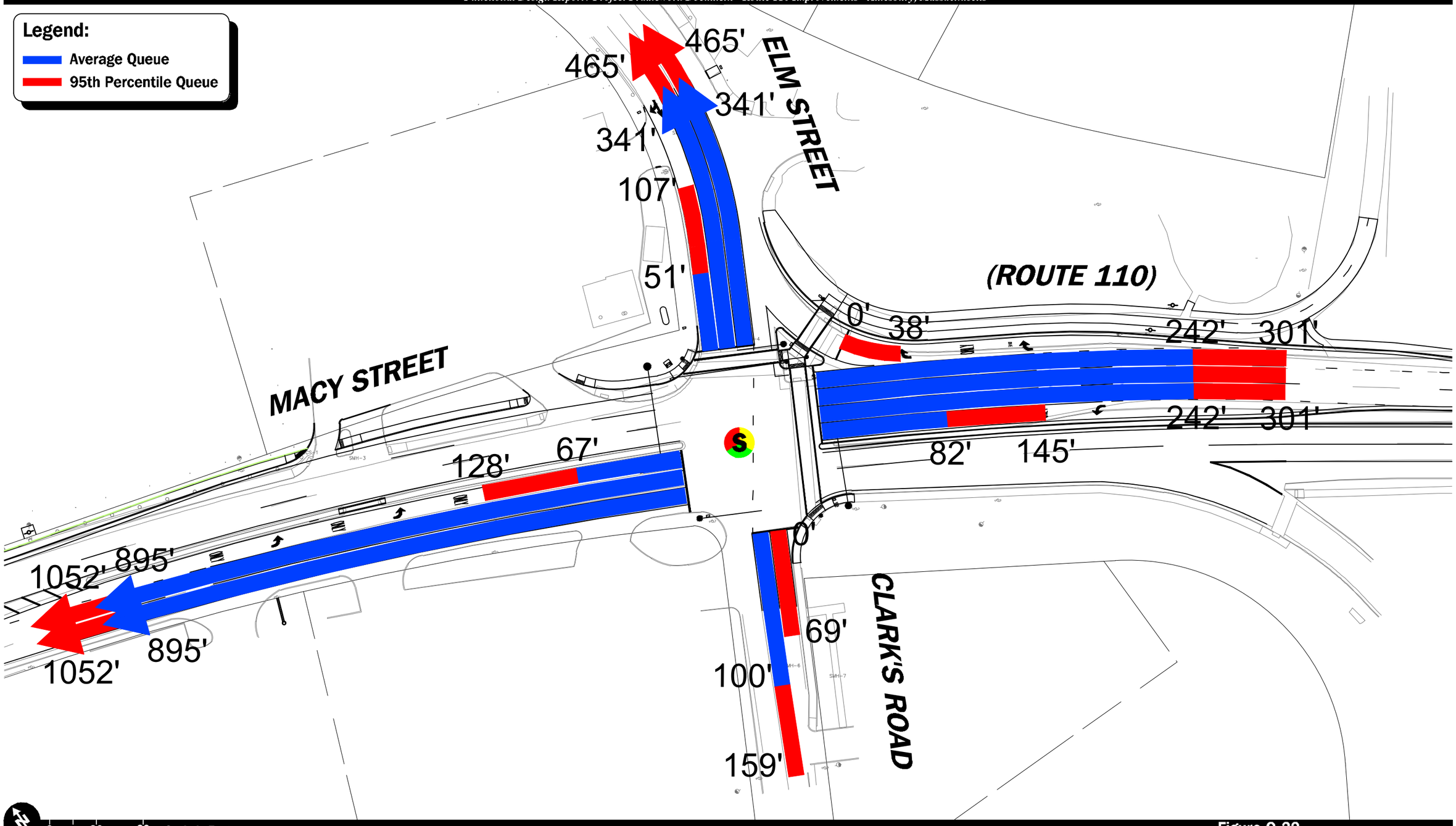

Figure Q-22

2032 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

Vanasse & Associates inc

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Legend:

- Average Queue
- 95th Percentile Queue

MACY STREET

ELM STREET

(ROUTE 110)

CLARK'S ROAD

307' 307' 226' 226' 145' 80'

53' 106' 435' 594'

120' 177' 435' 594'

123' 224'

840' 438' 438' 840'

0' 0'

128' 194'

0 30 60 Scale in Feet

Figure Q-23

2032 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

Vanasse & Associates inc

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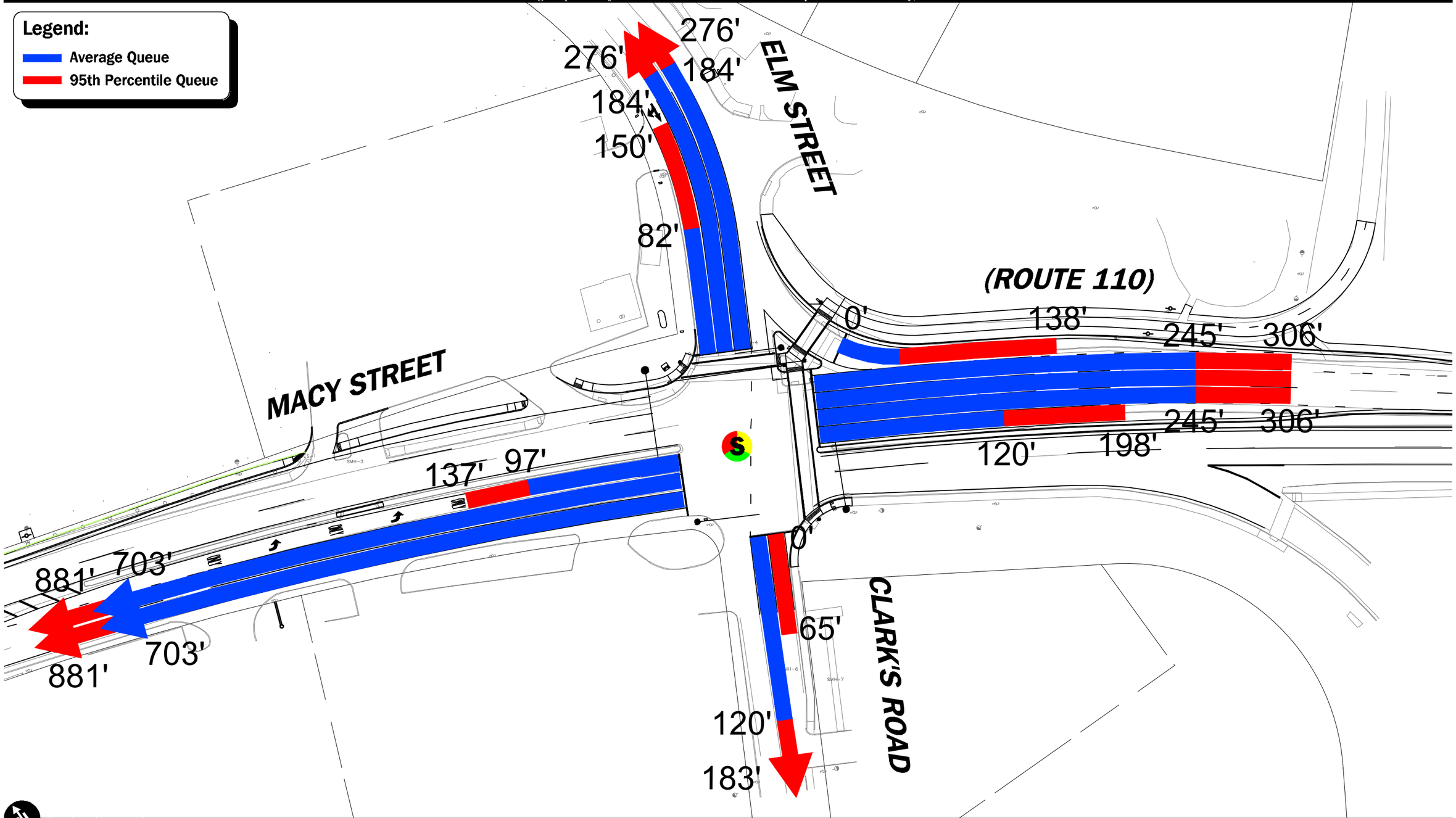

Figure Q-24

2032 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

Vanasse & Associates inc

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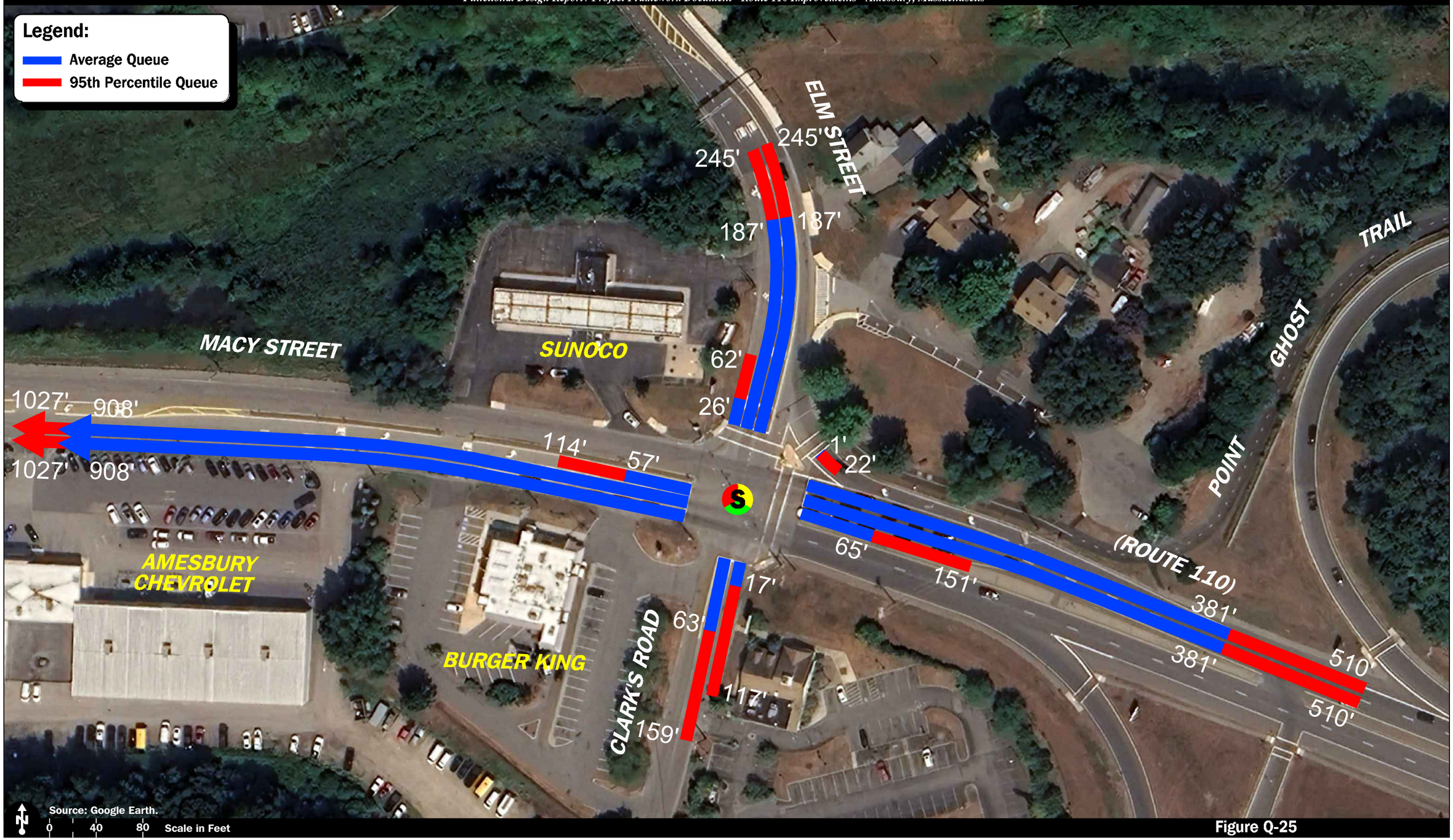

Figure Q-25

2045 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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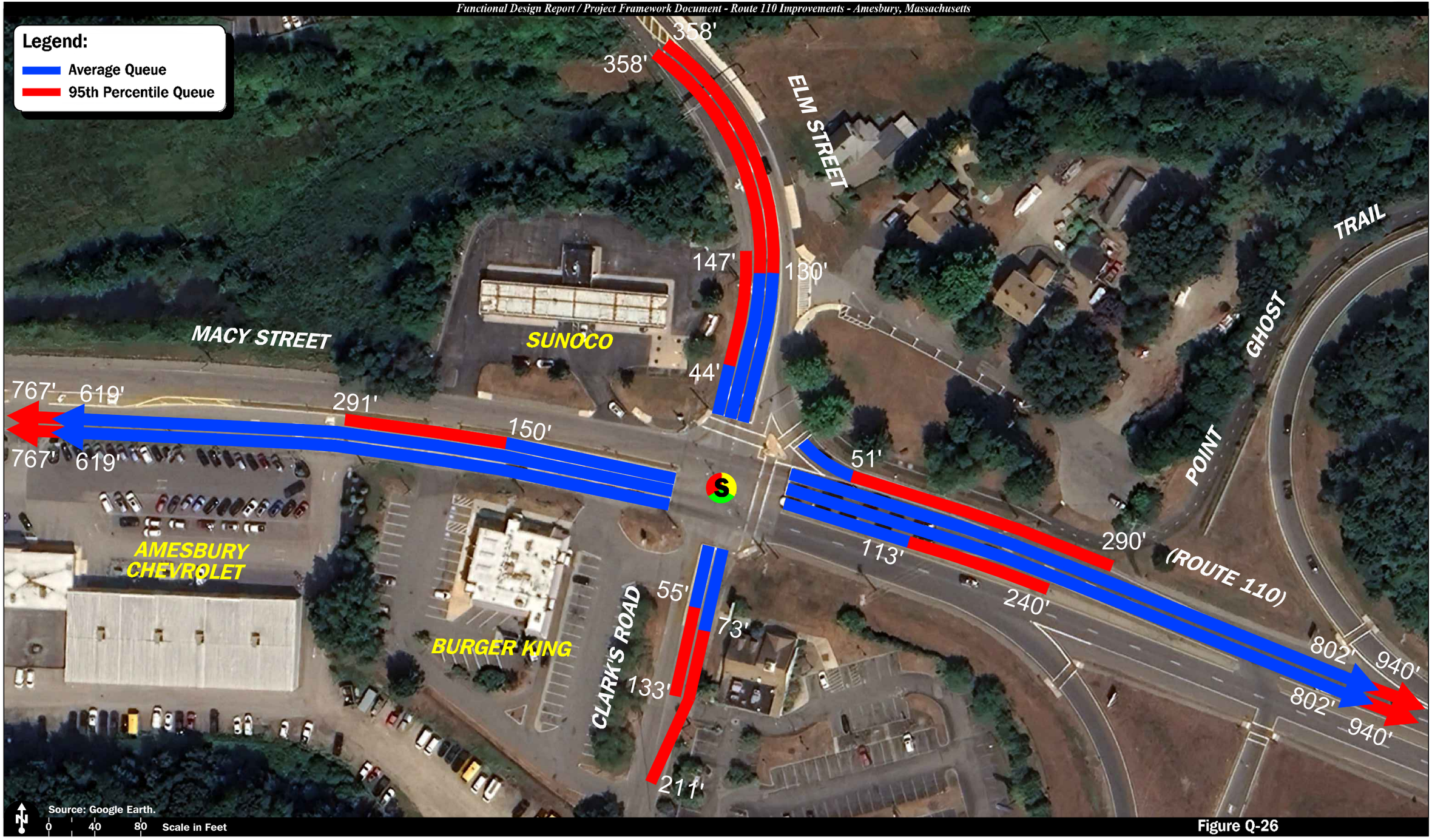

Figure Q-26

2045 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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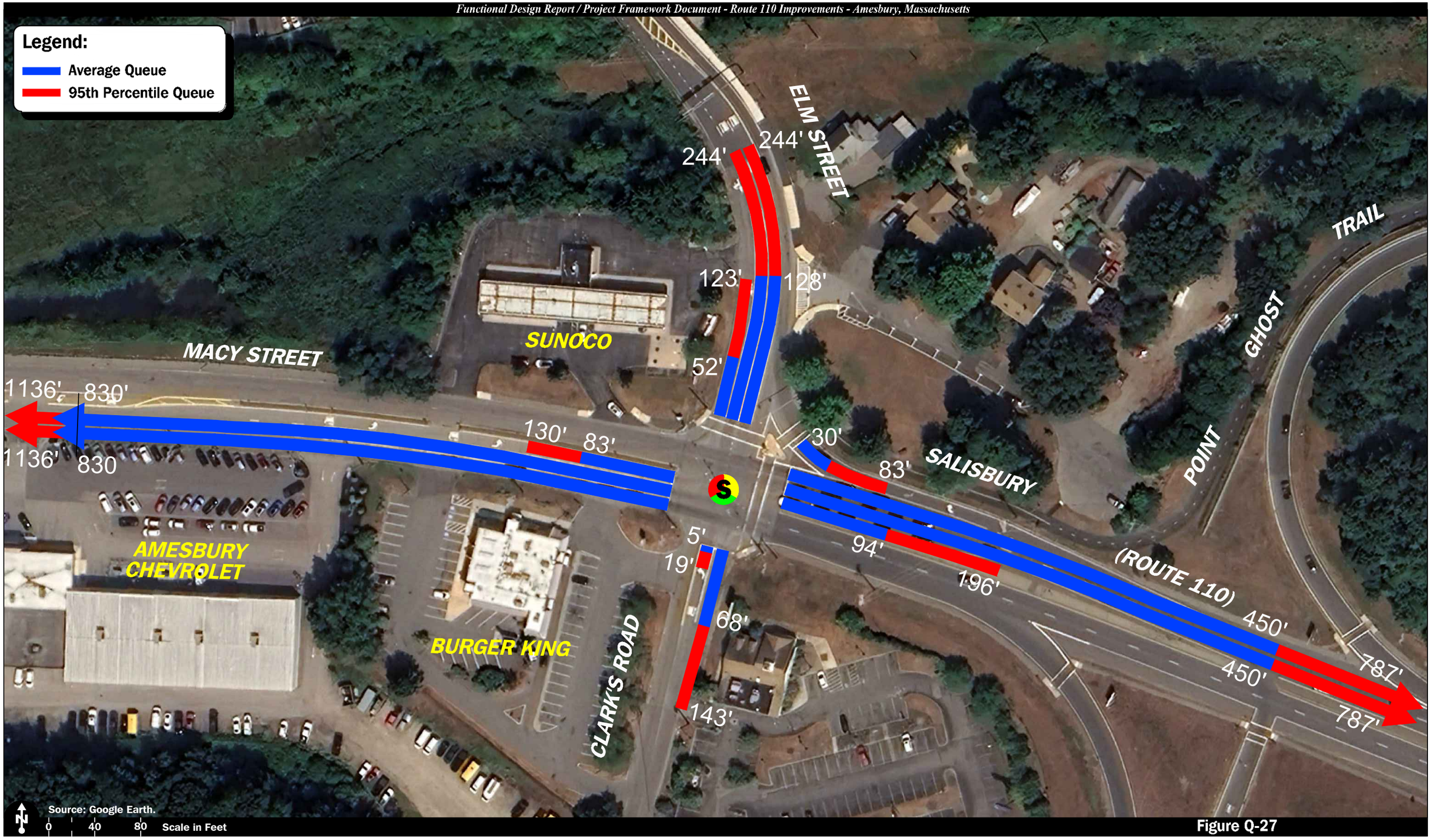

Figure Q-27

2045 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Clark's Road and Elm Street

Vanasse & Associates inc

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Legend:

- Average Queue
- 95th Percentile Queue

523'
523'
397'
397'
113'
55'
ELM STREET
(ROUTE 110)
0'
81'
275'
332'
275'
332'
85'
148'
MACY STREET
137'
72'
1205'
1046'
1205'
1046'
0'
72'
106'
166'
CLARK'S ROAD

0 30 60 Scale in Feet

Figure Q-28

2045 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

Vanasse & Associates inc

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Legend:

- Average Queue
- 95th Percentile Queue

353'
353'
250'
158'
90'
ELM STREET
(ROUTE 110)
33'
120'
441'
718'
MACY STREET
130'
233'
141'
171'
441'
718'
948'
758'
948'
758'
0'
0'
CLARK'S ROAD
138'
206'

0 30 60 Scale in Feet

Figure Q-29

2045 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

Vanasse & Associates inc

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Legend:

- Average Queue
- 95th Percentile Queue

310'
310'
202'
202'
160'
89'
ELM STREET
(ROUTE 110)
16'
144'
268'
346'
MACY STREET
144'
102'
126'
218'
268'
346'
1712'
856'
856'
1712'
0'
68'
CLARK'S ROAD
126'
191'

0 30 60 Scale in Feet

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Figure Q-30

2045 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
Elm Street and Clarks Road

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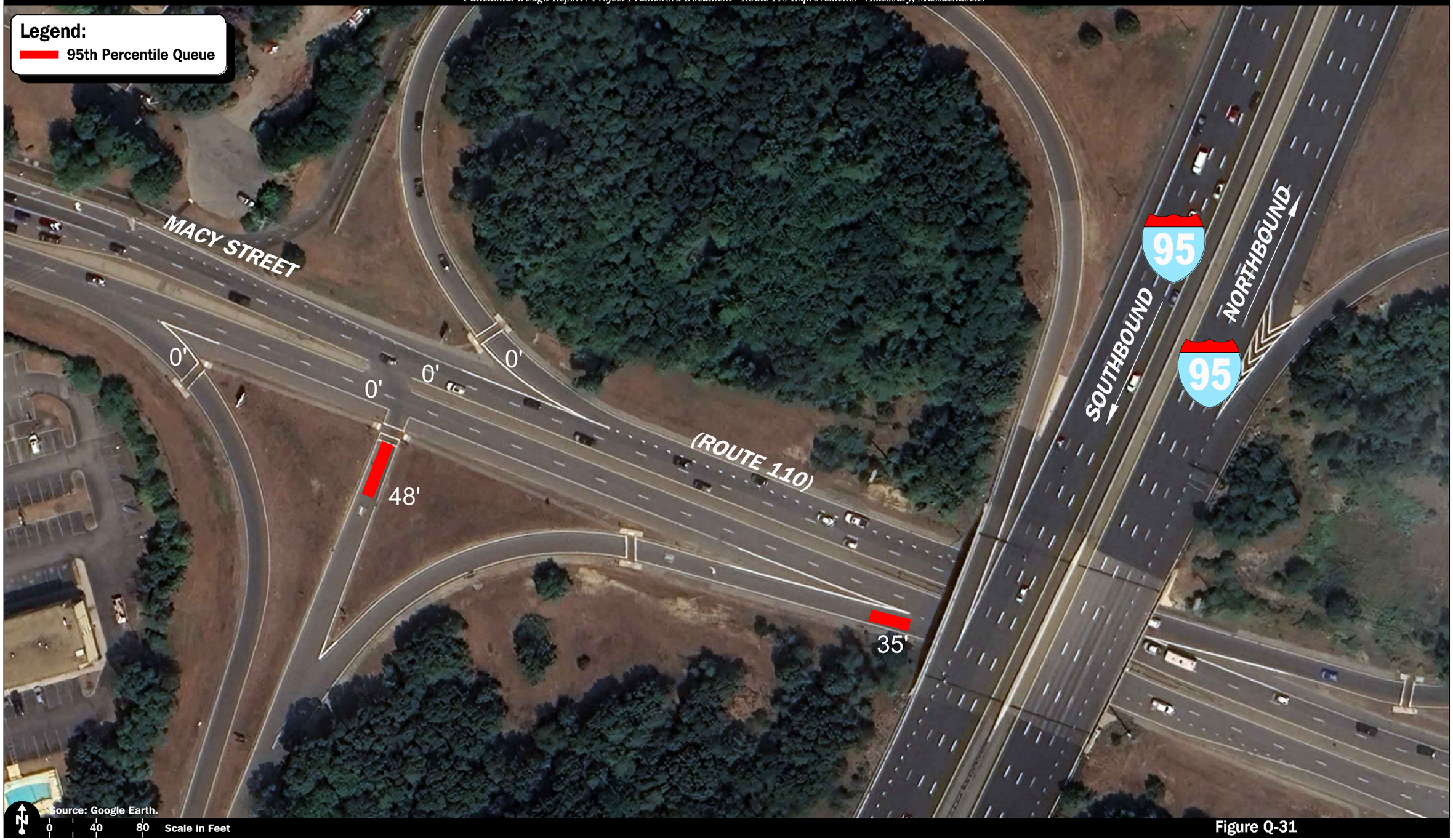

Figure Q-31

2025 Baseline
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

Vanasse & Associates inc

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R:\10269\Graphics\FDR\July 2025\10269QUEUE2.dwg, 7/29/2025 6:26:37 PM

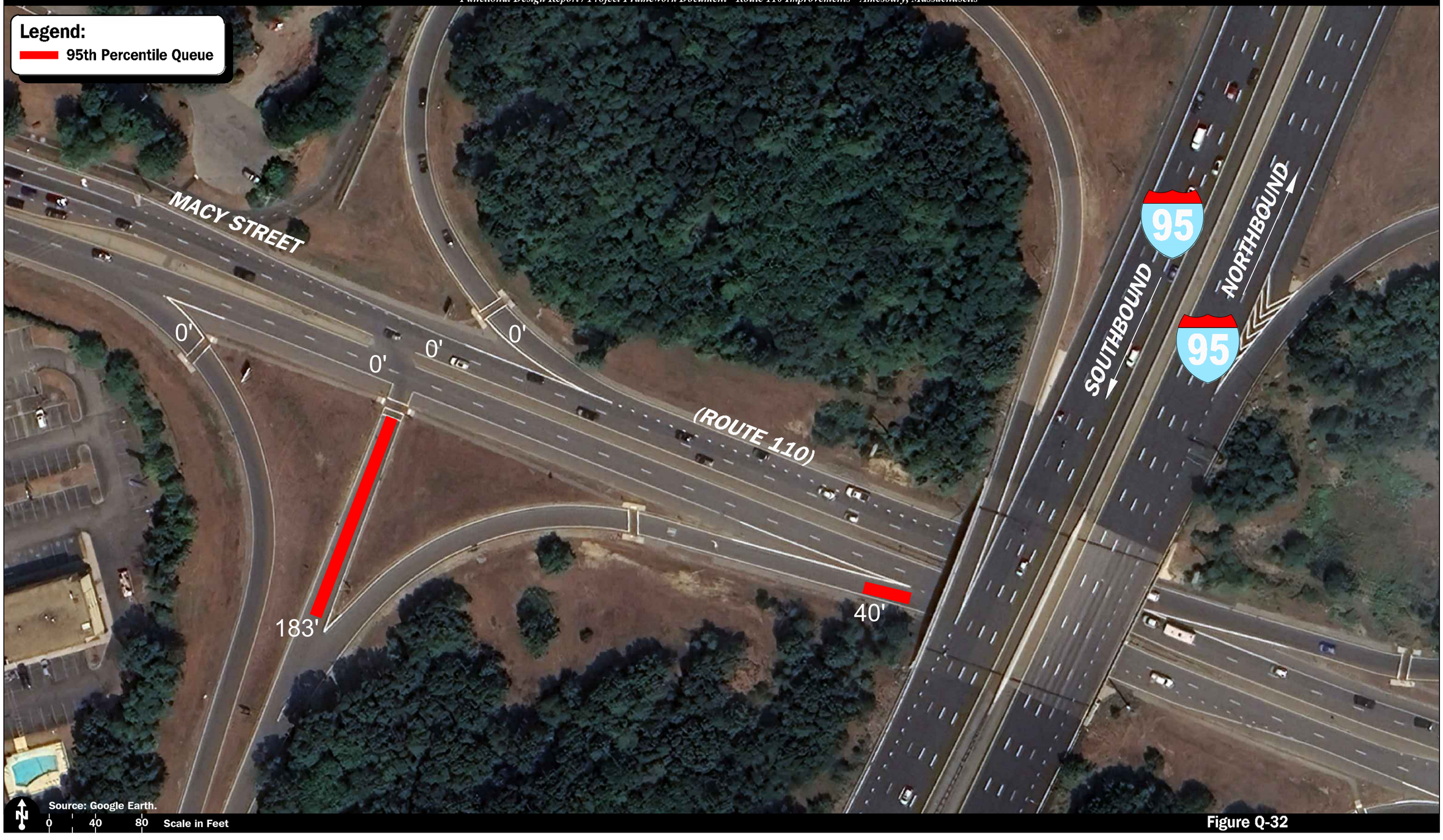

Figure Q-32

2025 Baseline
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

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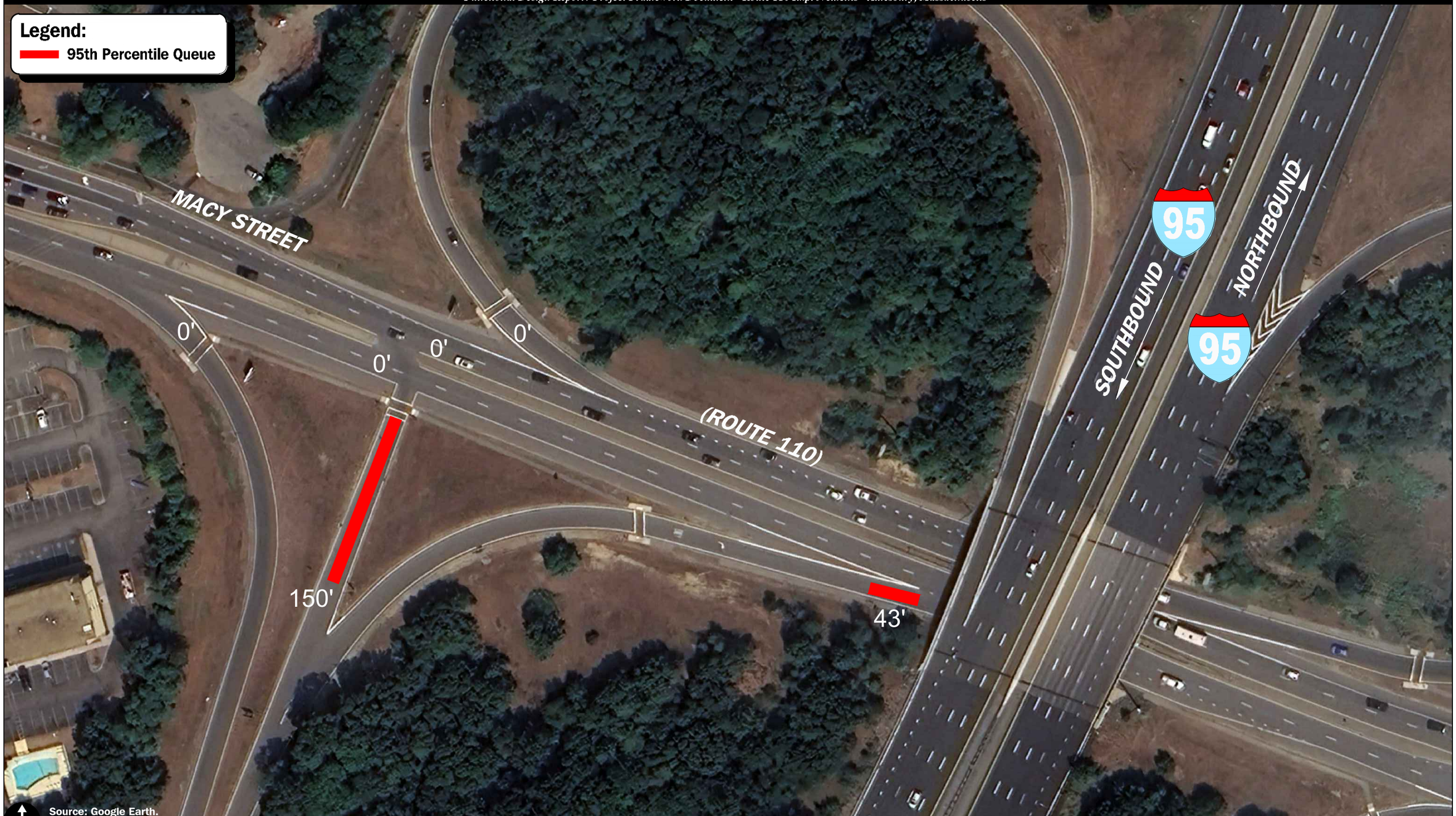

Figure Q-33

2025 Baseline
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

Vanasse & Associates inc

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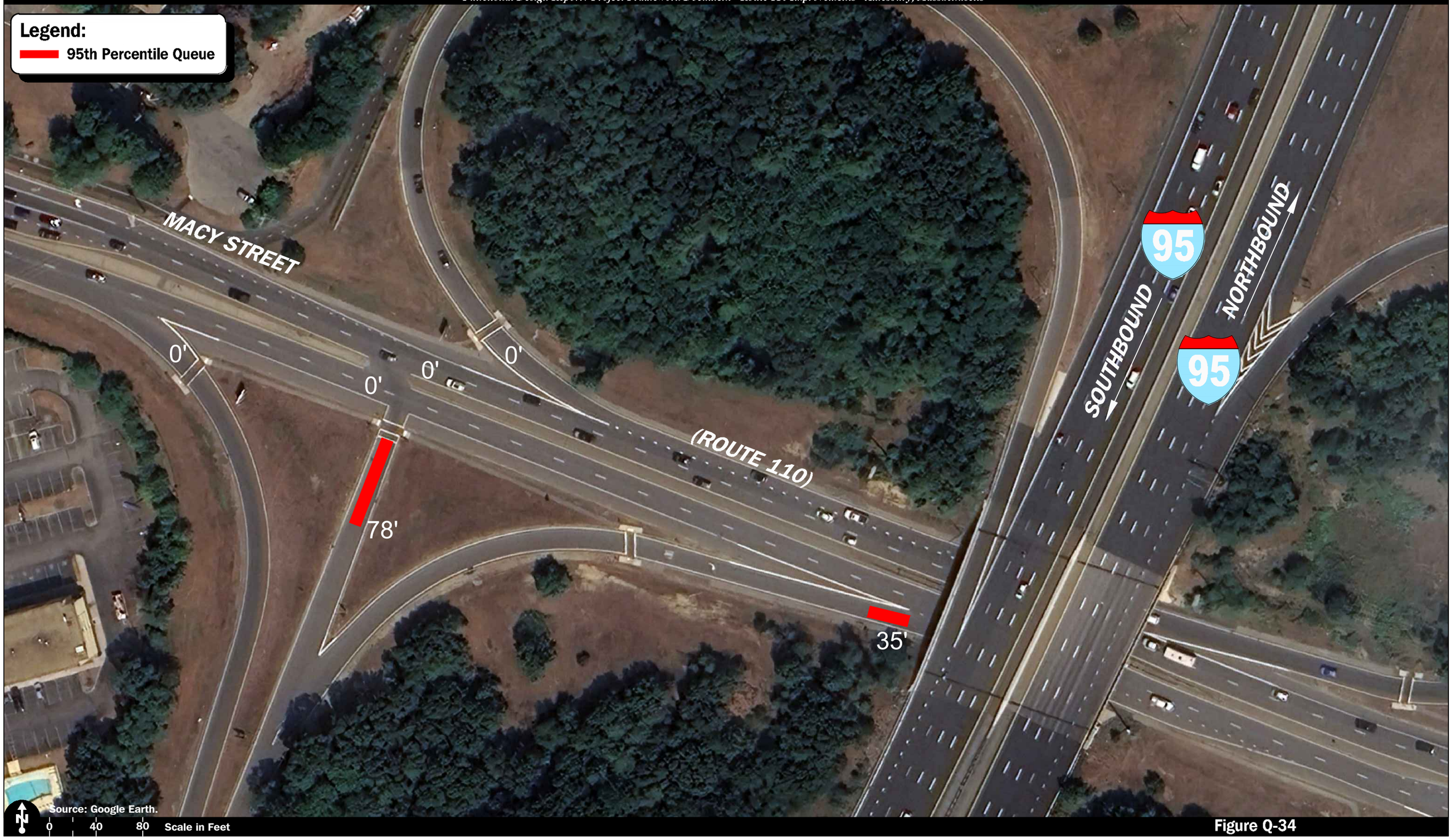

Figure Q-34

2032 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

Vanasse & Associates inc

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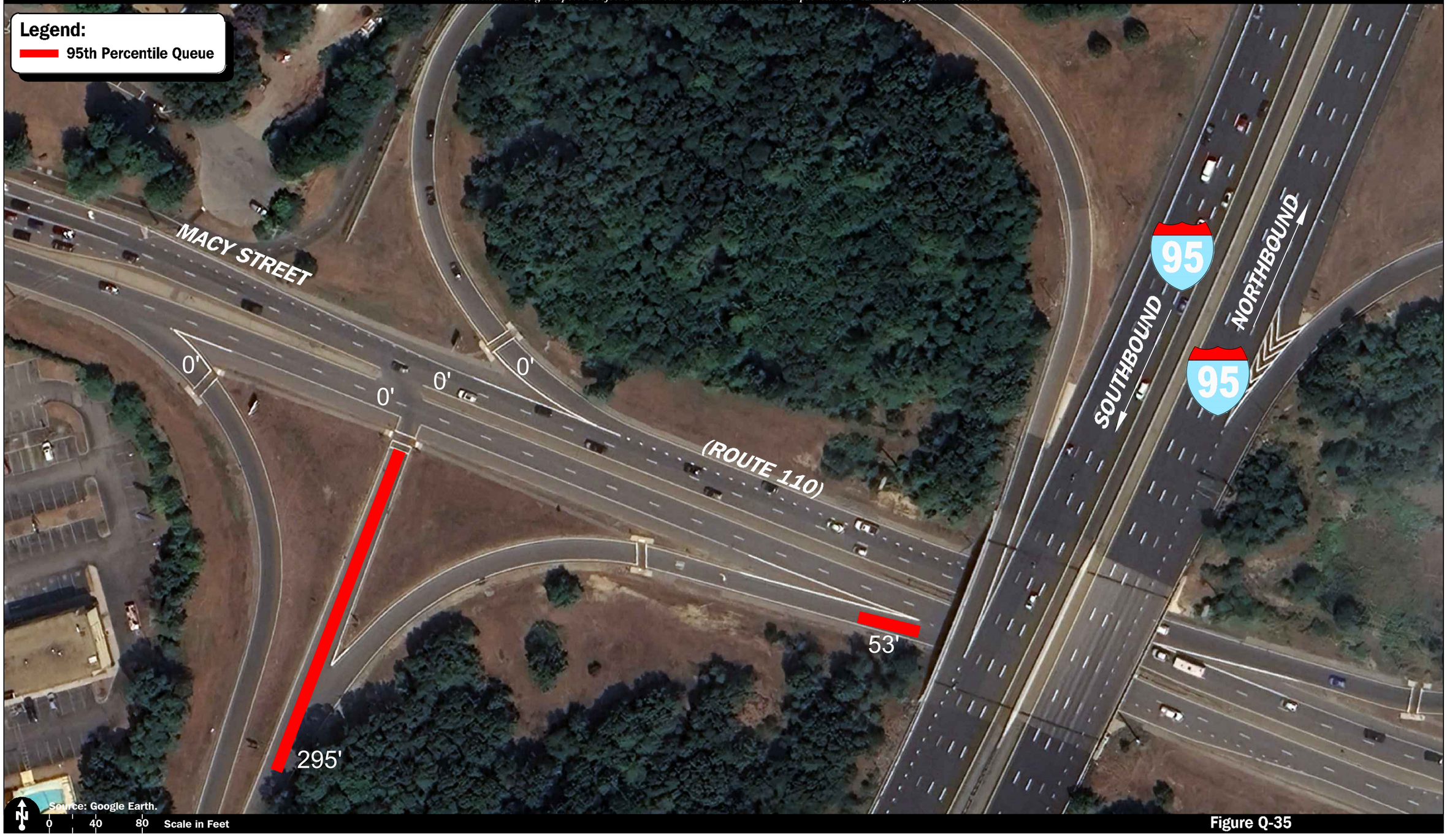

Figure Q-35

2032 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

Vanasse & Associates inc

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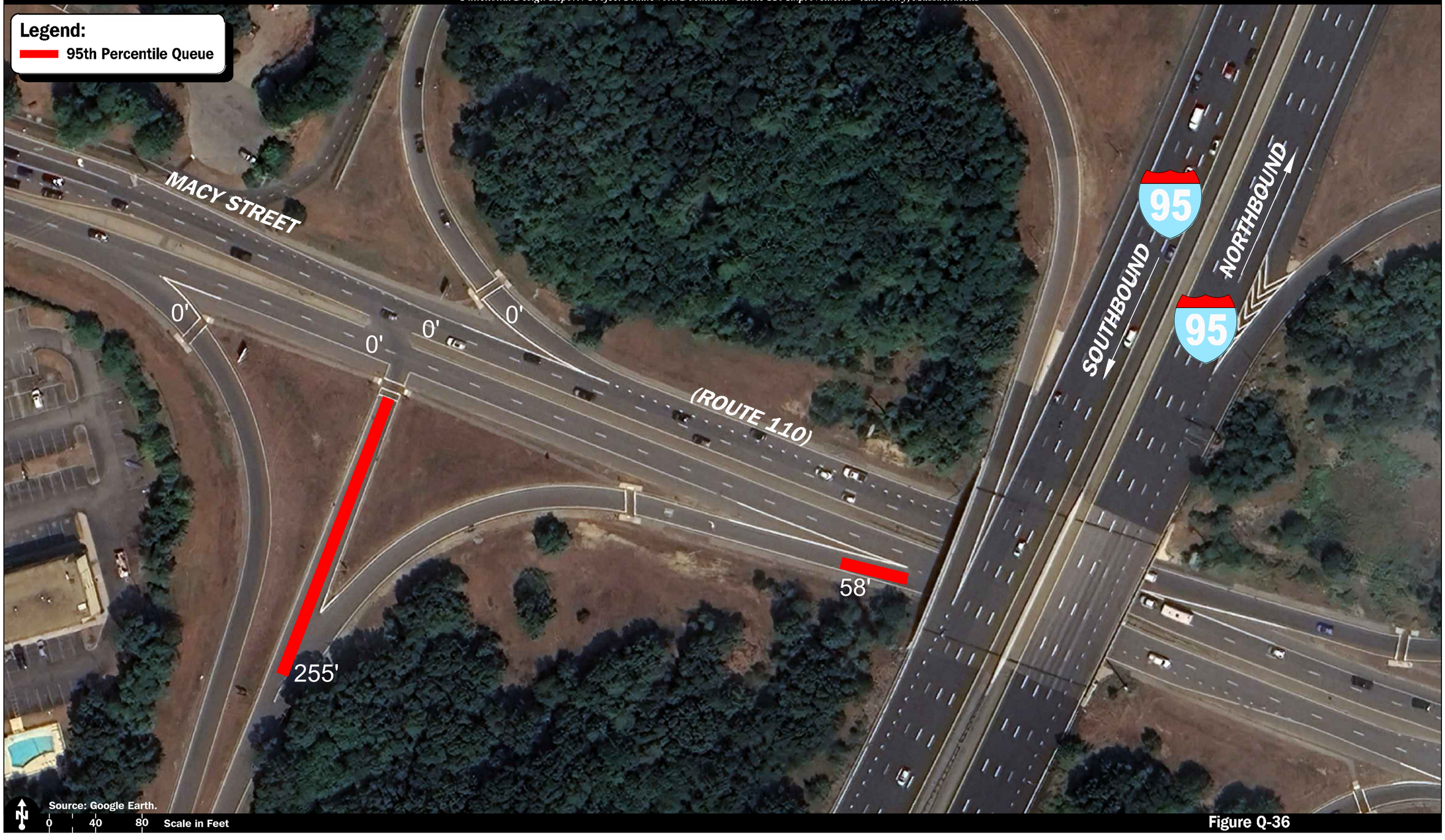

Figure Q-36

2032 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

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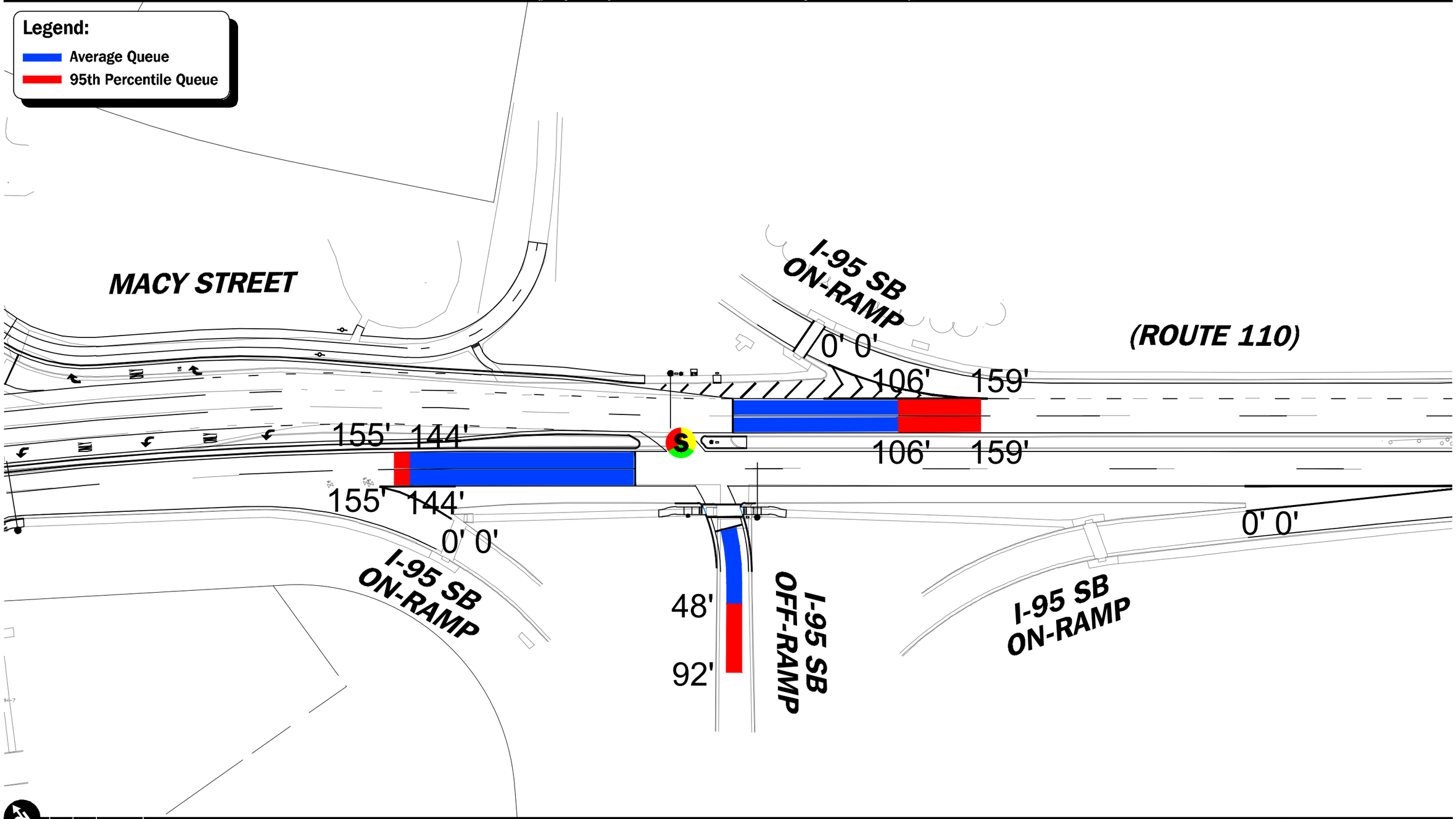

Figure Q-37

2032 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at I-95 Southbound Ramps

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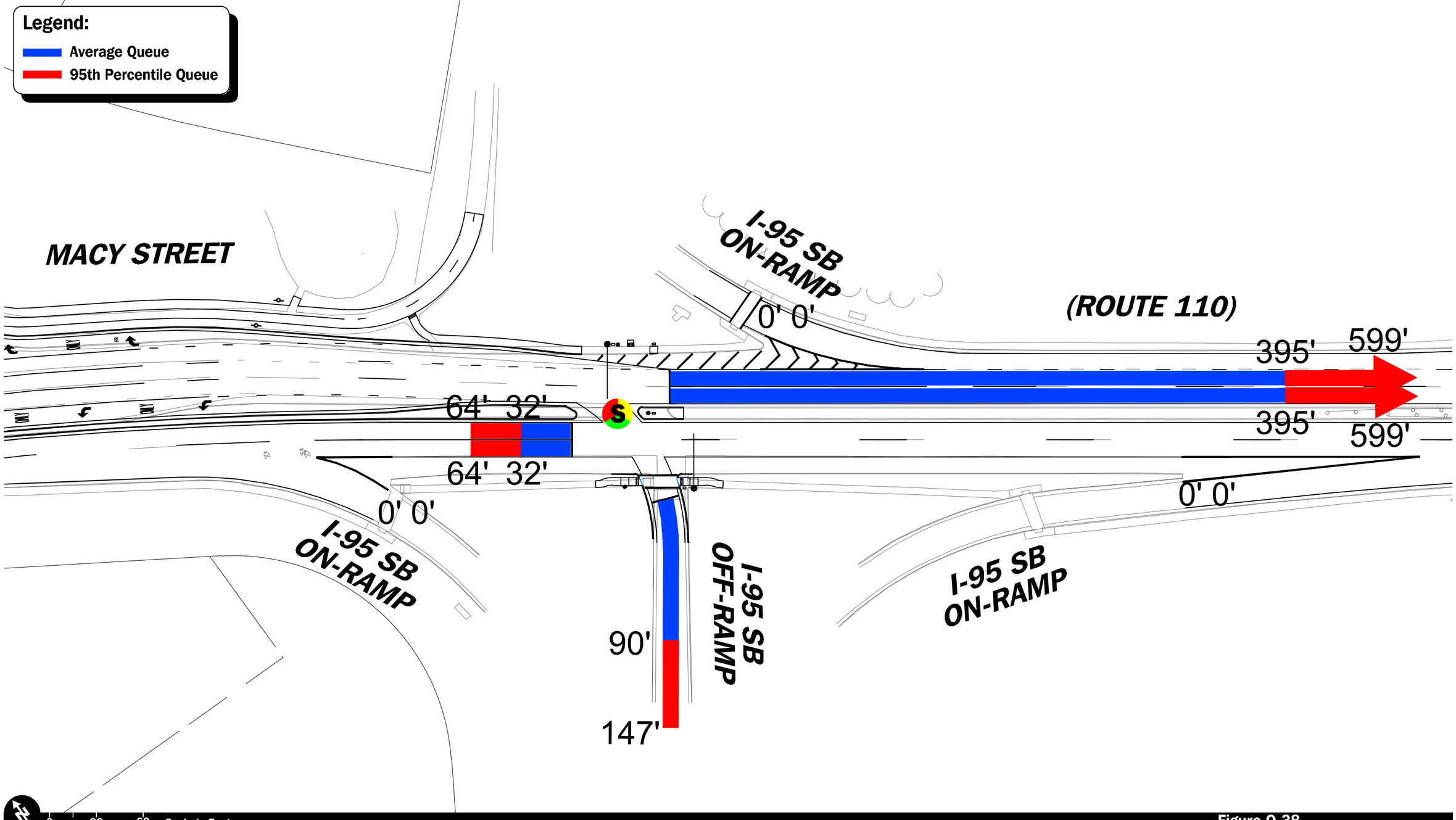

Figure Q-38

2032 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at I-95 Southbound Ramps

Vanasse & Associates inc

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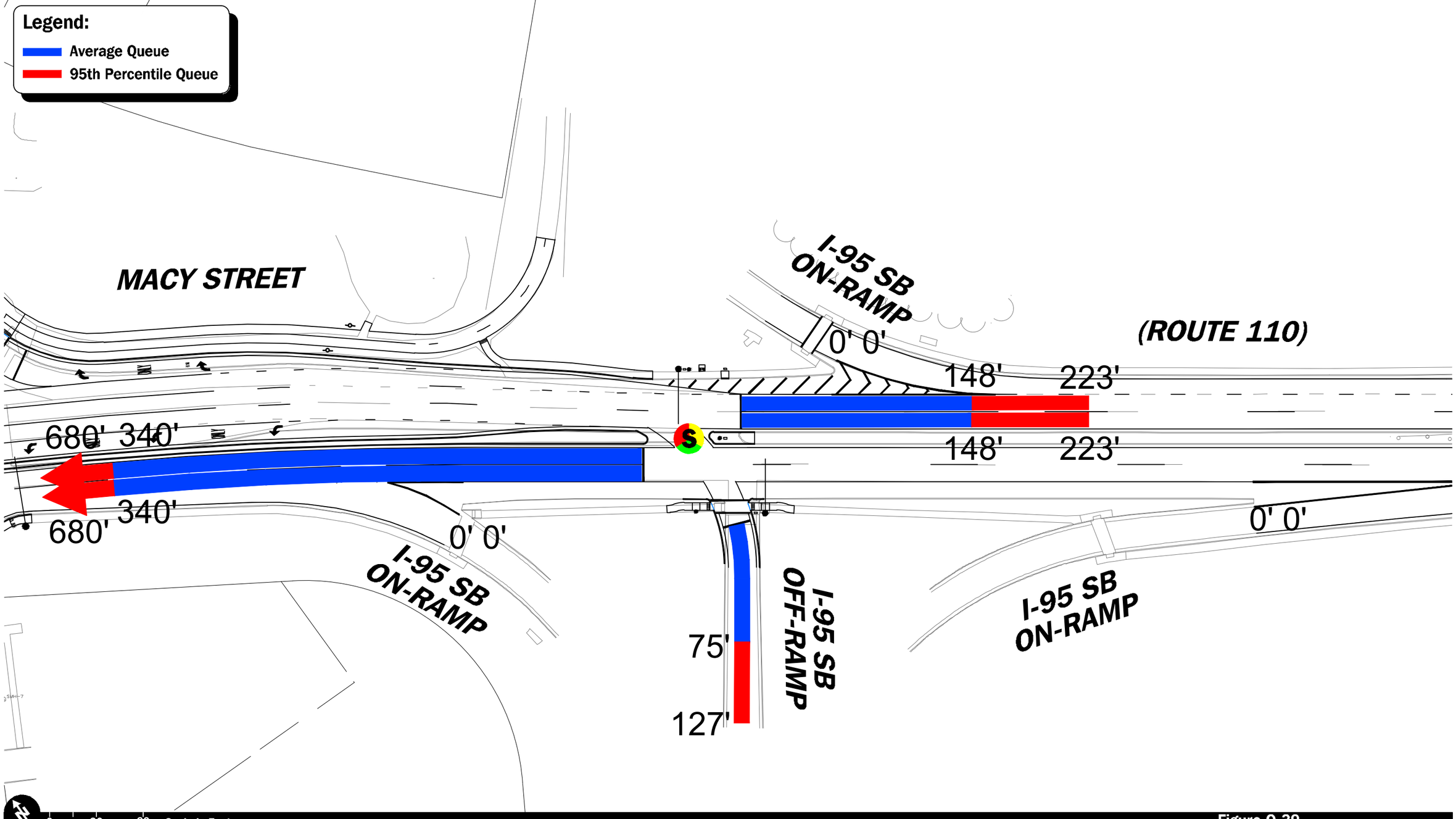

Figure Q-39

2032 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at I-95 Southbound Ramps

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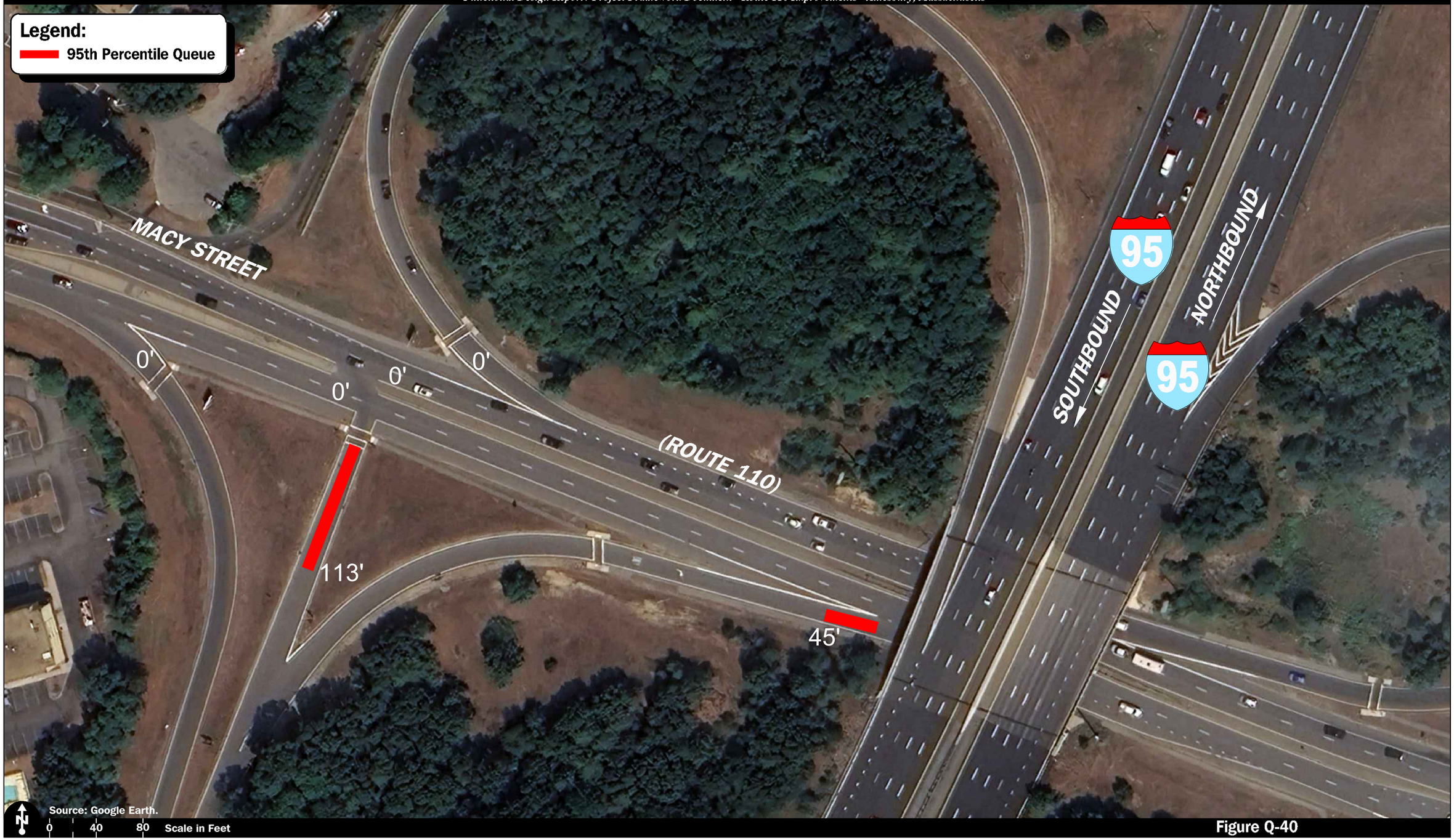

Figure Q-40

2045 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

Vanasse & Associates inc

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R:\10269\Graphics\FDR\July 2025\10269QUEUE2.dwg, 7/29/2025 7:22:02 PM

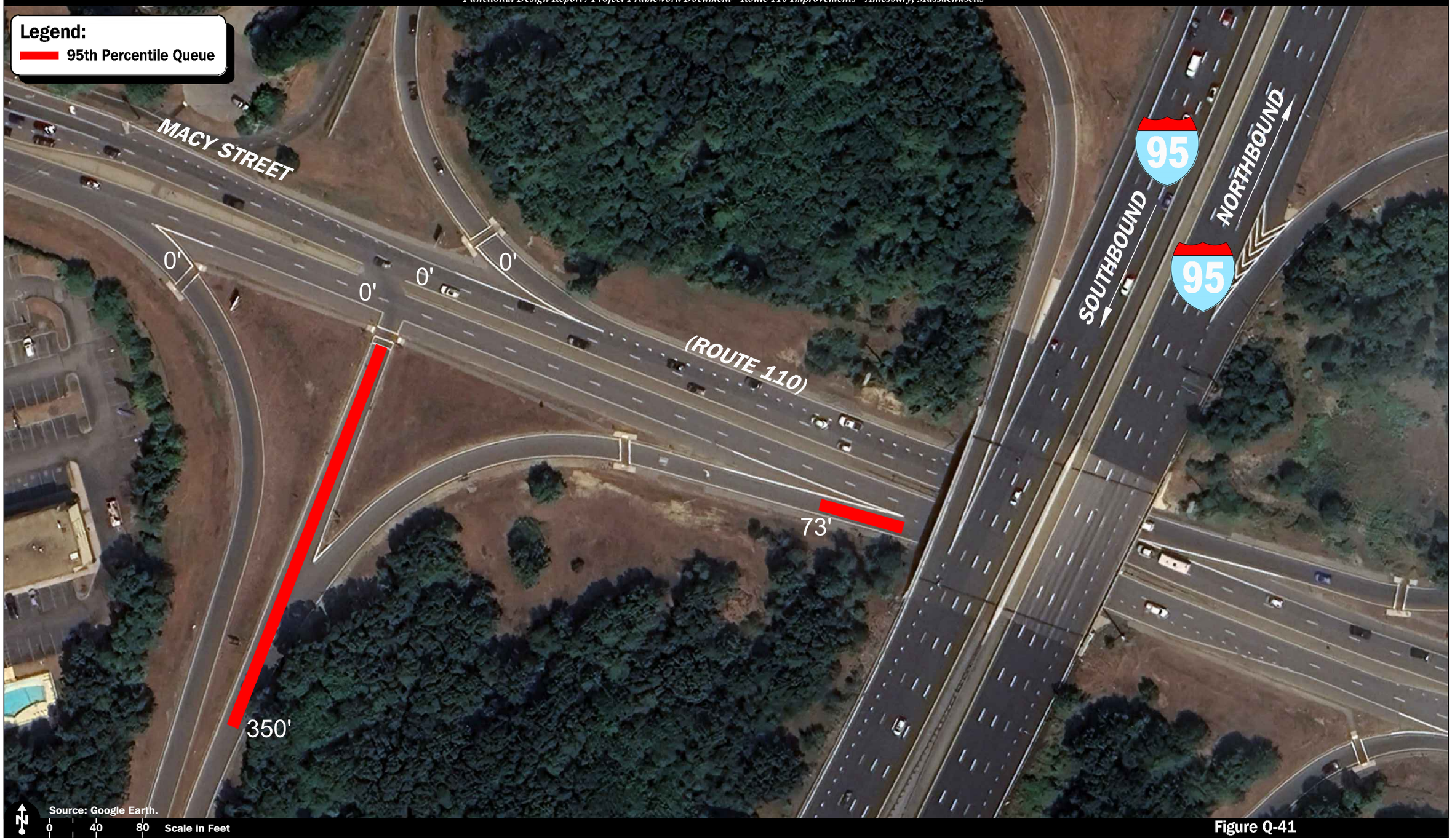

Figure Q-41

2045 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

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R:\10269\Graphics\FDR\July 2025\10269QUEUE2.dwg, 7/29/2025 7:22:31 PM

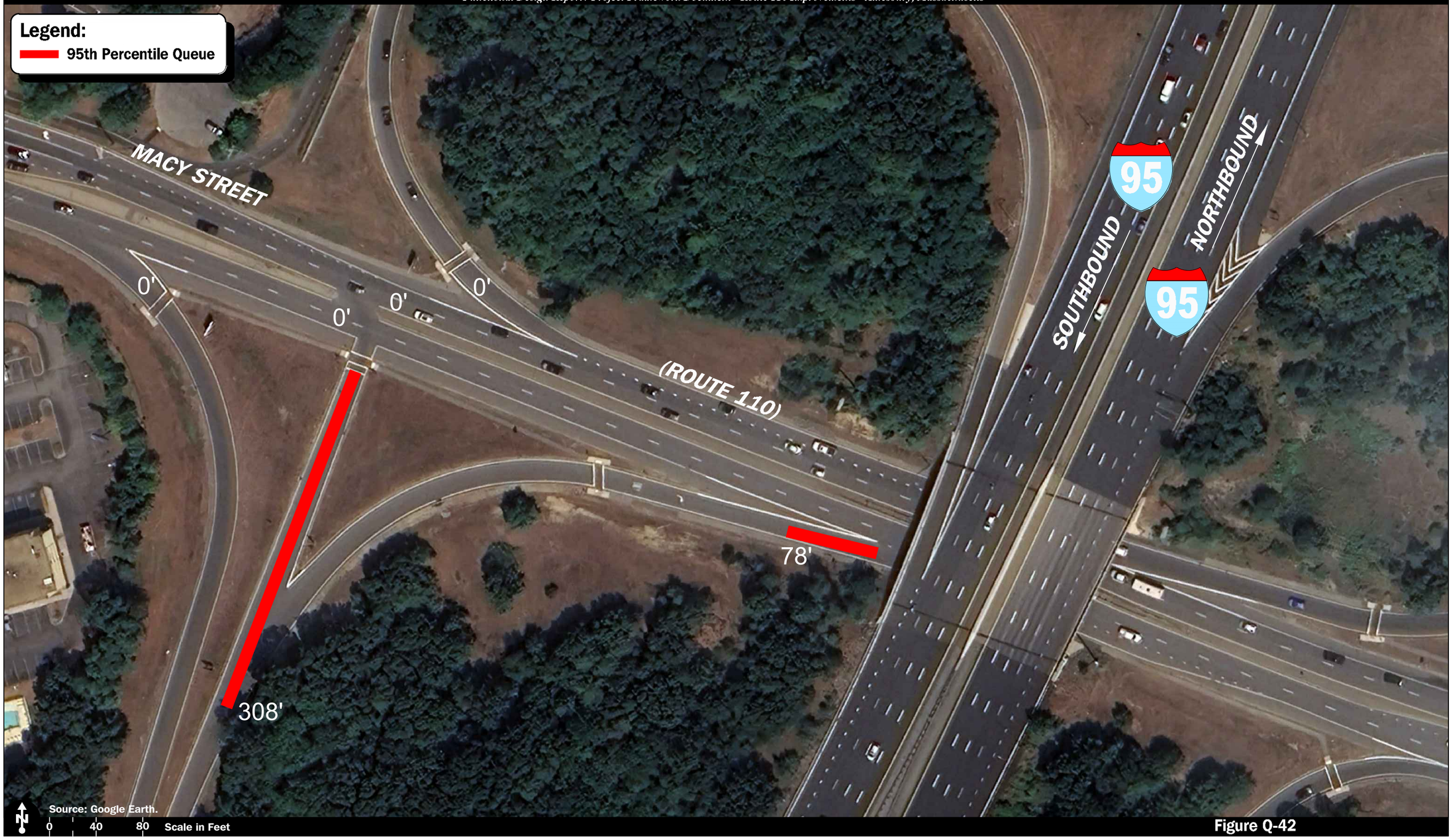

Figure Q-42

2045 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at
I-95 Southbound Ramps

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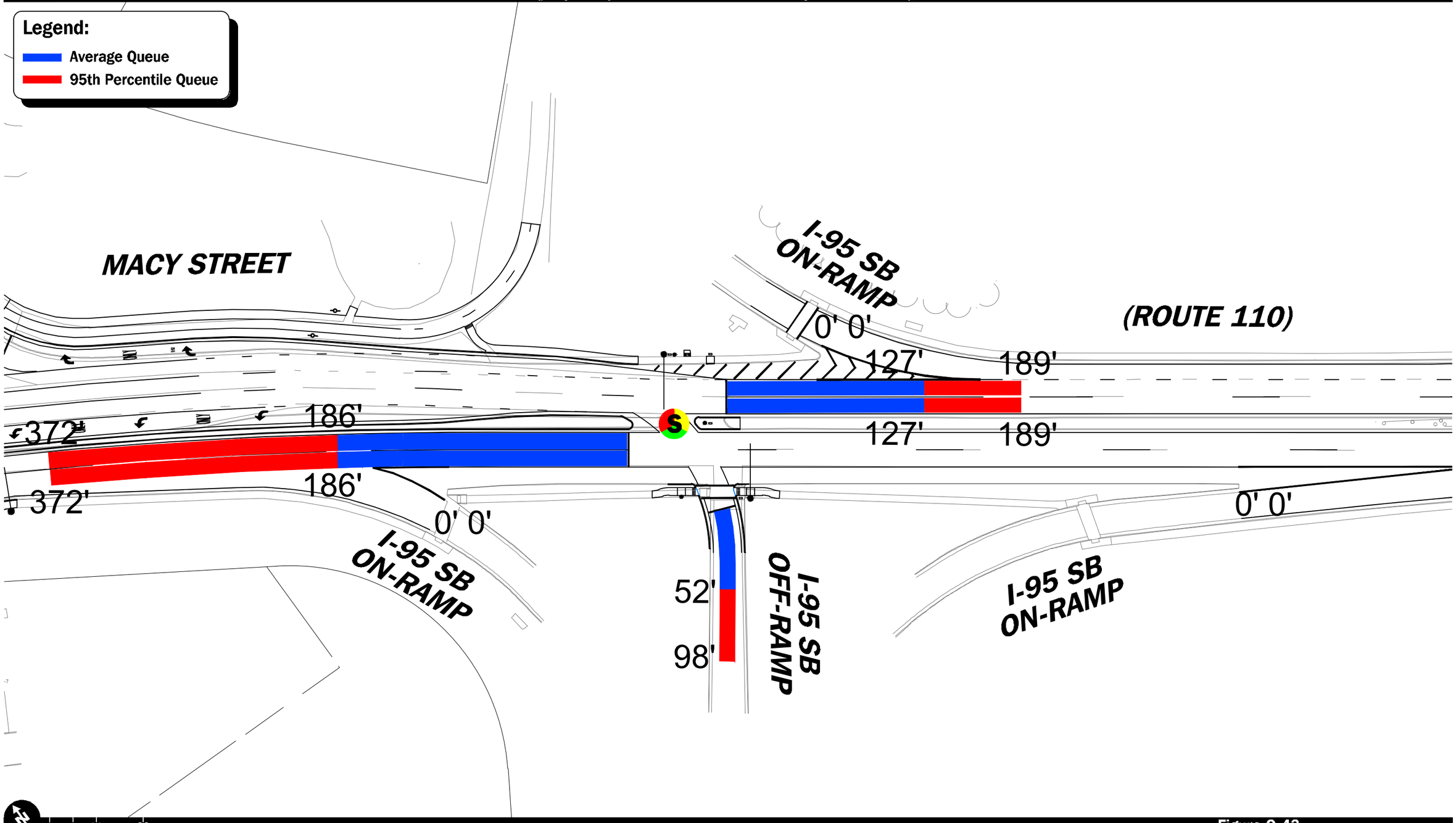

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Figure Q-43

2045 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at I-95 Southbound Ramps

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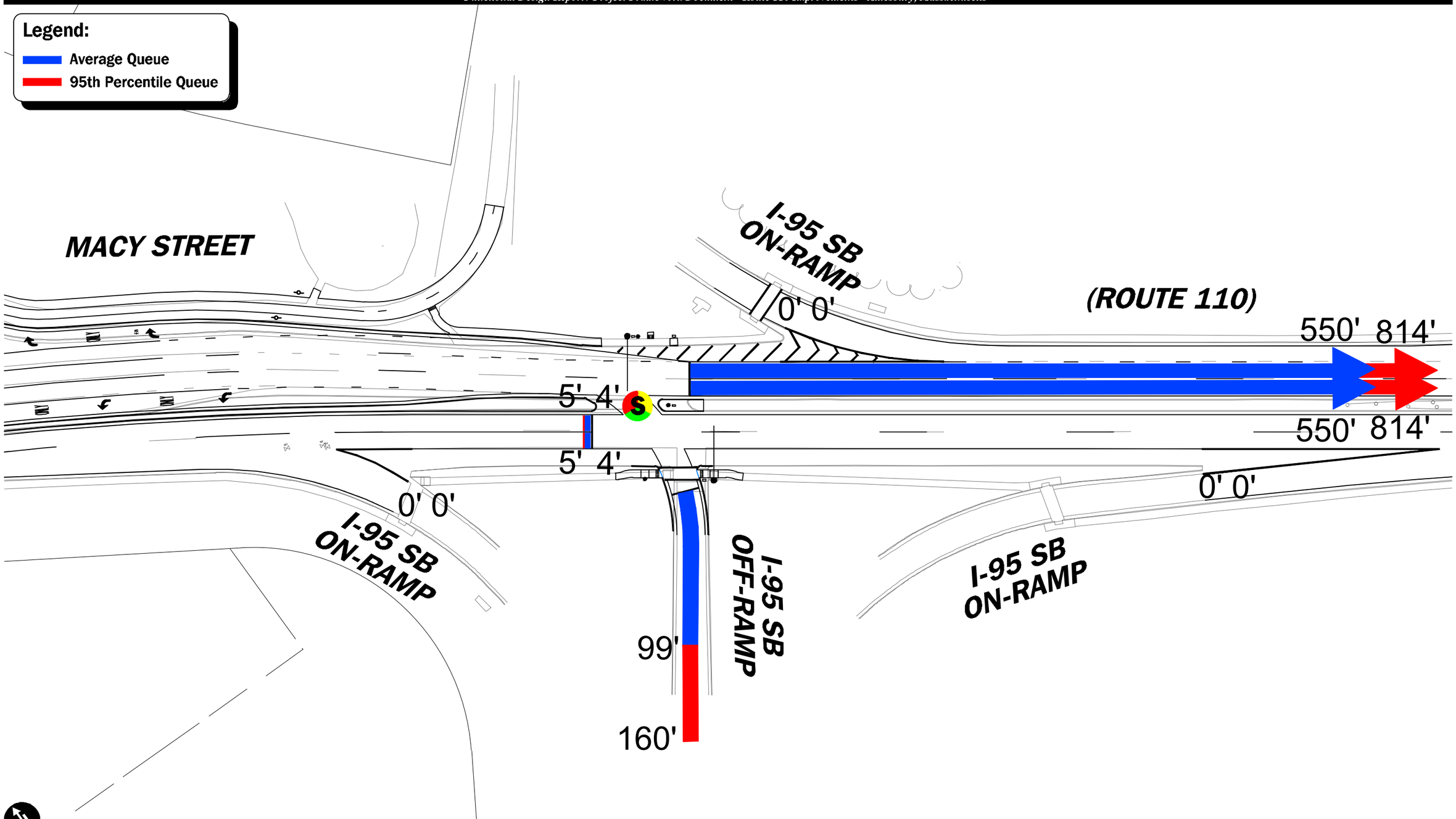

Figure Q-44

2045 Build Mitigated Weekday Evening Peak-Hour Vehicle Queue Summary Route 110 at I-95 Southbound Ramps

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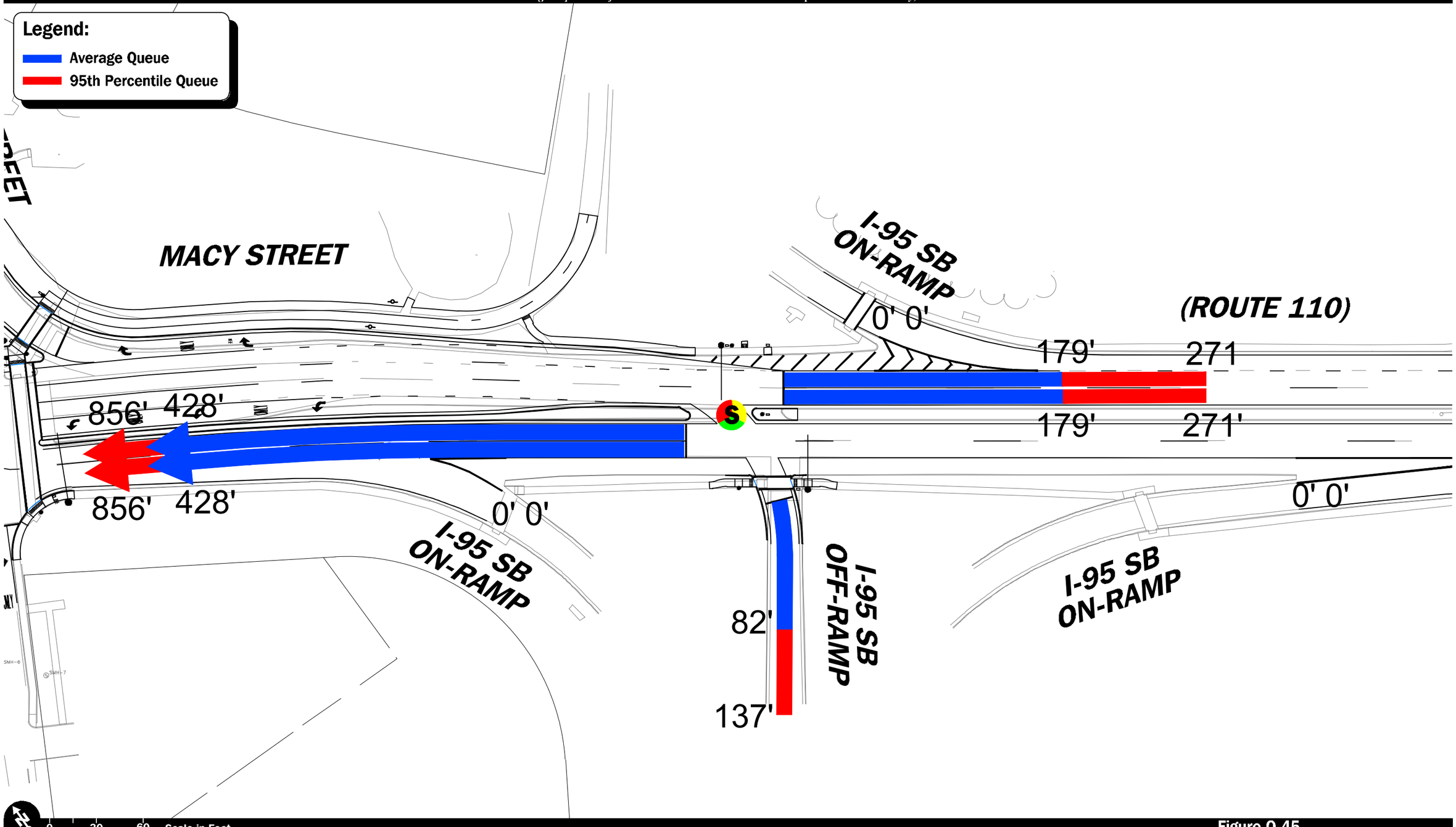

Figure Q-45

2045 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at I-95 Southbound Ramps

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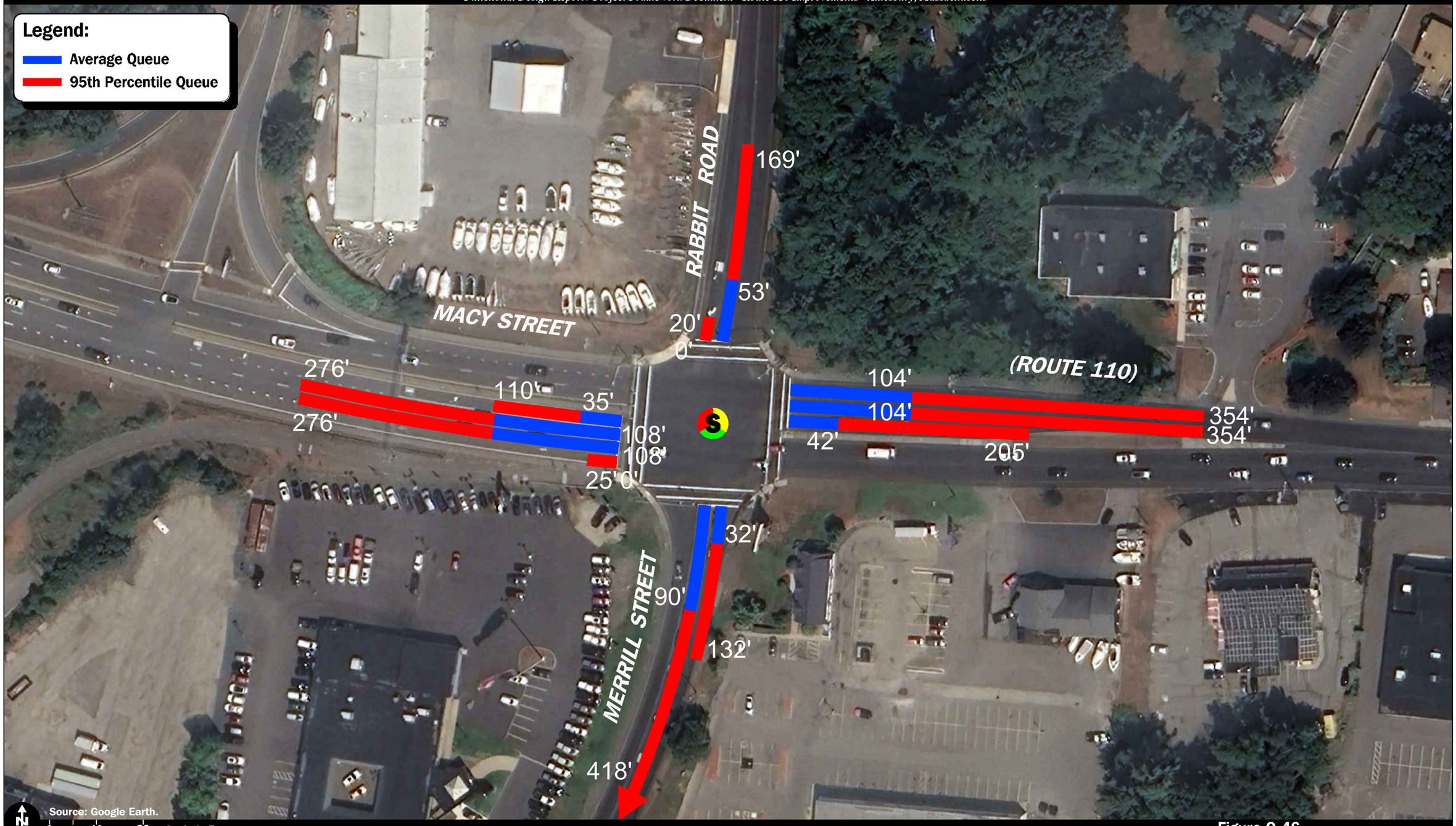

Figure Q-46

2025 Baseline
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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R:\10269\Graphics\FDR\July 2025\10269QUEUE6.dwg, 7/30/2025 8:11:38 AM

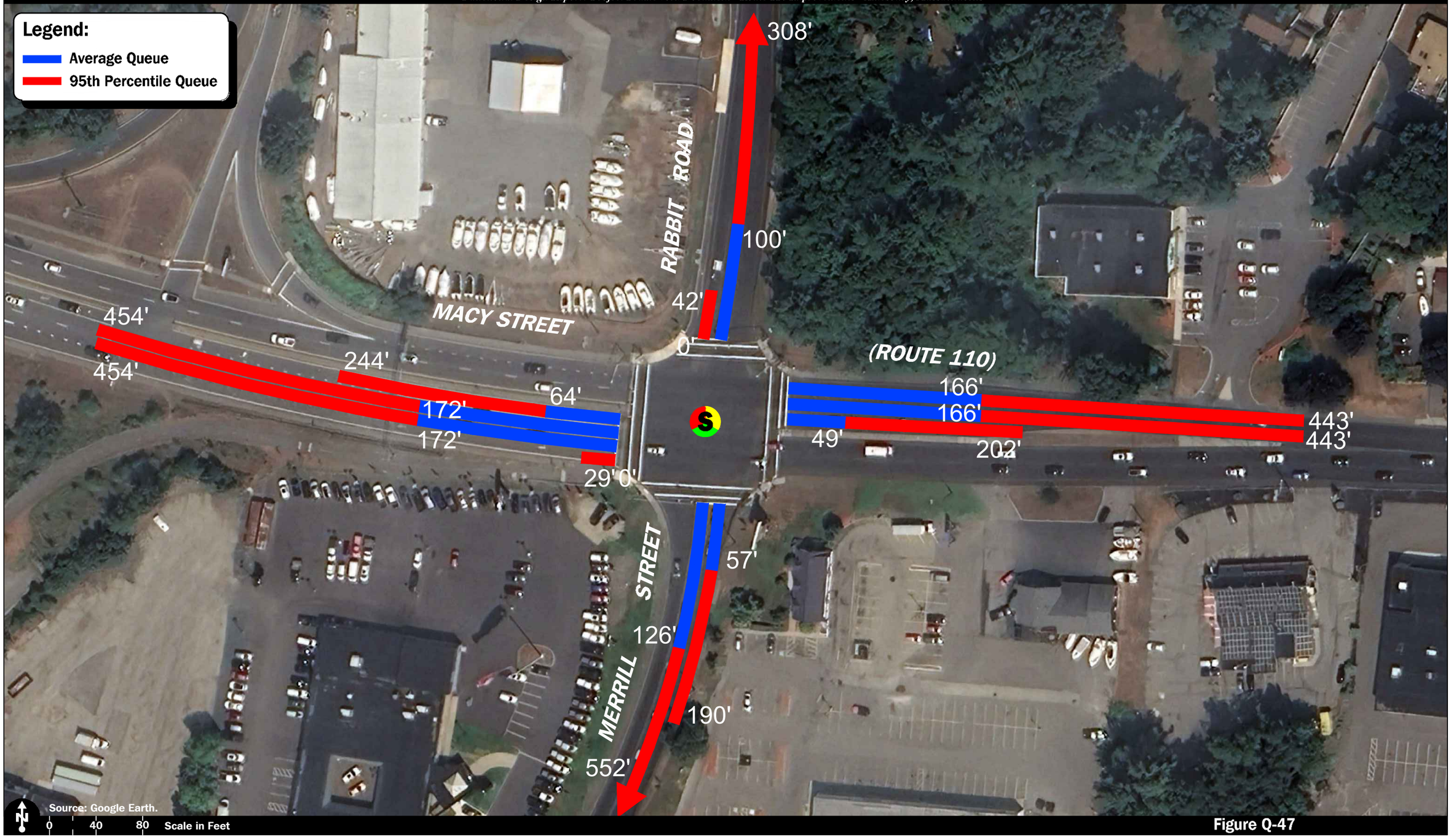

Figure Q-47

2025 Baseline
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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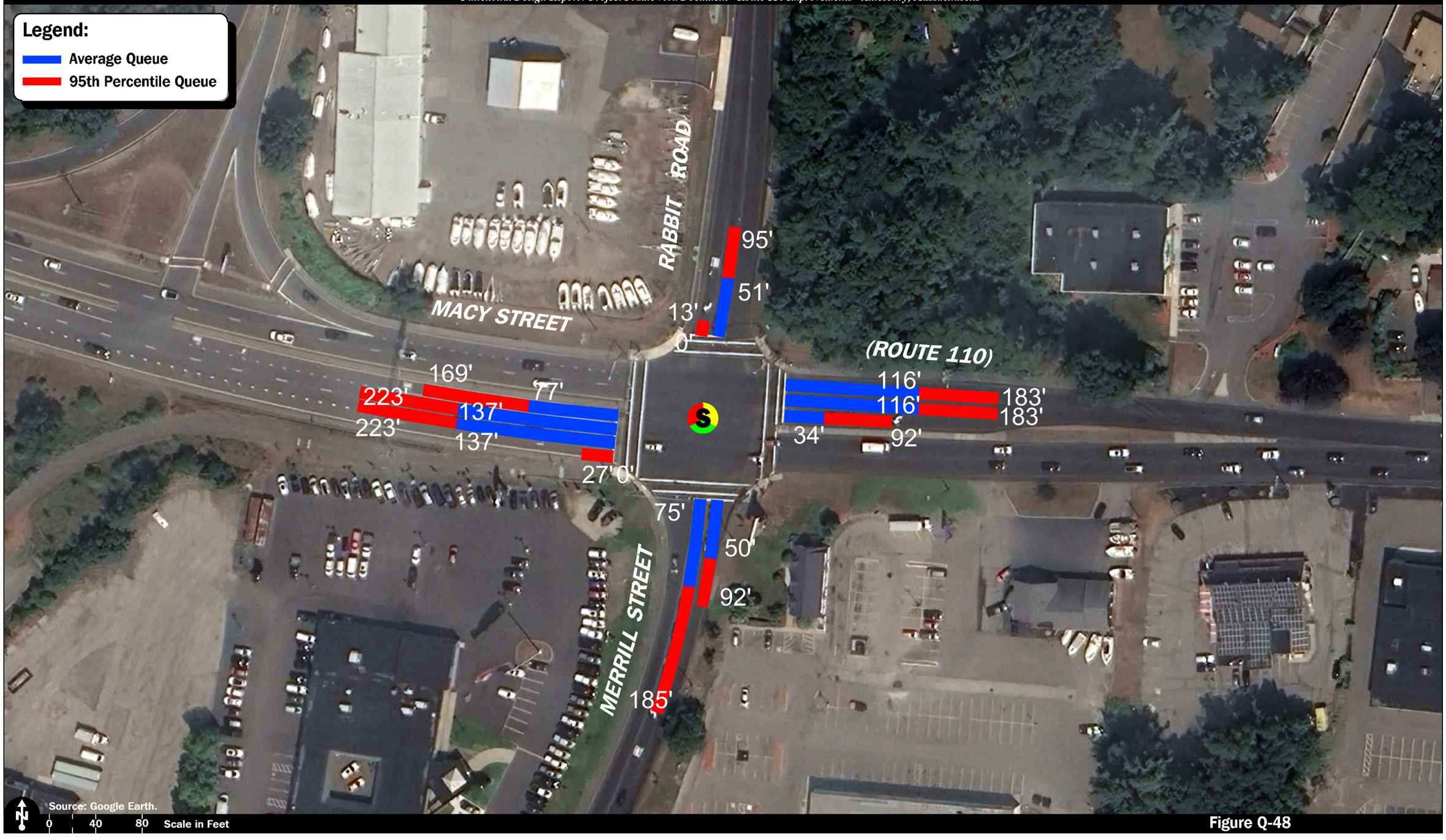

Figure Q-48

2025 Baseline
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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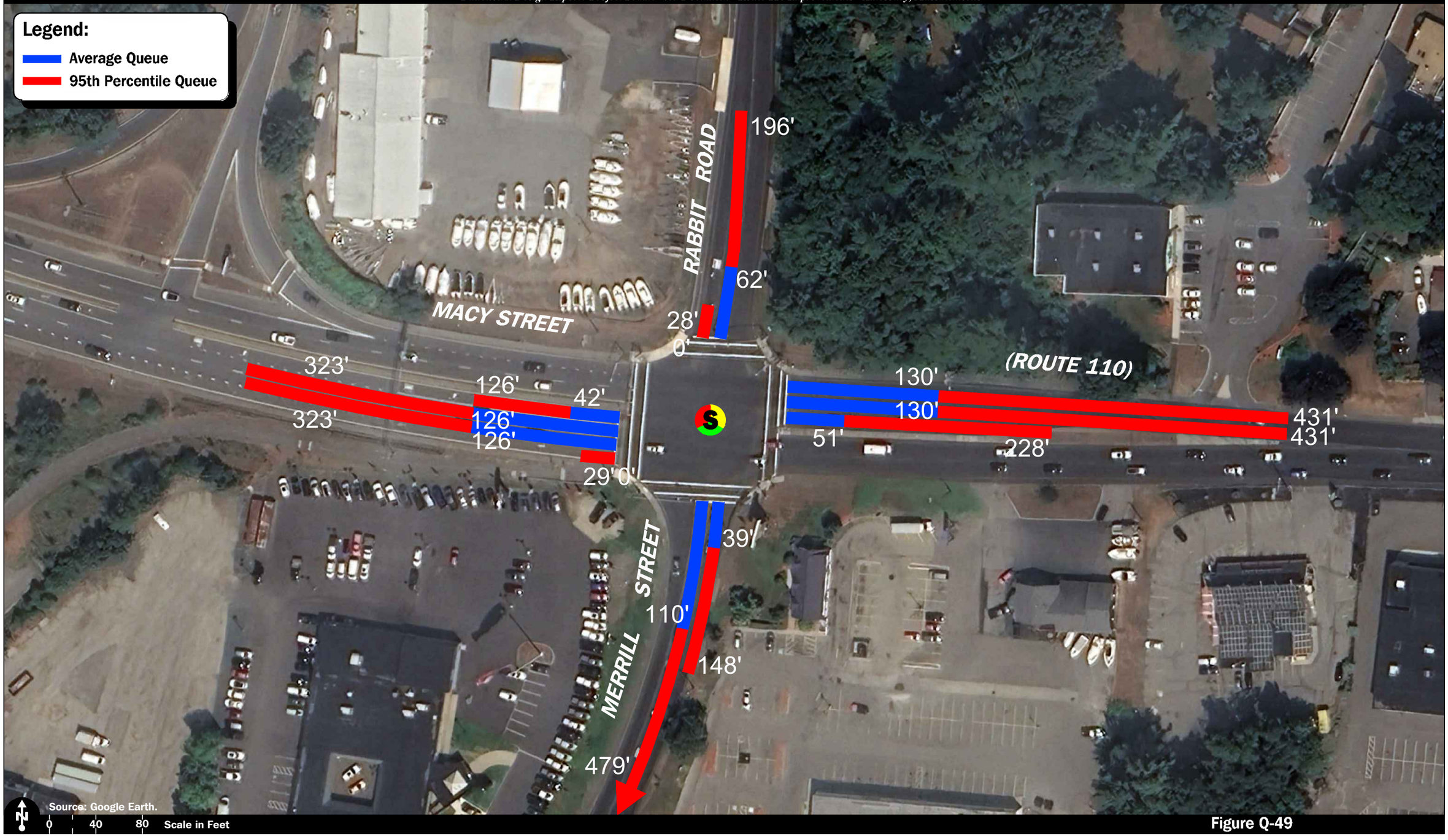

Figure Q-49

2032 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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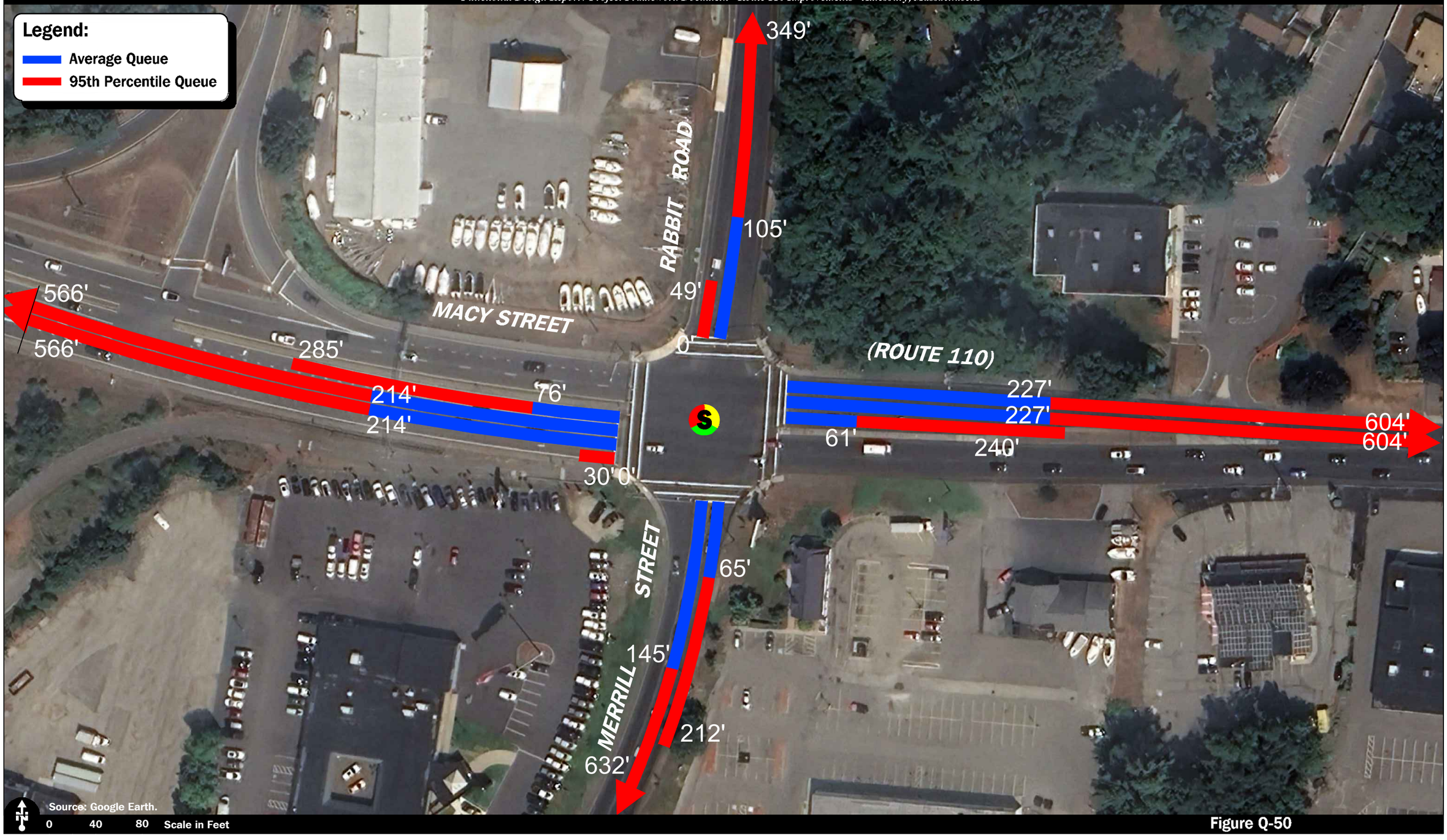

Figure Q-50

2032 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

Vanasse & Associates inc

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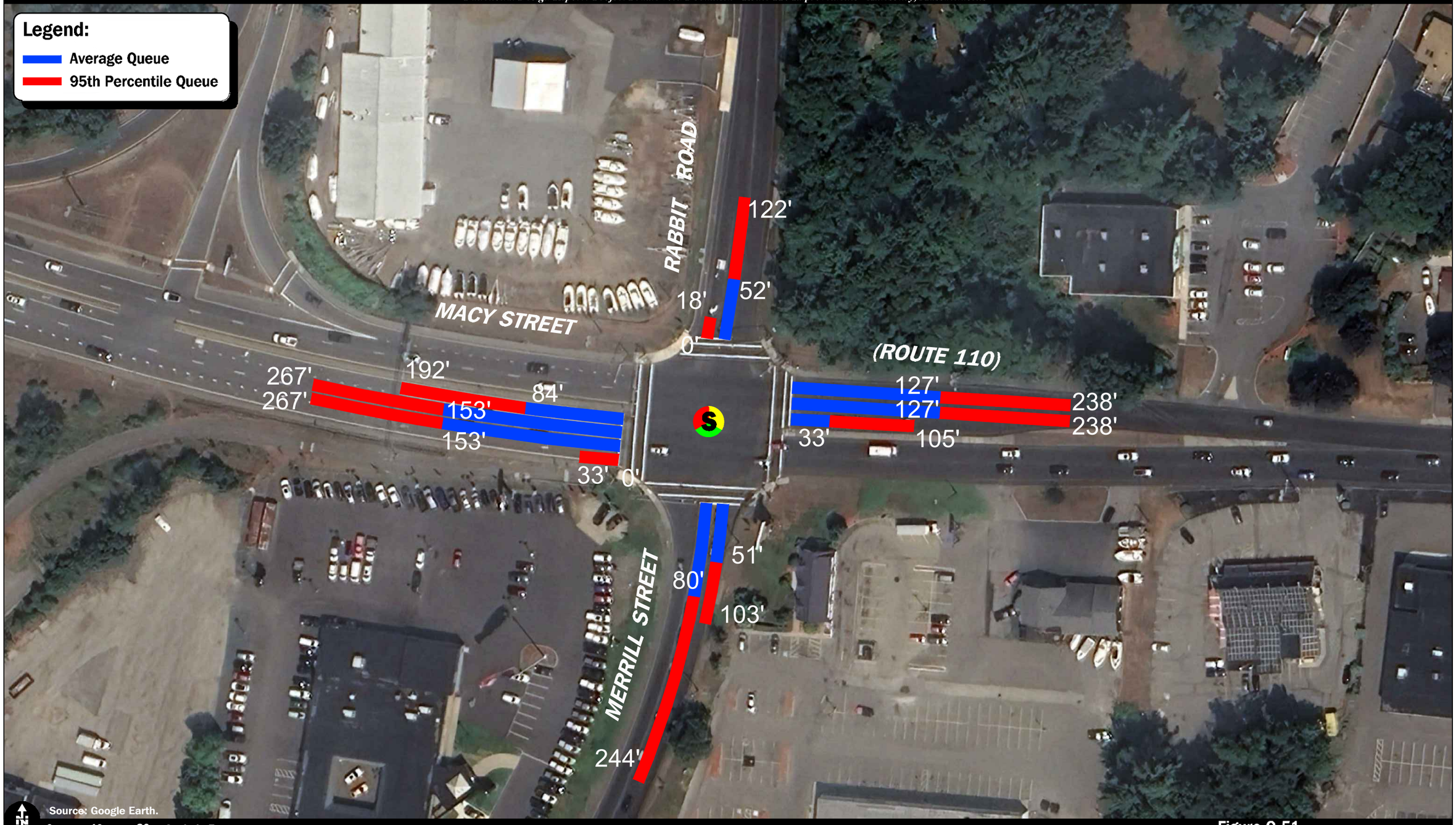

Figure Q-51

2032 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

Vanasse & Associates inc

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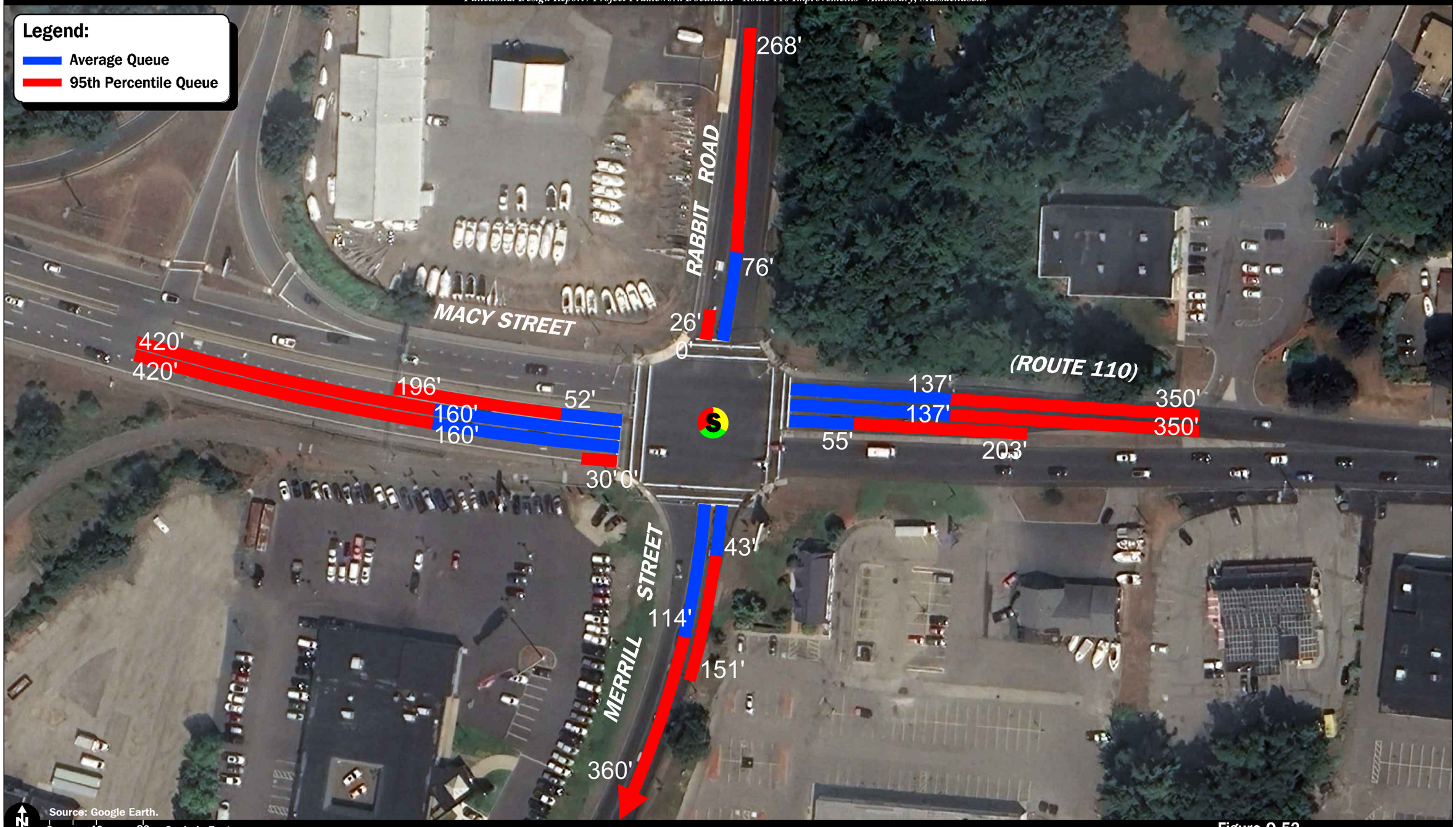

Figure Q-52

2032 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and
Rabbit Road

Vanasse & Associates inc

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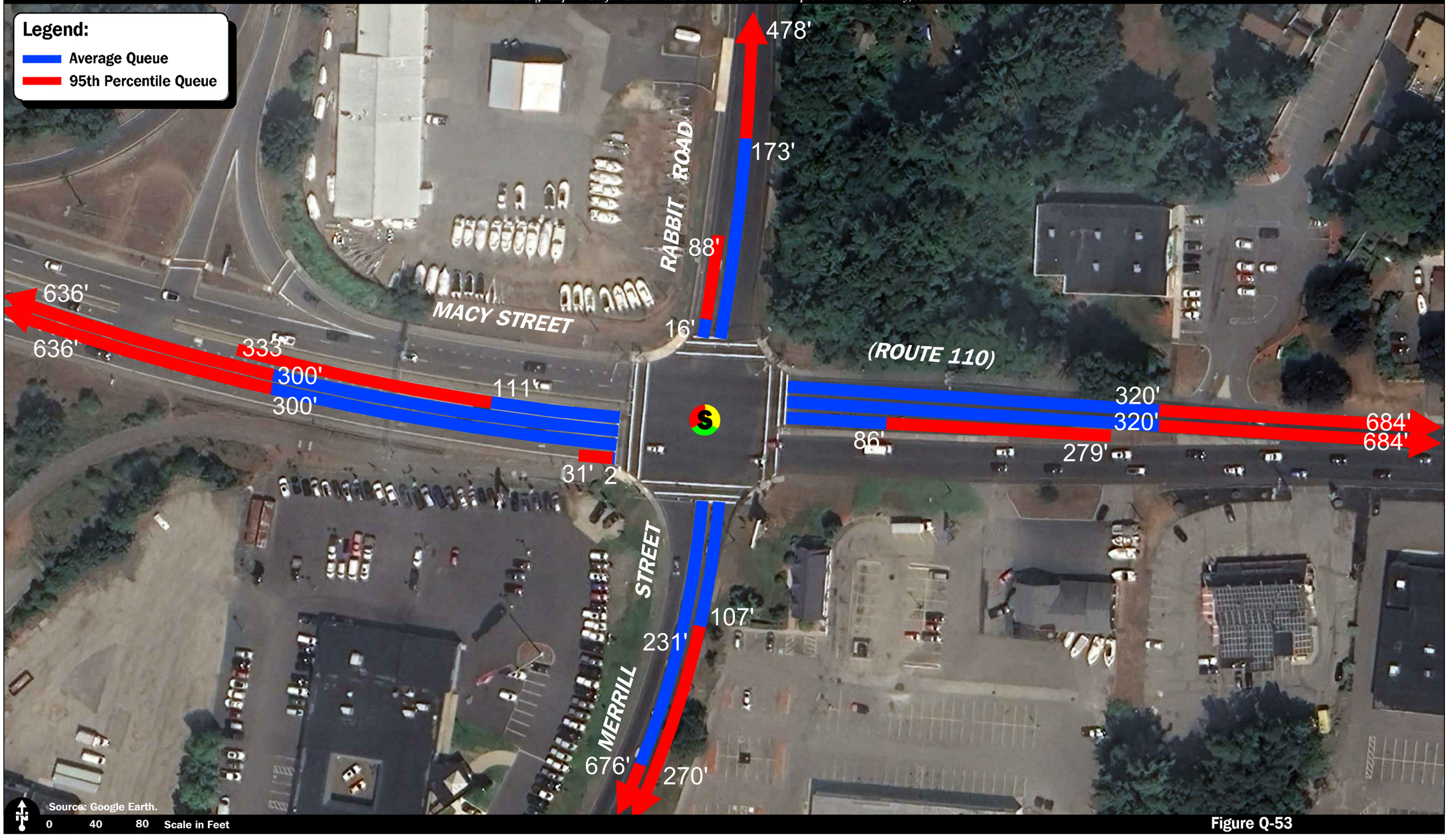

Figure Q-53

2032 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

Vanasse & Associates inc

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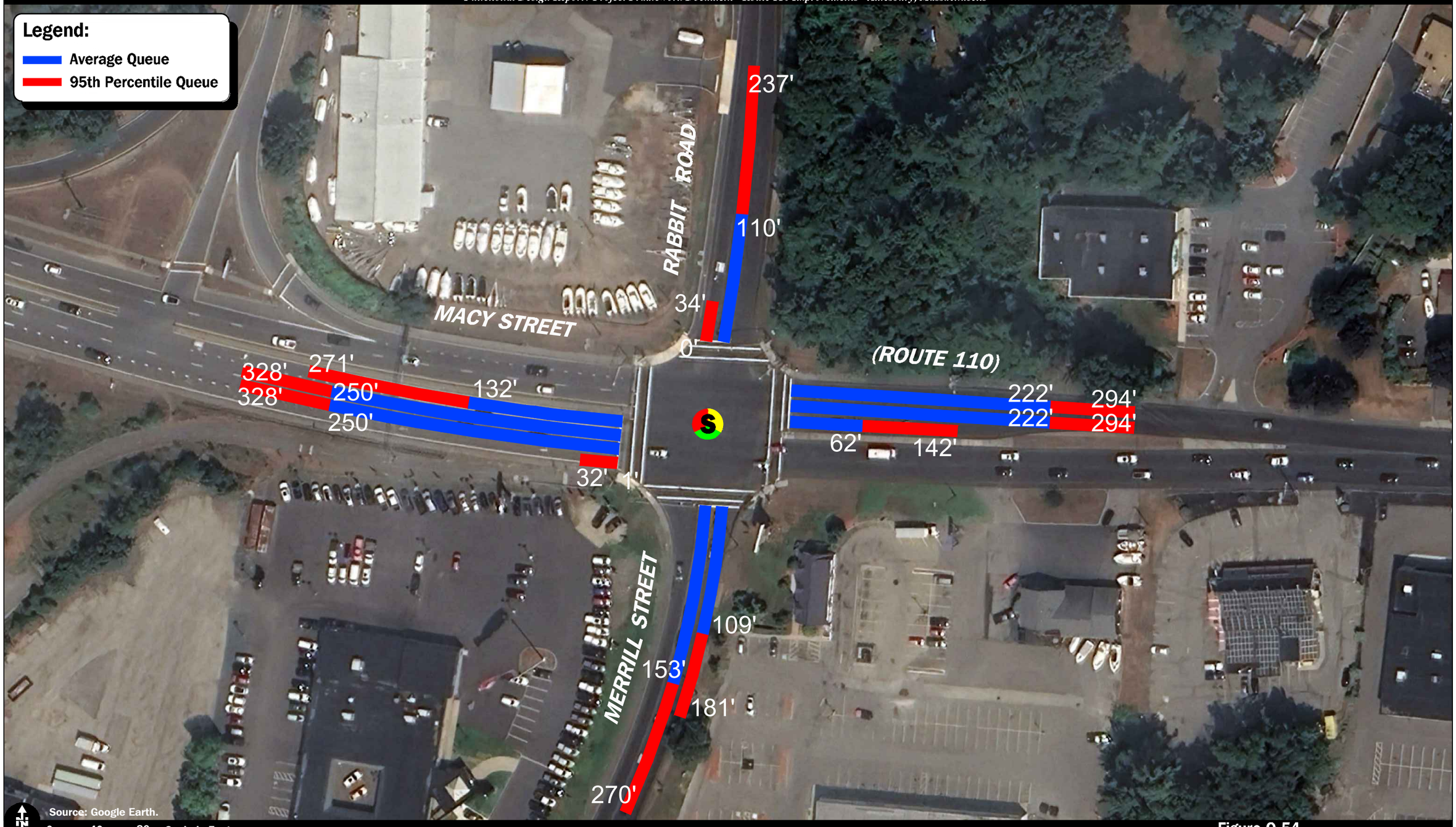

Figure Q-54

2032 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

Vanasse & Associates inc

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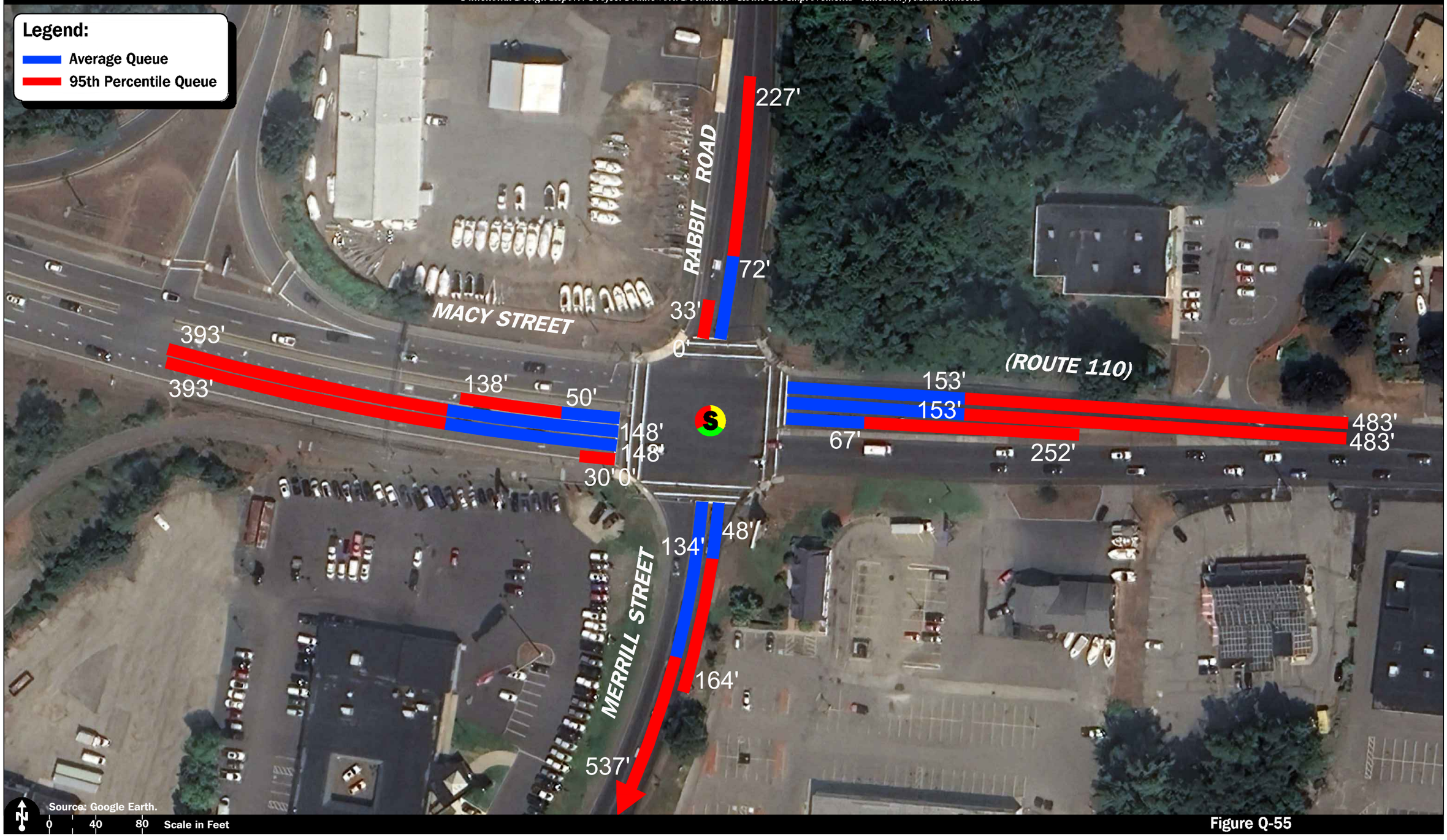

Figure Q-55

2045 Build
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

Vanasse & Associates inc

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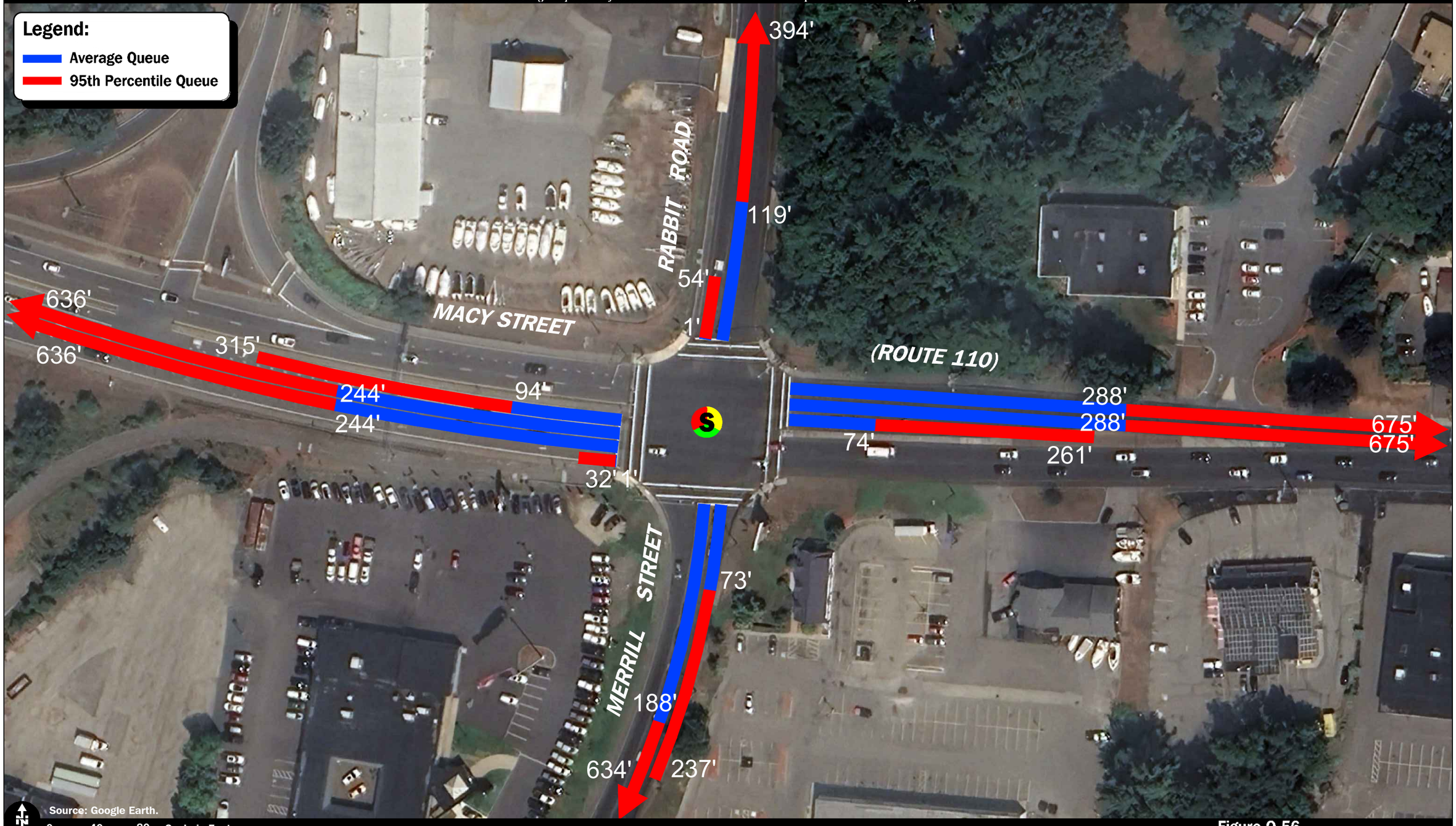

Figure Q-56

2045 Build
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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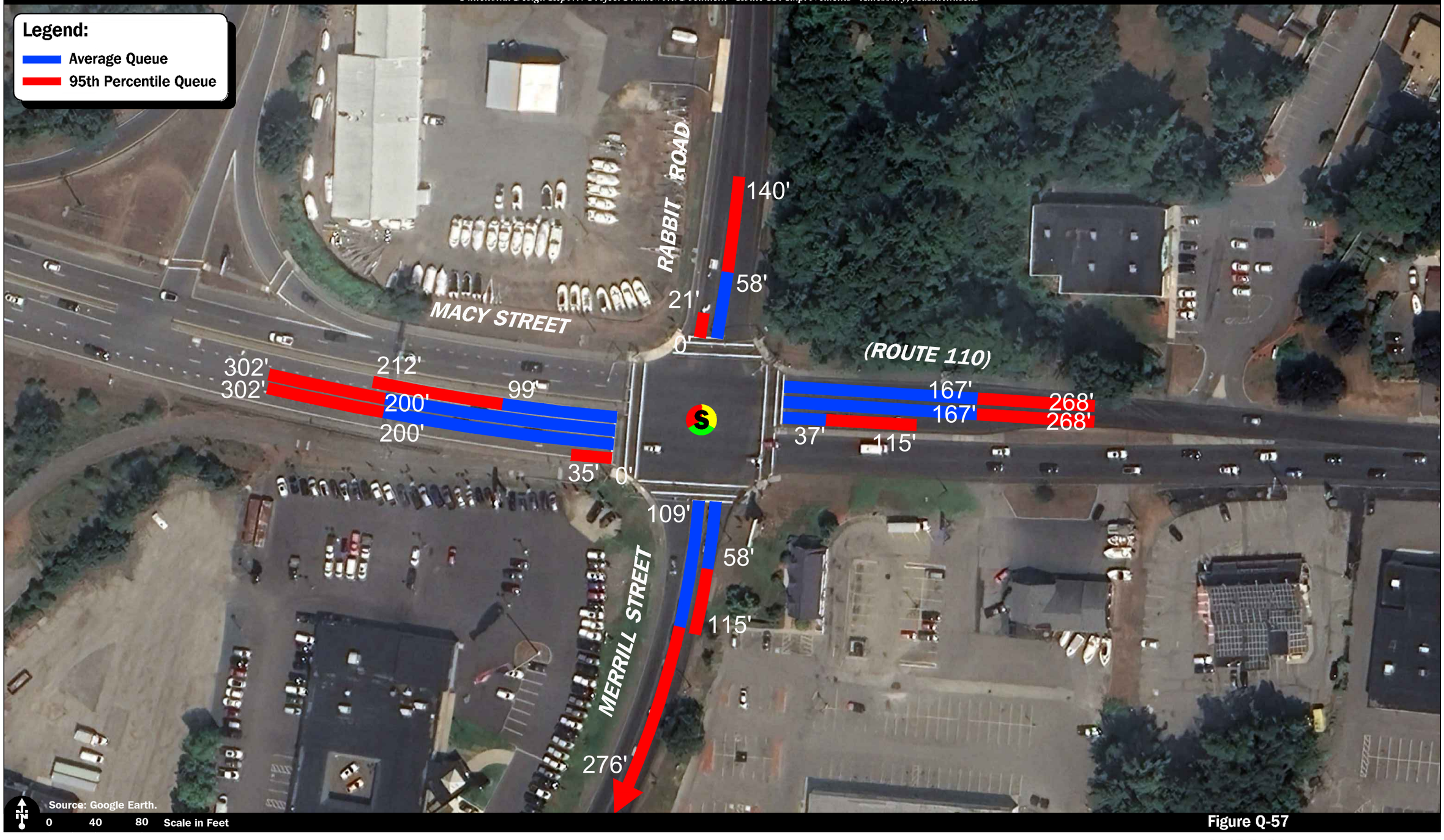

Figure Q-57

2045 Build
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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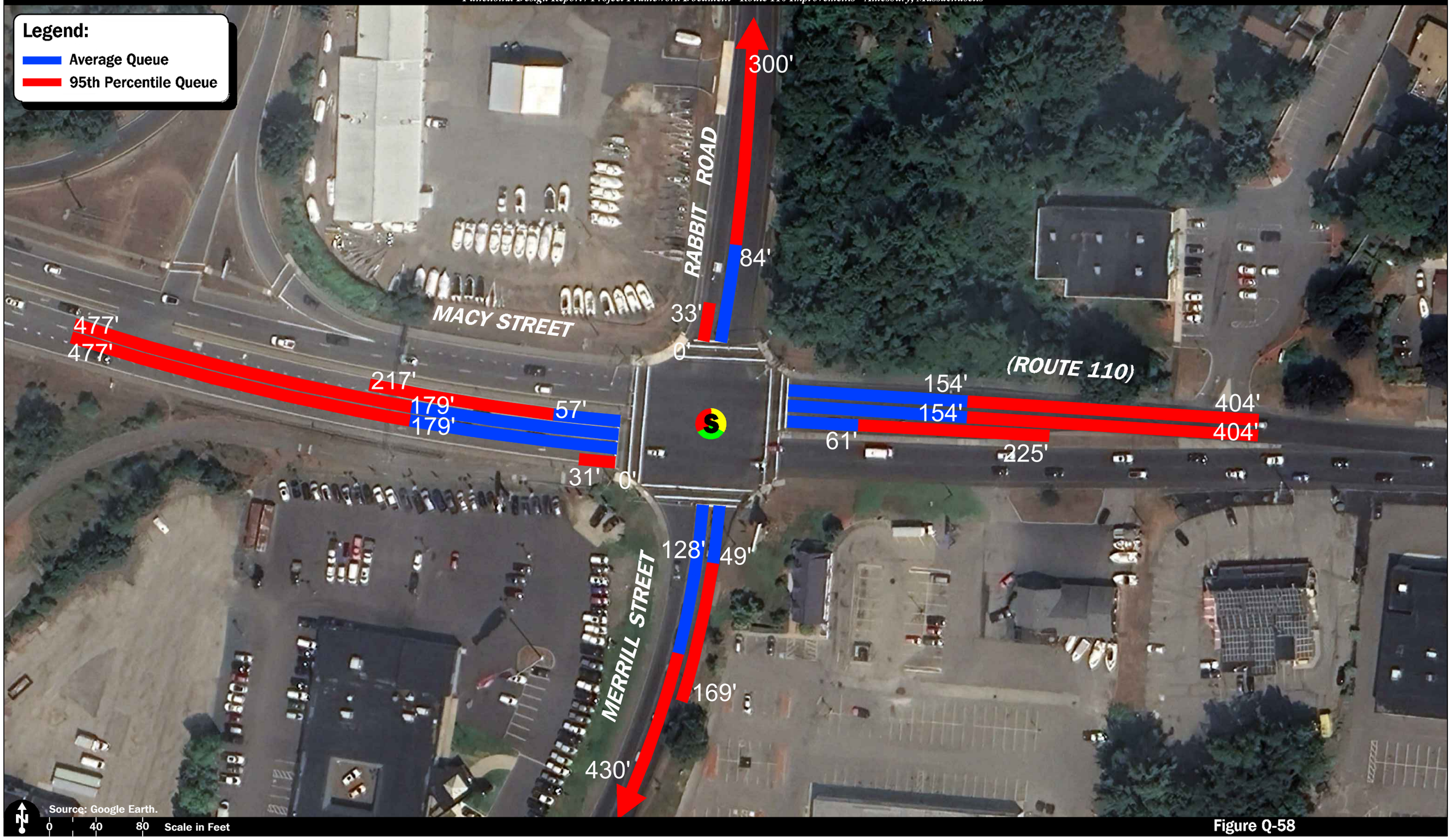

Figure Q-58

2045 Build Mitigated
Weekday Morning
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and
Rabbit Road

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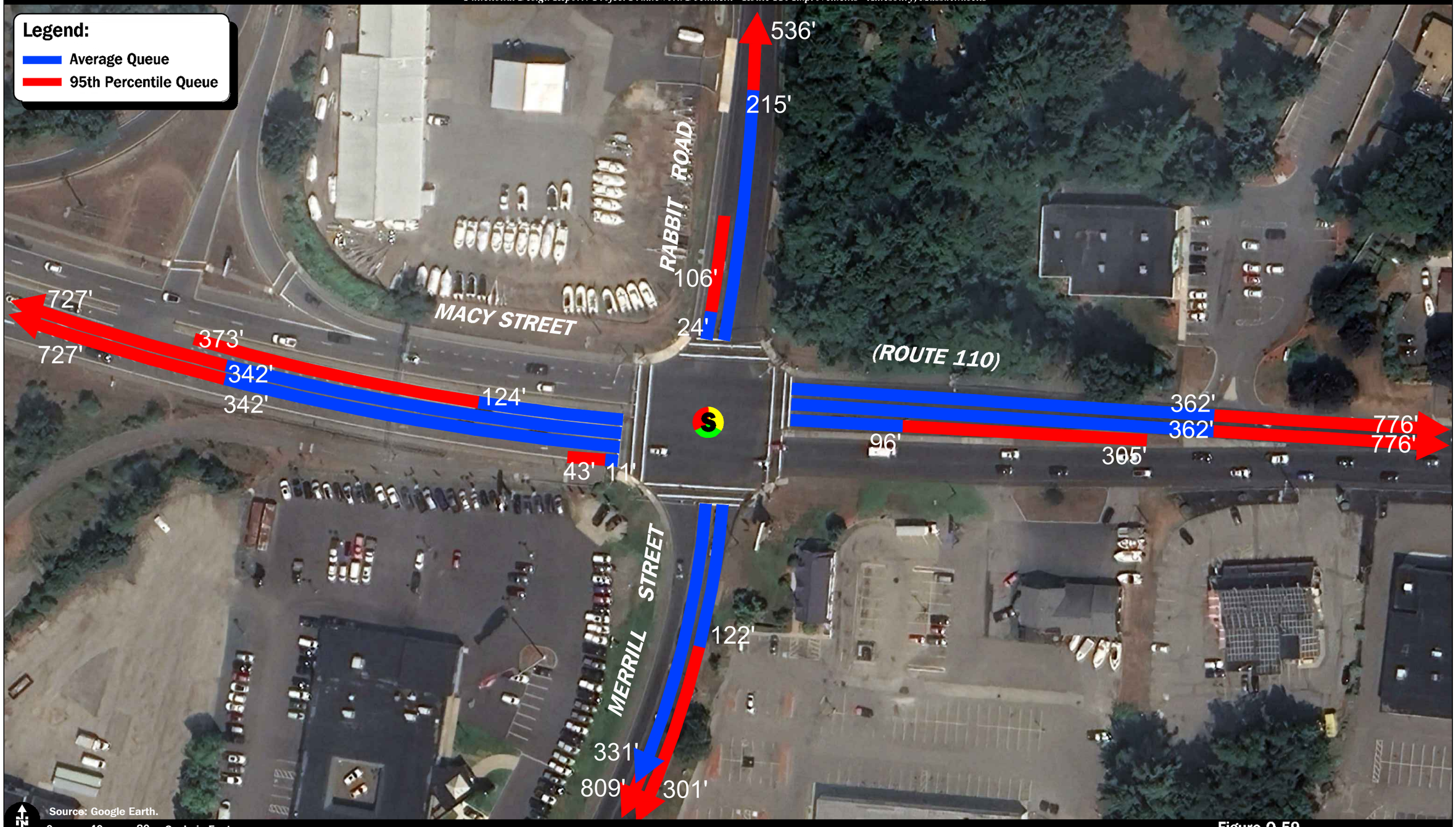

Figure Q-59

2045 Build Mitigated
Weekday Evening
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and
Rabbit Road

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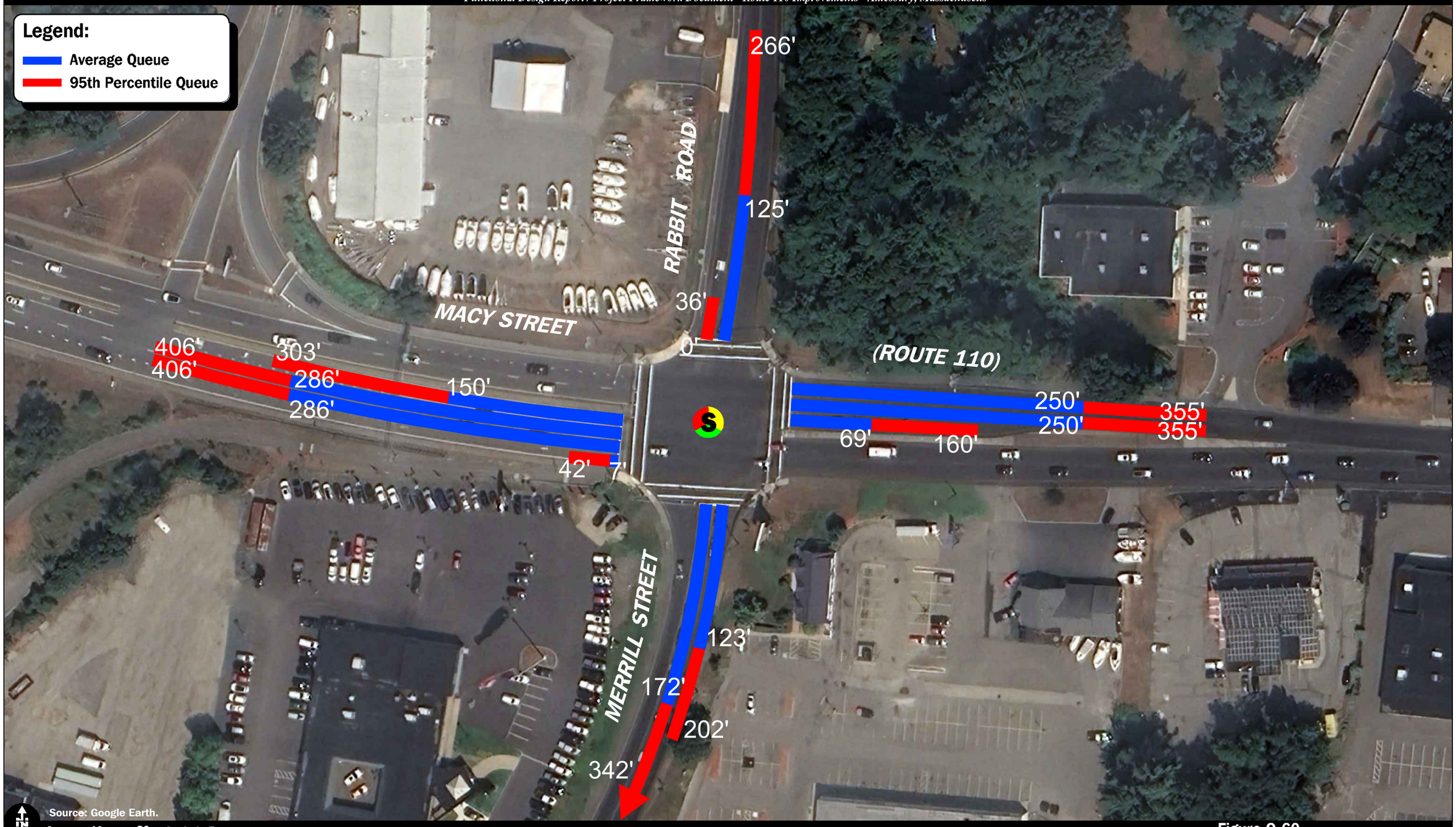

Figure Q-60

2045 Build Mitigated
Saturday Midday
Peak-Hour Vehicle Queue Summary
Route 110 at Merrill Street and Rabbit Road

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